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ALTERNATIVE AGRICULTURAL SYSTEMS: HORTICULTURAL CROPS FARMING IN DROUGHT PRONE ANANTAPURAM DISTRICT, ANDHRA PRADESH

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ABSTRACT

In the Alternative crop farming of Anantapuram district, Horticultural crops occupied a significant role in the crop science which deals with production, utilization and improvement of fruits, vegetable, ornamental plants, spices and plantation crops including medicinal and aromatic plants. Horticultural development in its true sense can be considered as transformation of conventional method of farming and introduction of new crops, resulting there by significant changes in the crop production, farming status and economic position of farming community. Anantapuram district being constantly threatened by droughts, the conventional farming has to be replaced by the alternative crop farming systems to uplift the agricultural economy of the farming community. Hence here an attempt is made to study about the patterns of alternative crops such as fruit crops, vegetable crops, spices condiments and flower crops cultivation in Anantapuram district.

KEY WORDS: *conventional farming, Alternative farming, fruit crops, vegetable crops, spices and condiments and flower crops.*

INTRODUCTION

India is home of important fruit crops viz., Jack fruit, citrus fruits, wood apple, kokum, khirni, mango, banana, Jamun, bael, aonla and ber, several fruits are introduced from other regions of the world by Persions, Turks, Mughals, Portugese, Dutch, French and British. The diversity in soil and climatic conditions in India permits growing of a large variety of tropical, sub-tropical and temperate fruits in different regions. The major fruits grown in India are mango, banana, citrus, guava, pine apple, grape and papaya in the tropics and subtropics, and apple, pear, plum, peach and walnut in the temperate region. A part from these, sapota, annona, ber, pomegranate, litchi, peach, pear, plum, apricot and walnut are grown on a sizeable area. A number of other fruits are also grown in different regions (Chowdary & Suneel Sharma, 2005).

The importance of fruit crops in human nutrition is well known. These crops play an important role in balancing the diet of human beings by providing not only energy rich food but also promise supply of vital protective nutrients like, minerals and vitamins. A significant increase has been observed in the export earnings from the horticultural crops including fruit crops in the recent years. This sector has potential to provide opportunities to increase income and alleviation of hunger and poverty and curve down socio-economic problems. Hence, an attempt in made here to study the spatial patterns of horticultural crops in Anantapuram District.

STUDY AREA

Anantapuram district is one of the districts of backward Rayalaseema region of Andhra Pradesh lies between 13° 40' and 15° 15' N latitude and 76° 50' and 78° 30' East longitude. The geographical area of the district is

19130 square kilometres. Administratively the district consists of 63 mandals. The altitude of the district generally varies from 272 to 942 mts. The district is drained by Pennar, Jayamangala, Chitravathi, Vadavathi and other minor streams. The normal rainfall of the district is 550 mm. About 54 percent of the total geographical area is under net sown area. The total population of Anantapuram district is 40.466 lakhs according to 2011 census with 71 percent in rural areas. There are 977 females per 1000 males in the district. The total irrigated area of the district accounts to 165393 hectares with a percentage of 14.02 to the gross cropped area. Tube well irrigation is the major type of irrigation in the district. The district is chronically affected by droughts and is declared as drought prone area by the government.

OBJECTIVES

- To study the spatial patterns of fruit crops in Anantapuram District
- To study the spatial patterns of vegetable crops in the district
- To study the spatial patterns of spices and condiments in the study area
- To study the spatial patterns of flower crops in Anantapuram district

METHODOLOGY

In the present study, the percentages of different types of horticulture crops such as fruit crops, vegetable crops, spices and condiments and flower crops, to the gross cropped area of the component areal unit i.e., mandal for the year 2010-2011 and mapped the spatial patterns of the same.

SPATIAL DISTRIBUTION OF TOTAL FRUIT FARMING

A variety of fruit crops are cultivated in Anantapuram district, namely, Grapes, Papaya, Sapota, Anjur, Regu, Konda Regu, Custard apple, Musk Melon, Water melon, Pomegranate, Banana, Guava, Oranges, Batavia, Acid lime, Mangoes etc. The total area under fruit crops in the district accounts to 2.85 percent to the total cropped area. The irrigated fruit cropped area to the total fruit cropped area accounts to 94.73 percent and 19.27 percent to the total irrigated area. It reveals the significance of irrigation in cultivating fruit crops. In Anantapuram district most of the farmers are adopting drip irrigation and sprinklers in the cultivation of fruit crops, which is a modern technology of irrigation for the economical utilization of limited sources of water.

