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Impact of Covid-19 on employment, income, poverty and inequality in India: evidence from a village study in Karnataka

B. Satheesha,
Indian Institute of Technology, Delhi
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Introduction

In the last few decades, India impressed the world with its rapid economic growth, in particular after the introduction of economic reforms in the 1990s. This economic growth is also associated with a faster decline in poverty, especially after 2000. The poverty rate declined from nearly 50 per cent in 1987- 88 to 21.9 per cent by 2011-12 (Datt and Ravallion 2011; Dang and Lanjouw 2018). In the health and educational sphere also, India made substantial improvements (Himanshu 2019). However, the progress and development that India achieved were halted with the onset of the worldwide global pandemic- Covid-19.

The Covid-19 pandemic, which was majorly a health crisis, quickly translated into an economic and labour market crisis, particularly for a country like India, which experienced one of the most stringent lockdowns in the world. The pandemic hit the Indian economy when GDP growth was already slowing down, and the health crisis further worsened the economic situation of the country (Dev and Sengupta 2020). During the first quarter of 2020-21, the GDP fell by 23 per cent with an unprecedented effect on livelihoods and earnings (Kesar et al. 2021).

The nationwide lockdowns introduced to contain the spread of the virus, in particular, the lockdown associated with the first phase (between 25 March to 31 May 2020), brought a complete standstill to the economy and caused millions of workers to lose their job and mass exodus of migrant workers to India's villages (Walter 2021; Jain and Sinha 2021). The study by Azim Premji University (2021) estimated the loss of 100 million jobs during the first lockdown. Further, the extent of loss of earnings to households in India was estimated to be 74.6 billion USD during the first lockdown, with the highest impact on the service sector (Paul et al. 2021). Beyer et al. (2021) measured the economic disruption in India during the lockdown period by using the night-time light intensity and energy consumption and found that the electricity consumption was 21 per cent less than the normal levels on the day the national lockdown was announced, and it dropped to more than 30 per cent in subsequent days.

While almost all sections of society experienced some loss in income or employment, the impact was severe in urban areas and on vulnerable groups, including those working as informal workers and those belonging to socially and economically disadvantaged sections of society. A phone survey of 4000 workers conducted by Azim Premji University found that more than 70 per cent of the informal workers lost their employment in the sample (Kesar et al. 2021). The loss of employment is accompanied by significant income loss and an increase in income inequality during the pandemic (Kesar et al. 2021; Totapally et al. 2020; Bhalotia et al. 2020; Jha and Lahoti 2021). The survey by the Centre for Economic Performance (CEP) of 8,500 urban workers between May and July 2020 shows that earnings fell by 48 per cent on average compared to the pre-Covid months of January and February.

During this period, the income shares of the top quartile in total income rose by 16 percentage points suggesting a rise in income inequality (Bhalotia et al. 2020).

Studies also suggest that significant loss of livelihood and earnings likely to cause a considerable rise in number of poor in the country. Kochar (2021) predicted an increase of 75 million poor in India due to the Covid-19 induced economic crisis, which accounts for 60 per cent of the global increase in poverty. Further, the probability of falling into poverty was predicted to be disproportionately higher for vulnerable groups, including less educated, Scheduled castes, and Muslims (Dang et al. 2021).

While the existing literature does highlight the impact of Covid-19 on employment and incomes based on secondary and phone survey data, systematic empirical evidence of the impact of Covid-19 using village-level panel data is still limited. Therefore, in this paper, we attempt to contribute to the existing literature by understanding the impact of Covid-19 on employment, income, poverty and inequality in India based on the data obtained from three rounds (2008-09, 2018-19 and 2020-21) of household surveys conducted in Alabujanahalli, a village located in the southern part of Karnataka. The availability of baseline information just before the pandemic allows us to understand the impact of Covid-19 on employment and income in a comprehensive and systematic manner.

This paper is organized into the following sections. Section 2 discusses the data and methodology. We provide a detailed description of the village and economic development of Alabujanahalli between 2008-09 and 2018-19 in Section 3. Section 4 looks at the timing and nature of lockdowns. Section 5 discusses the impact of Covid-19 on Alabujanahalli with a focus on the loss of livelihood incomes and distributional impacts. The functioning of social security measures and the sale of assets and loans are examined in sections 6 and 7, respectively. Section 8 concludes the paper by discussing the post-lockdown recovery and future prospects of Alabujanahalli.

Data and methodology

The paper is based on the field survey conducted among the households in Alabujanahalli, a village located in the Mandya district of southern Karnataka, during three time points, 2008-09, 2018-19, and 2022. The 2008-09 census survey in Alabujanahalli was conducted by the Foundation for Agrarian Studies (FAS) as a part of its Project on Agrarian Relations in India (PARI).

The village was resurveyed in 2018-19 in two steps. First, the household census was done for 261 households, and we collected information related to demography, employment, and operational holdings. Later, of the 261 households, we selected 102 households for detailed surveys using proportionate random sampling based on operational holding size-class, caste, non-farm employment, and migration-related information of households. The detailed survey covered information related to the production of agriculture and allied activities, land holdings, tenancy, employment status, incomes and earnings, and asset ownership. We created appropriate weights for the surveyed household such that weighted statistics become representative of all households in the village. The weights are generated by combining land operational size-class, caste, non-farm employment, and migration-related information of households. We have also checked how well our sample represents the population (See Appendix Table A1). The statistics related to demography and employment presented in this paper are based on census information, while income-related statistics are based on a weighted sample for the 2018-19 survey.

We revisited the village during March-April 2022 to understand the impact of Covid-19 on the economy of Alabujanahalli during three reference periods: lockdown phase 1 (April to October 2020), the second lockdown (April - May 2021) and at the time of the survey in April 2022. The survey covered the entire village and collected information on the production of agriculture and allied activities, land holdings, tenancy, employment status, earnings, schooling, indebtedness, social safety nets and food intake.

The village

Alabujanahalli is a small village located in the Mandya district in the southern part of Karnataka. Mandya is a prosperous agricultural region and one of the developed districts in the Cauvery delta. The village-based study of Epstein (1962, 1998) well documented 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. Alongside, better implementation of land reforms, lower incidence of tenancy and equal distribution of land also contributed to the overall economic development of the region (Ramakumar 2017; Gupta 2019).

The village of Alabujanahalli is closely integrated with the regional economy of Mandya. The nearest town to the village is K.M. Doddi, at a distance of 1.5 km, with bus connectivity to all major cities. The nearest railway station is at a distance of 15 km, located in Maddur. The Mandya town and the Bangalore metropolitan city are situated at a distance of 25 km and 95 km, respectively, from the village. The village has all essential public amenities like public school, PDS (Public Distribution System) shop, piped water, and a diary unit.

Despite the village's proximity to semi-urban towns and cities, agriculture continues to dominate the economic activities in the village. In 2018-19, agriculture and allied activities accounted for about 67 per cent of all primary employment in the village, and nearly 83 per cent of the households reported income from cultivation. The village receives water from canals that are linked to water channels from the river Cauvery and nearly 95 per cent of the cultivable land in Alabujanahalli is irrigated. The major form tenure in the village is owner-cultivator and less than 10 per cent of all operated area was under lease. No farmer in Alabujanahalli could be categorized within the traditional landlord class (owning more than 10 hectares or 25 acres of land). The village is characterized by a low level of landlessness with marginal and smallholding form the majority in the village.

The better access to irrigation is reflected in the village's cropping pattern. The major crops grown in the village are water-intensive crops of paddy and sugarcane (which are also highly labour-intensive) and summer crop of *ragi* (finger millet). In Alabujanahalli, a large part of the labour is provided by the cultivators themselves and the number of workers from the village who offered themselves as casual labour in agriculture is relatively low. As a result, major labour-intensive tasks in cultivation, especially in sugarcane cultivation, are performed mainly by migrant workers.

Despite being an agriculturally prosperous village, the average daily wage rates of casual agricultural labour are relatively low in Alabujanahalli, Rs 264 for men and Rs 131 for women in 2018-19, according to our survey. These wage rates were lower than the corresponding average figures for Karnataka and India, as reported in the official employment surveys, particularly for females. In Alabujanahalli, rice and *ragi* are the staple food and the nominal wage in terms of rice and *ragi* (for male) were respectively 17.1 kg and 10.2 kg in 2018-19.

Table 1: Socio-economic profile of Alabujanahalli, 2018-19

Location	Nearest town: K.M. Doddi (1.5 km)	
	Nearest railway station: Maddur (15 km)	
District headquarter: Mandya (25 km)		
Metropolitan city: Bangalore (95 km)		
	2008-09	2018-19
Number of households	243	261
Population	1235	1194
Average household size	5.1	4.6
Proportion of the population in different caste groups and their traditional occupation)		
1. Backward Class	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.

