



A STUDY OF CROP COMBINATION REGIONS OF RAMANAGARA DISTRICT

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ABSTRACT :

Agricultural productivity is influenced by Physical socio-economic technological and organization factor. This study is based on secondary data collected from revenue records. In this paper an attempt has been made to Analysis the cropping pattern in Ramanagara district. An endeavour is made here to study the crop combination regions in Ramanagara district for the year 2015-16. The crop date has been computed with the help of J.C.Weavers technique of crop combination. Ramanagara district located at the southern part of Karnataka and Cauvery river basin. Ten crop have been considering for crop combination analysis, among this food grain, miner milts, Ragi and Mulberry are major crops. By computing crop rank and using weaver sheet table of crops combination, such type of study represents real situation of cropping pattern in Ramanagara district and helps to planners and Agricultural scientist for agricultural planning at village level.



KEYWORDS : Cropping pattern, Crop combination, Indian economy.

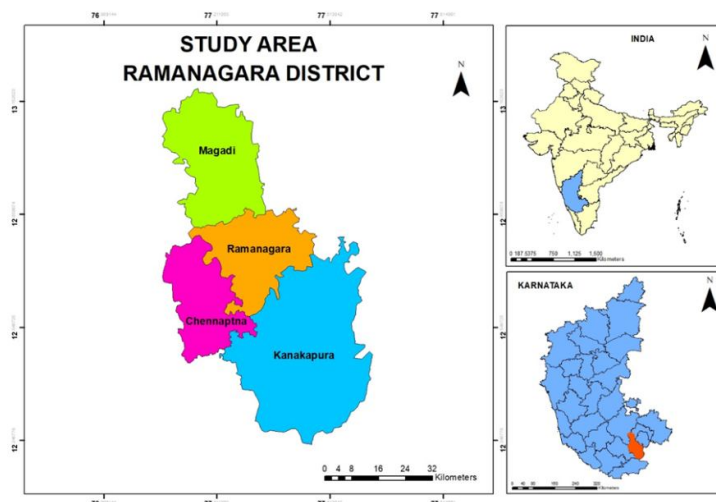
INTRODUCTION

The study of crop combination regions constitutes an important aspect of agricultural geography as it provides a good basis for agricultural regionalization. The crops are generally grown in combinations and it is rarely that a particular crop occupies a position of total isolation the crops in a given areal unit at a given point of time. The distribution maps of individual crops are interesting and useful for planners, but it is even more important to view the integrated assemblage of the various crops grown in an areal unit.

Agriculture is one of the most primary and oldest occupations of Ramanagara district and is the main source of livelihood in Ramanagara district and it is a main source of income. Major crops produce in district are, Ragi, Paddy, Maiza, Tur, Groundnut and Sugarcane, Horticulture is also famous in Ramanagara district.

STUDY AREA:

Ramanagara district is located in the southern part of Karnataka, it is situated on the north by Bengaluru rural and Tumakuru district of Karnataka state, on the East Bengaluru urban district, on the south east Tamilnadu state, on the south Chamarajanagara district, on the south west Mandya district of the Karnataka state. It is located between 12° 24' and 13° 09' North latitude and 77° 06' and 77° 34' East longitude. It has a geographical area of 3576sq km, which accounts for 1.85% of the geographical area of the state and has 27th place in the state, its average elevation is 800 meters above the mean sea level. There are 4 taluks namely Ramanagara, Channapatna, Magadi and Kanakapura in the district.



Map 1: The Study area of Ramanagara District.

Objectives:

- To evaluate the cropping pattern and crop combination in study area.

Data base:

The present study is based on secondary data collect from department of agriculture, Ramanagara district. District statistical office, Socio-economic review of Ramanagara district.

Methodology:

In the attempt for the delineation of agricultural region of the middle west in the united states, weaver computed the percentage of total harvested crop land occupied by each crop that held as much as 1 percent of the total cultivated land in each of the 1081 countries covered in his work. excluding a few countries like Houston and mine shofar in which the crop combination was easy to ascertain, other countries showed a complex and confused picture of the percentage, occupied by different crops, it was, therefore, necessary to devise "a rigorous approach that would provide. Objective constant and preciously respectable procedure and would yield comparable results for different years and localities" in his work weaver calculated deviation of the real percentages of crops (occupying over 1 percent of the cropped) for all the possible combination in the component areal units against a theoretical standard. the theoretical curve for the standard measurement was employed as fallows.

Monoculture = 100 percent of the total harvested crop land in one crop.

2-crop combination = 50 percent in each of two crops.

3-crop combination = 33.3 percent in each of three crops.

4-crop combination = 25 percent in each of four crops.

5-crops combination = 20 percent in each of five crops.

10-crops combination = 10 percent in each of ten crops.

For the determination of the minimum deviation the standard deviation method was used

$$SD = \sqrt{\frac{\sum d^2}{n}}$$

Where d is the difference between the actual crop percentage in a given country (area unit) and the appropriate percentage in the theoretical curve and n is the number of crops in a given combination.

Cropping pattern:

The cropping pattern is based on both time and space-sequence of crop. The variety in cropping pattern is the result of physical, socio-economic factors, physical factors often decide the cropping pattern to a large extent.

