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Editorial

It gives me immense satisfaction to place before the readers the IVth Volume of our College Research Journal, QUEST - The GCCE Peer Reviewed Journal of Multidisciplinary Research. At a time when Scorpus indexed and UGC recognized journals have become the requisites and preferred norm of publication for researchers and the teaching faculty, bringing out a college research volume has become an arduous exercise.

The fourth volume of our journal predominantly consists of selected research papers presented at the One Day State Level Seminar organized by the Department of Economics of the College on the theme "The Agriculture Sector in Goa: Towards Self Sufficiency and Sustainable Development" in January 2019. The Volume comprises of a total of fourteen research papers, nine of which are related to the theme of the seminar and five others – multidisciplinary in nature.

It is hoped that the contents in the volume provide the readers with fruitful inputs, information, analysis and adds to their body of knowledge.

Dr. Elizabeth J Henriques

Editor

Foreword

Dear Reader,

We are pleased to present the Forth Volume of 'QUEST' which is a Peer Reviewed Journal published annually by the Government College of Commerce and Economics, Borda, Margao, Goa. Quest is a platform for Scholars, Researchers and Practitioners who want to share their scholastic knowledge and Research experience from various fields particularly Social Science areas.

Today, Higher Education Ministry and UGC expect quality oriented research publications, hence, the Research Papers received for Quest have to undergo the process of 'Peer Review' and the 'Plagiarism' test which we have done.

'Agriculture in Goa', is the main thrust and centre of the Quest 2019. The Research papers published here will give you the status, feeling, grass root problems and perception of the agriculture sector in the State of Goa.

I sincerely thank all the contributors and the Editor, Dr. Elizabeth J. Henriques, Associate Professor of Economics for bringing out this issue of 'Quest - The GCCE Journal of Multidisciplinary Research .

Dr. Gajanan V. Madiwal
Principal

Panel of Peer Reviewers…..

SUPPORT PRICE AND CROP COMPENSATION SCHEME IN GOA: A STUDY

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ABSTRACT

The Agricultural sector in Goa needs a serious revival. A large number of efforts have been made by the state government through the Agricultural Department to bring in changes and improve the outcomes of the sector. Farmers Clubs are also instrumental in bringing in much needed change. The paper seeks to analyze the Support Price and Crop Insurance Compensation Scheme of the state government. The paper is based on both primary and secondary data sources.

Keywords: Crop compensation, Support price, Agriculture, Schemes

INTRODUCTION

The Agricultural sector of Goa needs a serious revival. Efforts are being made by the farmers and the Agricultural Department of Goa to bring in many changes and positive outcomes. The "farmer's club" in the village of Chorao is a very good example of a positive step in agriculture in the right direction. The agricultural business has grown under this club on a large scale. Besides this, the "Ilha Verde Farmer's club" in the village of St. Estevam where "Community Farming" is done has taken a leap forward and has made news all over the state.

This paper has tried to analyse the Support Price and Crop Compensation Scheme of the Government under the agricultural sector for the past six years. It is seen that from 2012-13 to 2017-18 there has been a drastic variation in the number of beneficiaries under the Support Price and Crop Compensation Scheme for various crops in the state of Goa.

OBJECTIVES OF THE STUDY

i) To analyze the Support Price and Crop Compensation Scheme in Goa for the last six years.

ii) To study the variations in the number of beneficiaries under the Support Price and Crop Compensation Scheme for various crops in the state of Goa.

iii) To give recommendations for the improvement of the scheme.

METHODOLOGY OF THE STUDY

The data for the paper on"Support Price and Crop Compensation Scheme in Goa: A Study" was collected from both primary and secondary sources. Interviews were held with the officials from the Directorate of Agriculture, Panaji-Goa. Besides this, information was also collected from the official records of the Directorate of Agriculture, Panaji-Goa. Various other books and the internet were also referred to.

SOME OF THE AGRICULTURAL SCHEMES PROVIDED BY THE GOVERNMENT TO THE FARMERS OF GOA.

The farmers in Goa have been assisted by the government through various schemes, where lakhs of rupees have been sanctioned by the government for the improvement of the Agricultural sector of Goa.

Support Price gives guaranteed price and assured market to the farmers and protects them from price changes and market fluctuations. Some of the schemes provided by the Government to the farmers of Goa are as follows:

1) Training in Agriculture and Home Science on Campus\ off Campus.
2) Krishi Card.
3) Soil Samples collection and analysis.
4) Assistance for soil conditioner and micro nutrients under Rastriya Krishi Vikas Yojana.
5) Assistance for construction of Biogas plant.
6) Assistance for Vermi compost unit.
7) Assistance for Organic manure units.
8) Assistance for rock phosphate under Rastriya Krishi Vikas Yojana.
9) Support Price and Crop compensation.
10) Development of Horticulture.

THE NUMBER OF BENEFICIARIES UNDER SUPPORT PRICE AND CROP COMPENSATION SCHEME IN GOA FROM 2012-13 TO 2017-18.

Table 1: Number of beneficiaries under Support Price and Crop Compensation Scheme in Goa (2012-13 to 2017-18)

Support Price and Crop Compensation Scheme	Number of Beneficiaries					
Names of the crops	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Paddy	12061	7629	2425	7067	9569	22290
Sugarcane	972	637	535	1191	1062	1489
Coconut	1226	2145	416	980	2165	786
Arecanut	711	2278	1179	673	45	01
Alsando	77	15	2	9	3	00
Cashewnut	2726	16209	2239	1916	45	00
Oil Palm	292	197	38	252	30	276

Source: Directorate of Agriculture, Goa.

It is seen from Table 1 that the number of beneficiaries under the Support Price and Crop Compensation Scheme had increased for two crops i.e. paddy and sugarcane from 2012-13 to 2017-18. It is also seen that the beneficiaries under the Support Price and Crop Compensation Scheme for coconut had increased from 2012-13 to 2013-14 but decreased in the subsequent years till 2017-18, except in 2016-17.

It is seen from the table that the beneficiaries under the scheme for Arecanut increased from 2012-13 to 2013-14, but has shown a decreasing trend from 2014-15 to 2017-18.There were 77 beneficiaries of this scheme under Alsando crop in 2012-13, but has shown a decreasing trend from 2012-13 onwards. In 2017-18 there were no beneficiaries for Alsando crop in 2017-18. It is also seen from the table that the beneficiaries of Cashew crop under the Support Price and Crop Compensation Scheme from 2012-13 has shown a decreasing trend and in 2017-18 there were no beneficiaries of cashew growers under this scheme.

The total number of oil palm beneficiaries under this scheme, were 292 in 2012-13. This number decreased to 197 in 2013-14 and further fell to 38 in 2014-15. In 2015-16 the number of oil palm beneficiaries increased to 252 which increased still further to 309 in 2016-17, but decreased in 2017-18 to 276 beneficiaries.

THE EXPENDITURE INCURRED BY THE GOVERNMENT ON SUPPORT PRICE AND CROP COMPENSATION SCHEME IN GOA FROM 2012-13 TO 2017-18.

Table 2 : The expenditure incurred by the Government on Support Price and Crop Compensation Scheme in Goa (2012-13 to 2017-18).

Support Price and Crop Compensation Scheme	Physical units of crops (in tonnes, Kgs., lakhs) under the Support Price and Crop Compensation Scheme in Goa from 2012-13 to 2017-18.					
Names of the crops	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Paddy	1084 (T)	7058.96(T)	2425(T)	6439.4 8(T)	8970(T)	9432.89 (T)
Sugarcane	44135.93(T)	31242.21(T)	20246(T)	87099.15(T)	53114.76(T)	79367.97(T)
Coconut	115.86 lakhs	178.53 lakhs	27.64lakhs	84.48 lakhs	151 lakhs	63.26 lakhs
Arecanut	131.87(T)	11.07(T)	3019(T)	1434.74(T)	27.87(T)	1.96(T)
Alsando	77Kgs	1457.40Kgs	200 Kgs	120.55	Kgs 333	Kgs 0
Cashewnut	1256.57(T)	327(T)	1243(T)	818.12 (T)	1142(T)	00
Oil Palm	292(T)	1254.96(T)	38(T)	1723.64(T)	6425(T)	2170.64(T)

Source: Directorate of Agriculture, Goa.

It is seen in the above table that Paddy beneficiaries in Goa received the Support Price and Crop Insurance Scheme in 2017-18 and produced 9432.89 tonnes of paddy, whereas sugar beneficiaries in Goa received the benefit of this scheme and produced 79367.97 tonnes of sugar. There were 786 coconut beneficiaries under this scheme and the production was 63.26 lakhs of coconuts under this scheme in the year 2017-18. In 2017-18 as there were no beneficiaries for Alsando crop and cashewnut production under the scheme so the production under the scheme for these crops has shown zero production. All the crops shown in the table received support from the Support Price and Crop Insurance Scheme in Goa from 2012-13 to 2016-17 and there was good production under all the crops except in 2017-18.

CONCLUSION:

Beneficiaries under the scheme:

- The beneficiaries' of Alsando crops have been very few under The Support Price and Crop Compensation Scheme in Goa from 2012-13 to 2017-18.
- The expenditure incurred by the Government on Alsando crop has been the lowest

under the Support Price and Crop Compensation Scheme in Goa from 2012-13 to 2017-18.

- The production of Alsando crop and cashewnuts under the Support Price and Crop Compensation Scheme in Goa is shown as zero in 2017-18
- It is seen from the study that from 2012-13 to 2017-18 there has been a drastic variation in the number of beneficiaries under the Support Price and Crop Compensation Scheme for various crops in the state of Goa.

Expenditure incurred by the Government:

- It is seen from the table that the Goa government has helped a number of beneficiaries of paddy, sugarcane, coconut, Arecanut , Alsando, cashewnut and oil palm from 2012-13 to 2016-17 by incurring huge expenditure under the Support Price and Crop Compensation Scheme.

Production:

- There was production of paddy, sugarcane, coconut, Arecanut, Alsando, cashewnut and oil palm under the Support Price and Crop Insurance Scheme in Goa from 2012-13 to 2016-17 except in 2017-18.

RECOMMENDATIONS

- More farmers in Goa should avail the benefit of the Support Price and Crop Insurance Scheme in Goa and benefit from this scheme.
- The Agriculture Department should study the reasons for the fall in the number of beneficiaries of some crops under the Support Price and Crop Insurance Scheme in Goa over the years and bring the necessary changes so as to benefit the farmers.
- Agriculture in Goa needs to be taken seriously. There is a need to revamp agriculture and more efforts are required from the side of the Government and also from the farmers' side to do so.
- A better Government- Farmer –Interface would help to solve all the problems of the agricultural sector in Goa and revive agriculture in Goa.
- Along with the schemes, better and continuous monitoring, motivation of the farmers, knowledge talks, seminars for the farmers and interest by the Government officials associated with Directorate of Agriculture could give better results in the agricultural sector of Goa.
- A holistic improvement in agriculture should revive and bring a revolution in the agricultural sector of Goa. The sky is the limit and nothing is impossible to bring a change.

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PRIVATE V/S GOVERNMENT SPONSORED HORTICULTURE KIOSKS-A STUDY OF CONSUMER PREFERENCES

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ABSTRACT

Goa Horticulture Corporation Ltd. entered into the marketing of vegetables in the year 2007 with the purpose of making vegetables available in the state of Goa at reasonable rates and to encourage self-employment among the locals. The corporation has set up many retail outlets. Since 2011 they have also started supplying fruits. At the same time, there are private vegetable and fruit vendors who are also selling vegetables and fruits. The government sponsored horticulture kiosks are a big competition to them because of subsidized rates of vegetables and fruits. The objective of the study is to find out the consumer preferences with regard to the private and the government sponsored horticulture kiosks.

The study is based on primary as well as secondary data. The study concludes that most of the consumers who belong to the higher income group prefer private horticulture kiosks.

Keywords: Horticulture, Vegetables, Fruits

INTRODUCTION

Goa Horticulture Corporation Ltd. entered into the marketing of vegetables in the year 2007 with the purpose of making vegetables available in the State of Goa at reasonable rates and to encourage self-employment among the locals. The Corporation has set up many retail outlets. Since 2011 they have also started supplying fruits. At the same time, there are private vegetable and fruit vendors who are also selling vegetables and fruits. The government sponsored horticulture kiosks are a big competition to them because of subsidized rates of vegetables and fruits.

Kiosks are a booth with an open window on one side. Some vendors operate from kiosks selling small, inexpensive consumable such as newspapers, magazines, street maps, vegetables, etc. Though kiosks are small, everything a business has to offer is

displayed.

In other words a kiosks is a small, enclosed stand from which merchandise is sold, often placed in the common area of a shopping centre or public concourse. For entrepreneurs who dream of breaking into retail, opening a shop is cost profitable but kiosks can be a low – cost profitable possibility. A kiosk is one of the ways to test the product in a retail setting before making the larger investment in a traditional store.

The initial investment for setting up kiosks is not very high. The promotional activities are minimum; it's mostly through word of mouth. Initially kiosks can be managed by one person single handed; hence there is no problem of labour. Kiosks are cheaper to maintain, the operational cost of running a kiosks is lower than as compared to regular retail outlets/stores.

Private kiosks vendors generally have a small stall or large private shops which are usually located near the market area or on the roadside. The forms of ownership of these types of kiosks are mostly sole proprietorship or partnership. In private kiosks variety of vegetables/ fruits are available, they even sell imported vegetables/ fruits.

The scheme of the Goa State Horticulture Development Corporation (GSHDC) was initiated to develop infrastructure for vegetable and flower cultivation in Goa. The Corporation also provides one marketing outlet for every hectare of land cultivated. One year's rent of the outlet at a maximum rate of Rs. 2000 per month is borne by the Corporation. The vegetables and fruits are supplied by the Corporation to the marketing centres. The vendors are allowed to sell their own local produce besides the vegetables and fruits supplied by the Corporation. Most of the vendors are sole proprietors.

OBJECTIVE OF THE STUDY

To find out the consumer preferences with regard to the private and the government sponsored horticulture kiosks.

METHODOLOGY

Data was collected form primary as well as secondary sources. A structured questionnaire was administered to a hundred customers who visited both private and government sponsored horticulture kiosks in Salcete Taluka.

DATA ANALYSIS

A survey among 100 customers from Salcete taluka who are customers of both Private and Government sponsored horticulture kiosk was undertaken. This survey was conducted to know the customer preferences in their purchasing decision to buy their fruits and vegetables from these vendors.

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Age: Majority of the customers who go to buy vegetables and fruits are between the ages 37 and 46, followed by 31% who belonged to the age group of 18 to 25.

Occupation: From the survey it is found that out of 100 respondents 33% belong to the employed class whereas 12% are found to be educated unemployed. Customers who are belonging to students category was 27% and 28 % were housewives.

Monthly Income: From the 100 customers chosen for survey 54% had a monthly income of 10, 000 or less which is considered as low income category for this study. Middle income ranges between 11,000 to 40,000 per month and 27 % belong to this category. Rupees 40,000 is taken as the higher income group and 19% customers belong to this group.

Variety: In horticulture kiosks different varieties of vegetables and fruits are available. Goa is famous for its local seasonal vegetables and fruits. Most of the other vegetables are bought from neighbouring states. There is a demand for imported vegetables and fruits too. Low income group which is 54% in the survey responded that they are giving low preference to the variety of vegetables and fruits which are offered in these government kiosks; 27 % belonging to the middle income group prefer both government as well as private kiosks depending on the availability and freshness of the vegetables. Only 19 % of the surveyed population belongs to high income group prefer to buy only from private vegetable vendors who offer them exotic fruits and variety of vegetables at their convenience.

Stock: Stock depends upon the demand for the products. If there is more demand then the vendors buy in larger quantities so that the customer's demands are met. Customers would prefer to go to outlets which are well stocked. There is quota of vegetables and fruits which the vendors of government sponsored kiosks can sell to its customers unlike the private kiosks where there are no such restrictions. The lower income group customers buy in smaller quantities. All the 54% of the lower income group are happy with the stock maintained by the government sponsored horticulture kiosks whereas 46% are happy with the stock maintained by the private horticulture kiosks.

Business Hours: High income group prefer to buy from private vegetable vendors because of their late working hours and the availability of these vegetables and fruits even after 8 O'clock. The business hours of these vendors play a major role in making the high income group their loyal customers. 81% of the customers are happy with the working hours of the government sponsored horticulture kiosks. Customers who are into

hotel and food stall business said that since government kiosks were closed on Tuesdays they preferred buying from private kiosks on a regular basis.

Freshness/ quality: Customer preference for freshness and quality depends on the purpose for which they are buying. Sometimes if fresh vegetables are not available and they badly need they buy it even if it is not fresh. But for special occasions most of the customers prefer to get very fresh fruits and vegetables.19% of customers belonging to high income group are in favour of freshness of fruits and vegetables available with private kiosks. Such customers find the government sponsored horticulture kiosks crowded specially in the mornings. As compared to the above mentioned category of customers, 54% of the customers who belong to the low income group have a very positive opinion about the quality and freshness of fruits and vegetables since they buy only in small quantities for their daily requirements. At the same time vegetables are available every day in the morning except Tuesdays, that is convenient for them. So they prefer to buy from government sponsored horticulture kiosks

Price: Price is the value of the commodity which the seller is willing to sell for and the buyer is willing to buy for. It plays an important role in influencing consumer choice of product and services. Price is one of the criteria in deciding the preference of customers. Prices offered by private kiosks are always higher than the government horticulture shops. 80% of the higher income people prefer to buy from private kiosks not considering the price factor. They are more focused on their convenience rather than the price charged by the vendors. But the low income group give more preference to the price charged by the horticulture kiosks and they always prefer to buy from the government sponsored kiosks.

Location: Every vendor looks for a strategic location to run his business. A customer would prefer a location which is convenient for him to buy from. He/she would prefer a location closer to his residence or workplace. With so much of traffic congestion people prefer locations where there is ample parking space. The government kiosks are all located at strategic places closer to residential areas so that it is convenient for the customers to go and buy. The private kiosks are usually located in the markets. The survey shows that 96% of the lower income group find the government kiosks more accessible and convenient for them. The higher income group have their own vehicles and don't mind travelling all the way to the market which is located in the town to purchase fruits and vegetables from private kiosks. Sometimes they send their chauffeurs and domestic help to buy the fruits and vegetables.

Service: One of the most important customer service skill that one can develop is the ability to understand effectively the customers' needs and concerns for a long time. This is one of the intangible benefit which a customer gets that determines the competitiveness among the sellers. Tangible factors can be easily copied by the competitors but intangible benefits like the quality of services offered cannot be easily achieved by the competitor that attracts customers. In the opinion of high income group,98% are very happy with the services of private vendors. As the customers visit the same vendors frequently there is a rapport created and personalised service is offered to the customers. Most of the customers belonging to the lower income group are happy with the services of the vendors belonging to government sponsored kiosks. These people are more focused on their requirements rather than their services. They gave more preference to the variety and price rather than service. Two percent of the customers complained that since there is usually a crowd at government kiosks they have to wait for a longer time to buy the vegetables and fruits.

SUGGESTIONS OF CUSTOMERS

Private kiosks:

- Enhance the product mix so that they can meet different requirements of different customers.
- Maintain cleanliness and hygiene inside and outside the kiosks.
- Introduce home delivery services as people buy in bulk and this way provide convenience to non-vehicle users.
- Extend the timings to make it convenient to office going customers.
- Sell the vegetables and fruits at a lower price.
- Accept debit and credit cards
- Provide proper change instead of other ingredients [chillies, lemon]

Government sponsored kiosks:

- Make available fresh fruits and vegetables so that customers do not have to go to the private vendors to buy them.
- Increase the stock in terms of quantity so that there is no shortage of stock and the customers can choose from a range of products.
- Keep the kiosks open on all week days so that it does not cause inconvenience to those who buy in small quantities on a daily basis.
- Extend the timings to make it convenient for office going customers.
- Provide proper change instead of other ingredients [chillies, lemon].
- Provide more range of products.

CONCLUSION

Horticulture business has become one of the most flourishing micro businesses in modern times. The demand for horticulture products is ever increasing, the reason being increase in population. People have become more health conscious. Fruits and vegetables have become an important ingredient in their daily diet. Some of them have turned vegetarians and a few are vegans.

Goa has witnessed a tremendous change in the composition of its population. There is a large majority of South Indians and North Indians families residing in Goa. Most of them are vegetarians. Goans too have realised the importance of consuming vegetables and fruits as a part of their diet.

Therefore to conclude the high income group prefer the private horticulture kiosks due to the variety of fruits and vegetables. They are not only happy with the stock maintained by private horticulture kiosk but also happy with the extended working hour. Freshness of vegetables and fruits and good quality are other reasons which attract the high income group to the private horticulture kiosks.

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CAN ENGLISH BE THE LANGUAGE FOR BUILDING A WORLD COMMUNITY?

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ABSTRACT

The word 'global' or 'world' language refers to a language that is learnt or spoken internationally and is characterized by the number of native and second language speakers, geographical distribution, and its use in international organizations and diplomatic relations. This paper tries to examine whether English has the potentiality to be considered a world language and thus help in building a world community. Today English could be called the 'lingua franca' which is helping people across the world to communicate on an equitable basis. The widespread use of the English language could also be attributed to its inherent qualities rather than only the British Colonialism and American culture. The English vocabulary is known for its richness and depth and its flexibility. Even though contentious, it is a simple language in terms of spellings and pronunciation. Even with some drawbacks and inconsistencies, English has proved itself to be more flexible and resilient of languages because of its remarkable capacity to adapt and absorb.

Keywords: Global, World language, *lingua franca,* World community.

INTRODUCTION

The globalisation of the world has led to the necessity of a 'global language'. The word 'global' or 'world' language refers to a language that is learnt or spoken internationally and is characterized by the number of native and second language speakers, geographical distribution, and its use in international organizations and diplomatic relations. In 2015, out of the total 195 countries in the world, 67 nations have English as the primary language of 'official status' and there are 27 countries where English is spoken as secondary 'official language'.

