



POPULARISING GEOGRAPHICAL INDICATION PRODUCTS OF UDUPI

Udupi Jasmine



Perspective

As the Country echoes 'Vocal for Local' and 'Local to Global', the significance of heritage products gain paramount importance. One such category of products are the Geographical Indications (GI) tagged products which have the power to economically transform and impact the marginalised farmers and artisans of any region or geography.

It is a matter of pride that out of a total of 420⁽¹⁾ GI products registered by the country as on date, Karnataka holds the lion's share of the pie, with maximum products in its GI basket, numbering 42⁽¹⁾. These products are across the Agricultural, Handicrafts, Manufactured Goods and Food Stuffs segments. The State is also a pioneer in the country to announce a first of its kind exclusive Geographical Indications Policy to support the GIs.

While the journey has commenced, each GI has its own unique flavour and story in terms of its Strengths, Weaknesses, Opportunities/potential and Threats. Visvesvaraya Trade Promotion Centre (VTTC) has made an attempt to precisely capture these findings in the form of report which helps to understand the specific GI product and provide a roadmap for appropriate interventions to strengthen the GI tagged product.

I place on record my deep sense of appreciation to Dr.H.G Joshi, Professor, Manipal Institute of Management and Chair Person, Dr.TMA Pai Chair for Social Entrepreneurship, Manipal University and his team, for their best efforts in engaging, interacting and coordinating with the stakeholders to put together this Diagnostic Report pertaining to Udupi Mallige, for VTTC. We hope the entrepreneurs, artisans, FPO's, industry members among many others would find this report useful. In the long run, I trust such initiatives and efforts by team VTTC will provide deeper insights into the traditional legacies that Karnataka is known for and position such heritage products across the niche segment of trade. This would precisely provide the necessary stimulus to the farmers and artisans to upscale further.

Shri S.R. Satheesha

Director (Exports) & Managing Director



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Acknowledgment

I am immensely happy to bring this report on Udupi Jasmine, a unique agricultural produce of Udupi, Coastal Karnataka. The produce has attracted many farmers and influenced them in bringing it back to the field of cultivation. The Geographical Indication (GI) is its crown in popularising the produce worldwide.

In the process of my effort to capture the data relating to Udupi Jasmine, many have supported me directly and indirectly. Hence, it's my duty to mention their contributions on record. My sincere thanks to Shri S.R. Satheesha, MD, Visvesarayya Trade Promotion Centre(VTPC), Bangalore for reposing confidence on me and assigning me the work of documenting Udupi Jasmine activities in a research Mode.

The constant support of Mrs Prabhavathi Rao, VTPC, Bangalore, prompted me to work creatively with enthusiasm. She took maximum care in developing a theme for the study. My heartfelt thanks to her.

I thank my team members who have actively participated in the field study and could capture minute aspects of the topic. The farmers of Shankara Pura, Bantakal, Shirva and other nearby Villages were proactive and could answer questions raised during the visits and in the process of the study. Therefore, I am always grateful to the farmers.

The research was carried out extensively by Dr Daryl Jeethesh D'souza, it is his study that was very insightful in bringing the report in this format. My heartfelt thanks to Dr Daryl. Experts from agricultural sector, business and services have responded positively. Everyone was very eager to contribute for the success of the study. I do acknowledge their support.

Dr. Harish. G. Joshi

Professor
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PART - I

INTRODUCTION

Profile of the study area - Udupi jasmine community-based enterprise

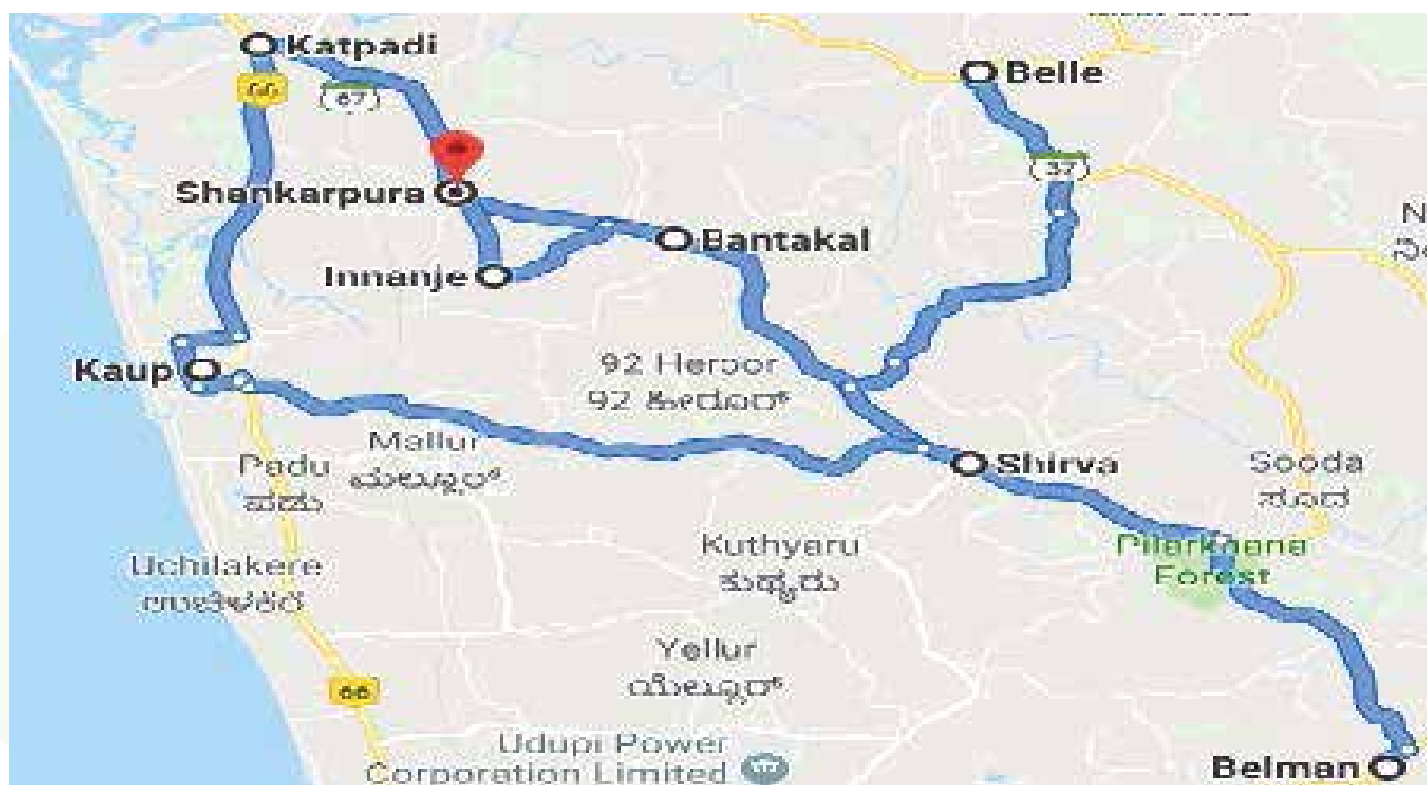
Udupi jasmine growing community in coastal Karnataka of India is a successful viable community-based enterprise. For this community despite having other sources of income, jasmine cultivation has provided them with a sustained regular income. It safeguards them against poverty even if their other sources of income diminish. Jasmine cultivation plays an important role in economic and social growth. It helps in promoting rural livelihoods, food security, and poverty reduction.

Majority of the Udupi jasmine is grown in the Shankarapura and surrounding villages, including Shirva, Belle (Moodubelle and Padubelle), Belman, Kaup, Katapadi, Bantakal and Innanje of Udupi district of coastal Karnataka, India. Udupi jasmine is well known for its exquisite fragrance. It is a favoured flower in ceremonial events and for personal use. Udupi jasmine flower growing community of coastal Karnataka have maintained a community-based enterprise for more than 85 years. Many of the farmers of this region

depend directly on the cultivation of Udupi jasmine for their livelihood (Krishnamurthy MK, Parameshwar NS, Sridhar Herle P, 1995). With an efficient system of pricing and distribution, trust and cooperation among the community and an accepted method of matching demand and supply just by thumb rule, the community has kept poverty away for nearly three generations.

Jasmine cultivation has a significant socio-economic impact on the cultivators. Although the cultivators have other sources of income, jasmine cultivation is the major source of their economy.

Figure 1.1 and 1.2 show the Udupi jasmine growing areas in coastal Karnataka.



Udupi Jasmine – farm to market

Jasmine is a year-round crop and cultivation mostly involves the entire family. Individuals or entire family members engage in the activity of jasmine cultivation and collection. The process of jasmine collection by growers' starts early in the morning and ends by 10 am. The process starts with the collection of jasmine buds. The collected buds are not directly sold to the consumer. Instead, they are tied together to a 6-inch chain

approximately. These tied chains of buds are then wrapped in banana leaves with a slip containing information like household name and number of buds put inside. These bundles are kept aside to be collected by "agents". This proves advantages to the growers as they can attend to other jobs. The collection and assembling of jasmine buds into units is shown in Figure 1.3.



Figure 1.3: The process of collection and assembling of jasmine buds into units.



