

**Working Paper 527**

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Ginger Farmers in  
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# SOCIO-ECONOMIC CHARACTERISTICS AND LAND PARTICULARS OF GINGER FARMERS IN KARNATAKA

Pesala Peter<sup>1</sup> and I Maruthi<sup>2</sup>

## Abstract

*Ginger is an important crop for farmers in Karnataka. The area of cultivation of ginger crop has gradually increased from 7,461 hectares (ha) in 1999-2000 to 20,809 ha in 2017-18. Hence, the study examines the socio-economic characteristics of ginger crop farmers in Karnataka. In its initial stage, the study identified two districts where a high amount of ginger was grown. In the second stage, two taluks in each district where ginger crop area cultivation was high were selected. In the final stage, in each taluk, 30 samples were selected and the total sample size was 120. The objective of this paper is to investigate the socio-economic characteristics of ginger farmers in Karnataka. The major findings of the study are: Firstly, in Belur taluk, ginger farmers were younger, the average family size was lower and most of them were educated. Secondly, the ginger farmers' main occupation was agriculture and nearly one-third of the farmers had a secondary occupation. Dairy (secondary) farming played the main role in our study area. Thirdly, the average net operated land size was higher in Shivamogga district and its taluk. Finally, the average irrigated land size was nearly two acres, and for irrigation, the main source was borewell. The main policy suggestion of the study is to find out those whose share is lower, devise inclusive policies for them and provide some special incentives to people in the disadvantaged group.*

**Keywords:** Socio-economic features of ginger farmers, Karnataka.

## Introduction

India is a developing country with a vast number of people engaged in cultivating different kinds of crops. Coming to the Karnataka state, in particular, farmers earn their livelihood by cultivating various crops. One such important crop is ginger. The crop area of ginger in Karnataka has gradually increased from 7,461 hectares (ha) in 1999-2000 to 14,780 ha in 2007-08. Earlier, the returns were more and a large number of farmers cultivated ginger crop. Bhat *et al.* (2012) in their study stated that the higher profitability in ginger cultivation may have drawn many farmers to it. In 2017-18, the ginger crop area was 20,809 ha. Among the 30 districts in Karnataka, ginger crop area cultivation is the highest in Shivamogga and Hassan districts. In these two districts, Himachal, Ragadi and other varieties of ginger are cultivated. A majority of the farmers begin sowing ginger in March. And the harvest is generally in the months of November-February. At this time, in the market, prices are low; farmers may be postponing the harvesting time as storage facilities are available for the ginger crop. In both these districts, and production comes appropriately. According to the farmers, the production depends upon the variety of seeds and fertilizers and pesticides for the control of diseases. In our study districts, contract farming was prevalent. Some of the contractors came from Kerala and took a lease in the study districts. These contractors cultivated most of the land in Karnataka. But the agreement depends on the quality of the land. In Shivamogga and Hassan districts, ginger washing units were established around the towns. During the season, ginger units wash ginger day and night (24x7). For washing

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ginger, labourers are required. A majority of the labourers at the units are from Bihar. Most of the farmers cultivating ginger had inherited it from their parents. The weather condition was also very suitable in the study districts. Based on the above discussion, the study wants to know the socio-economic characteristics of ginger farmers in Karnataka.

### **Statement of the Problem**

The cultivation of the ginger crop is gradually increasing in Karnataka. The farmers are attracted to the ginger crop due to the higher profit they get. Initially, the ginger crop was cultivated extensively by the tribal population until the other social groups moved in. Ginger provides a good profit for farmers though cultivation is expensive for marginal, small farmers and Dalits. Due to this reason, most of the people from poorer sections of society are unable to cultivate ginger. Many studies have covered the area and production, but they have not covered the socio-economic background details. Our study focuses on the socio-economic characteristics of ginger farmers in Karnataka. It investigates those who cultivate the ginger crop and their landholdings; socio-economic background details are presented extensively in the study. Farmers in the Belur and Hassan taluks in Hassan district, and those in the Shikaripura and Soraba taluks of Shivamogga district cultivate ginger crops extensively. The study focuses on ginger crop cultivation and the socio-economic background of farmers in these two districts in Karnataka.

### **Data and Methodology**

In its initial stage, the study identified two districts -- Shivamogga and Hassan -- where ginger crop area cultivation is more (Table1). In the second stage, in each district, two taluks were selected based on where the ginger crop area cultivation was more; and for the selection of the taluks, suggestions were taken from the Horticulture Department officials. The selected taluks, Hassan and Belur, are located in Hassan district while Soraba and Shikaripura taluks come under Shivamogga district. In the final stage, in each taluk, 30 ginger-growing households were selected, taking the selected total sample size to 120 (Table2). The primary data collected one year's information i.e. 2019-2020. The primary data was collected during February-March, 2020. The objective of the paper is to investigate the socio-economic characteristics of ginger farmers in Karnataka.