Today English could be called the 'lingua franca' which is helping people across the world to communicate on an equitable basis, since it is the most easily accessible

language due to its presence whether in films, on the internet or on the Television. It is not only in business and trade relations that English is used but also for borrowing or interchange of spiritual goods—art, science, and religion.

Historically a global language is established when it is spoken by those who wield power, an example being Latin, which though being a minority language got a global language status because of the Roman military and the powerful Roman Catholic Church.

The many different aspects of the English language which strengthen its claim of being a global language helping in building up a world community will be discussed in the paper.

HISTORY

English is a very effective language that is proved by the many native and non-native speakers all over the world. According to David Crystal (2003) "Statistics suggest that nearly a quarter of the world's population is already fluent or content in English".

Examining the history of the English language, we see that in the 17th and 18th centuries, English was the language of Britain, a colonial nation and in the 18th and 19th centuries it was the language of the leader of industrial revolution, Britain again. Finally in the 19th and 20th centuries it was the language of one of the leading economic powers, the United states of America. The widespread use of the English language could also be attributed to its inherent qualities rather than only the British Colonialism and American culture.

ADVANTAGES OVER OTHER LANGUAGES

Though some linguists have different points of view as to whether a language becoming global depends on the number of people speaking it, Crystal D. (2002: 7-10) claims that "Why a language becomes a global language has little to do with the number of people who speak it".

The English vocabulary is known for its openness, richness and depth. The English lexicon is currently increasing by 8500 words per year and about 200,000 English words are in common use as compared to 184,000 in German and a mere 100,000 in French. 'Roget's Thesaurus' is an excellent example of different shades of distinction allowed by the synonyms in the English language. Its flexibility of function, in respect of word order and ability to phrase sentences as active or passive or the ability to use the same word as both a noun and verb (ex - drink, fight , silence etc.) is to be truly appreciated. Some of the words which were formerly only nouns or verbs by differences in their forms are now often used as both nouns and verbs. For example: *of planning a table or tabling a plan, booking a place or placing a book, lifting a thumb or thumbing a lift.* In the other Indo-European languages, apart from rare exceptions in Scandinavian languages, nouns and verbs are never identical because of the necessity of separate noun and verb endings.

Even though contentious it is a simple language in terms of spellings and pronunciation. There are around 44 to 52 unique sounds used in English pronunciation, almost equally divided between vowel sounds and consonants, as compared to 26 in Italian, for example, or just 13 in Hawaiian. 84% of the English spellings conform to general patterns or rules and some words like *colonel, ache,* etc. which constitute around 3% are completely unpredictable.

The simplest kind of influence that one language may exert on another is the "borrowing" of words. The English language has a cosmopolitan character as it has adopted many words from other languages, unlike some other languages like French which are more rigid. The openness of vocabulary in the English language implies both free admission of words from other languages and the ready creation of compounds and derivatives. English adopts without any change, any word really needed to name some new object or to denote some new process. Words from more than 350 languages have entered English in this way. English frequently forms scientific terms from Classical Greek word elements. Although a Germanic language in its sounds and grammar, the bulk of English vocabulary is in fact Romance or Classical in origin. Most of the words in the English dictionary, that is about 80 percent are borrowed, mainly from Latin and over 60 percent of the English words, have Greek or Latin roots. In the vocabulary of the sciences and technology, the figure rises to over 90 percent and we see that about 10 percent of the Latin vocabulary has found its way directly into English without an intermediary.

The dominance of the English speaking nations like America, makes the English language crucially important for tourism and advertising, and most importantly for providing developing countries the access to scientific and technological resources of the developed countries. The quality of English literature produced throughout history and its popularity till today, is a fine testimony to the wealth of the language. The advantages of the English language are self-evident. Some of the world's most aspirational academic institutions such as Yale, Harvard, Cambridge and Oxford are based in English-speaking nations. English is now the most widely taught foreign language in over a hundred countries like China, Russia, Germany, Spain, Egypt and Brazil. To utilize the power of the internet to research information, it is highly advisable that one must know the English language with at least an 8th-grade proficiency level.

The United Nations, which could be called a global community, currently uses five official languages: English, French, Spanish, Russian and Chinese, and an estimated 85% of international organizations have English as at least one of their official languages (French comes next with less than 50%) and about one third of international organizations (including OPEC, EFTA and ASEAN) use English only, and this figure rises to almost 90% among Asian international organizations. If you consider that up to one-third of the administration costs of the European Community is taken up by translations into various member languages it would validate the use of English as a

lingua franca. The international organisations prefer English for diplomatic exchanges between political leaders of different nations. It is also the official language of the European Union and is spoken as a foreign language in 19 of the 25 EU Member States, even though it is not an official language in these countries.

The global workforce needs English as it is the language of business in the world and so also the language of technical literature for technicians and telephonic conversations of company secretaries is in English.

CONCLUSION

Though the advantages of the English language are self-evident there are some legitimate concerns that a dominant global language could also have some built-in drawbacks. The adoption of a global language may lead to the weakening of other languages and eventually the disappearance of some minority languages as well. It is estimated that up to 80% of the world's 6,000 or so living languages may die out within the next century [Crystal, David: 2003]. The speakers who naturally use the global language may be at an unfair advantage over those who are operating in their second, or even third, language. The insistence of only one language as global language may be a threat to freedom of speech; and another major impediment would be complacency on the part of natural speakers of a global language to learn a new language.

Even with some drawbacks and inconsistencies, English has proved itself to be more flexible and resilient of languages because of its remarkable capacity to adapt and absorb. Historically even languages like Latin, which was once a major international language, and French, another major language, have not achieved the worldwide reach that the English language has. It has found its place as the single most influential language in the world, even with some confrontations, as it has enabled a means of common communication between people of different backgrounds. The emergence of a global language has become more of a reality today and acceptance of English as a global language which could help in building a world community would not be far away.

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AGRICULTURE- ITS STATUS IN THE GOAN ECONOMY

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ABSTRACT

Agriculture is one of the occupations pursued in the state of Goa. The sector makes a tangible contribution to the Gross State Domestic Product. This paper tries to analyze the status of the agriculture sector in Goa from the perspective of its past, present and future. An attempt has also been made to construct a SWOT analysis of the sector. The paper which is based primarily on secondary data sources details the strengths, weaknesses, potential opportunities available in the sector as also the threats that the sector encounters.

Keywords: Agriculture, Status, Strengths, Weaknesses, Opportunities, Threats

INTRODUCTION

Though Goa is a small state, it occupies pride of place in the Sub-continent. With a population of 1458545 persons and GSDP growth rate of 8.41%, it is one of the most developed states of India and is counted amongst the most famous tourist destinations in India. Its population consists of Hindus, Christians, Muslims, Buddhists, Jains, Sikhs, etc. Its inshore and coastal waters are known to be rich fishery resources. Goa is considered to be a forward looking state and Agriculture plays a crucial role in the economy. By the year 2022, the government aims at doubling farmer's income by focusing on potential crops like Cashew, Coconut, Mango and Paddy.

METHODOLOGY

This paper consists of Section I Introduction; Section II Methodology; Section III Agricultural Sector in Goa – Its past; Section IV Agricultural Sector in Goa – Its Future; Section V SWOT Analysis; Section Section VI - Conclusion. The study is based on both primary sources such as Interviews with farmers and secondary sources of data such as Publications, Newspapers and internet.

AGRICULTURAL SECTOR IN GOA - IT'S PAST

Agriculture was one of the major activities of Goans which continued till the recent past.

Table 1: Trends in Agricultural growth Rates

Sr. No	Year	Growth Rate (%)
1.	2007-2008	5.50
2.	2008-2009	-10.38
3.	2009-2010	2.48
4.	2010-2011	3.20

Source: Economic Survey of Goa 2016-17.

The above table highlights that the majority of the land holdings are less than 2 hectares and less than 10% are large sized (10 ha & more) farms.

Table 2 : Operational Holdings and areas as per Agricultural Census 2010-11

Size Class	No. of Operational Holdings (ha)	Area of Operational Holdings (ha)	Average size of holdings (ha)	
			2005-06	2010-11
Below1.0	59900	28103	0.29	0.47
1.0-2.0	9817	17591	1.24	1.79
2.0-4.0	5707	16770	2.51	2.94
4.0-10.0	2010	12378	5.70	6.16
10.0&above	586	14152	66.99	24.15
Total	78020	88994	1.15	1.14

Source: Economic Survey of Goa 2016-17.

Table 2 highlights that the majority of the land holdings are less than 2 hectares and less than 10% are large sized (10 ha & more) farms.

The geographical area of the State in 2015-16 was 3,70,200 ha., out of which, the gross cropped area was 1 ,56,462 ha while the net area sown was 1 ,30,109 ha (35%). The area under forest was 1 ,25,473 ha. (33.89%) land not available for cultivation was 37,137(10.03 %), other uncultivated land was 38,557 ha. (10.42%) and fallow land 13,976 ha. (3.78%).

Farmers are slowly switching over to modern methods realising its benefits in terms of reduced labour costs and increased yields.

Table 3 : Physical Achievements under various components of Agricultural Machineries.

Component	Physical Achievement upto Dec 2013	Achievement as on 31st Jan 2017
Tractor (30 HP and above)	15	7
Mini Tractor	10	29
Power Tiller	120	453
Specialised Power Driven Equipments	69	214
Sprayers	NA	249
Rice planter	NA	3
Weed cutter	NA	590

Source: Economic Survey of Goa 2013-14 & 2016-17.

Table 3 depicts that there has been rise in the number of agricultural machinery / equipments used by farmers in Goa during recent times. Over 1000 vegetable growers in Salcette cultivate vegetables over 150 ha of land. They also grow red cabbage, broccoli, european raddish, lettuce, peperica and asparagus.

Various facilities like subsidies/ assistance, training, distribution of seeds & saplings, irrigation, polyhouses/ green houses have led to growth and development of agriculture (horticulture) in Goa. Cultivation of Coconuts, bananas, papayas, pineapples; spices like pepper; flowers - gerbera, orchids, chrysanthemum, anthurium etc have increased. Vegetables like cluster beans, green , chillies, bottle gourd, lady fingers, long beans, various pulses like baby corn, sweet corn are increasingly grown at Verna, Raia, Fatorda, Curtorim, Loutolim, Chandor; Paddy at Mayem, Poira, Amona, Narva, Virdi, Sal, Latsambarsem, Mencurem, Dhumashe, etc in Bicholim; Agonda, Gaondongrem, Cotigao, Poiguinim, Loliem in Canacona, Chandor, Girdolim, Sattari & Chinchinim and cashew, coconut, mango at Pernem.

AGRICULTURAL SECTOR IN GOA – IT'S FUTURE

Due to incentives provided through developmental programmes and schemes, advanced machinery and assured prices, Goan economy seems to be moving towards better prospects in agriculture in the future. Ban on mining industry, slowing down of tourism also have made goans look to agricultural sector for employment and livelihood. The New Agri export Policy is also expected to work in favour of Goa as rice, marine products and meat account for 52% of India's annual exports.

Under the MSME Support & Outreach campaign, North Goa is chosen to be one among 100 districts to benefit from bilateral trade, technology transfer and joint venture partnerships in food processing sector.

Contract Farming is also going to be one of the options for farmers in Goa. It stipulates an agreement between the farmer and a company and government as the guarantor to back the farmer. According to Niti Aayog, all states should have Contract Farming Act by 2019.

SWOT ANALYSIS

Strengths:

1. Goa has favourable climatic conditions, better soil, and improved water resources for cultivation that promote rise in land under cultivation as well as increase in productivity of foodgrains, vegetables, fruits &flowers.
2. Farmers shifting towards use of modern technology have resulted in bringing more area under cultivation, diversification of crops, commercialisation and reduction in the cost and better prices for farm products.
3. Farmers' Cooperative Societies like Adarsh Krushi Sahakari Kharedi Vikri Saunstha – offering loans, agricultural implements, fertilizers etc. loan upto 15 lakhs to a farmer, spot loan of 25000 within a day. Facilities for farmers' families-remedial coaching classes for students, cooperative training centre.

Weaknesses:

1. High Cost. According to Mr.Ajit Ranade, economist and Senior Fellow, Takshashila Institution, the cost of cultivation is eighty percent more than the income.
2. Low support prices. Long awaited demands by farmers for minimum support price for sugarcane to be hiked by Rs 1000 per tonne and sugarcane harvesting cost per tonne of cane be hiked by Rs. 400.
3. Youth shying away from agriculture. Poor attraction of youth in this sector due to non-remunerative prices, low status in society and seasonal nature of employment.
4. Even at present, use of traditional seeds, implements, cattle, dependence on monsoon exists.
5. Uneconomical/ small / tiny land holdings.
6. Incomplete land ownership records, litigation problems.
7. Difficulties in obtaining Agricultural Credit.
9. Poor Quality / unprocessed / non-standardised products
10. Absence of storage facilities.
11. Direct Agriculture Advances to total advances was 5.90 %, much below the

benchmark level of 18% of total advances.

12. Under -utilisation of land – land left fallow.

Opportunities:

1. Eco-Tourism / Hinterland Tourism

(i) Spice farms – Sai Organic Farm & Herbarium at Savoi Verem, Ponda, Parvati Madhav Plants Par Plantation ar Keri Ponda, Pascoal Spice Village at Khandepar, Ponda, Rustic Plantation at Sattari, Sahakari Spice Farm at Curti, Ponda, Tashikar Spice Farm at Netravalli, Sanguem etc are major touristic attractions and more can come in the future.(ii) Wildlife Sanctuaries, Caves, Waterfalls, lakes, springs, Turtle Nesting sites are places of interest to the growing tourists. (iii)Vegetable gardens (Kulagars) with food outlets, accommodation, events, transport facilities. (iii) Plant Nurseries. (iv) Accommodation at Farmer's Home (Home stay facility) – stress free life, display / exhibitions by local artisans as alternatives to overcrowded beaches.

2. Health / Medical Tourism

Ayurvedic centres, spas, CharakVatika at Atreya Vedic Farm at Mollem, Herbarium Abyss etc. With Ayurveda gaining importance and the Ayurveda Institute at Dhargal will be imparting training to youngsters in Ayurveda.

In the village of Curtorim (heaven for flora & Fauna), there are 172 varieties of plants and trees and 77 of them have medicinal values.

3. Agri- business/ Agripreneurs

Helping farmers:

(i) to showcase their products on-line. Encouraging local entrepreneurs.(ii) who grow beans, peas, groundnut to completely avoid use of urea and nitrogen fertilisers. (iii) in Food Processing and Marketing : Incubation centre to young agripreneurs. Earn While You Learn (EWYL) programme at Don Bosco College provides hands-on experience in production, sale, costing, pricing, marketing, profitability. Food Technology Incubation Centre at PE's RSN College of Arts &Science, Farmagudi.

4. Organic Farming

Agricultural system that works in harmony with nature. It has health benefits as fruits, vegetables available in the market are damaged by pesticides. Also Agriculture Minister, assured farmers of setting up a market exclusively for sale of organic products as well as making five star hotels compulsorily buy organic products from farmers during an awareness programme organised by KrishiVigyan Kendra and Agriculture Technology Management Agency

5. Food Joints / Street Food

Food stalls as an integral part of city landscape catering to the influx of tourists. Stalls selling varieties of Vegetarian dishes, desserts, tender coconut water, juices etc can replace unhealthy food joints in the state.

6. Melas, Exhibitions at Companies, Malls and Pop-up bazaars.

Sale of snacks and savouries / homemade delicacies like chakli, churma, laddoo, chivda, thikat fav, traditional sweets by Self Help Groups/ Mahila Mandals specially during festive season, Farmers Clubs to organise one exhibition per festival. Customers offered gift package of eatables. Display at Mall – ragi and jaggery ladoos, moong ladoos, churma for health conscious buyers.

Threats:

1. Urbanisation and development activities. Conversion of land for non- agricultural purposes like, construction of accommodations, bridges, highways, fly-overs etc.
2. Diversion of manpower to service sector due to better wages and prospects.
4. Unforeseen market fluctuations.
5. The average size of holding is uneconomical and hinders the use of mechanisation.
6. Food shortages, rise in prices/ inflation.
7. Dependence on other states for supplies of foodgrains, vegetables.
8. Rise in poverty specially SC/ST communities that heavily depend on agriculture.
8. High level of literacy.

CONCLUSION

Development of agricultural Extension / State Extension Programme (ATMA) consisting of exhibition training, demonstration shows, technical literature, farmers tours, farmer awards, support for higher education in agriculture is being undertaken by the government for the upliftment of agriculture in Goa. Modern agricultural methods/ technology, farmer centric policies, States' efforts to promote agriculture, respect for the occupation, procurement centres for vegetables is however the need of the hour for reviving and making agricultural sector self- sustainable.

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MENSTRUAL EDUCATION PROCESS AMONG ADOLESCENT GIRLS IN GOA

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ABSTRACT

The process of learning about menstruation, bodily changes and sex reflects the socio-cultural situation in society. The teachings regarding menstruation within the family, formal education system and society have been analysed in this paper to understand learning and un-learning process which takes place. The menstrual lessons through cultural practices and language usage are closely looked at which educates the adolescent girl about menstruation. The formal school teaching about the body, state and voluntary organisation's interventions on this health aspect of girls is analysed in the paper to understand the probable dilemma in the minds of adolescent girls about menstruation. The inferences are drawn from narratives shared by 150 college going adolescent girls in Goa.

Keywords: Menstruation, Family, Body, Practices, Adolescent

INTRODUCTION

'Periods', 'Menses', 'Monthly Cycle' or 'M.C' are the terms we use to refer to Menstruation. Each word connotes from the meaning itself, i.e. blood flow which comes every month. Menstruation can be defined as "Once every month or so, the lining tissues of the inside of the womb come away and are passed out through the vagina with some blood which is known as menstruation "or having a period" (Moronkola O. A. and Uzuegbu V. U: 2006).

Medical science defines menstruation sometimes as a pathological condition. However, there have been many research studies which indicate that menstruation is not only biological but is also a cultural event in Women's Life (Kissling: 1996).

METHODOLOGY

The study was carried out by conducting 150 personal interviews with adolescent girls.75 interviews were conducted in a college in North Goa and 75 interviews were

conducted in a college in South Goa. Girl's common room was used to interview the respondents. Selection of sample was based on availability sampling method. Respondents were in their late adolescent age i.e., 18-19 years.

Personal visits and interviews with staff of government agencies and NGOs were conducted to know the services for adolescent girls in the State. Brochures, annual reports, websites, books were also accessed to analyse their work in the field of adolescent health.

DISCUSSION

Menstrual Education: Lessons from the community

Agents of menstrual education are many. Family, especially the mother, 119 (79%) is usually the first informant about menstruation for the adolescent girls. As the adolescent experience menarche and menstruation, she learns about it from various direct and indirect sources such as menarche associated celebrations, language used to refer menstruation, religious practices, educational institutes, government agencies and NGOs and menstrual activism.

The menarche celebrations

The 'menarche' is rejoiced by the family members by communicating it to close relatives or cooking a special sweet dish in Goa. However, there is no special event which is performed among Goan Hindu or Christian families to celebrate menarche unlike in other States of the country like Tamil Nadu and Karnataka (Narasimhan: 2011).

Table No.1: Menarche related celebrations

Type of menarche related Celebration	n (%)
No Celebration	118 (79%)
Sweet Dish	20 (13%)
Wore Saree and taken to temple after 5 days	4 (2%)
Aarti sung	4 (2%)
Party	4 (2%)
Total	**150 (100%)**

20 (13%) said that their mothers prepared sweet dish like vermicelli *kheer*, *Gulab Jamun* or fruit custard. There were four respondents who were native of Karnataka. They said that there were made to wear green colour saree and there was function in their village. All relatives and neighbours gave gifts to her. They were also taken to temple after 5 days of menstruation and head bath.

Speaking about menstruation

Menstruation in the local language (*Konkani*) is known as *'Mhaino'* (Month) or *'Masik Pali'* (monthly cycle). However, there are numerous terms which adolescent girls shared through interviews to refer to menstruation. These phrases or words used in our local languages largely gives a meaning which means 'to exclude' or which is 'unclean'.

Table No.2: Local terms used to refer menstruation

Local terms used to describe menstruation among respondents	**N (%)**
Periods	104 (69.3%)
Bhair Asa	77 (51.3%)
Happy Birthday	37 (24.7%)
Kawlo Afudlo	19 (12.7%)
MC	57 (38%)
Batli/ Tomato futli	8 (5.3%)
Mhaino Asa	8 (5.3%)

- *'Bhair javap' (one to be excluded):* A Menstruating woman has to practice total exclusion where she is not allowed in the kitchen and has to stay separately. There is a fear of contamination, and some say that she gets to rest from daily chores.
- *Kawlo Afudlo' (touched by crow):* Indirect way of telling that if a crow touches someone, she becomes untouchable.
- *Bhasthe* (untouchable): Menstruating women are not allowed to touch anyone or anything
- *Adchan* (problem): Menstruation which is a biological function of the body and which is a normal bodily function of women in reproductive age is considered a problem because of the restrictions imposed on her during menstruation.
- *Haat Bhaille' (*one who should not be touched by hand*):* No one is allowed to touch her during menstruation as she is considered as impure or polluted.
- *mhaino (*month*):* Mhaino refers to *a* monthly cycle, and there is no derogatory meaning attached to it.
- *Basla' (*excluded, sitting*)*: As a menstruating woman has to sit separately in one place assigned to her hence this term is used.
- *Shock yeta* (untouchable, if touched gets shock): This term is used to tell the children so that they do not touch the menstruating women in the family.

These are commonly used terms in Goa. Each of the term used by people indicates that

menstruation is considered to be something to be ashamed of, impure and to be excluded. Usage of such terms may transmit an understanding among the adolescent girls that they should consider themselves to be impure and that menstruation is not something healthy or natural but something where 'God' will punish them. These terms can become one of the sources of information for adolescent girls about menstruation. Menstruation has been considered as dirt, polluting, impure not only in Goa or India but societies and culture Worldwide (Laws, 1990) (Kissling, 1996).