Each household is connected to one of the 150 agents who operate in these jasmine growing areas. The responsibility of the agent is to collect the buds from the household and then arranging them into commercial units called "chendu" comprising of 800 - 805 buds each. Since not all households will be able to produce a unit with the desired number of buds, the agents form these units with whatever buds they have collected from multiple households. These units are then combined into a bundle called "atte". Four "chendus" make one "atte" (bundle). The agents also collect the information slips from each household which the growers insert in

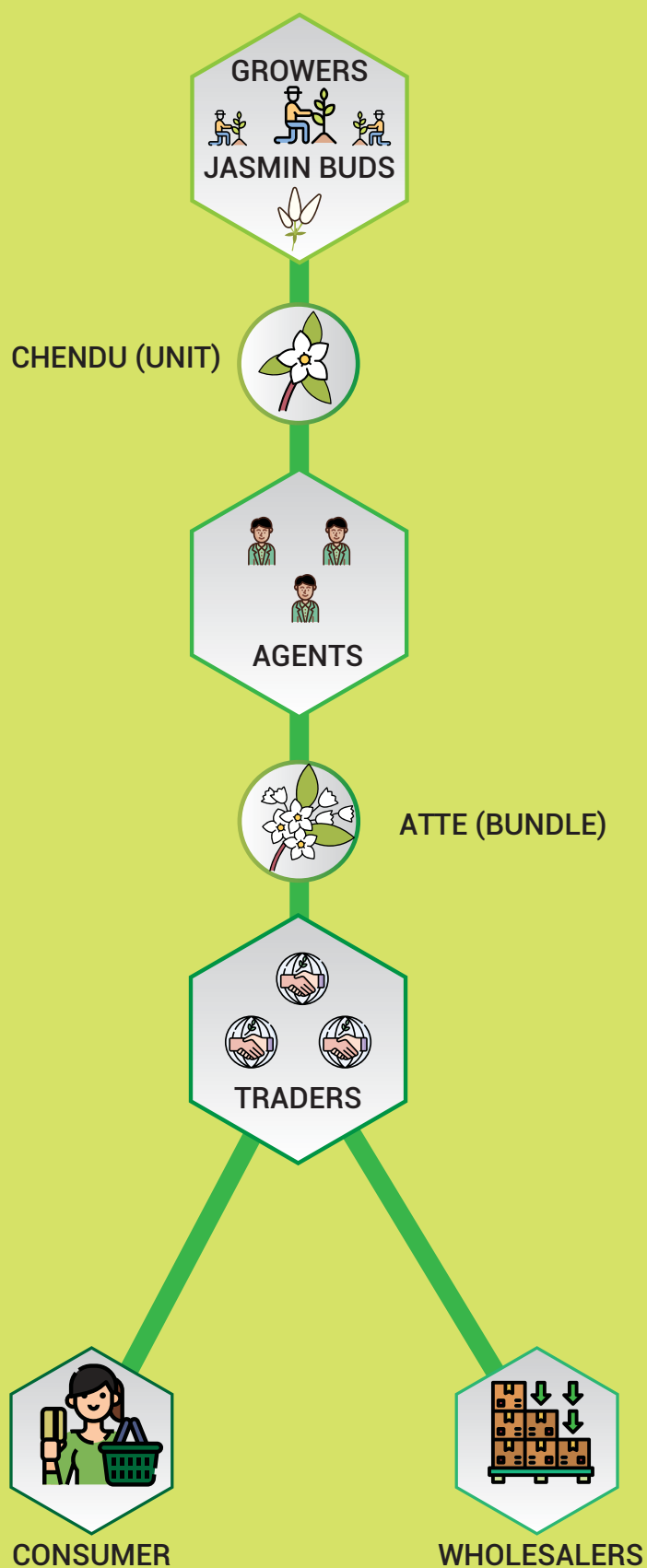
the wrapped banana leaves and are stored in a small plastic box. Figure 1.4 shows the way in which the grower places the slip on top of the flower unit containing information of the grower and number of buds collected. A separate book is also maintained with the information of each grower and price to be given for that day. Every seven days the grower gets the payment based on the flowers supplied. The entire process of jasmine farm to market is shown in Figure 1.5



Figure 1.4:
Collected flower buds tied together with the information slip placed on top.



UDUPI JASMIN PROCESS FROM FARM TO MARKET



Once the agents create these commercial bundles, they are then given to a designated trader in Shankarapura region. There are 6 traders in total to whom all the agents supply. Some of the agents directly sell the flowers to the local flower vendors who in turn sell it to local customers as shown in Figure 1.6.



Figure 1.6: Udupi jasmine sold at different local markets in Udupi and Mangalore.

Every day these bundles of jasmine arrive Shankarapura by 11 a.m. These 6 traders who operate from Shankarapura region contact wholesale dealers from outside the region for the collected units to be sold. These units reach whole sellers as far as Mumbai and Dubai. Udupi jasmine is a preferred flower in religious ceremonies, formal events and for personal use. Figure 1.7 shows jasmine used as ornamentation on women's hair. Once the demand is established the traders determine the price and the amount that they need to pay for each bundle to the agents. The traders keep track of the units received from agents and appropriate payments are made to them on a weekly basis.

Figure 1. 7:
Jasmine used as
ornamentation on
women's hair



Determination of jasmine price

Determination of price per unit is done by the traders. The six traders come together to determine the price for a jasmine unit based on the requirements for that day. Based on the demand from their wholesalers, one of the 6 traders establish a price X for that day. If the price X is not acceptable by the wholesalers of other 5 traders, they decrease their demand. So, the remaining 5 traders are left with additional supply. The price X will be agreed upon by the other 5 traders only if the trader who quoted price X agrees to buy the additional supply.

Thus, the traders engage in negotiations on price X and will reach on a consensus in establishing price of jasmine for that day. The wholesalers purchase decision depends on the overall market demand. For a

country routed deeply in religious traditions, auspicious days based on religious calendars influences demand. Jasmine cultivation as a major impact on the socio-economic conditions of the growers. It is critical to understand the variations in the price of Udupi jasmine as steps can be taken to stabilize it if variations are evident.

The information collected on price will also be useful in generating trends and future price predictions, which will enhance the user experience. To understand the price variations of Udupi jasmine, price per day was collected from the year 2010 to 2016.



II. LITERATURE REVIEW

Floriculture is the art and knowledge of growing flowers with perfection. Floriculture or flower farming is also called as discipline of Horticulture. It is the study of growing flowers and foliage plants. Some of the main objectives of floriculture is to know the flower cultivator's income, expenditure and saving to know the problems faced by the flower cultivators.

The study of E-Commerce Framework for Strategic Marketing of Udupi Jasmine by Darry Jeethesh D'Souza, Harish G. Joshi (2019) mentioned that Udupi jasmine cultivation plays a vital role in economic and social growth for the jasmine growing community based enterprise of coastal Karnataka, India. It also promotes rural livelihoods, food security and poverty reduction. The main aim of this study was to develop an e-commerce framework for strategic marketing; promotion of Udupi jasmine as a commercial venture and the study found that benefits of e-business and promotion of e-business is needed to boost the current system.

According to Rajamohan S and Sathish a Titled International Journal of Current Agricultural Science, a study based on jasmine cultivation in Tamilnadu region, jasmine is highly popular and profitable cultivation in

Tamilnadu. It stands first in the cultivation and production of jasmine in India. They are mainly focused on three varieties of jasmine namely *Jasminum Grandiflorum*, *Jasminum Sambac* and *Jasminum Auriculatu*. These three types of flowers are used in various purposes like *jasminum*. *Grandliflorum* is used for oil and also exported to Morocco, Spain, Italy and France. And other two are used for ornaments and decoration purpose. The study throw light on various challenge related to price fluctuation and explain that jasmine harvesters get a very low price because of high rate of commission to agents. The cultivators mainly depend upon agents and wholesaler because jasmine is perishable in nature. The marketing of their jasmine to the market is mainly done through Agents, the commission payable is huge and thus poses problem to the growers. The study shows that the jasmine cultivators belong to small and marginal farmers group and also they are mainly depending upon market middleman (agents) to sell their produce. The maximum farmers/ cultivators lack the knowledge about the market because of illiteracy and their low education levels. The farmers' technical know-how is good but are very poor marketers.

The study on Review on production techniques of GI Croup, Udupi Mallige (*Jasminum Sambac* (L.) Aiton) by HS Chaitanya, Nataraja S, Vikram HC and Jayalakshmi Narayan Hegde reveal that Udupi 'mallige' belongs to family oleaceae and due to its fragrance it is one of the commercial crop of costal Karnataka. It is also named as homestead gardens. The study took place in Shankarpura and its surrounding region in Udupi district.

The Udupi 'mallige' is grown by small farmers with an average land holding of 0.02 to 0.2 acres. Many of small farmers are depending upon Udupi 'mallige' for their livelihood. (Krishnamurthy et al., 1995) in Udupi 20000 farmers are cultivating jasmine in Udupi district (Anon., 2013). In 2008-09 the total area of 214 hectares was recorded with an annual production of 1391 metric tons of flowers (Annon. 2017). Due to many reasons the growth trend of the croup is declining in this area of Udupi district. The croup has been extended to its neighboring district of the state like Dakshina kannada, Uttar Kannada and Shivamogga.

The Rationale behind wearing strings of

Jasmine flowers by the lactating South Indian Women by Aswini Dutt. R, N S Sathish Kumar and Sandhya K hemraj observed in their study that the jasmine flower has traditional, religious, social, spiritual and medical benefits. It is known to be symbol of beauty, deep affection, happiness and elegance. And also jasmine found as National Flower in many countries for example Pakistan and Paraguay. It is cultivated in temperate climate. The flower jasmine had a history of Egypt dynasties, Chinese emperors, King of Afghanistan, Nepal, Persia, and Spain. These flowers find place in floral decoration of marriage, wedding ceremony, as a form of expressing love, affection, happiness and honouring the guest. Jasmine is also known for its medicinal uses like anti-inflammatory, mild analgesic, antioxidant, antiseptic, antiviral and enhancement of immunity. It is also used for treating skin diseases like ulcers, boils and vesicles. It provides the felling of optimism, confidence, euphoria, strongly cooling and calming effects. It is also used to treat apathy, indifferent and depression.

Jasmine the queen of flowers is one of the oldest fragrant flowers and is widely appreciated in India. The word 'jasmine' is derived from the Persian word 'Yasmin' which means 'fragrance' and also as "the gift from god". These Jasmines are widely grown mostly in warm parts of Southern Asia, Europe, Africa and the Pacific regions. It is the national flower of the Philippines, adopted by its government in 1937. In the year 1990, Indonesian government also adopted jasmine flower as their national flower. Jasmine, the other name for fragrance, is India's prominent commercial crop. Jasmine has a special significance in South India.

Udupi jasmine growing community in coastal Karnataka of India is a successful viable community-based enterprise. For this community despite having other sources of income, jasmine cultivation has provided them with a sustained regular income. It safeguards them against poverty even if their other sources of income diminish. Jasmine cultivation plays an important role in economic and social growth. It helps in promoting rural livelihoods, food security, and poverty reduction. Majority of the Udupi jasmine is grown in the Shankarapura and surrounding villages, including Shirva, Belle (Moodubelle and Padubelle), Belman, Kaup, Katapadi, Bantakal and Innanje of Udupi district of coastal Karnataka, India.

Determination of jasmine price

The study was carried out under Jasmine Flowers, which includes jasmine flower practice, process/production of jasmine flowers, problems faced by the jasmine growers, price fluctuation, marketing condition of jasmine. Udupi, Bantakal, Belman are the three main regions from the costal Karnataka were selected for the study of jasmine plantation. The study has been carried out in these areas as these locations have large number of farmers which would be appropriate for the study.

Sample size

The total number of samples recorded was 106 from the farmers. The responses consist of different farmers from the different region and also they are having long term jasmine plantation.

Sampling Method

The convenient sampling was used for the collection of data. 106 jasmine farmers were interviewed from selected region for the study. Present study also followed random cluster sampling for the data collection.