**Table1: District-wise Ginger Area Cultivation during 2006-07 to 2017-18 (%)**

Name of the District	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
<b>Hassan</b>	<b>39.6</b>	<b>43.5</b>	<b>54.3</b>	<b>75.8</b>	<b>73.3</b>	<b>47.2</b>	<b>29.7</b>	<b>37.3</b>	<b>51.1</b>	<b>51.6</b>	<b>38.7</b>	<b>36.4</b>
<b>Shivamogga</b>	<b>15.7</b>	<b>19.4</b>	<b>18.4</b>	<b>9.0</b>	<b>12.5</b>	<b>25.4</b>	<b>33.0</b>	<b>31.1</b>	<b>21.5</b>	<b>20.7</b>	<b>24.1</b>	<b>26.6</b>
Mysuru	6.2	6.8	6.7	4.0	3.6	8.4	13.2	13.5	11.3	9.6	11.9	13.0
Kodagu	22.3	15.9	11.3	5.3	4.8	7.0	7.9	6.3	5.0	5.2	7.1	7.9
Haveri	0.5	0.4	0.2	0.1	0.3	0.7	0.7	0.9	2.8	4.0	4.4	4.7
Chikmagalur	4.6	4.3	1.1	0.8	0.9	2.1	2.8	2.6	2.3	2.5	2.7	3.1
Bidar	7.8	5.5	4.6	3.1	2.6	4.7	7.8	4.1	2.9	2.7	7.3	2.5
Uttara Kannada	0.5	0.6	1.3	0.6	0.4	1.9	1.6	2.0	1.2	1.0	1.4	1.6
Kalaburagi	0.1	0.0	0.0	0.0	0.2	0.7	0.0	0.0	0.0	0.0	0.0	1.2
Chamarajanagar	0.0	0.0	0.2	0.1	0.1	0.2	0.5	0.2	0.1	0.3	0.4	0.8
Davanagere	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.8
DakshinaKannada	1.8	2.1	1.2	0.7	0.7	1.0	1.8	1.5	0.9	0.8	0.8	0.5
Udupi	0.6	0.7	0.4	0.2	0.2	0.3	0.5	0.3	0.2	0.2	0.2	0.2
Bengaluru(R )	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.1	0.2	0.2
Chikkaballapura	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.2
Ramanagara	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Mandya	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.4	0.1
Tumakur	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1
Bagalkote	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.2	0.1	0.0
Bengaluru-(U)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Belagavi	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0
<b>Karnataka (Total) (ha)</b>	<b>(17472)</b> <b>100</b>	<b>(14780)</b> <b>100</b>	<b>(25475)</b> <b>100</b>	<b>(44837)</b> <b>100</b>	<b>(46469)</b> <b>100</b>	<b>(29388)</b> <b>100</b>	<b>(16513)</b> <b>100</b>	<b>(18957)</b> <b>100</b>	<b>(30787)</b> <b>100</b>	<b>(29285)</b> <b>100</b>	<b>(23088)</b> <b>100</b>	<b>(20809)</b> <b>100</b>

Source: [https://aps.dac.gov.in/APY/Public\\_Report1.aspx](https://aps.dac.gov.in/APY/Public_Report1.aspx) ; the authors estimated based on the source.

### Social group (Caste)

In India, caste plays a vital role. Four such castes with a significant population are Other Castes (OC), Backward Castes (BC) Scheduled Tribes (ST), and Scheduled Castes (SC). A majority of the study households come under the BC community (48%), followed by OC (27.5%), ST (17.5%) and SC (6.7%). District-wise, BCs are higher in Hassan district, followed by STs (28%). The OCs are higher in the Shivamogga district (40%), followed by BCs (46.7%). Taluk-wise, BCs are higher in Belur in Hassan district while OCs are higher in Shikaripura taluk in Shivamogga district (Table2). The STs are higher in Hassan taluk. In the initial period, most of the tribal people cultivated ginger crops and later on it shifted to other communities. Rahman *et al*/(2009) in their study mentioned that ginger is the main cash crop, accounting for 49 per cent of India's ginger area and 72 per cent of India's ginger production. In India, most of the tribal farmers live in remote places and follow traditional methods of ginger cultivation.

### Age of the respondent

Age is very important for doing any household activity. The potential age provides the basis to take critical decisions in his/her family life. We interviewed almost all potential age group people. The ginger farmers' overall average age was 44.3. The district-wise average age was higher in Hassan district (45.5), followed by Shivamogga (43). Taluk-wise, the average age was higher in Hassan (47); followed by Soraba (44.4) and the lowest average age came from Shikaripura (42.1). The Shikaripura ginger farmers were younger and showed more potential than those in other study taluks (Table2). Most of the respondents were male (98%) and only two per cent of them were female. It indicates that we interacted directly with farmers.

