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**Agrarian Transformation in Central Gujarat from 2003 – 18:  
Cropping Patterns, Land Tenancy, and Labor Patronage**

Michitaro Oka (Meiji University)

人間文化研究機構プロジェクト地域研究推進事業「南アジア地域研究」

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## 1. Introduction

According to Fujita (1993),<sup>1</sup> agrarian structure in South Asia, including India, is generally characterized by such features as unequal land distribution in terms of ownership and operational holdings, the underdevelopment of land tenancy markets, and the “reverse” flow of tenancy land from small-scale to large-scale farmers, which Fujita refers to as “South Asian-type agrarian structure.” This structure, which appears often as the dominance of large-scale farming units with a high dependency on hired labor, has historically persisted in South Asia. However, in recent years, with the rapid economic development, especially with the emerging labor shortage and the hike of labor wages in rural areas, the South Asian-type agrarian structure seems to be experiencing drastic transformations.

Most large-scale farmers today struggle with high agricultural labor costs and are unable to maintain their traditional way of farming, which depends on cheap and plentiful agricultural laborers. This trend can be applicable to all of South Asia, although regional variation is not small. Central Gujarat, however, the study site for this paper, shows unique features. Particularly, the agricultural wage rate there has always been extremely low compared to that of other parts of Gujarat and other parts of India (see Fig. 1, which shows the wage rate geographical distribution in 2006). It seems that one of the major reasons for this is the strong patronage observed between large-scale farmers (Patidar castes) and agricultural laborers (Koli castes). This patron-client relationship has been maintained through a cheap credit supply from large-scale farmers to agricultural laborers. When agricultural laborers need a lump sum of money for a family member’s serious illness or a daughter’s marriage, for instance, the large-scale farmers provide credit that is free of interest. However, as long as the laborers owe such debts, they must always be available to work whenever the large-scale farmers request them, and they must work for cheap wage rates, much lower than those in other areas. This system is a kind of bonded labor, locally called *kayami*. Oka (2011) argued that this system functions as an important safety net for agricultural laborers; hence, they prefer to remain in the rural villages as bonded laborers of Patidar farmers despite the low wages paid. In other words, they do not leave the villages as migrant workers even though there are higher wages elsewhere.

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<sup>1</sup> See also Fujita (2009) as a same-type of argument in English.

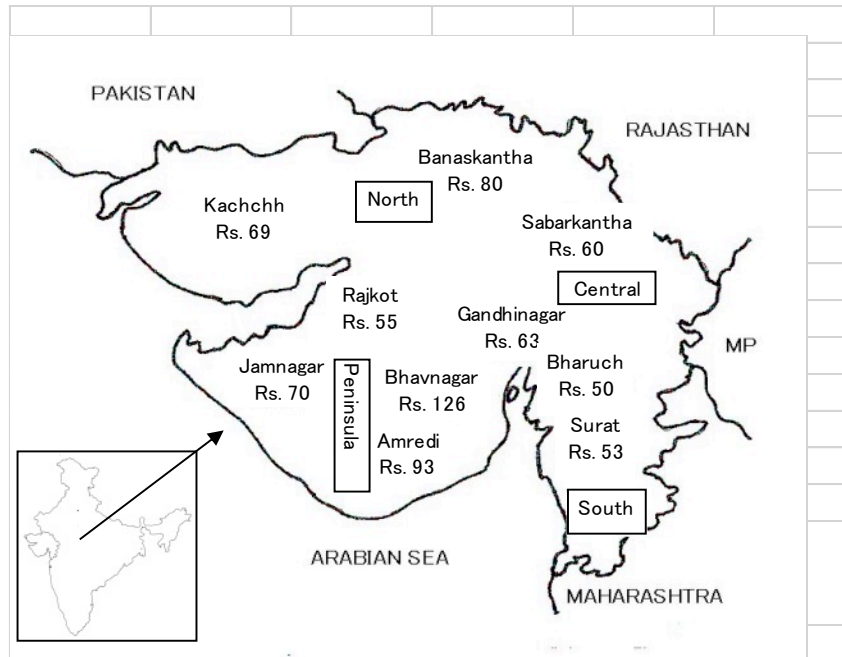


Figure 1 Daily Agricultural Wage Rates in Gujarat State in 2004-2005

Source: GoI, 2006.

Note: All figures are annual average of "other agricultural labour" for man.