Sampling Method

Both primary and secondary data were used for the study. Primary data was collected using a structured questionnaire and secondary data used includes opinion polling, discussions and panel members' opinion during cluster level meetings. The data was collected from the jasmine farmers of Shankara pura, Bantakal and Belman region.

Data Analysis

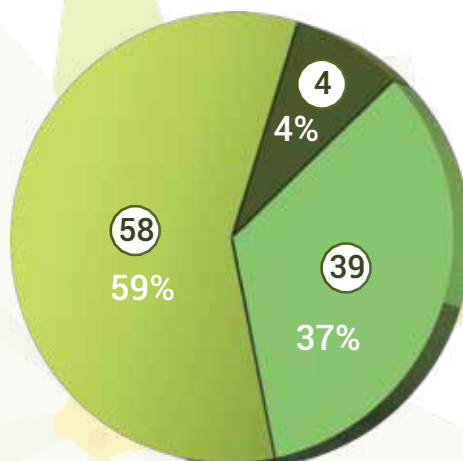
The data is being used to analyse keeping in view the basic objectives of the study. The opinion and other information provided during the interview was recorded where and when required appropriately.

IV-A GENERAL

1. Number of Jasmine plants

Table- 1. Number of bushes of Jasmine

Table-1 shows the number of the bushes of jasmine plants possessed. 59% farmers having less than 25 jasmine plants, 37% farmers belongs to less than 50 jasmine plants, and finally 4 farmers are belongs to less than 100(4%) out of 106.



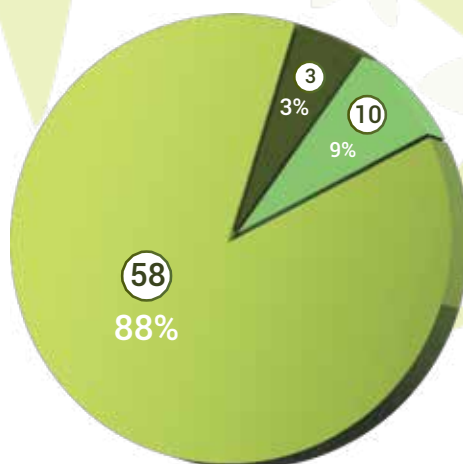
- Less than 25
- Between 20-50
- Between 50-100

Total

Numbers	106
%	100

Table -2. Area of jasmine cultivation.

Table 2, gives a depiction of area of the jasmine cultivation by the selected respondents. 93(88%) growers have less than 25 cents area of jasmine plantation. 10(9%) growers have less than 50 and 3% of them are under the category of less than 100 cents of jasmine cultivation land.



Land Holdings

- Less than 25 Cents
- Between 25- 50 cents
- Between 50- 100

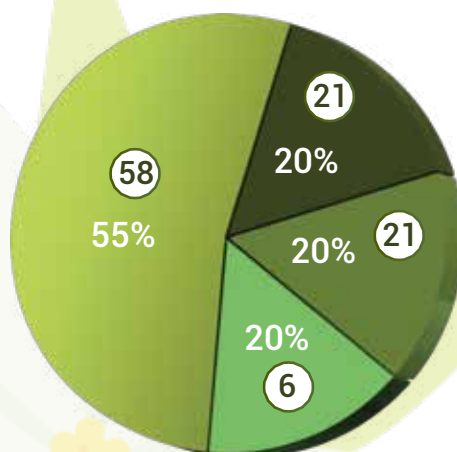
Total

Numbers	100
%	100

Total time spent on jasmine cultivation in a day?

TABLE - 3

Table -3 reveals that the total time spent on jasmine cultivation varies between 4 to 6 hours in a day. This may be attributed to the time spent for various purposes of jasmine cultivation including sending it to market.



- Less than 1 hour
- Less than 4 hours
- Less than 6 hours
- less than 8 hours

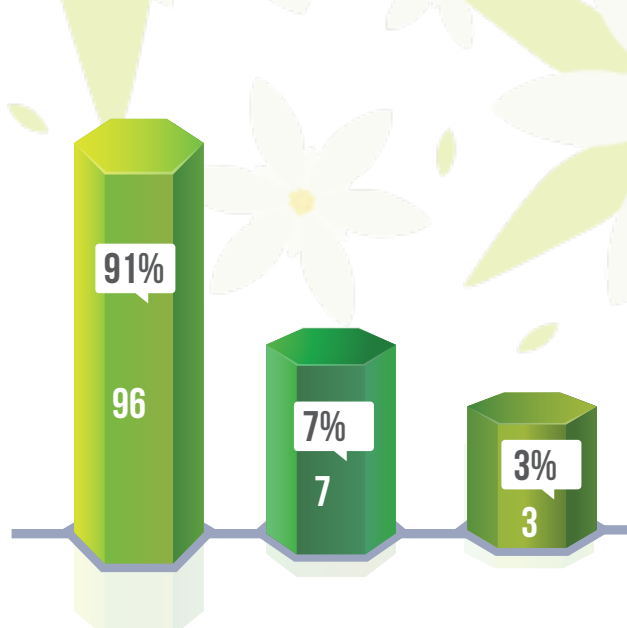
Total

Numbers	106
%	100

Number of days spent in a year on jasmine cultivation/ marketing

TABLE - 4

It is evident from the table that Jasmine growers work in the field almost every day to reap the benefits. Even during rainy season, they work in order to either maintain the jasmine plant or for collecting the flowers.



- 11 months
- 150-300 days
- Every day

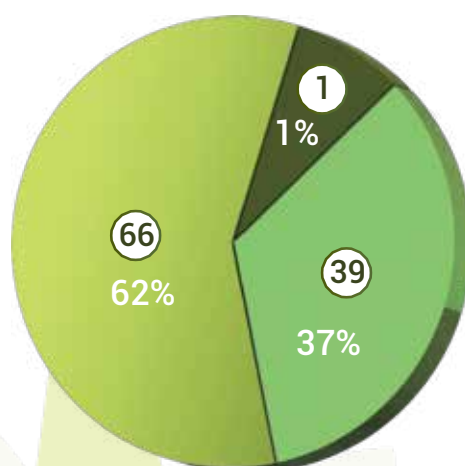
Total

Numbers	106
%	100

Number of persons involved in cultivation?

TABLE - 5

reveals the number of persons involved in jasmine cultivation activities. According to the study 62% of Jasmine grower's family 1-2 members of their family take part in the cultivation process.



- 1--2members
- 3--5members
- 6--9members

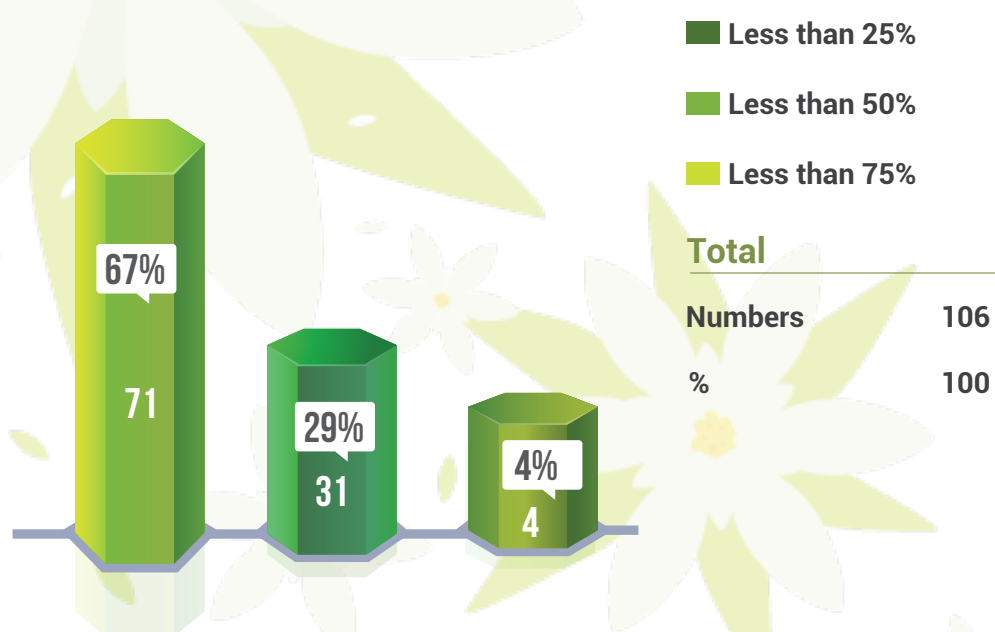
Total

Numbers	106
%	100

Percentage of the total area of the land V/S Jasmine growing area.

TABLE - 6

Table -6 Majority of farmers' use 25% of their total land area for cultivating jasmine. However, a few percentage also uses their entire land for the purpose of Jasmine farming.



- Less than 25%
- Less than 50%
- Less than 75%

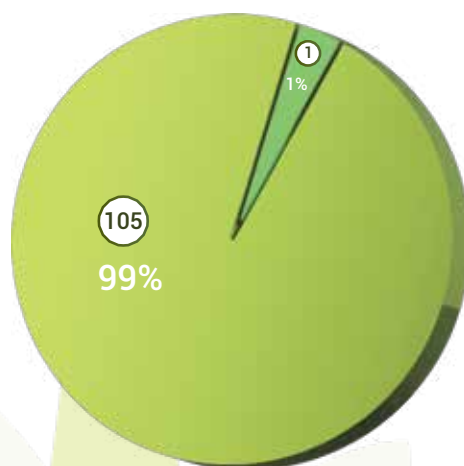
Total

Numbers	106
%	100

Sales of Jasmine.

TABLE - 7

shows how the farmers are selling their jasmine to the market. Only one farmer out of 106 sell jasmine direct to "katte". 99% farmers are selling their flowers through brokers. It is collected by the brokers and they sell it to the "katte".