There were 261 households in Alabujanahalli, with a total population of 1194 in 2018-19. The major social groups in the village are the “Backward Classes” (BCs) and “Scheduled Castes” (SC). The BCs accounted for 88.2 per cent of the total population (Table 1). Among the BCs, a major section of the population belonged to the Vokkaliga community. The caste name of Vokkaliga is associated with “Vokkalu” which means tenant farmer. Over the years, the Vokkaligas emerged as a major landowning class, which provided them with considerable political and economic power in Karnataka (Gupta 2019; Kohli 1987). The Vokkaligas have the highest per capita income in the village (Table 3). More than 90 per cent of the Vokkaliga households own some operational holdings and about 60 per cent of them are cultivators.

The other main caste groups that come within the category of BCs are Besthar and Madivala. The Besthar households traditionally belonged to a fisherman community, and their occupation was mainly linked to the supervision of irrigation in the village. However, today none of the Besthar households practice their traditional occupation and farming is the major source of livelihood in the village. The Madivala community is, in general, land-poor and traditionally engaged in laundry work (washerman). Of the total 9 Madivala households in Alabujanahalli, 4 households still continue to follow the traditional occupation while the remaining households derived their livelihood from casual labour in agriculture in the village.

The second largest caste group in the village after Vokkaliga is SC or Adi Karnataka and they comprised 11.3 per cent of the total population of the village. The traditional occupation of SC was drum beating for festivals and marriages, but today, none of them stick to their traditional occupation. Casual employment in agriculture is the major source of employment for SC within the village, employing 40 per cent of the total workforce. With respect to access to operational holding, the SC households fared better than some of the BC households. The proportion of the landless among SC households in Alabujanahalli appears to be lower than in rural Karnataka as a whole.

Before the onset of the pandemic, Alabujanahalli was undergoing the process of structural transformation. The resurvey of the village in 2018-19 showed clear signs of diversification of employment towards the non-farm sector. One of the distinctive features of employment diversification in Alabujanahalli compared to other villages in rural Karnataka and India was that regular salaried jobs accounted for the major source of employment in the non-farm sector. The share of non-farm employment in total employment rose from 19.5 per cent in 2008-09 to 33.0 per cent by 2018-19 (Table 3). The non-farm diversification mostly involved young individual members of households moving out of the village in search of better economic opportunities, even while they retained their family base in the village. The expansion of education, in particular higher education, has played a key role in providing access to non-farm employment opportunities. For instance, the proportion of the workforce who completed higher secondary or higher levels of education increased from 18.7 per cent in 2008-09 to 36.9 per cent in 2018-19. About 60 per cent of the regular workers reported that they obtained the job through interviews.

The two communities which have benefitted from the expansion of non-farm employment are Vokkaligas and SCs. In 2018-19, 48.4 per cent of the SC households and 37.8 per cent of the Vokkaliga households had at least one member with a regular job (Table 3). The workers from Vokkaliga were able to secure better-paying regular jobs in educational institutions and MNCs, and in the majority of the cases, the location of non-farm employment was in Bangalore city and accessed through migration. While most of the SC workers are employed in low-skilled jobs such as security guards, drivers, suppliers in bar and sales workers in textile with commuting being the major form of accessing these jobs (See Table A2). It is

important to note that the greater involvement of SCs in non-farm employment lifted them from the lowest income caste group in the village to the second position after Vokkaligas by 2018-19.

On the other hand, workers from Besthar and Madivala castes failed to exploit the growing opportunities in the non-farm sector, which pushed them down in the village economic ladder. The improved education among SC workers enabled them to exploit the employment opportunities outside the village, while low levels of education explain the failure of Besthar and Madivala to access better-paying jobs. In 2018-19, only 44.1 per cent of the workers from the Madivala community were literate and the corresponding figure for SC was 66.7 per cent (Table 3).

The last decade also witnessed an intensification of agriculture in Alabujanahalli with the shift of cropping pattern to a high-value crop of sugarcane and improvement in sugarcane yield. In 2008-09, 34.5 per cent of the gross cropped area was under sugarcane, and the share rose to more than 50 per cent by 2018-19. However the rise in yield has not translated into faster growth of cultivation income in real terms due to the rise in the cost of cultivation and inflation (See Table 9).

Non-farm diversification, poverty, and inequality: pre-covid trends

The rise in per capita income between 2008-09 and 2018-19 was not associated with a fall in poverty in Alabujanahalli, with the headcount ratio increasing from 27.6 per cent to 33.6 per cent (See Table 10). All the caste groups, except SC, experienced a rise in poverty. As we discussed above, the SCs have achieved greater diversification of employment towards the non-farm sector compared to any other communities in Alabujanahalli, which translated into higher per capita incomes and a reduction in poverty among SCs.

The Vokkaligas have the lowest poverty rates in the village but have seen a marginal increase in poverty during the period 2008-09 and 2018-19. This could be presumably due to a slow growth of real income from cultivation. The nominal income from cultivation rose by 4 times between 2008-09 and 2018-19, but the real income from cultivation increased only by 1.8 times due to elevated inflation as the CPI-RL (Consumer Price Index for Rural Labourers) in Karnataka doubled during the same period (See Table 8).

While the headcount index recorded a rise in Alabujanahalli, the squared poverty gap index has declined in the village, particularly for SC and Vokkaliga. This indicates the reduction in the severity of poverty as well as inequality among the poor in the village. On the other hand, Besthar and Madivala, the two communities which were less successful in diversifying employment towards the non-farm sector¹, saw a substantial increase in both the headcount index as well as squared poverty gap index. In 2018-19, 85 per cent of the population from Besthar and all individuals from Madivala fell into poverty (Table 11).

We also look at the characteristics of those belonging to the bottom three deciles of the per capita income distribution to understand the relative poverty in Alabujanahalli. Households in the lowest three deciles are categorised into different groups based on their demographic features, employment, landholding and caste, as shown in the first column in Table 2. The proportion of households in the village with the respective features is amongst the lowest three deciles shown in the second column. The likelihood of falling into poverty in 2018-19 is higher among households without land and household members working as agricultural labourers. All households from Madivala and 81 per cent of households from Besthar belonged to the lowest three deciles in the year 2018-19. At the same time, households with at least one member in a regular job, engaged in cultivation and households belonging to the Vokkaliga caste fared better than the rest of the households in the village. For these three groups of households, the likelihood of being poor also registered a decline between 2008-09 and 2018-19. More importantly, the share of SC households in the bottom three deciles declined from 48.5 per cent in 2008-09 to 36.7 per cent in 2018-19 (Table 2).

¹ 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.

Table 2: Proportion of households in the three lowest deciles of per capita income scale, Alabujanahalli

	2008-09		2018-19	
	No	%	No	%
Cultivation	50	28.7	53	26.2
With regular job	13	28.3	16	15.0
Landless	17	37.8	23	54.7
Agricultural labour	11	44.0	20	54.1
Landless agricultural labour	5	50.0	8	40.0
Without adult male	5	35.7	0	0.0
SC	17	48.5	11	36.7
Besthar	7	43.8	13	81.3
Madivala	4	33.3	8	100.0
Vokkaliga	43	25.1	41	21.2
All households	73	30.0	77	30.0

While poverty increased in Alabujanahalli between 2008-09 and 2018-19, income inequality recorded a decline, Gini coefficient declined from 0.487 in 2008-09 to 0.407 in 2018-19. Alternative measures of inequality, such as Theil L and Atkinson index, which are sensitive to changes in the incomes of the poor, also show the same trend (Table 12). We have decomposed inequality (Theil L measure with parameter value 0) by caste to understand the dynamics of caste inequality in Alabujanahalli. We also have looked at the between-group inequality by combining and separating different castes into groups. The main observation emerging from the analysis is that the contribution of between-group inequality to overall inequality is low, less than 15 per cent. Nevertheless, the contribution between group components rose between 2008-09 and 2018-19. When the village population is grouped into SCs versus all Others, between group component shows a decline, pointing to the upward mobility of SCs. At the same time, the distance between the group consisting of Madivala and Besthar versus the rest of the village increased during the first two survey periods due to the downward economic mobility of these two communities between 2008-09 and 2018-19 (Table 13).

One important reason for the fall in inequality in the previous rounds was the expansion of the non-farm opportunities, which not only benefitted the economically better-off households but also poorer segments of the village, in particular SCs. The share of non-farm income in average household income increased from 38.8 per cent in 2008-09 to nearly 60.0 per cent in 2018-19 (Table 14).

