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CROPPING PATTERN AN EMPIRICAL ANALYSIS OF FOOD AND NON-FOOD CROPS – A STUDY

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Abstract

The present study entitled "Cropping Pattern: An Empirical Analysis of Food and Non-Food Crops – A Study" examines the landholding pattern, land utilization, and distribution of food and non-food crops among different categories of farmers in Jagityal district of Telangana. The study is based on primary data collected from 360 respondent farmers selected from four mandals, namely Katlapur, Mallial, Buggaram, and Mallapur, through a multi-stage random sampling technique. The respondents were categorized into marginal, small, medium, and large farmers based on operational landholdings. The study analyzed the distribution of land resources and cropping patterns using descriptive statistical tools such as percentages, averages, and comparative analysis. The findings reveal that marginal and small farmers constitute the majority of respondents, whereas medium and large farmers possess a relatively higher share of operational land. Paddy and maize are the major food crops cultivated in the study area, while cotton, chilli, and turmeric are the dominant commercial crops. The cropping pattern indicates a gradual shift towards market-oriented cultivation due to profitability, irrigation availability, and resource capacity of farmers. The study concludes that landholding size, ownership pattern, market conditions, and economic factors significantly influence crop selection decisions. Strengthening irrigation facilities, credit availability, and market support is essential for promoting sustainable and profitable cropping systems.

Keywords: Cropping Pattern, Food Crops, Non-Food Crops, Landholding Pattern, Crop Diversification, Agricultural Development, Commercial Crops, Farm Size, Land Utilization.

Introduction:

Agriculture contributes 4.3 per cent of global GDP but provides employment to 26.4 per cent of the world workforce. "When we look at developing countries, we find the share of agriculture in the economy is half or one-fourth of what its share is in employment," Agriculture sector is playing a crucial role in the economic growth of a country particularly in developing economies. The counter share of GDP is in between 4.0 per cent to 25.0 per cent and more than the half of the employment by the agriculture sector and more than 60.0 per cent of population directly or indirectly depends on the agriculture sector for their livelihood[1].

The agricultural sector plays a pivotal role in the contribution to the GDP of the country since independence. In 1950-51 the GDP share of Agricultural sector was about 59.0 percent at present agriculture share in the GDP is about 17.0 percent. In the employment point of view agriculture sector as the main livelihood for the millions of the people in rural India, more than half of the total population getting the employment by the agricultural sector. On the other hand, agriculture sector has been feeding food for not only for the 140 crores of population but exporting to the rest of world[2].

Agricultural sector has been providing the best platform for the development of industrial sector mainly textile, sugar, edible oil, fertilizer and pesticides and so on and at the same time this sector has the reciprocal demand and supply of industries and service sectors. There is a constant need for raw materials and most of the industries of the country collect their sources of raw materials from the agricultural sector. Half of the income which is generated in India in the industrial sector comes from agricultural-based industries and hence agriculture in India plays a very important role. Agriculture in India is important for the development of the industrial sector and for trading purposes. In addition to some of the agricultural products like fabrics, dairy products, fruits and vegetables basmati rice, sugar tea, coffee, meat and fishers etc are exporting to rest of the world and earning the foreign exchange from the external economies towards the agriculture sector[3].

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Agriculture sector has a significant source of income for the both Governments of Central and State of the country. The government is getting a land taxes. A few different areas like railways and ports are obtaining significant income to provide the transport facilities for the agriculture commodities[4].

Agriculture is providing a major portion of the basic human needs by giving food and non-food needs. By the harvesting the crops of food and non-food crops agriculture is sustained. The cropping pattern in agriculture broadly divided into two folds like Food crops like Paddy, Wheat, Coarse Grains, and Pulses, and the Non-food crops like Oilseeds, Cotton, and Sugarcane, Establishing crops like Tea and Coffee, and Plant crops like organic products, vegetables, blossoms, flowers, cashews, and coconut. Moreover, some related allied products like milk and dairy items, poultry items, and fisheries are also considered as the cultivation area of agriculture[5].

