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STATUS OF FARMERS INCOME IN GUJARAT: AN EMPIRICAL ANALYSIS

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Abstract

The position of quality aspects of agriculture and two sample clusters in each agro climate zone and ten sample growers in each cluster have been selected for in-depth study. The, entirely fifteen clusters and 150 sample farmers are selected. The primary survey-based data extracted from the online data entry software of Ministry of Agriculture and Farmers Welfares, Government of India. An average per hectare input cost C_2 was Rs 3.85 lakh for fruit crops which is highest, followed by vegetable Rs 1.79 lakh while minimum average per hectare cost C_2 was Rs 0.24 lakh for pulses group in reference. An overall average per hectare cost was Rs 0.47 lakh for all crop groups. The highest average farm income per hectare earned from fruit group Rs 5.32 lakh and followed by vegetable group Rs 0.89 lakh while the lowest from oilseed crop group about Rs 0.02 lakh. The selected farmers earned an average income per hectare Rs 0.14 lakh in 2016-17. Based on total cultivated areas an annual farmer income was Rs 0.72 lakh for marginal group and 1.24 lakh for big groups while was Rs 0.75 lakh for all group during the reference year. Rainfall has been highly uneven across Gujarat. While South Gujarat has received more than its average rainfall, Kutch, North Gujarat and Saurashtra continue to face significant shortages. In that's why the agriculture is still dominant very good position in the different crops, even in the rain shortfall .

Keyword: Cost Cultivation formulation, MSP, Crops Productivity,

Introduction:

The government must set a target of doubling income of farmers of our country during last five years and government has initiated many programs. The farm income generally depends upon natural, climatic and market related factors along with input prices and cost of cultivation of crops. Among them government agricultural prices, farm harvest price, selection of crops, financial resources, irrigation facility, crop productivity and marketed surplus are the main factors, and these factors have positive as well negative effect on farm income. It is true that the irrigation facility and irrigated area have increased at national level as well as state level and water saving technology, micro pressurized irrigation system and solar energy have also performed significant roll gradually for crop intensity and crop productivity. Not only that, the marketing system has improved now, and electronic base system also developed like E-NAM, supply chain marketing channels etc. are taking place now a day but it will take time. A review of crop patterns over the last five decades indicates the non-food grain in some states along with Gujarat. The share of areas under non-food grain crops consistently and substantially increased over the period *(Bhaiya, 2018)*. The increase in incomes can come from greater production per unit of area because of higher yields, as there are yield gaps of the order of 25 percent to 100 percent across various crops particularly in dry land regions, and in some high-value crops even in irrigated areas. An average yield in most crops is only half in India compared to yields of crops of China. But yields are not amenable to sudden change (Singh, 2018) The income earned by farmers from agricultural activities after paying for input and labour costs has seen low to high growth in different periods during the last three decades. The farm income per cultivator increased by 2.74 percent a year from 1983–84 to 1993–94 and dropped to below 2 percent in the next decade. They estimated that per cultivator farm income increased by 7.3 percent a year during 2004–05 to 2011–12. They suggested that decent growth in a farmer's income requires high growth in output, favorable prices for farm produce and to reduce income disparities and promote inclusive growth (Chand, and *et al* (2015). The crop productivity was inversely related

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to farm size class. Per hectare value of crop output was Rs 0.25 lakh at holdings below 0.4 ha and Rs 0.19 lakh at holdings of size 0.4 ha to 1 ha in 2011. As the farm size increased towards 2 ha, value of crop output declined to less than Rs 0.17 lakh per hectare. In large farms i.e.4 ha to 10 ha, the value of aggregate crop production declined to Rs 0.14 lakh per hectare. Above 10 ha were found to have very low crop output value with Rs 0.8 lakh which was less than one-third of the productivity in the bottom farm size category. Agriculture productivity in marginal and small holdings was found to be much higher than the average productivity for all size categories. Thus, above results indicate the inverse relationship between farm size and land productivity. Per capita output is low on small holdings despite higher productivity due to lower per capita availability of land (Chand, and *et al* (2011). The low level of farmers' income and year-to-year fluctuations in it are a major source of agrarian distress. This distress is spreading and getting severe over time, impacting almost half of the population of the country that is dependent on farming for life. To secure future of agriculture and to improve livelihood of half of Indian's population, adequate attention needs to be given to improve the welfare of farmers and raise agriculture income (Chand, 2017). Past strategy for development of the agriculture sector in India has focused primarily on raising agricultural output and improving food security. Doubling farmers' income by 2022 is quite challenging but it is needed and is attainable. Three-pronged strategy focused on development initiatives; technology and policy reforms in agriculture is needed to double farmers' income. The country needs to increase use of quality seed, fertilizer and power supply to agriculture by 12.8, 4.4 and 7.6 percent every year. Besides, area under fruits and vegetables is required to increase by five percent each year. About one third of the increase in farmers' income is easily attainable through better price realization, efficient post-harvest management, competitive value chains and adoption of allied activities. Ensuring minimum support prices for farm produce through competitive markets or government intervention will result in sizeable increase in farmers' income in many states (Chand, 2017). During the period 2004-05 to 2015-16, per cultivator an annual income has increased about 68.39 percent in real price terms while it increased 359.70 percent in current price terms. Similarly, the compound growth rate of an annual income of cultivator as per real price term has registered 4.85 percent while current price term it registered 14.87 percent during the same period

Table 1– Farm income per cultivator in India

Sl. No.	Year	Total farm income of all Farmers'(Rs Cr)		Cultivators (No. in Cr)	Farm income per cultivator (Rs)		Compound Growth Rate	
		Market Price	Real Price		Current price	Real Price	Current Price	Real Price
1	1993-94	177954	303814	14.39	12365	21110	--	--
	1999-00	335631	372923	13.88	24188	26875	--	--
2								
	2004-05	434160	434160	16.61	26146	26146	--	--
3								
	2011-12	1157128	632514	14.62	79137	43258	17.14	7.46
4								
	2012-13	1312730	596695	14.36	91416	41553	16.94	5.96
5								
	2013-14	1477159	602922	14.10	104763	42760	16.68	5.62
6								
	2014-15	1558223	597020	13.85	112507	43106	15.71	5.13
7								
8	2015-16	1634625	598764	13.60	120193	44027	14.87	4.85

.Note-Number of cultivators after the year 2011-12 were projected based on rate of growth between 2004-05 and 2011-12; Author has calculated compound growth rate based on two point of time and 2004-05 is the based year. Source – Chand Ramesh (2017), p6

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Methodology, Data Base and Objective:

Nowadays electronic technology comes in the market as per time requirement and agro climatic changes. Some natural and environmental challenges are toward the farm income cost of production like as high temperature, uncertain and over/lower rainfalls, changing in season pattern and duration etc. Besides the agro-inputs technologies have been improving gradually and market intervention schemes and activities have largely extended by the government. The present government has fully concentrated on the agriculture and allied sector only. The researcher has been using the secondary and primary survey-based data (collected by daily accounting method) which have collected by the *'Cost of Cultivation Scheme for Gujarat'* organizing by Agro Economic Research Centre, Sardar Patel University, Vallabh Vidyanagar, Gujarat. The necessary data sets extracted from the online data entry software of the Directorate of Farmers Welfares and Agriculture, Government of India for the agriculture year 2022-23. Two sample clusters have been selected in each agro climate zone for in-depth study. Thus total 15 clusters were selected due to Bhal, and coastal zone has only one sample cluster. Altogether total 150 sample farmers (i.e. 15 cluster x 10 sample farmers) along with five farm size groups were selected across the state. We have considered all the seasonal as well as annual crop groups which have grown by the selected sample farmers in the reference agriculture year to estimate the farmers annual income and to calculate the input cost. The author has total eight crop groups categorized, and respective crops have been considered in the respective crop groups. The author has complied all inputs and labour (human and machine) expenditures for to compute input costs and considered the crop group production and sold value of respective crops for generating annual farm income. The secondary data as well as primary data has been used for the study, but major part of the study is based on the primary data only. The geographical area of Gujarat state has distributed in total eight agro climatic zones. Statistical and mathematical tools are used for detail and simple analysis.

The main objectives of the present study are to study the crop group wise input cost; to estimate the farm annual income of the farmers for the year 2022-23, marketing of farm produce of the sample farmers. Sample selection detail is given in table 2.

Sl. No.	Zone	Total No. of Cluster	Total farmers	Sample Cluster	Sample Farmers	Percent
1	South Gujarat Heavy Rain Area	3	30	2	20	13.33
2	South Gujarat	4	40	2	20	13.33
3	Middle Gujarat	7	70	2	20	13.33
4	North Gujarat	11	110	2	20	13.33
5	Bhal & Coastal	1	10	1	10	6.67
6	South Saurashtra	12	120	2	20	13.33
7	North Saurashtra	13	130	2	20	13.33
8	North West Zone	9	90	2	20	13.33
	Total	60	600	15	150	100.00

Source - online data entry software of the Directorate of Farmers Welfares and Agriculture, Government of Ind

Table 3 - Zone wise number of tehsils with name

Zone	District and Tehsils and Sample tehsils	No. of Tehsil
SGHR	**Dangs -** Ahwa, Vaghai and Subir: 3, **Navsari -** Navsari, Jalalpur, Gandiva, Chikhli, Bansda and Khergam: 6, **Valsad** - Valsad, Dharampur, Pardi, Kaprada, Umbergam, Vapi: 6, **Tapi** - Nijhar, Uchchhal, **Songadh**, **Vyara**, Valod, Dolwan, kukarmunda: 7	22
SG	**Bharuch** - Jambusar, Amod, Vagra, Bharuch, Jhagadia, **Ankleshwar**, Hansot, Valia, Netrang: 9, **Narmada** - Tilak Wada, **Nandod**, Dediapada, Sagbara, Garudeswar: 5, **Surat** - Olpad, Mangrol, Umarpada, Mandvi, Kamrej, Surat City, Choryasi, Palsana, Bardoli, Mahuva: 10	24

