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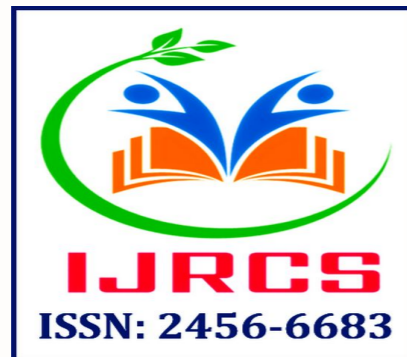
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Problems and Prospects of Horticulture Crops in Mangalore Taluk, Karnataka: A Study

¹K. N. Amarendra, ²Shekhar Angadi

¹Associate Professor, Dept of Geography, Sree Siddaganaga College of arts and commerce Nelamangala-562123

²Lecturer, Dept of Geography, University College Mangalore-575001

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ABSTRACT: Horticulture is tremendous industry composed of numerous commercial enterprises. Lot of raw material can be produced from horticultural crops. It contributes to health happiness and prosperity of the mankind. Horticulture is the applied science. It is defined as an expensive art and science of study of garden plants. This term applied first in 17th century. The word 'Hortus' means 'Garden' and 'Culture' means 'Cultivation'. The cultivation of flowers, fruit, vegetables in small plots using intensive methods of farming, the most intensive form of horticulture is probably the cultivation of crops (Smith, 1979). A survey base study was conducted to understand the knowledge level of horticulture growers and link to productivity based geographical conditions. In this study, it is tried to provide an idea about prospects of horticulture crops and remedies to improve the production of horticulture crops in the study region.

KEYWORDS: Horticulture, Problems, Prospects, Remedies

I. INTRODUCTION

Horticulture is a branch of agriculture. It includes cultivation of herbs, sprouts, mushrooms, algae, fruits, vegetables, nuts, seeds, flowers, seaweeds and non-food crops such as ornamental trees and plants. It also includes landscape restoration, plant conservation, landscape and garden design, Horticulturists used their knowledge to grow plants for human food and for personal or social needs. Their work includes plant propagation and cultivation with aim of improving plant, yields, quality, nutritional value, growth and resistance to insects, diseases, and environmental stresses. They work as growers, therapists, gardener's designers, and advisors in the field of horticulture. India is the seventh largest country in the world with a total

geographical area of 328.73 m ha and has second largest population 121 crores (2011), after China. The total arable land available is 144 million hectares of which 70% is under rainfed cultivation. Around 55-60% of the total population depends on agriculture and allied activities. Horticulture crops constitute a significant portion of total agricultural production in the country. The term horticulture is derived from two Latin words HORTUS meaning "GARDEN" and cultura meaning "cultivation". In ancient days the gardens had protected enclosures with high walls or similar structures surrounding the houses. The enclosed places were used to grow fruit, vegetables, flowers and ornamental plants. Therefore, in original sense "Horticulture refers to cultivation of garden plants within protected enclosures".

Horticultural marketing is an important economic activity. Besides contributing to higher productivity and production, it influences the income of growers and contributions to the development of a horticultural economy. It opens up an efficient market system, marketing horticulture a reliable source of income. Simultaneously, horticultural marketing ensures the availability of produce a reasonable price to consumers. However, the perishable nature of certain horticultural commodities like fruit and vegetables introduces an element of risk and uncertainty in the economy. Here, growers have no option but to bring the produce to the market as soon as it is harvested. As a consequence, seasonal glut and corresponding low prices are a common phenomenon during the immediate post-harvest period. The production and supply of fruits and vegetables is differently linked to soil, climate and season. The produce is, therefore, localized. Since the areas of consumption are largely concentrated

in cities and towns, the goods have to be transported over long and short distances. Further, due to defective methods of picking, packing and transportation, a large proportion of fruits and vegetables deteriorate in transit. The extent of spoilage as sometimes as high as 5 to 50 percent (Horticultural marketing series No. 149.1995) all these aspects introduce certain special elements in the marketing of horticultural crops. This makes the study of horticultural crops especially in relation to its marketing; a pertinent one Maharashtra is one of the leading states in the country in Horticulture Development. The diverse agro-climatic conditions of the state are very congenial for cultivation of various horticultural crops. The area under fruit crops which was 2.42 lakh hectares in 1990 has gone up to 6.13 lakh hectares in 2011. Similarly, the area under various vegetables, spice crops and floriculture has also increased substantially. This is mainly due to the govt. policies like establishment of separate department of horticulture in 1981 and linking horticulture development with "Employment Guarantee Scheme" in 1990. Creation of various infrastructure facilities like establishment of horticulture nurseries, irrigation facilities also helped for horticulture development. With the expansion of area under horticulture, production of fruits has increased substantially. However, the marketing of fruits could not be organized simultaneously. At present markets are dominated by middlemen and they decide the prices of fruits. Unless the farmers form co-operative and open their sale outlets in urban areas, the exploitation from middlemen would not be reduced. The farmers in some areas have organized themselves and formed fruit producer's co-operatives. The merchants do not have knowledge of handling of produce. Transportation is more oriented towards quantitative basis rather than qualitative basis. Timely availability of the transport is a matter of concern e.g. Jalgaon district is well known for banana cultivation. Wagon loads of bananas are transported to North India every day from Jalgaon. However, since the railway wagons are not specially designed for transport of fruits, great losses are incurred during April to June which are months of severe heat. Due to lack of cold chain, considerable losses are incurred in fruits and vegetables. Cold chains have been established in some limited areas of grapes. This has helped to increase shelf life, storage, transport and export of grapes. Due to lack of processing facilities, great losses occur in fruits and vegetables.

II. STUDY AREA

Mangalore, officially known as Mangalore, is the chief port city of the Indian state of Karnataka. It is located about 352 km (219 mi) west of the state capital, Bangalore, between the Arabian Sea and the Western Ghats mountain range. The population of the urban agglomeration was 623,841, according to the provisional results of the 2011 national census of India. Mangalore is located at 12.87°N 74.88°E in the Dakshina Kannada district of Karnataka. It has an average elevation of 22 m (72 ft) above mean sea level. It is the administrative headquarters of the Dakshina Kannada district, the largest urban coastal centre of Karnataka. Mangalore is situated on the west coast of India, and is bounded by the Arabian Sea to its west and the Western Ghats to its east. Mangalore city, as a municipal entity, spans an area of 132.45 km² (51.14 sq mi). Mangalore experiences moderate to gusty winds during day time and gentle winds at night. The topography of the city is plain up to 30 km (18.64 mi) inside the coast, and changes to undulating hilly terrain sharply towards the east in Western Ghats. The geology of the city is characterized by hard laterite in hilly tracts and sandy soil along the seashore. The Geological Survey of India has identified Mangalore as a moderately earthquake-prone urban centre and categorised the city in the Seismic III Zone.

III. OBJECTIVES

1. To find out the problems of horticulture crops in the study area
2. To find out the prospects of horticulture crops in the study area
3. To find out the remedies to developed of horticulture crops in the study area.

IV. METHODOLOGY

The present study is based on primary and secondary data collected from department of agriculture Mangalore district statistical office, socio-economic reviews of Dakshina Kannada district, district census hand book (2011), etc. and also referred to and collected relevant information. The taluk is considered as a real unit for investigation and analysis the study area. Secondary data is used for this study apart from primary data's and field observations are carried out in this selected agriculture field in the study area.

V. DISCUSSION

Horticatures Problems in Mangalore Taluk

Problem of finance:

It is one of the major problems faced by the growers or farmers of Mangalore. It is observed that the finance is the main factor which decides the ability to take up horticulture farming as their occupation. On the other hand the existing farmers too face the same problem of lack of finance led to difficulties in procurement of more seeds/plants, payment of wage to labour, maintenance of farm, development of land for cultivation etc. if the farmers invest their capital in small amount in near future, they will not have finance for further expansion and other purposes, it's the prima-fiche that maximum of grower are going through.

Problem of Marketing:

Most of the farmers in the city have faced the problem of marketing of their horticultural products. The growers of horticulture crops basically find it very hard to sell off their produce to the ultimate customers and as a result sell it to the traders that with unwillingly. Due to absence of a proper marketing policy and channel to assist the farmers of the city, the productivity of the study is being affected. The marketing problems arises mainly due to pricing method of product, lack of buyer, non-branding of products, distribution channel etc. Therefore, the marketing of horticulture produce lack the modern technique of selling off the products in a systematized way.

Problem of labour:

Another main constraint in the cultivation of horticulture farm is non availability of labour in the study area. As response by the respondents that due to the shortage of labour in the area, it's very hard to take care of horticulture crops during the period of pre and post-harvesting. The area, production and productivity of horticultural crops are totally depending on the work force of the farmers or growers. The majority of farmers are not in a position to employ labour in their field due to non- availability of labour.