Determinant Factors of Cropping Pattern:

The cropping pattern in agriculture is influenced by a combination of physical, economic, technological, and institutional factors. Climatic conditions such as temperature, rainfall, and humidity play a significant role in determining crop suitability, as these factors vary across different regions. Soil characteristics, including fertility, texture, colour, water-holding capacity, and drainage conditions, also influence the choice of crops cultivated by farmers. Landholding size and ownership pattern are important economic factors affecting cropping decisions. Large farmers generally possess greater resources and tend to adopt commercial crops due to their higher investment capacity and market orientation. In contrast, tenant farmers often prefer short-duration crops to reduce risk, while farmers cultivating their own land may undertake long-duration crops. Irrigation availability is another crucial factor influencing cropping patterns, as assured irrigation facilities encourage the cultivation of water-intensive crops such as paddy, sugarcane, horticultural crops, and floricultural crops. Market conditions, demand and supply trends, and previous season price fluctuations also influence farmers' crop choices. The availability of modern inputs, machinery, labour, and improved technologies contributes to changes in cropping systems. Crop adaptability, expected yield, pest and disease resistance, and suitability to local conditions are also considered while selecting crops. Farmers' knowledge, experience, and awareness regarding improved cultivation practices further influence crop diversification. The cost of cultivation and access to institutional credit significantly affect cropping decisions. Marginal and small farmers with limited financial resources generally prefer low-cost crops, while medium and large farmers with better credit access and financial capacity are more inclined towards commercial crops. Government policies, including price support, subsidies, and agricultural incentives, also play an important role in shaping cropping patterns. Thus, cropping patterns represent the combined effect of natural resources, market forces, farmer capabilities, and policy interventions[6].

Review of Literature:

Subba Rao (1969) examined the supply response of agricultural crops to relative prices. The study found that farmers reallocated land among crops based on price changes. In the case of sugarcane, higher relative prices encouraged an expansion of cultivated area, indicating that prices play a significant role in influencing cropping patterns. **V.K. Pandey (1992)** analyzed land use and cropping patterns in India during 1970–71 to 1990–91. The study revealed considerable fluctuations in crop area and productivity due to climatic uncertainty and market conditions. It recommended strengthening agricultural planning and policy incentives to stabilize cropping patterns. **S.S. Acharya (1993)** studied the impact of agricultural price policy during the pre- and post-liberalization period. The findings showed a shift from food crops to commercial crops, particularly oilseeds, due to better price incentives. The study highlighted the importance of price policy in crop diversification. **Arun S. Patel (2000)** investigated changes in cropping patterns in Gujarat over 25 years. The study observed a decline in the area under cotton and groundnut, while crops such as sugarcane, tobacco, castor, and potato expanded. Increased use of modern agricultural inputs contributed to higher productivity despite changes in cropped area. **Vamsi Vakulabharanam (2004)** examined the relationship between irrigation and agricultural development in Telangana. The study concluded that expansion of irrigation significantly influenced cropping patterns, agricultural production, and farmers' livelihoods, while dependence on groundwater created sustainability concerns. **Adilakshmi et al. (2005)** analyzed spatial and temporal variations in chilli prices and marketing efficiency in Andhra Pradesh. The study found that market price movements directly affected the cropping pattern of commercial crops such as chilli, turmeric, and cotton. Regulated markets performed better than unregulated markets. **Elumalai Kannan and Sujata Sundaram (2011)** studied changes in India's cropping pattern and found a significant shift from food crops to non-food crops. The study attributed this

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transformation to changing market demand, technological advancement, irrigation expansion, and higher profitability of commercial crops. **Emily S. Cassidy et al. (2013)** highlighted global changes in land use and cropping patterns. The study reported that increasing industrial demand and biofuel production encouraged farmers to allocate more land to non-food crops, thereby influencing agricultural diversification worldwide. **Latika Devi et al. (2017)** analyzed pulse cropping patterns in India from 1950–51 to 2014–15. The study found that although pulse production and productivity increased significantly over time, the area under pulse cultivation remained relatively stagnant, indicating the need for policy support to promote pulse cultivation. **Kotla Saritha (2023)** examined shifts in cropping patterns in Telangana using a Markov Chain approach. The study concluded that cropping patterns have become highly dynamic, with substantial expansion of paddy, cotton, and chilli cultivation, while the area under pulses and oilseeds declined. Improved irrigation, mechanization, and market opportunities were identified as the major drivers of these changes.