Adolescent girls shared that they use different terms in schools and colleges. They have code language like Happy Birthday, *batlifutli/guddifutli* (bottle or bottle cap broke), date, Pipe *futle* (Pipe broke), Chumps (Close companion) to refer to menstruation. This reflects shyness or taboo around the topic of menstruation. Any word or function related to our reproductive organs is not openly been talked about in our society. We have phrases which mostly have negative meaning attached to it. For example, *popat* (Parrot) for Penis, *Paplet* (Pomfret) for Vagina are few of the terms which are used in *Konkani* language among commoners in Goan society.

Constitution of India under Article 17 states that 'Untouchability is abolished and its practice in any form is forbidden. The enforcement of any disability arising out of untouchability shall be an offence punishable in accordance with law'. But, in reality, we see that women during their periods are considered as untouchables and have to follow various forms of exclusion practices even today. They are not allowed in places of worship, kitchen, religious and social functions. This act of untouchability goes unpunishable, and these practices are going on till today.

Menstrual Exclusion Practices and the Teachings

There are arguments among scholar on whether to term menstrual practices as taboos or etiquettes (Laws, 1990 in Kisslings, 1996). Menstrual pollution as a way of disciplining of the female body in practice has been discussed widely in the literature (Narsimha, 2011).

While criticizing westerners on commenting negatively about menstrual huts,**(**Baldy, 2016**)** states “Continued dismissal of indigenous menstrual customs as primitive and/or oppressive of women is built from a settler colonial desire to make Indigenous knowledge obsolete and indigenous ceremonies and cultures primitive remnants of the past."

A Cross-Cultural Study of Menstruation, Menstrual Taboos and related Social Variables' gives a macro level outlook on menstrual taboos around the world in various cultures. It throws light on how menstrual taboos developed. The study says that largely it was due to lack of medical knowledge which made people follow taboos. Since menstruation is related to blood, there was more fear among people. The taboos ranged

from total exclusion of women from house and house related work. There was also fear that flower would wilt, pickle would spoil, cooked food would spoil, etc if touched and prepared by menstruating women. In certain communities, women and men ate separately in fear of getting infected from women. There were also menstruating huts for women to stay during menstruation (Montgomery: 1974).

While referring to three types of menstrual taboos in the US culture, (Kisslings: 1996) (Lisandra Rodriguez White: 2012) discusses concealment taboo (hide about periods), activity taboo (restrictions on physical behaviour) and communication taboo (cannot talk openly about menstruation). Such taboos are practised even in Goa. But in addition to it, there are menstrual exclusion practices which can be put in three categories.

1. Total Exclusion: The woman is not allowed to touch anything or anyone, has to use separate utensils, made to sit in one corner of the house, sleep separately. She is not allowed to enter the kitchen. Her freedom of movement is restricted totally. She has to depend on another person to give her food and sometimes even water.
2. Partial Exclusion: Women are not allowed to worship God. She is refrained from performing any religious duties. She does not participate in any festival or religious functions like naming ceremony, baby showers, *Haldi kumkum*, *Pooja* or marriages. She can participate in any other household work like cleaning, washing and cooking.
3. No Exclusion: There are girls who do not follow any exclusion practices. Catholic girls do not follow any religious based restrictions. There were only nine Hindu adolescent girls who said that they do not follow any restrictions which are imposed upon by the religion on them. They enter places of worship and perform religious duties along with other housework.

Among Hindu adolescent respondents, during festivities like Ganesh Chaturthi, the girls who otherwise practice partial exclusion practice total exclusion. The main reason which adolescent girls expressed is that for the Ganesh Chaturthi celebration they go to their native place as it is the main festival among Goan Hindu society. There are also beliefs like if Ganesh idol hears a voice or sees menstruating women, the colour of the idol will fade away. Group of Girls from a college in North Goa expressed that they feel embarrassed when they menstruate during any festival time as whole family members and relatives come to know that she is menstruating. Another reason for fading away of total exclusion to partial exclusion could be the disintegration of the joint family into the nuclear family.

Table No. 3: Type of Religious practices related to menstruation

Type of Religious practices followed by adolescent girls	Frequency
Not going to places of worship	127 (84.7%)
No Cooking	82 (54.7%)
No use of common consumables	82 (54.7%)
Not to touch anything	78 (52%)
Sit separately	78 (52%)
Sleep separately	78 (52%)

A majority of 127 (85%) said that they do not go to temple during menstruation. 82 (55%) said that they do not cook and don't use any common consumables during menstruation. 78 (52%) said that then do not touch anything at home and sit and sleep separately. They have separate utensils for eating food which is used only during menstruation. The bed sheets and towels are washed after 5 days. They take head bath after their menstruation and eat tulsi leaf.

People who support menstrual exclusion state that these practices are levied on the woman so that she gets rest. But in reality, she has to perform all her housework like drawing water, washing, cleaning and those following partial seclusion also cook. Thus, she might have to work more during her menstruation, and only strict practices which remain is that of seclusion from religious functions and duties.

Menstrual Education in Formal Education System in Goa

Menstrual health and hygiene sessions for girls are conducted in schools by school counselors, health counselors, NGOs or other government bodies. Some schools conduct the sessions by themselves as it is part of curricula in 8^{th} and 9^{th} Standard.

Analysing the High School Textbook on Adolescent Education

Goa Board introduced sexual reproduction in plants at standard seventh, where they discuss about asexual and sexual reproduction among plants. In the Eighth standard, adolescents are introduced to two lessons, One on 'Reproduction in Animals' and another on 'Reaching the age of Adolescence'. In reproduction in animals lesson, different reproductive parts (male and female) and their functions are discussed in pictorial form. Fertilisation process, development of the embryo, test tube babies are discussed. It is interesting to note that there is no mention of the vagina and also how sexual intercourse takes place. The description seems to be very technical. Also, pubertal changes occur from 9-10 years onwards and curiosity among adolescents and sometimes among children also begins and discussing among reproduction and adolescence changes might

seem late as in eight standard, the child is already 13-14 years of age. There are chances that the child has already learnt about reproduction from various other sources like internet, peers, magazines, television, etc.

This particular lesson of reproduction is given for self-study by many science teachers as shared by the adolescent girls, or they invite persons from NGOs or experts to teach these lesson. There are very few science teachers who are comfortable with discussing such topics with their students in the class.

' Reaching the age of adolescence lesson discusses characteristics of adolescents, puberty and related changes that take place in the body as well as mental, intellectual and emotional changes, hormonal changes, menstruation, sex chromosomes, reproductive health, nutrition and personal hygiene topics are touched upon in this chapter. It is good that this lesson is discussed with parents and teachers in length and all doubts among adolescents are cleared. This will avoid dependance on unauthentic sources of information.

Adolescent Education section of science book in standard ninth of Goa Board is non-evaluative. This section is excluded from the exam portion. Thus teacher doesn't feel the need to teach it and is left for self-study. There are two chapters under Adolescent Education. One is on 'Understanding Adolescence' and other on 'Skill Development'. Understanding Adolescent covers defining adolescence and objectives of the adolescent education programme. Different aspects of adolescence like physical, psychological, emotional, socio-cultural, behavioural are discussed in brief in this chapters. Also, the needs of adolescents like nutrition, education, life skills education and concerns of adolescents are discussed. Chapter two on skill development discusses ten life skills in three categories: Thinking skills, social skills and negotiation skills in brief. The formal education system should treat these topics as equally important as when adolescent are well informed about their bodily changes from an authentic source, and also their life skills are developed then this will help them in developing their personalities.

Adolescent Development education in formal schooling is largely based on medical science and ignores the socio-cultural aspect of growing as an adult.

Role of Government Agencies and Voluntary Organisations in menstrual education

Government agencies through various departments are disseminating menstrual education among adolescent girls in Goa. Goa Education Development Corporation (GEDC), a semi-government body has school counselor's scheme where school counselors are appointed in government and aided schools and colleges. They conduct sessions in schools on menstrual hygiene. Directorate of Health Services through its RKSK (Rashtriya Kishor Shakti Yojana) scheme has established Yuva clinics where adolescent counselors are appointed who impart menstrual education in community as

well as in schools. Adolescent Education Programme (AEP) of Goa AIDS Control Society (GSACs) is implemented through SCERT where the counselors conduct sessions in schools on sex education, menstrual education and other related topics. Each of the departments have their own module to teach on menstrual education. Social exclusion practices and taboos around menstruation are not dealt with by government departments.

There are several NGOs such as Children Rights in Goa (CRG), EcoFemme, Green the Red, Rotary Clubs, ARZ (Anyay Rahit Zindagi), Sahas, Sangath, Mineral Foundation of Goa, etc who are working with adolescents and menstrual health. Children Rights in Goa (CRG) have helped schools in forming gender champions and conduct training relevant to them. EcoFemme promotes eco-friendly stitched cloth pads and conducts menstrual health management session in rural and urban areas. They also have given ecofemme pads to rural girls for free of cost. ARZ works with adolescent and youth in Vasco and conduct gender sensitization, sex education and other related awareness programmes with the communities and educational educational institutes. Sahas has been conducting gender sensitizations and menstrual health management sessions with rural girls mostly in Sattari taluka. Sangath had conducted intervention based research with adolescent girls and women on menstruation. Mineral Foundation of Goa (MFG) conducts menstrual health management sessions for schools in mining belt of Goa. Rotary Club of Panjim has installed sanitary pad vending machines and incinerators in 75 educational institutes all over Goa.

Through these efforts from government and NGOs towards menstrual health management and hygiene, adolescent girls are receiving knowledge about menstrual health. Each organization follows their own module to teach about menstruation. There is need to also work in the area of helping the adolescents to accept their body and also towards addressing the taboos which are practiced around menstruation in the State.
Apart from government and NGOs, there is also contribution of other sources like T.V, Internet and books to learn about menstruation.

Media, Internet, Books as a source of knowledge for learning about menstruation

There is lesser influence of T.V, Internet and books to learn about menstruation among adolescent girls respondents. They expressed that they have been watching TV advertisements of sanitary pads which gave them rough idea about menstruation. Through google search some of the adolescent girls seek information when they have irregular periods or cramps. Adolescent girls expressed that they have read science text books and not any other book for accessing knowledge on menstruation.

Menstruation Activism: Towards breaking menstrual taboos in Goa

Since societies across the Globe have considered menstruation much beyond just a biological function, it has given rise to several menstrual activism. The activism is towards breaking silence around menstruation, fighting against menstrual taboos. There are international activists such as Blood Sisters, Society for Menstrual Exclusion (Bobel: 2010). There are national initiatives like Menstrupedia, EcoFemme, Green The Red who works to educate women about menstrual hygiene, environment protection, etc.

In Goa, there is a social movement named SAME: Speak Against Menstrual Exclusion which is started by two young ladies in their 20s in 2014. They started by forming a closed group on Facebook in the same name. They have presently 2000+ members on this group. SAME received support from Chitrangi, women's collective of Konkani Bhasha Mandal who together have gone to more than ten colleges in Goa to speak against menstrual exclusion.

It is interesting to note that most of the active members of the SAME are from higher caste where the practices are more rigid. These females want to break the silence around menstruation and also stop following the social and religious practices which treat women as impure and unclean. They sternly speak about breaking all types of the taboos around menstruation. For adolescent girls who have been following menstrual taboos religiously all these years, this might come as a shock. There might be a dilemma between what has been practiced at home and community and what is heard through sessions conducted by SAME in their colleges.

CONCLUSION

There are several socialization agencies which influence the knowledge creation, perception building and acceptance of one's body and menstruation among adolescent girls in Goa. The primary agencies, i.e. family mainly teaches about menstrual hygiene and menstrual exclusion practices to be followed during menstruation. While secondary agencies like educational institute focus on passing medical science knowledge about menstruation and menstrual hygiene. On the other side, Menstrual Activists in Goa who directly challenge the menstrual exclusion practices, may trigger the minds of adolescent girls on re-thinking the practices they presently follow.

Apart from menstrual hygiene management lessons by both school and family, it is also important to help adolescent girls to accept their body, shun the shame around the topic and help them openly discuss their health concerns with family and teachers. Adolescent girls find it comfortable to discuss such topics with peers or other sources.

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CHALLENGES FACED BY FARMERS IN RICE CULTIVATION: A CASE STUDY ANALYSIS OF SOUTH GOA DISTRICT OF THE STATE OF GOA

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ABSTRACT

Rice, the staple food of the state of Goa, is cultivated over an area of 42,973 hectares with a production of 1,55,818 metric tonnes annually. The present paper has aimed at studying the problems in cultivation of rice among farmers in the South-Goa district of the state of Goa. The study further aimed at understanding the initiatives taken by state government in promoting rice cultivation in the state. An attempt has been made to examine the farmers' willingness to continue cultivation of crop amidst problems they face in cultivation of the said crop. Factor Analysis is used to identify the prominent problems faced by farmers in cultivating crops.

Keywords: Rice Cultivation, Agriculture, Food grains.

INTRODUCTION

Government of Goa has been making all out efforts to revitalize agriculture and allied activities in the State. Various schemes have been implemented to encourage rural youth to take up agriculture and allied activities in the villages. The present paper aims to look at some of the challenges faced by farmers in Rice Cultivation. The financial assistance towards mechanization of agricultural and allied activities to farmers alone has decreased from Rs. 421.26 lakhs in financial year 2014-15 to Rs.382.37 lakhs in financial year 2017-18. (Economic Survey 2017-18, Directorate of Planning, Statistics & Evaluation, Government of Goa).

Although all out efforts are being made by the State departmental agencies to bring more area which lies fallow during each season, the pressure from other sectors of the State's developmental processes like booming tourism industry has had a telling effect in this area.

Rice is cultivated both during *kharif* mostly as a rainfed crop with the abundant and

continuous rain received during the period. Of the total area of rice nearly two-third is cultivated in the kharif under three distinct situations of upland, lowland and saline soils. The productivity levels of the crop during kharif are relatively lower (3507 kg/ha) as compared to rabi season. During *rabi*, the crop is mostly cultivated in low lying areas with availability of water and the productivity levels are relatively higher (3625 kg/ha).

LITERATURE SURVEY

In order to understand the work done and to study the area under research some of the earlier works have been reviewed. These include:

Mahadevan R.,(2003), attempted to trace the process, analyse the effects on agricultural productivity and growth and discuss the problems and prospects for globalization to draw policy implications for the future of Indian agriculture. The changes in the Indian agricultural sector since the early 1990s in the move to liberalize the economy to benefit from globalization in the light of economic reforms were considered. The study stressed on need to ensure that these reforms are synchronized so that the pace of both reforms is set right in order to work hand in hand to promote agricultural productivity growth.

Sharma V.P., (2007), tried to understand socio-economic implications of corporate-led initiatives in agriculture (mainly contract farming) in the state of Punjab. The results indicated that contract farming is a good initiative for medium and large-scale farmers producing for the market but the long-term success of such initiatives will depend on how a large number of small and marginal farmers can be linked to restructured markets under changing market and policy environment. The study points out that it is important to provide an integrated set of services including credit and not just seed and limited extension services.

Dev S.M. (2012), tried to examine the roles and challenges of small holding agriculture in India. His study covered trends in agricultural growth, cultivation patterns, participation of small holding agriculture, productivity performance of small holders, linking small holders with markets including value chains, role of small holders in enhancing food security and employment generation, differential policies and institutional support for small holders and, challenges and future options for small holding agriculture including information needs.

Phiri M.A.R., Chilonda P., Manyamba C., (2012), attempted to explore key challenges and opportunities for agricultural productivity growth in Malawi. The study argued that unless government increases its financial contribution to Research and

Development, research agenda in the country will remain donor driven creating a precarious situation for sustainable agricultural productivity growth. The study suggested that government should make deliberate efforts by creating a conducive environment and building capacity of small holder farmers for the establishment of farmer producer and marketing associations

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Himani (2014), made an analysis of agriculture sector in Indian economy. The study confirmed that agriculture sector has achieved tremendous growth over the years in Indian economy. The sector's contributions in GDP, employment and exports were also seen rising considerably. To maintain and accelerate the growth and contributions of this sector and to develop it as a true engine of economic growth, the study suggested that there should be logic and rationale of complementary investments in physical infrastructure as well as in human capital.

Mohapatra B. B., Pradhan L., (2015), tried to explore the potential contribution so far been attempted under the aegis of e-agriculture or Information and Communication Technology (ICT) to the livelihoods of farming community in India. A general framework of the current state-of-the art wireless sensors network was given as a challenging technology for Indian farming community to monitor their crops from a remote place.

Solanki R., (2016), attempted to analyze the agriculture advances by commercial banks in Rajasthan. The analysis was made by the application of trend analysis; calculate ratios and chi- square test with time series analysis. Major finding of the study was that agriculture lending by sample bank has failed to reach the target which was given by RBI during the study period.

Mishra A. K., Mohapatra U., (2017), discussed the history and need of agricultural finance in India, sources and magnitude of agricultural finance and assessed progress with regard to agricultural finance. The study found that there has been a sharp decline in the percentage of agricultural credit financed by non-institutionalized sources like money-lenders from 90.9 per cent to 20.9 per cent. The study remarked that imparting training to borrowers regarding procedural formalities of financial institutions could be helpful in increasing their access to institutional credit. The option of micro finance and Kisan Credit Card (KCC) should be adopted and streamlined to alleviate the plight of the marginal, small, tribal farmers. They should be linked effectively to the Self Help Groups (SHGs).

IDENTIFICATION OF RESEARCH PROBLEM

The earlier studies conducted have been in different states of India. The agricultural finance, productivity, availability of water for agriculture, climate, support of government agencies, problems and prospects in the light of globalization, micro finance, lending by money lenders etc. are some of the areas covered by previous researchers. The present paper is an attempt to find out the challenges in Rice Cultivation faced by the small farmers in South-Goa district of Goa.

OBJECTIVES OF THE STUDY

The main objective of the study is to analyze the challenges faced by farmers in Rice Cultivation in the South-Goa District of Goa. However the specific objective is as under:

1. To analyse the problems in cultivation of rice among farmers in South-Goa District of Goa.
2. To study the initiatives taken by state government to promote rice cultivation.

RESEARCH METHODOLOGY

In order to study the above research objectives, the following research methodology has been adopted.

Universe and sample size

Universe

For the present study the South-Goa District of state of Goa has been considered as the Universe.

Sample Size

For the present study, a sample size of 100 farmers cultivating rice from South-Goa district was selected and studied.

Sources of Data

The study is based on the data collected from both primary and secondary sources.

Primary Data

The primary data is collected by conducting personal interviews with farmers cultivating rice from the South-Goa district of Goa. A scientifically designed questionnaire was utilized for the purpose of data collection.

Secondary Data

The secondary data has been collected from published source i.e. the annual reports for the years 2013-14 to 2017-18 from Directorate of Planning, Statistics and Evaluation, and Government of Goa.

Period of the Study

For the present study, the period of study is the period of survey i.e. from 1st November 2018 to 30th November 2018.

Data Analytical Tools

The statistical tool applied and used for data analysis is: Factor Analysis

ROLE OF STATE GOVERNMENT FOR AGRICULTURE IN GOA

The Agriculture sector is a major source of long term sustainable livelihood for the farmers in the State. The Government has greatly supported agriculture in the State through the implementation of many State Sponsored and Centrally Sponsored schemes for the welfare of farmers.

Initiatives of the State Government

1. **Greening Young Minds:**
   To sustain agriculture in the long term, there is need to bring youth into farming. To expose school students to vegetable cultivation, a comprehensive programme of training followed by actual cultivation of vegetables was taken up in 90 schools through the Agriculture Technology Management Agency (ATMA) in both districts in Goa.

2. **Mitigating Human Animal Conflict in Agriculture:**
   In order to ensure a fair and expectable compensation to farmers under the Shetkari Aadhar Nidhi scheme, 2932 farmers affected by damage to agricultural crops/produce due to wild life have been registered. The farms of such farmers are regularly surveyed so as to arrive at an equitable amount of compensation on application as such damages are a recurring occurrence.

3. **Crop Production and Input Management:**
   (i) **Assistance for high yielding/quality seed:** An estimated 10729 farmers were provided assistance of Rs. 61.03 lakh towards the purchase of 288.50 MT of seeds with subsidy provided at source.
   (ii) **Assistance for fencing:** Subsidy @ 75% to 90% of standard cost is provided for erecting stone wall, barbed wire or wire mesh fencing and 90% for solar powered fencing. Around 168.09 running kilometers fence has been erected with a subsidy of Rs. 129.66 lakh benefiting 163 farmers/groups.

4. Krishi Card:

Considering the widespread activities of the Directorate of Agriculture, steps to implement complete technology based system to deliver services to farmers and monitor them were taken in 2013-14. During the year 2017-18, 1906 Krishi Cards were issued to farmers, thus covering 27039 farmers since the beginning of the programme. So also, 70 services were brought under e-Krishi software during the year.

5. Shetkari Aadhar Nidhi:

The scheme is implemented for grant of compensation to farmers who suffer loss of crop/produce due to natural causes like unseasonal rains, floods, droughts, landslides, siltation, natural fire/lightning, epidemic of pests and diseases, damage due to wild animals etc. Maximum compensation for crop damage based on fixed norms per unit area is Rs. 1.00 lakh. Loss to infrastructure too is compensated @ 25% limited to Rs. 1.00 lakh. During the year, 372 farmers were provided compensation to the tune of Rs. 37.45 lakh up to 31/12/2017.

6. Interest Subsidy for Agriculture and Allied Activities:

The scheme envisages making loans available to persons engaged in Agriculture, Animal Husbandry, Fisheries, Processing and Marketing of Agriculture produce. The interest above 4% charged by Institutions such as Nationalized Banks, Scheduled Commercial Banks, Goa State Co-operative Bank and Primary Agricultural Co-operatives shall be borne by the Government as interest subsidy to the farmer and will be directly released to the respective lending Institutions. Each beneficiary shall be eligible for interest subsidy to a maximum loan amount of Rs. 5.00 lakh either as one or more loans taken for one or more approved activities of agriculture or allied purposes. During the year 2017-18, 5072 farmers have been provided interest subsidy with an expenditure of Rs. 73.68 lakh till 31/12/2017.