■ Direct selling
■ Through Broker

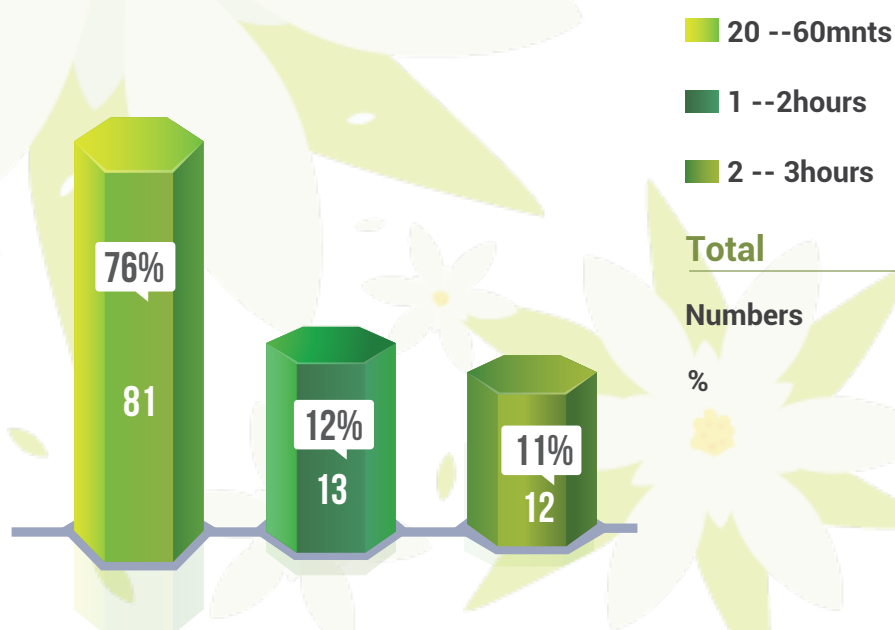
Total

Numbers	106
%	100

Average time required to tie one "Atte" of jasmine by one person

TABLE - 8

reveals that the average time required to tie one "Atte" of jasmine by one person is 1 to 2 Hours (76%) whereas speedy work however need minimum of 60 minutes to complete one Atte.



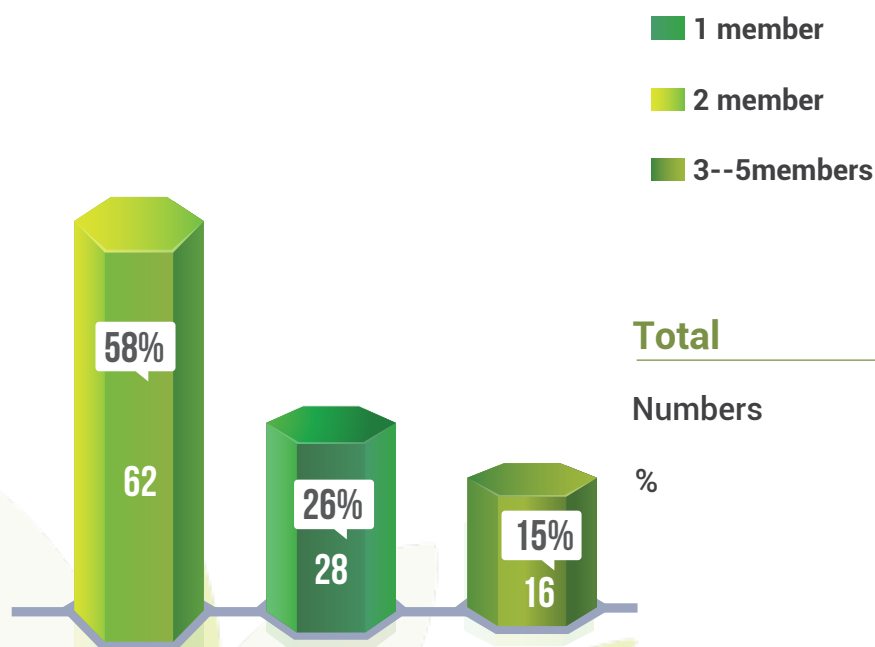
Total

Numbers	106
%	100

Number of members available in the family for the tying work

TABLE - 9

shows the number of members available in the family for the tying work. Out of 106 farmers 15% families depend upon one member. 58% families depend upon two members and 26% families depend upon 3- 5 members.



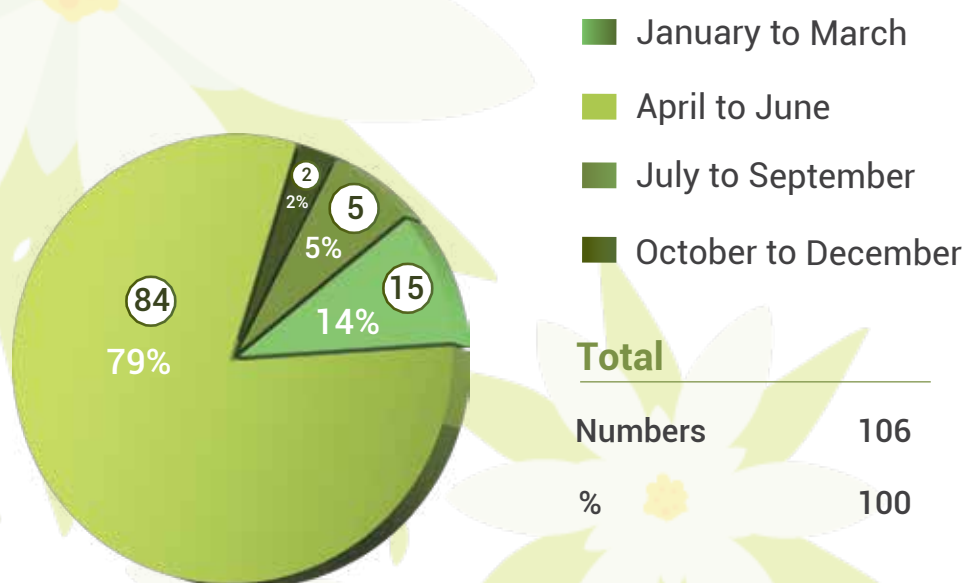
Total

Numbers	106
%	100

The quarter in which the yield is maximum

TABLE - 10

is an attempt to understand farmer's perception about them getting highest yield in different quarters of the year. There are divided opinion and maximum (79%) opine that they are able to get maximum yield in the month between April to June.



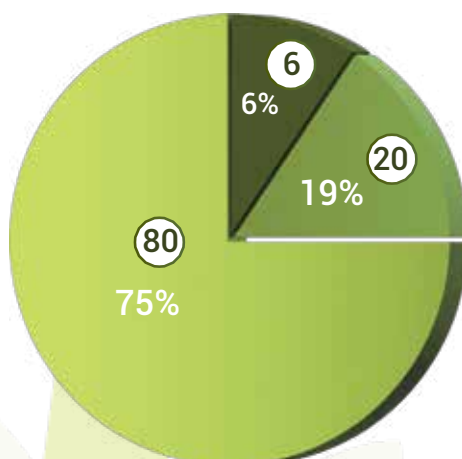
Total

Numbers	106
%	100

Task of obtaining fertilizer

TABLE - 11

shows the task of obtaining fertilizer is not so difficult (75%) 19% were facing difficulties and 6% farmers were not having any problems while obtaining fertilizers for their crop. It is observed that the major reasons for the farmers facing difficulties in obtaining fertilizers are lack of information and lack of guidelines regarding the available fertilizers.



- Little difficult
- More difficult
- Easy

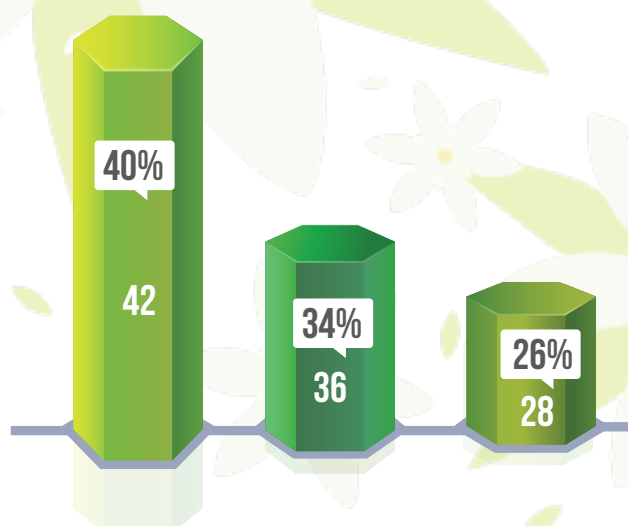
Total

Numbers	106
%	100

Distance to Sources of fertilizer

TABLE - 12

denotes the distance to sources of obtaining fertilizer. 40% farmers can get their fertilizer within 1km, 26% farmers get fertilizer within 2 kms and 34% farmers have to travel more than 2kms to get their fertilizer.



- Less than 1Km
- Less than 2Km
- More than 2Km

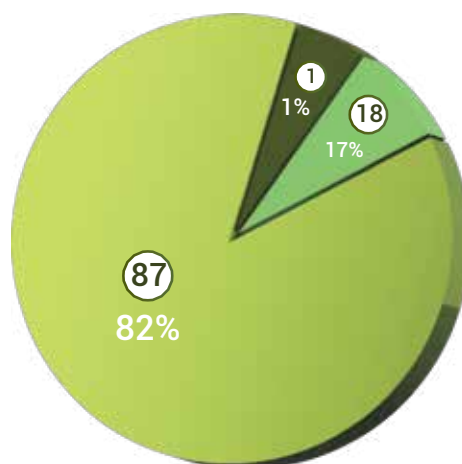
Total

Numbers	106
%	100

Source of water

TABLE - 13

shows that 82% were depending on open well, and 17% farmers depend on Panchayath water supply as their water source.



Open well

Bore well

Panchayath Water

Total

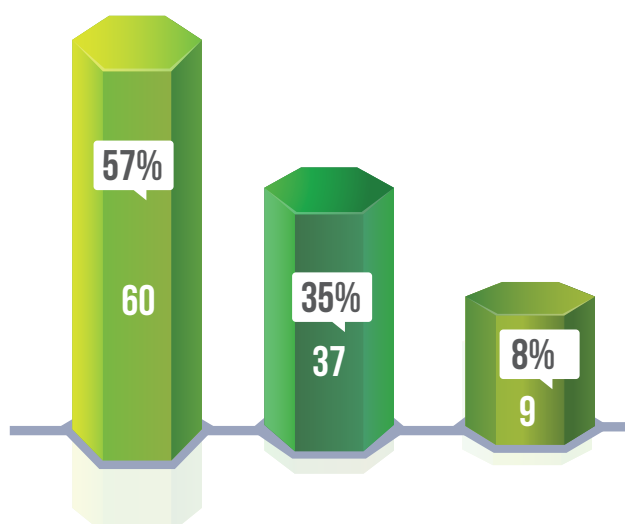
Numbers 106

% 100

Employing outside Labours

TABLE - 14

shows the status of employing outside Labour in the cultivation. 57% donot hire any labours and not hired, 35% hire members of nearby family for the jasmine cultivation.



