

CHAMARAJANAGAR DISTRICT TALUK-WISE AGRICULTURAL CROP DISTRIBUTION AND PRODUCTION: A GEOGRAPHICAL ANALYSIS

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ABSTRACT

Agriculture is the main economic activity in Chamarajanagar district and it sustains a large rural population. In the southern dry agro-climatic region of Karnataka, the crop distribution varies with rainfall, soils, relief and irrigation. The principal crops are paddy, ragi, maize, jowar, pulses, oilseeds, cotton and sugarcane. Banana, turmeric and vegetables are major horticultural crops. The present study deals with analysis of crop distribution and production of Chamarajanagar, Gundlupet, Kollegal, Yelandur and Hanur taluks. It emphasizes the different agricultural patterns and suggests crop diversification, efficient irrigation, watershed development, precision farming and better marketing for sustainable agricultural development.

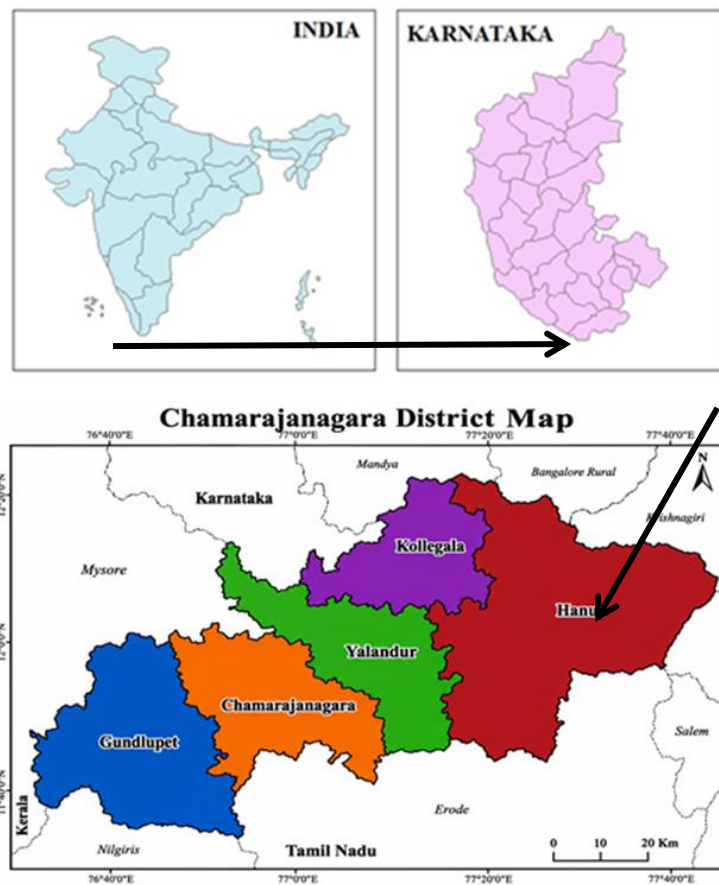
Keywords: Chamarajanagar, agricultural geography, crop distribution, crop production, taluk, irrigation, Karnataka, dryland agriculture.

INTRODUCTION

Chamarajanagar district is located in the south of Karnataka bordering Tamil Nadu and Kerala. It is an important agricultural district having five taluks namely Chamarajanagar, Gundlupet, Kollegal, Yelandur and Hanur. The area is located in southern dry agro climatic zone and agriculture is heavily dependent on rainfall, soils, terrain and irrigation. In 2020, the district had a gross cropped area of about 1.84 lakh hectares and 1.48 lakh hectares of net sown area with nearly 74% rainfed. The major crops are Paddy, ragi, maize, pulses, groundnut, sunflower, cotton and sugarcane. Horticultural crops like banana, turmeric, coconut, onion and vegetables bring more diversification to the agricultural economy.

GEOGRAPHICAL SETTING OF CHAMARAJANAGAR DISTRICT

Chamarajanagar district is a district in the southern part of the state of Karnataka, India. It lies roughly between latitudes 11°40' and 12°15' North and longitudes 76°20' and 77°00' east. It is bordered by Mysuru district to the north, Tamil Nadu on the south and southeast and Kerala toward the southwest. Chamarajanagar, located at the foot of the Western Ghats, is an important transition zone between Karnataka and Tamil Nadu. Chamarajanagar town, the district headquarters, is about 60 km south of Mysuru.