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MG	**Panchmahal** - Godhra, Morva Hadaf, Shehera, Kalol, Khoshaba, Halol, Jambu Ghoda: 7, **Mahi Sagar** - Khanpur, Kadena, Sant Rampur, Lonavala, Virpur: 5, **Dahod** - Fatehpuri, Jhalod, Limkheda, Dohad, Garbada, **Devgadh Baria**, Dhanpur, Anjeli:8, **Chhotaudepur** - Chhota Udaipur, Jetpur-pavi, Kavant, Nasvadi, Sankheda, Bodeli: 6, **Vadodara** - Savli, Vadodara, Vaghodia, **Dabhoi**, Padra, Karjan, Sinor Desar: 8	34
NG	**Mahesana** - Satlasana, Kheralu, Unjha, Visnagar, Vadnagar, Vijapur, Mahesana, Becharaji, Kadi, Jotana: 10, **Sabar kantha** - Khedbrahma, Vijayanagar, Vadali, Idar, Himatnagar, Prantij, Talod, Poshina: 8, **Arvalli** - Bhiloda, Meghraj, Modasa, Dhansura, Malpur, Bayad: 6, **Gandhinagar** - Kalol, Mansa, Gandhinagar, Dehgam: 4, **Ahmedabad** - Mandal, Detroj-Rampura, Viramgam, Sanand, Ahmadabad, Daskroi, Bavla, Dholera: 8, **Anand** - Tarapur, Sojitra, Umreth, Anand, Petlad, Khambhat Borsad, Anklav: 8, **Kheda** - **Kapadvanj**, Kathlal, Mehmadabad, Kheda, **Matar**, Nadiad, Mahudha, Thasra, Galteshwar Vaso: 10, **Mahisagar** – Balasinor: 1	55
BCA	**Ahmedabad** - **Dholka**, Dhandhuka: 2, **Bhavnagar** - Bhavnagar, Vallabhipur; 2	4
SS	**Junagadh** - Manavadar, Vanthali, Junagadh, Bhesan, Visavadar, Mendarda, Keshod, Mangrol, Maliya, Junagadh, **Gir Somnath** - Talala, Patan-Veraval, Sutrapada, Kodinar, Una, Girgadhada: 6, **Botad** - **Botad**, Gadhada, Ranpur, Barwala: 4, **Amreli** - Kunkavav, Babra, Lathi, Liliya, Amreli, Bagasara, Dhari, Savarkundla, Khambha, Jafrabad, Rajula: 11, **Bhavnagar** - **Umrala**, **Ghogha**, Sihor, Giridhar, Palitana, Talaja, Mahuva, Jesar: 8	39
NS	**Surendranagar** - Lakhtar, Wadhwan, Muli, **Dasada** (Patdi), Chotila, Chuda, Limbdi, Thangadh: 8, **Morbi** - Morbi, Maliya, Tankara, Wankaner: 4, **Jamnagar** - Jamnagar, Jodia, Dhrol, Kalawad, Lalpur, Jamjodhpur: 6, **Rajkot** - Rajkot, Paddhari, Lodhika, Kotda sangani, Jasdan, **Gondal**, Jamkandorna, Upleta, Dhoraji, Jetpur, Vinchhiya: 11, **Devbhumi Dwarka** - Okhamandal, Khambhalia, Kallangur, Bhanvad: 4, **Porbandar** - Porbandar, Ranavav, Kutiyana:	36
NWZ	**Kachchh** - Lakhapat, Rapar, Bhachau, Anjar, Bhuj, Nakhatrana, Abdasa, Mandvi, **Mundra**, Gandhidham: 10, **Banas kantha** - Vav, Tharad, Dhanera, Dantewada, Amirgadh, Danta, Vadgam, Palampur , **Deesa**, Deodar, Bhabhar, Kankrej, Lakhani, Suigam: 14, **Patan** - Santalpur, Radhanpur, Sidhpur, Patan, Harij, Sami, Chanasma, Shankheshwar, Saraswati: 9, **Morbi** – Halvad: 1, **Surendranagar** - Dhrangadhra, Sayla: 2	36
	Total Tehsils	**250**

Source- Arranged by author on basis of available data from Department of Agriculture, Farmers Welfare and Co-operation, Government of Gujarat, Gandhinagar, 2023

Note- Bold words are the name of district and selected sample cluster s or tehsils

SGHR - South Gujarat (Heavy Rain Area); SG - South Gujarat, MG - Middle Gujarat, NG - North Gujarat, BCA - Bhal and Coastal Area , SS - South Saurashtra, NS - North Saurashtra and NWZ - Northwest Zone.

Agriculture in Gujarat

Salient features of agro climatic zones

The salient features of agro climatic zones for the state of Gujarat are presented in table 4. In this table the climate, rainfall, soil structure and topography and major crops sown/grown etc. are mentioned.

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Table 4 - Salient features of agro climatic zones and major crop group in Gujarat

Sl. No.	Zone Name	Climate	Rainfall (mm)	Soil Type	Major Crops
1	South Gujarat (Heavy Rain Area)	Semi-arid to dry sub-humid	1500 and more	Deep black with few patches of coastal alluvial, laterite and medium black	Cereal- Rice, Jowar, Ragi, Kodra, Wheat; Oilseed - Sesamum, Groundnut, Pulse – Tur, Gram; Commercial - Cotton, Sugarcane, Spice - Chilly
2	South Gujarat	Semi-arid to dry sub-humid	1000-1500	Deep black clayey	Cereal - Rice, Jowar, Maize, Kodra, Ragi, Wheat, Perl Millets, Pulse- Tur, Gram, Oilseed- Groundnut, Sesamum, Commercial- Castor, Cotton, Sugarcane, Spice- Chilly
3	Middle Gujarat	Semi-arid	800-1000	Deep black, medium black to loamy sand	Cereal - Rice, Jowar, Maize, Kodra, Ragi, Wheat, Perl Millets, Pulse- Tur, Gram, Oilseed- Groundnut, Sesamum, Rapeseed- Mustard Commercial- Castor, Cotton, Sugarcane, Spice- Chilly; Vegetable- Potato,
4	North Gujarat	Arid to semi-arid	625-875	Sandy loam to sandy	Cereal - Rice, Jowar, Maize, Wheat, Perl Millets, Pulse- Tur, Gram, Oilseed- Groundnut, Sesamum, Rapeseed- Mustard Commercial- Castor, Cotton, Sugarcane, Spice- Cumin
5	Bhal & Coastal Area	Dry sub-Humid	625-1000	Medium black, poorly drained and saline	Cereal - Rice, Pearl Millets.
6	South Saurashtra	Dry sub-humid	625-750	Shallow medium black calcareous	Cereal - Rice, Maize, Wheat, Jowar, Pearl millets; Oilseed - Groundnut, Sesamum, Rapeseed-Mustard; Commercial- Cotton, Sugarcane; Pulse- Gram
7	North Saurashtra	Dry sub-Humid	400-700	Shallow medium black	Cereal - Jowar, Pearl millets; Oilseed - Groundnut, Sesamum;, Commercial- Castor, Cotton,
8	Northwest Zone	Arid to semi-arid	250	Sandy and saline	Cereal – Rice, Maize, Wheat, Jowar, Pearl millets, Barley; Pulse- Tur, Gram; Oilseed - Groundnut, Sesamum, Rapeseed-Mustard; Commercial- Cotton, Sugarcane; .

Source: Directorate of Economics and Statistics, Government of Gujarat, Gandhinagar

Land use pattern:

The land use pattern shows the uses of geographical area under different major components. Agriculture basically depends upon the net sown area under different crops and productivity of crop per unit of land. Table 5 represents the land use pattern of Gujarat state for the years 2004-05, 2008-09 and 2022-23. The interesting observation is that the area of forests and barren and un-culturable land was declined during 2004-05 to 2022-23. The other one observation is that the current fallows land was drastically declined during the same period and that was about 43.44 percent. The net sown area was 97.5 lakh ha (49.72 percent of geographical area) in 2004-05 which was increased with 103.02 lakh ha in 2008-09 (52.55) and again marginally increased with 103.02 lakh ha (52.56) in 2013-14, due to the current fallows land and forests area. The cultivated area under more than one season was also noticeably increased during 2008-09 to 2022-23. The area was 13.5 lakh ha (6.88 percent of geographical area) in 2008-09 and 21.9 lakh ha (11.15 percent) in 2013-14. Due to increase the net cultivated area and cultivated area more than one season the gross cropped area was increased during mentioned period in the state. The gross cropped area was 112.6 lakh ha (57.43 percent of geographical area) in 2004-05 which was increased with 116.5 lakh in 2008-09 (59.44 percent) and again significant increase with 124.9 lakh ha (63.70) in 2013-14.

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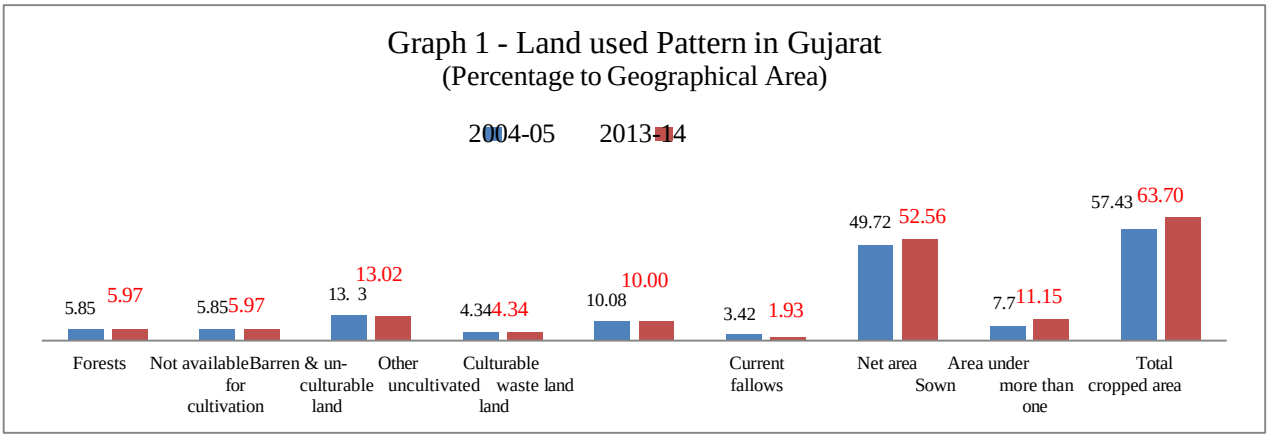
Table 5 – Land use pattern in Gujarat from 2004-05 to 2022-23

Sl. No.	Particular	2004-05		2008-09		2022-23		Change in percent
		Area	Percent	Area	Percent	Area	Percent	
1	Geographical Area	19602.0	100	19602.0	100	19602.0	100	0.00
2	Forests	1853.6	5.85	1834.0	5.97	1834.0	\ 5.97	-1.06
4	Not available for cultivation	1146.7	5.85	1171.1	5.97	1171.0	5.97	2.12
5	Barren & un-culturable land	2607.5	13.30	2551.5	13.02	2552.0	13.02	-2.13
6	Other uncultivated land	850.5	4.34	851.4	4.34	851.0	4.34	0.06
8	Land under misc. tree crops & groves	4.0	0.02	3.6	0.02	4.0	0.02	0.00
9	Culturable waste land	1976.5	10.08	1960.0	10.00	1960.0	10.00	-0.83
10	Fallow lands other than current fallows	12.3	0.06	16.2	0.08	16.0	0.08	30.08
12	Current fallows	670.1	3.42	378.9	1.93	379.0	1.93	-43.44
13	Net area Sown	9746.9	49.72	10301.8	52.55	10302.0	52.56	5.70
15	Area under more than one	1510.0	7.70	1349.2	6.88	2185.0	11.15	44.70
16	Total cropped area	11256.9	57.43	11651.0	59.44	12487.0	63.70	10.93

Source: Directorate of Economics and Statistics, Government of Gujarat, Gandhinagar, websites



Crop group wise, cultivated area

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The total cropped area declined with the area under food grains in Indian crop pattern and the value of production of food grains also witnessed a significant decline. The area under horticultural crops witnessed a significant increase and the production of horticulture crops also saw a remarkable increase. This sector is just maintaining an average annual rate of growth in the economy (Murali and Vijay, 2017). The area under cereal declined in the last four decades however, the irrigated area has increased in Gujarat. During this period the area under oilseeds moved up from 23 percent to 28 per cent but the groundnut has loosed out its importance (Kashyap, 2006). The foodgrain crops in India while non-foodgrain crops in Gujarat state have been dominating in cropping pattern, respectively. The crop group wise percentage to respective total of Gujarat and India is presented in table 6. The overall percentage shares of the state's cultivated area in total cultivated area of the country have about 9.80 to 12.20 percent during 2013-14 to 2015-16. But among the different crop groups, commercial and oilseed crop groups share have about 30 percent only in the country. The commercial and oilseed crop groups share are 20.20 percent and 9.90 percent respectively in 2022-23.