Existing studies have extensively examined cropping pattern changes in relation to prices, irrigation, technology, and policy at national and state levels. However, limited research provides an integrated, district-level analysis that simultaneously evaluates the combined influence of economic, institutional, environmental, and market factors over recent years. Moreover, insufficient attention has been given to the long-term sustainability, climate resilience, and resource-use implications of changing cropping patterns, particularly in rapidly transforming agricultural regions such as Telangana.

Methodology:

The study is based on primary data collected through a structured interview schedule from 360 sample farmers**,** with 90 respondents considered 25.0 percent in each selected from the mandals of Katlapur, Malliala, Buggaram, and Mallapur in Jagityal District in Telangan**.** Farmers were classified into four landholding categories of marginal, small, medium, and large based on operational landholdings. The total sample covered 1,641.40 acres**,** with an average farm size of 4.56 acres**.** Descriptive statistical techniques, including frequencies, percentages, averages, and comparative analysis, were employed to examine landholding distribution and assess cropping patterns of food and non-food crops across farm-size categories and selected mandals. The multi-stage random sampling technique has been adopted for the study. In the Overall, the study selected 360 respondents from 6,469 farmers across the eight sample villages, maintaining an equal sample of 45 farmers from each village**.** The overall sampling ratio was 17.96:1**,** indicating that, on average, every 18th farmer was selected for inclusion in the study. This systematic sampling procedure ensured adequate and representative coverage of farmers across all selected villages.

Objectives:

1. To examine the landholding pattern of respondent farmers in the sample area
2. To identify the land-ownership and utilization pattern of respondents
3. To analyze the distribution of respondents and land under different crops of food and non food crops in the selected area

To justify these objective the study has been adopted 5 tables based on the primary data, the tables mainly on category-wise, land ownership and operated landholdings, crop-wise distribution of respondents and along with land distribution under different crops of food and non-food crops. All the five table only simple percentage and averages based prepared for the study.

Table 1 reveals the category-wise and mandal-wise distribution of respondent farmers and their operational landholdings in the study area. The study covered 360 farmers selected equally from four mandals Katlapur, Mallial, Buggaram, and Mallapur with 90 respondents from each mandal. The total operational land under the sampled farmers was 1,641.40 acres**,** resulting in an overall average landholding of 4.56 acres per farmer**.**

Among the respondents, 145 were marginal farmers**,** constituting the largest category. Their distribution across the mandals was 38 in Mallapur, 37 in Mallial, 36 in Katlapur, and 34 in Buggaram**.** Together, these farmers cultivated 316.01 acres**,** of which Mallapur accounted for the highest area (85.48 acres)**,** followed by Katlapur (81.22 acres), Mallial (79.93 acres), and Buggaram (69.38 acres). The average landholding of marginal farmers was 2.18 acres**,** ranging from 2.04 acres in Buggaram to 2.26 acres in Katlapur**.**

Table - 1

Particulars of Category and mandal wise Distribution of Respondent Farmers Land in Acres

Landholdings	Katlapur	Mallaila	Buggaram	Mallapur	Total
Marginal	36	37	34	38	145

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Total Land	81.22	79.93	69.38	85.48	316.01
Average Size	2.26	2.16	2.04	2.25	2.18
Small Farmers	29	27	36	30	122
Total Land	110.89	98.29	132.48	122.48	464.14
Average Size	3.82	3.64	3.68	4.08	3.80
Medium Farmers	16	19	15	13	63
Total Land	113.06	121.06	100.83	103.65	438.6
Average Size	7.07	6.37	6.72	7.97	6.96
Large Farmers	9	7	5	9	30
Total Land	113.87	98.6	82.78	127.4	422.65
Average Size	12.65	14.09	16.56	14.16	14.09
Total Farmers	90	90	90	90	360
Total Land	419.04	397.88	385.47	439.01	1641.4
Average Size	4.66	4.42	4.28	4.88	4.56

Source: Field Study

The small farmer category comprised 122 respondents cultivating 464.14 acres**,** with an average holding of 3.80 acres. Buggaram had the highest number of small farmers (36), followed by Mallapur (30), Katlapur (29), and Mallial (27). Buggaram also recorded the largest cultivated area (132.48 acres), while Mallapur, Katlapur, and Mallial accounted for 122.48, 110.89, and 98.29 acres, respectively. The average farm size in this category varied between 3.64 and 4.08 acres**.**