However, in recent years, some changes in the *kayami* system have been observed. The major objective of this paper is to clarify the mode of the transformation of the *kayami* system in Central Gujarat and its related issues, based on the 2018 survey results in the study village as compared to the situation in 2003. We focus not only on the changes in the *kayami* system but also on closely connected issues such as the changes in land tenancy markets and cropping patterns because we are interested in the transformation of the South Asian-type agrarian structure in Central Gujarat as a whole. Traditionally, large-scale farmers have seldom leased land to landless or marginal farmers. Instead, they have operated a large amount of land by hiring agricultural laborers, although it caused lower land productivity, which has been argued in the form of the inverse relationship between farm size and productivity (Sen 1966, Bardhan 1973). Firstly, we will examine whether these features in the agrarian structure of central Gujarat have changed or not. Secondly, changes in cropping patterns will be discussed. Central Gujarat is historically well known as a major tobacco production area, a crop that is highly labor-intensive. The rise in labor costs, of course, affects the farmers' strategies in crop choice. We will show that fodder crops and dairy farming were more prevalent in the study village in 2018, whereas tobacco was more prevalent in earlier days. Finally, changes in labor patronage will be examined, and the changes of social

norms in caste relations between generations are critical in this matter. We will try to predict future changes in patron-client relations in Central Gujarat from this perspective.

## 2. The Study Village

The study village is located in Central Gujarat. Central Gujarat is traditionally well known for tobacco cultivation by utilizing its fertile land. The village had 490 households in 2003, of which 120 households were randomly selected from different caste communities for the analysis. As shown in Table 1, the Patidars occupied most of the village farmland. By contrast, most of the households belonging to the other castes were either landless households or marginal farmers. In this paper, we refer them as Kolis (a representative caste engaging in agricultural labor) for simplicity.

Table 1: Land Distribution in the Study Village in 2003 (for 120 Sample Households)						
		Landless ( 0 bhiga)	Marginal ( ~1.5bhiga )	Small ( 1.6~3.0 bhiga )	Landlord 1) ( 3.1bhiga~)	Total
Total	No. of HH	34	49	24	13	120
		28%	41%	20%	11%	100%
	Owned Land ( <i>Bhiga</i> )	0.0	42.1	55.7	217.9	315.7
		0%	13%	18%	69%	100%
Patidar	No. of HH	1	1	6	11	19
						16%
	Owned Land ( <i>Bhiga</i> )	0.0	1.5	13.1	204.7	219.3
					70%	
Other Castes	No. of HH	33	48	18	2	101
						84% (2
	Owned Land ( <i>Bhiga</i> )	0.0	40.6	42.6	13.2	96.4
					30%	
Source: Oka, 2005						
Note: 1 <i>bhiga</i> = 0.6 acres.						
(1 Landlord class is composed of medium- and large-scale farmers.						
(2 Of the total 84%, 44% belong to <i>Koli</i> caste, and the rest 40% belong to the other miscellaneous castes.						

The study village is located close to a town where miscellaneous off-farm jobs are available, especially for the labor households. In 2003, 44% of the sampled labor households were engaged in such jobs (Table 2). More than half of the labor households, however, preferred to remain in the village to work as agricultural laborers for the large-scale Patidar farmers. Table 2 shows their ages and education levels. It is apparent that these two factors were not serious constraints in their ability to find off-farm jobs in nearby towns.

As mentioned above, Oka (2011) argued that the major reason that some of the labor households preferred to stay in the village was the strong patronage between the Patidar farmers and Koli laborers through the *kayami* system. The *kayami* system is a kind of traditional bonded labor custom under which laborers can borrow a lump sum

of money (up to Rs.20,000 at the time of the 2003 survey) from their employers (Patidar farmers) in case of emergencies such as a family marriage or medical treatment without any interest or collateral. But once they do so, they must be available to work for the farmers at any time until all the debt is cleared. The agricultural wage rate was only Rs.24 per day in 2003. Note, however, that this rate applied not only to laborers who had debts but also to laborers without such debts. This is because the latter had retained the right to borrow whenever emergencies occurred, as an insurance. In contrast, the wage rates for unskilled off-farm labor in nearby towns were Rs.50 – 60 per day at the time. By referring to Basu (1983), Oka (2011) tried to explain the huge wage gap as implicit interest charged to the debts and as the premium for insurance.

Occupations	No. of Workers (of whom, Female)	Income (Rs./Year)	Working Days /Year	Wage Rate (Rs./Day)	Of all workers	
					No. of Youth Workers 1)	Education of the Youth Workers
Agricultural Labor Total	84 ( 33)	4,473	182	24.6	31	7.5
Non-agricultural Total	65 ( 5)	25,824	235	109.7	37	8.4
Formal Employment	12 ( 1)	73,500	250	294.0	5	14.0 ***
Self-employment (High)	4 ( 0)	48,725	334	146.0	0	n.a.
Informal Employment	24 ( 0)	17,200	293	58.8	19	8.3
Self-employment (Low)	12 ( 1)	8,168	147	55.7	5	3.8 ***
Part-time Employment	13 ( 3)	4,657	70	66.8	8	7.9
Source: Authour's survey in 2003.						
1) For males under 35 years old who are supposed to opportunities for occupational transfer.						
*** shows 1% significance in t-test between agricultural labor and each occupations.						
Note: Excluding cultivation.						