Table 6 – Crop group wise, cultivated area in Gujarat and India during 2013-14 to 2015-16
('000 ha)

Sl. No.	Crop Groups	Gujarat			Percentage share in India			All-India		
		2013-14	2014-15	2015-16	2013-14	2014-15	2015-16	2013-14	2014-15	2015-16
1	Cereals	3565	3974	3509	3.57	3.16	2.9	99829	125917	121166
		(32.50)	(36.77)	(34.17)				(57.04)	(64.89)	(63.63)
2	Pulses	813	591	598.3	3.2	2.5	2.4	25211	23554	25259
		(7.41)	(5.47)	(5.83)				(14.40)	(12.14)	(13.26)
3	Commercial	3320	3696	3604	18.43	19.5	20.2	18016	18975	17863
		(30.27)	(34.20)	(35.09)				(10.29)	(9.78)	(9.38)
4	Vegetable	73.6	--	--	3.7	--	--	1973.2	--	--
		(0.67)	--	--		--	--	(1.13)	--	--
5	Fruit	66.5	--	--	8.3	--	--	802.6	--	--
		(0.61)	--	--		--	--	(0.46)	--	--
6	Spice	50.8	--	--	4.5	--	--	1140.2	--	--
		(0.46)	--	--		--	--	(0.65)	--	--
7	Oilseed	3079	2545.6	2558.6	11	9.9	9.8	28051	25596	26135
		(28.07)	(23.56)	(24.91)				(16.03)	(13.19)	(13.72)
8	Total	7402.9	6832.6	6760.9	12.2	10	9.8	175023	194042	190423
		(100.00)	(100.00)	(100.00)				(100.00)	(100.00)	(100.00)

Sources - Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, Government of India, New Delhi.

Parentheses donates percentage of respective total and latest data of cultivated area of vegetable, fruit and spice is not available **Cereals** - Rice, Wheat, Jowar, Bajra, Maize, Ragi, Small Millets, Barley and Coarse Cereals; **Pulses** - Tur, Gram, Urad, Moong and Other Pulses; **Commercial** - Castor seed, Sugarcane, Cotton and Tobacco; **Vegetable** – Potato; **Fruit** – Banana; **Spice -** Turmeric, Black Pepper, Chillies and Ginger and **Oilseed** - Groundnut, Seasamum, Niger seed, Soya bean, Sunflower, Rapeseed and Mustard, Linseed and Safflower.

Production of crop group

The instability in production and occurrence of frequent floods is one of the factors responsible for low rate of adoption of modern production techniques. The frequent floods destroy crops, so it accountable for the low yield and low growth of agriculture *(Mandal, 2010).* The different crop group's production declined in Gujarat during 2013-14 to 2015-16 due to overall these productions declined due to insufficient rainfall in the state. The crop group wise production of Gujarat and India is presented in table 7. The share of total production of Gujarat has marginally declined during the mentioned period due to decline the production of pulses and oilseed production. The production of pulses declined therefore the share in total production of the country was reduced. This share was 10.31 percent in 2013-14 that was only 3.1 percent in 2015-16. In case of oilseed crops, the share of production of oilseed crop group was more than 50 percent in 2013-14 while that declined about 10.88 percent in 2015-16.

Cost of cultivation of selected crops

The table 8 displayed the cost of cultivation of tur, groundnut, rapeseed and mustard and cotton per hectare and per quintal as well as over the period percentage changes during 2009-2022-23. The analysis of the table shows that the cost of cultivation of indicated crops has increased from 2009-10 to 2022-23. The cost expenditure per hectare has increased about 92.72 percent of ground nut cultivation and is followed by rapeseed and mustard 68.00 percent, cotton 67.10 percent and Tur 31.73 percent during the same period. The per quintal cost of cultivation of cotton increased by about 50.29 percent 2009-10 over 2022-23 while for tur that was about 12.31 percent.

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Table 7 – Crop group wise production in Gujarat and India during 2013-14 to 2022-23

('000 tonnes)

Sl. No.	Crop Groups	Gujarat			Percentage share in India			All-India		
		2013-14	2014-15	2022-23	2013-14	2014-15	2015-16	2022-23	2014-15	2022-23
1	Cereals	8451	8180	7248	3.44	2.99	2.61	245790	273695	277733
		(18.38)	(21.26)	(20.99)				(33.75)	(39.22)	(38.60)
2	Pulses	729	574	533	10.31	3.49	3.1	7071	16468	17150
		(1.59)	(1.49)	(1.54)				(0.97)	(2.36)	(2.38)
3	Commercial	24540	26286	23973	6.3	6.85	6.01	389770	383960	399008
		(53.37)	(68.33)	(69.44)				(53.53)	(55.03)	(55.45)
4	Vegetable	2267	--	--	5.46	--	--	41555	--	--
		(4.93)	--	--				(5.71)	--	--
5	Fruit	4225	--	--	14.22	--	--	29725	--	--
		(9.19)	--	--				(4.08)	--	--
6	Spice	190	--	--	5.6	--	--	3388	--	--
		(0.41)	--	--				(0.47)	--	--
7	Oilseed	5583	3431	2789	51.3	14.5	10.88	10883	23654	25641
		(12.14)	(8.92)	(8.08)				(1.49)	(3.39)	(3.56)
8	Total	45985	38471	34543	6.31	5.51	4.8	728182	697777	719532
		(100.00)	(100.00)	(100.06)				(100.00)	(100.00)	(100.00)

Sources - Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, Government of India, New Parentheses indicates percentage of respective total and latest data of production for vegetable, fruit and spice is not available Delhi and State-wise Fourth Advance Estimates of Production of Principle Crops during 2022-23

Cereals - Rice, Wheat, Jowar, Bajra, Maize, Ragi, Small Millets, Barley and Coarse Cereals; **Pulses** - Tur, Gram, Urad, Moong and Other Pulses; **Commercial** - Castor seed, Sugarcane, Cotton, Guar seed and Tobacco; **Vegetable** – Potato; **Fruit** – Banana; **Spice -** Turmeric, Black Pepper, Chillies and Ginger and **Oilseed** - Groundnut, Seasamum, Niger seed, Soya bean, Sunflower, Rapeseed and Mustard, Linseed and Safflower.

Table 8 – Cost of cultivation of tur, groundnut, rapeseed and mustard and cotton for year 2009-10 to 2022-23 and percentage change

Sl. No.	Crops	2009-10	2010-11	2011-12	2012-13	2022-23	2010-11 over 2009-10	2011-12 over 2010-11	2012-13 over 2011-12	2013-14 over 2012-13	2022-23 over 2009-10
		Cost of Cultivation - Cost C_2 (Rs/Ha)					Percentage change in Cost C_2				
1	Tur	22927	23649	27781	25431	30203	3.15	17.47	-8.46	18.76	31.73
2	Groundnut	31053	33908	42837	48015	59847	9.19	26.33	12.09	24.64	92.72
3	Rapeseed and mustard	22743	25410	30805	30352	38210	11.73	21.23	-1.47	25.89	68.00
4	Cotton	42295	53726	58038	54769	70673	27.03	8.03	-5.63	29.04	67.10
		Cost of Production Cost C_2 (Rs/Quintal)					Percentage change in Cost C_2				
1	Tur	3461	2033	3096	3747	3889	-41.25	52.26	21.03	3.81	12.39
2	Groundnut	2490	2036	2916	4905	2859	-18.22	43.22	68.19	-41.70	14.85
3	Rapeseed and mustard	1416	1359	1779	2040	2122	-4.02	30.87	14.69	4.01	49.85
4	Cotton	2225	2415	3268	4347	3345	8.51	35.31	33.04	-23.06	50.29

Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, Government of India, New Delhi Cost C2 includes all actual expenses in cash & kind incurred in production by owner, interest on value of owned fixed capital assets (excluding land), rental value of owned land (net of land revenue), rent paid for leased-in land and imputed value of family labour.

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Minimum support price - 2009-10 to 2022-23

The review of literature shows that the minimum support price of other crops increases except the wheat and paddy after a couple of years, however, area under low value rice and wheat crops in Punjab expanded enormously. The highest number of regulated markets is in Punjab, but it efficiently utilizes for wheat and paddy thus not on board on the electronic-National Agricultural Market (Mann, 2017). The increasing farmers' incomes through higher or more stable prices is unlikely to fructify, given the inability of the state to implement the MSP mechanism for two dozen crops with effective procurement across various states, with state agencies restricting themselves to a few states and a few crops to meet the public food grain procurement quotas. Only 25 percent of the farmers were aware of MSP at the all-India level in 2012–13 with 11percent in Gujarat (Singh, 2018). Now a day lot of issues regarding minimum support prices and purchasing farm produce by the government through the minimum support prices are going in the farming communities. Therefore, the analysis of minimum support prices has been made in table 9.