The medium farmer group included 63 respondents operating 438.60 acres**,** with an average landholding of 6.96 acres. Mallial had the highest number of medium farmers (19), followed by Katlapur (16), Buggaram (15), and Mallapur (13). Mallial also possessed the largest area (121.06 acres), while the average farm size ranged from 6.37 acres in Mallial to 7.97 acres in Mallapur**.**

The large farmer category consisted of 30 respondents cultivating 422.65 acres, with an overall average holding of 14.09 acres. Katlapur and Mallapur each had nine large farmers, Mallial had seven, and Buggaram had five. Although Buggaram had the highest average farm size **(**16.56 acres**)**, Mallapur recorded the largest total area under large farms **(**127.40 acres**)**.

Overall, the findings indicate that average landholdings across the four mandals were fairly uniform, ranging from 4.28 to 4.88 acres. While the distribution of respondents varied among farm-size categories, the operational landholding pattern remained relatively consistent across the study area, suggesting a balanced representation of different farm-size groups in the sample.

Table – 2
Category-wise Land Distribution of Respondents Particulars

Particulars	Marginal Farmers	Small Farmers	Medium Farmers	Large Farmers	Total
No. Farmers	145	122	63	30	360
% of Respondents	40.3	33.8	17.5	8.3	100.0
Total Land	316.29	464.11	438.35	422.65	1641.4
Land Percentage	19.3	28.3	26.7	25.8	100.0
Average Size of Land	2.18	3.81	6.96	14.1	4.56

Source: Field Study

Category-wise land distribution particulars of the respondent farmers have been given from the table – 2 The total 360 respondent farmers possess 1641 acres of total land with the average size of 4.5 acres in the overall study. The category

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wise distribution of land particulars are as follows, out of 360 respondents are having the total land 1641 acres and average 4.56 acres, in this aspect MF category is 145 respondents and it constitutes as 40.3 percent and they have 316.29 acres of land constitutes as 19.3 percent with 2.18 as the average size of land. There are 122 respondent farmers are under SF category and its share is 33.8 percent have the total land of 464 acres with 28.3 percent and the average 3.81 acres. In the Med. F category there are 63 respondent farmers with 17.5 percent and the total land 438 acres and it constitutes as 26.7 percent and the average size is 6.96 acres. Out of, only 30 respondent farmers belongs to LF category and their share is also little bit of 8.3 percent, but they have 422 acres of land and its share is 25.8 percent and the average size of land is 14.1 acres. The respondents share and the land share is not similar, in case of MF and SF categories respondent percentage is significantly higher than the land share and it is viz a viz in the categories of Med. F and LF. This data gives the information that land ownership is more concentrate among the LF and Med. F categories of farmers in the study area.

Table – 3 presents the land particulars of the respondent farmers in the study area. The land resources of the farmers were classified into own land, leased-in land, leased-out land, waste land, and net operated land. The net operated area was calculated by adding own land and leased-in land and deducting leased-out and waste land from the total land. The total land possessed by the 360 respondent farmers was 2230 acres, of which 1503 acres belonged to own land, accounting for 67.39 percent of the total land.

Among different categories of farmers, large farmers possessed the highest share of own land with 429 acres, followed by small farmers with 415 acres, medium farmers with 331 acres, and marginal farmers with 328 acres. The total net operated land was 1470 acres, constituting 65.92 percent of the total land. Small farmers operated the largest area of 401 acres, followed by large farmers with 386 acres, medium farmers with 382 acres, and marginal farmers with 301 acres.