The 120 sample households were resurveyed in 2018. Some of the households' heads had passed away, and their sons had inherited the land. We integrated such land back into the father's household to simplify the comparison. In 2018 the agricultural wage rate in the village was Rs.100 per day while the wage rates for unskilled off-farm labor were Rs.200 – 250 per day.

### **3. Land Tenancy Markets**

Four land tenancy systems have been observed in the village: fixed-rent tenancy, 1/2 sharecropping, 1/4 sharecropping, and mortgage (*gire*). The annual land rent per *bigha* (1 *bigha* = 0.6 acres) for fixed-rent tenancy ranged from Rs.2,250 – 3,000 in 2003 and Rs.5,000 – 7,000 in 2018, an increase of 2.2 – 2.3 times over 15 years, which was

slightly smaller than the overall inflation rate (2.6 times). In the 1/2 sharecropping arrangement, landowners and tenants share the harvest and the cost of current inputs equally. Under this system, any increase in labor costs will also squeeze the returns to the tenants. In the 1/4 sharecropping arrangement, on the other hand, tenants take 25% of the harvest but do not bear any cost for current inputs. Under this system, tenants lose when labor costs exceed 25% of the gross production. The *gire* is the so-called usufructuary land mortgage in which creditors can use land without paying rent until the debt is paid back. In 2018 debtors could borrow Rs.100,000 – 150,000 per *bigha*. The annual interest rate for fixed deposits in commercial banks was 6 – 7% in 2018. Considering that land rent per *bigha* is Rs.5,000 – 7,000, the fixed deposit in the banks seemed to be more attractive than investing in *gire* from the viewpoint of creditors. This is because depositing Rs.100,000 – 150,000 to fixed deposits would bring about an annual interest of Rs.6,000 – 10,500, which means that in 2018, cultivating farmland was less profitable than other economic activities.

Table 3 shows the amount of farmland leased in the study village in 2003 and 2018. It is shown by the four tenancy systems and categorized by the two communities (Patidars and Kolis). For example, under fixed-rent tenancy, Patidar landowners leased 60.5 *bigha* of land to Patidar tenants but did not lease any land at all to Kolis in 2018.

Four remarkable findings can be pointed out from the table. First, Patidars have become much more active in participating in land tenancy markets, and this deserves special attention in the context of India's traditional South Asian-type agrarian structure. The total land leased was 127.7 *bighas* in 2018, an increase of more than five times the 25.2 *bighas* in 2003, and the share of the leased land had reached more than 50% of total land.

Next, we will examine the kind of Patidar farmers who have participated in leasing land. Patidars who are lessors can be categorized into large-scale farmers (with more than 10.0 *bighas*) who have migrated to foreign countries such as the USA (as non-resident Indians) or who have become aged and whose sons live in the USA. On the other hand, most Patidars who are lessees are medium-scale (3.1 – 9.9 *bighas*) or small-scale (1.6 – 3.0 *bighas*) farmers who are good at cultivation (most of them do not have any family members living in the USA). How do medium- or small-scale Patidars secure enough laborers for their operated land? Interestingly, they lease not only land but also *kayami* laborers from former employers: the “landlord Patidar.”<sup>2</sup>

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<sup>2</sup> The remaining debt of *kayami* laborers was not paid back by the “lessee Patidar” to the “lessor Patidar.” In other words, the “lessor Patidar” did not sell the right to use his laborers but only leased the *kayami*

Year	Landowner	Land area (1)	Tenants	Fixed rent (2)	1/2	1/4	Total (2)+(3)+(4)=(5)	Gire (6)	% to own land				
					sharecrop ping (3)	sharecrop ping (4)			(2)	(3)	(4)	(5)	(6)
2018	Patidars	219.3	Patidars	60.5	38.0	0.0	127.7	43.5	28%	17%	0%	58%	20%
			Kolis	0.0	2.0	27.2		0.0	0%	1%	12%		0%
	Kolis	96.4	Patidars	0.0	0.0	0.0	27.0	9.7	0%	0%	0%	28%	10%
			Kolis	3.0	13.8	10.3	14.9	3%	14%	11%	15%		
2003	Patidars	219.3	Patidars	10.5	3.0	0.0	25.2	36.0	5%	1%	0%	11%	16%
			Kolis	0.0	2.0	9.7		0.0	0%	1%	4%		0%
	Kolis	96.4	Patidars	0.0	15.5	0.0	42.5	9.7	0%	16%	0%	44%	10%
			Kolis	3.0	13.8	10.3	14.9	3%	14%	11%	15%		

Source: Oka, 2005 and author's survey in February and October in 2018.

However, Patidars did not lease land to Kolis either under the fixed-rent tenancy or the 1/2 sharecropping system. The one exceptional case was two *bighas* of land leased to Kolis under a 1/2 sharecropping arrangement. This Patidar was famous for being a nonconformist and a lazy drunkard in the village.