Table 9 - Crop and year wise minimum support price, change and compound growth rate

(Rs per Quintal)

Sr. No.	Crop	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2018-19 0ver 2009-10	Growth rate (Percent)
1	Paddy - Common	950	1000	1080	1250	1310	1360	1410	1470	1550	1750	84.21	6.3
2	Paddy - A Grade	980	1030	1110	1280	1345	1400	1450	1510	1590	1770	80.61	6.09
3	Jowar – Hybrid	840	880	980	1500	1500	1530	1570	1625	1700	2430	189.29	11.21
4	Jowar – Maldani	860	900	1000	1520	1520	1550	1590	1650	1725	2450	184.88	11.04
5	Bajra	840	880	980	1175	1250	1250	1275	1330	1425	1950	132.14	8.79
6	Maize	840	880	980	1175	1310	1310	1325	1365	1425	1700	102.38	7.3
7	Ragi	915	965	1050	1500	1500	1550	1650	1725	1900	2897	216.61	12.22
8	Tur	2300	3000	3200	3850	4300	4350	4425	4625	5450	5675	146.74	9.45
9	Moong	2760	3170	3500	4400	4500	4600	4650	4800	5575	6975	152.72	9.71
10	Udad	2520	2900	3300	4300	4300	4350	4425	4575	5400	5600	122.22	8.31
11	Cotton Short staple	2500	2500	2800	3600	3700	3750	3800	3860	4020	5150	106.00	7.49
12	Cotton long staple	3000	3000	3300	3900	4000	4050	4100	4160	4320	5450	81.67	6.15
13	Groundnut	2100	2300	2700	3700	4000	4000	4030	4120	4450	4890	132.86	8.82
14	Sunflower	2215	2350	2800	3700	3700	3750	3800	3850	4100	5388	143.25	9.3
15	Soya bean	1350	1400	1650	2200	2500	2500	2600	2775	3050	3399	151.78	9.67
16	Seasamum	2850	2900	3400	4200	4500	4600	4700	4800	5300	6249	119.26	8.17
17	Nagar seed	2405	2450	2900	3500	3500	3600	3650	3725	4050	4870	102.49	7.31
18	Wheat*	1100	1120	1285	1350	1400	1450	1525	1625	1735	--	57.73	5.19
19	Barley*	750	780	980	980	1100	1150	1225	1325	1410	--	88.00	7.27
20	Gram*	1760	2100	2800	3000	3100	3175	3425	4000	4400	--	150.00	10.72
21	Lentil*	1870	2250	2800	2900	2950	3075	3325	3950	4250	--	127.27	9.55
22	R. and Mustard*	1830	1850	2500	3000	3050	3100	3350	3700	4000	--	118.58	9.08
23	Safflower *	1680	1800	2500	2800	3000	3050	3300	3700	4100	--	144.05	10.42
24	Copara Miling*	4450	4450	4525	5100	5250	5250	5550	5950	6500	--	46.07	4.3
25	Copara Ball *	4700	4700	4775	5350	5500	5500	5830	6240	6785	--	44.36	4.16
26	Coconut*	1200	1200	1200	1400	1425	1425	1500	1600	1760	--	46.67	4.35
27	Jute*	1375	1575	1675	2200	2300	2400	2700	3200	3500	--	154.55	10.94
28	Sugarcane*	129	139	145	170	210	220	230	230	255	--	97.67	7.79

Sources - Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare and form the government websites. The bonus is included in minimum support prices. The minimum support prices of rabi crops are not declared by the government

Note – The two point of time formula used for calculating the compound growth rates for the period of 2009-10 to 2017-18 and the attracts mentioned the period of 2009-10 to 2022-23 due to minimum support prices are not declared by the government. It is fact that the cost of production has been increasing day by day due to prices and rates of input and labour increase. Besides, the government has

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also increased the minimum support prices over the period. Table 8 clearly shows that the minimum support prices have increased more than double except 9 crops. The compound growth rate of minimum support price has increased by 8.17 percent to 12.22 percent for 15 crops (except copra, coconut, wheat, paddy, cotton, barley, maize, Nagar-seed and sugarcane) during 2009-10 to 2018-19/2017-18. The growth rate has increased from about 4.16 percent to 7.79 percent for copra, coconut, wheat, paddy, cotton, barley, maize, Nagar seed and sugarcane.

The place of the crop:

The review of literature of area under crop and crop pattern for the Gujarat reveals that a share of non-foodgrain crops increased during 1980s to 2000s (Bhaiya, 2014). The area under total cereal crops accounted for only 25.55 percent of gross cultivated area but two important cash crops as cotton and groundnut both together claimed 34.88 percent of gross cropped area. The area under non-food grain crops was around 64 percent of gross cultivated area triennium ending 2006-07 (Shah and et al, 2011). The crop and crop groups have their own feathers, and they depend upon the natural climate and other basis resources and facilities. The cultivated area of cereal crops has declined except one zone. The farmer's attitude has now become more profit-making crop selection with maximum production. The prices of some crops have had the most debatable issues in the last two/three years, and the government has announced high amount of minimum support price with bonus. Bumper production has been observed in the nearby past and the price of pulses has declined below the minimum support price (Bhaiya 2018).

Table 10 - Crop group wise percentage change2005 to 2023

(Percent to gross cropped area)

Zone	Cereals		Pulse		Oil Seeds		Spices and Medicinal		Commercial Crops	
	2005-06	2022-23	2005-06	2022-23	2005-06	2022-23	2005-06	2022-23	2005-06	2022-23
South Gujarat Heavy Rain	59.57	63.76	14.74	17.77	5.14	1.97	0.23	0.01	19.89	16.43
South Gujarat	26.37	25.77	14.61	24.59	2.51	0.58	0.02	0.29	53.81	45.88
South Gujarat	55.36	56.67	19.90	12.42	2.08	0.70	0.34	0.67	21.78	28.98
North Gujarat	55.17	48.16	5.94	1.99	8.93	5.66	2.35	1.87	25.95	39.16
Bhal & Coastal	38.10	30.96	4.32	4.27	10.10	3.11	2.16	0.83	44.82	60.68
South Saurashtra	16.35	5.84	1.70	1.49	53.54	33.96	2.60	0.37	22.61	55.45
North Saurashtra	12.12	3.96	3.58	1.66	49.34	40.42	5.07	2.14	29.20	51.61
North West Zone	28.90	19.89	8.00	5.11	22.65	17.45	6.16	11.24	33.06	43.47
Gujarat	32.00	26.63	7.40	5.49	26.88	18.59	3.28	3.33	28.92	43.97

Source - Calculated by author on basis of available data from Department of Agriculture, Farmers Welfare and Co-operation, Government of Gujarat, Gandhinagar

Cereals - Paddy, Wheat, Bajari, Maize, Jowar, Ragi and Small Millets; Pulse - Tur, Gram, Moong, Moth, Udad, Other Pulse; Oilseeds - Groundnut, Seasamum , Rape seed-Mustard; Spices and Medicinal - Chilly, Cumin, Fennel, Garlic, Ginger, Isabgul; and Commercial Crops - Cotton, Castor, Guvar , Soybean, Sugarcane, Tobacco.

Table 10 shows that area under oilseed crops has constantly decreasing trend in the state because the pests and disease has highly affected the yield and expenditures. The area under spices and medicinal crops has not noticeable changed but has significantly increased in one zone only. The irrigation facility and the hybrid and bt seeds have toward the non-foodgrain in Gujarat. The area under commercial crops has 28.92 percent in 2005-16 and it increased with 43.97 percent in 2022-23.

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Features of Sample Population:

The population supplies the working population to producing unit. The good amount of younger population has significant contributing in economic activity and always the bear of dependent population as children and aged people. The studied sample has altogether 640 people (52.03 percent males and 48.97 percent females) and an average family size has about 4.00 persons per sample farm households. The average age has 34.20 years of the head of the samples along with good amount of educated people (about 94 percent) of which indicates that they have taken up any challenges for innovative farming practices and they would take any risk of the new experiment of modern technology and challenges (table 11).

Table 11 – Population feathers of the sample

Sl. No.	Farm size group	Population (No.)					Education status		
		Male	Female	Total	Avg. family size	Age (year)	Illiterate people	Education people	Percent to total
1	Marginal	58	53	111	3.47	34.32	6	105	94.59
2	Small	74	72	146	4.56	31.01	9	137	93.84
3	Semi-medium	58	49	107	3.34	36.79	9	98	91.59
4	Medium	63	59	122	3.81	36.26	8	114	93.44
5	Large	80	75	154	4.81	33.73	6	148	96.10
6	All	333	308	640	4.00	34.20	38	602	94.06

Source: Calculated by author and data collected form cost of cultivation scheme, AERC, SPU, Vallbh Vidyanagar.

Status of earner population:

Generally, there are three categories of family members in the household as earners, earning dependent and fully dependent. Table 12 indicated that about 31.25 percent people are fully earners but 60.34 percent earners have in marginal group which is highest among the farm size groups.

Table 12 – Status of earner and dependent population

Sl. No.	Farm Size	Earner		Earning dependent		Earner with dependent		Domestic activities with dependent	
		Person	Percent	Person	Percent	Person	Percent	Person	Percent
1	Marginal	35	60.34	31	27.93	66	59.46	45	40.54
2	Small	44	30.14	51	34.93	95	65.07	51	34.93
3	Semi-medium	42	39.25	28	26.17	70	65.42	37	34.58
4	Medium	39	31.97	37	30.33	76	62.30	46	37.70
5	Large	40	25.97	41	26.62	81	52.60	73	47.40
6	All	200	31.25	188	29.38	388	60.63	252	39.38

Source: Calculated by author

The earning with dependent population has observed about 29.38 percent and the range has 26.35 percent among the different groups. Thus, total earner and earner with dependents were about 60.63 percent in the sample studied.

The crop production, animal rearing along with agricultural labourer is main economic activity particularly in the rural India. Table 13 shows that principal occupation of the family members is the crop production (61.86 percent of total earner people) and followed by animal husbandry (29.90 percent) while only few people have engaged in non-agricultural economic activity. The similar occupation pattern has observed in all the groups in the survey year.

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Table 13 – Principal and minor occupation of sample farm households

Sl. No.	Farm Size	Principal					Minor occupation				
		Crop Production	Animal Husbandry	Agri. Labourer	Other work	Total	Crop Production	Animal Husbandry	Agri. labourer	Other work	Total
1	Marginal	40	20	2	4	66	19	25	9	6	59
		(60.61)	(30.30)	(3.03)	(6.06)	(100)	(32.20)	(42.37)	(15.25)	(10.17)	(100)
2	Small	57	29	0	9	95	21	47	2	5	75
		(60.00)	(30.53)	(0.00)	(9.47)	(100)	(28.00)	(62.67)	(2.67)	(6.67)	(100)
3	Semi-medium	41	18	1	10	70	21	32	3	0	56
		(58.57)	(25.71)	(1.43)	(14.29)	(100)	(37.50)	(57.14)	(5.36)	(0.00)	(100)
4	Medium	48	23	0	5	76	20	30	2	2	54
		(63.16)	(30.26)	(0.00)	(6.58)	(100)	(37.04)	(55.56)	(3.70)	(3.70)	(100)
5	Large	54	26	0	1	81	22	43	3	11	79
		(66.67)	(32.10)	(0.00)	(1.23)	(100)	(27.85)	(54.43)	(3.80)	(13.92)	(100)
6	All	240	116	3	29	388	103	177	19	24	323
		(61.86)	(29.90)	(0.77)	(7.47)	(100)	(31.89)	(54.80)	(5.88)	(7.43)	(100)

Parentheses indicates percentage of respective farm size group total
Source: Calculated by author

Operational holding

The modern agricultural practices and capital investment always depends upon the land holding and operational holding size of the farmers The selected sample groups have altogether been operating 675.56 ha during the agriculture year in the selected sample clusters The total area has allocated about 561 parcels (average 1.17 parcels).