Table – 3

Land Particulars of the Respondent Farmers

Land Particulars	Marginal Farmers	Small Farmers	Medium Farmers	Large Farmers	Total
Own Land	328 (21.82) [66.0]	415 (27.61) [64.14]	331 (22.02) [61.75]	429 (28.54) [78.0]	**1503** **(100.0)** **[67.39]**
Leased in Land	71 (20.46) [14.28]	109 (31.41) [16.84]	128 (36.89) [23.9]	39 (11.24) [7.10]	**347** **(100.0)** **[15.56]**
Leased out Land	78 (32.77) [15.7]	89 (37.39) [13.8]	40 (16.81) [7.46]	31 (13.03) [5.63]	**238** **100.0)** **[10.67]**
Waste Land	20 (14.08) [4.02]	34 (23.94) [5.30]	37 (26.05) [6.90]	51 (35.91) [9.3]	**142** **(100.0)** **[6.36]**
Net Operated Land	**301** **(20.47)** **[60.56]**	**401** **(27.27)** **[61.97]**	**382** **(25.98)** **[71.26]**	**386** **(26.25)** **[70.18]**	**1470** **(100.0)** **[65.92]**
Total Land	**497** **(22.28)** **[100.0]**	**647** **(29.01)** **[100.0]**	**536** **(24.03)** **[100.0]**	**550** **(24.66)** **[100.0]**	**2230** **(100.0)** **[100.0]**

Source: Field Study

The leased-in land accounted for 347 acres, representing 15.56 percent of the total land. Medium farmers had the highest leased-in land of 128 acres, followed by small farmers with 109 acres, marginal farmers with 71 acres, and large farmers with 39 acres. The total leased-out land was 238 acres, of which small farmers contributed the highest share with 89 acres, followed by marginal farmers with 78 acres, medium farmers with 40 acres, and large farmers with 31 acres. Waste

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land accounted for 142 acres, representing 6.36 percent of the total land, with large farmers having the highest share of 51 acres.

Category-wise analysis indicates that small farmers possessed the largest share of total land with 647 acres, followed by large farmers with 550 acres, medium farmers with 536 acres, and marginal farmers with 497 acres. The proportion of own land was higher across all categories, with large farmers recording the highest share. Medium farmers had a greater dependence on leased-in land, which contributed to their higher net operated area. The findings indicate that more than half of the total land was under active cultivation, reflecting the importance of operational land availability in determining cropping patterns and agricultural performance in the study area.

Table – 4

Particulars of Crop and Category-wise Distribution

Crop Details	Marginal Farmers	Small Farmers	Medium Farmers	Large Farmers	Total
Paddy	145 (40.28) [100.0]	122 (33.89) [100.0]	63 (17.50) [100.0]	30 (8.33) [100.0]	**360** **(100.0)** **[100.0]**
Maize	82 (37.10) [56.55]	76 (34.39) [62.30]	45 (20.36) [71.43]	18 (8.14) [60.0]	**221** **(100.0)** **[61.39]**
Vegetables	15 (30.61) [10.34]	24 (48.97) [19.67]	06 (12.24) [9.52]	04 (8.16) [13.33]	**49** **(100.0)** **[13.61]**
Cotton	116 (38.41) [80.0]	118 (39.07) [96.72]	42 (13.91) [66.67]	26 (8.61) [86.67]	**302** **(100.0)** **[83.89]**
Chilly	30 (17.75) [20.69]	59 (34.91) [48.36]	52 (30.77) [82.54]	28 (16.57) [93.33]	**169** **(100.0)** **[46.94]**
Turmeric	11 (6.67) [7.59]	68 (41.21) [55.74]	59 (35.76) [93.65]	27 (16.36) [90.0]	**165** **(100.0)** **[45.83]**
Sugarcane	01 (3.23) [0.69]	08 (25.81) [6.56]	13 (41.94) [20.63]	09 (29.03) [30.0]	**31** **(100.0)** **[8.61]**
Total	**145** **(40.28)** **[100.0]**	**122** **(33.89)** **[100.0]**	**63** **(17.50)** **[100.0]**	**30** **(8.33)** **[100.0]**	**360** **(100.0)** **[100.0]**

Source: Field Study

Table – 4 presents the crop-wise and category-wise distribution of respondent farmers in the study area. The farmers were found to cultivate both food crops and commercial crops, including paddy, maize, vegetables, cotton, chilly, turmeric, and sugarcane. The cropping pattern indicates that farmers have diversified their cultivation based on profitability, market demand, and resource availability.

All 360 respondent farmers were cultivating paddy, indicating that it is the major food crop in the study area. The distribution of paddy growers was 145 marginal farmers, 122 small farmers, 63 medium farmers, and 30 large farmers. Maize was cultivated by 221 farmers, with marginal farmers accounting for the highest share, followed by small, medium, and large farmers. Among maize cultivators, 37.10 percent belonged to the marginal farmer category, while small, medium, and large farmers contributed 34.39 percent, 20.36 percent, and 8.14 percent respectively.