Problem of storage:

The horticulture crops after post-harvesting have to be store in some preservative and safe place from spoilage and sold them at a high profit margin. In the case of horticulture crops such as orange and pineapple the growers sell it to the traders or buyers from the plant only. The majority of farmers stated that they do used only traditional way of storing their horticulture

produce. Therefore, it can be said that maximum of farmers are unaware of the modern method of storing and need of cold storage in their district. It was reported by 15% of sample farmers that though they are in a position to increase their product in a year after year but storage is the problem to keep them properly.

Problem of Education:

Education plays an important role in every walk of life for an individual. Lack of education among the sample beneficiaries is one of the problems of study area. Due to this the farmers are not in position to know more about the horticulture sector in the study area. Thus, as a result the farmers are not approaching the horticulture department with regard to any kind of support and help for their horticulture farm. So, in addition to this the lacks of education make the farmers less respond to modern technologies and other advancement which are required for proper development of horticulture sector. Therefore, to equip the farmers with all this modern techniques and technology, proper training and motivational campaigns should be provided from the side of state and central Government.

Problem of maintenance

The growers or farmers of horticulture crops in the study area find it hard to maintain their farm such as boundary fence, medicine to the plants, cleaning up of unwanted plants and grasses etc. The proper and systematic looking after the horticulture crops will yield huge return in term of production, productivity and income of farmers of the study area. Therefore, the Government should provide aid to farmers the required pesticides to kill all the insects and other so that production can be maintained.

Problem of Know-How

Know-How means the process and procedure of cultivation of horticulture crops. It is almost found that some of the grower's don not have the idea and knowledge of planting the plants or nurseries in a systematic way, medication of plants etc., which as a result hamper in the productivity of horticultural crops. Sometimes, due to lack of knowledge of farming the plant get spoiled or die up for the cause of not planting as per required method. Therefore, it's a very serious problem in the part of grower to take adequate care to have the knowledge of firsthand information on the method and techniques for planting of horticultural crops.

Problem of technology

In today's modern world, technology plays a major role in growth and development of all sectors of a nation. The farmer of the study area is facing these problems because they are unaware or not in a position to use the latest modern technology. It was found that majority of farmers are using traditional way of cultivation in their farm which as a result create obstacle in the progress of growth and development. In order to compete or increase the scale of area, production and can be better facilitated through the currently-functioning regional and global economic cooperation. Horticulture is a boon of nature which is refined by human skill as a science to obtain more and more benefits. It involves rigorous cropping expertise, including the improvement, production, distribution and use of vegetables, fruits, woody landscape and greenhouse plants. Horticulture is now one of the fastest growing industries with striking professional opportunities. An increasing proportion of the world's population is living in metropolitan environments where their understanding of farming, and therefore of food production, is becoming progressively poorer. While in 1950 approximately 71% of the world's population lived in rural locations, this had declined to 50% in 2011 and is anticipated to be as low as 30% globally by 2050. Ironically however, these same urban-based consumers have become increasing verbal about various issues such as use of pesticides, labour conditions for farm workers, carbon taxes, buy-local campaigns, and the sustainability of production methods. These are often driven as "matters of ethics" and are in isolation from the reality of current production methods or of the opportunity to realistically meet these consumer demands. To meet the steadily rising requirements of low-cost, year-round supply of premium quality fruit and vegetables especially in developing countries, production of fresh vegetables for export has grown rapidly in a number of countries around the world over the last decade. This trade brings producers and exporters of world together with importers and retailers. Usually, urbanization is also impacting considerably on the availability of labour for farming activities. The general unavailability of low-cost labour and the increasing cost of land have seen a turn down in horticultural production in many developed countries around the world. As a result, production has shifted to countries where land and labour permit cost-competitiveness, for instance Kenya. In many countries large scale production of agronomic crops through genetic manipulation is being extensively

used. However, in some countries, production of horticultural crops by genetic manipulations is of great concern and a matter of debates regarding the safety and the wider justification of GMOs. The lack of consciousness about the role that conventional plant breeding plays in the production of new cultivators and the uncertainty that often prevails between conventional breeding and plants produced using gene transfer technologies is a matter of concern regarding horticulture practices.

Current development remedies and future prospects in horticulture

Current trends indicate that consumers are looking for increased variety, freshness, and healthy options in their eating choices. They are also seeking greater ease and a higher proportion of fresh produce in their diets. Those in metropolitan environments are more and more aware of and dependent on green spaces for their livelihoods and wellbeing. The future for horticulture and its foundation sciences within such an environment is, therefore, exhilarating, tricky, motivating and surely worthwhile. Provide support for the production and supply of good quality planting material of high yielding varieties of fruit crops, both through conventional and in vitro system of propagation. Bring more area under fruit crops with focus on location specific fruit crops in the country. Provide critical inputs for improving the productivity of old orchards/neglected orchards, Educate the farmers about the efficacy of improved techniques for increasing productivity. Provide assistance for establishing plant health clinics and leaf nutrient analysis labs for fruit crops. Provide support for integrated management of pests and diseases including disease forecasting. Increase production of Cashew & Cocoa in the country through productivity improvement and area expansion programmes. Horticulture Development through Plasticulture Interventions.

- Promote horticultural development through applications like drip irrigation, green house construction, plastic mulching, low tunnels etc. in the farmer's fields.
- Demonstrate various applications like drip irrigation, green house construction, plastic mulching at Government farms and farms belonging to ICAR Institutes, State Agricultural Universities, NGO's and progressive farmers.
- Improve the availability of quality planting material through establishment of nursery. To increase production and productivity of coconut.

- To bring additional area under coconut in potential non-traditional areas.
- To develop new technologies for product diversification and by-product utilisation.
- To strengthen mechanism for transfer of technologies.
- To elevate the income level of small and marginal farmers engaged in coconut cultivation.
- To build up sound information base for coconut industry and market information.
- To generate ample employment opportunities in the rural sector.
- Use of new seeds and technologies.
- + Quality assurance of seed plants and produce.
- Linking farmers with market.
- Infrastructure for production and marketing.
- Investment in development.
- Increased availability of horticulture produces Adoption of technologies.
- Increased exports of horticultural crops.
- Attraction for corporate in horticulture.
- Increased availability for processing.
- Stimulation of holistic growth of horticulture sector.
- Improvement of productivity through availability of improved germplasm, seeds, planting material, use of technologies like protected cultivation, drip and sprinklers.
- Creation of production clusters and hubs to facilitate setting up of infrastructure facilities for processing and PHM.
- Development and dissemination technologies for horticulture development.
- Creation of employment generation opportunities for skilled and unskilled persons, especially youth.

VI. CONCLUSION

The analyst is indicate that there is a growing trend in the area allotted for the cultivation of horticultural crops like vegetables and fruits all over the country, which has resulted in the growth in the value of output in the last 30 years. Though the rate of growth in the value of output of the horticultural products has come down during the 2000s, it is still higher than the overall growth of the agricultural sector, which augurs well of the horticultural sector of India Moreover, there is also huge demand for the horticultural products and it is growing at a considerable rate in both the rural and urban house hold and among both the poor and rich households. Thus, every effort should be taken to

increase the area and output of the horticultural crops, which are considered as high value crops, since it will considerably increase the income levels of the farmers in the area. In the Mangalore taluk is mainly we can see different types of cops are growing in Mangalore mainly we observe the main crops are coconut, cashew nut, areca nut, pepper, coco bean, pineapple and jackfruit are the main crops are in Mangalore. And their growing is very highly in the Mangalore taluk these are the important horticulture crops in Mangalore. And the mangloreans are highly cultivated these crops. And Mangalore has good climate, soil, and mainly coastal area its one of the important aspects of Mangalore. Here we can observe what are the horticulture crops in study are and their importance, scope, concept, and were distributed in the study area these are in important aspects in the topic. Review of literature methodology also in their then here we can study the Study area and objectives, these all topics included in this project work. In this project we can understand because of growing the important horticulture crops and their problems and prospects it's one of the major aspect of Mangalore.

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¹K. N. Amarendra, ²Shekhar Angadi

¹Associate Professor, Dept of Geography, Sree Siddaganaga College of arts and commerce Nelamangala-562123

²Lecturer, Dept of Geography, University College Mangalore-575001

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ABSTRACT: Horticulture is tremendous industry composed of numerous commercial enterprises. Lot of raw material can be produced from horticultural crops. It contributes to health happiness and prosperity of the mankind. Horticulture is the applied science. It is defined as an expensive art and science of study of garden plants. This term applied first in 17th century. The word 'Hortus' means 'Garden' and 'Culture' means 'Cultivation'. The cultivation of flowers, fruit, vegetables in small plots using intensive methods of farming, the most intensive form of horticulture is probably the cultivation of crops (Smith, 1979). A survey base study was conducted to understand the knowledge level of horticulture growers and link to productivity based geographical conditions. In this study, it is tried to provide an idea about prospects of horticulture crops and remedies to improve the production of horticulture crops in the study region.