**Table 2: Ginger farmers and social groups**

Name of the Taluk /District	Social group					Average age in years
	SC	ST	BC	OC	Total	
Belur	2(6.7)	3(10.0)	17(56.7)	8(26.7)	30(100)	1316(43.9)
Hassan	2(6.7)	14(46.7)	13(43.3)	1(3.3)	30(100)	1411(47.0)
Hassan district	4(6.7)	17(28.3)	30(50.0)	9(15.0)	60(100)	2727(45.5)
Shikaripura	1(3.3)	2(6.7)	14(46.7)	13(43.3)	30(100)	1262(42.1)
Soraba	3(10.0)	2(6.7)	14(46.7)	11(36.7)	30(100)	1332(44.4)
Shivamogga district	4(6.7)	4(6.7)	28(46.7)	24(40.0)	60(100)	2594(43.2)
Total	8(6.7)	21(17.5)	58(48.3)	33(27.5)	120(100)	5321(44.3)

Source: Primary data collected, 2020.

### Size of the family

Family size is coming down these days due to education. It is determined by socio-economic conditions. The present study of ginger farmers reveals that the average size of the family was 6.2. The average family size was higher in Shivamogga (7.2) district as compared to Hassan (5.1) district. Among the taluks, in Soraba, the average family size was higher (8). In contrast, in Belur, the average family size was lower than that in other taluks. It indicates that the Belur study farmers may be aware of the

importance of the size of the family. The male average family size was higher in Shivamogga district (2.9), followed by Hassan district (2.1). The average female size was higher in Shivamogga district (2.5) as compared to Hassan district (1.7) (Table 3). In all study districts/taluku, the male population average size was higher than the female. It indicates that the male population dominated the study area.

**Table 3: Ginger farmers' average family size**

Name of the Taluk /District	Size of the family			
	Male	Female	Children	Total family size
Belur	61(2.0)	50(1.7)	31(1.5)	142(4.7)
Hassan district	66(2.2)	51(1.8)	48(2.1)	165(5.5)
Hassan district	127(2.1)	101(1.7)	79(1.8)	307(5.1)
Shikaripura	79(2.6)	73(2.4)	41(1.9)	193(6.4)
Soraba	94(3.1)	780(2.6)	69(2.5)	241(8.0)
Shivamogga district	173(2.9)	151(2.5)	110(2.2)	434(7.2)
Total	300(2.5)	252(2.1)	189(2.0)	741(6.2)

*Source:* Primary data collected, 2020

### **Education (Years of schooling)/Qualification**

Education is very important for all. Without education, survival is very difficult in the present situation. Most of the ginger farmers were educated up to some level. Among the farmers, 48 per cent of the ginger farmers were educated from 6<sup>th</sup> to 10<sup>th</sup> standard, followed by 1<sup>st</sup> to 5<sup>th</sup> (13%), Intermediate (16.7%) and degree (10%). Nearly 12 per cent of the farmers were illiterates. District-wise, a majority (53%) of the Hassan district farmers were educated from 6<sup>th</sup> to 10<sup>th</sup> standard; and 13 per cent at Intermediate level. Similar results were found in the case of the Shivamogga district. Taluk-wise, nearly 57 per cent of the Belur farmers were educated from 6<sup>th</sup> to 10<sup>th</sup> standard. Very few farmers were educated up to the degree level (Table 4).

### **Main occupation and income**

In rural areas, agriculture and allied activities form the main occupation of a majority of the people. Very few of them were practicing non-farm activities in general and the study area in particular. All ginger farmers' main occupation was agriculture (100%). But the annual average income was different from person to person. Going by the 2019-20 annual income study, the annual average income was ₹ 3,40,833. The average income of Shivamogga (₹ 3,92,750) district ginger farmers was higher than those in Hassan (₹ 1,55,750) district. Soraba taluk ginger farmers' annual income was higher, followed by Shikaripura (Table 3). The study observed that the income variations were higher among the districts/ taluku. Sometimes people mentioned low income due to fear of loss of subsidy schemes of the government.

**Table 4: Education Attainment and Main Occupation and Income**

Name of the Taluk/ District	Education level						Agriculture (Main occupation /income)
	Illiterate	1 <sup>st</sup> to 5 <sup>th</sup>	6 <sup>th</sup> to 10 <sup>th</sup>	Intermediate	Degree	Total	
Belur	2(6.7)	5(16.7)	17(56.7)	4(13.3)	2(6.7)	30	5085000 (169500)
Hassan	7(23.3)	3(10.0)	15(50.0)	4(13.3)	1(3.3)	30	4260000 (142000)
Hassan district	9(15.0)	8(13.3)	32(53.3)	8(13.3)	3(5.0)	60	9345000(155750)
Shikaripura	3(10.0)	5(16.7)	12(40.0)	4(13.3)	6(20.0)	30	10225000(340833)
Soraba	2(6.7)	3(10.0)	14(46.7)	8(26.7)	3(10.0)	30	13340000(444667)
Shivamogga district	5(8.3)	8(13.3)	26(43.3)	12(20.0)	9(15.0)	60	23565000(392750)
Total	14(11.7)	16(13.3)	58(48.3)	20(16.7)	12(10.0)	120	10225000(340833)

Source: Primary data collected, 2020.