OBJECTIVES

The main objectives of the study are:

1. To analyze the spatial distribution of major agricultural crops of Chamarajanagar district.
2. To study taluk-wise variations in crop cultivation.
3. To review available data on production and productivity of major crops.
4. To identify the role of the physical conditions and rainfall in crop distribution.
5. To suggest measures for sustainable agricultural development.

METHODOLOGY AND DATA SOURCES

The study is primarily based on secondary data. Information has been collected from Chamarajanagar District Administration, Karnataka Economic Survey, NABARD district level planning documents and District Irrigation Plan. The District Irrigation Plan gives crop-wise and taluk-wise details of irrigation. The Karnataka Economic Survey gives the district level area and yield information of important crops.

The analysis is in terms of area in hectares, production in tons or metric tons and productivity in kg/ha or tonnes/ha. Since the historical taluk-wise production series are not uniform across the years, taluk-wise distribution is mainly analyzed through crop-area data and production and productivity are presented with the available district-level crop estimates. Hanur needs

special treatment as several older agricultural datasets were prepared when the district was represented by four taluks/blocks; recent administrative data identify Hanur separately.

AGRICULTURAL CHARACTERISTICS OF CHAMARAJANAGAR DISTRICT

The physical environment of Chamarajanagar offers a lot of agricultural diversity. Red sandy, Red loamy, gravelly & black soils are found in different parts of the district. The southern dry agro-climatic condition favors ragi, jowar, maize, pulses and oilseeds, whereas irrigated areas support paddy and sugarcane. The district has favorable conditions for horticultural crops and sericulture also.

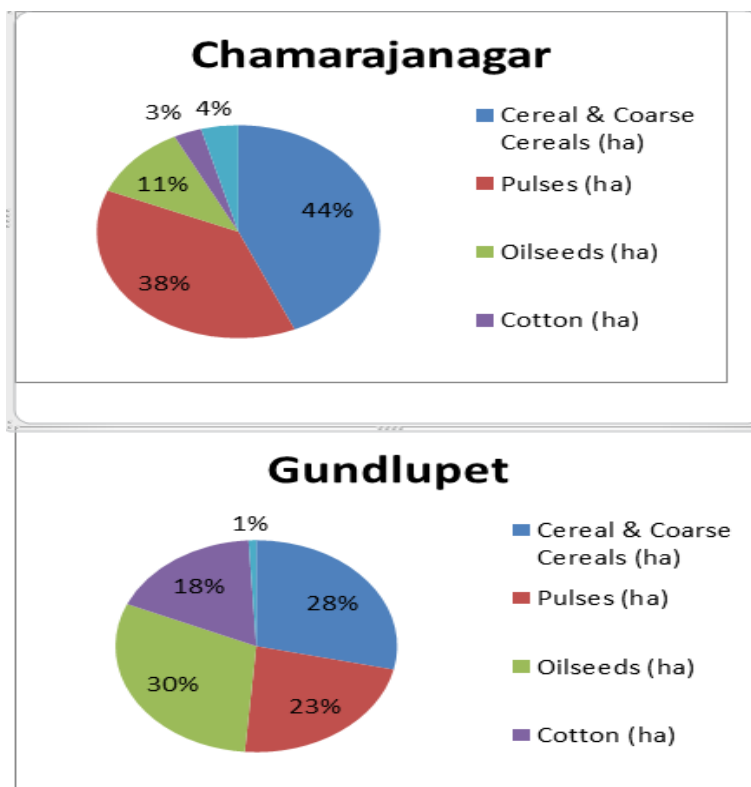
The District Irrigation Plan shows that agriculture depends mainly on rain. In the historical assessment, only about 34% of the cultivated area was irrigated and the rest 66% was rainfed. Canal irrigation is particularly important in parts of Chamarajanagar, Kollegal and Yelandur, while groundwater is a major component of irrigated farming elsewhere.