Table 14 - Operational holding of the farm size groups

Sl. No.	Farm size group	Total no. of farms	Leased in farms	Area leased in (ha)	Area (ha)	Area under border path (ha)	Seasonal/ annual crops (ha)	Avg. leased in area (ha)	Avg. operated area (ha)	Value of land (Rs)	Drip irrigation (no.)	Traditional Irrigation (no.)	Total (no. of farms)
1	Marginal	88	34	42.14	72.12	2.56	72.12	1.40	2.40	26.82	5	81	86
2	Small	84	11	12.69	64.10	3.39	64.10	0.42	2.14	32.53	5	77	82
3	Se-medium	113	16	18.60	112.46	4.65	111.26	0.62	3.75	32.41	2	108	110
4	Medium	117	7	12.22	156.11	5.59	155.27	0.41	5.20	34.29	7	106	113
5	Large	159	16	21.35	273.05	9.21	272.81	0.71	9.10	33.90	6	150	156
6	All	561	84	107.00	677.84	25.40	675.56	0.71	4.52	32.86	25	522	547

Source: Calculated by author

The farm size group wise operational holdings were 2.40 ha, 2.14 ha, 3.75 ha, 5.20 ha, 9.10 ha by marginal, small, medium, semi medium and big farmers, respectively (table 13). The marginal (1.40 ha leased in area) and small (0.42 ha leased in area) farm size groups have operating leased in land along with their own cultivated land, therefore, the operational holding were more with them during the study period. Out of total 25 parcels (4.46 percent parcels) with drip irrigation facility and remaining 522 parcels with traditional irrigation facilities (table 14).

Area under crop groups

The crops have its specific nature therefore that crops have been growing in the area i.e. agro climatic zone in the Gujarat. The selected farm size groups have cultivated cereals, pulses, commercial or cash, vegetables, fruits, spices, oilseed and fodder crops during the survey reference year. Crop group wise which crops have considered that details is given at end of the table. Out of total hand holding cultivated area about 78.80 percent area has operated by sample farmers while remained 21.20 percent area given as lease out by the farmers The Gujarat cropping pattern indicates that the farmers' attitude toward the

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commercial or cash crop but the following table 14 shows that the cereals crop group have dominated crop with 36.32 percent of total area, followed by commercials or cash crop (24.75 percent), pulses crop (10.26 percent) and oilseeds crop (4.72 percent). In case of cereals crop, all farm size groups have allocated maximum area under cereals crop except medium-size groups in the reference year. The animal rearing is the other one secondary occupation of the rural people, and they have been earning additional income with this business. Therefore, the farmers have allocated some area for the fodder crop. The below indicated that out of total area 2.83 percent (28.24 ha) area under fodder cultivation. The marginal and small farmers have allocated good amount of area under fodder crops. The vegetable crop is mostly short duration crop and starts the income of farmers shortly, therefore small land holders have preferred the crop compared to big land holders. The other details are provided in table 15.

Table 15 – Farm size and crop group wise, cultivated area

Sl. No.	Particular	Farm size group (Area in ha)					All Groups	Farm size group (Percentage)					All Groups
		Marginal	Small	Semi-medium	Medium	Large		Marginal	Small	Semi-medium	Medium	Large	
1	Cereals	22.33	56.45	63.35	70.70	149.79	362.62	34.61	59.65	33.85	25.06	40.47	36.32
2	Pulses	22.78	7.14	16.21	18.99	37.33	102.45	35.31	7.55	8.66	6.73	10.09	10.26
3	Commer-cials	12.89	18.42	46.02	79.16	90.63	247.12	19.98	19.47	24.59	28.06	24.49	24.75
4	Vegetables	1.38	2.93	3.40	2.10	3.05	12.86	2.14	3.10	1.82	0.74	0.82	1.29
5	Fruit s	0.98	0.00	0.00	0.00	0.00	0.98	1.52	0.00	0.00	0.00	0.00	0.10
6	Spices	1.10	2.44	1.28	3.24	3.84	11.90	1.71	2.58	0.68	1.15	1.04	1.19
7	Oilseeds	1.85	3.64	7.73	9.50	24.44	47.16	2.87	3.85	4.13	3.37	6.60	4.72
8	Fodders	2.48	6.05	5.00	6.38	8.33	28.24	3.84	6.39	2.67	2.26	2.25	2.83
9	All crops	63.31	91.36	138.15	184.21	309.80	786.83	98.14	96.54	73.83	65.29	83.70	78.80
10	Lease out area	1.20	3.27	48.98	97.92	60.32	211.69	1.86	3.46	26.17	34.71	16.30	21.20
11	Total Area	64.51	94.63	187.13	282.13	370.12	998.52	100.00	100.00	100.00	100.00	100.00	100.00
12	Per farmer area	2.11	3.05	4.61	6.14	10.33	26.23	--	--	--	--	--	--

Source: Calculated by author

Cereal – Bajra, Maize, Oat, Other Cereals, Paddy and Wheat; **Commercial /Cash–** Castor, Cotton, Gaur Commercial, Sugarcane, Tobacco; **Fodder –** Lucerne, Other fodders grain; **Fruit –** Banana; **Oilseed –** Groundnut, Rapeseed & Mustard, Seasamum and Soya bean; **Pulse –** Gram, Moong, Moth, Other Pulses, Peas, Tur and Urad **Spice** – Chilly, Coriander, Cumin seed and Isabgol and **Vegetables –** Onion, Potato and Other vegetables.

Input cost and income:

The farm size and crop group wise inputs cost and farm income is displayed in table 16. The highest maximum on average per hectare input cost is C2 Rs 3.85 lakh for fruit crop, followed by vegetable Rs 1.79 lakh, spice Rs 0.65 lakh and oilseed Rs 0.51 lakh, while minimum average per hectare cost C_2 has Rs 0.24 lakh for pulses crop in the year 2022-23. On average overall per hectare cost has Rs 0.47 lakh for all crops in the 2022-23. In vegetable the banana is only cultivated and grown by only marginal farmers from the entire sample groups during the reference period and it requires more inputs expenditure compared to other crops; therefore, this crop group have observed maximum inputs per hectare cost. In case of pulses crops, moong, moth, peas, tur, urad, and gram crops are grown by the farmers, and this crop group have required less various inputs including irrigation, so inputs cost has less observed compared to other crop per hectare cost.

On average overall the farm business income per hectare has about Rs 0.14 lakh during the study year. The maximum average farm income per hectare earned by the sample farmers from fruit crop cultivation Rs 5.32 lakh and followed by vegetable Rs 0.89 lakh, pluses Rs 0.22 lakh, cereals Rs 0.21 lakh. On an average overall minimum per hectare farm business income earned by sample farmers from oilseed crop cultivation about Rs 0.02 lakh while Rs 0.03 lakh from fodder crop and Rs 0.04 lakh from the commercial

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crop during the study period. Overall, on average per hectare farm business income Rs 0.25 lakh earned by marginal group; 0.01lakh small group; Rs 0.15 lakh medium group; Rs 0.26 lakh semi medium group and Rs 0.12 lakh big groups during the study year. The various costs, family human labour costs, total farm produce value, profit or loss and profit including family labor etc. haves indicated in table 16.

Table 16 - Farm Size group and crop group wise inputs cost and farm income –Year 2022-23

(Rs/ha)

Sl. No.	Particular	Cereal	Pulse	Commercial	Vegetable	Fruit	Space	Oilseed	Fodder	All crops
Group I - Marginal farmers (less than 1 ha cultivated area)										
1	Area under crop	17.83	22.78	12.89	1.38	0.98	1.10	1.85	4.50	63.31
2	Cost A	24072	17409	42185	143493	258623	49701	44098	32409	33219
		(63.52)	(69.17)	(66.24)	(77.60)	(67.14)	(73.78)	(64.35)	(65.24)	(67.25)
3	Cost B	30095	23087	52690	159381	358107	59101	51503	37211	41705
		(79.41)	(91.73)	(82.73)	(86.20)	(92.96)	(87.74)	(75.16)	(74.91)	(84.43)
4	Family human labour	7802	2082	10995	25522	27117	8261	17026	12466	7688
		(20.59)	(8.27)	(17.27)	(13.80)	(7.04)	(12.26)	(24.84)	(25.09)	(15.57)
5	Cost C2	37897	25169	63685	184902	385224	67362	68529	49677	49393
		(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)
6	Produce value	53012	51557	92396	115830	917257	79091	60830	38299	74890
7	Profit/loss	15115	26388	28711	-69072	532033	11729	-7699	-11377	25497
8	Profit +Family labour	22917	28470	39706	-43550	559150	19990	9326	1089	33186
Group II - Small farmers (1-2 ha cultivated area)										
1	Area under crop	45.61	7.14	18.42	2.93	0.00	2.44	3.64	11.18	91.36
2	Cost A	31789	22632	41722	95132	0	44911	62119	34275	37987
		(77.03)	(75.49)	(87.49)	(68.67)	0	(76.58)	(77.72)	(83.29)	(78.83)
3	Cost B	38149	27832	45777	110469	0	54602	70835	38872	44077
		(92.44)	(92.83)	(95.99)	(79.75)	0	(93.11)	(88.63)	(94.46)	(91.47)
4	Family human labour	3118	2150	1912	28058	0	4041	9091	2279	4111
		(7.56)	(7.17)	(4.01)	(20.25)	0	(6.89)	(11.37)	(5.54)	(8.53)
5	Cost C2	41267	29982	47689	138527	0	58643	79925	41151	48188
		(100.00)	(100.00)	(100.00)	(100.00)	0	(100.00)	(100.00)	(100.00)	(100.00)
6	Produce value	54066	45208	28026	124840	0	83443	68522	35690	49505
7	Profit/loss	12798	15226	-19663	-13688	0	24799	-11403	-5461	1317
8	Profit +Family labour	15917	17376	-17751	14370	0	28840	-2313	-3182	5428