Spatially, the fruit crops occupied very high (>10%) concentration in 4 mandals during 2010-11, namely, Yellanur (18.72%), Garladinne (17.96%), Peddapappur (17.20%) and Parigi(12.34%). High concentration (7.5-10%) in Tadipathri and Narpala mandals, moderate concentration (5.75%) in Pamidi, Kudair, Singanamala and Tadimarri mandals. Low (2.5-5%) to very low (<2.5%) concentration of fruit crop farming in the district is noticed in 9 mandals and 44 mandals, respectively (Fig 1.1).

In Anantapuram district, of the total fruit cropped area, Batavia or sweet lime occupies first place with a total area of 17851 hectares (53.07) Mango crop is being cultivated in about 5613 hectares (16.7%) followed by Sapota (4.99%), Guava (4.65%), Pomegranate (4.64%), Plantain (3.96%), Papaya (3.76%), Acid lime Water Melon (1.22%), Custard Apple (0.58%), Grapes (0.55%), Gangi Regu (0.23%) and Anjur (0.08%) (Table 1.1).

SPICES AND CONDIMENTS FARMING

During 2010-11, the total area under Spices and condiments is estimated as 10413 hectares 0.88 percent to the total cropped area of the district. The major crops cultivated under this group are- curry leaf, coriander, Turmeric, Tamarind and chillies

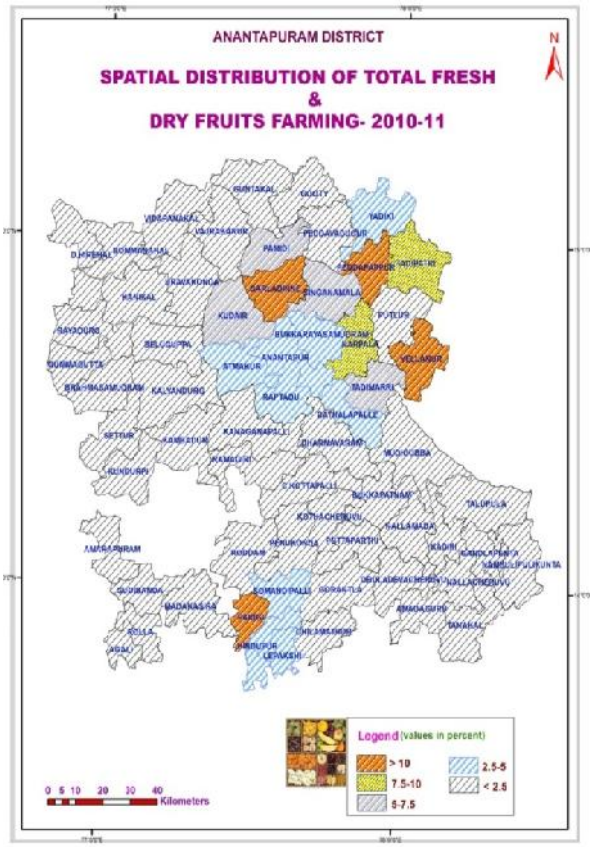

FIG 1.1

Table 1.1 Area under different fruit crops to the total fruit cropped Area Anantapuram District: 2010-11

S.no	Fruit crop	Total area in hectares	Percentage to the total fruit cropped area
1	Batavia (Sweet lime)	17851	53.07
2	Mangoes	5613	16.686
3	Sapota	1678	4.99
4	Guava	1564	4.65
5	Pornegranate	1560	4.64
6	Plantain	1332	3.96
7	Papaya	1264	3.76
8	Acid Lime	704	2.09
9	Regu	581	1.73
10	Musk melon	520	1.54
11	Water Melon	411	1.22
12	Custard Apple	197	0.58
13	Grapes	185	0.55
14	Gangi Regu	79	0.23
15	Anjur	28	0.008
	Total fruit cropped Area	**33639**	**100.00**