7. Mechanization in Agriculture:

The objective of the scheme is to promote agricultural mechanization to overcome shortage and high cost of manual labour. The components such as custom services of agricultural machineries including mechanised paddy transplanter, assistance for agricultural machinery and equipment, special assistance for maintenance of tractor, one time assistance for removal of bushes and weeds, assistance for land levelling etc. are included under the scheme. During the year 2017-18 till 31/12/2017, 18809 farmers have been benefitted with assistance of Rs. 214.24 lakh towards custom services provided for hire charges of machinery like combine harvester, tractor, power tiller and mechanized paddy transplanter.

8. Assured price for Agriculture Produce:

The scheme envisages the minimum price assured by Government for sale of produce by a farmer to encourage them to venture into investments in agriculture with full confidence so that farming community could maintain traditional plantation that support rural economy of Goa. Moreover, younger generation would step forward to take up agriculture as an economical viable activity.

Analysis and Discussion

Table 1: Reliability Statistics for 10 variables on Farmers' Problems

Reliability Statistics

Cronbach's Alpha	N of Items
.735	10

Source: Computed from Primary Data

The above Table-1 shows Cronbach's Alpha for Reliability Statistics for 10 variables on Farmers' Problems in Cultivation of rice as 0.735. These 10 variables are further used to perform exploratory factor analysis.

Table 2: Significance of KMO and Bartlett's Test on Reasons for Problems in Cultivation of Rice

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.662
Bartlett's Test of Sphericity	Approx. Chi-Square	289.477
	Df	45
	Sig.	.000

Source: Computed from Primary Data

The Table-2 shows Kaiser-Meyer-Olkin Measure of Sampling Adequacy at 0.662. The Chi-square value is 289.477 for 45 degrees of freedom. These statistical values are significant at 5% level of significance. KMO value of less than 0.6 is considered inadequate as there may be chances of widespread correlations which are further a problem to perform factor analysis. Hence, the above data with value of 0.662 is considered adequate for performing factor analysis.

Table 3: The total variance explained for problems for cultivation of rice

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.206	32.055	32.055	3.206	32.055	32.055	2.517	25.165	25.165
2	1.938	19.383	51.438	1.938	19.383	51.438	1.933	19.335	44.500
3	1.331	13.307	64.745	1.331	13.307	64.745	1.742	17.419	61.919
4	1.181	11.807	76.552	1.181	11.807	76.552	1.463	14.633	76.552
5	.641	6.412	82.964						
6	.576	5.759	88.722						
7	.363	3.630	92.353						
8	.332	3.323	95.675						
9	.276	2.757	98.433						
10	.157	1.567	100.000						

Extraction Method: Principal Component Analysis.

Source: Computed from Primary Data

The above table-3 explains the total variance explained for problems for cultivation of rice on 10 variables exhibiting a 76.55% of total variance with 4 Eigen values i.e. 3.206, 1.938, 1.331 and 1.181. All these values are strictly greater than one. This depicts the existence of four major factors. Individually these factors are having variances of 25.165, 19.335, 17.419 and 14.633 respectively. Further, according to the variables under each factor; these prominent factors are named for additional analysis.

Table 4: Result of Rotated Component Matrix for factors responsible for problems

Sr. No.	Factors		Component			
			1	2	3	4
1	Lack of Government Support	Wages of Labour	.652			
		Storage Facility	.520			
		Processing of Subsidies	.855			
		Lack of Cooperation from Government Offices	.861			
2	Challenging Unprofitable activity	Physical Work in Agriculture		.904		
		Unprofitable Activity		.790		
3	Documentation in availing subsidies	Documentation in Availing Subsidies			.837	
		Problems of Water			.687	
4	Prices of crops after harvest	Prices of Crops After Harvest				.807
		No Proactive Role by Panchayat				.668

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

Source: Computed from Primary Data

The result of Varimax with Kaiser Normalization has given four factors. The above factors have been named as, lack of Government support, unprofitable activity, documentation in availing subsidies and prices of crops.

The first factor is named as Lack of Government Support which includes the variables such as Wages of Labour, Storage Facility, Processing of Subsidies, Lack of Cooperation from Government Offices. The second factor has been named as Challenging Unprofitable activity. It includes two variables; firstly, Physical Work in Agriculture and secondly; Unprofitable activity. The third factor has been named as Documentation in availing Subsidies. This factor includes two variables of problem of water and documentation in availing subsidies. The fourth factor is named as prices of crops. This factor has variables of prices of crops after harvest and role played by government agencies such as panchayat in reaching out to farmers.

CONCLUSION

The State Government has been devising number of schemes for the upliftment of the agriculture sector in the state. These are the some of the activities that were taken in the year 2017-18. Greening Young Minds, Mitigating Human Animal Conflict in Agriculture, Crop Production and Input Management, Krishi Card, Shetkari Aadhar Nidhi, Interest Subsidy for Agriculture and Allied Activities, Mechanization in Agriculture and assured price for Agriculture Produce. The present study has identified Lack of Government support, agriculture being a challenging unprofitable activity, documentation in availing subsidies and prices of crops after harvest as prominent problems in continuing agricultural activities by farmers. Though State Government has been launching schemes particularly in mechanization of the sector Tractor with subsidies while providing Mini Tractor, Power Tiller, Mini Tiller, Weed Cutter, Sprayers etc; these schemes have not been taken up by the masses. The government support in terms of processing of applications for the above mentioned schemes have to more farmer centric by taking the farming community into confidence. The blocks in the mindsets of the farmers that documentation involved in availing schemes as hindrance has to get transformed into a necessary requirement as the deserving applicants should only avail these subsidies and schemes. The belief among the respondents that agriculture is challenging unprofitable activity can be addressed by bringing the mechanization in the mainstream among the farmers. The Krishi Melavas that are organized in different talukas to acquaint the farmers with advancement in agriculture should be attended by masses and particularly from remote villages where agriculture is of prime importance for their existence.

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A STUDY ON CULTIVATION OF DIFFERENT TYPES OF CROP IN THE PONDA TALUKA OF GOA

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ABSTRACT

Agriculture sector play an important role in the process of development. Efforts should be made to increase the production and productivity of this sector so that we do not have to depend on our neighbouring states for supply of food products. In this respect every aspect associated with agricultural productivity and production should be studied in detail. Productivity of an agricultural sector depends on the type of crop grown by farmers and the types of crops cultivated in a particular region depend on natural factors such as climatic condition, type of soil as well as on various socio-economic factors. Goa being a small state is dependent on its neighbouring states for milk, poultry and vegetables. Rice that is cultivated in the rains from June to September is the major crop followed by arecanut, coconut, cashew, pineapple, sugarcane, mango and bananas. An attempt has been made in the following study to analyse the type of crops grown in the sample area. For the sake of analysis crops are divided into two groups as food grain crops and non-food grain crops. Required information is collected from about 5 per cent of the farmers from Ponda taluka of Goa by using stratified random sampling technique from across the village panchayats.

Keywords: Agriculture, Productivity, Farmers, Crops

INTRODUCTION

Productivity of the agricultural sector depends on the type of crop grown by farmers and the types of crops cultivated in a particular region depend on natural factors such as climatic condition, type of soil as well as on various socio-economic factors. Goa being a small state is dependent on its neighbouring states for milk, poultry and vegetables. Rice

that is cultivated in the rains from June to September is the major crop followed by arecanut, coconut, cashew, pineapple, sugarcane, mango and bananas. An attempt has been made in the following study to analyse the type of crops grown in the sample area. For the sake of analysis, crops are divided into two groups as food grain crops and non-food grain crops.

Type of crop grown by farmers depends on the natural factors such as climatic condition, type of soil, and on various socio-economic factors. Several studies undertaken in the past have provided the reasons for the farmers' preference to cultivate cash crops or non-food grain crops rather than food grain crops. Guided by the principle of comparative advantage, the farm households with resources to produce cash crops most efficiently might specialise in the production of cash crops and buy food crops which raise their overall income (J. Govereh and T. Jayne, 2003). Farmers with larger landholdings cultivate more cash crops than food crops as a means of diversification and /or to increase their income (C. Timmer, 1997) as the cash crop have a positive effect on farmers income (Chege et-al. 2013). With the more income generation from cash crops, the farm households would be provide with the means to save and invest in a more productive form and accelerate a process of agricultural commercialisation. The export potential of cash crops would also contribution towards poverty reduction when there is a broad based participation by farmers in an area, with labour intensive production processes, and potential positive linkages to staple crop productivity in cash crop production. Household-level spillover effects can result when production of a crop is commercialised. It enables the farm household to acquire new resources that would not otherwise be accessible. It is proved that, cash crops bring substantial wage and employment opportunities to the rural economy, over a time cash crops provide a stimulus to the agricultural innovation by raising capital for agricultural investment and accelerating the build-up of institutions that enable further commercialization. Cash crop production enables farmers and farm workers to increase their living standards, thus contributing to food security. The production of cash crops offers farmers, opportunities for investment and improving management in their farms, stimulating agricultural innovation and increasing yields (Achterbosch, T.J., S. van Berkum and G.W. Meijerink, 2014);. The risk of food crop failures in subsistence economy households is more likely to encourage diversification into cash crops. As the cultivation of cash crops requires large initial investments, the farmers with increasing income would be able to cultivate cash crops (Masanjala, 2005).

OBJECTIVES

1. To study the farmers preference between the cultivation of food crops and non food crops in Ponda taluka of Goa.
2. To study the reasons for non cultivation of food crops and non food crops by the farmers in Ponda taluka of Goa.

METHODOLOGY

The required data is collected directly through a structured questionnaire from 313 farmers constituting 5 per cent of total number of farmers from Ponda taluka of North Goa district of Goa by following stratified random sampling technique. Farmers are divided into four categories as marginal, small, medium and large farmers depending on the size of land holdings. Minimum 5 per cent farmers from each size of holding are chosen to have proper representation. The questionnaire was framed to elicit information from the sample farmers keeping in mind the objectives of the study.

An Analysis of Cultivation of Different Types of Crops

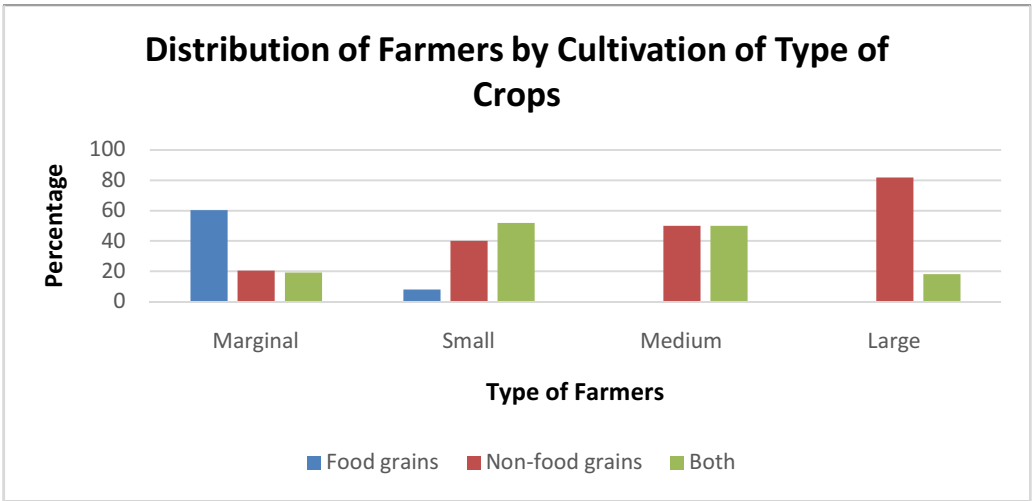
The study analyses the type of crops grown in the sample area. For the sake of analysis, the crops are broadly divided into food grain crops and non-food grain crops.

Cultivation of Food Grain Crops

In the study area, 48 per cent of the farmers cultivated only food grains and nearly 27 per cent farmers cultivated only non-food grain crops. Nearly 25 per cent of the farmers cultivated food grain crops as well as non-food grain crops. Including double cropping, overall 69 per cent of the net sown area was under the cultivation of non-food grain crops while 40 per cent of the net sown area was under the cultivation of food grain crops. In absolute terms, out of the 657 hectors of land under cultivation, 417 hectors of land was under the cultivation of high value crops, i.e., non-food grain crops while 240 hectors of land was under the cultivation of low value crops, i.e., food grain crops**.**

The proportion of farmers cultivating exclusively food grain crops decreased with increase in the size of land holdings (Fig 1). Large farmers did not cultivate exclusively food grain crops while a large proportion of marginal farmers (60.42%) cultivated only food grain crops. It can be observed that with an exception of marginal farmers, in all other categories, the proportion of farmers cultivating non-food grain crops was higher than cultivating food grain crops. Majority of the large farmers (81.82%) cultivated only non-food grain crops. As compared to small and medium farmers, the proportion of farmers cultivating both the crops was less for marginal and large farmers.

Fig. 1: Distribution of Farmers by Cultivation of Type of Crops (in percentages)



Source: Primary Survey, 2014.

From the above figure it can be seen that majority of the farmers especially marginal farmers, irrespective of the education level cultivate food grains mostly paddy (rice) which is the staple food of people of Goa. Even when the farmers want to shift their cultivation towards non-food grain crops, they keep at least some part of their land only for the cultivation of paddy, so as to avoid complete dependency on market for the purchase of their staple food. Despite high cost of cultivation of paddy, those farmers continue to cultivate it because they have a special taste for the rice grown in their own field and feel that, their paddy possesses high nutritional value. However, large farmers hardly prefer to cultivate food grains.

Reasons for Non-Cultivation of Food Crops

Cultivation of food grain crops is very important for achieving self-sufficiency in food grain production. If the state is not self-sufficient in the production of food grains then it has to depend on the neighbouring states for meeting its demand. Despite the introduction of various schemes to increase the production of food grains by the state Government, farmers were reluctant to undertake the cultivation of food grain crops. Some of the reasons cited by the farmers for not cultivating food grain crops were Non-availability of sufficient land (17% of marginal farmers and 16% of small farmers) problem of water/ lack of irrigation (13% of marginal farmers), non-availability of labour (6% of marginal farmers, 11% per cent small farmers,14% large farmers), problem of fencing (10 % marginal farmers, 5% small farmers), non-profitability (38% marginal farmers 63% small farmers 100% medium farmers 86% large farmers) and

other reasons including the problem of pollution, lack of subsidies and support price (15% marginal 5% small). One of the most important reasons cited by the farmers for the non-cultivation of food grain crops is low profitability. This is true since rice is supplied by the Government at subsidized rate through fair price shops, while the cost of cultivation is more. So, several farmers have given up the cultivation of paddy.

The above analysis reveals that, higher proportion of farmers irrespective of the size of land holdings responded that, they do not cultivate food crops because it is not profitable. They also feel that the cost of cultivating food grains especially paddy is more than buying rice from market.

Table 1. Reasons for non-cultivation of food grain crops

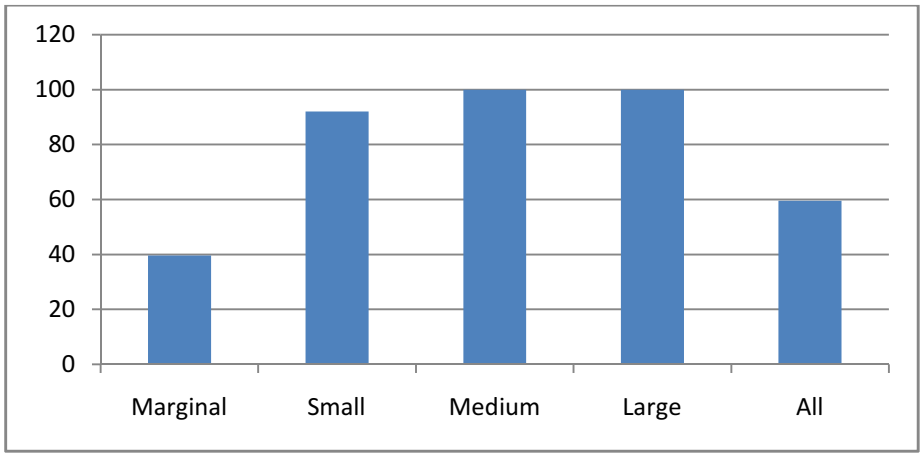
Reasons	Types of Farmers			
	Marginal	**Small**	**Medium**	**Large**
Less land	17.3	15.78	0.00	0.00
No Irrigation	13.6	0.00	0.00	0.00
Cost & availability of labour	5.76	10.52	0.00	14.28
Fencing problem	9.61	5.26	0.00	0.00
Not profitable	38.46	63.15	100	85.71
Any Other	15.38	5.26	0.00	0.00
Total	100	100	100	100

Source: Primary Survey, 2014

Cultivation of Non-Food Grain Crops.

There has been a growing trend in the cultivation of non-food grain crops. Karunakaran (2013) found that, the number of farmers cultivating non-food grains increased leading to increase in the percentage of area covered under non-food grain crops. On the other hand, farmers growing food grain crops decreased leading to decrease in the percentage of total area under food crops, giving the evidence of diversification. Majority of the farmers, except marginal farmers in the study area cultivated non-food grain crops (Fig. 2) and, the cultivation of non-food grain crops varied directly with the size of land holdings. Thus, the cultivation of non-food grain crops varied directly with the size of land holdings

Fig. 2: Distribution of Farmers Cultivating Non-food Crops (in percentages)



Source: Primary Survey, 2014.

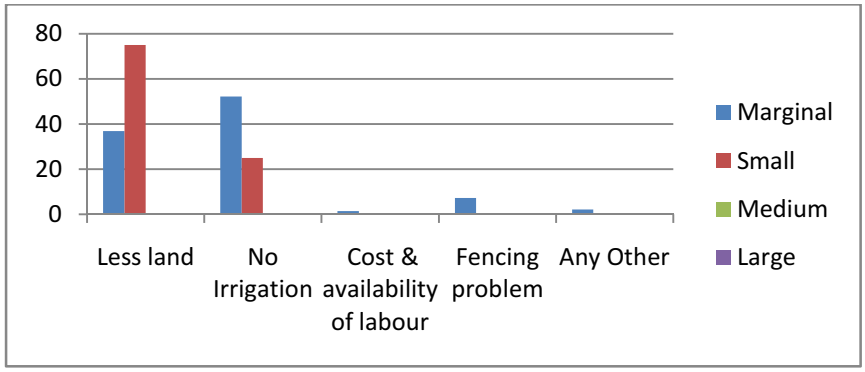
Reasons for Not Cultivating Non-food Grain Crops

In the case of medium size and large size of land holdings all the farmers cultivated non-food grain crops. It is quite possible that, even though farmers are interested to cultivate variety of crops, it won't be possible for them to do so because of some limiting factors. An attempt is made in this study to know the reasons for non-cultivation of non-food grain crops by the farmers (Fig. 3). It is understood that, small size area and the lack of irrigation facility are the main problems faced by the farmers from marginal and small size of land holdings for the non-cultivation of non-food-grain crops.

Lack of Irrigation Facility: Perennial supply of water is the most important determining factor in the cultivation of non-food grain crops like areca nut, banana sugarcane, high yielding varieties of cashews and vegetables. Majority of the marginal farmers except graduates and 50 per cent of graduate small farmers cited non-availability of irrigation facility as the main reason for not cultivating non-food-grain crops (Fig. 3).

Size of Land Holdings: The availability of sufficient land is also viewed by some farmers as a requirement for the cultivation of non-food grain crops. A large proportion of marginal farmers with graduate (75%), and middle school education (42%) and graduate small farmers (50%) revealed that, shortage of cultivable area was the main reason for not opting to cultivate non-food grain crop by them (Fig. 3).

Fig. 3 Reasons for Non-Cultivation of Non-Food Grain Crops



Source: Primary Survey, 2014.

FINDINGS

The size of land holding influenced the type of crop cultivated by the farmers. The proportion of farmers cultivating exclusively food grain crops decreased with increase in the size of land holdings. Large farmers were not cultivating exclusively food grain crops while a large proportion of marginal farmers (60.42%) cultivated only food grains. With an exception of marginal farmers, in all other categories, the proportion of farmers cultivating non-food grain crops was higher than cultivating food grain crops. Majority of the large farmers (81.82%) cultivated only non-food grain crops. As compared to small and medium farmers, the proportion of farmers cultivating both the crops was less for marginal and large farmers.This is because marginal farmers own small size of land and they do not want to give up the cultivation of paddy since it is their staple food. The large farmers are already into cultivation of non-food grain crops and they are satisfied with their income that they receive from their farms.The proportion of farmers growing food grains decreased with increase in the size of holdings. It decreased from 80 per cent in the case of marginal size holdings to nearly18 per cent for the large size land holdings.

SUGGESTION

The sample farmers were of the view that proper fencing, improvement in irrigation facility, control of pollution, appropriate support prices, easy availability of labour and lower wages would help in improving agricultural productivity in their area.

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CONSUMER'S PERCEPTION TOWARDS HORTICLTURE KIOSKS IN THE VICINITY OF MARGAO

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ABSTRACT

Horticulture is one of the major allied activities of agriculture which includes wide varieties of crops, be it fruits, vegetables, meditative, aromatic, etc. Over the years horticulture has evolved as an essential part of agriculture, aiming towards self sufficiency and sustainable development. The Goa State Horticulture Corporation Limited (GSHCL) had emerged to develop flower and vegetable cultivation in Goa. One major impetus was the initiation of outlets or kiosks for sale of the farmer's produce. In order to promote vegetables with assured markets, these kiosks along with the government's assistance sell vegetables at subsidized rates to the general public. However, it has been noticed that such kiosks which are set up in areas wherein there already exists a larger wholesale local vegetable market face high competition, as the latter has more varieties and better freshly available produce. This paper reveals that although these horticulture kiosks sell vegetables at a subsidized rate, the quality of vegetables is a matter of concern. Lack of proper grading and proper quality control have led to some kiosks selling stale and wilted produce, thereby forcing consumers to purchase better, fresh produce from the larger local market at a slightly higher price.