Table 16…

Sl. No.	Particular	Cereal	Pulse	Commercial	Vegetable	Fruit	Space	Oilseed	Fodder	All crops
Group III - Medium farmers (2-4 ha cultivated area)										
1	Area under crop	54.39	16.21	46.02	3.40	0.00	1.28	7.73	9.12	138.15
2	Cost A	31810	22162	43046	118246	0	41448	22277	28981	37041
		(71.62)	(72.92)	(84.49)	(68.62)	0	(70.84)	(72.50)	(78.14)	(76.39)
3	Cost B	39695	27837	49506	149177	0	53631	26254	33810	44469
		(89.37)	(91.59)	(97.17)	(86.58)	0	(91.66)	(85.44)	(91.15)	(91.71)
4	Family human labour	4720	2557	1441	23132	0	4883	4473	3281	4018
		(10.63)	(8.41)	(2.83)	(13.42)	0	(8.34)	(14.56)	(8.85)	(8.29)
5	Cost C2	44415	30394	50947	172310	0	58514	30727	37091	48487
		(100.00)	(100.00)	(100.00)	(100.00)	0	(100.00)	(100.00)	(100.00)	(100.00)
6	Produce value	69305	50101	51678	273844	0	109389	33084	39588	63169
7	Profit/benefit	24890	19706	731	101535	0	50875	2356	2497	14681
8	Profit +Family labour	29610	22263	2172	124667	0	55758	6830	5779	18700
Group IV - Semi-medium farmers (4-6 ha cultivated area)										
1	Area under crop	59.42	18.99	79.16	2.10	0.00	3.24	9.50	11.80	184.21
2	Cost A	30788	21657	42175	102968	0	41798	39093	30458	36669
		(70.09)	(69.09)	(82.41)	(49.77)	0	(72.73)	(74.74)	(73.45)	(75.11)
3	Cost B	39416	27848	48347	185953	0	53408	46151	36584	44846
		(89.74)	(88.84)	(94.47)	(89.89)	0	(92.93)	(88.23)	(88.23)	(91.86)
4	Family human labour	4508	3497	2832	20917	0	4063	6157	4882	3972
		(10.26)	(11.16)	(5.53)	(10.11)	0	(7.07)	(11.77)	(11.77)	(8.14)
5	Cost C2	43924	31345	51179	206870	0	57471	52308	41466	48818
		(100.00)	(100.00)	(100.00)	(100.00)	0	(100.00)	(100.00)	(100.00)	(100.00)
6	Produce value	77044	55412	49064	798962	0	103553	58860	52121	70776
7	Profit/loss	33120	24067	-2115	592092	0	46082	6552	10655	21958
8	Profit +Family labour	37628	27564	716	613009	0	50146	12709	15537	25930

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Group V - Big farmers (6 and above ha cultivated area)										
1	Area under crop	125.18	37.33	90.63	3.05	0.00	3.84	24.44	25.33	309.80
2	Cost A	27579	9584	45022	130931	0	61609	37713	16791	32696
		(75.73)	(63.21)	(81.42)	(73.49)	0	(80.44)	(74.71)	(74.36)	(76.80)
3	Cost B	33858	13532	53172	145270	0	68106	44219	20210	39133
		(92.97)	(89.25)	(96.16)	(81.53)	0	(88.93)	(87.61)	(89.50)	(91.92)
4	Family human labour	2560	1629	2126	32902	0	8482	6256	2370	3441
		(7.03)	(10.75)	(3.84)	(18.47)	0	(11.07)	(12.39)	(10.50)	(8.08)
5	Cost C2	36419	15161	55297	178172	0	76588	50475	22580	42574
		(100.00)	(100.00)	(100.00)	(100.00)	0	(100.00)	(100.00)	(100.00)	(100.00)
6	Produce value	54515	36605	67990	104111	0	46484	53753	29153	54554
7	Profit/benefit	18096	21444	12693	-74060	0	-30103	3277	6573	11980
8	Profit +Family labour	20657	23073	14819	-41159	0	-21621	9534	8943	15421
Grand total - All farmers										
1	Area under crop	302.43	102.45	247.12	12.86	0.98	11.90	47.16	61.93	786.83
2	Cost A	29700	16924	44164	119783	258623	49695	38254	26331	35687
		(73.90)	(70.35)	(82.69)	(67.07)	(67.14)	(76.93)	(75.32)	(77.88)	(76.53)
3	Cost B	36736	22047	51207	150220	358107	59124	44683	30812	42849
		(91.40)	(91.65)	(95.87)	(84.12)	(92.96)	(91.53)	(87.98)	(91.14)	(91.89)
4	Family human labour	3454	2009	2205	28362	27117	5474	6103	2996	3781
		(8.60)	(8.35)	(4.13)	(15.88)	(7.04)	(8.47)	(12.02)	(8.86)	(8.11)
5	Cost C2	40190	24055	53412	178582	385224	64599	50786	33807	46631
		(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)
6	Produce value	61445	46150	57184	268434	917257	79381	52811	36911	60914
7	Profit/loss	21255	22095	3772	89852	532033	14782	2025	3103	14284
8	Profit +Family labour	24709	24104	5977	118214	559150	20256	8128	6099	18065

Source: Calculated by author

(Interest on working capital (2 %); interest on fixed capital (3 %); rental value of own land (10 % of produce value); land revenue considered as average per hectare)

Cereal – Bajra, Maize, Oat, Other Cereals, Paddy and Wheat; **Pulse –** Gram, Moong, Moth, Other Pulses, Peas, Tur and Urad **Commercial /Cash–** Castor, Cotton, Gaur Commercial, Sugarcane, Tobacco; **Vegetables –** Onion, Potato and Other vegetables; **Fruit –** Banana; **Fodder –** Lucerne, Other fodders grain; **Spice** – Chilly, Coriander, Cumin seed and Isabgol; and **Oilseed –** Groundnut, Rapeseed & Mustard, Seasamum and Soya bean

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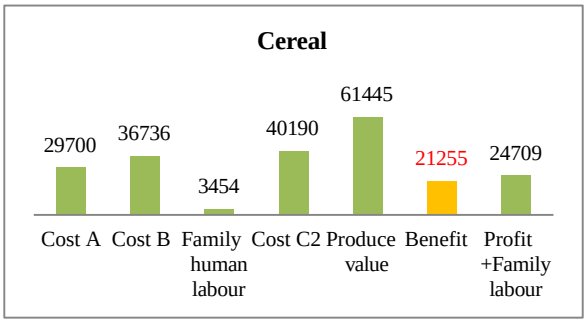
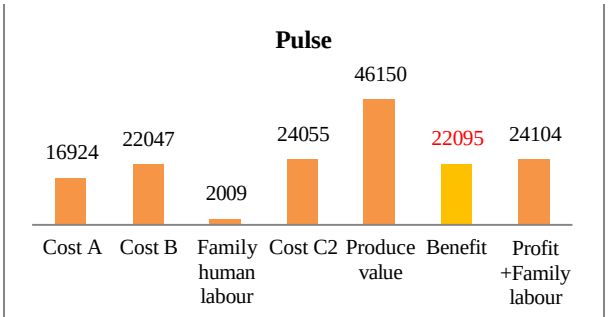
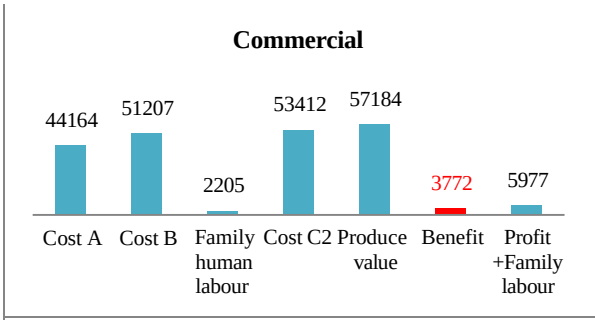
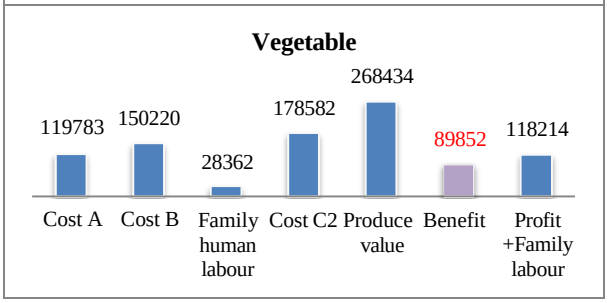
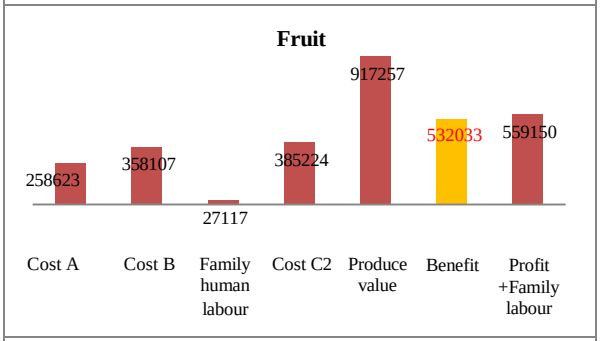
Graph 3- Crop group wise cost and income

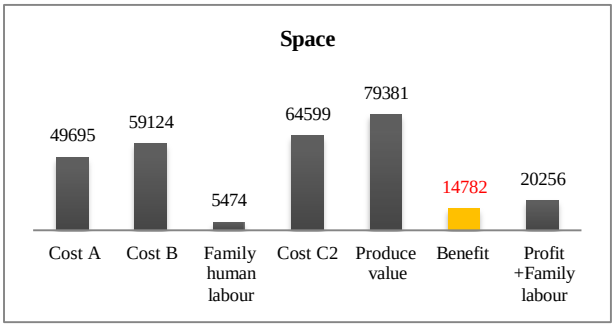


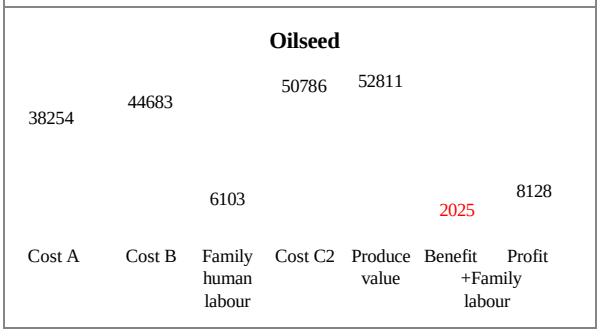


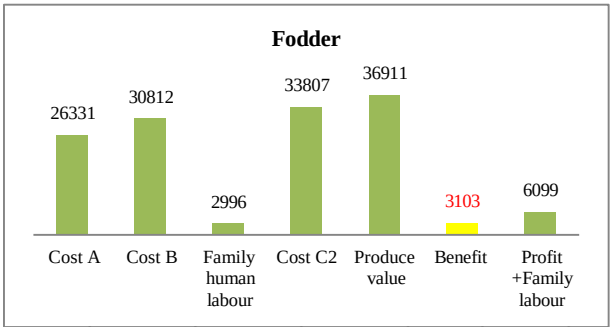












The selected farmers groups have cultivated average area 2.81 ha, 3.05 ha, 4.61 ha, 6.14 ha and 10.33 ha, respectively and average cultivated area has about 5.25 ha during the year in the reference year. The farmer group wise average cultivated area considered for the annual income, Rs 0.72 lakh for marginal group and 1.24 for big group while Rs 0.75 for all groups during the study year 2022-23 (table 17).