KEYWORDS: Horticulture, Problems, Prospects, Remedies

I. INTRODUCTION

Horticulture is a branch of agriculture. It includes cultivation of herbs, sprouts, mushrooms, algae, fruits, vegetables, nuts, seeds, flowers, seaweeds and non-food crops such as ornamental trees and plants. It also includes landscape restoration, plant conservation, landscape and garden design, Horticulturists used their knowledge to grow plants for human food and for personal or social needs. Their work includes plant propagation and cultivation with aim of improving plant, yields, quality, nutritional value, growth and resistance to insects, diseases, and environmental stresses. They work as growers, therapists, gardener's designers, and advisors in the field of horticulture. India is the seventh largest country in the world with a total

geographical area of 328.73 m ha and has second largest population 121 crores (2011), after China. The total arable land available is 144 million hectares of which 70% is under rainfed cultivation. Around 55-60% of the total population depends on agriculture and allied activities. Horticulture crops constitute a significant portion of total agricultural production in the country. The term horticulture is derived from two Latin words HORTUS meaning "GARDEN" and cultura meaning "cultivation". In ancient days the gardens had protected enclosures with high walls or similar structures surrounding the houses. The enclosed places were used to grow fruit, vegetables, flowers and ornamental plants. Therefore, in original sense "Horticulture refers to cultivation of garden plants within protected enclosures".

Horticultural marketing is an important economic activity. Besides contributing to higher productivity and production, it influences the income of growers and contributions to the development of a horticultural economy. It opens up an efficient market system, marketing horticulture a reliable source of income. Simultaneously, horticultural marketing ensures the availability of produce a reasonable price to consumers. However, the perishable nature of certain horticultural commodities like fruit and vegetables introduces an element of risk and uncertainty in the economy. Here, growers have no option but to bring the produce to the market as soon as it is harvested. As a consequence, seasonal glut and corresponding low prices are a common phenomenon during the immediate post-harvest period. The production and supply of fruits and vegetables is differently linked to soil, climate and season. The produce is, therefore, localized. Since the areas of consumption are largely concentrated

in cities and towns, the goods have to be transported over long and short distances. Further, due to defective methods of picking, packing and transportation, a large proportion of fruits and vegetables deteriorate in transit. The extent of spoilage as sometimes as high as 5 to 50 percent (Horticultural marketing series No. 149.1995) all these aspects introduce certain special elements in the marketing of horticultural crops. This makes the study of horticultural crops especially in relation to its marketing; a pertinent one Maharashtra is one of the leading states in the country in Horticulture Development. The diverse agro-climatic conditions of the state are very congenial for cultivation of various horticultural crops. The area under fruit crops which was 2.42 lakh hectares in 1990 has gone up to 6.13 lakh hectares in 2011. Similarly, the area under various vegetables, spice crops and floriculture has also increased substantially. This is mainly due to the govt. policies like establishment of separate department of horticulture in 1981 and linking horticulture development with "Employment Guarantee Scheme" in 1990. Creation of various infrastructure facilities like establishment of horticulture nurseries, irrigation facilities also helped for horticulture development. With the expansion of area under horticulture, production of fruits has increased substantially. However, the marketing of fruits could not be organized simultaneously. At present markets are dominated by middlemen and they decide the prices of fruits. Unless the farmers form co-operative and open their sale outlets in urban areas, the exploitation from middlemen would not be reduced. The farmers in some areas have organized themselves and formed fruit producer's co-operatives. The merchants do not have knowledge of handling of produce. Transportation is more oriented towards quantitative basis rather than qualitative basis. Timely availability of the transport is a matter of concern e.g. Jalgaon district is well known for banana cultivation. Wagon loads of bananas are transported to North India every day from Jalgaon. However, since the railway wagons are not specially designed for transport of fruits, great losses are incurred during April to June which are months of severe heat. Due to lack of cold chain, considerable losses are incurred in fruits and vegetables. Cold chains have been established in some limited areas of grapes. This has helped to increase shelf life, storage, transport and export of grapes. Due to lack of processing facilities, great losses occur in fruits and vegetables.

II. STUDY AREA

Mangalore, officially known as Mangalore, is the chief port city of the Indian state of Karnataka. It is located about 352 km (219 mi) west of the state capital, Bangalore, between the Arabian Sea and the Western Ghats mountain range. The population of the urban agglomeration was 623,841, according to the provisional results of the 2011 national census of India. Mangalore is located at 12.87°N 74.88°E in the Dakshina Kannada district of Karnataka. It has an average elevation of 22 m (72 ft) above mean sea level. It is the administrative headquarters of the Dakshina Kannada district, the largest urban coastal centre of Karnataka. Mangalore is situated on the west coast of India, and is bounded by the Arabian Sea to its west and the Western Ghats to its east. Mangalore city, as a municipal entity, spans an area of 132.45 km² (51.14 sq mi). Mangalore experiences moderate to gusty winds during day time and gentle winds at night. The topography of the city is plain up to 30 km (18.64 mi) inside the coast, and changes to undulating hilly terrain sharply towards the east in Western Ghats. The geology of the city is characterized by hard laterite in hilly tracts and sandy soil along the seashore. The Geological Survey of India has identified Mangalore as a moderately earthquake-prone urban centre and categorised the city in the Seismic III Zone.

III. OBJECTIVES

1. To find out the problems of horticulture crops in the study area
2. To find out the prospects of horticulture crops in the study area
3. To find out the remedies to developed of horticulture crops in the study area.

IV. METHODOLOGY

The present study is based on primary and secondary data collected from department of agriculture Mangalore district statistical office, socio-economic reviews of Dakshina Kannada district, district census hand book (2011), etc. and also referred to and collected relevant information. The taluk is considered as a real unit for investigation and analysis the study area. Secondary data is used for this study apart from primary data's and field observations are carried out in this selected agriculture field in the study area.

V. DISCUSSION

Horticatures Problems in Mangalore Taluk

Problem of finance:

It is one of the major problems faced by the growers or farmers of Mangalore. It is observed that the finance is the main factor which decides the ability to take up horticulture farming as their occupation. On the other hand the existing farmers too face the same problem of lack of finance led to difficulties in procurement of more seeds/plants, payment of wage to labour, maintenance of farm, development of land for cultivation etc. if the farmers invest their capital in small amount in near future, they will not have finance for further expansion and other purposes, it's the prima-fiche that maximum of grower are going through.

Problem of Marketing:

Most of the farmers in the city have faced the problem of marketing of their horticultural products. The growers of horticulture crops basically find it very hard to sell off their produce to the ultimate customers and as a result sell it to the traders that with unwillingly. Due to absence of a proper marketing policy and channel to assist the farmers of the city, the productivity of the study is being affected. The marketing problems arises mainly due to pricing method of product, lack of buyer, non-branding of products, distribution channel etc. Therefore, the marketing of horticulture produce lack the modern technique of selling off the products in a systematized way.

Problem of labour:

Another main constraint in the cultivation of horticulture farm is non availability of labour in the study area. As response by the respondents that due to the shortage of labour in the area, it's very hard to take care of horticulture crops during the period of pre and post-harvesting. The area, production and productivity of horticultural crops are totally depending on the work force of the farmers or growers. The majority of farmers are not in a position to employ labour in their field due to non- availability of labour.

Problem of storage:

The horticulture crops after post-harvesting have to be store in some preservative and safe place from spoilage and sold them at a high profit margin. In the case of horticulture crops such as orange and pineapple the growers sell it to the traders or buyers from the plant only. The majority of farmers stated that they do used only traditional way of storing their horticulture

produce. Therefore, it can be said that maximum of farmers are unaware of the modern method of storing and need of cold storage in their district. It was reported by 15% of sample farmers that though they are in a position to increase their product in a year after year but storage is the problem to keep them properly.

Problem of Education:

Education plays an important role in every walk of life for an individual. Lack of education among the sample beneficiaries is one of the problems of study area. Due to this the farmers are not in position to know more about the horticulture sector in the study area. Thus, as a result the farmers are not approaching the horticulture department with regard to any kind of support and help for their horticulture farm. So, in addition to this the lacks of education make the farmers less respond to modern technologies and other advancement which are required for proper development of horticulture sector. Therefore, to equip the farmers with all this modern techniques and technology, proper training and motivational campaigns should be provided from the side of state and central Government.

Problem of maintenance

The growers or farmers of horticulture crops in the study area find it hard to maintain their farm such as boundary fence, medicine to the plants, cleaning up of unwanted plants and grasses etc. The proper and systematic looking after the horticulture crops will yield huge return in term of production, productivity and income of farmers of the study area. Therefore, the Government should provide aid to farmers the required pesticides to kill all the insects and other so that production can be maintained.