Crop combination Region:

The study of crop combination region constitution an important aspect of agricultural geography as it provides a good basis agricultural regionalization. The statistical technique adopted by J.C. Weaver is more accurate and rational and therefore it is quite popular for delineation of crop combination regions. According to this method percentage area of all crops was arranged in descending order for 4 taluks. In present study are 8crops were usedfor computation of crop combination region.

Table 1. Taluk wise are under various crops: Ramanagara district (in %) 2015-16

SL.NO	Crops	Channapatna	Kanakapura	Magadi	Ramanagara
1	Ragi	38.71	48.20	62.05	31.57
2	Fruits	23.54	7.69	13.64	35.40
3	Pulses	12.77	12.11	19.08	13.86
4	Mulberry	15.09	15.84	0.82	9.80
5	Oil seed	2.01	11.38	1.38	2.83
6	Paddy	3.25	3.97	2.02	1.95
7	Maize	2.97	0.26	0.21	3.77
8	Vegetable	1.63	0.50	0.76	0.79
	Total	100	100	100	100

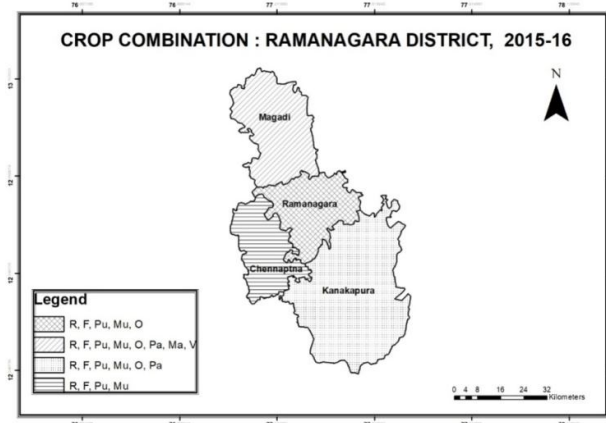
Crop combination:

After the application of weaver standard deviation method for analysing cropping pattern of Ramanagara district, all the four taluks of the district have no mono and two crops combination found. Two taluks have three crops combination and two taluk consists of six crops combination.

Table 2: Crop Combination in Ramanagara District 2015-16.

SL.NO	TALUKS	NO. OF CROP COMBINATION	CROPS
1	Channapatna	4	R, F, Pu, Mu,
2	Ramanagara	5	R, F, Pu, Mu, O,
3	Kanakapura	6	R, F, Pu, Mu, O, Pa,
4	Magadi	8	R, F, Pu, Mu, O, Pa, Ma, V,

Abbreviation- R=Ragi, F=Fruits, Mu=Mulberry, Pu=Pulses, O=Oil seeds, Pa=Paddy, V=Vegetable, Ma=Maize.



Map 2: crop combination in Ramanagara District 2015-16.

Four crops combination:

Four crops combination is found in Channapatna taluk in 2015-16. The crops grown in respective taluks are Ragi, Fruits, Mulberry and Pulses. Our field observations, discussions with farmers and concerned authorities' reveals that, the crop combination from one taluk to another have changed due to some significant reasons like soil fertility, variation in prices of the crops and impact of urban centres.

In addition, it can be generalized that, the taluks receives more rain fall/more irrigation have lesser number of crops under combination. Whereas, the dry taluks/less irrigated taluks exhibit more number of crops under combination Agriculture in Ramanagara district is changing towards commercial type, due to the trend of diffusion of Agricultural innovation.

Five crop combination:

Five crops combination was only confined to Ramanagara taluk in the year 2015-16. The high concentration of land was under fruits and followed by Ragi, Pulses, Mulberry and Maize. This is an account of deep tube well irrigation and recent improvement of agricultural practice. In spite of these factors, the diversity in the combination increased due to variation in Rainfall, Soil, and the interest of farmers in rotation the crops for better yields.

Six crop combination:

Kanakapura taluk have six crop combination. In this taluk crops grown are Ragi, Mulberry, Pulses, Oilseeds, Fruits and Paddy. The reasons for the existence of these crops combination are less rainfall, keen moisture deficiency and edaphic conditions. Most of the crops are grown as drought resistant.

Eight crop combination:

Eight crops combination is found in Magadi taluk in 2015-16, The crop entering into this combination are Ragi, Pulses, Fruits, Paddy, Oil seeds, Mulberry, Vegetable, and Maize. In these, farmers intended to grow ragi of well irrigation facilities and fetching higher prices in land areas.

From the above discussion it is clear that mainly the environmental factors influence the distribution pattern of different crops due to different geographical environment and farmers interest, Agricultural diversity and flexibility is seen throughout the district.

CONCLUSION:

Ragi is the principal crop of the district, pursued by food grains and mineral millets. It is important to note that, different taluks have different cropping pattern but these three have its dominance. This is

because Ragi is not only the staple food in the district but also due it being a monsoonal crop. The formers of the district indulged in traditional agriculture characterized by lack of irrigation, modern agricultural technology, and machinery. Weak economic status and low literacy and low occurrences result in low productivity and production. It directly manifests in cropping pattern. Ragi is the third ranking crops after food grains, and minor millets respectively and the other high ranking like mulberry, fruits and pulses. The crop combination which indicate the level of agriculture technology.

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