### Secondary occupation and income

Nearly one-third of the farmers worked in secondary occupations like dairy (76%), business (15%) and agricultural labour/construction work/ security guard (9%). Among the occupations, those who were in business earned a high average income (₹ 2,80,000) as compared to other occupations like agricultural labour/construction work/ security guard (₹ 1,00,000) and dairy (₹ 55,462) (Table 5). Shivamogga farmers earned more income through secondary occupations as compared to those from Hassan district. A few farmers worked in agricultural labour/construction work/security guard and their average income was higher in Shivamogga district, but Hassan district farmers did not work in these fields. In these two districts, dairy farming was taken up, but Hassan district farmers earned more income through it compared to Shivamogga district farmers. Belur and Hassan taluk farmers were more engaged in dairy farming. The study observed that the secondary occupation helped ginger farmers and it had directly or indirectly improved the economic condition of the farmers.

**Table 5: Subsidiary Occupation and Income**

Name of the Taluk/District	Dairy	Business	Agricultural*	Total
Belur	751000(68272.7)	0(0.00)	0(0.00)	751000(68272.7)
Hassan	39600 (56571.4)	150000(75000)	0(0.00)	546000 (60666.7)
Hassan district	1147000(63722.2)	15000 (75000)	0(0.00)	1297000 (64850)
Shikaripura	195000(39000.0)	1000000(1000000)	180000(90000)	1375000 (171875)
Soraba	100000(33333.3)	250000(125000)	120000(120000)	470000 (78333.3)
Shivamogga district	295000(36875.0)	1250000(416666.7)	300000(100000)	1845000(131785.7)
Total	1442000(55461.5)	1400000 (280000)	300000(100000)	3142000 (92411.8)

Note: \* Agricultural labour /Construction work/ Security guard.

Source: Primary data collected, 2020.

### Farming experience in ginger farmers

In any area or field, experience is very important. In our study, the ginger farmers had farming experience. The total average farming experience was 22 years. But in Hassan district, farmers had a slightly higher (years) experience compared to Shivamogga. Among the taluks, Belur farmers had more



experience. In farming, the lowest experience came from Hassan taluk and the highest experience from Belur (Table 6).

**Table 6: Total Annual and Average Income**

Name of the Taluk /District	Total annual income	Total years of farming experience
Belur	5836000(194533)	724(24.1)
Hassan	4806000(160200)	641(21.4)
Hassan district	10642000(1,77,367)	1365(22.8)
Shikaripura	11600000(386667)	681(22.7)
Soraba	13810000(460333)	645(21.5)
Shivamogga district	25410000(423500)	1326(22.1)
Total	36052000(300433)	2691(22.4)

*Note:* Figures in brackets represent averages.

*Source:* Primary data collected, 2020.

### Family members engaged in farming

All family members of a farmer may not work in agricultural activity, some may be involved in other activities and children go to school/college. In our study area, an average of nearly three people worked in the agricultural sector. More worked in Shivamogga district as compared to Hassan district. In Soraba, people were more engaged in farm activity and the lowest came from Belur. Belur ginger farmers were more educated and may have had greater awareness and that led to decreased dependence on agriculture (Table 7). Among the genders, more males were engaged in agricultural activities as compared to females.

**Table 7: Number of Persons Engaged in Farming in Family Members**

Name of the Taluk / District	Male (A)	Female(B)*	Total (A+B)
Belur	43(1.4)	20(0.9)	63(2.1)
Hassan	52(1.7)	29(1.2)	81(2.7)
Hassan district	95(1.6)	49(1.1)	144(2.4)
Shikaripura	58(1.9)	49(1.8)	107(3.6)
Soraba	69(2.3)	40(1.7)	109(3.6)
Shivamogga district	127(2.1)	89(1.7)	216(3.6)
Total	222(1.9)	138(1.6)	360(3.0)

*Note:* Figures in brackets represent averages.

*Source:* Primary data collected, 2020.