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Vegetable cultivation was practiced by 49 respondents. Small farmers had the largest contribution with 48.97 percent, followed by marginal farmers with 30.61 percent, medium farmers with 12.24 percent, and large farmers with 8.16 percent. This indicates that small and marginal farmers were more involved in vegetable cultivation due to its suitability for smaller landholdings and frequent income generation.

Among commercial crops, cotton was the most widely cultivated crop, with 302 farmers engaged in its production. Small farmers constituted the highest share of cotton growers with 39.07 percent, followed by marginal farmers with 38.41 percent, medium farmers with 13.91 percent, and large farmers with 8.61 percent. Chilli cultivation was reported by 169 farmers, where small farmers had the highest share, followed by medium, marginal, and large farmers. Turmeric was cultivated by 165 farmers, with small and medium farmers contributing the major share. Sugarcane cultivation was limited to 31 farmers, with medium farmers having the highest participation followed by large and small farmers.

Category-wise analysis reveals that all marginal farmers cultivated paddy, while cotton and maize were the major crops among this group. Small farmers showed greater preference for cotton, maize, and turmeric cultivation. Medium farmers mainly concentrated on turmeric, chilli, and maize, whereas large farmers preferred chilli, turmeric, and cotton cultivation. Sugarcane cultivation was more common among medium and large farmers due to higher investment requirements and longer crop duration.

The overall findings indicate that paddy remains the dominant food crop, while cotton, chilli, and turmeric are the major commercial crops in the study area. Farmers across different categories adopted multiple cropping practices, combining food and non-food crops to improve income opportunities and reduce production risks. The cropping pattern reflects the influence of landholding size, market opportunities, and profitability considerations among different categories of farmers.

Table – 5 presents the crop-wise and category-wise distribution of cultivated land among the respondent farmers in the study area. The farmers were found to cultivate major food crops such as paddy and maize, along with commercial crops including cotton, chilli, turmeric, sugarcane, and vegetables. The total operated land under different crops was 1470 acres, distributed among marginal, small, medium, and large farmer categories.

Among different categories of farmers, small farmers occupied the highest cultivated area with 406 acres, accounting for 27.62 percent of the total operated land, followed by large farmers with 398 acres, medium farmers with 380 acres, and marginal farmers with 286 acres. The crop-wise distribution indicates that maize occupied the largest area with 389 acres, representing 26.46 percent of the total cultivated land. Paddy and cotton were the next major crops, occupying 358 acres and 352 acres respectively. Chilli, turmeric, sugarcane, and vegetables accounted for relatively smaller shares of cultivated land.

Table – 5
Crop and Category-wise Land Distribution Particulars

Name of Crop	Marginal Farmers	Small Farmers	Medium Farmers	Large Farmers	Total
Paddy	102 (28.49) [35.66]	118 (32.96) [29.06]	91 (25.42) [23.95]	47 (13.13) [11.81]	**358** **(100.0)** **[24.35]**
Maize	69 (17.74) [24.13]	114 (29.31) [28.08]	86 (22.11) [22.63]	120 (30.85) [30.15]	**389** **(100.0)** **[26.46]**
Vegetables	12 (21.43) [4.20]	10 (17.86) [2.46]	16 (28.57) [4.21]	18 (32.14) [4.52]	**56** **(100.0)** **[3.81]**
Cotton	79 (22.44) [27.62]	104 (29.55) [25.62]	66 (18.75) [17.37]	103 (29.26) [25.88]	**352** **(100.0)** **[23.95]**
Chilly	14 (10.61)	31 (23.48)	46 (34.85)	41 (31.06)	**132** **(100.0)**

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	[4.90]	[7.64]	[12.11]	[10.30]	**[8.98]**
Turmeric	8 (6.96) [2.80]	21 (18.26) [5.17]	49 (42.61) [12.89]	37 (32.17) [9.30]	**115** **(100.0)** **[7.82]**
Sugarcane	2 (2.94) [0.70]	8 (11.76) [1.97]	26 (38.24) [6.84]	32 (47.06) [8.04]	**68** **(100.0)** **[4.63]**
Total	**286** **(19.46)** **[100.0]**	**406** **(27.62)** **[100.0]**	**380** **(25.85)** **[100.0]**	**398** **(27.07)** **[100.0]**	**1470** **(100.0)** **[100.0]**