Table 17 - Farm Size group and farmers annual income –Year 2022-23

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(Rs Per ha)

Sl. No.	Particular	Group I	Group II	Group III	Group IV	Group V	Grand Total
1	Area under crop	63.31	91.36	138.15	184.21	309.8	786.83
2	Cost A	33219	37987	37041	36669	32696	35687
		(67.25)	(78.83)	(76.39)	(75.11)	(76.80)	(76.53)
3	Cost B	41705	44077	44469	44846	39133	42849
		(84.43)	(91.47)	(91.71)	(91.86)	(91.92)	(91.89)
4	Family human labour	7688	4111	4018	3972	3441	3781
		(15.57)	(8.53)	(8.29)	(8.14)	(8.08)	(8.11)
5	Cost C2	49393	48188	48487	48818	42574	46631
		(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)
6	Produce value	74890	49505	63169	70776	54554	60914
7	**Profit/benefit**	**25497**	**1317**	**14681**	**21958**	**11980**	**14284**
8	Profit and Family labour	33186	5428	18700	25930	15421	18065
9	Total sample farmers	30	30	30	30	30	150
10	Average cultivated area ha	2.81	3.05	4.61	6.14	10.33	5.25
11	**Farmers annual income**	**71647**	**4018**	**67680**	**134823**	**123752**	**74990**
12	Annual come and benefit	93251	16556	86205	159208	159302	94842

Source: Calculated by author and data collected form cost of cultivation scheme, AERC, SPU, and Vallabh Vidyanagar Parentheses indicates the percentage to total cost C2 of respective group

Group I - Grand Total Bajra, Banana, Coriander, Cotton, Cumin seed, Gaur Commercial, Gram, Groundnut, Maize, Moong, Oat, Onion, Other fodders green, Other Pulses, Other vegetables, Paddy, Potato, Rapeseed & Mustard, Seasamum, Sugarcane, Turn, Urad and Wheat

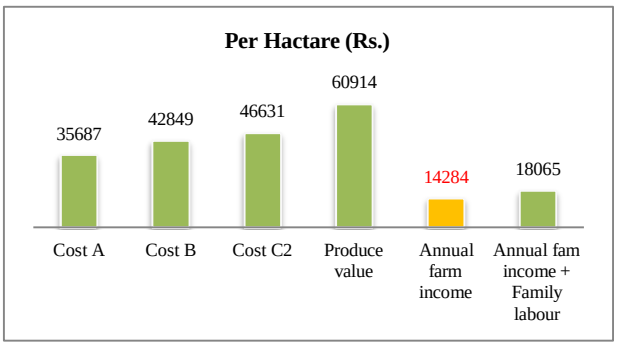
Group II - Bajra, Castor seed, Coriander, Cotton, Cumin seed, Gaur Commercial, Gram, Groundnut, Maize, Moong, Onion, Other fodders green, Other Pulses , Other vegetables, Paddy, Potato, Rapeseed & Mustard, Seasamum, Sugarcane, Turn, Urad, Wheat and Lucerne

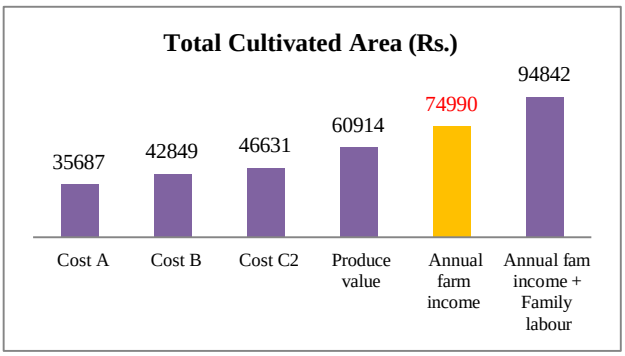
Group III - Bajra, Castor seed, Chillies, Cotton, Cumin seed, Gaur Commercial, Gram, Groundnut, Maize, Moong, Onion, Other fodders green, Soya bean, Other Pulses , Other Cereals, Other vegetables, Paddy, Potato, Rapeseed & Mustard, Seasamum, Sugarcane, Turn, Urad , (Black Gram), Wheat and Lucerne

Group IV - Bajra, Castor seed, Coriander, Chillies, Cotton, Cumin seed, Gaur Commercial, Gram, Groundnut, Maize, Moong, Onion, Other fodders green, Soya bean, Other Pulses , Other Cereals, Other vegetables, Paddy, Potato, Rapeseed & Mustard, Seasamum, Sugarcane, Turn, Urad, Wheat, Tobacco and Lucerne

Group V - Bajra, Castor seed, Coriander, Chillies, Cotton, Cumin seed, Gaur Commercial, Gram, Groundnut, Maize, Isabgol, Moong, Moth, Onion, Other fodders green, Soya bean, Peas, Other Pulses , Other Cereals, Other vegetables, Paddy, Potato, Rapeseed & Muster d, Sesamum, Sugarcane, Turn, Urad, Wheat, Tobacco and Lucerne

Graph 4- Per Hectare of total cultivated area and arm income





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Marketing of farm produces

Now a days the infrastructural, market and service-related facilities have been developing in our country along with the agricultural sector. The government has initiated many activities including e-market and enlargement in minimum support price of farm produces. However, the
above table 18 reveals that more than half of the total farm produces sold in the local market by the selected size groups in the study period.

Table 18 - Farmer groups and crop groups wise marketing of farm produces

(Quantity in quintal)

Sl. No.	Particular	Cereals	Commercial	Fruits	Oilseeds	Pulses	Spice	Vegetable	Grand Total
	Group I - Marginal farmers (less than 1 ha cultivated area)								
1	Total Produce	3475	70	1529	501	242	4	163	4524
2	Sold in village	3036	58	1529	497	241	--	--	3831
		(87.35)	(83.62)	(100.00)	(99.06)	(99.26)	--	--	(85.19)
3	Sold in market	440	11	--	5	2	4	163	692
		(12.65)	(16.38)	--	(0.94)	(0.74)	(100.00)	(100.00)	(14.81)
	Group II - Small farmers (1-2 ha cultivated area)								
1	Total Produce	3516	124	--	55	48	10	580	4333
2	Sold in village	2076	82	--	55	48	--	--	2261
		(59.04)	(66.08)	--	(100.00)	(100.00)	(0.00)	(0.00)	(48.23)
3	Sold in market	1440	42	--	--	--	10	580	2072
		(40.96)	(33.92)	--	(0.00)	(0.00)	(100.00)	(100.00)	(51.77)
	Group III - Medium farmers (2-4 ha cultivated area)								
1	Total Produce	5506	329	--	62	103	9	848	6856
2	Sold in village	4478	218	--	49	103	--	--	4848
		(81.32)	(66.34)	--	(78.91)	(100.00)	(0.00)	(0.00)	(67.99)
3	Sold in market	1028	111	--	13	0	9	848	2009
		(18.68)	(33.66)	--	(21.09)	(0.00)	(100.00)	(100.00)	(32.01)
	Group IV - Semi-medium farmers (4-6 ha cultivated area)								
1	Total Produce	5407	509	--	116	111	12	163	6318
2	Sold in village	1788	327	--	88	104	--	--	2307
		(33.07)	(64.22)	--	(75.98)	(93.68)	--	--	(34.71)
3	Sold in market	3619	182	--	28	7	12	163	4011
		(66.93)	(35.78)	--	(24.02)	(6.32)	(100.00)	(100.00)	(65.29)
	Group V - Big farmers (6 and above ha cultivated area)								
1	Total Produce	3801	587	--	241	219	5	607	5460
2	Sold in village	1397	381	--	185	187	--	--	2150
		(36.76)	(64.91)	--	(76.58)	(85.39)	--	--	(35.88)
3	Sold in market	2403	206	--	57	32	5	607	3310
		(63.24)	(35.09)	--	(23.42)	(14.61)	(100.00)	(100.00)	(64.12)
	Grand total - All farmers								
1	Total Produce	21704	1620	1529	975	724	40	2360	27491
2	Sold in village	12774	1067	1529	873	683	--	--	15397
		(58.86)	(65.88)	(100.00)	(89.54)	(94.36)	--	--	(53.62)
3	Sold in market	8930	553	--	102	41	40	2360	12094
		(41.14)	(34.12)	--	(10.46)	(5.64)	(100.00)	(100.00)	(46.38)

Source: Calculated by author

Parentheses indicate the percentage to total farm produce of respective crop groups

Of the total farm produces, about 85.19 percent by marginal, 48.23 percent by small, 67.99 percent by medium have sold their farm produces in the local market while about 65. 29 percent by semi medium and 64.12 percent by big size group have sold their products in the outside local market as in APMC, market yard. The less quantity of marketed surpluses of farm produces, lack of transportation facilities or availability of vehicles or high rate of transpiration charges, on much variation in the price of farm produces etc. has the main reasons for sold their farm produce in to local market by small land holders

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The crop group and size group wise total farm produces, produces sold in local or village market and sold in outside market etc. are given in table.

Conclusion:

The overall average per hectare cost was Rs 0.47 lakh for all crop groups while an average overall per hectare farm income was about Rs 0.14 lakh in 2016-17. The maximum farm income per hectare earned by the sample farmers from fruit cultivation Rs 5.32 lakh and vegetable Rs0.89 lakh and besides, the minimum farm income earned by sample farmers from oilseed crop group Rs 0.02 lakh. The overall per hectare farm income Rs 0.25 lakh earned by marginal group while Rs 0.12 lakh big groups. The sample farmers earned an average income per hectare Rs 14.28 lakh in 2016-17. The farmer groups have cultivated average area 2.81 ha, 3.05 ha, 4.61 ha, 6.14 ha and 10.33 ha, respectively and from the cultivated area the marginal farmers group earned an annual income Rs 0.72 and big group Rs 1.24 lakh while all groups Rs 0.75 lakh during the study year 2016-17. To secure future of agriculture and to improve livelihood Indian farmers, adequate attention needs to be given to improve the welfare of farmers and raise agriculture income. The country needs to increase use of good quality seeds or BTseed, fertilizer and power supply. Besides, area under fruits and vegetables is required to increase each year. About one third of the increase in farmers' income is easily attainable through better price realization, efficient post-harvest management, competitive value chains and adoption of allied activities.