### Operation land holdings

The land is a very important economic asset for rural people in India in general and the study area people in particular. The study farmers had a total of 514.5 acres of own (86%) irrigated land and 84 acres of un-irrigated (14%) own land. The district-wise, average own irrigated land was higher in Shivamogga district as compared to Hassan district. The average land size was higher in Soraba and the lowest average on irrigated land was in Hassan taluk. In the case of un-irrigated own land, it was higher

in the Shivamogga district, but the taluk-wise average was higher in Belur. Similar results were found in total own land. Leased in land was prevalent in the study area. The leased in irrigated land was higher in Shivamogga district as compared to Hassan district. The leased in land was higher in Soraba taluk. The study observed that the irrigated land was only taking leased in land. Un-irrigated land was not being taken on lease since a water source was required to cultivate any crop.

In all study taluks, farmers did not lease out their land in irrigated and un-irrigated (excluding Shikaripura). In Shikaripura, only 1.2 acres of land were leased out during the study period. The uncultivated total land was nine acres and a majority of the land came from Shivamogga district and the average land size was 1.5 acres (Table8). The rental value was based on the quality of land, distance and source of water. If water facilities were available, then there was a possibility to hike the rent. The average rent value was ₹ 99,483. But the average rent value was lower in Hassan district as compared to Shivamogga district and the rent value was higher in Soraba (Table8).

The net irrigated total land in the study area was 609.5 acres. The average net operated irrigated land was higher in the Shivamogga district. Among the study taluks, the net irrigated operated average land was higher in Soraba, followed by Shikaripura. Around Soraba taluk, plenty of forest land was available, suitable to cultivate ginger, and some of the villagers had cultivated the land long back and got it registered for themselves.

Yadav *et al* (2004) stated that the climatic condition should be suitable for the cultivation of the ginger crop. According to the study, the North-Eastern Region in general and Meghalaya climatic condition of the region, in particular, was highly suitable for the cultivation of spices such as ginger, turmeric, chilli, tejpat, cardamom, coriander, and garlic in particular. In the present study area, the weather condition was ideal: a warm, humid climate, drained sandy or clay loam, red loam or laterite loam for growing good quality ginger. In our study area, the above said weather conditions were available and due to this reason, the net operated land was higher in Soraba taluk as compared to other taluks.

In our study, the un-irrigated operated total land was 75 acres and the average land size was 2.2 acres. The un-irrigated operated land size was higher in Shivamogga district as compared to Hassan district. In Shikaripura taluk, one person possessed four acres of uncultivated land, and there was no un-irrigated land. The total net operated land was 684 acres and the average land size was 5.7 acres. The average total operated land size was higher in Hassan district. But the Shikaripura the average total operated land size was higher and it crossed above the total net operated land (Table8). The total land irrigation main sources were borewell (86%), the canal (9%) and dug well (3%) and pond and borewell (1.7%). The borewell usage was higher in the Shivamogga district. In the Shivamogga district, all farmers used borewells and three farmers used dug wells and two farmers used pond and borewells (Table9).

**Table 8: Operational Land Holdings (acres)**

Type of land	Particulars of land	Hassan district and its taluks			Shivamogga district and its taluks			Total
		Belur	Hassan	Hassan*	Shikaripura	Soraba	Shiva**	
Owned land	Irrigated (A)	117.3 (3.9)	68.3 (2.3)	185.6 (3.1)	151.5 (5.6)	177.5 (5.9)	329.0 (5.8)	514.5 (4.4)
	Un-irrigated (B)	38.5 (3.2)	18.2 (1.8)	56.7 (2.6)	8.0 (2.7)	19.3 (2.4)	27.3 (2.5)	84.0 (2.5)
	Total (A+B)	155.8 (5.2)	86.5 (2.9)	242.3 (4.0)	159.5 (5.9)	196.8 (6.6)	356.2 (6.2)	598.5 (5.1)
Leased In land	Irrigated (A)	NA	9.5 (1.9)	9.5 (1.9)	30.8 (2.4)	55.5 (5.0)	86.3 (3.6)	95.8 (3.3)
	Un-irrigated (B)	NA	NA	NA	NA	NA	NA	NA
	Total (A+B)	NA	9.5 (1.9)	9.5 (1.9)	30.8 (2.4)	55.5 (5.0)	86.3 (3.6)	95.8 (3.3)
Leased outland	Irrigated (A)	NA	NA	NA	1.2 (1.2)	NA	1.2 (1.2)	1.2 (1.2)
	Un-irrigated (B)	NA	NA	NA	NA	NA	NA	NA
	Total (A+B)	NA	NA	NA	1.2 (1.2)	NA	1.2 (1.2)	1.2 (1.2)
Un-cultivated land	Irrigated (A)	NA	NA	NA	NA	NA	NA	NA
	Un-irrigated (B)	1.0 (1.0)	NA	1.0 (1.0)	4.0 (2.0)	4.0 (1.3)	8.0 (1.6)	9.0 (1.5)
	Total (A+B)	1.0 (1.0)	NA	1.0 (1.0)	4.0 (2.0)	4.0 (1.3)	8.0 (1.6)	9.0 (1.5)
Rental value	Irrigated (A)	NA	325000 (65000)	325000 (65000)	1030000 (79231)	1530000 (139091)	2560000 (106667)	2885000 (99483)
	Un-irrigated (B)	NA	NA	NA	NA	NA	NA	NA
	Total (A+B)	NA	325000 (65000)	325000 (65000)	1030000 (79231)	1530000 (139091)	2560000 (106667)	2885000 (99483)
Net Operated land	Irrigated (A)	117.3 (3.9)	77.8 (2.6)	195.1 (3.3)	181.1 (6.0)	233.0 (7.8)	414.1 (6.9)	609.1 (5.1)
	Un-irrigated (B)	37.5 (3.1)	18.2 (1.8)	55.7 (2.5)	4.0 (0.8)	15.3 (2.2)	19.3 (1.6)	75.0 (2.2)
	Total (A+B)	154.8 (5.2)	96.0 (3.2)	250.8 (4.2)	185.1 (6.2)	248.3 (8.3)	433.3 (7.2)	684.1 (5.7)