The overall picture that emerges from the 2008-09 and 2018-19 surveys is that Alabujanahalli has been on a positive trajectory of development, with structural

transformation gaining momentum and benefiting one of the most vulnerable groups in the village. Moreover, the non-farm diversification was also associated with a rise in per capita income, a fall in the severity of poverty and income inequality in the village and better human development indicators, in particular rise in overall educational level. On the other hand, in the village, agriculture continues to be the major source of livelihood with the intensification of cultivation. The onset of the Covid-19 pandemic has reversed the process of structural transformation of the village with the 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 in Alabujanahalli.

Table 3: Caste composition of Alabujanahalli

	Vokkaliga		Besthar		Madivala		SC		All castes	
	2008-09	2018-19	2008-09	2018-19	2008-09	2018-19	2008-09	2018-19	2008-09	2018-19
Proportion of landless households	10.5	7.7	37.5	31.6	66.7	77.8	20.0	32.3	18.5	16.1
Mean land cultivated by household (in acres)	2.94	2.47	0.73	0.95	0.20	0.10	0.63	0.68	2.24	2.02
Proportion workforce in non-agriculture (age 15+)	14.5	31.3	10.5	27.5	63.6	50.0	19.5	39.5	18.5	32.9
Percentage of households with at least one regular job	17.0	37.8	18.8	21.1	41.7	33.3	22.9	48.4	18.9	37.9
Literacy rate, age 7+ (percentage)	68.4	75.7	43.9	61.4	40.4	44.1	55.4	66.7	62.7	72.3
Proportion of workforce who completed higher secondary or higher levels of education	24.2	42.1	10.0	15.0	2.9	5.0	10.8	31.2	18.7	36.9
Per capita income (Rs per year) (at 2008-09 prices, CPI-RL)	20182	30960	11908	13361	12400	8222	9337	23282	17588	28591

Impact of Covid-19 on employment and income

Before we discuss the economic impact of the pandemic, in this section of the paper, we would like to highlight the timing and nature of Covid-19 lockdowns in Alabujanahalli. India experienced one of the world's strictest nationwide lockdowns, which was imposed to prevent the spread of Covid-19. According to the respondents of Alabujanahalli, the Covid-19 lockdown, especially the first lockdown between March 24- May 31, 2020, was strictly enforced, mainly affecting mobility within and outside the village. People were scared of the infection and went out only to buy essential goods and for important work.

Another important aspect the people unanimously agreed on was the disruption of social life in the village due to Covid-19. Mutual cooperation and interaction are the lifelines of the village, and suddenly people stopped talking and coming out of their homes. Due to the fear of Covid-19 infection, some farmers stopped hiring labours for cultivation, instead, they depend on family labour. In the field also, farmers ensured compliance with Covid-19 protocols by the workers, such as keeping distance between workers and using masks while working.

Vegetables and grocery shops at K.M Doddi were opened every day for a short duration, from 7:00 to 10:00 UTC+5:30. However, villagers often complained that on many occasions, they had to come back without any groceries because of the long queues. Shopkeepers were also strictly enforcing social distance norms and would be sent back anyone without masks. Other essential services like Banking, PDS and Dairy Unity were also functioning but with the limited operation. For PDS, households received the grains, mainly rice and finger millet, without biometric during the lockdown time.

During the lockdown time, the ASHA workers² used to visit the village regularly to generate awareness among the people regarding Covid-19, such as social distancing, wearing masks, avoiding visiting other's places and gatherings, and Covid-19 symptoms and testing.

According to the official records supplied by the Anganwadi teacher in the village, there were 26 Covid-19 cases, including two deaths in Alabujanahalli. During our survey, we learned that more people fell sick in the village, especially during the second wave in April 2021.

However, many of them, rather than doing tests, treated the common symptoms like cough, cold and fever with home remedies. People were scared to go to the healthcare centre as the village has no government primary health centre, and the nearest one is located in K.M. Doddi, which is often crowded. There is one private multi-speciality hospital in K.M. Doddi and those who have money prefer to go to this hospital as it is close and less crowded

2 Accredited Social Health Activists (ASHAs) are community health workers under the National Rural Health Mission of Government of India. Along with auxiliary nurse midwives (ANMs) and Anganwadi (childcare) workers (AWWs), they are among India's frontline health workers (See Niyati and Mandels (2020) for the details.

compared to the government healthcare centre. During our discussions, households reported that the government offered free rations and food grains, but we prefer to have affordable and accessible healthcare in our village.

Impact of Covid-19 on Alabujanahalli

Given the village economy of Alabujanahalli is dominated by agriculture, farmers managed to undertake agricultural operations during the Covid-19 lockdowns. Sugarcane is cultivated throughout the year, which ensures a steady supply of cane to the Sugarcane Factory. When the lockdown was announced, sugarcane harvesting was almost completed and transplantation of summer paddy was underway in the village. As mentioned before, the labour-intensive tasks in cultivation, in particular sugarcane harvesting, are performed by the migrant workers from Bellary (a district in northern Karnataka) who are brought in by the Sugarcane Factory through labour contracts.

Typically, the workers migrate with their families and stay in Alabujanahalli for 7 to 8 months in small tents, starting from July-August (when sugarcane harvesting begins and the Factory starts operations) and return to their villages during March-April (when the Factory shuts its operations for the season). The telephonic interviews conducted by the Foundation of Agrarian Studies (FAS) on 31 March and 1 April 2020, found that 60 per cent of workers were returned when the lockdown was announced and the remaining 40 per cent of the workers were sheltered in the village (Niyati and Vijayamba 2020). When the 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 number was insufficient to meet the labour demand in the village, which delayed the harvest of cane that was ready for the cut.

The labour-intensive tasks in paddy cultivation, in particular transplanting, were done by a group of 8 to 10 women (called *gumpu* in Kannada) and the workers comprised local workers as well as workers from nearby villages. The movement restrictions of Covid-19 lockdowns resulted in a shortage of workers for paddy operations. Nevertheless, the farmers could overcome the labour shortage by supplementing the family labourers and through exchange labour.

Even though agricultural operations and production were not affected by the lockdown, there were several other ways agriculture was impacted. First, rise in the cost of cultivation for all major crops. For example, the cost of cultivation of ratoon sugarcane³ was Rs 46462 per acre in 2018-19 and it increased to Rs 52525 in 2020-21, while the sale price of sugarcane remained at the pre-Covid-19 level, Rs 2600 per ton. Similarly, the per acre cultivation costs of paddy and finger millet increased while sale prices remained unchanged (Table 9). The increase in cost of cultivation was largely driven by the rise in the cost of fertiliser (increased

³ The BPL (Below Poverty Line) and AAY (Antyoday Anna Yojna) card holders were entitled for additional food grain per month.

by 1.3 times between 2018-19 and 2020-21), manure and seed (especially in the case of sugarcane).

Dairying and sericulture are major supplementary sources of income for the villagers and these two activities were severely impacted by the pandemic. Incomes from animal resources and sericulture fell significantly during the lockdown due to a rise in cost and a fall in sale prices. The price of cocoons fell from Rs. 250 per kg in 2018-19 to Rs. 100-150 per kg in 2020-21. Many sericulture farmers reported that it was difficult to find buyers for their produce during the lockdown due to the closing of markets. For dairying, we find that the dairy procurement unit in the village was functioning during the lockdowns, nevertheless, there was a fall in the sale price of milk by one rupee per litre.

Besides agriculture, the impact of the Covid-19 pandemic was severe on the non-farm sector, as all economic activities were suspended during the lockdown. As mentioned before, non-farm diversification was gaining momentum in Alabujanahalli before the pandemic. On set of pandemic resulted in a loss of employment and the return of many workers to the village, in particular those who migrated to Bangalore city for work. The rich farmers in Alabujanahalli derived a part of their household income from non-farm assets such as shopping malls, business and trade, and rental incomes. During the lockdown, the rich farmers did not receive any income from non-farm sources and hence experienced a fall in income.

In the next section, we examined the economic consequences on employment, income, and distributional impacts in detail.

Loss of employment

In 2018-19, the WPR⁴ (15 years and above) was 84.6 per cent for men and 29.5 per cent for women. During the first lockdown, the WPR for men declined by 10.3 percentage points while for females the WPR increased marginally. Compared to other Covid-19 studies, workforce participation in Alabujanahalli did not experience a sharp fall. This is because agriculture accounts for two-thirds of overall employment in the village and the majority of workers are cultivators. Since farmers continued to cultivate their land even during the lockdown and therefore less likely to report a loss in employment.