The question is why did Patidars not lease land to Kolis under the fixed rent tenancy or the 1/2 sharecropping system? Several villagers answered this question as follows: it is because of the Patidars' pride (locally called *abhimaan*). Traditionally, they have played the role of good cultivators and employed laborers as a patron-client relationship in the village society. Therefore, a Patidar who leases land to the laborer class would feel shame (locally called *sharam*).

In addition to pride, the lack of agricultural skills, bullocks, machineries, and working capital for farming among the Kolis might be another reason. However, the lack of working capital is not a decisive reason because there are a considerable number of Kolis who have sufficient cash income from off-farm jobs. For example, the Koli who leased land under the 1/2 sharecropping system from the drunkard Patidar was a pensioner, already retired from a government job.

The next point is that some Patidars increased the amount of land they leased to Kolis under the 1/4 sharecropping system by 180%, from 9.7 *bighas* in 2003 to 27.2 *bighas* in 2018. It increased 17.5 *bighas*. Moreover, what surprised us is the registered name of the 17.5 *bighas* land. It was found that they were all registered as land of Patidars. This was surprising because, in 2003, we had not observed that Patidars had leased land to Kolis under either the fixed-rent tenancy, the 1/2 sharecropping, or the 1/4 sharecropping system. All of the land (9.7 *bighas*) leased to Kolis from Patidars under the 1/4 sharecropping in 2003 was mortgaged (*gire*) land from the same Kolis to

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laborers to the "lessee Patidar" temporarily.



the same Patidars earlier. In other words, the 9.7 *bighas* of land leased from Patidars were not Patidar family land but were originally Koli family land. However, in 2018, some Patidars had leased their owned land to Kolis. It was a totally new phenomenon.

There are some concerns with this new phenomenon.

1) All the Koli tenants are former *kayami* laborers of the landowners. This is because they know the nature of the land very well.

2) Only Kolis who have many household laborers can lease land from Patidars under the 1/4 sharecropping system because Kolis cannot hire laborers at the low wage rate of Rs.100 per day, which is applied only to the Patidar's laborers under the *kayami* system.

3) It is extremely difficult for the Patidars who have migrated from the village (such as to the USA or even elsewhere in India) to find a tenant under the 1/4 sharecropping system due to the high cost of monitoring laborers. Only one case was observed in which a Patidar who migrated to the USA leased land to Kolis under the 1/4 sharecropping system, but the landowner had hired a young Patidar to monitor the sharecropping in the village for a salary of Rs.10,000 per month (the maintenance of the landowner's residential house was also a duty of the young Patidar).

Then, does this new phenomenon imply that the Patidar's "pride" mentioned above has been eroded, at least to some extent? The Patidar who owns the leased land under the 1/4 sharecropping system explained as follows: leasing land under the 1/4 sharecropping system is less shameful because the tenants have no rights in farm management; they are just laborers.

4) The "reverse" tenancy has completely disappeared (Table 3). In 2003, 15.5 *bighas* of Kolis' land was leased to Patidars under the 1/2 sharecropping arrangement. However, such cases had completely disappeared by 2018. This can be interpreted as follows: labor costs increased relatively to gross revenue, which put pressure on the income of Patidar tenants. That is why they had lost incentive to lease land for expanding their operational size.

Let us summarize the changes in land tenancy in the village. Although the land tenancy markets became much more active, the transactions were basically limited within the Patidars' caste community. The main direction of land tenancy is from the large-scale Patidars who migrated to the USA to the small-/medium-scale Patidars who are good at cultivation. The practice of "reverse" tenancy has also disappeared. These two changes imply that Patidars have lost incentives to expand their operational land, which may be due to the recent labor shortage (this will be discussed in detail later). An interesting change in the 1/4 sharecropping system was also observed in which some

Patidars have started to lease their family land to Kolis under such a sharecropping arrangement. However, it is not clear whether this phenomenon implies the erosion of Patidars' "pride" or not. We will discuss this issue later as well.

#### 4. Cropping Patterns

Table 4 shows the cropping patterns in the study village in 2003. The share of the area under crops during the three seasons, *kharif* (monsoon season), *rabi* (dry season), and summer, is estimated. Tobacco is the major crop throughout the *kharif* and *rabi* seasons for Patidar farmers, and they leave most of the land fallow in summer season. On the other hand, Koli farmers grow wheat and fodder/*bajiri* (pearl millet) as the major crop even in the summer season. This difference in cropping patterns between Patidars and Kolis is basically caused by the labor custom and the lack of working capital. As shown in Table 5, current input costs and hired labor costs are much higher for tobacco than for the other crops. Tobacco is also a labor-intensive crop. A total of 73 man-days of laborers are hired per *bigha* for tobacco cultivation throughout the season. Leaf thinning (removing small leaves to make main leaves larger) and harvesting are the major reasons for the labor intensiveness of tobacco. If Kolis have enough working capital and want to start a tobacco crop, they need to hire laborers (unless they had enough household members to do so). However, as mentioned earlier, the labor custom of *kayami* is deeply rooted in the caste system. Therefore, it is considerably difficult for Koli farmers to hire enough laborers in the village. In fact, it was found that no Koli farmers had hired laborers in 2003.