1---2 members

No outside Labours

Other Family members

Total

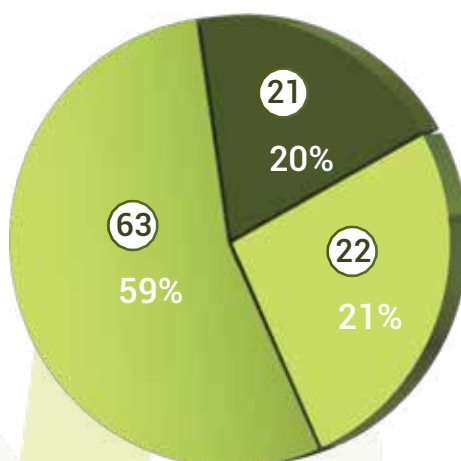
Numbers 106

% 100

Average Revenue in (Rs) from last 3 years

TABLE - 15

shows the average revenue of the each farmer from last 3years. The average revenue of the farmers in the last 3 years are Rs.100-50000 are got by 59%, 20% farmers were have average revenue of Rs.50001-2 lakhs and 21 % farmers were not calculated or they cannot say their average revenue.



- Rs.1000 ---50,000
- Rs.50,001 ---2 lakhs
- Can't Say

Total

Numbers	106
%	100

IV- B Jasmine Price Analysis

Jasmine price information was collected from the growers for a period of 7 years starting from the year 2010. The year has been divided into four quartiles. Graphs corresponding to respective quartiles are displayed. Graphs of each year along with the average price is provided in Annexure 3. The graphs are analysed based on the various external factors affecting the jasmine price.

Q1 - January to March

Table 16: Average jasmine price for Q1.

	Average Price	Standard Deviation
January	488	63.5
February	403	75.1
March	209	31
Q1	365	132.5

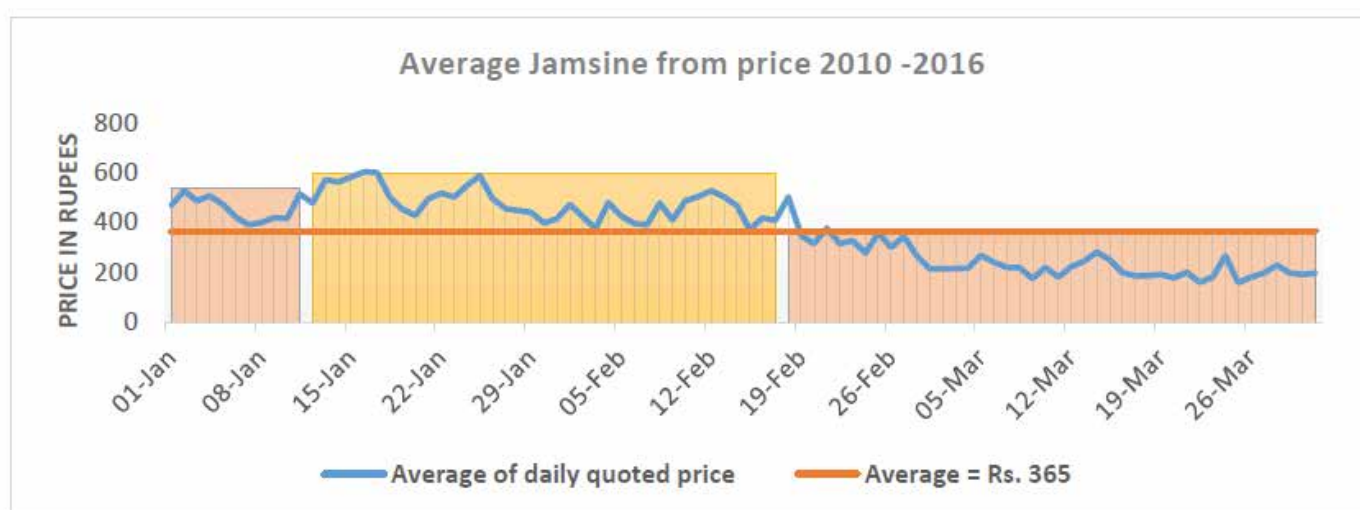


Figure 1.8: Average jasmine price from January to March for the year 2010-2016

The price variations and average price for the third quartile is shown in Table 18 and the graph is displayed in Figure 1.10. The average price of jasmine obtained for the third quartile is Rs. 360 (SD = 88.2). For the third quartile when compared to the second there is a strong rise in average jasmine price. In the month of July during the first ten days, the June trend continues and less prices prevail. But during the second week of July prices start to increase due to marriages, functions and decrease in crop production due to rains.

During the last two weeks of July, prices fall again due to Aati Amavasya. "Aati Amavasya" in Tulunadu is a festival celebrated on the new moon day (Amavasya) of the Ashadha (Aati) month of the Hindu calendar. In the Month of August by the end of first-week prices start to rise and remain high throughout the month. This is due to a number of festivals like Shravana Masa, Varalakshmi Pooja, Nagara Panchami, Krishna Janmashtami, Mankramana etc, and jasmine crop production is low due to rains and demand is more due to festivals.

The trend in rise of prices continue in the beginning of September as Shravana Masa (the month marks Lord Shiva consuming the poisonous Halahal stone to keep the universe from destruction) continues.

There are festivals like Ganesh Chaturthi which again influences the rise in prices. After mid-September prices starts to decrease due to Pitrapaksha which means "fortnight of the ancestors" is a 16-lunar day period in Hindu calendar when Hindus pay homage to their ancestors. As there will be no functions during this time demand decreases hence the fall in jasmine price.



Q2 – April to June

Table 17: Average jasmine price for Q2.

	Average price	Standard Deviation (SD)
April	244	61.4
May	251	59.6
June	148	30
Q2	215	78.4

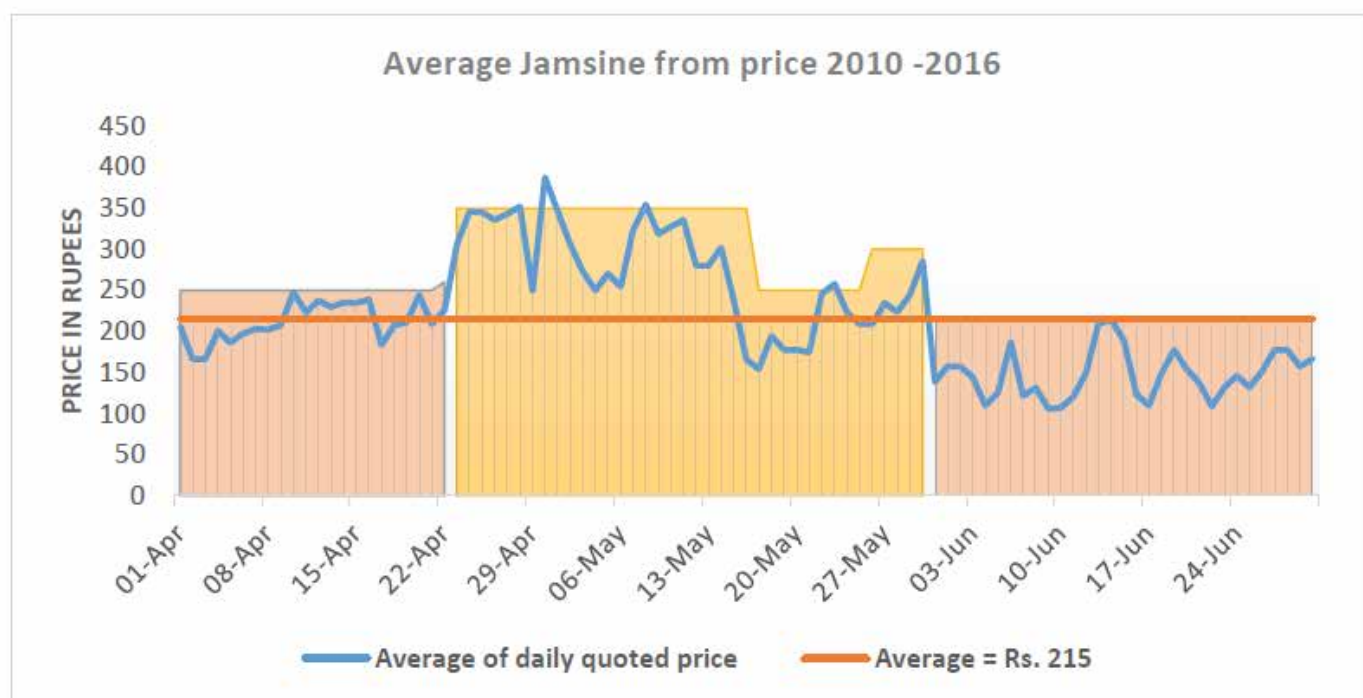


Figure 1.9: Average jasmine price from April to June for the year 2010-2016.

The price variations and average price for the second quartile is shown in Table 17 and the graph is displayed in Figure 1.9. The average price of jasmine obtained for the second quartile is Rs. 215 (SD = 78.4). For the second quartile when compared to the first there is a sharp decline in the average jasmine price. The fall in price continues from March to mid-April. There are no major festivals and starting from the March to mid-April the Christian community follows Lent, a solemn religious observance. During this time, they do not conduct any functions or celebrations. As its summer the crop production is high and there is no demand.

By the end of April, the wedding season starts after Easter for the Christian community and Rathotsava is done in temples, thus there is a small rise in the prices. The small price rise continues in the month of May as there is a continuation of Rathotsava and Buta Kola a ritual folk dance from the coastal districts of Karnataka. But after mid of May prices fall considerably as

its peak summer season jasmine production is at a maximum but there is no increase in demand. This trend continues in the month of June as jasmine prices keep falling throughout the month. This is mainly because initially there will be an increase in jasmine production due to the first rains and functions or auspicious days are less during this time.