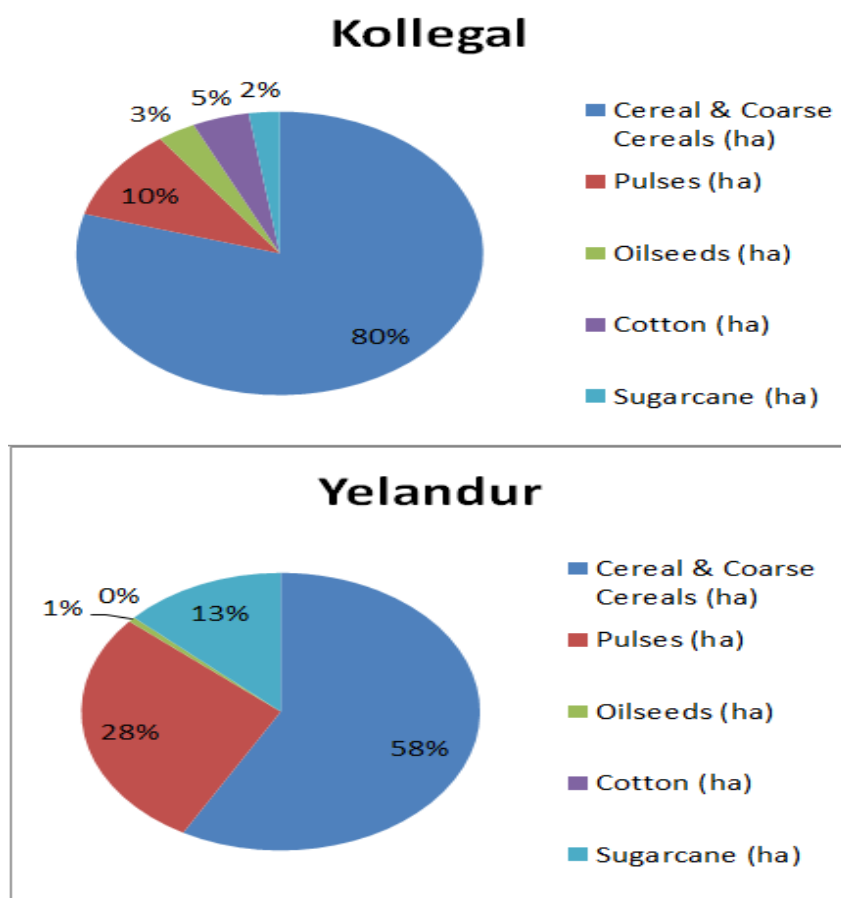
Table 1. Taluk-wise Agricultural Crop Distribution by Major Crop Groups

Taluk	Cereal & Coarse Cereals (ha)	Pulses (ha)	Oilseeds (ha)	Cotton (ha)	Sugarcane (ha)	Total group crop-area (ha)
Chamarajanagar	16,360	14,220	4,230	1,200	1,600	37,610
Gundlupet	16,055	12,800	17,000	9,900	490	56,245
Kollegal	45,700	6,030	1,755	2,600	1,400	57,485
Yelandur	7,070	3,420	70	0	1,600	12,160

Source: District Irrigation Plan

The table shows significant spatial differentiation. Kollegal has the largest area under cereals/coarse cereals. Gundlupet has particularly large areas under oilseeds and cotton. Chamarajanagar has a relatively diversified agricultural structure while Yelandur is having smaller agricultural area with significant cereal and sugarcane cultivation.





TALUK-WISE AGRICULTURAL CROP DISTRIBUTION

Chamarajanagar Taluk

The agricultural economy of the taluk of Chamarajanagar is mixed because of the variations in soils, irrigation and rainfall. Paddy is grown mainly in the irrigated areas while Ragi, Maize, Pulses, Groundnut and Sunflower are rainfed crops. Combined with seasonal assessment, historical irrigation statistics indicate about 2,300 hectares of cereals, 14,060 hectares of coarse cereals, 14,220 hectares of pulses, 4,230 hectares of oilseeds, 1,200 hectares of cotton and 1,600 hectares of sugarcane.

Thus, the taluk represents a mixed farming system with food crops and commercial crops coexisting. Dryland agriculture is greatly benefited by ragi, pulses and oilseeds.