Problem of Know-How

Know-How means the process and procedure of cultivation of horticulture crops. It is almost found that some of the grower's don not have the idea and knowledge of planting the plants or nurseries in a systematic way, medication of plants etc., which as a result hamper in the productivity of horticultural crops. Sometimes, due to lack of knowledge of farming the plant get spoiled or die up for the cause of not planting as per required method. Therefore, it's a very serious problem in the part of grower to take adequate care to have the knowledge of firsthand information on the method and techniques for planting of horticultural crops.

Problem of technology

In today's modern world, technology plays a major role in growth and development of all sectors of a nation. The farmer of the study area is facing these problems because they are unaware or not in a position to use the latest modern technology. It was found that majority of farmers are using traditional way of cultivation in their farm which as a result create obstacle in the progress of growth and development. In order to compete or increase the scale of area, production and can be better facilitated through the currently-functioning regional and global economic cooperation. Horticulture is a boon of nature which is refined by human skill as a science to obtain more and more benefits. It involves rigorous cropping expertise, including the improvement, production, distribution and use of vegetables, fruits, woody landscape and greenhouse plants. Horticulture is now one of the fastest growing industries with striking professional opportunities. An increasing proportion of the world's population is living in metropolitan environments where their understanding of farming, and therefore of food production, is becoming progressively poorer. While in 1950 approximately 71% of the world's population lived in rural locations, this had declined to 50% in 2011 and is anticipated to be as low as 30% globally by 2050. Ironically however, these same urban-based consumers have become increasing verbal about various issues such as use of pesticides, labour conditions for farm workers, carbon taxes, buy-local campaigns, and the sustainability of production methods. These are often driven as "matters of ethics" and are in isolation from the reality of current production methods or of the opportunity to realistically meet these consumer demands. To meet the steadily rising requirements of low-cost, year-round supply of premium quality fruit and vegetables especially in developing countries, production of fresh vegetables for export has grown rapidly in a number of countries around the world over the last decade. This trade brings producers and exporters of world together with importers and retailers. Usually, urbanization is also impacting considerably on the availability of labour for farming activities. The general unavailability of low-cost labour and the increasing cost of land have seen a turn down in horticultural production in many developed countries around the world. As a result, production has shifted to countries where land and labour permit cost-competitiveness, for instance Kenya. In many countries large scale production of agronomic crops through genetic manipulation is being extensively

used. However, in same countries, production of horticultural crops by genetic manipulations is of great concern and a matter of debates regarding the safety and the wider justification of GMOs. The lack of consciousness about the role that conventional plant breeding plays in the production of new cultivators and the uncertainty that often prevails between conventional breeding and plants produced using gene transfer technologies is a matter of concern regarding horticulture practices.

Current development remedies and future prospects in horticulture

Current trends indicate that consumers are looking for increased variety, freshness, and healthy options in their eating choices. They are also seeking greater ease and a higher proportion of fresh produce in their diets. Those in metropolitan environments are more and more aware of and dependent on green spaces for their livelihoods and wellbeing. The future for horticulture and its foundation sciences within such an environment is, therefore, exhilarating, tricky, motivating and surely worthwhile. Provide support for the production and supply of good quality planting material of high yielding varieties of fruit crops, both through conventional and in vitro system of propagation. Bring more area under fruit crops with focus on location specific fruit crops in the country. Provide critical inputs for improving the productivity of old orchards/neglected orchards, Educate the farmers about the efficacy of improved techniques for increasing productivity. Provide assistance for establishing plant health clinics and leaf nutrient analysis labs for fruit crops. Provide support for integrated management of pests and diseases including disease forecasting. Increase production of Cashew & Cocoa in the country through productivity improvement and area expansion programmes. Horticulture Development through Plasticulture Interventions.

- Promote horticultural development through applications like drip irrigation, green house construction, plastic mulching, low tunnels etc. in the farmer's fields.
- Demonstrate various applications like drip irrigation, green house construction, plastic mulching at Government farms and farms belonging to ICAR Institutes, State Agricultural Universities, NGO's and progressive farmers.
- Improve the availability of quality planting material through establishment of nursery. To increase production and productivity of coconut.

- To bring additional area under coconut in potential non-traditional areas.
- To develop new technologies for product diversification and by-product utilisation.
- To strengthen mechanism for transfer of technologies.
- To elevate the income level of small and marginal farmers engaged in coconut cultivation.
- To build up sound information base for coconut industry and market information.
- To generate ample employment opportunities in the rural sector.
- Use of new seeds and technologies.
- + Quality assurance of seed plants and produce.
- Linking farmers with market.
- Infrastructure for production and marketing.
- Investment in development.
- Increased availability of horticulture produces Adoption of technologies.
- Increased exports of horticultural crops.
- Attraction for corporate in horticulture.
- Increased availability for processing.
- Stimulation of holistic growth of horticulture sector.
- Improvement of productivity through availability of improved germplasm, seeds, planting material, use of technologies like protected cultivation, drip and sprinklers.
- Creation of production clusters and hubs to facilitate setting up of infrastructure facilities for processing and PHM.
- Development and dissemination technologies for horticulture development.
- Creation of employment generation opportunities for skilled and unskilled persons, especially youth.

VI. CONCLUSION

The analyst is indicate that there is a growing trend in the area allotted for the cultivation of horticultural crops like vegetables and fruits all over the country, which has resulted in the growth in the value of output in the last 30 years. Though the rate of growth in the value of output of the horticultural products has come down during the 2000s, it is still higher than the overall growth of the agricultural sector, which augurs well of the horticultural sector of India Moreover, there is also huge demand for the horticultural products and it is growing at a considerable rate in both the rural and urban house hold and among both the poor and rich households. Thus, every effort should be taken to

increase the area and output of the horticultural crops, which are considered as high value crops, since it will considerably increase the income levels of the farmers in the area. In the Mangalore taluk is mainly we can see different types of cops are growing in Mangalore mainly we observe the main crops are coconut, cashew nut, areca nut, pepper, coco bean, pineapple and jackfruit are the main crops are in Mangalore. And their growing is very highly in the Mangalore taluk these are the important horticulture crops in Mangalore. And the mangloreans are highly cultivated these crops. And Mangalore has good climate, soil, and mainly coastal area its one of the important aspects of Mangalore. Here we can observe what are the horticulture crops in study are and their importance, scope, concept, and were distributed in the study area these are in important aspects in the topic. Review of literature methodology also in their then here we can study the Study area and objectives, these all topics included in this project work. In this project we can understand because of growing the important horticulture crops and their problems and prospects it's one of the major aspect of Mangalore.

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Cropping Pattern And Crop Ranking Of Dakshina Kannada District, Karnataka

¹Shekhar Angadi. ²K. N. Amarendra

¹Lecturer, Dept. of Geography, University College Mangalore-575001

²Associate Professor, Dept. of Geography, Sree Siddaganga College of Arts and Commerce Nelamangala-562123

Abstract: - Agriculture, crop ranking play a vital role in agriculture development. In this study mainly the ranking of the crops has been analysed from the year 2000-01 and 2015-16 by using secondary data, different taluks of district is having different ranking in the different year. The production of crops is depends on the soil, temperature, rainfall, irrigation and agriculture technique, each taluk having different soil texture, availability of water resource. In this attempt have been made to analyse cropping pattern and crop ranking of the study region. Horticulture crops were dominated because of this study area having humid climate which is suitable for crops like areca nut, coconut, cashew nut and rubber etc.

Keywords: - Agriculture, Cropping Pattern, Crop Ranking. Horticulture

Introduction

The percentage of area under each crops was ascertained simply by ranking them for each taluks in order to have percentage of the total net sown area occupied by each crop. Ranking of crops gives an insight into the geographical reality of the cropping pattern. Moreover, ranking of crops helps in knowing the crops which compete with each other to gain more hectares under cultivation. After assessing the relative strength of different crops in geographical unit, the process of planning can be initiated more relationally for the optimum used of the available land for cultivation. A judicious use of land with adequate input in fact can help in raising the agricultural production even in the less fertile soil. Thus the study is useful in reducing the entire regional disparities in the agricultural income and economy. Unless the major crops of the district are studied in their ranking order and the areal strength of each crop is determined, an appropriate association of soil and soil enriching crops for situation cannot be ascertained.

Study Area

Dakshina Kannada district is located south western part of Karnataka state in India with a population of 20, 83,625 persons (census 2011). Geographically it lies between 13⁰ 50' and 14⁰ 30' north latitude, and 68⁰ .00' and 70⁰.10' east longitude. The district was bifurcated in 1859 from north Canara district. The total area of Dakshina Kannada district is 477381 sq. km. administratively the Dakshina Kannada district is divided seven tehsil namely Mangalore. Sullia, Puttur, Belthangadi, Moodbidri, Bantwal and Kadaba. The study is bounded from the north by Udupi and Chikkamagalore district, southern by Kasaragod (Kerala), Kodagu district eastern by Hassan district, and western by Arabian Sea.