Crops	Sample Total			Patidar			Kolis		
	<i>Rabi</i>	Summer	<i>Kharif</i>	<i>Rabi</i>	Summer	<i>Kharif</i>	<i>Rabi</i>	Summer	<i>Kharif</i>
Tobacco	62%		62%	78%		78%	21%		21%
Cotton	1%		1%				3%		2%
Banana	1%		1%	1%		1%	3%		2%
Vegetables	9%			5%			19%		
Castor									
Wheat	19%			10%			41%		
Rice			3%			1%			9%
Fodder/ <i>Bajiri</i>	7%	27%	33%	5%	5%	20%	12%	80%	66%
Fallow		73%			95%		1%	20%	
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: Author's survey in 2002-2003.  
Note: Blank means 0%.

Table 5 Cost and Returns of Crop Production in 2003			
(Per <i>bigha</i> )			
	Wheat	<i>Bajiri</i>	Tobacco
Revenue (1)	5,493	4,148	9,690
Production (kg)	n.a.	n.a.	646
Sales Price (per 20kg)	n.a.	n.a.	Rs.300
Current input cost (2)	2,633	1,362	3,767
% to Revenue	48%	33%	39%
Hired labor cost (3)	547	264	1,750
% to Revenue	10%	6%	18%
Mandays	24	11	73
Net income (1)-(2)-(3)	2,313	2,522	4,173
% to Revenue	42%	61%	43%
Source: Author's survey in 2002-2003.			
Note: Current inputs include seed, water, fertilizer, pesticide and equipment rent.			
Marginal farmers are excluded from the estimates.			

Now we will consider the changes in cropping patterns in the village. Table 6 shows the cropping patterns in 2018. We see that a considerable share of tobacco has been replaced by bananas, wheat, and fodder/*bajiri*. Why have Patidars abandoned tobacco cultivation? Let us confirm how much the increased labor cost squeezed the profit from tobacco production. Table 7 shows the cost and returns of tobacco production in 2018. Compared to Table 5, the profit share decreased by 11 points (from 43% to 32%), which can be explained mostly by the increased share of labor cost (from 18% to 25%). In addition, it is important to note that the yield of tobacco considerably declined, dropping by 22.6% (from 646 kg to 500 kg per *bigha*). Farmers claimed that the major reason was inadequate labor input for leaf thinning due to the labor shortage in the village. In fact, Tables 5 and 7 show that labor input for tobacco production decreased by 23 man-days per *bigha*. The traditional method of tobacco cultivation by Patidar farmers is now facing a serious problem of yield decline caused by the labor shortage. Villagers mentioned that the total number of *kayami* (in debts) in the village had decreased by approximately 60% over the last 15 years.

However, the 2018 wage rate of Rs.100 per day is still lower than in the other parts of Gujarat. For example, the wage rates in Peninsula Gujarat are around Rs.200 per day. Therefore, it can be said that the *kayami* system still plays an important role in the lower wage rates in the village, at least to some extent.

Crops	Total			Patidars		
	<i>Rabi</i>	Summer	<i>Kharif</i>	<i>Rabi</i>	Summer	<i>Kharif</i>
Tobacco	40%		40%	46%		46%
Cotton	1%		1%			
Banana	6%		6%	8%		7%
Vegetables	9%			5%		
Castor	1%			2%		
Wheat	23%			16%		
Rice			4%			2%
Fodder/ <i>Bajiri</i>	19%	39%	49%	22%	22%	45%
Fallow		61%		1%	78%	

Source: Author's survey in 2018.

Note: Blank means 0%.

Revenue (1)	20,000
Production(kg)	500
Sales Price (per 20kg)	800
Current input cost (2)	8,590
% to Revenue	43%
Seedling	1,350
Urea	1,600
Ammonia	1,600
Leaf thinner*/Pesticide	1,000
Water	240
Equipments Rent	2,800
Hired labor cost total (3)	5,000
% to Revenue	25%
Labor input (man-days)	50
Leaf thinning	2,000
Water & Fertilize	400
Planting	800
Harvest	1,800
Net income (1)-(2)-(3)	6,410
% to Revenue	32%

Source: Authors survey in 2018.

\* Chemical for thinning young leaves.