Gundlupet Taluka

Gundlupet is one of the important agricultural taluks in the district. Its agricultural structure is strongly affected by relatively dry conditions and irrigation from groundwater. The historical cropping pattern shows about 16,055 hectares under cereals/coarse cereals, 12,800 hectares under pulses, 17,000 hectares under oilseeds, 9,900 hectares under cotton and about 490 hectares under sugarcane.

The large areas of oilseed and cotton indicate the significance of commercial dryland agriculture. However, the pressure of ground water is a big concern. Historical groundwater assessments showed that Gundlupet was found to have particularly high groundwater development, making water-efficient irrigation critical for long-term agricultural sustainability.

Kollegal Taluk

Kollegal is the largest taluk in the district in terms of geographical area and has a large agricultural area. The crop pattern major crops are cereals/coarse cereals, especially maize and ragi, pulses, oilseeds, cotton and sugarcane. Historical data show 45,700 hectares under cereals and coarse cereals, 6,030 hectares under pulses and 1,755 hectares under oilseeds. Sugarcane is an important irrigated-crop niche.

Cauvery-related irrigation and other surface-water systems have facilitated irrigated cultivation in parts of Kollegal. Hence, the taluk exhibits a mixture of dryland farming and irrigated farming.

Yelandur Taluk

Geographically, Yelandur is the smallest of the historical taluks, but it is agriculturally important. Its agriculture is relatively more influenced by irrigation and fertile valleys. Paddy is the major crop and ragi, pulses and sugarcane are also grown.

In the combined crop assessment, historical crop statistics show 4,500 hectares of irrigated cereals, 2,570 hectares of coarse cereals, 3,420 hectares of pulses and 1,600 hectares of sugarcane. Availability of canal and surface-water irrigation has led to the cultivation of water demanding crops. However, efficient water management is necessary, as agricultural development must be balanced against scarce water resources.

Hanur Taluk

Hanur is now recognized as a separate taluk of the district. Current land-administration data shows Hanur separate from Kollegal and has its own cadastral and village-level administrative data. Hanur's agricultural landscape is greatly influenced by the dry conditions, forests, hills and rainfed farming. Important dry land crops are ragi, maize, pulses, groundnut and others. Care must be taken when comparing directly with the older four-taluk agricultural tables because Hanur and Kollegal have been combined in several older agricultural datasets. Future research Hanur should be analyzed separately using recent Department of Agriculture crop-survey data.

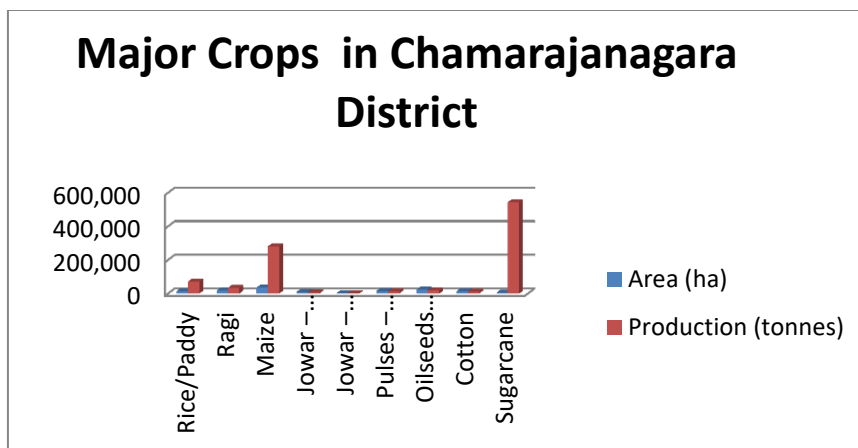
MAJOR CROP PRODUCTION

The importance of cereals is shown by data on production available at the district level. The District Irrigation Plan shows in its evaluation about 71,500 tons of rice production with an average productivity of 4,931 kg/ha. Ragi covered about 17,080 ha and the yield was about 34,084 tons. Maize covered about 36,180 ha and the yield was about 281,294 tons.