While employment in agriculture was least affected during the lockdown, there was considerable loss of employment for those engaged in non-farm sector jobs. Between 2018-19 and the first lockdown in March 2020, the share of non-farm workers in the total workforce declined from 32.4 per cent to 12.6 per cent for men – a 20 percentage points

⁴ We have estimated workforce participation rate (WPR) based on the main activity status – that is, the activity status on which a person spent a major part of the reference year – as reported by the respondents in the primary survey.

decline. Compared to men, loss of non-farm employment was marginally higher among women – 22.5 percentage points decline. However, the decline in employment was not reflected in the female WPR, as some of them reported unpaid family labour in cultivation as their primary activity. Moreover, women who reported attending domestic duties in the 2018-19 survey joined the labour market to supplement the labour shortage in cultivation during the lockdown period (See Table 4 and Figure 1).

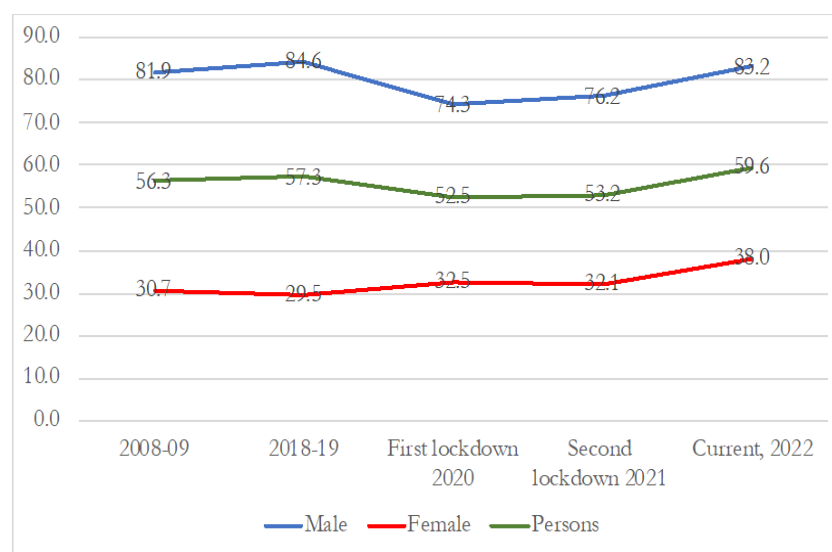
In 2018-19, 23.6 per cent of all workers were employed in regular sector jobs and this share declined considerably to 8.7 per cent during the first lockdown in 2020, indicating the vulnerability of the workforce engaged in regular sector jobs but without job security. At the same time, the workers employed in the government sector and corporate sector with relatively high job security did not lose their job.

The employment situation more or less remained unchanged during the second lockdown in 2021 (April-May), with non-farm workers still being unemployed. Non-farm employment started recovering only after the lifting of lockdown restrictions from June 2021 onwards, with 70 per cent of the workers returning to their pre-lockdown jobs. This suggests that the majority of workers in non-farm sector were out of work and earnings during the lockdown periods. However, when the economy started reviving, particularly after lifting the second lockdown, they were called upon for the same job. At the time of the survey in April-May 2022, the share of non-farm employment rose to 24.6 per cent, but these figures were still less than the pre-lockdown share of 33.0 per cent (Table 4).

Table 4: 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

Figure 1: Workforce participation rates (WPR), 15 years and above, Alabujanahalli



As some studies suggested the socially and economically weaker section of society were more likely to lose their livelihood during the pandemic (Kesar et al. 2021; Totapally et al. 2020), this was true in Alabujanahalli also. The two communities that were adversely hit by the lockdowns were Madivala and SC since their relative dependence on the non-farm sector was high compared to any other castes in the village. There were 10 workers from the Madivala community employed in non-farm sector in 2018-19, and the number declined to 2 during the first lockdown in 2020. This decline was largely among the workers running laundry shops in K.M Doddi, who had to shut their shops during the lockdown.

For SC, the share of the workforce in the total population declined by 17.3 percentage points between 2018-19 and the first lockdown in April 2020. In 2018-19, 40 per cent of the total workforce from the SC community (31 workers in total of 77) was employed in the non-farm sector and the share declined to 26.5 per cent during the first lockdown (Table 6).

A large number of workers employed in the non-farm sector from the Vokkaliga community also lost their job and returned to the village during the lockdown period. However, the WPR for Vokkaliga remained unchanged during the lockdown periods compared to the pre-lockdown period of 2018-19. This is because of the entering of women members of the Vokkaliga households into labour market to supplement the labour shortage in cultivation. A similar trend can be observed in the Besthar community, where female members of the community entered the labour market to assist the cultivation (Figure 2).

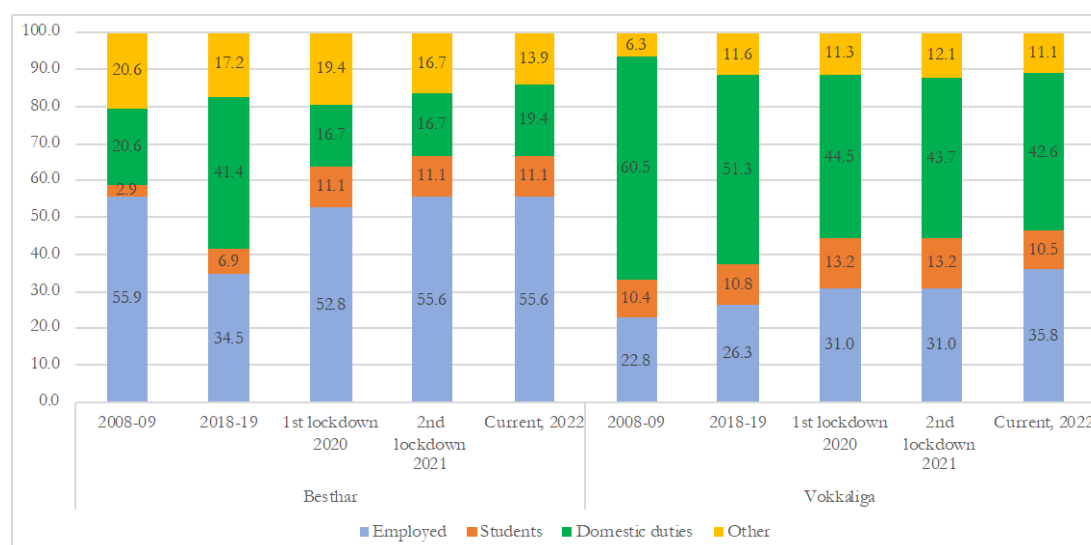
Table 5: Change in employment across various socio-economic groups in Alabujanahalli

	Share of workforce			% Change between:		
	2018-19	2020-21	2022	2008-09 to 2018-19	2018-19 to 2020-21	2020-21 to 2022
Sex						
Male	84.6	74.3	83.2	2.7	-10.3	8.9
Female	29.5	32.5	38.0	-1.3	3.0	5.5
All persons	57.2	52.5	59.6	1.0	-4.8	7.1
Social group						
SC	63.6	46.9	56.6	5.2	-16.7	9.7
Besthar	65.6	67.6	70.6	-6.1	2.1	2.9
Madivala	74.1	32.4	55.9	3.9	-41.7	23.5
Vokkaliga	54.8	53.7	59.5	1.7	-1.0	5.8
Occupation						
Self-employed in agriculture	52.3	76.1	65.0	-8.5	23.8	-11.2
Casual labour in agriculture	14.8	11.5	10.4	-6.0	-3.3	-1.0
Self-employed in non-agri	7.4	2.3	4.1	0.5	-5.1	1.8
Regular salaried	23.6	8.7	18.5	13.9	-14.9	9.7
Sector						
Agriculture	67.1	87.6	75.4	-14.5	20.5	-12.2
Manufacturing	6.0	1.9	3.6	3.1	-4.0	1.6
Education, health and admin	11.6	4.1	8.2	7.4	-7.5	4.1
Other services	15.3	6.2	13.2	3.7	-9.1	6.9
WPR	57.3	52.5	59.6	1.0	-4.8	7.1
All workers	568	515	585	-	-	-