Source: Field Study

Maize cultivation covered 389 acres in the study area. Large farmers allocated the highest area of 120 acres, followed by small farmers with 114 acres, medium farmers with 86 acres, and marginal farmers with 69 acres. Paddy cultivation occupied 358 acres, of which small farmers contributed the highest area with 118 acres, followed by marginal farmers with 102 acres, medium farmers with 91 acres, and large farmers with 47 acres. Cotton was cultivated on 352 acres, with small farmers having the largest share of 104 acres, closely followed by large farmers with 103 acres. Marginal and medium farmers accounted for 79 acres and 66 acres respectively.

Commercial crop cultivation showed variations among different categories of farmers. Chilli was cultivated on 132 acres, with medium farmers contributing the highest area of 46 acres, followed by large farmers with 41 acres, small farmers with 31 acres, and marginal farmers with 14 acres. Turmeric cultivation covered 115 acres, where medium farmers had the largest share with 49 acres, followed by large farmers with 37 acres, small farmers with 21 acres, and marginal farmers with 8 acres. Sugarcane occupied 68 acres, and large farmers accounted for the highest cultivated area with 32 acres, followed by medium farmers with 26 acres. The participation of marginal farmers in sugarcane cultivation was very limited. Vegetable cultivation was restricted to 56 acres, with large farmers contributing the highest area, followed by medium, marginal, and small farmers.

Category-wise analysis shows that small farmers cultivated 406 acres, with paddy being the dominant crop occupying 118 acres, followed by maize and cotton with 114 acres and 104 acres respectively. Large farmers cultivated 398 acres, mainly under maize and cotton, which accounted for 120 acres and 103 acres respectively. Medium farmers possessed 380 acres of cultivated land, with paddy occupying the highest area of 91 acres, followed by maize, cotton, turmeric, and chilli. Marginal farmers cultivated 286 acres, where paddy accounted for the largest share with 102 acres, followed by cotton and maize.

The findings reveal that food crops, particularly paddy and maize, occupied a significant proportion of cultivated land across all farmer categories due to their traditional importance and suitability to local conditions. Among commercial crops, cotton emerged as the major crop, followed by chilli and turmeric, reflecting the increasing market orientation of farmers. Medium and large farmers showed greater preference for high-value commercial crops such as chilli, turmeric, and sugarcane due to their larger operational holdings and investment capacity. Overall, the cropping pattern indicates diversification between food and non-food crops, with farmers adopting commercial crops to enhance income opportunities while maintaining food crop cultivation for household and market requirements.

Summary and Conclusion:

The study reveals that marginal and small farmers together constitute nearly three-fourths of the total respondents, while medium and large farmers possess a comparatively larger share of operational land, indicating unequal land distribution across farm categories. Although own land forms the major component of total landholdings, leased-in cultivation is more prominent among medium farmers, resulting in a relatively higher net operated area. Paddy and maize remain the dominant food crops across all farm categories, reflecting their importance for food security and local consumption. Among commercial crops, cotton occupies the largest area, followed by chilli and turmeric, demonstrating the increasing commercialization of agriculture in the study area. Sugarcane cultivation is concentrated mainly among

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medium and large farmers because of its higher investment requirements and longer crop duration. The findings further indicate that farmers follow a diversified cropping pattern by combining food and non-food crops to reduce production risks and improve farm income. The study concludes that cropping patterns in the selected mandals of Jagityal district are strongly influenced by landholding size, land ownership, and operational land availability. While paddy and maize continue to dominate the food crop sector, commercial crops such as cotton, chilli, turmeric, and sugarcane have gained considerable importance due to better market opportunities and higher profitability. Medium and large farmers exhibit greater crop diversification and commercial orientation because of their larger operational holdings and better resource availability, whereas marginal and small farmers continue to prioritize food crops alongside selected commercial crops. The coexistence of food and non-food crops reflects a balanced strategy adopted by farmers to ensure household food security while enhancing farm income. Overall, the study highlights an ongoing transition from subsistence-oriented farming towards market-oriented agriculture, emphasizing the need for policies that strengthen irrigation, institutional credit, extension services, and market infrastructure to promote sustainable and profitable cropping systems across all categories of farmers.

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