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Annexure I

Table 19 - Farm Size group and crop group wise cost of inputs and income –Year 2022-23

Group I - Marginal farmers (less than 1 ha cultivated area)

Sl. No.	Particular	Cereal	Pulse	Commercial	Vegetable	Fruit	Space	Oilseed	Fodder	All crops
1	Area under crop	17.83	22.78	12.89	1.38	0.98	1.10	1.85	4.50	63.31
2	Hired human labour	4486	3322	12298	19605	23282	6059	1761	1378	6005
3	Family animal labour	76	78	969	1775	1276	0	270	150	324
4	Hired animal labour	3369	8910	14212	56670	149410	21556	27853	19975	13205
5	Family machine labour	7925	1123	3884	3837	7356	10873	6092	4366	4301
6	Hired machine labour	3221	955	2058	43188	58102	3000	4732	2776	3898
7	Seed/Seedling	3833	699	6907	10843	13347	4450	2284	3104	3545
8	FYM & Fertilizers	665	1957	1006	4736	755	2764	217	0	1266
9	Other Inputs	23600	17068	41357	140679	253552	48726	43233	31773	32568
10	Interest on working capital	472	341	827	2814	5071	975	865	635	651
11	Cost A	24072	17409	42185	143493	258623	49701	44098	32409	33219
12	Interest on fixed capital	722	522	1266	4305	7759	1491	1323	972	997
13	Rental Value of own land	5301	5156	9240	11583	91726	7909	6083	3830	7489
14	Cost B	30095	23087	52690	159381	358107	59101	51503	37211	41705
15	Family human labour	7802	2082	10995	25522	27117	8261	17026	12466	7688
16	Cost C_2	37897	25169	63685	184902	385224	67362	68529	49677	49393
17	Produce value	53012	51557	92396	115830	917257	79091	60830	38299	74890
18	Profit/loss	15115	26388	28711	-69072	532033	11729	-7699	-11377	25497
19	Profit+ Family labour	22917	28470	39706	-43550	559150	19990	9326	1089	33186

Interest on working capital (2 % of 11); Interest on Fixed capital (3 % of 14); Rental Value of Own Land (10 % of MP + BP Value); Land revenue considered as average per hectare; FYM – Farmyard manure

Table 19…

Group II - Small farmers (1-2 ha cultivated area)

Sl. No.	Particular	Cereal	Pulse	Commercial	Vegetable	Fruit	Space	Oilseed	Fodder	All crops
1	Area under crop	45.61	7.14	18.42	2.93	0.00	2.44	3.64	11.18	91.36
2	Hired human labour	4781	1587	7036	4082	0	4137	7099	2832	4800
3	Family animal labour	8675	4885	10188	33881	0	11150	18072	5153	9866
4	Hired animal labour	5951	6950	6757	18029	0	5741	11667	12006	7691
5	Family machine labour	6232	3690	8320	21657	0	8613	5871	2569	6569
6	Hired machine labour	1105	1200	404	473	0	0	727	2355	1059
7	Seed/Seedling	0	487	711	0	0	0	709	98	222
8	FYM & Fertilizers	4398	3365	7464	15119	0	14365	16731	8564	7011
9	Other Inputs	31165	22188	40904	93266	0	44030	60901	33603	37242
10	Interest on working capital	623	444	818	1865	0	881	1218	672	745
11	Cost A	31789	22632	41722	95132	0	44911	62119	34275	37987
12	Interest on fixed capital	954	679	1252	2854	0	1347	1864	1028	1140
13	Rental Value of own land	5407	4521	2803	12484	0	8344	6852	3569	4950
14	Cost B	38149	27832	45777	110469	0	54602	70835	38872	44077
15	Family human labour	3118	2150	1912	28058	0	4041	9091	2279	4111
16	Cost C_2	41267	29982	47689	138527	0	58643	79925	41151	48188
17	Produce value	54066	45208	28026	124840	0	83443	68522	35690	49505
18	Profit/loss	12798	15226	-19663	-13688	0	24799	-11403	-5461	1317
19	Profit +Family labour	15917	17376	-17751	14370	0	28840	-2313	-3182	5428

Interest on working capital (2 % of 11); Interest on Fixed capital (3 % of 14); Rental Value of Own Land (10 % of MP + BP Value); Land revenue considered as average per hectare; FYM – Farmyard manure

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Group III - Medium farmers (2-4 ha cultivated area)

Sl. No.	Particular	Cereal	Pulse	Commercial	Vegetable	Fruit	Space	Oilseed	Fodder	All crops
1	Area under crop	54.39	16.21	46.02	3.40	0.00	1.28	7.73	9.12	138.15
2	Hired human labour	5178	1645	6493	10610	0	3938	3287	2827	5078
3	Family animal labour	10894	5285	10002	40889	0	13410	8174	6395	10577
4	Hired animal labour	4144	5761	5567	17839	0	5383	4024	9376	5690
5	Family machine labour	7143	5002	12081	30099	0	10127	3827	4739	8869
6	Hired machine labour	697	404	668	741	0	0	350	863	639
7	Seed/Seedling	9	578	621	51	0	78	650	85	326
8	FYM & Fertilizers	3097	3028	6745	15673	0	7676	1504	4104	5111
9	Other Inputs	31186	21728	42202	115927	0	40636	21840	28413	36315
10	Interest on working capital	624	435	844	2319	0	813	437	568	726
11	Cost A	31810	22162	43046	118246	0	41448	22277	28981	37041
12	Interest on fixed capital	954	665	1291	3547	0	1243	668	869	1111
13	Rental Value of own land	6930	5010	5168	27384	0	10939	3308	3959	6317
14	Cost B	39695	27837	49506	149177	0	53631	26254	33810	44469
15	Family human labour	4720	2557	1441	23132	0	4883	4473	3281	4018
16	Cost C2	44415	30394	50947	172310	0	58514	30727	37091	48487
17	Produce value	69305	50101	51678	273844	0	109389	33084	39588	63169
18	Profit/loss	24890	19706	731	101535	0	50875	2356	2497	14681
19	Profit +Family labour	29610	22263	2172	124667	0	55758	6830	5779	18700

Interest on working capital (2 % of 11); Interest on Fixed capital (3 % of 14); Rental Value of Own Land (10 % of MP + BP Value); Land revenue considered as average per hectare; FYM – Farmyard manure

Group IV - Semi-medium farmers (4-6 ha cultivated area)

Sl. No.	Particular	Cereal	Pulse	Commercial	Vegetable	Fruit	Space	Oilseed	Fodder	All crops
1	Area under crop	59.42	18.99	79.16	2.10	0.00	3.24	9.50	11.80	184.21
2	Hired human labour	5072	1565	6169	9530	0	4284	2884	3551	5009
3	Family animal labour	10871	6711	10220	35206	0	10316	10123	8435	10292
4	Hired animal labour	3817	5103	4269	19030	0	6511	7756	9338	5006
5	Family machine labour	6414	4580	13308	18312	0	10614	7919	3477	9370
6	Hired machine labour	721	80	1124	480	0	156	3966	699	981
7	Seed/Seedling	0	26	40	1310	0	0	42	0	37
8	FYM & Fertilizers	3265	3144	6194	17057	0	9074	5613	4336	5230
9	Other Inputs	30185	21232	41349	100949	0	40979	38326	29861	35950
10	Interest on working capital	604	425	827	2019	0	820	767	597	719
11	Cost A	30788	21657	42175	102968	0	41798	39093	30458	36669
12	Interest on fixed capital	924	650	1265	3089	0	1254	1173	914	1100
13	Rental Value of own land	7704	5541	4906	79896	0	10355	5886	5212	7078
14	Cost B	39416	27848	48347	185953	0	53408	46151	36584	44846
15	Family human labour	4508	3497	2832	20917	0	4063	6157	4882	3972
16	Cost C2	43924	31345	51179	206870	0	57471	52308	41466	48818
17	Produce value	77044	55412	49064	798962	0	103553	58860	52121	70776
18	Profit/loss	33120	24067	-2115	592092	0	46082	6552	10655	21958
19	Profit +Family labour	37628	27564	716	613009	0	50146	12709	15537	25930

Interest on working capital (2 % of 11); Interest on Fixed capital (3 % of 14); Rental Value of Own Land (10 % of MP + BP Value); Land revenue considered as average per hectare; FYM – Farm yard manure

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Table 19..

Group V - Big farmers (6 and above ha cultivated area)

Sl. No.	Particular	Cereal	Pulse	Commercial	Vegetable	Fruit	Space	Oilseed	Fodder	All crops
1	Area under crop	125.18	37.33	90.63	3.05	0.00	3.84	24.44	25.33	309.80
2	Hired human labour	3216	255	5765	13193	0	6591	5670	1094	3780
3	Family animal labour	6457	2684	8967	50763	0	15846	13336	3608	8097
4	Hired animal labour	3632	2118	4451	18636	0	9239	4354	5028	4142
5	Family machine labour	7285	3632	16505	31172	0	13270	8011	2428	9547
6	Hired machine labour	481	138	697	1239	0	0	222	587	493
7	Seed/Seedling	6	56	209	525	0	2180	948	9	178
8	FYM & Fertilizers	5937	488	7521	12811	0	13252	4408	3684	5794
9	Other Inputs	27039	9396	44139	128364	0	60401	36973	16462	32055
10	Interest on working capital	541	188	883	2567	0	1208	739	329	641
11	Cost A	27579	9584	45022	130931	0	61609	37713	16791	32696
12	Interest on fixed capital	827	288	1351	3928	0	1848	1131	504	981
13	Rental Value of own land	5451	3660	6799	10411	0	4648	5375	2915	5455
14	Cost B	33858	13532	53172	145270	0	68106	44219	20210	39133
15	Family human labour	2560	1629	2126	32902	0	8482	6256	2370	3441
16	Cost C_2	36419	15161	55297	178172	0	76588	50475	22580	42574
17	Produce value	54515	36605	67990	104111	0	46484	53753	29153	54554
18	Profit/loss	18096	21444	12693	-74060	0	-30103	3277	6573	11980
19	Profit +Family labour	20657	23073	14819	-41159	0	-21621	9534	8943	15421

Interest on working capital (2 % of 11); Interest on Fixed capital (3 % of 14); Rental Value of Own Land (10 % of MP + BP Value); Land revenue considered as average per hectare; FYM – Farmyard manure

Grand total - All farmers

Sl. No.	Particular	Cereal	Pulse	Commercial	Vegetable	Fruit	Space	Oilseed	Fodder	All crops
1	Area under crop	302.43	102.45	247.12	12.86	0.98	11.90	47.16	61.93	786.83
2	Hired human labour	4206	909	6184	9584	23282	4976	4695	2277	4395
3	Family animal labour	8531	4201	9705	42625	1276	12595	11969	5382	9301
4	Hired animal labour	4356	3576	5114	19090	149410	7274	6047	8290	5314
5	Family machine labour	6765	3960	13828	25379	7356	10587	6896	2918	8756
6	Hired machine labour	710	298	838	696	58102	42	1156	944	730
7	Seed/Seedling	9	168	309	542	13347	712	671	45	188
8	FYM & Fertilizers	4518	3456	7296	19494	755	12510	6046	5935	6280
9	Other Inputs	29118	16592	43298	117434	253552	48721	37504	25814	34987
10	Interest on working capital	582	332	866	2349	5071	974	750	516	700
11	Cost A	29700	16924	44164	119783	258623	49695	38254	26331	35687
12	Interest on fixed capital	891	508	1325	3593	7759	1491	1148	790	1071
13	Rental Value of own land	6144	4615	5718	26843	91726	7938	5281	3691	6091
14	Cost B	36736	22047	51207	150220	358107	59124	44683	30812	42849
15	Family human labour	3454	2009	2205	28362	27117	5474	6103	2996	3781
16	Cost C_2	40190	24055	53412	178582	385224	64599	50786	33807	46631
17	Produce value	61445	46150	57184	268434	917257	79381	52811	36911	60914
18	Profit/loss	21255	22095	3772	89852	532033	14782	2025	3103	14284
19	Profit +Family labour	24709	24104	5977	118214	559150	20256	8128	6099	18065

Interest on working capital (2 % of 11); Interest on Fixed capital (3 % of 14); Rental Value of Own Land (10 % of MP + BP Value); Land revenue considered as average per hectare; FYM –Farmyard manure

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