Q3 – July to September

Table 18: Average jasmine price for Q3

	Average price	Standard Deviation (SD)
July	335	97.9
August	392	93.4
September	352	60.4
Q2	360	88.2

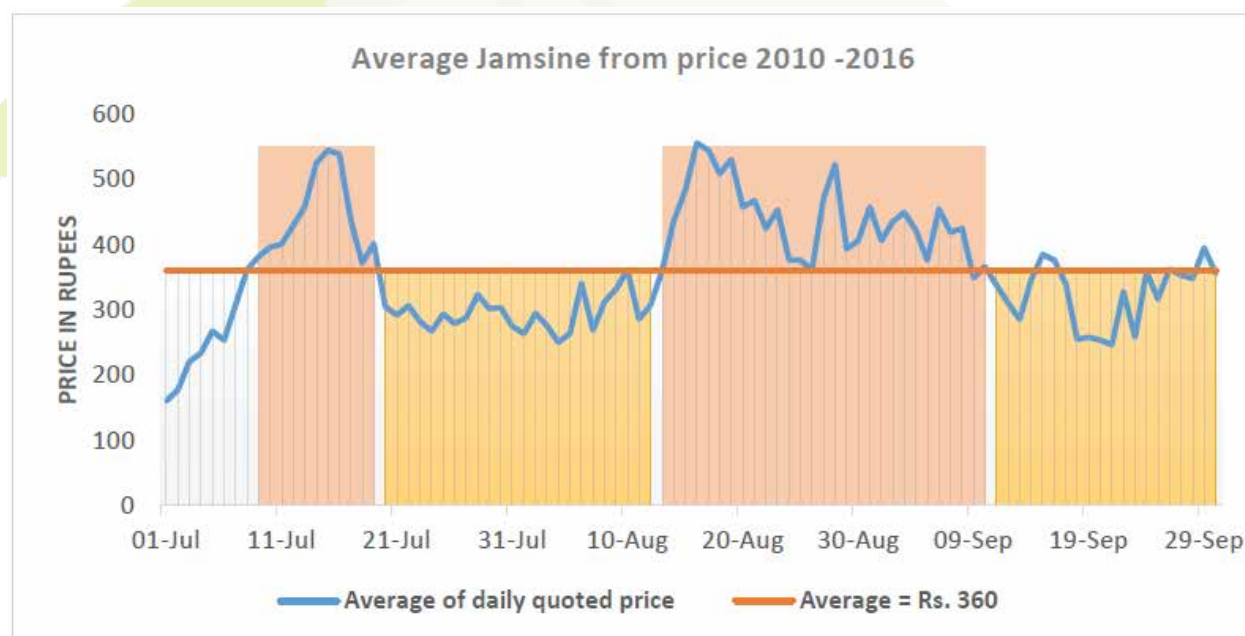


Figure 1.10: Average jasmine price from July to September for the year 2010-2016.

By the end of April, the wedding season starts after Easter for the Christian community and Rathotsava is done in temples, thus there is a small rise in the prices. The small price rise continues in the month of May as there is a continuation of Rathotsava and Buta Kola a ritual folk dance from the coastal districts of Karnataka. But after mid of May prices fall considerably as

its peak summer season jasmine production is at a maximum but there is no increase in demand. This trend continues in the month of June as jasmine prices keep falling throughout the month. This is mainly because initially there will be an increase in jasmine production due to the first rains and functions or auspicious days are less during this time.

Q3 – July to September

Table 18: Average jasmine price for Q3

	Average price	Standard Deviation (SD)
July	335	97.9
August	392	93.4
September	352	60.4
Q2	360	88.2

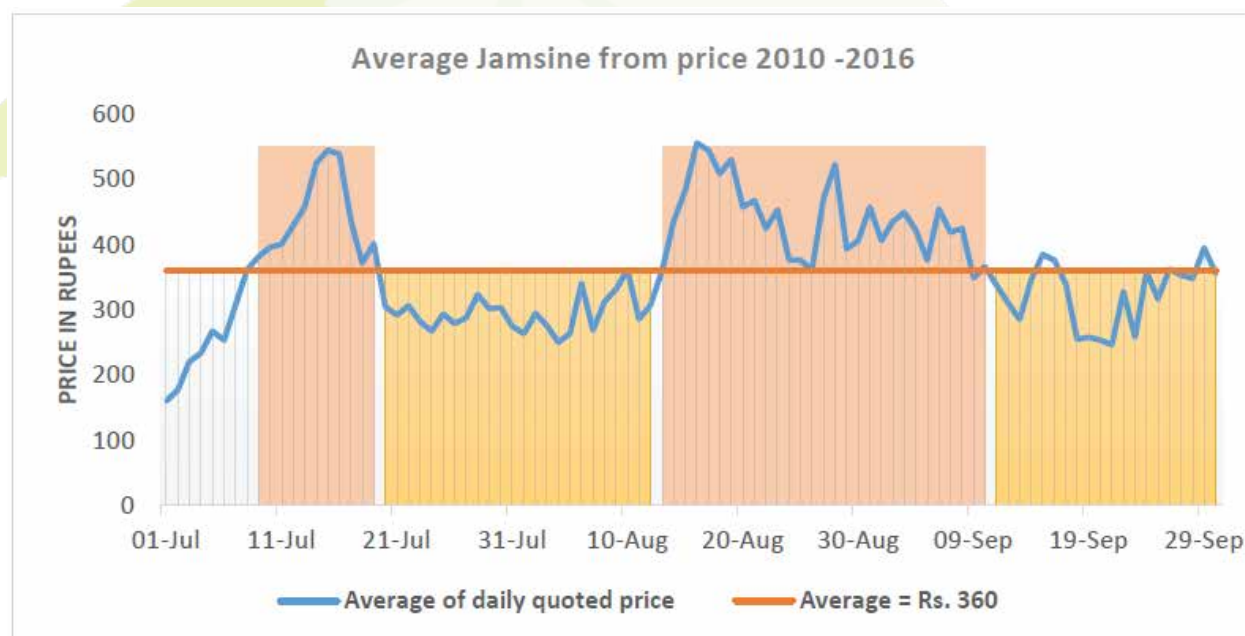


Figure 1.10: Average jasmine price from July to September for the year 2010-2016.

remains moderate. For the month of October, there are many festivals like Deepavali, Navaratri, Sharada Pooja, Deepostava and other temple festivals where the demand for jasmine remains high. Also, the month of October many communities conduct weddings and other functions. By the beginning of November winter starts and production of jasmine starts to decline. Functions will continue during this; thus the demand continues to rise and the prices will be uniformly high. The month of December winter continues, and production of jasmine is again moderate. As there are weddings, functions and occasions during this time demand for jasmine will be all-time high. Hence prices will soar during this time remain constantly high during this month and continue till the beginning of January.

Analysis of jasmine price presents the following details:

There is a direct correlation between jasmine prices, festivals, functions and occasions. The production too plays a key factor in the variation of jasmine price. Whenever there are festivals and special occasions there is a sharp rise in the price.

There are many consumers who use jasmine for daily ornamental consumptions. Hence providing an online option for buying jasmine will increase demand for jasmine as it will be available to a wide range of consumers

V. DATA ANALYSIS

The implications of the research are outlined as follows:

Providing structure to a fragmented agricultural market. The Udupi jasmine market is a large and dispersed market. E-commerce may assist in providing answers by assimilating individual actors to improve the structure of the organization. Through the internet, many aspects of business can be managed systematically and effectively.

With limited investment, e-commerce can improve the market reach.

Irrespective of the geographical location ICT provide options to link various actors in the farming chain with minimum investment in infrastructure. By reducing the obstacles of geographical locations of market reach such as time and distance it increases the market reach through online transactions.

Price transparency and stability will improve.

Online access to product and price information will allow comparison of products and increase price transparency. Fluctuations in price likely to diminish because of the increase in competition. Also, the demand will increase as the accessibility is increased to a larger population and hence stability in price can be established.

Accessibility will be key to acceptance.

Adoption of ICT depends on the accessibility along with the benefits it offers. Udupi jasmine has got a significant socio-economic impact on the community-based enterprise. The community-based enterprise has an unstructured system. Thus, e-commerce will assist to extend the reach of Udupi jasmine to a larger market through its structured reach.

Better information exchange.

Information exchange can help to reduce the gap between consumers and the producers. Hence ICT serves as a platform to provide authentic information not only to the existing stake holders but also can attract more players into the system. As information is readily available there will be better information exchange.

Formation of an alternative market structure.

It will decrease rural isolation and increase market transparency and thereby help the stakeholders to explore alternative market for the benefit of market expansion.

Enhance farming techniques and best practices.

In general, timely interventions can help improve farming techniques and adopt best practices in agriculture and with regard to Udupi jasmine the producers can experiment the possibility to adopt best practices because of information accessibility. This will also be helpful for the policymaking bodies to alter or redefine the policies on a timely basis.



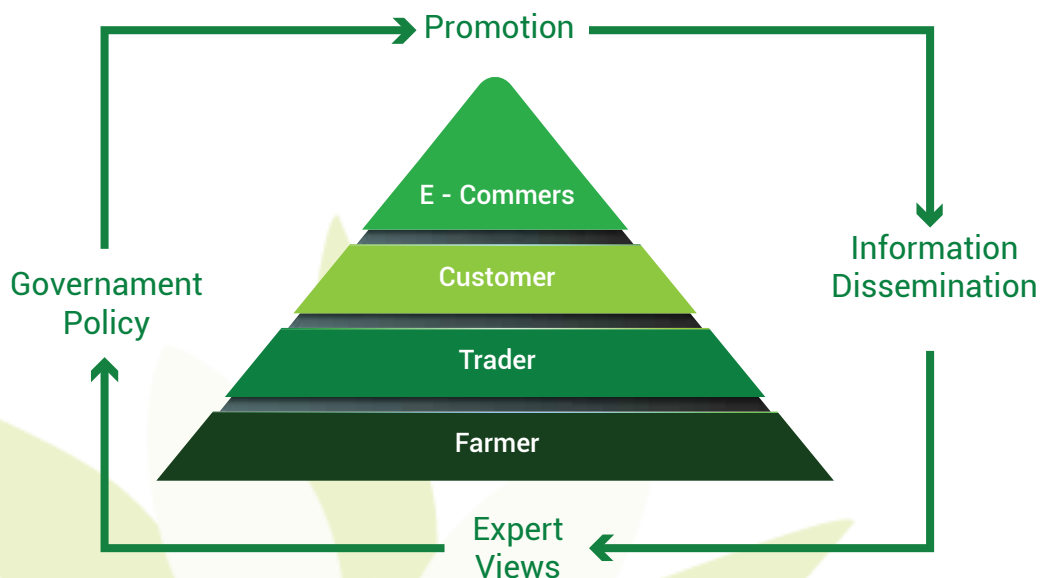


Figure 1.12: Implications of the e-commerce model.

The farmer is given the maximum priority as they occupy the bottom of the pyramid. Farmers will have information about prices, best agriculture practices, government policies etc. E-commerce will integrate traders and consumers to provide an organized market. Traders will be assisted by the trading platform to conduct trade. Finally, the consumers will have a portal that will allow them to buy the product irrespective of their geographical location. As the market reach increases there will be an increase in demand which will directly affect the price of the product.

Hence the farmer will benefit from the increase in demand. Effective information dissemination will be possible as the sector gets organized. As data will be integrated at all levels through the data warehouse it will allow

experts to provide inputs in various aspects of the supply chain that will assist in government policymaking. Agriculture product promotion is a critical factor for e-agriculture to succeed. Promotion is the element of market mix that includes all the ways a firm communicates the merits of its products and persuades its target customers to buy it. Hence, product promotion will assist the product in reaching a larger audience. From an academicians perspective, this work can be applied in agricultural sectors that are localized to specific geographical locations. This model can be customized for such crops which are specific to a geographical location. This will help in the promotion of such agricultural products to a wide range of consumers and organise a largely unorganized sector.