Note: \* indicates Hassan district; \*\* indicates Shivamogga district. NA means not available.

Source: Primary data collected, 2020.

**Table 9: Irrigation Source in Study Farmers**

Name of the Taluk/District	Irrigation sources				
	Borewell	Canal	Dug well	Pond and bore well	Total
Belur	18(60.0)	11(36.7)	1(3.33)	0(0.0)	30(100)
Hassan	30(100)	0(0.0)	0(0.00)	0(0.0)	30(100)
Hassan district	48(80.0)	11(18.3)	1(1.67)	0(0.0)	60(100)
Shikaripura	30(100)	0(0.0)	0(0.0)	0(0.0)	30(100)
Soraba	25(83.3)	0(0.0)	3(10.0)	2(6.7)	30(100)
Shivamogga district	55(91.7)	0(0.0)	3(5.0)	2(3.3)	60(100)
Total	103(85.8)	11(9.2)	4(3.3)	2(1.7)	120(100)

Source: Primary data collected, 2020

### Irrigation source of ginger crop

Ginger crop cultivation is done in both irrigated and rain-fed areas. The cultivation of ginger in the North-East region is as a rain-fed crop while in other parts of the country it is a rain-fed and irrigated

crop (Yadav and *et al.*; 2004). In our study area, all farmers cultivated irrigated land only. The ginger crop was not cultivated in the rain-fed area. The irrigated land differed from farmer to farmer. The 120 ginger farmers were engaged in cultivating 246.6 acres of irrigated land. The average irrigated land was nearly two acres (2.1 acres). The average irrigated cultivation of land was higher in Shivamogga district (3 acres) compared to Hassan district (0.9 acres). But taluk-wise, ginger irrigated and cultivated land was higher in Soraba (Table10). The ginger farmers' irrigation sources were borewell (87%), the canal (9%) and dug well (3%). District-wise, Shivamogga farmers (93%) used borewell, followed by Hassan district (80%). Very few (18%) of the farmers used canal water and they come under Hassan district. Canal facilities were not utilized by Shivamogga district farmers. Three per cent of the farmers used dug well water sources (Table10).

**Table10: Ginger Irrigated Land and Irrigation Sources**

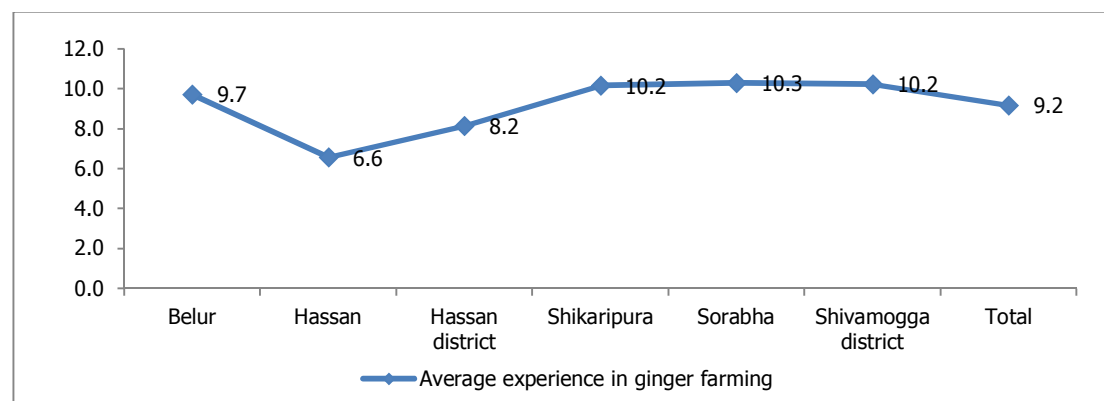
Name of the Taluk/District	Ginger irrigated total land	Source of irrigation				
		Bore well	Canal	Dug well	Bore well & Tank	Total
Belur	27.0(0.9)	19(63.33)	10(33.3)	1.0(3.33)	0(0.00)	30(100)
Hassan	25.6(0.9)	29(96.67)	1(3.33)	0(0.00)	0(0.00)	30(100)
Hassan district	52.6(0.9)	48(80.0)	11(18.3)	1.0(1.67)	0(0.00)	60(100)
Shikaripura	84.3(2.8)	28(93.3)	0(0.0)	1(3.3)	1(3.3)	30(100)
Soraba	109.8(3.7)	28(93.3)	0(0.0)	2(6.7)	0(0.0)	30(100)
Shivamogga district	194.1(3.2)	56(93.3)	0(0.0)	3(5.0)	1(1.7)	60(100)
Total	246.6(2.1)	104(86.7)	11(9.2)	4(3.3)	1(0.8)	120(100)