Using the *kayami* system, tobacco is still produced on 46% of the Patidars' total land. Which Patidars are still growing tobacco and which Patidars have abandoned it? Table 8 shows the cropping patterns of Patidar farmers categorized by landholding size. Clearly, large-scale Patidars still hold a higher share of tobacco cultivation. There are three plausible reasons for this. First, large-scale Patidars have advantages in tobacco

sales. They have good connections with tobacco merchants, and some of them (or their relatives) even own a “dry house.” The “dry house” owner purchases tobacco leaves from farmers and dries, weighs, and packs them. Secondly, they have many *kayami* labor families and more political power. Therefore, they know how to secure laborers for their farm better than other Patidars do. Thirdly, they have stronger feelings about “pride” of patronage than other Patidars do. We will discuss more about the third issue in the next section.

On the other hand, small- and medium-scale Patidars are replacing tobacco with fodder/*bajiri*. Fodder crops are not for sales but for feeding milch animals.

< Year 2018 >	Small-scale Patidar			Medium-scale Patidar			Large-scale Patidar		
Crop	<i>Rabi</i>	Summer	<i>Kharif</i>	<i>Rabi</i>	Summer	<i>Kharif</i>	<i>Rabi</i>	Summer	<i>Kharif</i>
Tobacco	9%		9%	13%		13%	63%		63%
Cotton									
Banana	9%		9%				11%		11%
Vegetables	9%						7%		
Castor							3%		
Wheat				28%			14%		
Rice						9%			
Fodder/ <i>Bajiri</i>	72%	62%	81%	57%	62%	78%			26%
Fallow		38%		2%	38%		3%	100%	
< Year 2003 >	Small-scale Patidar			Medium-scale Patidar			Large-scale Patidar		
Crop	<i>Rabi</i>	Summer	<i>Kharif</i>	<i>Rabi</i>	Summer	<i>Kharif</i>	<i>Rabi</i>	Summer	<i>Kharif</i>
Tobacco	43%		43%	69%		69%	86%		86%
Cotton									
Banana	9%		9%						
Vegetables	9%						7%		
Castor									
Wheat				21%			7%		
Rice						2%			
Fodder/ <i>Bajiri</i>	38%	28%	47%	8%	13%	29%			14%
Fallow		72%		2%	87%			100%	
Source: Author's survey in 2003 and 2018.									
Note: Blank means 0%.									
: Small=1.6-3.0bhiga, Medium=3.1-9.9bhiga, Large=10.0 bhiga-.									

Table 9 shows the costs and returns structure for dairy farming, based on a survey of a medium-scale Patidar farmer. He owns three *bighas* of land and used all the land for growing fodder. He rears seven cows and seven buffaloes in a cowshed that was constructed in 2018. The fodder produced from the three *bighas* of land is basically enough for his 14 milch animals, although he had to purchase some feed from the market. His income was Rs.57,134, after deducting imputed family labor costs. This was a high income from only three *bighas* of fodder cropping, at Rs.19,044 per *bigha*. Compared to income from tobacco production (Table 7), his income was three times larger. This is, of course, a very rough estimation. However, we can clearly say that growing fodder for

dairy farming is much more attractive for Patidars than tobacco cultivation is, from the viewpoint of utilizing the same amount of land. In addition, hired labor costs for dairy farming are Rs.144,000 per year. He hired two laborers (a husband and wife) throughout the year and paid them a monthly salary of Rs.12,000. Divided by work days, this comes to Rs.200 per day, and this might have influenced a raise in the agricultural wage rate in the village to some extent since they say that the technical requirement for dairy labor is not exclusive. The government of Gujarat has also launched a new subsidy scheme for modern dairy farming. In this scheme, a person who purchases more than 12 milch animals (cow or buffalo) is subsidized half the construction cost of a cowshed and can benefit from interest-free loans to buy milch animals with an animal insurance scheme.

Considering these changes in the village, the traditional method of tobacco cultivation by Patidars—depending on cheap labor under the *kayami* system—seems that it will be outdated sooner or later. In the next section, we will see some qualitative information about Patidars' sense of patronage or “pride” and discuss whether this outdated is a simple occurrence or not.

<b>Table 9 Cost and Returns of Dairying (a case of medium-scale Patidar farmer)</b>	
Revenue (1)	781,830
Cow (7 cows)	321,930
Liters/day/cow	4.5
Price/Liter	28
Buffalo (7 buffalos)	459,900
Liters/day/cow	3.6
Price/Liter	50
Current cost (2)	431,809
Purchased feeds	287,809
Concentrate	264,146
Dry fodder	23,663
Green fodder	0
Hired labor	144,000
Home production of feeds (3)	60,821
Concentrate	3,478
Dry fodder	10,093
Green fodder	47,250
Family labor (4)	45,734
Collecting fodder	18,842
Milking etc.	26,892
Depreciation (5)	185,333
Cow/Buffalo	168,000
Cowshed	17,333
Land rent for cowshed (6)	1,000
Net Income (7)=(1)-(2)-(3)-(4)-(5)	57,133
Income per <i>bigha</i> (7)/3	19,044
Source: Author's survey in 2018.	
Note: Unit is Rs..	