Keywords: Horticulture, Kiosks, Consumers, Perception, Vegetable

INTRODUCTION

India is developing in leaps and bounds, and the fact remains and still holds strong that agriculture is the backbone of the Indian economy. Majority of the Indians still depend on agriculture for their livelihood. In the realm of agriculture, we have a lot of allied activities such as horticulture, sericulture, fishing, animal husbandry, poultry farming, dairy farming, etc. One of the strong stem sprouting from agriculture is Horticulture. Horticulture is one of the major allied activities of agriculture, which includes wide

varieties of crops be it fruits, vegetables, meditative, aromatic, etc. According to the American Society for Horticultural Science, 'Horticulture is the science and art of producing, improving, marketing, and using fruits, vegetables, flowers, and ornamental plants'. Over the years the horticultural activities in Goa, have evolved as an integral part of agricultural development aiming towards self sufficiency and sustainable development. The Goa State Horticulture Corporation Limited (GSHCL) has emerged to develop flower and vegetable cultivation in Goa. By enhancing and improving agricultural development in Goa through wide assistance provided to the farmers the Goa State Horticulture Corporation Limited tries to reduce the State's dependency on neighbouring states for agricultural produce. One major impetus was the initiation of outlets or kiosks for sale of the farmer's produce. In order to promote vegetables with assured markets these kiosks, along with the government's assistance sell the vegetables at subsidized rates to the general public. However, it has been seen that such kiosks which are set up in areas wherein there already exists a large wholesale vegetable market face high competition, as the larger local market has more varieties and better freshly available stock of vegetables. It has been noticed that although these outlets sell vegetables at a subsidized rate, the quality of vegetables is a matter of concern. Lack of proper grading and proper quality control have led to some outlets selling sub-standard, stale and wilted produce, thereby forcing consumers to purchase better fresh produce from the larger local market or any local vegetable vendor even at a slightly higher price.

REVIEW OF LITERATURE

According to a study by Times of India (2017) the supply of rotten and stale vegetables by the State run Goa State Horticulture Corporation Limited (GSHCL) had irked operators of the subsidized vegetable stores and left consumers disappointed with the service. Most of the officials said they were helpless and blamed the situation on post monsoon showers. It was also informed that during the monsoons the vegetable bags get drenched in transit leading to rotting. Many a times the suppliers received bags of vegetables to the extent of 70 percent being spoilt on receipt itself. Customers hence feel much better in going to and buying from the local wholesale market or even small retail vegetable vendors who sell fresh stock of vegetables even though they would have to pay a slightly higher price.

In another study on the similar grounds by team Herald (2017), it was found that the several consumers have complained about “rotten” and “poor quality” of vegetables at the carts. The outlets are flooded with old and poor quality vegetables. Repeated complaints to the Corporation have been made and assurances have been given that the situation will improve, however, all have fallen on deaf ears. People prefer buying vegetables from other local outlets, while some poor complain that they are helpless and forced to buy such poor quality produce.

OBJECTIVES

1) To study whether consumers are satisfied with the vegetables available at the Goa State Horticulture Corporation Limited (GSHCL) outlets/ kiosks.

2) To analyze whether people would compromise quality for subsidized price.

3) To find out whether the GSHCL kiosks meet the aim of the government to provide fresh vegetables at a subsidized rate to the general public.

Sample:

For the purpose of the study an individual survey procedure was used vide convenience sampling. A total of 200 individuals participated in the study. The sampled individuals comprised of residents from the vicinity of Margao, residing in Aquem, Borda, Fatorda, Comba, Pedda Margao and Ambaji, during November 2018.

Data collection tools:

The sample was administered a structured questionnaire. The questions were designed in a forced choice (dichotomous) and in a 3 point *Likert* scale format. The questions aimed at understanding the consumer's perception towards Goa State Horticulture Corporation Limited (GSHCL) vegetable outlets/ kiosks.

RESULTS AND DISCUSSION

The data was analyzed using statistical tools of percentage analysis to compare the results among the respondents.

Problem 1: To study whether consumers are satisfied with the vegetables available at the Goa State Horticulture Corporation Limited (GSHCL) outlets/ kiosks.

Table 1: Satisfaction levels of consumers/ freshness levels of vegetables with GSHCL outlets.

Intensity levels	Satisfaction levels of consumers with GSHCL outlets	Level of freshness of vegetables available at GSHCL outlets
Extremely	2%	4%
Moderately	18%	76.5%
Not at all	80%	19.5%

Source: Fieldwork

As seen in Table 1, it can be seen that 80 percent of the consumers are not at all satisfied with the vegetables available at the Goa State Horticulture Corporation Limited (GSHCL) outlets/ kiosks. 18 percent were moderately satisfied, while only 2 percent were extremely satisfied. With respect to the level of freshness of the vegetables available at the GSHCL outlets, 76.5 percent were moderately satisfied, 4 percent of consumers were extremely satisfied, whilst 19.5 percent were not at all satisfied with the freshness of the vegetable stock available at the Goa State Horticulture Corporation Limited (GSHCL) outlets/ kiosks.

Problem 2: To analyze whether people would compromise quality for subsidized price.

Table 2: Price difference between GSHCL outlets and local vendors

Price difference level intensity	Consumers perception
Extremely	3.5%
Moderately	94.5%
Not at all	2%

Source: Fieldwork

Table 3: Consumers compensation views between quality and price.

Intensity levels	Consumers compensation between quality and price
Most of the time	2%
Sometimes	27%
Never	71%

Source: Fieldwork

Table 4: Consumers preferred outlet to buy vegetables

GSHCL	Local wholesale market or local retail vegetable vendor
15%	85%

Source: Fieldwork

With respect to problem 2, i.e. to analyze whether people would compromise quality for subsidized price, it can be seen in Table 2 that on the whole there is a moderate amount of price difference between the produce available at the GSHCL kiosks and local vegetable vendors. 94.5 percent consumers perceive that the price difference levels are moderate, 3.5 percent perceive that the difference is extreme, while 2 percent observe that there is no price difference at all between the vegetables available at the GSHCL outlets and the

local vegetable vendors. When asked whether they would compromise quality for price, it can be clearly seen in Table 3, that 71 percent replied that they would never compromise quality for price, 27 percent said that they sometimes would, while 2 percent said that most of the time they would not mind buying not so fresh vegetable at a lower price which is usually available at the GSHCL outlets. On the whole it can be seen in Table 4, that 85 percent consumers prefer buying vegetables from the local wholesale market or local retail vegetable vendor, while only 15 percent prefer buying vegetables from the GSHCL outlets.

Problem 3: To study whether the GSHCL kiosks meet the aim of the government to provide fresh vegetables at a subsidized rate to the general public.

Table 5: Consumers perception of vegetables available being sub-standard, stale and wilted

Intensity levels	Consumers perception
Most of the time	89.5%
Sometimes	8%
Never	2.5%

Source: Fieldwork

Table 6: Consumers perception of GSHCL in meeting the aim of providingfresh and subsidized vegetables.

Yes	No
12%	88%

Source: Fieldwork

As can be seen in Table 5, 89.5 percent of the consumers feel that the most of the time the vegetables available at the GSHCL outlets are sub-standard, stale and wilted. Eight percent perceive that only sometimes they are of such quality, while 2.5 percent perceive that the vegetables are never sub-standard. However, in support to the 89.5 percent consumers, a finding done by Times of India (2017) also confirmed that the vegetable stocks available at the GSHCL outlets are of sub-standard quality. It was found that most of the potatoes at this outlet were oozing and were in a state of rot, onions were undersized and slimy, carrots and tomatoes had softened and ladyfingers and brinjals were stale. Hence it can clearly be seen in Table 6 that only 12 percent of the consumers perceive that the GSHCL kiosks meet the aim of the government to provide fresh

vegetables at a subsidized rate to the general public**,** while 88 percent of the consumers perceive that they do not.

The GSHCL outlet owners themselves agree to the consumers woes. In a finding by Team Times of India (2017), one of the owner informed that his customers were hesitant to purchase vegetables from him because of such stale vegetable stock. He claims to be losing income and has brought this matter to the attention of the horticulture corporation several times but in vain. With such kind of treatment the outlet owner plans to soon discontinue the franchise. In a similar finding by Team Herald (2017) GSHCL outlet owners say that the Corporation has prohibited them from buying vegetables to sell at their carts. The Corporation has hired some contractors who supply vegetables to them but the quality is very bad. Many outlets have faced the ire of their consumers, who have even returned the vegetables after purchase.

OTHER GSHCL KIOSK ISSUES

A study by Team Times of India (2017), was a complaint about the Goa State Horticulture outlets getting vegetables stock late, forcing daily customers of the GSHCL to go empty handed since they were asked to come later for their purchases as the supplies had not yet come. It is said that a 'Customer is King', hence the seller has to by all means try to satisfy the consumer. Such treatment of not getting the stock on time, hence forcing the customer to either go without any purchase or buy old stock of vegetables, dissatisfies a customer, who in turn prefers purchasing from the local vegetable vendors who have ample of fresh stock available at their disposal for sale.

Goa State Horticulture Corporation Limited aims to provide assistance to the farmers of Goa and tries to reduce the State's dependency on neighbouring states for agricultural produce. However, a finding by Team GOA365(2018), reveals that the farmers feel cheated and are suffering losses. Farmers say that the government started these horticulture stalls to promote local farmers, but it is not happening. Farmers say that these stalls vendors are buying vegetable at a cheaper rate from the neighbouring state. In such situation the local farmers feel cheated and de-motivated to grow and sell their produce.

Another new setback faced by GSHCL outlets is the opening of '*TaazaTokri'* at several cities in Goa. TaazaTokri is an air-conditioned outlet providing fresh fruits and vegetables at reasonable rates. This outlet even provides the service of free doorstep delivery of a customer's order. Such service is definitely going to prove very competitive to the GSHCL outlets, who will ultimately have to bear the brunt of it, if they do not improve their services.

CONCLUSION

The study concludes that majority of the people living within the vicinity of Margao i.e. in the surrounding areas of Margao like Aquem, Borda, Fatorda, Ambaji, Comba, Pedda Margao, etc., prefer to purchase vegetables from the local wholesale market or any other local vegetable vendor rather than from Goa State Horticulture Corporation Limited (GSHCL) outlets/ kiosks due to the freshly available stock at the former. However, the results also show that some people still do prefer to purchase from the horticulture kiosks owing to the subsidized pricing of the produce available at GSHCL outlets. The only main issue with the Goa State Horticulture Corporation Limited (GSHCL) outlets/ kiosks is the supply of fresh stock of vegetables which will ensure safeguarding their customers, protect the welfare of the local farmers and ultimately aim towards self sufficiency and sustainable development in the field of horticulture in Goa. According to Gaonkar (1997) in order to increase efficiency of growers they should be provided with enough incentives in terms of remunerative prices and technological back-up. This will help ensure farmers with good quality produce which can be profitable to the farmers and ensure satisfaction to the consumers.

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AN EVALUATION OF THE STATUS OF AGRICULTURE IN GOA

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ABSTRACT

Agriculture is one of the crucial economic activities of Goa. Located between the Arabian Sea and the Western Ghats, Goa faces problems of enough cultivable land to feed its own population. Being a coastal area, its lands are exposed to salinity and do not qualify as good and productive for cultivation. So, for its day-to-day needs of agricultural produce like vegetables, Goa is largely dependent on neighbouring states Karnataka and Maharashtra. Rice that is cultivated in the rains from June to September is the major crop followed by cereals like pulses and small millets. The areca nut, coconut, cashew are the other major plantation crops here and the garden crops include pineapple, mango, bananas and jackfruits. Also, from the forest various types of barks and bamboo canes are harvested. Due to rapid urbanization the availability of agricultural land is reducing. In this paper we are trying to find out the trends of agriculture production during the last four years.

Keywords: Agriculture, Cultivation, Production, Trends, Rice, Coconut.

INTRODUCTION

Agriculture plays a vital role in India's economy. Over 58 percent of the rural households depend on agriculture as their means of livelihood. The share of the primary sectors (including agriculture, livestock, forestry and fishery) is estimated to be 20.4 percent of the Gross Value Added (GVA) during 2016-17 at current prices.

Agriculture in Goa is one of the important economic activities in the state. Located between the Arabian Sea and the Western Ghats, Goa faces problems for enough cultivable land to feed its own population. The coastal areas are exposed to salinity and do not qualify as good agricultural areas, while the inland areas are not productive enough. So, for its day-to-day needs of agricultural produce like vegetables, Goa is dependant on Karnataka and Maharashtra. However, approximately one third of the total land in Goa falls under forest areas and yields substantial profits. In this paper an attempt has been made to study the trends of agricultural production in Goa during recent years.

The government has done much to improve and develop agriculture in Goa to make it more productive, thus enabling the farmers to get a better return for their labour. Rice and fish being the staple diet of the people, paddy is the main crop in Goa's agriculture. The important crops, apart from paddy, are ragi, maize, jowar, bajra and pulses. Cash crops like coconut, cashew-nut, arecanut, mango, jackfruit, banana, pineapple are also grown in abundance. Cashew is an important crop in Goa. A kind of intoxicating drink called *Feni* is produced from cashew. Sugarcane cultivation has been taken up only recently and a sugar factory has also been set up in Goa. A variety of mangoes are grown in Goa. Some of the famous Mango varieties are mancurade, mussarade, fernandine, xavier, alfonsa, colaco. There are two varieties of jackfruit grown here namely kapo (hard) and rasal (soft).

The vegetables that form a part of the agriculture in Goa are brinjal, lady's fingers, radish, cucumber, pumpkins, drumsticks, breadfruit and different varieties of gourds. Sweet potatoes, chillies, onions are also available.

Paddy, the principal crop of Goa, is grown in two seasons, viz, Kharif or *sorod* and the rabi or *vaingan*. The monsoon crops are called the kharif crops and the winter crops are called rabi crops. The main sources of irrigation for winter crops are the nallahs, rivers and streams, tanks, wells and canals. Crops grown in the Kharif season consist of paddy, ragi (locally called nachani) and some pulses. Crops grown in the rabi season are comprised of paddy, pulses like horse-gram (kulith), black gram (udid), a variety of beans and some vegetables.

The State has made a remarkable progress in agriculture sector besides various other spheres of economic upliftment. The Agriculture along with Forests in Goa is instrumental in keeping Goa green and cover nearly 65% of the total area of the State.At the time of liberation, nearly 70% of the population was involved in agriculture as their full time occupation. Paddy was the predominant crop of the State followed by Cashew and Coconut. The cropping pattern is changing and today, we have Cashewnut which is cultivated in nearly 55,000 Ha with paddy covering about 31.000 Ha. The cultivation of horticultural crops is gaining importance due to the better returns, lower risk and tolerance of these crops for part time farming.

Goa being a small state is dependent on its neighboring states for milk, poultry and vegetables. Rice that is cultivated in the rains from June to September is the major crop followed by cereals like pulses and small millets. The areca nut, coconut, cashew are the other major plantation crops here and the garden crops include pineapple, mango, bananas and jack fruits. Also from the forest various types of barks and bamboo canes are harvested.

Due to rapid urbanization the availability of agricultural land is reducing. Even though one fourth of the population is sustained by agriculture in Goa, it contributes to only 15 to 16 percent to the income of the state.. Also as 78 percent of the agricultural area is still rain fed, irrigation is insufficient and commercial farming is ruled out as 80 percent of land holdings are below 2 hectares and the sizes of the fields are small.

OBJECTIVES

1. To briefly discuss the overall picture of agriculture production in Goa.
2. To analyse the trends of agriculture production in recent years.

METHODOLOGY

Secondary data has been sourced from "Goa at a Glance", Economic Survey Goa, Statistical Handbook of Goa, etc, and from the website of Directorate of Planning, Statistics and Evaluation, Government of Goa.

DATA ANALYSIS AND DISCUSSIONS

1. Status of agriculture crops at the time of Statehood and now:

The status of agriculture in Goa at the time of attaining statehood during the year 1987-88 and during 2016-17 is given in the Table 1.

Table 1: Status of agriculture crops

Item	Unit	At the time of attaining Statehood (1987-88)	2016-17
1. Total cropped area	Hectares	1,30,575	1,54,721
2. Net area sown	"	1,22,182	1,30.000
3. Food-grains production	Tonnes	1,10,708	1,19,139
4. Production of Rice	"	71,070	1,13,227
Production of Cash crops			
i. Coconut	Million Nos.	106.40	132.16
ii. Cashew nut	Tonnes	10,500	24,396
iii. Areca nut	"	1,450	3,102
iv. Sugarcane	"	80,000	40,222

(Source: Goa"s Economy in Figures)

It may be seen from table 1 that the total cropped area, net sown area, food grain production and production of rice, production of cash crops, viz, coconut, cashew nut, areca nut, all showing increasing trend except the sugarcane production which shows a tremendous 50 percent decline.

2. Size of Agriculture Holdings:

District wise distribution of operational land holdings according to the size class as per agricultural census, 2010-11 is shown in table 2.

Table 2: District wise of Operational holdings according to size class as per Agricultural Census 2010-11

Size Class (Hectares)	North Goa	South Goa	Goa
Below 0.5	25532(55.64)	16882(52.54)	42414(54.36)
0.5-1.0	10988(23.94)	6498(20.22)	17486(22.41)
1.0-2.0	4994(10.88)	4823(15.01)	9817(12.58)
2.0-3.0	2230(4.86)	2167(6.74)	4397(5.64)
3.0-4.0	671(1.46)	639(1.99)	1310(1.68)
4.0-5.0	421(0.92)	481(1.50)	902(1.16)
5.0-7.5	473(1.03)	302(0.94)	775(0.99)
7.5-10.0	208(0.45)	125(0.39)	333(0.43)
10.0-20.0	248(0.54)	151(0.47)	399(0.51)
20.0 and above	126(0.27)	61(0.19)	187(0.24)
Total	45891	32129	78020

(Source: Statistical handbook of Goa-2015-16)

It is evident from table 2 that Agriculture holdings in Goa are predominantly small. It can be observed that in North Goa above 55.64% of the land holdings are below 0.5 hectares while in South Goa 52.54% of the land holdings are below 0.5 hectares. The land holdings below 3 hectares is 95.32% and 94.51% in North and South Goa respectively. Land holdings 10 hectares and above is less than 0.75% in entire Goa. Small land holdings may be one of the hindrance for agriculture development in Goa as it lacks economies of scale leading to higher production cost.

3. Distribution of Agriculture workers/cultivators:

The distribution of working population in agriculture sector as per 2011 census is given in table 3.

Table 3: Distribution of working population in agriculture, 2011

State/Distt/Talukas	Total Workers	Cultivators	Agri. Labourers
Goa	5,77,248	31,354	26,760
North Goa	3,27,658	15,402	14,120
Tiswadi	73,486	2,091	1,072
Bardez	94,662	3,054	1,821
Pernem	28,438	2,655	1,876
Bicholim	37,603	2,272	1,864
Sattari	24,352	2,564	4,654
Ponda	69,117	2,766	2,833
South Goa	2,49,590	15,952	12,640
Sanguem	27,281	2,658	3.530
Canacona	19,048	5,009	1,920
Quepem	32,890	3,684	4,289
Salcete	1,08,209	3,269	2,169
Mormugao	62,162	1,332	732
Agricultural workers/cultivators to total workers	28.57% (1981 census) 10.07% (2011 census)		

(Source: Indicators of Socio Economic Development – 2017 and Statistical Handbook-2017)

The distribution of working population in agriculture as per 2011 census in table 3, indicates that in North Goa, there are more cultivators and agriculture labourers compared to South Goa, Bardez in North Goa and Salcete in South Goa has highest distribution of total workers while Sattari in North Goa and Canacona in South Goa has lowest distribution of total workers. It is also observed that there is a huge decline in the percentage of agricultural workers/cultivators to total workers from 28.57% in 1981 to 10.07% in 2011.

4. Area under various crops during 2015-16

The table 4 given below shows the area under various principal crops produced in Goa.

Table 4: Area under various crops during 2015-16 (in Hectares)

Crop	Total area under the crop	% of total cropped area
Rice (Kharif)	27730	17.72
Rice (Rabi)	13814	8.70
Ragi	-	-
Pulses	7154	4.57
Ground nut	1898	1.21
Areca nut	1783	1.14
Coconut	25818	16.50
Cashew nut	56609	36.18
Sugarcane	1139	0.73
Mango & Banana	7298	4.67
Vegetable	7240	4.63
Pineapple	378	0.24
Other fruits	3909	2.50
Oil Palm	834	0.53
Pepper	783	0.50
Tree Spices	193	0.13
Sweet Potato	43	0.03
Kokum	39	0.02
Total	**156462**	**100**

(Source: Statistical handbook of Goa-2015-16)

It may be seen from the table that area under cashew nut cultivation is the highest being 36.18% followed by Rice (26.42%) and Coconut (16.5%). However, area under the production of Sugarcane, Pineapple, Oil Palm, Pepper, Tree Spices, Sweet Potato and Kokum is very less.

5. Primary Agriculture Credit Societies:

The functioning of Primary Agriculture Credit Societies in North and South Goa districts during the year 2015-16 are provided in the following two tables, Table 5a and Table 5b.

Table 5a. Functioning of Primary Agricultural Credit Societies, North Goa, 2015-16 (Rs. in Crores)

Particulars	Primary agriculture Credit Societies	Farmers Service Societies	Total
Societies (No.)	45	2	47
Members (No.)	54959	27364	82323
Paid up Capital	14.83	1.21	16.05
Reserve and other funds	2.64	0.50	3.14
Working Capital	43.88	11.26	55.14
Deposits	50.23	12.66	62.89
Borrowings	3.1	0.33	3.43
Loans outstanding	29.5	5.66	35.16
Loans Overdue	21.17	2.98	24.16

(Source: Statistical handbook of Goa-2015-16)

Table 5b: Functioning of Primary Agricultural Credit Societies, South Goa, 2015-16. (Rs.in Crores)

Particulars	Primary agriculture Credit Societies	Farmers Service Societies	Total
Societies	32	0	32
Members	25962	0	25962
Paid up Capital	0.92	0	0.92
Reserve and other funds	1.64	0	1.64
Working Capital	17.14	0	17.14
Deposits	8.5	0	8.5
Borrowings	4.47	0	4.47
Loans outstanding	9.07	0	9.07
Loans Overdue	0.39	0	0.39

(Source: Statistical handbook of Goa-2015-16)

It is observed from table 5a and table 5b that the borrowings of North Goa (3,1crores) is less than South Goa (4.47 crores) in spite of lesser number of credit societies in South Goa. Regarding loan out standings, in South Goa it is only 9.07 crores whereas in North Goa it is 29.5 crores. The Farmers' Service Societies are non operational in South Goa.