Objectives

To assessment the ranking crops of Dakshina Kannada district.

To know the cropping pattern of the study region.

Sources of data collection

1. To study the various aspects of Agricultural geography of Dakshina Kannada district, the data for two periods i.e., 2000-01 and 2015-16 are taken from the following.;
2. Dakshina Kannada district at a glance 2000-01 and 2015-16 district statistical office, Mangalore (Dakshina Kannada district), Government of Karnataka, M. S. Building, Bangalore.
3. Taluk a wise plan statistics of Dakshina Kannada district, District Planning Unit, Zilla Panchayat Office, Dakshina Kannada District.
4. Gazetteer of Dakshina Kannada District, Govt. of Karnataka.

Limitations of the study:-There is a limitation in the agricultural and cropping pattern, some crops have been unable to describe such as minor commercial crops like fruits, vegetable, etc. because of less percentage of agricultural area and production.

Methodology

This method can be studied by descriptive and quantitative, ways to delineate the ranking of individual crops according to their areas as impotence in each components units. The crop with the larger percentage share of the net sown area forms the first ranking crop and the crop with the next largest share become the second ranking crop. Similarly calculation have been made up to 1 to 11 ranking crop and result patterns have been plotted in figure no. for the years 2000-01 and 2015-16.

Table:-Taluk wise ranking of Crops 2000-01

Sl.No.	Name of the taluk	1	2	3	4	5	6	7	8	9	10	11
1	Bantwal	P	CS	A	CO	FR	V	PU	SP	RU	PP	C
2	Belthangadi	CS	P	A	CO	RU	V	FR	SP	PU	C	PP
3	Mangalore	P	CS	CO	PU	FR	A	V	RU	SP	PP	C
4	Puttur	CS	A	P	CO	FR	V	RU	SP	C	PP	PU
5	Sullia	A	RU	CS	CO	C	FR	P	SP	PP	V	PU
		3	4	4	2	3	3	5	2	5	3	3

Table:-Taluk wise ranking of Crops 2015-16

Sl. No	Name of the taluk	1	2	3	4	5	6	7	8	9	10	11
1	Bantwal	P	CS	A	CO	FR	SP	PU	RU	PP	V	C
2	Belthangadi	CS	P	A	CO	RU	SP	FR	PP	PU	V	C
3	Mangalore	P	CS	CO	PU	A	FR	V	SP	RU	PP	C
4	Puttur	A	CS	CO	P	RU	FR	V	SP	C	PP	PU
5	Sullia	A	RU	CS	CO	FR	P	PU	SP	PP	C	V
		3	3	3	3	3	3	3	3	4	3	3

P-PADDY, CS-CASHEW NUT, A-ARECANUT, RU-RUBBER, CO-COCONUT, FR-FRUITS, V-VEGITABLE PU-PULSES C-COCOA SP-SPICES PP-PEPPER

Discussion

First Ranking Crops:-Paddy are the most dominant crop in the district in 2000-01. There were only three crops i.e., Paddy. Cashew nut and areca nut, which were compact as first ranking crops in the district. Paddy was cultivated as first ranking crop in Bantwal and Mangalore taluk and cashew nut was cultivated as first ranking crop in Belthangadi and Puttur Taluks. Areca nut is only in Sullia taluk. During 2015-16, Paddy, Cashew and Areca nut were Cultivated as first ranking crops in the district. Among these crops the Paddy was dominant in two taluks. Viz., Bantwal and Mangalore. Areca nut was cultivated as first ranking crops in Puttur Taluk have been changes

and all four taluk continued as first ranking crops. Also same as frown as dominant crop in 2015-16 where as it was dominated by Paddy, Cashew and areca nut, areca nut in Puttur taluk instead of cashew nut during 2015-16.

Second Ranking Crops:-Cashew nut, Paddy, Areca nut and Rubber were cultivated as second ranking crops in the district during 2000-01. Cashew was dominated crop even as second ranking crop of the district and was so grown in Bantwal and Mangalore taluks. The second important crop in the same rank was paddy. Which was grown in Belthangadi, Similarly Areca nut in Puttur Rubber in Sullia. During 2015-16, Cashew nut was cultivated in three taluks wiz Bantwal, Mangalore and Puttur, Rubber grown as second ranking crop in Sullia taluk. Similarly paddy in Belthangadi. A one and half decadal study periods shows that Cashew have been replaced by Areca nut in Puttur remaining four taluk have maintain same crops an second ranking is same taluks respectively.

Third Ranking Crops:-Four crops were grown in the district as third ranking crop wiz, areca nut in Bantwal and Belthangadi, coconut in Mangalore, paddy in Puttur, and cashew nut in Sullia in 2000-01. Whereas three crops were cultivated as the third ranking crops in 2015-16. Areca nut was cultivated as third ranking crop in Bantwal and Belthangadi, coconut in Mangalore and Puttur, in cashew nut in Sullia have been grown as third ranking crop in the district during 2015-16. A Fifteen year periods, shows that there were change in cultivation of crops i.e., paddy in Puttur taluk, there were no changes were found in other four taluks of the district in during 2015-16.

Four Ranking Crops:-Coconut was cultivated as fourth ranking crops in four taluk wiz, Bantwal, Belthangadi, Puttur and Sullia. Pulses in one taluk were cultivated as fourth ranking crop during 2000-01. Similarly in 2015-16, three crops were cultivated as fourth ranking crops in the district in different taluks. The three crops are coconut in three taluk, pulses under Paddy in single taluk. The change from 2000-01 to 2015-16 shows that, Paddy is replaced by coconut in Puttur taluk and other four taluk were maintained same crops as fourth crop ranking in between period of fifteen years.

Fifth Raking Crops:-There were three crops cultivated as fifth ranking crops in 2000-01 and 2015-16. Fruits, rubber, and cocoa were cultivated as fifth ranking crops in a different taluk each, Fruits cultivated as a dominant crop as fifth ranking in three taluk but fruits cultivated as a dominant crop as fifth ranking in three taluk during 2000-01. During 2015-16, Fruits, Rubber and Areca nut were the important crop grown in the district as fifth ranking crop. Fruits and Rubber are dominant crop which was cultivated as fifth ranking crop in two taluks each (each crops having two taluks) and Areca nut in a single taluk. A one and half decadal periods shows that areca nut, Rubber and Fruits have been replaced by Fruits and cocoa.

Six Ranking Crop:-Vegetable have been dominantly cultivated as sixth ranking. Crops in three taluks during 200-01. Two other crops are also grown as sixth ranking crops, wiz, Areca nut and fruits. During 2015-16 with replacing vegetable by spice in Bantwal, Belthangady and Areca nut by fruits in Mangalore, and vegetable by fruits in Mangalore, and vegetable by fruits in Puttur, and fruits have been replaced by paddy in Sullia.

Seventh Ranking Crops:-The five crops have been cultivated as seventh ranking crops in 2000-01, and three crops during 2015-16 in the district. Pulses fruits, vegetable, rubber and paddy have been grown as seventh ranking crops during 2000-01 whereas pulses, fruits and vegetable are the seventh crops in 2015-16. A fifteen years of study period (2000-01 to 2015-16) shows that two taluks have been replaced vegetable by rubber in Puttur and pulses by Paddy in Sullia taluk.

Eighth Ranking Crops:-In this rank only two crops were included during 2000-01, whereas, three crops in the year 2015-16. The minimum numbers of crops have been grown as eighth ranking crops have been grown as eighth ranking crops i. e., two crop. The spices played dominance with placing in four taluks as eight ranking crop in the district during 2000-01. Rubber also have been cultivated as eight as eighth ranking crop in one taluks. The changes from 2000-01 to 2015-16 shows that about three crops have been replaced during span of fifteen years, spice have been replaced by rubber in Bantwal. Spice is replaced by pepper in Belthangadi, Rubber is replaced by spice in Mangalore remaining two taluks have maintain same crop eight ranking.

Ninth Ranking Crops:-There were five crops in the year of 2000-01. And 4 crops during 2015-16 have been cultivated as ninth ranking, in the district, Rubber, Pulses, Spices, cocoa and pepper was cultivated as ninth ranking crop on five taluk. Five taluks has been grown as ninth ranking crop in a single taluk each during 2000-01. In the year 2015-16, pepper was cultivated as ninth ranking crops in two taluks similarly pulses, cocoa and rubber have

been cultivated as ninth ranking crops in Belthangadi, Mangalore, and Puttur respectively. The changes from 2000-01 to 2015-16 shows that pepper and rubber are replaced by spice and pepper in Bantwal and Mangalore taluks.