## 5. Labor Patronage

The agricultural wage rate (for normal tasks, including tobacco leaf thinning, that is equally applied to both men and women) in the study village in 2018 was Rs.100 per day, which had increased from Rs.80 in 2014. This is applied regardless of whether he or she is in debt to the employer under the *kayami* system. The *kayami* system is still active in the village, and this wage rate is still much lower than the wage rate for the same tasks in most other parts of Gujarat.

Of course, there are some exceptional villages, even in Central Gujarat. The *kayami* system has disappeared in some villages during the last 15 years. Although we will not go into detail in these cases, it can be said that such villages are usually located near a mega city (with population size of about 2 million). The study village is located 3 km from a medium-scale town with population of about 500,000. Still, the number of

*kayami* laborers in the village considerably decreased from 29% to 13% between 2003 and 2018. Let us examine some cases of Patidars who have abandoned *kayami* laborers and other Patidars who still keep *kayami* laborers.

1) Case 1 (Abandoned): The Patidar is 55 years old and owns three *bighas* of land. His *kayami* laborer had worked for more than 40 years but died 2 years ago. The *kayami* laborer had a son who worked in a nearby town at that time. The Patidar decided to give up using the *kayami* system and started cultivating fodder grasses for dairy farms. He asked the son of the *kayami* laborer to repay the father's remaining debt but did not give him a due date. He said that he could not force the son to work on his farm. Moreover, he said that he could lend more money to the son without any interest up to around Rs.20,000 even if he knows the son would never come back to work in his farm. He told us the reason as follows: "His father had been working very hard for my father and me for a quite long time. Who can take interest from such a person's son? If villagers come to know that I take interest from my former *kayami* family, I will never be respected as a good Patidar. Villagers will never help me for any small work thereafter."

2) Case 2 (Abandoned): The Patidar is 54 years old and owns six *bighas* of land. One of his *kayami* laborers, 50 years old, stopped coming to his farm after he refused a new loan for the laborer in June 2018. He had already lent the laborer Rs.100,000 for two daughters' marriages during the last 15 years. The Patidar has not claimed the remaining debt so far, and the laborer comes to work on his farm as a casual laborer.

3) Case 3 (Abandoned): The Patidar's name is Mukeshbhai. He is 49 years old and owns nine *bighas* of land. He had been using two *kayami* families since his grandfather's generation, but six years ago, he abandoned it and shifted to dairy farming. Another Patidar took over the two *kayami* families and repaid the remaining debt of Rs.2,000. Regarding the issue of "pride," Mr. Mukeshbhai told us, "Many respectable Patidar farmers think tobacco cultivation by using Koli laborers is our duty. But I think that in these days, [the] situation is changing." His 22-year-old son, sitting behind him during the interview, told us, "I will not stay in the village because if I do agriculture, I need to use Koli laborers. Then, who will be a bride of such a household in which she has to take care of Koli laborers?" He added that he was planning to lease the land in his generation to others, regardless of caste.

4) Case 1 (Keeping): The Patidar is 70 years old and owns 28 *bighas* of land. He now



lives in the USA with his son; hence, his elder brother, an inhabitant of the village, gave us his information. He leased all of his land under the 1/2 sharecropping system to another Patidar who owns three *bighas* and is good at tobacco cultivation. Moreover, he provided the tenant Patidar with four *kayami* families who had been working since his grandfather's generation. The most influential person in the four *kayami* families is a 38-year-old man. The Patidar's elder brother told us, "Kolis need us. The relationship between Patidars and *kayami* families would not be broken so easily even under the current rapid economic development. Only *kayami* laborers who are short-sighted go away from us."

5) Case 2 (Keeping): The Patidar is 68 years old and owns nine *bighas* of land. He had loaned Rs.4,000 to his *kayami* laborer in September 2018 so that the *kayami* laborer's son, who is 18 years old, can pay the entrance fee to an industrial training institute (ITI). He said that he knew the son might be an industrial worker after graduating from the ITI and might not come back to his farm as an agricultural laborer. "But I do not care about it. To help my labor family is my duty."

6) Case 3 (Keeping): The Patidar's name is Mafatbhai. He is 63 years old and owns nine *bighas* of land. He was the former *surpanch* (village head). His mother brought a very old laborer from her native village in 2018. The laborer was too old to work properly as an agricultural laborer, but he had been working for her father and brother for more than half a century. Her brother sold land to an industrial developer and faced difficulty in taking care of the old laborer. Therefore, she asked Mafatbhai to take over his care. Mr. Mafatbhai told us, "We cannot kick out such a laborer who has been working for us for long period."