only. The other crops like pepper, Garlic, Ginger Azwan and others have not been cultivated in the district. Spatially, at mandal level, Very high (>4%) of Spices and Condiments are cultivated in Vidapankal (8.94%) and Putlur (4.07%) fallowed by high concentration (3-4%) in Peddapappur (3.88%) Parigi (3.514%) and Yellanur (3.88%), Parigi (3-4%) and Yellanur (3.32%) mandals. Medium concentration (2-3%) of Spices and Condiments has been observed in 5 mandals namely, D.Hirrehal, Tadipatri, Madakasira, Amarapuram and Somadepalli, where as low (1-2%) in Yadiki, Pamidi, Rolla, Agali and Hindupur mandals. In about 40 mandals, very low (<1%) concentration is found (Fig 1.2). in about 8 mandals condiments and Spices are not cultivated during 2010-11. Individually, crop wise, Coriander occupies maximum of area with 5323 hectares followed by Tamarind (2206 hectares), Chillies (1968 hectares), currey leaf (903 hectares) and Turmeric 13 hectares. The percentages of these to the total spices cropped area are 51.1%, 21.2%, 18.9%, 8.67%, 0.12% respectively.

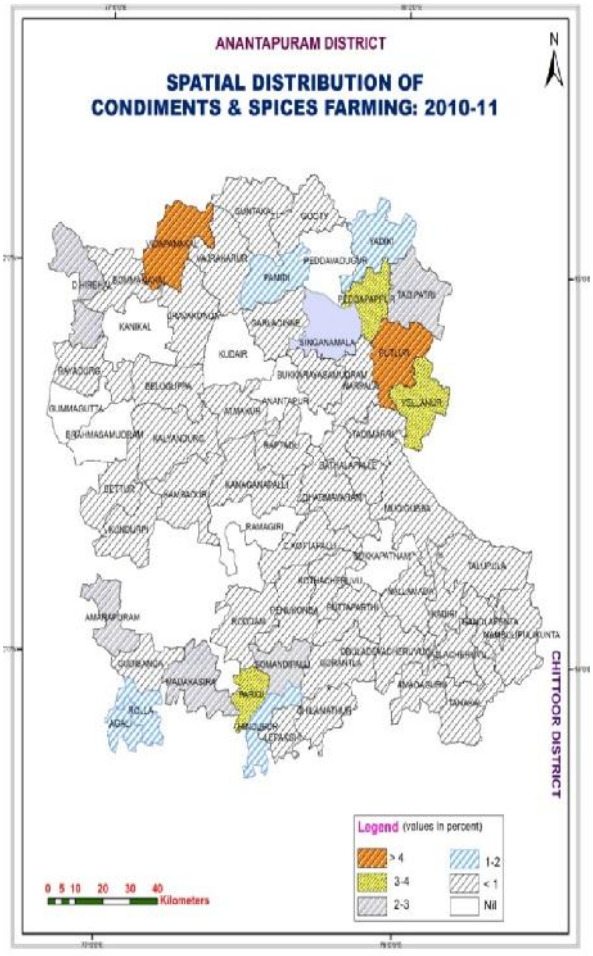

FIG 1.2

VEGETABLE FARMING

Cultivation of Vegetables also have significant role in the Alternative farming practices of Anantapuram district. The total area under vegetable crops has been estimated as 6371 hectares with a percentage of 0.54% to the total cropped area. The crops included under vegetable crops are Tomatoes, Onions, Green chillies, Brinjal, Drumstick, Bhendi, cucumber, Amla, potatoes, Sweet potatoes,Gokara, Green leaf vegetables, Anapa and Cauliflower (Table 1.2).

Spatially, at mandal, very high (>4.1%) concentration of vegetable crops is seen in only mandal, such as, Gummagatta (4.6%) followed by high concentration (3-4) in zero mandals, medium concentration (2-3%) is observed in Narpala and Bukkaraya Samudram with 2.48 percent each. Low concentration (1.2%) is noticed in 3 mandals, namely, Rayadurg, Yadiki and Peddapappur and very low (< 1%) in about 39 mandals of the district. In 18 mandals Vegetable crops have not been cultivated during the year 2010-11 (Fig 1.3).

