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CROP COMBINATION OF DAKSHIN KANNADA DISTRICT: A GEOGRAPHICAL STUDY

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ABSTRACT: -

Agriculture occupies an important in Indian economy. Its contribution income in 2001-02 was up to 22.39 per cent share of GDP and it is reduced up to 15.19% in the year 2013-14 (source: central statistical Organization (ESO). The importance of agricultural sector

remains constant till today and the developing country like India has made remarkable development and achievements in secondary and tertiary sector in few decades. Its high contribution is leading in these sectors in GDP. However the agriculture sector is a major economic activities on which about70% population of the country is till depending on the agricultural sector provides employment food and raw material for various agro industries. However, in the period of globalization, agriculture of India is facing several problems along with the inadequate and erratic nature of rainfall in the country.The Karnataka state is a most developing state of the country which makes remarkable development in the industrial front with the agricultural sector and the agricultural activity remains fundamental one, though the Dakshin Kannada district is located in the west coastal regions of the Karnataka.

KEYWORDS: *Indian economy,Central Statistical Organization (ESO), major economic activity.*

INTRODUCTION :

The Dakshin Kannada district is located in the western regions of Karnataka based on the geographical condition which can be divided in to Coastal region, Central region and Western Ghat region (Western Ghats range found to the western side of the state is in the eastern border of the district and Arabian sea is situated towards the west). The Western Ghats, which is extended in many parts, to the central and coastal region as created valleys, in the central region there are number of hillocks and valleys. This is the prime agriculture land of thedistrict, in this region primarily arecanut, cashew, rubber, coconut and paddy cultivation is primarilyundertaken and to a smaller extent fruits and vegetables are also being cultivated.

Agricultural regionalization is important step for agriculture development and through which we understanding the regional imbalance and disparities. There is increasing sophistication in the principles and techniques which are used to define and delineate agricultural region through which, crop combination analysis is done. Weaver (1954) proposed the objectives, statistical technique of combination analysis to establish crop. Livestock and enterprisecombinations involving both the qualitative and quantitative aspects of crop raising livestock husbandry and functioning form of agriculture. As Per Weaver opinion various crops are cultivated

combined. In present paper attempt has been done to analyze crop combination in DakshinKannad district, Karnataka state in India.

STUDY AREA

Dakshina Kannada is located in the south western part of Karnataka state of India, geographically the district is lies between 130 50' to 140 30' North Latitude and 680 00 to 700 10' East Longitude, it was bifurcated in 1859 from North canara district. The total area of Dakshin Kannada District is 477381 Sq km. Administratively the Dakshin Kannada district isdivided into five tahsilsnamely Bantwal, Belthangadi, Mangalore, Puttur, and Sullia. The study region is bounded from the north by Udupi and Chikkamangalore district, Southern by Kasaragod (Kerala), Kodagu district eastern by Hassan district, and Western by ArabianSea.

OBJECTIVES

The following objective have been setup for the study,

1. To evaluate the cropping pattern and crop combination in study area.
2. To know the agricultural land use of the study area and,
3. To find out the remedies to increase the output of agriculture.

DATA BASE AND METHEDOLOGY

The present study is based on primary and secondary data collected from department of agriculture Mangalore district, District Statistical office, socio-economic reviews of Dakshin Kannada district, District Census Hand Book (2011), etc. and also referred and collected the relevant information, statistical techniques have been used in thisstudy. The taluk is considered as areal unit for investigation and analysis the study area poses five units. Sothe analysis considering the all fivetaluksof district.

An attempt has been made to calculate crop combination, and weaver's method is used. Secondary data is used for this study apart from primary data's and field observations which are carried out in this selected agricultural field of the study area.

DISCUSSION AND ANALYSIS

GENERAL LAND USE

Total geographical area of the Dakshin Kannada District is 4.77 lakh hectors, out of this near about 26.91% area is occupied by forest, land not available for agriculture (non- agricultural land & non-cultivable land) and non-cultivated area fallow land besides this 12.90% area as fallow land which includ current fallow land &other fallow land. Remaining geographical area of district i.e. about 43.34% is net sown Area. Out of the total geographical area of the taluka wise have largest net sown area is Bantwal(39.37) and lowest in Puttur (7.64%).