Source: Primary data collected, 2020

### Experience in ginger farming

Experience is very important for human life. Without experience, there is a possibility to do some mistakes. The study subjects reported an average of 9.2 years of cultivation of the ginger crop in their lives, but it varied from farmer to farmer. In Shivamogga district, farmers had higher (10.2 years) experience as compared to Hassan district farmers (8.2 years). Among the taluks, Soraba farmers had a greater average (10.3 years) farm experience (Figure1).

**Figure 1: Experience in Ginger Cultivation**



### First-year of ginger started in the study area

Once the ginger is cultivated in a particular land (segment), farmers give a break/gap for nearly four to five years. During these years, the farmer cultivates other crops which are suitable for a particular land. Due to this reason, the cultivation of ginger land may show ups and downs. A majority of the ginger farmers cultivated in 2010 (17%), followed by 2015 (10%). But nearly 6 per cent of the farmers had been cultivating ginger crops since 2000 (Table 11).

**Table 11: When Did You First Take up Cultivation of Ginger Crop?**

Year	Name of the Taluk / District						Total
	Belur	Hassan	Hassan (District)	Shikaripura	Soraba	Shivamogga (District)	
1980	0(0.0)	0(0.0)	0(0.0)	1(3.3)	0(0.0)	1(1.7)	1(0.8)
1990	0(0.0)	0(0.0)	0(0.0)	0(0.0)	1(3.3)	1(1.7)	1(0.8)
2000	2(6.7)	0(0.0)	2(3.3)	3(10.0)	2(6.7)	5(8.3)	7(5.8)
2001	0(0.0)	0(0.0)	0(0.0)	1(3.3)	0(0.0)	1(1.7)	1(0.8)
2002	0(0.0)	0(0.0)	0(0.0)	1(3.3)	1(3.3)	2(3.3)	2(1.7)
2003	1(3.3)	0(0.0)	1(1.7)	0(0.0)	0(0.0)	0(0.0)	1(0.8)
2004	0(0.0)	0(0.0)	0(0.0)	1(3.3)	0(0.0)	1(1.7)	1(0.8)
2005	3(10.0)	1(3.3)	4(6.7)	2(6.7)	0(0.0)	2(3.3)	6(5.0)
2006	3(10.0)	0(0.0)	3(5.0)	0(0.0)	3(10.0)	3(5.0)	6(5.0)
2007	1(3.3)	0(0.0)	1(1.7)	1(3.3)	2(6.7)	3(5.0)	4(3.3)
2008	2(6.7)	2(6.7)	4(6.7)	1(3.3)	1(3.3)	2(3.3)	6(5.0)
2009	0(0.0)	0(0.0)	0(0.0)	0(0.0)	5(16.7)	5(8.3)	5(4.2)
2010	4(13.3)	7(23.3)	11(18.3)	4(13.3)	5(16.7)	9(15.0)	20(16.7)
2011	0(0.0)	1(3.3)	1(1.7)	1(3.3)	0(0.0)	1(1.7)	2(1.7)
2012	3(10.0)	2(6.7)	5(8.3)	0(0.0)	1(3.3)	1(1.7)	6(5.0)
2013	0(0.0)	0(0.0)	0(0.0)	3(10.0)	0(0.0)	3(5.0)	3(2.5)
2014	4(13.3)	4(13.3)	8(13.3)	2(6.7)	0(0.0)	2(3.3)	10(8.3)
2015	2(6.7)	4(13.3)	6(10.0)	1(3.3)	5(16.7)	6(10.0)	12(10.0)
2016	2(6.7)	4(13.3)	6(10.0)	0(0.0)	3(10.0)	3(5.0)	9(7.5)
2017	0(0.0)	1(3.3)	1(1.7)	2(6.7)	1(3.3)	3(5.0)	4(3.3)
2018	3(10.0)	2(6.7)	5(8.3)	2(6.7)	0(0.0)	2(3.3)	7(5.8)
2019	0(0.0)	2(6.7)	2(3.3)	4(13.3)	0(0.0)	4(6.7)	6(5.0)
<b>Total</b>	<b>30</b>	<b>30</b>	<b>60</b>	<b>30</b>	<b>30</b>	<b>60</b>	<b>120</b>