Tenth Ranking Crops:-Pepper in Bantwal, Mangalore and Puttur was grown as tenth ranking crop in the year 2000-01, but in the remaining taluks have been cultivated cocoa in Belthangadi and Vegetable in Sullia has tenth ranking crops in the district. In the year 2015-16, the vegetable and pepper have been grown as tenth ranking crops in two taluks each of the district. Cocoa as tenth ranking crops in the district. A one and half decadal study periods (2000-01 to 2015-16) shows pepper and cocoa have been replaced by vegetables as tenth ranking crop in the district. Three crops have been continued as tenth ranking crop during a span of fifteen years.

Eleventh Ranking Crops:-Cocoa and pulses was cultivated as eleventh ranking in two taluks each and pepper in a single taluk of district in 2000-01. Whereas cocoa, pulses and vegetable crops grown in) cocoa in three taluk in one taluk pulses and vegetable in a single taluk each have been cultivated as eleventh ranking crops in 2015-16. In the year 2015-16. Cocoa have been grown as eleventh ranking crops in three taluks of the district. Pulses, vegetables, in a single taluk each have been cultivated as eleventh ranking crops in 2015-16. The changes from 2000-01 shows that cocoa in Bantwal, pulses in Puttur have been other crops have been replaced during a fifteen year pepper was replaced by cocoa, pulses was replaced by vegetable and pepper was replaced by cocoa in Belthangadi in Sullia taluk.

Conclusion

In this study we can observe horticulture crops were dominated because of this study area having humid climate which is suitable for crops like areca nut, coconut, cashew nut and rubber etc. and also we can notice in this region farmers adopting new technologies for improving to develop of horticulture crops.

1. Paddy has been cultivated as first ranking crop in the 2 taluks which coastal plain land.
2. Cashew nut and areca nut are the first ranking crop in the elevated land to words Western Ghats region.
3. There are intermix of cashew nut, rubber and coconut as second and third ranking crops are all taluks of the districts.
4. Among the dry taluks other pulses and fruits are the third and fourth ranking crops.
5. There exist differences in the ranking of crops, between coastal plain and elevated land. The middle order rank like fifth and sixth possess few wet crops in dry taluks. This type of trend connate be notice in ninth tenth, and eleventh crops between wet and dry taluks.

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Changing Scenario of Sex Ratio in Tumkur District: A Study

¹K. N. Amarendra, ²Shekhar Angadi, ³Basavaraja. G. R.

¹Associate Professor, Dept. of Geography, Sree Siddaganaga College of Arts and Commerce Nelamangala-562123

²Lecturer Dept. of Geography, University College, Mangalore-01

³Lecturer, Dept. of Geography, Mandya University, Mandya

Email - sangadi7@gmail.com

Abstract: *The Sex-ratio is also one of the main components of demographic study from which one can identify the strength of male and female population. Thus numerical measurement of sex composition is often expressed in terms of sex ratio, this ratio is calculated differently in different countries. In India the sex ratio is calculated in terms of number of females per thousand males. Secondary data is used for analysis of sex ratio in Tumkur district that is 2001 to 2011.. According to 2011 census, out of the total population 2678980 persons, 1350594 males and 1328386 females, forms the sex ratio of Tumkur 984 female's per1000 males. The 2011 census recorded a sex ratio of Tumkur district 984 females' per1000 males. This is much higher than that of the state ratio of 973. The sex ratio of the district shows continuous increasing trend since 1961. It is found true in the present study where one can observe differences in male and female ratio in rural and urban areas. For the Tumkur district as whole sex ratio varies from rural to urban areas and from one decade to another as well as from one taluk to another. Sex ratio of Karnataka in the year 2011 is 968 females per thousand males. But in India 940/1000 males and it is below the state average district average. In the year 1981 the sex ratio was 961 females per 1000 males whereas. In 1991 it decreased by small fraction to 959 females per 1000 males, but by the year 2001 it increased to 966/1000 males. This study has been attempted to know sex ration in Tumkur districts.*

Key Words: Sex Ratio, Changing Scenario, Population, Tumkur District,

1. INTRODUCTION :

Sex ratio is most significant demographic indicator of an area which play pivotal role in assessing the nasality, mortality, occupational structure and migration character of the population. Hence the analysis of sex ratio is the vital importance. The numerical expression of male and female is sex composition of an area. It is an important aspect in the study of population characteristics. In other words the proportion of males and females or ratio between them is a sex ratio. For example sex ratio of the world is 986 that is 986 females per 1000 males. Sex Ratio is an important indicator to measure the extent of prevailing equality between male and female population of a society specified point of time. The separate data of males and females is important for various types of planning and for the analysis of other population aspects. Sex ratio directly influences the supply of labor. If proportion of males in the total population is larger than that for females, the supply of man power is more. If proportion of males in a population is large, age at marriage for girls declines. If age at marriage for females declines birth rate increases and total population starts to grow. If proportion of males in total population is large, generally death rate is high. While if the proportion of female is large, normally the death rate will be low. The Proportion of female's in total population influences status of females in the society and participation of females in the economic activity. Sex ratio will be affected by Fertility, Mortality, Maternal mortality, Wars and others. Under nutrition mortality among males is higher than that of females. Generally, sex ratio among migrants is not balanced. Males dominate among long distance migrants and also among those who move due to economic reasons. Franklin (1956, p-168) rightly observes that sex ratio was an index of economy prevailing in an area and was useful tool for regional analysis. The profound effect of the sex ratio upon the other demographic elements like population growth, marriage rates, occupational structures, has also been well recognized (Shyrock 1976, p-105). Thus, the knowledge of sex ratio is essential for understanding the employment and consumption patterns and social needs

etc. of a community. Trewartha (1953) rightly observed that the proportion of two sexes is fundamentals to the geographic analysis of a region. Because it is not only an important feature to the landscape but it also influences the other demographic elements significantly and such provides an additional means for analyzing the regional landscape. The numerical measurement of sex composition of a population is often expressed in terms of sex ratio. Sex ratio is defined as the number of female's per thousand males. It is an important and useful indicator to assess relative surplus or deficit of men or women in a given population at that point of time. There are more men than women in both India and Karnataka. It is evident from the table that the sex ratio (females per 1000 males) is lower than 1000 throughout the period 1901 to 2001. The graph shows that sex ratio per 1000 males was quite better during 1901 for Karnataka (983) and further it has been declined to 965 in 2001. Female mortality was higher than male mortality is the reason for the sex ratio lower than 1000 in all the census periods. Karnataka state is better positioned in sex ratio when compare to all India data. It has been observed marginal improvements in sex ratio during the periods of 1981 and 2001 in Karnataka.

2. STUDY AREA :

Tumkur districts selected for the present study. Many geographical characteristics like Rainfall, irrigation, urbanization, industrialization etc. are considered for the choice of topic. The study area is influenced by the state capital. The geographical aspects are very impotent to understand the changing pattern of population of an area and also it exhibits the potentialities of that particular area for its development. Therefore an attempt is made to know the geographical background of Tumkur district. The name of the district Tumkur had been derived from TUMKURU and TUMMEGURU this place is famous for Leucasaspera. Tumkur district has a few places like Iraka Sandra of Koratagere taluk, Nedagallu, having great historical impotence. Recently, the name of the district is changed as Tumakuru, for the convenience of census data analysis the old name is mentioned here. Tumkur district is situated between 12°45' and 14°20' North latitudes and 76°20' and 77°31' East longitudes. The district has irregular shapes with peculiar features. The North Eastern part of the district is totally detached from the remaining part of the district. This place named Pavagada taluk and surrounded by the Andrapradesh, western part of this taluk with very short stretch to touches the Chitradurga district. The district is bounded on the north by Annantpur district by Andra pradesh, on the south by Mandya district on the east by Chikkaballapur, Bangalore rural and Ramanagar district and west bounded by Hassan and Chitradurga districts of Karnataka state. The mid-west part of the district too touches Chikkamagalur district. The district has an area of 10,597 km², accounts 5.5% of the total geographical area of the Karnataka state.

3. METHODOLOGY :

Secondary data were used for this study which is collected from survey of India and district statistical department MS Building Bangalore. The simple formula has been used for calculating the Sex Ratio.

$$\text{Sex-Ratio} = \frac{\text{Number of females}}{\text{Number of Males}} \times 1000$$

4. OBJECTIVES :

- To Know the sex ratio of Tumkur district
- To Study the changing scenario of sex ratio in the study region.