Table 1.1
General land use: Dakshina Kannada District (%) 2015-16

SL NO	taluks	Geographical area	forest	Area not available for agriculture	Non cultivable area with follow land	Total follow land	Net sown area
1	bantval	71758	7.06	14.96	17.83	32.79	39.87
2	belthangady	137510	36.24	17.45	04.48	21.93	28.66
3	mangalore	85385	03.39	28.11	13.08	41.19	31.93
4	puttur	99697	27.46	23.17	24.90	48.07	7.64
5	sulya	83031	52.12	07.88	24.90	12.32	22.32
	Total district	477381	26.91	0.59	12.31	12.9	43.34

Source: - District Socio-Economic Abstract (2015-16)

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.

The physical environment provides a wide range of possibilities for growing crops, but the social and economic condition determine as to which are the crops to be grown and how much of it is to be devoted to different crops & also, social and cultural values strongly influence the cropping patterns especially in the countries where agriculture is a way of life. Geographers are very keen to present quantitatively the spatial as well as regional patterns of agriculture, the cultural factors also play a vital role in cropping pattern.The Macro and micro level studies on cropping pattern and its spatial behaviors could be undertaken in order to analyses the prospects and problems in a two dimension form. It is highly desirable to have introduction with other members of faculty for understanding the problems in detail and suggest and viable cropping pattern to the formers.

Table no 1.2
Talukawise area under various crops: Dakshin Kannada District (in %) 2015-16

Sl. No	Crop	Bantwala	Belthagadi	Mangalore	Puttur	Sulya	Total
1	Paddy	25.21	23.12	29.16	8.69	13.81	100
2	Arecanut	17.63	23.31	5.54	27.41	26.11	100
3	Pepper	12.76	59.21	2.41	17.14	8.48	100
4	Cashew	21.33	30.05	11.45	21.34	15.82	100
5	Coconut	19.65	31.46	20.62	15.25	13.02	100
6	Rubber	2.54	37.27	2.03	8.98	49.19	100
7	Banana	20.37	28.20	10.37	28.87	12.20	100
8	Jackfruit	38.07	16.46	25.25	12.94	7.29	100
9	Pulses	7.91	31.54	39.99	12.48	8.08	100
10	Oilseed	1.05	79.66	14.68	2.10	2.52	100

In this study area out of total cropped area nearly about 38.63% is under paddy, 0.29%oil seeds and 2.13% is pulses and remaining 58.95% is under arecanut, pepper, cashew. coconut, rubber banana and jackfruits. As such there is no kharif crops grown in this district, only horticultural crops is grown because physical condition like, climate, soil topography etc., are more favorable for these crops.

In horticulture groups of crops arecanut, pepper, cashew, coconut, rubber, banana, jackfruits etc. is

being naturally grown. There is less scope for food crops in the district, and more importance given for commercial crops.

In this region rice is a major crop in Mangaloretaluk, Peppers Cashew, Coconuts are in Belthangaditaluk, Rubber is grown in Sullyataluk, banana in Puttur, Jackfruits in Bantwala and pulses is grown more in Mangaloretaluk.

IRRIGATION

The source of irrigation can be classified into canals, tanks, wells, and other sources in the study area, there are no canal irrigation facilities. Tanks, wells, lift irrigation and though other means of irrigation facilities are provided the details of irrigation are provided in the table No -1.3)

Table No.1.3.
Irrigated and non-irrigated area: DK District-2015-16

Sl,no	Taluks	Total Cropped Area	Irrigated	%	Non-Irrigated Area	%
1	Bantwal	28574	16052	56.27	12522	43.82
2	Belthangadi	39384	20366	51.71	19018	48.28
3	Mangalore	28119	12264	43.61	15855	56.38
4	Puttur	24130	11999	49.72	12131	50.27
5	Sulya	22223	11370	51.16	10853	48.83
	Total	142430	72051	50.58	70739	49.41

CROP COMBINATION:

After the application of Weaver deviation method for analysing cropping pattern of DakshinKannad District, to know the five taluks of the district there is no mono cropping pattern found two taluks have four cropping pattern and onetalukconsists of five crop combination.

THREE CROP COMBINATION: the three cropping pattern in Sulyataluka with areca nut is a major crop, which occupies 43.89% area of the taluk. Along with this major crop rubber and cashew are also associated.