Table 6: Distribution of workforce by employment type and caste

	2008-09	2018-19	1st lockdown 2020	2nd lockdown 2021	Current, 2022
SC					
Agriculture	80.5	59.7	73.5	75.8	58.5
Self-employed	37.8	19.5	39.7	40.9	30.5
Casual labour	42.7	40.3	33.8	34.8	28.0
Non-agriculture	19.5	40.3	26.5	24.2	41.5
Self-employed	0.0	3.9	4.4	4.5	3.7
Casual labour	7.3	3.9	4.4	3.0	2.4
Regular workers	12.2	30.7	17.6	16.7	35.4
All workers	100	100	100	100	100
N	82	75	68	66	82
Vokkaliga					
Agriculture	85.5	68.7	90.1	88.3	79.4
Self-employed	76.3	62.1	86.1	84.7	75.4
Casual labour	9.1	6.7	3.9	3.6	4.0
Non-agriculture	14.5	31.3	9.9	11.7	20.6
Self-employed	4.8	6.4	1.8	2.1	3.3
Casual labour	0.5	1.2	0.8	0.8	1.2
Regular workers	9.1	23.6	7.3	8.8	16.1
All workers	100	100	100	100	100
N	372	419	382	385	423

Figure 2: WPR for 15 and above for female by caste, Alabujanahalli



Income loss

In the previous section, we discussed the impact of Covid-19 on employment loss in Alabujanahalli. We find that the loss in employment was not severe in Alabujanahalli due to its high dependence on agriculture for livelihood. Nonetheless, we did see some pattern across castes, with poorer communities experiencing higher loss of employment compared to the dominant caste (Vokkaliga). In this section of the paper, we will discuss the impact of the pandemic on household income in the village.

Alabujanahalli experienced a sharp fall in average per capita annual household income between 2018-19 and 2020-21 (Covid-19 year) from Rs. 28591 to Rs. 12959 (at 2008-09 prices): a decline of 54.7 per cent. There were 13 households which reported negative income in 2020-21. The drop in household income was much greater among the poorer sections of the village, in particular landless and households belonging to the bottom 40 per cent of the income group. The average annual per capita income of landless and the bottom 40% fell more than 70 per cent during the Covid-19 year. This loss of income was 15-30 percentage points higher than the income loss experienced by households cultivating some land and those belonging to the top 10% of the income bracket (See Tables 7 and 8).

Across different social groups, the loss of income varied from more than 50 per cent for SC and Vokkaliga to 29.9 per cent for Besthar and 43.1 per cent for Madivala. Though the negative income shock on Besthar and Madivala was relatively less, the welfare impact of the shock on these communities could be higher compared to SC and Vokkaliga as the average annual income for these communities was already low in 2018-19: Rs. 13361 for Besthar and Rs. 8321 for Madivala per annum against the average annual per capita income of Rs. 28591 in Alabujanahalli (Tables 7 and 8).

Table 7: Average annual household income (in Rs) and loss of income during the Covid-19 year (in per cent) as a percentage of pre-Covid-19 income in Alabujanahalli

	2008-09	2018-19	2020-21	Income loss (%) during Covid-19
Current prices				
Mean household income	89388	391078	180420	-53.9
Median household income	57095	231450	96255	-58.4
Mean per capita income	17588	63472	33565	-47.1
At 2008-09 prices (CPI-RL)				
Mean household income	89388	176161	69660	-60.5
Median household income	57095	104257	37164	-64.4
Mean per capita income	17588	28591	12959	-54.7
Median per capita income	11138	20548	8649	-57.9

Table 8: Average annual per capita income (in Rs) (at 2008-09 prices) across different socio-economic groups and change in income (in per cent)

	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	9337	23496	11449	151.7	-51.3
Vokkaliga	20182	31334	14376	55.3	-54.1
Besthar	11908	13361	9367	12.2	-29.9
Madivala	12400	8321	4731	-32.9	-43.1
Land class					
Landless	14372	29420	7495	104.7	-74.5
Marginal	11560	21681	10650	87.6	-50.9
Small	14304	29377	17450	105.4	-40.6
Semi-medium	25012	31070	17296	24.2	-44.3
Medium	65549	118428	49662	80.7	-58.1
Income group					
Bottom 40%	5865	11965	3164	104.0	-73.6
Middle 50%	16706	30125	13388	80.3	-55.6
Top 10%	71879	89980	51028	25.2	-43.3
All	17588	28591	12959	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.

While the impact of the pandemic on cultivation and agricultural employment was low, the income from crop production experienced a fall during the Covid-19 year, from Rs. 16456 per acre in 2018-19 to Rs. 12712 (at 2008-09 prices) in 2020-21 (Table 9). Major reasons for the fall in income from crop production were, first, the rise in the cost of cultivation, in particular price of fertilisers. For example, as information provided by the farmers, a 50 kg bag of DPA (Diammonium phosphate) and Potash cost Rs. 1250 and Rs. 800, respectively in 2018-19 and the price rose respectively to Rs. 1700 and Rs. 1300 by 2020-21.

Second, decline in the productivity of sugarcane, especially from planted sugarcane. The possible explanation for the decline in productivity reported by farmers is the application of high amounts of chemical fertiliser, which is essential for efficient yield, resulting in low fertility of the land. Second, the use of pesticides for weeding due to the shortage of local workers, especially during the first phase of the lockdown, resulted in the burning of sugarcane roots and a decline in yield. Moreover, the shortage of migrant workers affected the timely harvest of sugarcane and the fall in yield. When the sugarcane matures, it should be harvested and transported immediately and delay in this can result in a decline in weight and deterioration of the sugar content of the cane.

The rise in the price index (CPI-RL) and unchanged sale prices of the 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 unchanged (See Table 9). The real wages of casual labour in agriculture have stagnated between 2018-19 and 2020-21, though the nominal wages show some rise, increasing by 20 rupees for both men and women.

Table 9: Average yield, gross value of output (GVO) sale prices and income from major crops, Alabujanahalli

	2008-09	2018-19	2020-21	2018-19/2008-09	2020-21/2018-19
Average yield of major crops (kg per acre)					
Sugarcane planted	40000	52000	48640	1.30	0.94
Sugarcane ratoon	34135	36240	38062	1.06	1.05
Paddy	1600	1865	1840	1.17	0.99
Finger millet	1500	1308	1418	0.87	1.08
Price received by farmers (Rs per quintal)					
Sugarcane	110	260	260	2.36	1.00
Paddy	875	1547	1510	1.77	0.98
Finger millet	783	2600	2600	3.32	1.00
Average gross value of output (Rs per acre)					
Sugarcane planted	44000	134934	123608	3.07	0.92
Sugarcane ratoon	38600	93463	99923	2.42	1.07
Paddy	16365	28852	31628	1.76	1.10
Finger millet	12750	34008	36386	2.67	1.07
Average cost of cultivation (Rs per acre)					
Sugarcane planted	31032	70385	75743	2.27	1.08
Sugarcane ratoon	24804	46462	52525	1.87	1.13
Paddy	12250	26492	29490	2.16	1.11
Finger millet	9486	15730	18180	1.66	1.16
Net income from crop (Rs per acre)					
Sugarcane planted	12968	64549	47865	4.98	0.74
Sugarcane ratoon	13796	47001	48414	3.41	1.03
Paddy	4115	2360	2138	0.57	0.91
Finger millet	3264	18278	17619	5.60	0.96
CPI-RL at 2008-09 prices	100	222	259	2.22	1.17
Real net income from crop (Rs per acre)					

Table 9: Average yield, gross value of output (GVO) sale prices and income from major crops, Alabujanahalli (Contd)

	2008-09	2018-19	2020-21	2018-19/2008-09	2020-21/2018-19
Sugarcane planted	12968	29076	18481	2.24	0.64
Sugarcane ratoon	13796	21172	18693	1.53	0.88
Paddy	4115	1063	826	0.26	0.78
Finger millet	3264	8233	6803	2.52	0.83
Average income from crop production (per acre)	9030	36533	32924	4.05	0.90
Average income from crop production (per acre), at 2008-09 prices	9030	16456	12712	1.82	0.77

Poverty and Inequality

The faster growth of per capita incomes, particularly in the late 2000s, was associated with a decline in poverty and a rise in inequality in India. Between 2011 and 2019, extreme poverty in India declined, but the rate of reduction was considerably slower than the period between 2004 and 2011 due to low economic growth (Roy and Weide 2019)⁵. The economic crisis of Covid-19 has reversed the progress that India made with significant loss of employment and income, contributing to a rise in poverty and inequality. Next, we examined how poverty and inequality evolved during the pandemic in Alabujanahalli.

In Alabujanahalli, the loss of income and decline in per capita income resulted in a significant rise in poverty during the Covid-19 period, from 33.6 per cent to 83.1 per cent between 2018-19 and 2020-21. More than 80 per cent of the individuals from all the castes in Alabujanahalli fell into poverty during the Covid-19 year. The poverty rate among Madivala and Besthar was 100 per cent and 96.5 per cent, respectively (Table 10).