Table 2. Selected Major Crop Production

Selected Major Crop Production			
Crop	Area (ha)	Production (tonnes)	Productivity
Rice/Paddy	14,500	71,500	4,931 kg/ha
Ragi	17,080	34,084	1,996 kg/ha
Maize	36,180	281,294	7,775 kg/ha
Jowar – local	10,000	5,640	564 kg/ha
Jowar – hybrid	2,650	3,570	1,347 kg/ha
Pulses – total, Kharif	15,730	11,302	718 kg/ha
Oilseeds – total, Kharif	22,890	18,504	808 kg/ha
Cotton	13,700	11,081	809 kg/ha
Sugarcane	5,090	544,000	106.88 t/ha

Source: Chamarajanagar District Irrigation Plan



The production figures reflect the significance of maize and sugarcane. Although sugarcane covers a smaller area, the large production volume comes from its high productivity. Maize is especially important for its extensive cultivated area and high yield.

Data from the 2020–21 Karnataka Economic Survey indicate Chamarajanagar as a significant maize producer, with around 38,822 hectares and a yield of approximately 3,740 kg/ha. In the same district-level estimations, Ragi occupied around 9,187 hectares and yielded about 1,784 kg/ha.

IRRIGATION AND CROP DISTRIBUTION

Irrigation is one of the most important factors in the geographical distribution of crops. The district agriculture is mainly dependent on rainfall. Intensive cultivation in selected areas is supported by canal, tank, well and borewell irrigation. The District Irrigation Plan mentions the canal water is specially important in parts of Kollegal, Yelandur and Chamarajanagar.

Ragi, jowar, pulses, groundnut and sunflower are favored in rainfed areas because these crops can withstand comparatively lower moisture conditions. In irrigated areas, paddy and sugarcane are favored as these require greater and more assured availability of water.

MAJOR PROBLEMS

The main agricultural problems of the district are variability of rainfall, depletion of ground water, rising cost of cultivation, fragmentation of holdings, shortage of agricultural labor, pest and disease problems, market fluctuations and inadequate post-harvest infrastructure. A large proportion of agricultural holdings are small and marginal farmers who are more vulnerable to climatic and market risks. As per NABARD, almost 90 per cent of farmers are small and marginal farmers.

Gundlupet and other areas of intensive cultivation are putting particular pressure on groundwater. Raising water-intensive crops without parallel gains in water-use efficiency can heighten agricultural vulnerability.

SUGGESTIONS

For Chamarajanagar, sustainable agricultural development requires a combination of technological, institutional and environmental measures. First, the area under drip and sprinkler irrigation needs to be stepped up, especially for sugarcane, banana, vegetables and horticultural crops. Secondly, watershed development, farm ponds, recharge structures and rainwater harvesting should be promoted in rainfed taluks.

Third, the diversification of crops should be promoted. Farmers should grow a mix of cereals, pulses, oilseeds, horticultural crops and livestock, instead of being over-dependent on one single crop. Fourth, soil testing and precision farming should be promoted to improve fertilizer efficiency. Fifth, Farmer Producer Organizations can collectively improve purchase, processing and marketing.

Facilities for cold storage, grading, processing and value addition are of particular importance in case of banana, turmeric, vegetables and other horticultural products. Digital agricultural markets and crop insurance can also help reduce market and climatic risks.

CONCLUSION

Chamarajanagar district is a typical example of spatial variation in agricultural geography. The distribution of crops is closely related to rainfall, soil, irrigation and the local physical conditions. Chamarajanagar taluk is characterized by a diversified crop structure; Gundlupet is a center for oilseeds, cotton and dryland crops; Kollegal has a large cereal and mixed agricultural base; Yelandur has important irrigated paddy and sugarcane cultivation; and Hanur is characterized by predominantly dryland agriculture and a landscape strongly influenced by hills and forests.

The available production statistics point to the importance of maize, paddy, ragi, pulses, oilseeds, cotton and sugarcane, while horticultural crops such as banana and turmeric provide important commercial opportunities. The district's agricultural future will depend on reducing excessive dependence on groundwater, improving the efficiency of irrigation, adopting crops that are resilient to climate, strengthening agricultural marketing and promoting sustainable management of land and water. GIS based taluk and village level crop mapping and annual crop survey data can provide a strong base for future geographical research and agricultural planning.

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