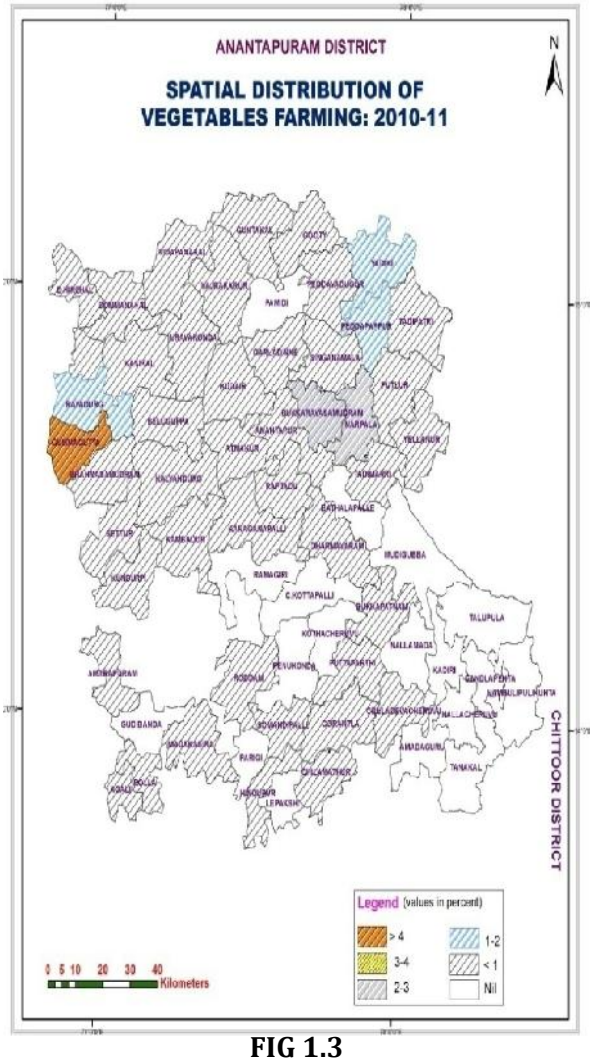

FIG 1.3

FLOWER CROPS FARMING

Marigold, Crossandra, Lilly, Jasmine and chrysanthemum are the important flower crops cultivated in the district during the study period. The total area under flower crops is estimated as 559 hectares with a percentage of only 0.05 to the total cropped area. The individual percentage share of flower crops is Marigold- 35.6%, Crossandra- 21.29%, Lilly- 19.86%, Jasmine- 13.06% and Chrysanthemum- 10.2% during the study period.

At mandal level, High concentration (>2%) is found in Guntakal (2.2%) mandal followed by medium concentration (1-2%) in Dharmavaram (1.07%). In 23 mandals of the district, the concentration of flower crops is low (<1%) and in 38 mandals the crop has not been cultivated by the farmers during 2010-11. (Fig 1.4).

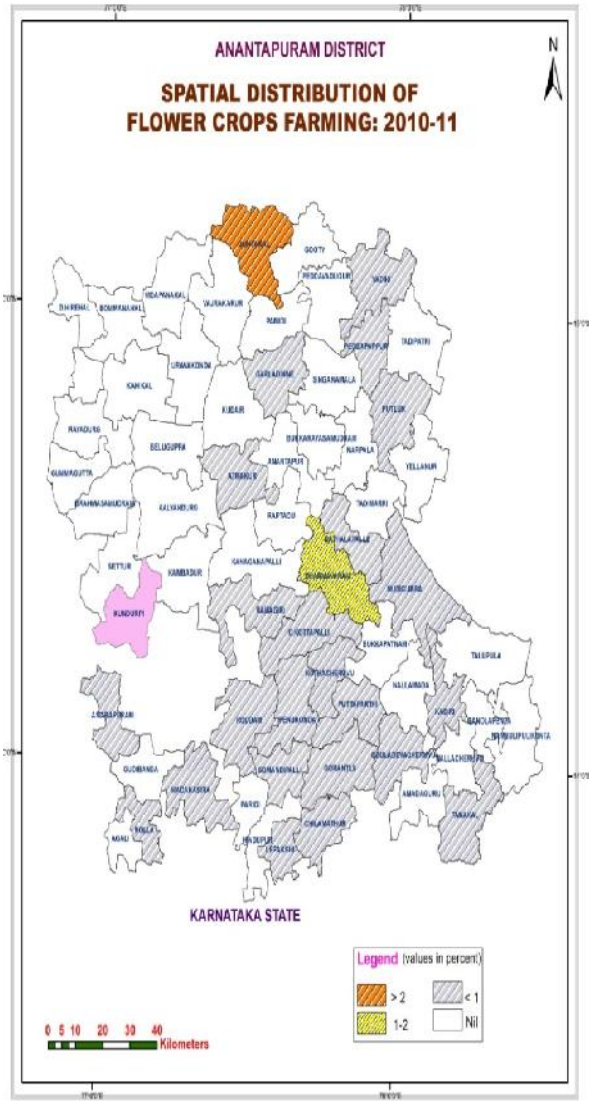

FIG 1.4

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