Source: Primary data collected, 2020

### Reason for choosing ginger crop

The study observed ginger farmers and gave an open-ended question regarding their reasons for choosing ginger crops. Most of the farmers said that those who cultivated the ginger crop were able to get high income (61%) followed by more profits/ returns (33%) and the price was good (6%). District-wise, high income was reported by many farmers in Shivamogga district; and followed by Hassan district. High income was the main reason for cultivating ginger crop as farmers reported in Soraba and

the second place was occupied by Shikaripura farmers. But on the contrary, more profit/returns were reported in Hassan district and the next place was occupied by Shivamogga district. Hassan taluk farmers reported higher profits from ginger cultivation and second place went to Belur (Table 12).

**Table 12: What was the Main Reason to Choose Ginger Crop?**

Name of the Taluk / District	High income/profit	More profits/returns	Price is good	Total
Belur	19(63.3)	11(36.7)	0(0.0)	30
Hassan	10(33.3)	17(56.7)	3(10.0)	30
Hassan district	29(48.3)	28(46.7)	3(5.0)	60
Shikaripura	20(66.7)	9(30.0)	1(3.3)	30
Soraba	24(80.0)	3(10.0)	3(10.0)	30
Shivamogga district	44(73.3)	12(20.0)	4(6.7)	60
<b>Total</b>	<b>73(60.8)</b>	<b>40(33.3)</b>	<b>7(5.8)</b>	<b>120</b>

*Source:* Primary data collected

## Conclusion

Based on the above discussion, the study provided some findings given below. As far as India is concerned, caste plays a vital role in the development of human life. Our results reveal that a majority of the sample households came under the BC community, followed by OC, ST and SC. STs were higher in Hassan taluk. Age is very important for doing any household activity. The ginger farmers' total average age was 44 years. In Belur taluk, ginger farmers were younger than in the other study taluks. Most of the respondents were male (98%). Ginger farmers' data reveals that Belur taluk's average family size was lower. It indicates that the Belur study farmers may have been more aware of the importance of limiting the size of the family. Nearly half of the farmers were educated from the 6<sup>th</sup> to the 10<sup>th</sup> standard. Taluk-wise, nearly 57 per cent of the Belur farmers were educated from 6<sup>th</sup> to 10<sup>th</sup> standard.

Secondly, for ginger farmers, the main occupation was agriculture. But the annual average income differed from person to person. Shikaripura taluk farmers' annual income was higher, followed by Soraba. The study observed that the income variations were higher among the districts/ taluks. Nearly one-third of the farmers had a secondary occupation and their main secondary occupations were dairy, business and agricultural labour /construction work/ security guard. Among the occupations, for those who worked in business, the average income was higher. Dairy farming played a vital role in the study area. In Shikaripura and Soraba, a majority of the ginger farmers earned more income due to their land being fertile and cultivated more ginger and other crops; and had increased their income. Thirdly, ginger farmers' total average experience was 22 years. An average of nearly three people worked in the agricultural sector. The study observed that in Belur taluk, ginger farmers were better educated and may have had greater awareness and that led to decreased dependence on agriculture. Among the genders, the males were engaged more in agricultural activities.

Fourthly, farmers in our study had nearly 86 per cent irrigated and 14 per cent of un-irrigated own land at the time of our investigation. The average net operated irrigated land was higher in Shivamogga district as compared to Hassan district. The net operated average land was higher in

Soraba taluk, followed by Shikaripura. In the case of un-irrigated land, the net operated total land was 75 acres and the average land was 2.2 acres. The un-irrigated operated land size was higher in Shivamogga district. The total operated land size was 684 acres and the average land size was 5.7 acres. The average net operated land size was higher in Shivamogga district as compared to Hassan district. But in Shikaripura the average net operated land size was higher.

Finally, all farmers cultivated irrigated land only. The 120 ginger farmers cultivated nearly 246.6 acres of irrigated land. The average irrigated land was two acres. The average irrigated cultivation land was higher in Shivamogga district. Taluk-wise irrigated land area where ginger was cultivated was higher in Soraba. The ginger farmers' irrigation sources were borewell, canal and dug well. The experience varied from farmer to farmer. The study observed that the reason for cultivating ginger crops was high income, more profits/ returns and the price was good as reported by the ginger farmers. The main policy suggestion of the study is to apply the incentives in growing ginger to disadvantaged people in an appropriate manner.

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