It appears that economically well-off households, especially from the Vokkaliga, also fell into poverty during the pandemic in Alabujanahalli. This is possibly due to the use of current income to measure poverty. Scholars have cited a number of issues in using income as a measure of economic status and important among them is the accurate measurement of income, particularly from cultivation (Lanjouw and Stern 1998; Ravallion 1994).

Alabujanahalli is predominantly an agrarian economy and the income from cultivation could

⁵ Roy and Weide (2019) use the Consumer Pyramids Household Survey (CPHS) to understand the evolution of poverty after 2011 because the NSSO (National Sample Survey Office) has not released the 2017-18 “quinquennial” round of consumption expenditure survey.

fluctuate year-to-year depending on the quality of harvest, thus affecting the current income. During the first Covid-19 year of 2020-21, the sugarcane yield declined while the cost of cultivation rose, resulting in a fall in net income from sugarcane. Alongside, the Covid-19 shock hit the non-farm earnings pushing a number of households below the poverty line. Nevertheless, the current income still is a good measure to understand how economic status changes with specific events or shocks, such as Covid-19.

Table 10: 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, in rupees)	7468	16613	19379
Mean per capita income (annual per capita, in rupees)	17588	28591	12959
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 consumer price index for rural labour (CPI-RL).

Table 11: Poverty rates in Alabujanahalli by caste

	Head-count index			Squared poverty gap index (*100)		
	2008-09	2018-19	2020-21	2008-09	2018-19	2020-21
SC	41.8	39.2	83.6	7.9	3.1	30.8
Besthar	41.7	84.6	96.5	4.4	13.3	37.5
Madivala	26.7	100.0	100.0	1.6	28.1	65.1
Vokkaliga	25.2	26.1	80.4	7.1	5.0	34.3
Total	27.6	33.6	83.1	6.5	6.0	36.3

The reversal of structural transformation in Alabujanahalli during the Covid-19 period resulted in a rise in inequality in the village Gini coefficient rose from 0.407 to 0.502 between 2018-19 and 2020-21 (Table 12). As we have seen, the employment and incomes from the non-farm sector were hit hard by the Covid-19 lockdowns and the impact was higher on the asset-poor groups compared to those economically better off. At the same time, the income loss from cultivation was relatively lower compared to any other sources. Between 2018-19 and 2020-21, the share of income from cultivation in total household income increased from

25.8 per cent to 41.5 per cent. During this period, the contribution of crop income to overall inequality rose from 24.6 per cent to 34.6 per cent (Tables 14 and 15).

Income from a salaried job in the non-farm sector is the largest contributor to overall inequality, accounting for 46 per cent of total inequality in 2018-19 and the share declined only marginally to 44.3 per cent. In Alabujanahalli, there are individuals who are employed in the formal sector with job security, particularly in the government sector and software companies. They did not lose their job during the lockdown period and received their salary. At the same time, many regular workers with low job security were unemployed during the pandemic year and experienced a loss of earnings. This could be the reason why the contribution of the salaried component to overall inequality remained high.

Table 12: Inequality in Alabujanahalli

	2008-09	2018-19	2020-21
Gini coefficient	0.487	0.407	0.502
Atkinson index			
e=0.5	0.209	0.136	0.214
e=1	0.355	0.250	0.397
e=2	0.604	0.437	0.726
Theil L measure			
GE (0)	0.439	0.288	0.506
GE (1)	0.518	0.295	0.472
Percentile ratios			
p90/p10	6.67	5.58	12.23
p90/p50	2.63	2.43	2.89
p10/p50	0.39	0.43	0.24
p75/p25	2.70	2.57	3.43
p75/p50	1.72	1.70	1.77
p25/p50	0.64	0.66	0.52

Table 13: The contribution to inequality of caste differences (Theil L measure)

	2008-09	2018-19	2020-21
Within caste contribution	91.1	87.1	89.6
Between caste contribution	8.6	12.9	10.4
SC versus rest of the village	5.7	0.8	0.1
Vokkaliga versus rest of the village	7.8	7.4	3.1
Besthar, Madivala versus rest of the village	1.6	8.6	2.2

Table 14: Distribution of total household income by source, Alabujanahalli

	2008-09	2018-19	2020-21
Primary sector	58.4	39.6	52.4
Crop income	29.7	25.8	41.5
Animal resources	7.3	5.3	2.1
Sericulture income	7.4	2.1	0.4
Agricultural labour earnings	12.7	5.5	6.1
Rental income from agricultural land	1.3	0.8	2.3
Secondary and tertiary sector	38.8	59.6	40.1
Non-agricultural casual labour	2.1	1.4	2.6
Salaried job	9.1	41.7	30.7
Business and trade	17.9	9.3	2.0
Rental income from other sources	9.8	7.2	4.8
Transfers	1.6	0.8	7.6
All sources	100	100	100

Table 15: Inequality decomposition by source of household income (Theil L measure)

	2008-09	2018-19	2020-21
Primary sector	45.4	29.3	42.0
Crop income	30.0	24.6	34.6
Non-farm sector	53.7	70.4	56.1
Salaried	12.0	45.9	44.3
Business	27.2	11.7	2.1
Rental income	13.5	11.1	7.2

Social security and food intake

In this section of the paper, we examine government support and transfers and their access across social groups during the lockdown. The households reported that the Public Distribution System (PDS) was an important source of food grain during the lockdown, particularly during the first lockdown in April 2020. We find that more than 95 per cent of the eligible households⁶ 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, through PDS (Table 16).

The Central government announced a transfer of Rs 500 per month to all women with Pradhan Mantri Jan Dhan Yojana (PMJDY) account holders during the first lockdown period (April to June 2020). We find that among 36.8 per cent of Jan Dhan account holders, only 50 per cent of them received the amount for three months. About 94 per cent of the eligible farm households (households that hold cultivable land up to 2 hectares) received a transfer of Rs. 6000 in the Covid-19 year of 2020-21 under PM-Kisan Samman Nidhi Yojana (Table 16).

The Government of Karnataka announced a Covid-19 relief package of Rs 1610 crore in May 2020 for those who lost their livelihood due to the pandemic. The package provides one-time compensation to workers from various sectors, including farmers who suffered crop loss and workers from the unorganized sectors such as Washermen, Barbers, construction workers, cab drivers and other workers. To claim relief workers have to register in the government portal. We find that only 20 per cent of the households in Alabujanahalli received some cash transfer from the State government⁷. Among the eligible households including the two most backward communities in the village, Madivala and Barber, reported not receiving any such benefit from the government during the pandemic. During the discussion, the lack of awareness about the relief was cited as the main reason for lower recipients of the benefit, particularly for the above-referred communities. These communities, especially Madivala households, have the village's lowest educational outcomes, making it difficult for them to register for such relief measures using the governmental portal.

In Alabujanahalli, 53.7 per cent of households are eligible for various types of pension and among them, 76.8 per cent received pension regularly during the months of lockdown. Among the SC households, only 57 per cent of them received pension regularly during the lockdown period, while the corresponding figure for Vokkaliga was 82 per cent. One reason for this difference in receiving the pension could be the better network and contact of

⁶The BPL (Below Poverty Line) and AAY (Antyoday Anna Yojna) card holders were entitled for additional food grain per month.

⁷It is important to mention that we have no information overall how many households in the village were eligible for this transfer.

Vokkaliga (the dominant caste) at the administrative level compared to SC. During our survey in 2022, the four members who represented Alabujanahalli in the Annur Gram panchayat belonged to the Vokkaliga caste. These networks not only made Vokkaliga better aware of various types of schemes but also timely transfer of the benefits.

The MGNREGA played an important role in providing livelihood support, particularly during the pandemic, in rural India (APU 2022; Afridi et. al 2022; Lokhande and Gundimeda 2021). The study by Azim Premji University (APU) based on field survey conducted in four Indian States (Bihar, Karnataka, Maharashtra, and Madhya Pradesh) find that earnings from MGNREGA were helped to compensate 20 per cent to 80 per cent of income loss incurred because of pandemic (APU 2022). In Alabujanahalli the implementation of MGNREGA has been relatively poor. Conditional on at least one member of the household worked under MGNREGA, a household received 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 a rural household under MGNREGA. About 56 per cent of the households cited the 'works opened were not adequate' as the reason for not getting as much work as they wanted under the scheme.