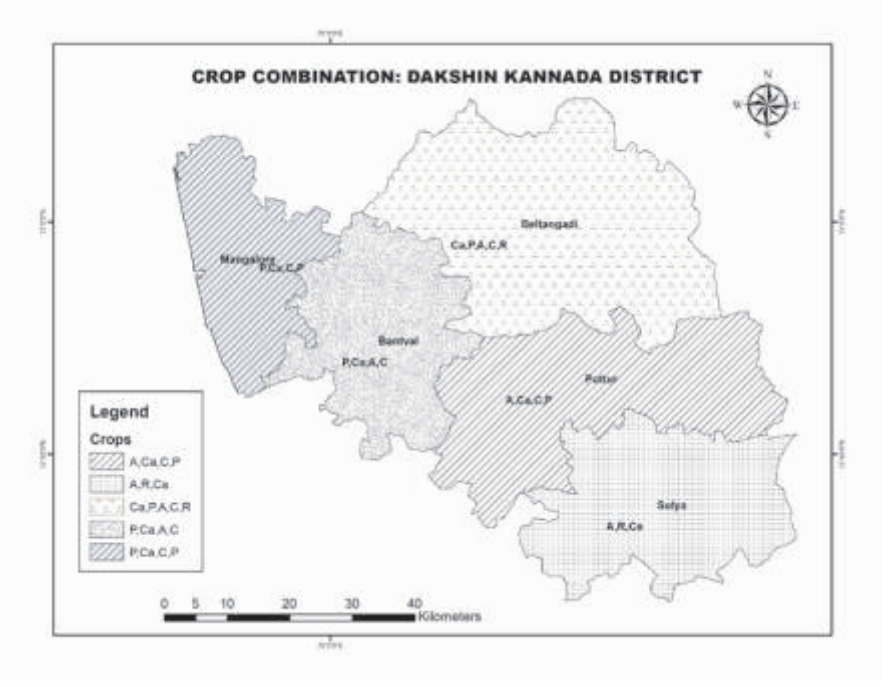
FOUR CROP COMBINATION:the four cropping pattern in identified in Mangaloretaluka with paddy is a major crop, which occupies 40.66% area of the taluk. Along with this major crops are cashew, areca nut and coconut are also associated. In the Bantwaltalukand Putturpaddy andarecanut are the major crop cultivated in association with cashew, coconut and pulses.

FIVE CROP COMBINATION: Belthangaditaluka have five crop combinations. In this taluka cashew (23.73%), paddy (19.05%), arecanut (18.72%), coconut (13.34%) and rubber (10.31%) are the combination identified by this method. (Table no-1.4)

Table no.1.4
Crop Combinations:Dakshin Kannada District -2015-16

Sr, no	Taluks	No.of. Crop Combination	Crops
1	Bantwal	4	P, Ca, A, C
2	Belthangadi	5	Ca, P, A ,C, R
3	Mangalore	4	P, Ca, C,P,
4	Puttur	4	A, Ca, C, P
5	Sulya	3	A, R, Ca,

Abbreviation- P=Paddy, Ca=Cashew, A=Areca nut, C=Coconut, Pu=Pulses, R=Rubber,



CONCLUSION

Concluding the features of the land use, cropping pattern and crop combination of the study area it is observed that,Out of the total geographical area of the district about 43.34% area is net sown area.In the study areamore net sown area is observed in Bantwaltaluk(39.87%) and lowest is in Putturtaluk of the study area (7.64%),about 43.36% area is irrigated of the total cultivated area in the district where highest percentage of irrigated area seen in the Bantwaltaluk followed by Belthangadi and Sulya.In the study area it is observed that all the taluks areBantwal, Mangalore andPuttur and Sulya have four cropping pattern and Sulyataluk have three cropping pattern, Belthangaditaluk have five cropping pattern,Mostly the crop rice is cultivated in the plain area and receiving high rainfall of the study area and on the other hand cashew, rubber, coconut and areca nut these crops covered in all taluks in the district. The efforts must be taken by the agriculture scientist, planners, and govt. to increase land under same more crops so, that, still there will be a scope for cultivation of food crops in the study area.

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