Table 6: Contribution of Agriculture crops to the State Domestic Product (Rs, in Crore) (Percent)

State Domestic Product	2013-14	2014-15	2015-16	2016-17
GSDP at Current Prices	1267 (9.73)	1385 (7.2)	1568 (7.56)	1775 (7.59)
GSDP at Constant Prices (Base Year 2011-12)	1097 (7.89)	1069 (6.05)	1025 (5.47)	1026 (4.96)
% Growth over Previous Year GSDP at Current Prices	17.33	9.26	13.21	13.20
% Growth over Previous Year GSDP at Constant Prices (Base Year 2011-12)	6.64	-2.61	-4.08	-0.01
NSDP at Current Prices	1155 (4.1)	1264 (3.27)	1442 (3.28)	1640 (3.11)
NSDP at Constant Prices (Base Year 2011-12)	1003 (4,08)	973 (2,97)	930 (2.55)	929 (2.17)
% Growth over Previous Year NSDP at Current Prices	17.76	9.44	14,05	13.75
% Growth over Previous Year NSDP at Constant Prices (Base Year 2011-12)	7.14	-3.01	-4.42	-0.1

(Source: Economic Survey of Goa 2017-18)

The above table gives information regarding the contribution of agriculture crops to the state domestic product both in figures and percentage. It is revealed that even though there is increase in the GSDP and NSDP at current prices, at constant prices, the percentage has declined and the growth percent at both current and constant prices are showing negative growth rates from the year 2013-14 to 2016-17.

ii. Recent Trends in Paddy Cultivation in North Goa and South Goa

The recent trends in paddy cultivation in different talukas are given in table 7a for North Goa and table 7b for South Goa. The data collected is for four years from 2013-14 to 2016-17 under four parameters viz. Net area sown, area under paddy, and average yield during Kharif and Rabi season.

From the table it can be noticed that the net sown area is almost static with a minor variation/reduction in the area and the area under paddy cultivation is also reducing from 2013-14 to 2016-17 in Tiswadi, Bardez, Pernem and Bicholim while there is minor increase in net area s0w in Sattari and Ponda Talukas. However, the total area under paddy cultivation is declined marginally. Regarding average yield of rice per hectare (Kharif), it is reduced in Tiswadi, Pernem and Bicholim. But it is showing a marginal increase in Bardez, Sattari and Ponda Talukas. However the table shows, in the case of average yield of rice per hectare (Rabi) there is marginal decline in all the Talukas in

North Goa. The total net sown area and area under paddy cultivation in North Goa has declined. Average yield of rice in both Kharif and Rabi seasons is also showing a declining trend.

Table 7a: Paddy Cultivation in North Goa

Taluka	**Year**			
Tiswadi	**2013-14**	**2014-15**	**2015-16**	**2016-17**
Net area sown (Ha)	10801	10557	10282	10513
Area under Paddy (Ha)	4740	4415	4370	4365
Average Yield of Rice per Ha in kg (Kharif)	2954	2955	2881	2683
Average Yield of Rice per Ha in kg (Rabi)	2992	2574	2305	2879
Bardez				
Net area sown (Ha)	15872	16240	16137	15866
Area under Paddy (Ha)	6010	5880	5730	5535
Average Yield of Rice per Ha in kg (Kharif)	2954	2910	2754	2961
Average Yield of Rice per Ha in kg (Rabi)	2901	2284	3300	2814
Pernem				
Net area sown (Ha)	14301	14173	14381	14469
Area under Paddy (Ha)	4330	4290	4107	4113
Average Yield of Rice per Ha in kg (Kharif)	3430	2945	2799	2883
Average Yield of Rice per Ha in kg (Rabi)	3023	2963	2908	3005
Bicholim				
Net area sown (Ha)	11168	11167	11174	11166
Area under Paddy (Ha)	2380	2290	2255	2240
Average Yield of Rice per Ha in kg (Kharif)	3283	2586	2850	2995
Average Yield of Rice per Ha in kg (Rabi)	3206	2770	3186	2552
Sattari				
Net area sown (Ha)	14166	14299	14435	14480
Area under Paddy (Ha)	1130	1100	1092	1074
Average Yield of Rice per Ha in kg (Kharif)	2451	2574	2848	3040
Average Yield of Rice per Ha in kg (Rabi)	2779	2629	3060	2733
Ponda				
Net area sown (Ha)	10398	10364	10454	10489
Area under Paddy (Ha)	3420	3230	3045	2891
Average Yield of Rice per Ha in kg (Kharif)	2435	2225	2564	2658
Average Yield of Rice per Ha in kg (Rabi)	3071	2779	2930	2649
Total				
Net area sown (Ha)	**76706**	**76800**	**66409**	**66494**
Area under Paddy (Ha)	**22010**	**21205**	**17554**	**17327**
Average Yield of Rice per Ha in kg (Kharif)	**2999**	**2847**	**2830**	**2867**
Average Yield of Rice per Ha in kg (Rabi)	**3046**	**2760**	**2984**	**2771**

(Source: Goa at a Glance : 2013-14, 2014-15, 2015-16 & 2016-17)

Similarly, regarding the Net sown area in South Goa, we can observe from the table that there is increase in Sanguem, Dharbandora, Canacona, Quepem and Salcete Talukas from 2013-14 to 2016-17. But there is decline in Marmugao. In the case of area under paddy cultivation, it is noticed that there is marginal decline in Sanguem, Dharbandora and Salcete, Mormugao is almost static and in Canacona and Quepem there is a marginal increase. The average yield of rice per hectare (Kharif and (Rabi) also shows marginal variations.

As per the observation the whole South Goa total depicts that even though there is marginal increase in the net area sown and area under paddy cultivation, the yield of rice is almost static in these years.

Table 7b: Paddy Cultivation in South Goa

Taluka	**Year**			
Sanguem	**2013-14**	**2014-15**	**2015-16**	**2016-17**
Net area sown (Ha)	10500	10549	11012	10928
Area under Paddy (Ha)	2085	2030	2020	2020
Average Yield of Rice per Ha in kg (Kharif)	2496	13 29	2840	2548
Average Yield of Rice per Ha in kg (Rabi)	3145	2641	2619	2609
Dharbandora				
Net area sawn (Ha)	3359	3301	3420	3420
Area under Paddy (Ha)	1105	975	975	955
Average Yield of Rice per Ha in kg (Kharif)	3137	2906	2793	2699
Average Yield of Rice per Ha in kg (Rabi)	3237	2845	2648	2701
Canacona				
Net area sown (Ha)	9646	9682	9863	9767
Area under Paddy (Ha)	3330	3340	3350	3340
Average Yield of Rice per Ha in kg (Kharif)	2543	3037	2895	2807
Average Yield of Rice per Ha in kg (Rabi)	2693	2653	2740	2905
Quepem				
Net area sown (Ha)	9981	10021	10013	10043
Area under Paddy (Ha)	5650	5800	5785	5655
Average Yield of Rice per Ha in kg (Kharif)	1880	3051	2885	2642
Average Yield of Rice per Ha in kg (Rabi)	4031	2864	2147	2684
Salcete				
Net area sown (Ha)	16666	16627	16683	16709
Area under Paddy (Ha)	7780	7770	7770	7775
Average Yield of Rice per Ha in kg (Kharif)	3055	6229	2877	2359
Average Yield of Rice per Ha in kg (Rabi)	3115	2897	2394	2821

Marmugao				
Net area sown (Ha)	2348	2263	2255	2288
Area under Paddy (Ha)	860	850	845	860
Average Yield of Rice per Ha in kg (Kharif)	3052	2967	2800	2839
Average Yield of Rice per Ha in kg (Rabi)	3175	2737	2849	2868
Total				
Net area sown (Ha)	**52500**	**52443**	**63700**	**63644**
Area under Paddy (Ha)	**20810**	**20765**	**23790**	**23496**
Average Yield of Rice per Ha in kg (Kharif)	**2642**	**2995**	**2850**	**2722**
Average Yield of Rice per Ha in kg (Rabi)	**3359**	**2792**	**2543**	**2722**

(Source: Goa at a Glance : 2013-14, 2014-15, 2015-16 & 2016-17)

CONCLUSION

The above analysis regarding agriculture production in Goa reveals that there is a huge decline in sugarcane production. Land holdings in Goa very small which may be one of hindrance for development of Agriculture in Goa. There are more cultivators and agriculture labourers in North Goa compared to South Goa. The area under the production of cashew, rice and coconut forms significant area under crops while area under rest of the crops is very small. Borrowings are more in South Goa District compared to North Goa while loan outstandings are more in North Goa District than in South Goa, Various schemes were implemented by the Central and State Governments to improve the agriculture production in Goa. Even though there is increase in the GSDP and NSDP at current prices, at constant prices, the percentage has declined and the growth rate at both current and constant prices is showing negative rates in recent years. It has been noticed that the total net sown area and area under paddy cultivation in North Goa has declined. Average yield of rice in both Kharif and Rabi seasons is also showing a declining trend. In these years in South Goa, even though there is marginal increase in the net area sown and area under paddy cultivation, the yield of rice is almost static. Thus, it may be concluded that considering very small land holdings, static agriculture activity, declining agriculture workforce and less interest among the population towards agriculture, it is unlikely that Goa will be able to achieve self-sufficiency in agriculture.

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A STUDY ON FARMERS SATISFACTION TOWARDS GOVERNMENT SUBSIDIES PROVIDED TO THE FARMERS IN GOA

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ABSTRACT

Agriculture is considered as the backbone of our country. It constitutes total 60% of land which is covered under agriculture in India. Agriculture plays a major role in increasing the GDP of our country which contributes 18% of total GDP of India. Goa is famous for various things likes beaches, tourism, apart from this Goa is also known for the agriculture. The important agricultural crops which are grown in Goa are paddy, ragi, maize, jowar, bajra and pulses. The present study is conducted to analyse the farmers' level of satisfaction towards the subsidies which are provided by the Government pertaining to the state of Goa. For this study 50 farmers were chosen as a sample. The data is collected from primary as well as secondary sources. The primary data has been collected by using the questionnaire and also the personal interview was conducted of the farmers. For analyzing the data SPSS has been used as a statistical tool in which regression analysis is conducted. The present study is conducted in South Goa.

Keywords: Agriculture, Farmers, Satisfaction, Subsidies, South Goa.

INTRODUCTION

An agricultural subsidy is a governmental subsidy paid to agribusinesses, agricultural organizations and farms to supplement their income, manage the supply of agricultural

commodities, and influence the cost and supply of such commodities. Examples of such commodities include: wheat, feed grains (grain used as fodder, such as maize or corn, sorghum, barley and oats), cotton, milk, rice, peanuts, sugar, tobacco, oilseeds such as soybeans. Rice is an important staple food crop for more than 60 per cent of the world population. It is the oldest known food that is still widely consumed today. There are different kinds of agriculture subsidies which are provided by government in India. Such as Fertilizer Subsidy: which means distribution of cheap chemical or non-chemical fertilizers among the farmers. It amounts to the difference between price paid to manufacturer of fertilizer (domestic or foreign) and price, received from farmers. Irrigation Subsidy: Subsidies to the farmers which the government bears on account of providing proper irrigation facilities. Irrigation subsidy is the difference between operating and maintenance cost of irrigation infrastructure in the state and irrigation charges recovered from farmers. Power Subsidy: The electricity subsidies imply that the government charges low rates for the electricity supplied to the farmers. Power is primarily used by the farmers for irrigation purposes. Seed Subsidies: High yielding seeds can be provided by the government at low prices. The research and development activities needed to produce such productive seeds are also undertaken by the government, the expenditure on these is a sort of subsidy granted to the farmers. Credit Subsidy: It is the difference between interest charged from farmers, and actual cost of providing credit, plus other costs such as write-offs bad loans. Availability of credit is a major problem for poor farmers.

Some of the benefits of agriculture subsidies

1. Agricultural subsidies help to manage domestic food supplies.
2. They can help to provide emergency income support.
3. They help to build domestic agricultural infrastructure.
4. Subsidies help to reduce agricultural imports.
5. Farmers can take their land out of production to help it recover.
6. Agricultural subsidies help farmers remain competitive.
7. It helps to reduce the effects of sudden loss within the market.

LITERATURE SURVEY

- **Arul Mary Thangam C (2012),** in his paper titled "Impact of subsidies on Agricultural production in Tamilnadu with special reference to Kanyakumari District" attempted on to examine the impact of subsidy on per acre net income distribution to different farmer groups and to give suggestions for the effective provision and utilization of subsidies.

- **Harshala Anil Salunkhe (2015),** in his paper titled "A Study of impact of Government subsidies to Agriculture sector in Jalgoan district" focused on studying the nature of government subsidy to agricultural sector, structure, procedure, distribution and hurdles of government subsidies for farmers in Jalgaon District and to study impact of the government subsidies to agricultural sector in Jalgaon District and also to find out the growth of agricultural sector in Jalgaon District with help of government subsidy. The study was based on quantitative research methodology.
- **Daojuan Zhuang (2015),** in his paper titled "Satisfaction evaluation for crop variety Subsidy Policy" focused on finding out the satisfaction level of the farmers towards the variety of Subsidy Policy.

RESEARCH PROBLEMS

- No concrete study about agriculture subsidies provided by Government to farmers has been conducted in South Goa. It gives scope to do this Research.
- The above studies have not been restricted to the particular state.

OBJECTIVES OF THE STUDY

- To understand the different government subsidies availed by farmers.
- To know whether the farmers have availed the Government subsidies.
- To find out the level of satisfaction among farmers pertaining to the Government subsidies.

RESEARCH METHODOLOGY

The various components of research methodology for the present research work are as under:

a) Universe

For the purpose of study, state of Goa has been selected as the universe.

b) Sample

For the purpose of study of agriculture subsidies provided by Government to farmers a sample of 50 respondents has been selected from South Goa.

c) Period

The period of Study is the period of Survey i.e. December 2018.

d) Data collection method

The present research study is based on data collected from both primary as well as secondary sources. An advantage of using primary data is that researchers are collecting information for the specific purposes of the study through

questionnaire. For the present study data is collected with the help of structured questionnaire. The secondary data is drawn from books, internet and different other publications.

e) For statistical tools

The following statistical tools are used in this study for the purpose of analysis.

i. Factor analysis

ii. Regression analysis

a) Hypothesis

H_0: Farmers are not satisfied with agriculture subsidies provided by Government of Goa.

H_1: Farmers are satisfied with agriculture subsidies provided by Government of Goa.

Agriculture is an important economic activity in Goa. The government has done much to improve and develop agriculture in Goa to make it more productive, thus enabling the farmers to get better return for their labor. Rice being the stable diet of the people, paddy becomes the principal crop in the scenario of agriculture in Goa. The important crops apart from paddy are ragi, maize, Jowar, Bajra and Pulses. The government has made all efforts to improve the agriculture sector in Goa by providing various agriculture subsidies to the farmers, which helps the farmers in carrying out their agriculture activities in Goa. In order to check whether the data which is collected is reliable, reliability test was done which is shown below: -

Reliability test

Table 1: Reliability Statistics

Cronbach's Alpha	N of Items
.663	12

Source: Compiled through primary data

The above table shows the reliability of the data which will be used to do analysis so the total reliability comes to 66% which is more than 50% so the whole data is reliable and is therefore used to find out whether the farmers are satisfied with schemes provided by Government of Goa and also to know whether the farmers have availed the Government subsidies.

Factor analyses

In order to find out the factors which influence the farmers satisfaction vis-a-vis the schemes provided by the Government, factor analysis has been conducted. Analysis

indicates that provision of subsidy helped the farmers in times of financial crises; led to an increase in agricultural output; helped the farmers in storage of grains; improved their standard of living; enabled them to get regular income and ensured continuous supply of

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.466
Bartlett's Test of Sphericity	Approx. Chi-Square	139.309
	Df	91
	Sig.	.001

Source: Compiled through primary data

From the above table Kaiser-Meyer-Olkin Value derived is 0.466, which is more than 0.50, which states that the sample selected is good sample. The significance value comes to 0.001 it means that the data is significant at 5% significance level.

Table 3: Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
Financial Support	2.425	17.323	17.323
Storage Facility	1.826	13.046	30.368
Fund Management	1.634	11.670	42.038
Improve Standard of Living	1.530	10.926	52.965
High Income	1.356	9.686	62.651
Emergency income support	1.133	8.093	70.744

Source: Compiled through primary data

After doing the factor analysis total 9 Factors which were used to determine the factors which shows whether farmers are satisfied with the agriculture subsidies provided by government are reduced to Just 6 Factors. It was also found that the total data explained is 70.74% and the Remaining 29.26 % is unexplained.

Table 4: Rotated Component Matrix

Factors	Component					
	1	2	3	4	5	6
Helped in critical financial position	.784					
I observe an increase in the Agricultural output after I used the subsidy	.715					
Surplus food could be stored		.767				
Growth of agricultural sector		.680				
Fund management was easier after availing the Agricultural subsidy			.207			
Continues supply of food grains			.110			
Improves standard of living				.743		
I started gaining regular income due to Govt. subsidies					.900	
Helps to provide emergency income support						.818

Source: Compiled through primary data

From the above table the 6 main factors derived are detailed as follows: -

1. **Financial support:**
   Subsidies provided by the government helps the farmers to overcome the critical financial position which the farmers might have been facing due to unavailability of financial resources. These subsidies will help the farmers to increase their productivity and to produce more.
2. **Storage facility:**
   The government encourages the farmers to store their food grains in the godowns at the subsidised rate which encourages the farmers to produce more since they will be free from the tension of getting food grains spoiled. When government encourages farmers by providing such type of facilities, it will ultimately lead to the growth of agriculture sector.

3. **Fund management:**
   The agriculture subsidies will help the farmers to use the funds productively. The farmers can use this fund for the other purposes such as education of their children, marriages etc. The subsidies will also help the farmers to provide continuous food grains and also to get the consistent income.
4. **Improves standard of living:**
   When the government provides more subsidies to the farmers, the farmers tend increase cultivation and this will lead to the increase in production which means that they can sell more in the market which ultimately leads to an improvement in the standard of living of the farmers.
5. **High income:**
   Government subsidies help the farmers to generate high income. When the farmers produce more the income generated by them will also be high.
6. **Emergency income support:**
   The subsidies will act as the emergency income support to the farmers as they can use the money for the other purposes whenever the farmers need the money.

Regression Analysis

Regression Analysis is performed to check the farmer's satisfaction towards Government subsidies provided to them. The following results are obtained.

Table 5 : Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.781	.611	.556	1.037

Source: Compiled through primary data

The regression analysis indicates that the above six factors have had an impact on the farmers satisfaction to the extent of 61%. This implies that there is scope for further study to determine what are the other factors that impact farmers satisfaction with respect to subsidy.

Table 6: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	72.503	6	12.084	11.243	.001[b]
	Residual	46.217	43	1.075		
	Total	118.720	49			

Source: Compiled through primary data

The data has been analysed with the help of regression using SPSS where Farmers satisfaction has been considered as dependent variable. There are nine independent variables which are assumed to have an influence on the considered dependent variable. The independent variables predicted to have impact on dependent variable are Financial Support, Storage Facility, Fund Management, Improve Standard of Living, High Income and Emergency income support.

It is assumed that from the above independent variables the factors such as Financial Support, High income and Emergency income support has a direct relation with farmers satisfaction towards government Subsidies. Where the data has been tested the following result has been observed. Overall all the factors have been found significant as 0.001 which is within the limit of 5% significant level. Thus alternative hypothesis gets accepted with the assumption that farmers are satisfied with the agriculture subsidies provided by government.

Table 7: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	Sig.
	B	Std. Error	Beta	
(Constant)	3.160	.147		.000
Financial Support	-.477	.148	-.306	.002
Storage Facility	-.231	.148	-.149	.126
Fund Management	-.123	.148	-.079	.412
Improve Standard of Living	-.350	.148	-.225	.023
High Income	-.648	.148	-.416	.000
Emergency Income support	.801	.148	.515	.000

Source: Compiled through primary data

CONCLUSION

A total of 50 respondents were surveyed both male as well as female respondents. The majority of the respondents were male farmers. The first objective of the study was to understand the different government subsidies availed by farmers and it was found that the farmers have availed different subsidies provided by the Government. Second objective of the study was to know whether the farmers have availed the Government subsidies and it was found that the majority of the farmers have availed the government subsidies

Third objective was to find out the level of satisfaction among farmers pertaining to the Government subsidies. For this purpose factor analysis and regression analysis has been used and it was found that out of a total of nine factors which were considered, three factors namely Financial Support, High Income and Emergency income support were found to be significant at 5% level of significance. It can be concluded that overall the farmers were satisfied with the subsidies provided by the government.

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PERCEPTION OF AGRO-SCHOOL STUDENTS TOWARDS AGRICULTURE: A CASE STUDY

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ABSTRACT

Agriculture sector has played a very crucial role in economic development of India. Till date half of the population is dependent on agriculture as a source of employment. With the rising level of unemployment, once again agriculture sector has opened up wide opportunities for younger generation. This study is focused on perception of agro-school students towards agriculture. The sample of 28 students was selected by using purposive sampling method. The sample includes students of Ramanath Crisna Pai Raikar School of Agriculture, Savoi Verem, Ponda- Goa. Survey method was employed to collect primary data with the help of questionnaire. The collected data is analysed using frequencies and Charts. The study found that wide opportunities with a reasonable assurance to prosper and grow motivate agro-school students towards pursuing education in agriculture. The study also found that agro-school students are more oriented towards self-employment and jobs. Further study has also revealed that agriculture is no more male dominated sector. Women are treated on par with men in the field of agriculture.