During our survey, we interviewed the village mate or worksite supervisor⁸ of Alabujanahalli, and he pointed out three major hurdles to the implementation of MGNREGA in the village. First, members of the Vokkaliga caste exerted control over the Gram panchayat (GP) and they could successfully lobby the panchayat officials to stop the allocation of work under MGNREGA, especially during periods of heavy demand for agricultural labour. Second, it was learnt 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 – more than 90 per cent of the land in the village was owned by the Vokkaliga community – was also an important hurdle to undertake MGNREGA work in Alabujanahalli. Other studies have identified control over local institutions by the dominant classes, corruption, and administrative inefficiency as major reasons for the poor implementation of MGNREGA in Karnataka (Usami and Rawal 2012; Pattenden 2017).

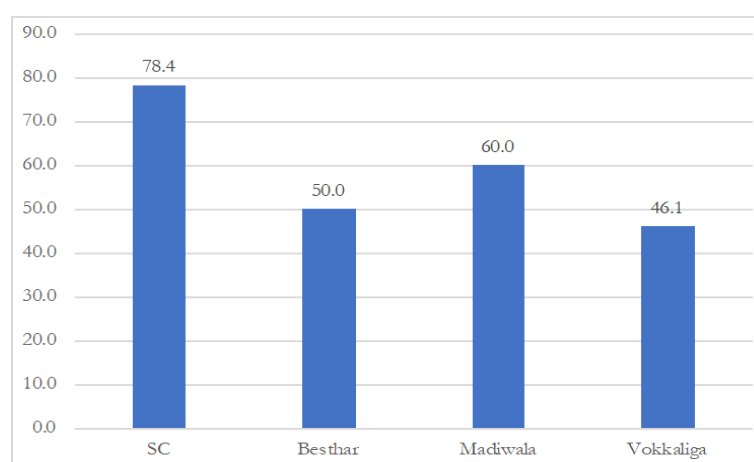
We also look at the impact of the pandemic on household food intake. About 52 per cent of the respondent reported a decline in the per capita food intake in their household consumption, in particular consumption of meat, compared to the pre-pandemic period. This proportion was 78.4 per cent for SC households and 46.1 per cent for Vokkaliga households as depicted in Figure 2. When asked about major sources of food grain during the pandemic time, households reported PDS as an important source, followed by food grain grown on their own land or leased-in land. Some of the households also reported meeting their consumption by taking a loan or by taking food grain from relatives and friends in the village.

⁸ The village mate is responsible for supervise worksites, capture daily attendance, facilitate applications for job-cards and demand for work, and submit them to Gram panchayat (see GOI 2013).

Table 16: Access to various social safety nets

	SC	Besthar	Madivala	Vokkaliga	All
Access to PDS					
% of households received extra grain during the lockdown	97.4	100	100	95.5	
Pension					
% of households receiving 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 received cash transfer during the lockdown	100	100	100	92.8	
Jan-Dhan					
% of having Jan-Dhan account	36.8	23.8	40.0	39.1	
% of households received cash transfer during the lockdown	50.0	80.0	75.0	48.2	
Other Covid-19 relief transfers					
% of households received cash transfer from the State government during the lockdown	15.8	9.5	20.0	23.3	

Figure 3: Decline in per capita food consumption during lockdown compared to pre-lockdown period



Sale of assets and loan

To cope with the loss of employment and earnings during the pandemic, about 20 per cent of the households sold some type of assets. This proportion is higher among Besthar and Madivala castes, 42.3 per cent and 30 per cent, respectively. The most common asset sold was livestock (50 per cent), followed by jewellery (44.6 per cent). The major reason reported by the households for selling the assets was to meet the food, health and daily expenses of households during the Covid-19 period.

About 51.2 per cent of the households borrowed loans during the lockdown and 67.8 per cent of the households reported that the main purpose of the loan was to meet the daily expenses of houses, in particular for buying food items. The caste-wise distribution of borrowers shows that 70 per cent of the Madivala households availed of loans during the pandemic and 43 per cent of them borrowed from cooperative society.

Post-lockdown trends and going forward

“Everyone is back to their normal life with people started moving around without any restriction and, more importantly, interacting with each other like before Covid-19. During the lockdown, many of us took loans to meet the household expenses and now we are confident that we can repay those loans because everyone started working again” according to a farmer in the village.

The evidence from the field survey supports the above statement with the life of farmers back to normal with the agricultural and allied activities coming back in full swing in the village. There was no shortage of labourers for cultivation as migrant workers’ availability was no longer a problem. The sale prices of major crops in Alabujanahalli have improved at the time of the survey compared to the Covid-19 period. The price of sugarcane increased from Rs. 2600 in 2020-21 to Rs. 2800 per ton in April 2022. Similarly, prices of paddy and finger millet increased by Rs. 450 and Rs. 400 per quintal, respectively. The sale price of milk also reached the pre-pandemic levels. Further, households who stopped sericulture during the lockdown due to low prices resumed the activity again as the cocoon price recovered after the lockdown lifted. At the time of the survey, the cocoon price ranged from Rs. 700 to 900 per kg compared to Rs 150 per kg during the first lockdown in 2020. Despite the rise in prices of the produce, one of the major concerns among farmers that came out during our discussions was the decline in the profitability of agriculture due to a rise in the cost of cultivation.

The recovery of non-farm employment in Alabujanahalli shows a mixed picture as the non-farm employment levels had not returned to the pre-Covid-19 levels. In April 2022, 24.6 per cent of the total workforce was employed in the non-farm sector and the corresponding figure for 2018-19 was 33.0 per cent. Interestingly, 70 per cent of the regular workers could return to their pre-Covid-19 employment. The recovery rate has been faster for SC compared to Vokkaligas. The share of non-farm employment in total employment was 41 per cent for SC, which is twice the share of Vokkaliga (20.6 per cent). Most importantly, the expansion of non-farm employment for SC was driven by the growth of jobs requiring relatively high skills, such as teaching (See Appendix Table A2). In 70 per cent of the cases, employment was accessed through commuting from the village. Like the pre-Covid-19 period, the improved education, in particular higher education helped them to secure a regular source of income in nearby towns.

Recovery of non-farm employment among Vokkaligas was slow compared to SC, as nearly 80 per cent of the workforce from the Vokkaliga community is engaged in agriculture. More than 90 per cent of Vokkaligas own land which provides a fallback option during the shocks like Covid-19. On the other hand, the low size of landholding by SCs, mostly growing food grains for household consumption, makes agriculture less profitable, forcing them to seek

better opportunities outside agriculture. The other reason for low recovery among Vokkaligas compared to SC could be the nature of accessing non-farm jobs. While majority of SC workers commute daily to nearby towns for jobs, the Vokkaligas accessed non-farm employment through migration to bigger cities like Bangalore.

During our survey, we found several Vokkaliga families which were permanently migrated out of the village and returned to the village with the family during the pandemic. In one such instance, a husband and wife were working in a garment factory in Bangalore. During the first lockdown, the factory closed, and they were out of work for three months. When lockdown restrictions began to ease after June, they were hired back but only for a few months before the factory closed again during the second lockdown in April 2021. Due to the uncertainty of work in the city, they returned to the village in September 2021 and started cultivating their land (1 acre) which was leased out before and planned to stay in the village permanently.

In another case, a Vokkaliga household who owns 0.75 acres of land in the village was residing in Bangalore before Covid-19 and shifted back to the village with the family after the head of household who was working in the printing press lost the job due to the closure of the press. Because of job loss, children were shifted from private schools to government schools in the village. During the first and second lockdown, the head of the household was working as casual labour alongside leasing out their own land. During our recent visit, he was working as a helper in a grocery store but reported that he did not receive his salary for the last three months.

For Besthar and Madivala communities, agriculture appears to be strengthening as a major source of livelihood after the pandemic. In April 2022, 85.4 per cent of the Besthar workforce and 52 per cent of the Madivala workforce depended on agriculture and allied activities, and these shares are higher than the pre-Covid levels.

Since recovery is gaining momentum in Alabujanahalli, going forward, we expect that opportunities outside the village will accelerate in future, and education will play a crucial role in accessing those opportunities. The villagers are also well aware of this and they give the utmost priority to their children's education. We have seen that 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. During our visit in 2018-19, a bus stand was under construction in K.M. Doddi and it was being constructed on the village land. The construction was completed and operationalised when we revisited the village in 2022. We assume that this will further strengthen the integration of Alabujanahalli with the outside economy in the coming years.