7) Case 1 (Half-keeping/Half-abandoned): The Patidar's name is Khantibhai. He is 65 years old and owns 25 *bighas* of land. He and all his sons live in the USA with their families; hence, a neighboring Patidar who works for Khantibhai as a farm manager gave us his information. Khantibhai has been using five *kayami* families since his grandfather's generation. Two years ago, one of them asked him to employ him as a 1/4 sharecropper. The labor family had three agricultural laborers in the household. Table 10 shows the net income of the 1/4 sharecropper. The 1/4 sharecropper grew tobacco using only his family labor (60 man-days per *bigha*). At the same time, they said the production was only 500 kg per *bigha*. This answer is suspicious because it implies a loss of Rs.1,000. According to data obtained from other farmers, production should be

around 600 kg if 60 man-days of labor are used. The difference in revenue comes to Rs.4,000. If the 1/4 sharecropper gained this difference, it must be a big incentive for being a 1/4 sharecropper.

The important thing is that Khantibhai could not (or did not) refuse to lease his own land to the laborer. Although Patidars insist that leasing land to 1/4 Koli sharecroppers does not mean the erosion of “pride,” this case, at least, shows clearly that Patidars’ bargaining power in the labor market has weakened.

In summary, although the laborers’ bargaining power is strengthening, the sense of patronage or “pride” (*abhimaan*) of the Patidars remains deep-rooted. For example, the Patidar’s excuse for agreeing to the 1/4 sharecropper is one way to accept reality while simultaneously maintaining his pride. It is hard to assume that the labor patronage customs will be outdated directly. The generation change is the key to predicting what the future holds for traditional methods of agriculture in Central Gujarat.

Revenue (1)	20,000
Production(kg)	500(?)
Sales price(per 20 kg)	800
Current input cost total (2)	8,590
% to Revenue	43%
Seedling	1,350
Urea	1,600
Ammonia	1,600
Leaf thinner*/Pesticide	1,000
Water	240
Equipments rent	2,800
Family labor cost total **(3)	6,000
% to Revenue	30%
Labor input (man-days)	60
Leaf thinning	2,500
Water & Fertilize	400
Planting	800
Harvest	2,300
Tenant remuneration 25% of (1) = (4)	5,000
Tenant net income (4) - (3)	-1,000
Net income of landowner (1) - (2) - (4)	6,410
Source: Authour's survey in 2018.	
* Chemicals for thinning young leaves.	
** Estimated by applying imputed wage rate of Rs.100/day.	

## 6. Concluding Remarks

In this paper, we investigated the changes in the South Asian-type agrarian structure in Central Gujarat that have taken place since 2003. Most of the Indian villages have experienced soaring agricultural labor costs during this period, but Central Gujarat has some unique features. It is historically famous for its rich soil, tobacco production, and the strong patronage of the dominant caste (Patidars) to their laborers (Kolis). The agricultural wage rates have been significantly lower than those in other parts of Gujarat due to a traditional labor custom called *kayami*, in which laborers can borrow lump sums of money for emergencies such as medical treatment or a daughter's marriage. The objective of this paper was to determine what the changes of the South Asian-type agrarian structure in a village with such a strong patronage look like. To achieve this aim, changes in land tenancy, changes in cropping patterns, and changes in labor patronage between Patidars and Kolis were discussed based on intensive surveys in 2003 and 2018 in a study village in Central Gujarat.

The land tenancy markets have become much more active, but transactions are limited within the Patidar caste community. They still do not lease land to Kolis under the fixed-rent tenancy and the 1/2 sharecropping systems. The reason for this is strongly related to their "pride." The major direction of this tenancy is from large-scale Patidars who have migrated to the USA to small-/medium-scale Patidars who are good at cultivation. The practice of "reverse" tenancy has disappeared. These two changes imply that Patidars have lost incentives to expand their operational land under the South Asian-type agrarian structure. Moreover, Patidars have started to lease their family land to Kolis under the 1/4 sharecropping arrangement.

The traditional method of tobacco cultivation by Patidars, which depends on cheap labor under the *kayami* system, seems that it will be outdated sooner or later. Only about half of the large-scale Patidars and a few small-/medium-scale Patidars who are good at tobacco cultivation have maintained it, but others have already shifted to fodder crops to feed milch animals.

Finally, through the narrative information, we discussed whether the sense of patronage or Patidars' "pride" will be outdated simply or not. Indeed, the laborers' bargaining power is getting stronger, but the sense of patronage or "pride" (*abhimaan*) remains deep-rooted at the same time. It is hard to assume that labor patronage customs will be outdated directly. The generation change is the key to predicting what the future will hold for the traditional methods of agriculture in Central Gujarat.

Of course, there must be a transition period. The speed of change depends on

surrounding situations such as accessibility to towns. However, it is a notable finding that even in the study village, which is located only 3 km from a nearby town, land tenancy is still limited within the dominant caste community. The Patidars' "pride" will not be eroded so easily. The new phenomena, such as leasing family land under the 1/4 sharecropping arrangement and shifting to dairy farming, might be practical ways to satisfy both the Patidars' pride and the market requirement.

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