Keywords: Perception, Agro-School students, Agriculture, Non-Agriculture, Women

INTRODUCTION

The agriculture sector essays a pivotal role in the economic development of India. Prior to independence, it was the only sector which provided gainful employment to the majority of workforce. But in the recent past, people were found gradually shifting

towards service and industry sector in search of jobs. Data released by agricultural statistics 2017, indicates that agriculture sector still employs 54.6% of rural population. Presently, there is a tough war for getting a job in the competitive labour market. With the increase in population, problem of unemployment is rising day by day. Taking this factor into account policy makers are found constantly encouraging youngsters towards agriculture sector through their various policy frameworks. The present NDA government has initiated various schemes like Skill India for empowering youths towards carrying out economic activity of their own. The main aim of this initiative is to reduce the rising unemployment by providing standardised and nationally acceptable skill based programmes to unemployed people of India.

Also with the rising cases of formalin, chemical adulteration, pesticides spraying etc, people are becoming more and more health conscious and environmental savvy. In turn this has opened wide market for eco-friendly and agricultural products and services at large.

In order to reap the benefit of this available opportunity efforts are being taken to promote institutions which can empower and encourage our younger generation in the field of agriculture. One such institution promoted in Goa is Ramanath Crisna Pai Raikar, School of Agriculture, Savoi Verem, Ponda- Goa. It is the premier technical-vocational school started in the State of Goa during the academic year 2013-14, with an aim to bring changes in the field of agriculture sector through the development of highly skilled manpower with positive work attitude and entrepreneurial spirit.

This paper focuses on the perception of students of Ramanath Crisna Pai Raikar School of Agriculture, towards agriculture. The Paper also throws light on motivational factors and future goal of these Agro-School students.

REVIEW OF LITERATURE

Zakaria, Adam, Abujaja (2013) studied the perception of University for Development Studies (UDS) students in Ghana towards seeking self-employment in agribusiness sector. The study found that agribusiness has a high potential for self-employment and that there is high prospects of its success in Ghana. The study used Five point Likert Scale method to measure the performance of the students.

Smith, Park (2010) have surveyed public schools in New York regarding the perception of school students on agriculture. The data was collected with the help of closed ended questionnaire. The study revealed that students enrolled in agriculture programme had higher perception regarding the agriculture. Results showed that there is lack of understanding about agriculture as a career for the students.

Osborne, Dyer's (2000) study indicated that most of the students favour agriculture courses. Students and parents had positive attitudes towards agriculture as a

career. The study indicated that parents are not sure whether to encourage the students to pursue agriculture as a career or not. Both groups feel that there is wide scope for employment in the field of agriculture.

Cecchettini, Sommer, Leising's (1992) study on Australian students perceptions of agricultural careers, revealed that school students with agriculture programmes have more positive attitudes towards agriculture as a career. The students of Canberra felt that agriculture as a career option is more interesting, satisfying and secure. Very few students among those who have not opted for agricultural courses are positive towards the agriculture as a career in future.

SIGNIFICANCE OF THE STUDY

With the rising level of unemployment and people's preference for organic food, once again agriculture sector has opened wide opportunities for youngsters. However, the younger generation still hankers for white collared jobs. There is not therefore significant emphasis on developing skills through awareness, on field training and education. It is also expected that younger generation can bring spectacular transformation in agriculture sector with their modern approaches. Thus, this paper aims at studying perception of agriculture school students towards agriculture. Attempt has been made to collect maximum information on factors motivating students towards agriculture education and their future goals.

OBJECTIVES OF THE STUDY

1. To understand factors motivating students towards pursuing education in agriculture.
2. To studyfuture goals of agro- school students.
3. To find reasons behind rising enrolment of female students in agro-schools.

METHODOLOGY

The present study focuses on perception of Agro-School Students towards agriculture. The sample of 28 students was selected by using purposive sampling method. The sample includes students of Ramanath Crisna Pai Raikar, School of Agriculture, Savoi Verem, Ponda- Goa. Survey method was employed to collect primary data with the help of questionnaire. The collected data is analysed using frequencies and Charts.

FINDINGS

Findings of this study are divided into two parts:
Part 1 – Profile of the Respondents
Part 2 – Findings from the field data

PART 1 – PROFILE OF RESPONDENTS

- The sample consists of both genders. Male comprises of 54% (15) of the sample, while female consist of 46% (13).
- The respondents belong to the age group of 15-24 years, with a majority of them below 20 years (71%).
- The primary data reveals that majority students pursuing education in agriculture are from rural/village areas.
- As far as family occupational background of students is concerned, 68% of the students are from agricultural family background. While 32% are from Non-Agricultural family background.

PART 2 – FINDINGS FROM THE FIELD DATA

I] Motivation towards pursuing education in agriculture:

Interpretation: Primary Data reveals that there are multiple factors which motivate students towards seeking education in agriculture. 32% of the respondents are of the opinion that there is bright future and scope because people are becoming more environmentally savvy. Another 32% of the respondents said it is something different from normal education. 22% of the respondents are of the opinion that changing trend towards agribusiness attracted them toward this education. Rest of the respondents (i.e. 14%) said they preferred this education only due to presence of Agriculture school in Goa.

II] Future Goals of Agro- School Students:

Interpretation: An attempt to study future goals of agro-school students throws up interesting facts. The 47% of the respondents opined that they will actually practice old school agriculture with modern approaches. Among others, 25% of the respondents conveyed their willingness towards researching the future prospects of improving agriculture. Another 14% of the respondents said they will provide various agricultural services. Remaining 14% of the respondents said they will prefer working with Biotech Companies. It is also found that Agro-school students are not interested in teaching profession.

III] Rising Enrolment of Female Students In Agro-School:

Interpretation: Based on the oral interaction held with the staff of Agro-school and enrolment data received (academic year 2017-18 and 2018-19), it is found that enrolment of female students is increasing at the rate of 38% per year. Per Academic year on an average 16 female students prefer education in agriculture. The reasons for this phenomenon are many. 50% of the respondents have opined that a large job opportunity

in the field of agriculture orients more and more females towards it. 29% of the respondents are of the opinion that women are empowered to carry out agricultural activity which influences them towards agriculture education. 21% of the respondents also said that women are treated equally in par with the men in the field of agriculture.

CONCLUSION

Wide opportunities with a reasonable assurance to prosper and grow motivate agro-school students towards pursuing education in agriculture. Agro-School students are very clear about their future course of action. They are more oriented towards self-employment and jobs. Agriculture is no more a male dominated occupation. Women are also well equipped to carry out agricultural activities. They are treated on par with men in agriculture sector.

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ROLE OF WOMEN EDUCATION IN DETERMINING BIRTH RATES

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ABSTRACT

Birth rate is a very integral component measuring population growth. As birth rates are directly related to the health status of a woman, the emphasis is on studying the factors that influence birth rates such as the age of the woman, nutrition, income, education, culture, etc., affecting birth rates. The objective of the paper is to study whether 'Woman Education' as an empowerment tool towards development and prosperity is the main factor for reduction in birth rates. This study uses the time series data of 57 years on female education and crude birth rates and the World Development Indicators from World Bank. The study gives emphasis to Education as an effective measure resulting in the decrease in birth rates. The analysis of the study shows that across countries in which female education is high, women tend to give birth to fewer and healthy children. Illiteracy, lack of medical facilities, teenage pregnancy, stress, malnutrition, employment, delayed marriage, contraceptives, etc., are the main factors that lead to declining birth rates.

Keywords: Birth Rate, Education, Total Fertility Rate, Women Literacy

INTRODUCTION

Birth rate is a very integral component measuring population growth. As birth rates are directly related to the health status of a woman, emphasis is made to study the impact of various factors viz. age of the woman, nutrition, income, education, culture, etc.,

affecting birth rates. This paper reveals that birth rates in general are declining, one of the main causes being the increase in women's literacy rate. It focuses on the number of births per woman in a population given emphasis on their educational level. The number of children per woman was very high in the past and up to the second half of the 20th century. Globally, up to the year 1965 an average woman had more than five children. Over the last fifty years the global fertility rate has halved and globally the average woman has three or less than three children.

REVIEW OF LITERATURE

From a theoretical perspective, several channels have been emphasized. First, education raises a woman's permanent income through earnings, tilting her optimal fertility choices towards fewer off-springs of higher quality (Becker 1960, Mincer 1963, Becker and Lewis 1973, Wills 1973). Second, under positive assortative mating, a woman's education is casually connected to her mate's education, so that the effect of education on household permanent income is augmented through a multiplier effect (Behrman and Rosenzweig, 2002). Third, education may improve an individual's knowledge of, and ability to process information regarding, fertility options and healthy pregnancy behaviours (Grossman 1972). The study made by Pradhan and Canning 2016 of education and fertility in Ethiopia estimated that an additional year of schooling in Ethiopia would lead to a seven percent reduction in the probability of teenage pregnancy and a six percent decrease in the probability of marriage. In broad terms Education may affect a women's fertility and child investment choices through either income or learning (Michael 1973).

The literature also gives emphasis on the role of education in augmenting an individual's decision of motherhood and health. With respect to fertility, Rosenzweig and Schultz (1989) provide evidence that a woman's education explains the ability to effectively use contraception. Thomas Strauss and Henriques (1991) show that education predicts a woman's ability to acquire and process information. One of the most cited examples is smoking (Currie and Moretti 2003). Considering smoking being one of the causes for low birth rates, through anti-smoking campaigns in schools or health class, teenagers could learn about the dangers of smoking and be discouraged from adopting the habit of smoking.

OBJECTIVES

The objective of the paper is:

1) To study whether 'Woman Education' as an empowerment tool towards development and prosperity is the main factor for reduction in birth rates.
2) To analyze whether high level of female education is a reason for fewer and healthy births.

3) To study some of the factors leading to decline in birth rates.

METHODOLOGY

This paper uses secondary data. This study uses the time series dataof 57 years on female education and crude birth rates. The paper uses the World Development Indicators from World Bank.

The paper studies birth rates globally, country-wise annual number of births, enrollment of women in schools/ higher education and the woman's fertility rate. There is a negative correlation between the different levels of female education and the total fertility rate (TFR) in a population.

DATA ANALYSIS

Broad Reasons for the Decrease in Birth Rates

Following are some of the reasons which could lead to decline in birth rates:

(I) Education refers to the process of receiving or giving systematic instruction at school or university. Female education has a greater impact on the age of marriage and delayed fertility than male education. It has been observed that higher the level of education of a woman more delayed is her marriage and in turn fertility. It was found that more educated women have higher opportunity costs of bearing children in terms of lost income (Pradhan, 2016). They prefer to concentrate on their career which provides them for their livelihood. According to the ideation theory, more educated women may learn different ideas of desired family size through school, community, and exposure to global communication networks. Data show that the higher the level of a woman's educational attainment, the fewer children she is likely to bear. Given that fewer children per woman and delayed marriage and childbearing could mean more resources per child and better health and survival rates for mothers and children (Pradhan, 2015). When a woman is educated she tends to be more knowledgeable about prenatal care and child health and hence has greater confidence that her children will survive compared to illiterate women. Illiteracy also leads to decline in births because such women do not have the proper knowledge to be taken heed of during her gestational period. Three mechanisms influence the fertility decision of educated women: (1) the relatively higher incomes and thus higher income forgone due to childbearing leads them to want fewer children. The better care these women give increases their children's human capital and reduces the economic need for more children; (2) the positive health impacts of education, on both women and their children, mean women are better able to give birth and children's higher survival rate reduces the desire for more; and (3) the knowledge impact of education means women are better at using contraceptives (Jungho Kim, 2016). According to a study done by the Population Connection Organization (2016) data from 219 countries

from 1970 to 2009 found that for every one additional year of education for women of reproductive age, child mortality decreased by 9.5 percent. Investments in women's education have proven especially effective at lowering fertility rates since better educated women tend to marry later and have fewer and healthier children. Educated women are more physically capable of giving birth than uneducated women; but want fewer children and control birth better. Educated women provide better care at home, thus increasing the value of their children's human capital and reducing the need for more children. (Jungho Kim, 2016).

(ii) Culture, Media & Family Planning: In today's populous world, most governments try to promote having smaller families in order to control population. Gone are the days when women and families with their particular country's culture preferred having many children, sometimes as many as 12 to 15 and even more. This notion has now been replaced by having two or few children. The government helps in assisting families achieve this goal through family planning programmes or small family norms. Family planning refers to all active efforts to choose the number of children a family wants. It focuses on decision making and execution on a personal level. When it comes to such programs, it has been seen they play an important role in providing information through social media, counseling to couples and even supplying modern contraceptive methods which prove effective in bringing down sizes of families which literally means decline in birth rates. One major reason why family planning is highly important today is to bring down the number of unwanted pregnancies. Awareness of safe family planning methods nowadays compared to yesteryears has reduced the number of unwanted births thereby decline in overall birth rates.

(iii) Contraceptives: Another reason leading to declining birth rates is the increase in the use of contraceptives. A contraceptive is a device, drug or method used to prevent pregnancy or to basically control birth of a child from taking place. There are various kinds of contraceptive methods used in today's world. Use of condoms and pills top the list as the most commonly used type of contraception. The other methods include contraceptive diaphragm, the cervical cap/ femcap, Intrauterine Device (IUD) which are of two types hormonal and copper-based devices, contraceptive implant, contraceptive sponge, contraceptives injections, vaginal ring, contraceptive patch, sterilization which may be surgical or non-surgical, Natural Family Planning, etc. However whichever contraceptive method a couple may choose to adopt not to conceive a child, it has to be taken into account that human errors and method malfunction although less likely can take place, depending on the use and effectiveness of the particular method. In general though, the use of contraception is followed and does significantly lower ones chances of becoming pregnant. The reasons as to why contraceptives are used are usually in case a couple is not ready to take up the responsibility of bringing up a child. It may be due to

reasons like family planning, wherein a couple do not want children or it may not be the right time i.e. they would want a child but after some years, spacing the timing of births of their children so that they can concentrate on the child or children they already have or they do not feel that they are ready to be become parents as they may be too young or they have children and the couple feels like their family is complete. It may be used by some women who want to have more control over their lives, i.e. no added responsibility of raising up a child as they want to focus on their career. Contraceptives may also be used by couples when they are not able or ready to take up the financial responsibilities involved in having a baby or they must also be used for health reasons wherein bearing a child would prove harmful for the woman. All the above reasons of using contraceptives lead to the end goal of couples towards not bearing a child ultimately and on a greater note, declining birth rates.

(iv) Nutrition: Another factor, which, if not paid importance to, does also lead to decline in birth rates. Nutrition refers to the substances that one takes into one's body as food and the way that they influence one's health. Based on a 2500 calorie minimum required daily diet, the FDA recommends at least 50 gms of protein, 300 gms of carbohydrates 25gms of dietary fiber and aim to get less than 80gms total fat, 25 gms saturated fat, 300 mg of cholesterol and 2400 mg sodium. When one does not get the adequate requirement mainly due the lifestyle that we follow these days it leads to deficiencies which may not be noticed. Such deficiencies, excesses, or imbalances in a person's intake of energy and nutrients result in malnutrition. Nowadays most people get so busy with their respective work schedules that they miss out on having breakfast or lunch and proper meals. This ultimately leads to people ending up eating junk food lacking the proper nutritional requirements thus leading to malnourishment. These deficiencies and malnourishment in women can lead to infertility and difficulties in conceiving. A woman cannot control the causes of infertility but she can definitely control her eating habits which plays a vital role in conceiving. Maintaining healthy weight and food selection is important for a woman to prepare herself for pregnancy and enhance fertility. The National Infertility Association reports that 30 percent of infertility cases are due to weight extremes, which can alter hormone levels and throw ovulation off schedule. For women who are overweight, as little as 5 percent weight loss could improve fertility. On the other hand, women who are underweight, with a body mass index below 18.5 (18.5 to 24.9 is considered normal), may experience irregular menstrual cycles or stop ovulating altogether, according to the American Society of Reproductive Medicine. (Caroline Kaufman, 2017). Thus intake of proper nutritional meals is very important without which it leads to deficiencies leading to infertility thereby declining birth rates.

(v) Lack of medical facilities: Women living in urban areas are connected to good hospitals and good health care facilities which help them carry out their pregnancy well, although it may be observed that urbanization is generally associated with low fertility. On the other hand, rural area women faces issues of lack of information, lack of health care connectivity, poor sanitation levels all which lead to all kind of odds during her pregnancy period leading to decline in birth rates.

(vi) Stress: In today's highly competitive rat race world, working women are faced with a lot of work and home pressure which leads to stress, anxiety, depression, etc. These conditions affect the health of women. Symptoms like insomnia, loss of appetite or eating less than usual and sometimes even eating more than usual and binging on food stuff, losing interest in things one normally loves doing, etc., sets in. When one is stressed out, getting pregnant becomes difficult. Research shows links between stress, anxiety, depression and infertility. Research also indicates that stress may have an impact on other aspects of fertility beyond ovulation, including problems with fertilization and implantation in the uterus. Many a times the physical cause of infertility can be treated medically, however, with high stress levels, getting pregnant can still be difficult.

(vii) Mother's age: It has been noticed that there exists a negative correlation between mother's age and birth rates. Research studies show that as a woman gets older she tends to conceive fewer children. The numbers of births continue to fall as the average age of mothers rise. The average age a woman gives birth has shifted from mid 20s to late 20s and early 30s i.e. the average age of a woman at childbirth has increased. The focus of child bearing has shifted to later age groups leading to general decline in fertility age group. This shift is either the result of focus on career or not finding the right match, leading to delayed marriages and thereby delay in conceiving. Further with regards to teenage pregnancies, although the rates have declined, it has been seen that when adolescent girls do get pregnant, they are immature and fail to take up the responsibility of precautions needed during their gestational period. Adolescent girls who get pregnant usually come from situations of homes with high incidence of poverty, violence, use of drugs and hence pregnancy at a young age. In addition, these adolescent girls have a higher than average history of learning problems and school dropout and some experience postpartum depression. These problems stunt the development of these adolescents and add to this the responsibility of bringing a child may lead to additional problems for themselves and their infants. Children born to teen mothers are at increased risk for behavioral, social, and learning problems.(Garrison and Marriane, 2009).

(viii) Employment and Income: Income refers to the money gained on a regular basis usually for being employed for some kind of service or through investments. It has been seen that there exists a negative correlation between income and birth rates i.e. higher the income fewer the number of children born to a woman. In most cases the higher the level

of education, the better the job prospects, better income but fewer children. In a 1974 UN population conference in Bucharest, Karan Singh, a former minister of population in India, illustrated this trend by stating "Development is the best contraceptive." During the last few decades there has been a rise in the numbers of working women. Long gone are the days where the place of a woman was the four corners of her home.Women now are more career oriented. They are doing tremendously well in all walks of life. Hence women are becoming increasingly reluctant to abandon a professional career for the sake of having a family (Gutierrez-Domenech, 2004). Their employment in whichever field possible proves them to be supplementary income providers. Women with high incomes usually bear lesser number of children resulting in low birth rates whereas women with lower incomes bear more children resulting in higher birth rates. For women with lower incomes it has been noticed that more children prove to be a helping hand monetarily. More the children, more the hands at work. It is also seen that families with lower incomes count on their children to take care of their parents during old age, which is usually not the case in higher income families with monetary back up already done. Women with higher incomes usually have higher work stress and responsibilities and hence tend to have fewer children which overall leads to declining birth rates.

6. Data Analysis:

In considering whether female education actually drives a decline in the birth rates, the paper first studies the top ten populated countries and later analyses their respective birth rates using the data available from the World Bank, World Population Prospectus.

Table 1: Top Ten Populous Countries and Birth Rates

Sr. No.	Country	1960	2000	2010	2015	2016
1	China	20.86	14.03	11.90	12.07	12.00
2	India	42.10	26.46	21.41	19.27	19.01
3	U.S.	23.70	14.40	13.00	12.40	12.40
4	Indonesia	44.56	21.76	20.86	19.35	18.99
5	Brazil	42.34	20.20	15.49	14.41	14.16
6	Pakistan	44.19	32.04	30.18	28.73	28.23
7	Nigeria	46.34	43.15	41.34	39.37	38.89
8	Bangladesh	49.02	27.64	21.22	19.29	18.95
9	Russia	23.79	8.70	12.50	13.30	12.90
10	Mexico	45.53	24.13	19.99	18.51	18.17

Data Source: Compiled from World Population Prospectus: 2017 Revision

As can be seen from the above table, China being the most populous country is showing a decline in the birth rate from 20.86 (per thousand people) in the year 1960 to 12.00 (per thousand people) in the year 2016. India being the second largest populated country also sees a decline in the birth rate from 42.10 (per thousand people) in the year 1960 to 26.46 (per thousand people) in the year 2000, further declining to 21.41 (per thousand people) in 2010 and further to 19.01 (per thousand people) in the year 2016. A similar trend is seen throughout the other countries, while in Russia, in the year 2000 a drastic decline (08.70 per thousand people) is seen owing to the breakup of the Soviet Union. The overall country-wise analysis shows that compared to the year 2015 the birth rates have decreased in the year 2016.

The study by Angrist and Krueger (1992) concludes that women are likely to give birth at early ages than woman intend on attaining a specific level of schooling such as college degree.