5. DISCUSSION :

Table1: Trend of Sex Ratio in India, Karnataka and Tumkur District

Sl. No	Census year	India	Decadal Variation	Karnataka	Decadal Variation	Tumkur District	Decadal Variation
1	1901	972	---	983	---	985	---
2	1911	964	-8	981	-2	977	-8
3	1921	956	-8	969	-12	958	-19
4	1931	952	-4	965	-4	962	4
5	1941	947	-5	960	-5	951	-11
6	1951	948	1	966	6	958	7
7	1961	943	-5	959	-7	956	-2

8	1971	931	-12	957	-2	957	1
9	1981	934	3	963	6	961	4
10	1991	927	-7	960	-3	959	-2
11	2001	933	6	965	5	966	7
12	2011	940	7	973	8	984	18

Source: Census of India 1901 and 2011

As per figures depicted in the above chart, sex ratio of India is continuously decreased from 1901 to 1941. In the very next decade 1951, it was increased by one unit and became 946 from 945 females per 1000 males. Again it was decreased by 05 and 11 units in the next 1961 and 1971 census years. After 1971 census, the trend did not remain constant but increases in one decade and declines in next decade. From 1991 the sex ratio of India shows trend of improvement as 927, 933, 940 ratio in 1991, 2001 and 2011 census respectively.

Sex ratio in Tumkur District

According to 2011 census, out of the total population 2678980 persons, 1350594 males and 1328386 females, forms the sex ratio of Tumkur 984 female's per 1000 males. The 2011 census recorded a sex ratio of Tumkur district 984 females' per 1000 males. This is much higher than that of the state ratio of 973. The sex ratio of the district shows continuous increasing trend since 1961. It is found true in the present study where one can observe differences in male and female ratio in rural and urban areas. For the Tumkur district as whole sex ratio varies from rural to urban areas and from one decade to another as well as from one taluk to another. Sex ratio of Karnataka in the year 2011 is 968 females per thousand males. But in India 940/1000 males and it is below the state average district average. In the year 1981 the sex ratio was 961 females per 1000 males whereas. In 1991 it decreased by small fraction to 959 females per 1000 males, but by the year 2001 it increased to 966/1000 males.

Sex ratio at Taluk level

There are large Spatio-temporal variations in the sex ratio at taluk level. According to 1991 census, it is observed that the highest sex ratio was observed in Kunigal taluk with 1005 and lowest was found in Tumkur taluk with 910 females per 1000 males. Where as in the year 2001 the sex ratio increased slightly and it is 924 females to 1000 males in the district. The lowest was observed in Tumkur taluk (924) but Kunigal continued to be the highest. In the 2001 census and observe the growth rate of these three decade in Kunigal taluk continues increase of growth rate of sex ratio (+0.090% (1991) to +1.79% (2001), except Koratagere taluk (-0.21%) growth rate of sex ratio has slightly increased in remaining taluks.

Table2: Taluk Wise Trend of Sex Ratio in Tumkur District (1901-2011)

Sl.No	Taluks	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001	2011
1	Chikkanaya Kanahalli	990	979	955	956	943	947	937	956	968	974	985	1009
2	Gubbi	1003	984	949	962	957	964	967	981	976	971	976	987
3	Koratagere	953	919	922	943	934	939	959	957	964	967	965	987
4	Kunigal	1018	1027	1000	1004	998	1004	999	996	996	1005	1023	1002
5	Madhugiri	947	957	934	942	930	940	940	941	953	953	962	989
6	Pavagada	948	940	940	938	915	924	943	942	942	944	955	982
7	Sira	975	964	949	961	921	953	949	960	955	956	960	974
8	Tiptur	993	987	983	978	976	965	951	953	957	970	978	1002
9	Tumkur	984	962	951	943	943	945	939	920	935	910	924	945
10	Turuvekere	1073	1088	1021	1016	1004	1008	984	989	993	998	1001	1013
	District	985	977	958	962	951	958	956	957	961	959	967	984

Source: Census of India Publication.

From some of the recent studies it has been observed that compared to pre 1970's sex ratios in the state barring coastal district have significantly declined. Earlier, decadal sex ratio was higher and shows the compassionate society. With the improving medical facilities, sex ratio shows decline due to still continuing discrimination of female in a male child preferring society. Only in post 1991 census, sex ratio starts to increase due to the growth of female literacy and at the same time, central & state governments have taken several steps to protect and empower girl child there is a

marginal rise in female population. The disparities in the sex ratio between rural and urban area of the district is not much glaring. The sex ratio in the rural area of the district is 984 females to 1000males, its far better than the state as well as national sex ratio during 2011cesus. The same tendency is continued in the sex ratio of urban areas also. The difference between rural and urban area in the sex ratio is just one. Among the taluks, the overall sex ratio is varies significantly. Turuvekere, Chikkanayakanahalli, Kunigal and Tiptur taluks have better sex ratio i.e. more than1000 females per thousand males, of which Turuvekere has the highest sex ratio with1013 females.The least sex ratio is observed in Tumkur taluk and it has only 954females /thousand males. A little insight in to rural areas shows that, as mentioned earlier, four taluks namely Turuvekere, chikkanayakanahalli, Kunigal and Tipturtaluks have better sex ratio i.e. more than 1000 females per thousand males. There is a drastic change in Sex ratio of Tumkur taluk, it is reduced to 932 females per thousand males and exhibits below the national average, reason may be the unemployed male population migrated to wards state capital at the time of enumeration. During the period, sex ratio in the urban area of the district about 984 females per thousand males. Between the 2001and2011census period sex ratio increased about 46 females per thousand males. At the taluk level it varies considerably. Among the taluks urban area of Chikkanayakanahalli taluk has highest sex ratio with 1025, followed by Koratagere and Turuvekere taluks with 1009 and 1003respectively. Rest of the urban areas of the district exhibits the sex ratio below 1000, urban areas of Kunigal taluk records the least sex ratio with 972in the district.

Table.3: Taluk wise Sex Ratio in Tumkur District (2001-2011)

Sl.No	Taluks	Sex Ratio (2001)			Sex Ratio (2011)			Decadal Changes		
		Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
1	Chiknayakanahalli	986	984	997	1009	1006	1025	23	21	27
2	Gubbi	977	979	946	987	986	999	10	7	53
3	Koratagere	966	966	971	987	985	1009	21	19	38
4	Kunigal	1024	1034	959	1002	1007	972	-22	-27	13
5	Madhugiri	965	967	941	989	988	999	24	20	58
6	Pavagada	958	959	947	982	981	992	25	22	45
7	Sira	961	966	937	974	972	981	13	6	43
8	Tiptur	977	988	945	1002	1007	988	24	18	43
9	Tumkur	925	925	926	954	932	976	28	6	50
10	Turuvekere	1001	1008	940	1013	1014	1003	12	6	63
	District	967	975	938	984	983	984	17	8	46

Source: Census of India2001 and 2011

Table4.Taluk wise Sex Ratio of SC & ST population in Tumkur District (2001-2011)

Sl.No	Taluks/ year	Sex Ratio (2001)			Sex Ratio (2011)			Changes		
		Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
1	Chiknayakanahalli	975	976	956	1004	1001	1027	29	25	71
2	Gubbi	974	974	977	992	988	1055	18	14	78
3	Koratagere	963	960	995	1004	1004	1004	41	43	9
4	Kunigal	1036	1043	976	1026	1035	967	-9	-8	-9
5	Madhugiri	953	958	883	990	986	1030	37	28	147
6	Pavagada	954	954	959	987	986	999	33	32	41
7	Sira	960	965	925	979	976	998	18	12	74
8	Tiptur	996	1005	953	1029	1035	1003	33	30	50
9	Tumkur	941	955	914	967	959	980	26	4	67
10	Turuvekere	996	996	998	1030	1020	1133	34	25	135
	District	964	969	932	991	990	998	27	21	66

Source: Census of India 2001 and 2011

Sex ratio of SC & ST population

Table 4.4 explained about the sex ratio of SC & ST population in Tumkur district during 2001 and 2011 census years. In 2001 SC & ST sex ratio is 964, which is below the overall sex ratio of the district i.e., 967 in 2001 but it has increased to 991 in 2011 which is higher than overall sex ratio of the district i.e., 984 in the same period. Sex ratio of SC & ST population in the rural area is more than the district average. Sex ratio of SC & ST population is more in Kunigal Taluk during 2001 & 2011, and it is more than district average and state average, followed by Koratagere, Turuvekere & Tiptur Taluk. Taluk wise Sex ratio of SC & ST population both in Urban & Rural area of Tumkur district is increasing since 2001, excepting Kunigal Taluk. Decadal growth rate of sex ratio is more in Koratagere followed by Madhugiri. Growth of urban sex ratio in Koratagere Taluk is just 9 and it has increased about 41 in the rural areas of the Taluk. Sex ratio in Kunigal taluk is decreased from 1036 in 2001 to 1026 in 2011. The Sex ratio in the age group 0-06 year shows positive trend except in three taluks viz Kunigal, Turuvekere, Pavagada, Which is rapidly declining in Tumkur district than the state & Country average. As per 2011 census Tumkur district has the sex ratio about 959 between 0-06 years age group (child sex ratio), but it was 947 in 2001. According to 2011 census, Gubbi and Tiptur taluk has highest child sex ratio where as Pavagada taluk has least child sex ratio.