Access to information played an important role in the increased demand for education and aspirations among parents about their children's education. In 2022, 60 per cent of the school-going children were enrolled in private schools. Parent's aspirations are also

reflected in their willingness to send their children to coaching centres farther away from the village. During our visit in 2022, we found that a Vokkaliga family sent their child to Kota (Rajasthan) for coaching classes aspiring the kid to get admission to premier educational institutions like IITs (Indian Institute of Technology).

The declining prosperity in agriculture may also contribute to the faster movement of young workers out of agriculture in future. The important problems faced by the farmers in cultivation are, the rise in cost of cultivation while there was no corresponding increase in sale price, which adversely affected the income from cultivation. Alongside this, the shortage of water and delay in payment from the Sugarcane Factory contributed to the rising uncertainty about the returns from cultivation. Many farmers reported that cultivation alone is not sufficient to ensure livelihood and it is important to exploit the growing opportunities outside the village. Nevertheless, cultivation would still remain the predominant source of livelihood in Alabujanahalli. We found that during the pandemic, land ensured livelihood security when many of the workers lost jobs and returned to the village.

We are optimistic that rising education levels and the growth of opportunities outside the village are going to play a crucial role in the development of the village. The non-farm diversification would involve the individual member of the household migrating out while other members take care of the operational holding in the village.

At the same time, a section of the disadvantaged communities in Alabujanahalli continue as agricultural labourers with limited opportunities to diversify. Different forms of control over labour by farmers are the main reason for low levels of diversification among agricultural labourers. These include attached labour and control over MGNREGA works which might have resulted in low levels of agricultural wages and also prevented the wages from rising in Alabujanahalli. We expect that traditional caste-based occupations will disappear completely in the coming years as the prospects of better income from these occupations are already on a decline.

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Appendix

Calculation of Household Incomes

The household incomes include income from cultivation, animal resources, sericulture, wage labour, salaried jobs, business and trade, rental incomes, and transfers.

Income from cultivation: Cultivation incomes are net of costs incurred by the households. The 2008-09 survey by the FAS collected a detailed information on cost of cultivation for each specific crop grown by all households. The cost items included in the survey is close to the definition of the cost A2 category collected by the Directorate of Economics and Statistics, Government of India. No cost imputed for family labour and for owned land (Swaminathan and Das 2017).

One of the limitations in the subsequent 2018-19 and 2020-21 surveys is that we did not collect cost information pertaining to crop production, from all the households who engaged in cultivation. Nevertheless, we have collected detailed cost information for different crops from four farmers representing different land-size classes in both the years. In each of these years, the same group of farmers was interviewed to collect the cost data, with two of them belonging to marginal holding category (less than 2 acres), one in the small land holding category (2 acres to 4 acres) and another farmer in the medium land holding category (more than 4 acres). We subsequently applied these crop-specific cost estimates to all cultivating households based on their respective land sizes.

As part of a robustness check, we calculated the 2018-19 cost of cultivation by inflating the cultivation cost from 2008-09 using the Consumer Price Index for Agricultural Laborers (CPI-AL)⁹. For instance, the cost of cultivating sugarcane in 2008-09 was Rs. 31,032 per acre. Applying a multiplier of 2.25 (representing the rate of inflation between 2008-09 and 2018-19), we derived the corresponding cost for 2018-19, which amounts to Rs. 69,822. We found that our measures of cultivation cost and income remained consistent when using this method. Additionally, we computed household income and poverty based on the income from cultivation obtained through this approach, and our findings indicated that the overall poverty figure remained nearly unchanged.

⁹We also computed the change in the cost of cultivation for different crop by using cost data obtained from the CACP (Commission for Agricultural Costs and Prices) for Mandya in 2018-19 and the cost information collected by the FAS in 2008-09. However, we found a decline in the cost of cultivation, especially for sugarcane. This could possibly be attributed to the unavailability of cost data separately for planted and ratoon sugarcane. In general, surveys of FAS found higher estimates of costs compared to CACP estimate. Therefore, we cannot use CACP data to derive the cost of cultivation for various crops, especially for sugarcane, as this crop accounts for more than 50 per cent of the cropped area in Alabujanahalli in 2018-19.



Income from animal resources and sericulture: The 2008-09 survey collected cost incurred in animal husbandry and sericulture from each households. In 2018-19 and 2020-21 surveys, we collected various cost components associated with animal husbandry and sericulture from few households and applied the average cost to those households engaged in these activities.

Income from wage labour, business and trade: In 2018-19 and 2020-21 surveys, the income from wage labour has been estimated based on the number of days of employment in a month and the wage rate received for the activity. The 2008-09 survey has detailed information on number of days employed and earnings of wage worker in agriculture by season, crop, and crop production. The income from business and trade comprised of profit from all shops, printing press, cinema hall, marriage hall, tailors, street vending, and transportation. The rich farmers in Alabujanahalli also own rice mills, engaged in real estate business and finance but declined to provide income from these sources. So there was underestimation of income from business and trade.

Representativeness of 2018-19 Survey

In 2018-19 survey, we have census information related to demography, employment, and operational holdings, covering 261 households. However, for detailed survey we randomly selected 102 households. Since we have information from census as well as sample for selected variable, we are able to check the representativeness of our sample. Table A1 shows that our sample is well represents the population on all selected indicators.

Table A1: Sample representativeness

	Sample	Population	Standard error	95% Confidence Interval	
				Lower bound	Upper bound
Landless households (%)	18.6	16.1	0.039	10.9	26.3
SC households (%)	10.8	11.9	0.031	4.7	16.9
Vokkaliga households (%)	71.6	75.1	0.045	62.7	80.5
Mean operational holding (in acres)	2.44	2.02	0.325	1.80	3.09
Male in population (%)	50.6	50.3	0.022	46.2	54.9
Literacy rate (7 years and above) (%)	72.6	72.1	0.021	68.3	76.4
Workforce participation rate (WPR)	52.0	47.8	0.022	47.6	56.3

Table A2: Distribution of workers: by caste and sector of employment (in numbers)

	2008-09		2018-19		1st lockdown, 2020		2nd lockdown, 2021		Current, 2022	
	SC	Vokkaliga	SC	Vokkaliga	SC	Vokkaliga	SC	Vokkaliga	SC	Vokkaliga
1. Jobs requiring moderate to high skills	2	20	4	58	3	16	3	19	11	34
1.1 Teaching & related activities	0	7	2	9	0	1	0	1	5	7
1.2 Hospital & health related activities	0	1	0	7	1	3	1	3	1	3
1.3 Banking/finance	0	1	0	5	0	2	0	2	0	2
1.4 Corporate employees (MNC)	0	3	1	20	1	7	1	8	3	14
1.5 Accountant/clerks	1	3	0	9	1	1	1	2	1	3
1.6 Other	1	5	1	8	0	2	0	3	1	5
2. Less-skilled jobs	7	11	16	23	7	7	5	11	14	24
2.1 Attender/cashier/anganwadi workers	1	5	1	5	1	2	1	2	1	2
2.2 Helpers and assistants in restaurants/shop/school	3	4	5	9	3	2	2	3	8	13
2.3 Security guards	0	0	4	0	1	1	1	1	1	2
2.4 Bus conductor/drivers and other transport related workers	3	2	6	9	2	2	1	5	4	7
3. Business/shop owners	0	13	1	19	2	2	2	3	2	6
4. Trades workers & operators (electrician/lineman)	0	1	3	4	2	2	2	2	2	4
5. Manufacturing	4	7	3	25	2	8	2	9	5	15
5.1 Sugarcane factory workers	1	3	0	8	2	2	2	2	2	3
5.2 Fitter/mechanic/packing etc.	2	0	3	14	0	4	0	4	2	7
5.3 Garment/tailoring	1	4	0	3	0	2	0	3	1	5
6. Elementary occupations	4	2	2	2	3	2	2	2	5	3
All non-farm workers	17	54	29	130	19	37	16	46	39	86
All farm-workers	66	319	46	288	50	344	50	340	48	336
All workers	83	373	77	418	68	382	66	385	82	423



Table A3: Wages for casual labour in agriculture, Alabujanahalli

	2008-09		2018-19		2020-21	
	Male	Female	Male	Female	Male	Female
Nominal wage (Rs per day)	113	51	264	131	283	151
Real wage (Rs per day at 2008-09 prices)	113	51	117	58	111	59
Rice wage (kg/day)	12.9	-	17.1	-	18.7	-
Ragi wage (kg/day)	14.4	-	10.2	-	10.9	-

Note: Nominal wage was deflated by using CPI-AL for Karnataka (2008-09 prices). The rice and *ragi* wage was calculated by dividing the nominal wage by the sale prices of rice and *ragi* in Alabujanahalli.