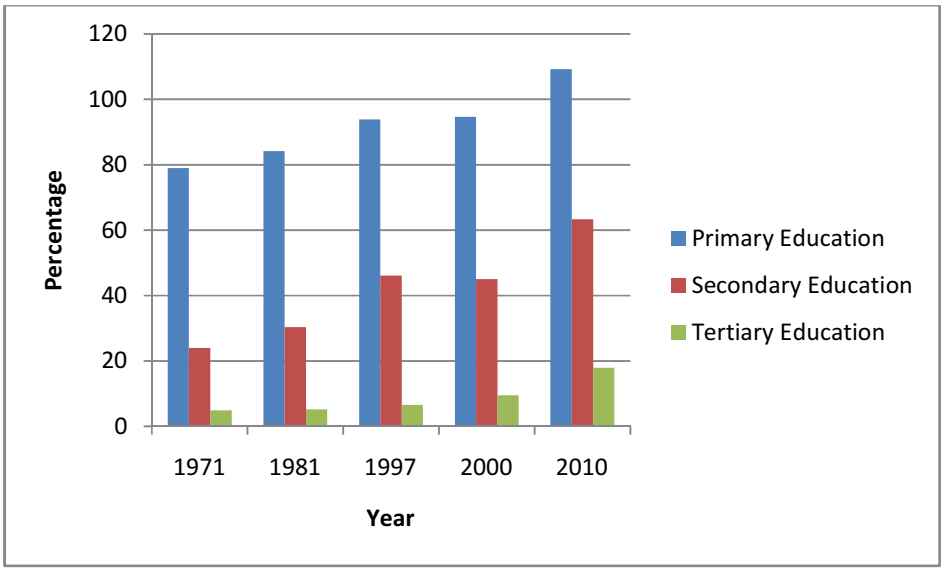
Table2: School Enrollment (males and females)

Year	Primary Education (Percentage)	Secondary Education (Percentage)	Tertiary Education (Percentage)
1971	78.92	24.04	4.95
1981	84.22	30.42	5.28
1997	93.89	46.05	6.57
2000	94.62	45.08	9.55
2010	109.20	63.31	17.91
2015	108.50	73.98	26.88
2016	114.53	75.18	26.93

Data Source: Compiled from World Population Prospectus: 2017 Revision

The above Table 2 shows that the school enrollment of males and females in the Primary, Secondary and Tertiary level education. Inspite of the decline that is seen in school enrollment from primary education to secondary education and further from secondary education to tertiary education, an increasing trend can be seen owing to the fact that the percentage of males and females enrollment in the tertiary level education in increasing. Figure 1 shows a diagrammatical representation of Table 2.

Figure1: School Enrollment (males and females)



Data Source: Compiled from World Population Prospectus: 2017 Revision

Table 3: Relationship between Female Education and Fertility in India

Year	Female Literacy Rate (Percentage)	Fertility Rate (Births per woman)
1981	25.68	4.77
1991	33.73	3.96
2001	47.84	3.24
2011	59.28	2.53
2016	70.21	2.33

Data Source: Compiled from World Population Prospectus: 2017 Revision

There is a negative correlation between the different levels of female education and the total fertility rate in a population. The statistical data clearly supports the casual role of female education in fertility decline. The female literacy rate in the year 1981 was 25.68 percent, further increasing to 47.84 percent in the year 2001 and a rapid increase by 70.21 percent in the year 2016 which evidently indicates that more women are getting themselves educated. Whereas, the fertility rate show a decline in the number of births per woman from 4.77 births in the year 1981 to 2.33 births in the year 2016. As per the household bargaining model, more educated women are better able to support

themselves and have a small family as education brings in more career opportunities.

CONCLUSION

The study based on the data concludes that, higher the level of woman's educational attainment and career oriented goals, lesser the number of children she is likely to have. The innovation approach links 'Education' to improving the capacity of the economy to develop new ideas and technologies. The basic human capital approach is that education improves the overall skills and abilities of the workforce. Having a more educated woman workforce creates new economic opportunities leading to the improved services which can lead to greater national and personal wealth. Access to family planning, reduced child mortality, access to education and work opportunities does influence the number of children a woman bears. This paper concludes that Women empowered through Education tend to have fewer children resulting in the overall decline in Birth Rates.

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ROLE OF ENVIRONMENTAL LAW IN SUSTAINABLE DEVELOPMENT

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ABSTRACT

Over the past decades, sustainable development as a concept for balanced development has made its way into the legal regimes of many nations. The justiciability of sustainable development is predominantly viewed as a universal principle of law that articulates a sequence of sub-principles contained in the treaties which are, precautionary principle and polluter pays principle. Right to environment is a fundamental right protected under Article 21 of the Constitution of India. To determine the issue of degradation, worldwide experts have evolved a doctrine called 'Sustainable Development', where there is a balance between ecology and development.

Keywords: Sustainable Development, Environment, Public Interest Litigation, Pollution

INTRODUCTION

Environment is a broad concept encompassing the whole range of diverse surroundings in which one perceives experience and react to events and changes. It includes the land, water, vegetation, air and the whole gamut of the social order. It also includes the physical and ecological environment. It concerns people's ability to adapt both physically and mentally to the continuing changes in environment. In its natural condition, the environment of any region is in a state of dynamic equilibrium. This is what is called the balance of nature. But when people try to exploit and interfere with nature, this equilibrium is disturbed, in many cases to the detriment of all forms of life. Ultimately, it is condition of land and water resources and the quality of the air, which one breathes that determine the health and wealth of a nation.

OBJECTIVES

1. To analyze the approach of the Indian Judicial System.
2. To observe the Constitutional Provisions on environmental protection.
3. To compare the provisions of the Environmental Protection Act, 1986.
4. To study the case laws regarding Environmental Protection.

RELEVANCE OF THE STUDY

The economy based approach of government and private firms has lead to disastrous levels of degraded environment which requires the researcher to initiate the study in context of the judicial system in light of various constitutional and legislative aspects. The illegal and ill-equipped techniques have lead to a globally imbalanced atmosphere. The global commitments made at international forum and India being signatory to it makes it obligatory upon us to realise the promises made by checking the overt steps towards ill equipped developmental approach.

METHODOLOGY

The research methodology adopted by the researcher is a doctrinal form and the author has referred secondary sources in doing the research analysis.

SUSTAINABLE DEVELOPMENT AND PROTECTION OF ENVIRONMENT

In India, there has been respect for the environment for centuries which is reflected in the lives of people and also personified in our cultures and religion. Through the years, arbitrary abuse of natural resources has relentlessly affected the environment and the end result has been widespread deforestation, depletion of wildlife and other unfavourable environmental consequence.

Environmental jurisprudence includes the laws created by statutory and judicial decisions, with reference to the various aspects of environmental protection and sustainable development. Environmental jurisprudence in India has held a place of decisive magnitude by devising principles towards the accomplishment of environmental protection and justice. In the post-independence period Indian environmental law was primarily limited to claims of tortuous nature such as nuisance or negligence. There was no environment specific legislation to address the problems of environmental degradation. The growth of Indian environmental jurisprudence is from the time of the United Nations Conference on the Human Environment held at Stockholm in 1972. India was a member to this conference which underlined the need of India and other states to adopt environmental measures. In light of India's international obligations arising from the Stockholm Conference, the Forty-Second Amendment to the Indian Constitution in 1976 introduced principles of environmental protection.

Article 48A, part of the Directive Principles of State Policy, obligated the State to protect and improve the environment. Article 51A(g) obligated citizens to undertake the same responsibilities. Thereafter important legislations were legislated to deal with specific environmental problems. The Water (Prevention and Control of Pollution) Act of 1974 was the first example of a legislation. Others included The Forest (Conservation) Act), 1981, the Air (Prevention and Control of Pollution) Act, and 1986 (The Environment (Protection) Act.

In the last two decades there has been a gradual shift in the environmental legislations specially after the Bhopal Gas leak tragedy. The concern of the judiciary in safeguarding the environment has been well reflected in the landmark judgment in M.C. Mehta V, Union of India, where the Hon'ble Supreme Court has declared environment as a basic fundamental right.

PILAND THE EXPANSION OF LOCUS STANDI

Preceding 1980s, litigation in India was in its undeveloped form as it could only be initiated by an aggrieved party for the vindication of his/her private interest. However a major change took place contained by the Indian legal framework. This change was chiefly attributable to Justices P.N. Bhagwati and V.R. Krishna Iyer who notably led to the development of environmental law in India.

PIL enables the poor, as well as non governmental organizations, social action groups and public spirited persons to initiate legal action for the furtherance of environmental justice in the appellate courts of the country. PIL is in the form of continuous mandamus under Articles 32 and 226 by the Supreme Court of India and the High Courts of the States respectively. Thus the India judiciary has used PIL as a tool for developing environmental jurisprudence as PIL is essentially towards addressing public environmental interests which has made environmental law in India more effective.

A landmark case in respect of the expansion of the concept of locus standi is Fertilizer Union Kamnagar Sabha V. Union of India. In this particular case the phrase Public Interest Litigation was first coined.

CONSTITUTION AND ENVIRONMENTAL LAW

Entitlement Kendra v State of UP was the first PIL where issues related to environment and ecological balance was raised. The Supreme Court highlighted the fact that Indian citizens have the fundamental right of protecting the environment under Article 51A(g) of the Constitution.

The first case in respect to the Courts interpretation of Article 21 is MC Mehta v Union of India or the Oleum Gas Leak Case. A writ was filed under Article 32 on the event of leakage of Olem gas from one of the units Shriram Foods and Fertilizers

Industries. The primary issues dealt with in this case was the scope of Article 21 and 32 of the Constitution. The Court observed, the claim for compensation under Article 21 is sustainable.

Chhetriya Mukti Sangharsh Samiti v State of UP was one of the earliest cases where the right to environment was linked to right to life. In this case the Supreme Court explicitly held that "every citizen has a fundamental right to have the enjoyment of quality of life and living as contemplated by Article 21 of the Constitution. Anything which endangers or impairs by conduct of anybody either in violation or degradation of laws, the quality of life or living of people is entitled to be taken recourse of Article 32 of the Constitution."

Another landmark case that can be mentioned is Indian Council for Enviro-Legal Action v Union of India. In this case writ was filed under Article 32 on behalf of villagers alleging that dangerous chemicals were being emitted by private companies and this violated the right to life of the villagers. The Court held, if Companies blatantly violated the right to life of individuals then the Court has a right under Article 32 of the Constitution to intervene to protect the right to life and liberty of the citizens.

Another important judgment in this regard is MC Mehta v Union of India. A PIL was filed wherein it was contended that refinery emissions, vehicular traffic, etc polluted the ambient air around the Taj Trapezium (TTZ). The Supreme Court held that the emissions resulted in the violation of the right to life of people living in the TTZ and also damaged a prestigious monument like the Taj.

ROLE OF THE SUPREME COURT IN DEVISING ENVIRONMENTAL PRINCIPLES TO PROTECT THE ENVIRONMENT

Sustainable development is one of the primary doctrines devised by the Courts in India. As defined by the Brundtland Report sustainable development means development which meets the need of the present generations without compromising the capability of future generations to meet their own needs.

However Narmada BachaoAndolan v. Union of India wherein it was observed that "Sustainable development means what type or extent of development can take place, which can be sustained by nature/ecology with or without mitigation." Perhaps the most important decision of the Supreme Court in relation to sustainable development was the Vellore Citizens Welfare Forum v Union of India case. In this PIL it was alleged that untreated effluents were discharged by tanneries in the state of Tamil Nadu into agricultural field, waterways, etc which finally entered into the river and polluted its water. The Court highlighted the fact that in the two decades from Stockholm to Rio sustainable development has emerged as a viable concept to balance development and the ecosystem. Further the Court also referred to the precautionary principle and the polluter pays principle as being assumed fundamental principles of international

environmental law. The Court also pointed out that these concepts are also implied in constitutional provisions such as Article 47, 48A and 51A(g) as well as legislations such as the Water Act.

Precautionary principle rests upon the preventive aspect of environmental law. The crux of the precautionary principle implies that, even where there is no scientific evidence suggesting that there might be potential harmful effects in respect to a particular theory, precaution should be taken. In other words, discharge of pollutants, which are potentially harmful, must be controlled, even in the absence of specific data concerning it. The precautionary principle, as applied by the Court in the Vellore Citizens' Case imposed an obligation on every developer, industry as well as governmental agency to anticipate, prevent and attack the causes of environmental degradation.

The Polluter Pays principle was also recognized in the Vellore Citizen's case and this principle has been acknowledged in a number of international agreements including the Rio declaration. This principle can be evaluated from two main aspects. On one hand it is used as machinery for providing compensation. On the other hand it is also used as a preventive mechanism. So this principle adopts a two branched approach as it acts as compensatory in nature as it mandates that the polluter should pay for the harm inflicted by him on the environment and at the same time acts as a preventive measure as the imposition of heavy penalties detracts polluters.

The Public Trust doctrine, borrowed from Roman jurisprudence dating back to ancient times stipulates that natural resources like air, seashore, rivers, etc are held by the state as trustee and the state is prohibited from breaching the trust.

This doctrine was recognized in the case of MC Mehta v Kamal Nath and Others. In the instant case the flow of the river Beas was deliberately diverted because it used to flood Span Motels in the Kulu Manali valley in which Kamal Nath's family had a direct interest. Further the motel also encroached on protected forest land. However this encroachment was regularized by the Himachal Pradesh government. The Supreme Court applied the public trust doctrine by observing that the Himachal Pradesh Government has committed breach of public trust doctrine by leasing land which was ecologically fragile to private individuals.

Finally the principle of absolute liability as propounded in the case of MC Mehta v Union of India was regarding the extent to which industries which engage in hazardous and inherently dangerous industries can be held liable. In the landmark judgment it was observed by the Court that the principle of strict liability as was propounded in the case of Rylands v Fletcher is not sufficiently adequate in the context of present India environmental jurisprudence. So the principle of absolute liability is based on the assertion that naturally hazardous industries which are a probable threat to the health and

safety of the community hasve an responsibility of adhering to the highest standard of safety and if any harm occurs due to the activities of such an industry then such an enterprise should have to be held absolutely liable and would have to pay compensation. So this entails that such an enterprise can be held absolutely liable and cannot elude their responsibility of paying compensation under any exceptions which was possible under the tortuous principle of strict liability. In conclusion it can be stated that the significance of this particular doctrine lies in the fact that it acts as an ideal weapon to deal with negligent pollution causing industries and also acts as a deterrent factor to arrest the problem of environmental degradation.

CONCLUSION

India has a outstanding environmental heritage which can be attributable to its biodiversity. However industrial and economic development in industries as well as the lax attitude of the state in certain circumstances has had an adverse effect on the environment as well as a number of communities who are dependent on them. Hence the need for the judiciary to take a futuristic attitude to thwart depletion of the precious biodiversity of the country. It is indeed not an exaggeration to affirm the environmental jurisprudence in this country can to a great extent be attributable to the acts of the judiciary in the last two decades. It is remarkable that the apex Court has also acknowledged the decisive link between the environment and the rights of communities as well. The Supreme Court has recognized the nexus between environmental protection and human rights in Andhra Pradesh Pollution Control Board v MV Naydu. The Hon'ble court observed that environmental concerns under Article 32 and 226 are of equal importance to Human Rights concerns as both can be traced back to the protection of right to life and liberty under Article 21 of the Constitution. Thus it would not be erroneous to conclude that the Courts have been influential in establishing environmental law towards achieving the ends of justice.

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HOME GARDENING: A STEP TOWARDS SELF SUFFICIENCY

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ABSTRACT

Goa is an agriculture based economy. With an increase in the population there is a need to increase food production. Over the recent years there has been growing interest to intensify local food production in order to meet the growing demand for food and food price volatilities. Consequently, home garden is a strategy to enhance the household food needs. This study recognizes positive impact of home gardens towards addressing self sufficiency in the domestic household.

Keywords: Crop compensation, Support price, Agriculture, Schemes

INTRODUCTION

About Home Gardens

The rising cost of food and gas has made way for home gardening. Home gardens are an integral part of local food system. Home gardens are found in villages as well as in city areas. The beginning of modern agriculture started way back when people used to engage in subsistence cultivation in small garden plots around the house. These gardens played an important role in providing food and income for the family. The home garden can produce many things like fuel for cooking, food, income, medicinal plants, spices, herbs and flowers.

Home gardens are commonly established on the plots that are not suitable for cultivating field crops because of their size or location. The size of a home garden varies from household to household. Kitchen waste, animal manure and other organic residues can be used for increasing the productivity and fertility of these gardens.

Each home garden is unique in structure, composition and appearance, as they depend on the location, available family resources such as labour and skills, preferences and support from family members. The crop selection, input procurement, harvesting are mostly driven by the consumption and income generation needs of the household.

The owners of home garden frequently use family labour, i.e. men, women, children but depending on the economic affordability they may hire the services of wage labours to cultivate and maintain the home gardens. Home gardens can be defined as a farming activity which combines physical, social and economic function in an enclosed area of land around the family home.

Characteristic of Home Gardening

Location

Home gardens are located close to dwellings for security, convenience, and special care. The size of the home gardens differ from household to household. The home gardens are mostly adjacent to homes, have a wide diversity of crop to meet family needs.

Cultivation

The scope for home gardening is very wide. The natural and planted vegetation in home gardens consists of vegetables, fruit trees, spices, herbs, pulses, flowers etc.

Contribution to household

Home gardens play a key role in meeting daily consumption needs of a household. The vegetables, spices, herbs can be used for daily cooking requirement and the excess can be sold to generate income.

Labour Source

The labour used for home gardening is mostly the members of the family. They spend time in the garden as per their convenience. Outside labour is not required as the area under gardening is small and close to the household.

Tools and skills

Simple hand tools are used for home gardening. Tools such as wheelbarrow, golden gark, fork hoe, garden trowel, pick axe, spade, garden knife, garden hose, garden scissors, etc. Special skills are not required for home gardening but one must have interest and patience to wait for the yield.

Types of Home Gardens

1. ***The container garden:*** Container gardening is the practice of growing plants in containers instead of planting them directly in the ground. Many vegetables and fruits can be grown in vegetable gardens. A container could be a box, tub, basket or tin. It is highly suitable for people who have limited space or time. Growing

vegetables in containers is an easy way to enjoy fresh home grown food. Vegetables like tomatoes, potatoes, cucumbers, green onion, lettuce, etc. grow well in containers.

2. ***The in-ground garden bed:*** It is growing vegetable and fruits directly in the ground. A small area outside the house can be used for home gardening where fruits and vegetables can be grown. The produce can be used for self - consumption or can be sold in the market.
3. ***The raised bed garden:*** It is a form of garden in which the bed of soil is formed above the level of ground and could be of any length or shape. The soil is enclosed by a frame generally made of wood, stones or concrete blocks. Soil is enriched with compost. Plants such as beans, broccoli, pumpkin, spinach can be grown on this type of raised bed gardens.
4. ***Kitchen Garden:*** kitchen garden is a place where vegetables, herbs, flowers and fruits are grown together. It caters to the day to day needs of the household or family for personal cooking. It is also ideal for households with limited space. Herbs such as mint and vegetables like tomatoes, spinach, beans, chilly, onion, etc. can be grown in the kitchen garden.

Benefits of Home Gardens

Home gardens are primarily intended to grow and produce food items for family consumption, but they can also be used to produce outputs that have multiple uses including local medicine and home remedies for certain illnesses, fuel source, manure, building material, and animal feed.

Home gardening benefits can be categorised into two components: social and economic.

Social benefits: Home gardens enhance food and nutritional security improving family health. Home gardens are maintained for easy access to fresh vegetables, fruits and animal food sources. Herbs and medicinal plants are grown in home gardens to treat various diseases, and improve health conditions. Many of the plants found in home gardens have some medicinal value and they can be used to treat many common health problems in a cost-effective manner.

Economic benefits: Home gardens contribute to income generation, improved standard of living, welfare as well as promoting entrepreneurship skills. Home gardens also contribute to household economic well-being in numerous ways: garden products can be sold to earn income, earnings from the sale of home garden products and the money saved from consuming home-grown food products can lead to more disposable income that can be used for other domestic purposes, savings, education, and other services.

Constraints in Home Garden

While there are multiple benefits of home gardening there are also constraints to the productivity and sustainability of home gardens. Some of the constraints to home gardening are:

- Insect attack.
- Destruction of crops by animals.
- Inadequate access to water.
- Poor environmental conditions.
- Lack of knowledge, information, and advisory services.
- Shortage of family or hired labour.
- Poor soil fertility.
- Limited marketing opportunities.
- Excessive post-harvest losses.
- Lack of information on nutritional benefits of home gardening.

Experience of Home Gardening in Goa.

A survey was conducted in the areas of Quepem Taluka. The respondents under survey were satisfied with the yield produced by their home garden. They used the same for self - consumption and the surplus was sold in the local market. Most of them sell their flowers to the local florist or in the market. When questioned about the cost of investment in home gardening, the respondents replied that it is minimal and basically involves just the purchase of saplings. Sometimes they obtain the saplings from relatives, friends or neighbours. The seeds of the produce are used for re-cultivation. The area used for home gardening was their own land or the space outside the house or own field.

The cost of labour is nil as the family members are involved in home gardening and service of outside labour is not required. They spent their leisure time in the garden for maintaining and watering the plants. The respondents use kitchen waste, animal waste and local salt as the manure in their home garden. The respondents are very positive towards continuing their home gardening as it meets their consumption needs and also adds to the family income bowl. The crops grown are described in Table 1.

Table 1: Crops cultivated by home gardeners in Quepem

Vegetables	Fruits	Spices	Herbs	Pulses	Flowers
Carrot	Banana	Pepper	Mint	Ragi	Anthurium
Beans	Papaya	Cinnamon	Lemon grass	Horse-gram (Kulith)	gladiolus
Spinach	Cashew	Nutmeg	Curry leaves	Pigeon peas	Orchids
Tomatoes	Chikoo	Bay leaves, Tamarind.	Coriander		Marigold
Red Spinach	Jackfruit	Vanillia	Ginger		
Green leafy	Mango	Chilly			
Eggplants	Coconut	Betel nut			
Bottle Guard	Guavas	Turmeric			
Better Guard	Pineapple				
Pumpkin	Custard apple				
Onion					
Lady Fingers					
Malabar Spinach (ValchiBhaji)					
Breadfruit					
Cucumber					
Sweet Potatoes					
Drumsticks					

CONCLUSION

The contributions of home gardens vary from geographic area to area. Home gardens satisfy social, cultural and economic needs. Home gardening is gaining importance in the wake of a global food crisis and the increasing food prices. The importance of home garden goes far beyond satisfying the household food requirement; it also acts as a source of income.

Apart from the benefits provided, home gardens also face constraints in its productivity. Some of them are poor soil quality, insect attack, destruction of the crop by the animals, etc.

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