Table 4.5 depicts the child sex ratio of rural and urban area during 2001 & 2011. In general, child sex ratio of urban area is better compared to sex ratio of rural area in Tumkur district during both census periods. At taluk level the child sex ratio varies considerably. Among the taluks rural area of Chikkanayakanahalli and Tiptur taluk both have highest child sex ratio with 995, followed by Gubbi taluk with 974 females per thousand males. Rural area of Kunigal taluk records the least child sex ratio with 930 female children in the district. The same tendency is continued in the urban area of the district

Table 5: Taluks Wise Sex Ratio of 0 to 6 years Age Population in Tumkur District (2001-2011)

Sl.No	Taluk	2001			2011			Decadal change (2001 -2011)		
		Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
1	Chikkanayakanahalli	969	965	1002	993	995	985	24	30	-17
2	Gubbi	955	956	931	970	974	922	15	18	-9
3	Koratagere	943	942	958	965	964	975	22	22	17
4	Kunigal	971	975	948	929	930	928	-42	-45	-20
5	Madhugiri	952	957	899	964	966	955	12	9	56
6	Pavagada	938	935	966	928	932	900	-10	-3	-66
7	Sira	939	942	922	953	947	977	14	5	55
8	Tiptur	950	956	902	981	995	947	31	39	45
9	Tumkur	940	931	950	964	961	967	24	30	17
10	Turuvekere	957	957	957	929	930	918	-28	-27	-39
District		947	949	946	959	959	959	10	10	13

Source: Census of India 2001 and 2011

Table 6: Village wise Sex Ratio in Tumkur District (2001)

Sl.No	Taluk	Total villages	Number of Villages have the Sex Ratio above the average					
			Dist Avg = 967		State Avg = 965		National Avg = 933	
			Villages	%	Villages	%	Villages	%
1	Chikkanayakanahalli	221	139	62.9	142	64.3	175	79.2
2	Gubbi	328	189	57.6	194	59.1	248	75.6
3	Koratagere	236	107	45.3	108	45.8	155	65.7
4	Kunigal	294	242	82.3	243	82.7	267	90.8
5	Madhugiri	298	153	51.3	156	52.3	207	69.5
6	Pavagada	145	66	45.5	67	46.2	103	71.0
7	Sira	235	124	52.8	126	53.6	166	70.6
8	Tiptur	227	146	64.3	147	64.8	191	84.1
9	Tumkur	358	176	49.2	179	50.0	236	65.9
10	Turuvekere	232	161	69.4	163	70.3	195	84.1
District		2574	1503	58.4	1525	59.2	1943	75.5

Source: Census of India 2001

Sex Ratio at village level

Sustain analysis reveals that sex ratio at village level is much glaring. A glance at table 4.6, it indicates that, Villages are classified into three categories based on the sex ratio like, Villages which have sex ratio more than district average ,state average& national average. According to 2001 census there are 2574 villages in Tumkur district, of which,1503 villages (58.4%) have more than district average sex ratio i.e.967,about 1525villages (59.2%) have more than state average sex ratio i.e., 965 and 1943 villages(75.5%) have more than national average sex ratio i.e.933. Table also indicates that, National average sex ratio is less than the district average and state average. Out of ten taluks Kunigal taluk has highest percentage of villages (82.3%), which have the sex ratio more than district average, as well as state and national average. Less number of villages (45.3%) in Koratagere taluk have the sex ratio more than district, state& national average.

Table7: Village wise Sex Ratio in Tumkur District (2011)

Sl.No	Taluk	Total Villages	Number of Villages have the Sex Ratio above the average					
			Dist Avg = 984		State Avg= 973		National Avg =940	
			Villages	%	Villages	%	Villages	%
1	C.N.Halli	222	133	59.9	149	67.1	182	82.0
2	Gubbi	331	182	55.0	192	58.0	242	73.1
3	Koratagere	235	122	51.9	129	54.9	165	70.2
4	Kunigal	294	189	64.3	206	70.1	239	81.3
5	Madhugiri	302	144	47.7	170	56.3	220	72.8
6	Pavagada	149	77	51.7	87	58.4	119	79.9
7	Sira	234	97	41.5	118	50.4	170	72.6
8	Tiptur	225	147	65.3	162	72.0	193	85.8
9	Tumkur	357	158	44.3	184	51.5	245	68.6
10	Turuvekere	233	151	64.8	162	69.5	191	82.0
District		2582	1400	54.2	1559	60.4	1966	76.1

Source: Census of India 2011

According to 2001 census Tumkur district has 2582 villages, of which, 1400 villages(54.2%) have more than district average sex ratio i.e.984,1559villages(60.4%) have more than state average sex ratio i.e., 973 and 1966 villages (76.1%) have more than national average sex ratio. During 2011 census Tukur district has better sex ratio than that of National and state average sex ratio. Among ten taluks of the district, Tiptur taluk has highest percentage of villages(82.3%), which have the sex ratio more than district average, as well as state and national average. Least number of villages in Sira taluk has the sex ratio more than district, state & national average.

Table8: Village wise Sex Ratio of SC & ST Population in Tumkur District(2001)

Sl.No	Taluk	Total Villages	Villages have the Sex Ratio above the average			
			SC Dist Avg = 966		ST Dist Avg = 962	
			Villages	%	Villages	%
1	Chikkanayakanahalli	221	96	53.9	78	59.1
2	Gubbi	328	130	56.8	96	57.5
3	Koratagere	236	92	49.7	78	51.7
4	Kunigal	294	170	66.7	34	46.6
5	Madhugiri	298	115	48.9	105	50.7
6	Pavagada	145	61	44.9	65	50.8
7	Sira	235	102	49.8	93	52
8	Tiptur	227	117	62.6	57	57
9	Tumkur	358	141	48	101	47.9
10	Turuvekere	232	118	61.5	49	61.2
District		2574	1142	54.5	756	52.9

Table 8 explains about the village wise sex ratio of SC & ST population at taluk level in Tumkur district. As per 2001 census, 1142 villages have more SC population sex ratio than district average Sex ratio and 756 villages have more ST Population sex ratio than district average sex ratio. Among all the taluks in Tumkur district more villages in

Kunigal Taluk have more SC population sex ratio than district average, followed by Tiptur and Turuvekere taluks. More villages in Pavagada taluk have less SC population sex ratio compared to other taluks. Table also describes about ST population sex ratio. Out of 10 taluks Turuvekere taluk villages (61.2 %) have more ST population sex ratio followed by Chikkanayakanahalli & Gubbi Taluks. In Tumkur district more villages of Kunigal taluk have less ST population sex ratio than the district average and it is followed by Tumkur taluk villages.

Table.9: Village wise Sex Ratio of SC &ST Population inTumkur District (2011)

Sl.No	Taluk	Total Villages	Number of Villages have the Sex Ratio above the average			
			SC Dist Avg =991		ST Dist Avg = 991	
			Villages	%	Villages	%
1	Chikkanayakanahalli	222	100	53.8	72	50.0
2	Gubbi	331	129	54.4	94	51.4
3	Koratagere	235	105	55.6	75	47.8
4	Kunigal	294	176	68.2	41	42.7
5	Madhugiri	302	107	45.7	107	50.0
6	Pavagada	149	74	53.2	72	54.1
7	Sira	234	98	47.8	87	47.0
8	Tiptur	225	118	63.4	66	58.9
9	Tumkur	357	134	45.6	110	47.8
10	Turuvekere	233	118	61.8	56	56.0
District		2582	1159	54.7	780	50.2

Source: Census of India 2011

6. CONCLUSION

According to 2011 census, out of 2582 villages, 1159 villages in Tumkur district have more SC population sex ratio than district average sex ratio and 780 villages have more ST Population sex ratio than district average ST sex ratio in the district. Among the taluks in Tumkur district, Kunigal Taluk has more villages with more SC population sex ratio than the district average, followed by Tiptur and Turuvekere taluks. Pavagada taluk has more villages with less SC population sex ratio compared to other taluks. Table also describes the ST population sex ratio. Out of 10 taluks, Tiptur taluk has more villages (58.9 %) with more ST population sex ratio followed by Turuvekere & Gubbi Taluks. In the district, villages of Kunigal taluk have less ST population sex ratio than the district average. Nearly 50% villages in all the taluks of the district exhibits low Sex ratio. The reasons behind lower sex ratio are the similar which are prevailing in India. Special concentration is to be needed to uplift the sex ratio.

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