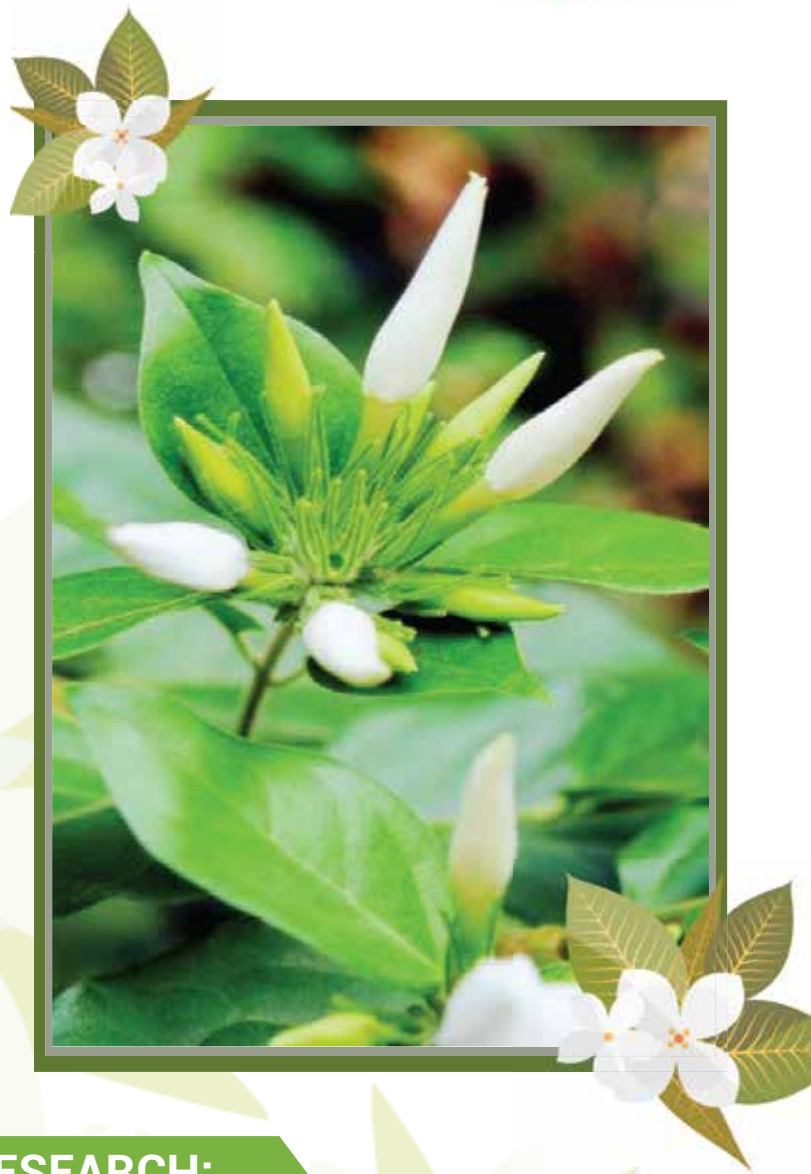
V. CONCLUSION

Jasmine growing community in coastal Karnataka of India is a successful viable community-based enterprise for over 78 years. Due to the significant socio-economic impact of jasmine cultivation, the promotion and marketing of jasmine is inevitable for the sustenance of this community-based enterprise. Hence this study tries to provide a means of promotion and marketing using ICT, in particular by the development of an e-commerce model. Mixed-method research approach helped in the identification of important factors that govern this jasmine community-based enterprise. Many crops in India are specific to a geographical location and Udupi jasmine is one among them. Existing e-commerce models cannot be used to market such crops as these models are not localized to market such crops. Localization of e-commerce is necessary to market such crops. The model proposed is localized to market Udupi jasmine and the model considers

several factors that govern the entire jasmine growing community-based enterprise. It provides a number of functionalities that will assist the consumer and trader in conducting commerce effectively. The model also provides solutions in collecting and managing grower information that will assist government intervention when necessary.

By integrating data of the entire system through a data warehouse, information dissemination at all levels can be achieved. Data analysis will help to understand the problems faced by the farmers and timely intervention by the respective authorities can be sought. It will also help in forming effective government policies that will assist in improving the socio-economic status of farmers. Hence the e-commerce model will provide assistance in improving the market reach, reduce transaction cost, convenience of buying, transparency, efficiency in productivity and organize supply chain.

Digital shifts are reshaping economies and societies today as well as in the future. Keeping localization in mind the model developed provides new ways of marketing crops that are specific to a geographical location hence providing new direction in the sector of GI based crops. The study is an attempt to contribute to the literature regarding collation of data and an insight to any researcher willing to apply a mixed-method approach in a related context. This study is a guideline for an approach that will lead to a new direction for assisting such community-based enterprises through technology.



THE FUTURE SCOPE OF THE RESEARCH:

1. Using E-commerce in a market going to be good for jasmine and flower will become more popular than now and it is beneficial to the farmers and also their produce.
2. Udupi 'mallige' app is one of the supporter of E-commerce. The development of this app will also promote more to the farmers and for the jasmine market.

PART - II

SUGGESTIONS, STRATEGY INTERVENTIONS

AND MANAGERIAL IMPLICATIONS UDUPI JASMINE

A. Suggestions in General for Jasmine as a GI certified Produce

Marketing of GI products encompasses all the tasks that are needed to sell these products which are written down in terms of a marketing plan. The plan aims to reach the consumer after assessing his/her needs and motives, taking into account the market potential and limitations of the GI products. At present, there are over 661 GI products in India (GI Registry, 2020) with unique characteristics and exceptional market potential.

However, in the Indian context, these products have not been able to reap benefits of their rich geographical derivation, rich heritage and originality. In an emerging market like India, products like Darjeeling Tea, Alphonso Mangoes, and Chanderi Sarees are few of those numerous brand names that give us 'Top of the mind recall' among Traditionally Special Products with a suitably structured marketing strategy. Other GI products with great potential for market acceptance like Nagpur Orange, Nashik Grapes, Banaganapalle Mangoes, Byadgi chilies,

Nanjangud Banana, Udupi Gulla, Mysore Jasmine and Udupi Jasmine have remained way behind due to the lack of a strategic marketing approach.

The Foreign Trade Policy Statement for the year 2015-20 has identified the marketing and branding of GI products as a key area of focus and entrusted the task of conducting a study on adopting measures and policy interventions to develop the market potential of these unique products. This section enumerates marketing strategy suggestions to various stakeholders involved in the task of promoting and brand building for Udupi Jasmine. The patrons involve producers, channel partners (agents/traders), Central Government Operated Agencies (Department of Industrial Policy and Promotion, Agriculture Food Processing and Export Development Authority, National Horticulture Board) agencies proposed to be created by state agencies, agencies operated by the State Government (APMC)

support functionaries (National Bank for Agriculture and Rural Development) and policymakers (Department of Commerce and Ministry of Agriculture, Government of India). The suggestions reported as strategy interventions can be used to unravel the commercial potential of vegetables and fruits in general although they are specifically formulated for Udupi Jasmine.



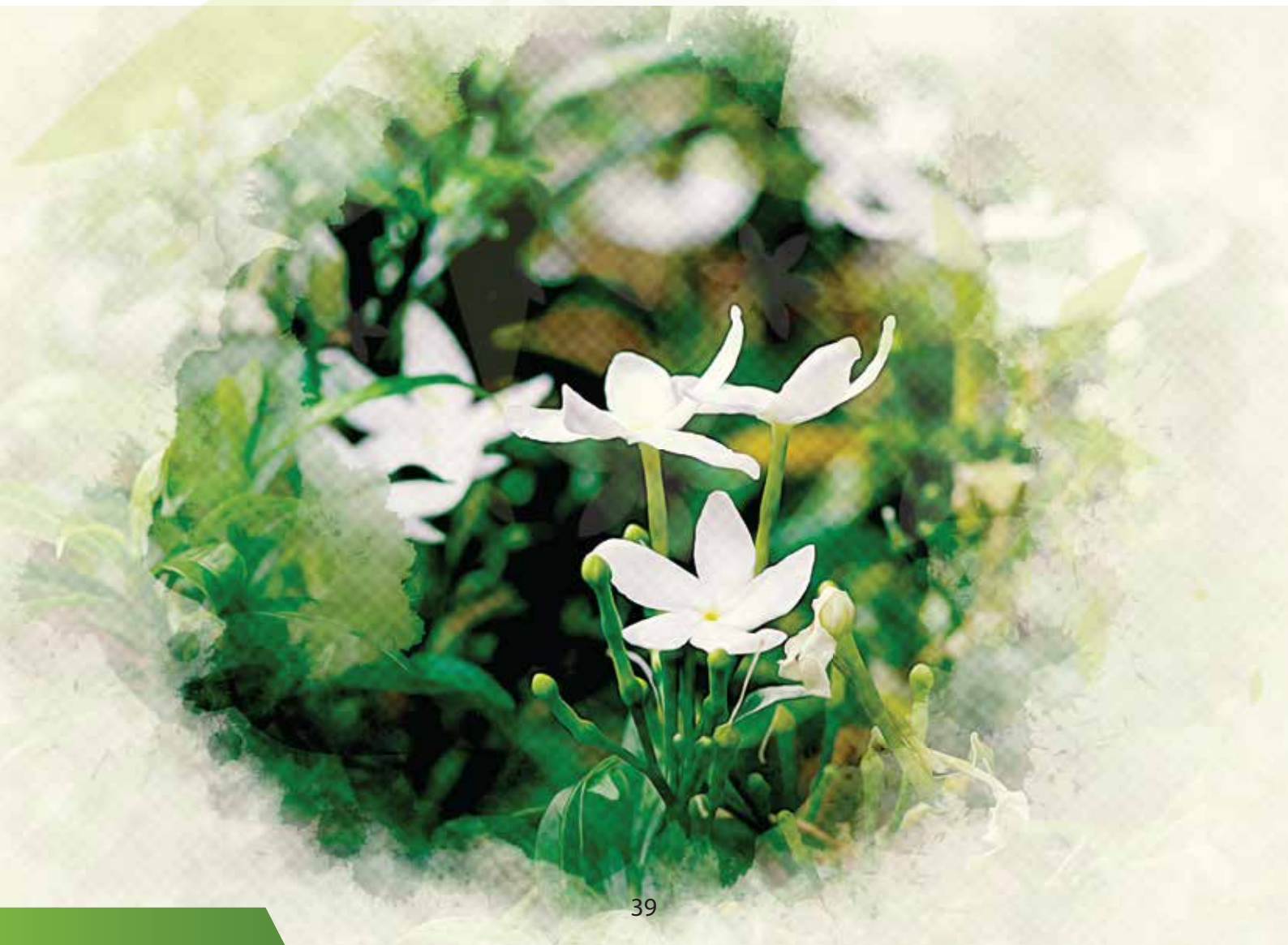
B. Protection Strategy

The market for Udupi Jasmine is largely localized and the production capacity is limited. The agents in the distribution chain pocket profits thereby leaving the farmers with limited margins. Therefore, the key strategy to protect the product from the problem of free riding and misuse of Jasmine is by leveraging the GI registration and guarding it against substitutes. The customer should be able to easily identify the GI name and efforts should be taken to ensure that other products do not misuse the GI name. This can be achieved by using the following techniques:

1. **Identification:** A small seal or label with the mark 'original' and with the GI number and logo should be introduced. This will make counterfeiting difficult.
2. **Functional Improvement:** A This can be achieved by increasing the utility of Udupi Jasmine through value-added products.
3. **Packing and Packaging:** A successful marketing and sales promotion strategy needs both packing and packaging of products. Packing is the preparation of a product for storage and transportation, while Packaging is considered as the preparation of the product not only for storage and transportation but also for sale. Thus packaging necessarily involves an element of promotion as its design needs to consider the buying motives of the consumer (www.differencebetween.com). Packaging involves labeling for sales promotion. Packing

is not considered as an important function in the sale of Jasmine by the farmers and agents' right from the period of harvest till it reaches the hands of the consumer. Farmers' market and retail store display Jasmine in open air. Packing is done to ensure the safety of the product. The quality of the product gets deteriorated and the product does not remain fresh by the time it is picked up by the consumer.

4. **Extended shelf-life through packaging:** Europe's market leader in packaging fresh perishable products, 'Sirane Ltd', has developed innovative technology-oriented packaging solutions by offering a wide range of absorbent pads, cushioned pads, anti-fungal pads as well as compostable. The benefits of the new packaging technology can be used to extend the shelf-life of fruits and vegetables and ready-to-eat products. These shelf-life extending products, including bags, films, and pallet liners help significantly reduce wastage throughout the supply chain.



Market information: Jasmine growers should be updated with information. Due to advancement in technology the market dynamics (price, new consumer segments, and corporate buyers) move at a faster pace and the farmer is left behind as he is not able to match this pace of advancement. The role of the enabler is crucial on such occasions. The enabling association should ensure that the farmer is updated with information and trained properly in service, selling and salesmanship skills.

Methods to Maximize the Commercial Potential of the GI mark: There is still scope to leverage the potential of the Jasmine GI mark. The following techniques can be undertaken by the Jasmine growers to promote the GI logo:

1. Posters/Banners can be inserted on the walls of every retail shop in the district portraying the GI logo of Udupi Jasmine to create awareness.
2. All retailers can be encouraged to use the GI logo of Udupi Jasmine on their bill books. The customers carry the bills home and can be easily reminded of the logo during each purchase.
3. Every letterhead/Email (formal communication) of the Udupi Jasmine Association made to stakeholders should carry the GI logo.

Strategy to Key Participants to unlock the true market potential of Udupi Jasmine.

step by step approach and a clear allocation of responsibilities and timeliness will come a long way in creating awareness and building brand awareness for Jasmine Joint action by the State Government, Department of Commerce, Department of Industry Policy and Promotion (DIPP), Export Promotion Council (EPC), Ministry of Agriculture, Government of India and Udupi Jasmine Growers Association is required if desired systems need to be put in place to unlock the true potential of Jasmine in domestic and international markets. Of late, it is seen that National Bank for Agriculture and Rural Development (NABARD) is keenly focused on implementing Farmers Producer Organization to ensure the pooling of community resources and endorse the cooperative movement. NABARD and NHB can consider making an appeal to the Central Government to establish

and Udupi Jasmine Growers Association.

A number of steps need to be taken by the Central and State Governments to implement the proposed marketing initiatives. Of course, all these steps cannot be taken concurrently, nor is it required to be taken at the same time, and needs to be executed by different parties in a phased manner. It is suggested to implement these strategies in a phased manner after considering proper prioritization and implementation of these marketing initiatives. The field level execution of the outlined marketing efforts is the coordinated action of three important players namely, the enabling agency, Udupi Jasmine Growers Association and the Government.

Creating Udupi Jasmine GI Enabling Association

The Jasmine GI enabling agency can be set up with a specific objective of sketching the promoting and marketing efforts of Jasmine for enhancing GI brand value and building visibility. An appeal should be made to the State Government as these State Agencies are working closely with the Udupi Jasmine growers. A detailed report on the current marketing system, the gaps present, and the action plan of marketing initiatives required can be presented to support the creation of enabling agency. The enabling agency should constitute of members from Udupi Jasmine Growers Association, traders, agents, VTPC, NHB and a State Government representative in the capacity of a nodal officer.

1. Should be set up with a formal structure and proper management systems.
2. Appoint 2-3 members on a full time or part-time basis for coordinating marketing activities.
3. Should be responsible to define and register authorized members, make documentation, update information and keep records.
4. Should provide information on all related government schemes and ensure these schemes are availed by the members of the farming community.
5. Should channelize marketing efforts and undertake and monitor quality compliance.
6. Can also provide advisory roles on the existing tax structure like Goods and Services Tax (GST) keeping in mind the efforts directed towards the brand building in International markets.
7. Conduct small workshops for farmers, traders, agents, team members on the use of the GI mark, quality compliance, sorting and grading and product differentiation.

Stage 2- Appeal to provide Market Development Fund for Jasmine for Awareness and Promotion Campaigns in Domestic and International Markets.

In the initial stages, seed fund should be provided by the State Government. There are two Central/State owned/run machinery to whom the Jasmine Growers Association and enabling association can approach for allocation of funds for market development. The support of the local branch of the Zonal Agriculture Research Station can be availed to conduct rural marketing campaigns. In matters related to production and technology

interventions, the experts of ZARS are closely connected with the farmers of Udupi District. By proper liaising, this connection can be leveraged towards implementing marketing initiatives. The ZARS operates a Market Extension Cell headed by the Market Development Manager. Farmers can be motivated to contribute to the fund when they are confident that the initial marketing efforts have yielded results.

Stage 3 - Other Direct Marketing Alternatives for Jasmine Farmers

By using the direct marketing alternative, the Udupi Jasmine Growers can capture the rupee that consumers pay in other markets. To receive similar prices and attract customers, the growers must provide better

products and services that that offered by the retailers. Consumers, on the other hand, will get genuine and accurate quantity products at competitive prices.

Interventions

E-commerce applications continue to expand every year and have entered into almost all sectors. Agriculture sector in India needs a major overhaul to keep up with the present global trends; usage of e-commerce is the need of the hour. There are several GI based crops in India which do not have the luxury of marketing as regular crops since they are restricted to a specific geographic location. This study provides a new pathway for the use of e-commerce in these sectors providing a means for increasing their market share. The research shows that by keeping localization in mind, the e-commerce model can be built and used to market localized crop such as Udupi jasmine.

Providing structure to a fragmented agricultural market.

The Udupi jasmine market is a large and dispersed market. E-commerce may assist in providing answers by assimilating individual actors to improve the structure of the organization. Through the internet, many aspects of business can be managed systematically and effectively.

Providing structure to a fragmented agricultural market.

Irrespective of the geographical location ICT provide options to link various actors in the farming chain with minimum investment in infrastructure. By reducing the obstacles of geographical locations of market reach such as time and distance it increases the market reach through online transactions.

Price transparency and stability will improve.

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Implications of the proposed e-commerce model

The farmer is given the maximum priority as they occupy the bottom of the pyramid. Farmers will have information about prices, best agriculture practices, government policies etc. E-commerce will integrate traders and consumers to provide an organized market. Traders will be assisted by the trading platform to conduct trade. Finally, the consumers will have a portal that will allow them to buy the product irrespective of their geographical location. As the market reach increases there will be an increase in demand which will directly affect the price of the product.

Hence the farmer will benefit from the increase in demand. Effective information dissemination will be possible as the sector gets organized. As data will be integrated at all levels through the data warehouse it will

allow experts to provide inputs in various aspects of the supply chain that will assist in government policymaking. Agriculture product promotion is a critical factor for e-agriculture to succeed. Promotion is the element of market mix that includes all the ways a firm communicates the merits of its products and persuades its target customers to buy it. Hence, product promotion will assist the product in reaching a larger audience. From an academicians perspective, this work can be applied in agricultural sectors that are localized to specific geographical locations. This model can be customized for such crops which are specific to a geographical location. This will help in the promotion of such agricultural products to a wide range of consumers and organise a largely unorganized sector.



Proposed E-Commerce Model for Udupi Jasmine:



RECOMMENDATIONS

(i) Create and Preserve Links between small farmers, markets, support services, and policymakers:

Small farmers face several constraints in terms of production and marketing. The most uphill task small farmers' face is the lack of information in marketing and the failure to meet the quality standards. Information pertaining to market needs and quality standards provided by agencies and policymakers needs to be simplified and distributed to small farmers. These small farmers need to be made aware of the dynamics of market, competitions, standards to be maintained, technology that can be used to meet these standards to minimize market risk.

(ii) Creation of agricultural development teams to cater to needs expressed by community-based farmers:

To cater the need of community-based farmer's rural development organizations with agriculture experts are not enough. The creation of agricultural development teams consisting of experts from multiple disciplines and from different sectors who are knowledgeable about the agricultural process is also needed. Researchers from across universities, research institutions should also be made a part of these agricultural development teams as they can provide valuable insights into farming and marketing practices. The result of such a diverse team of specialists across multiple disciplines working together would provide strong assistance to the agricultural demands faced by the community-based farmers.

(iii) Promote investment in the agricultural ICT sector

Through the right policy-framework, improve the business environment that facilitates research, innovation, development along with investment. Public-Private Partnerships are a good example that would encourage investment in ICT infrastructure and applications. Through the right policy-frameworks, development can be accelerated in open source and other technologies that would be easily available to rural small farming communities.

(iv) Promote linkages between institutions and farming communities through ICT:

Increases in globalization and liberalization of trade have immense benefits and these benefits can be used by agricultural systems. Small farmers need competence in connecting agricultural production with processing of agricultural products, marketing and the creation of grower's organizations. The total system is made up of these small domains of each agricultural disciplines. Linkages between institutions and farming communities through ICT will result in an increase in farmer's competence in agricultural production, marketing, finance and micromanagement of details that would enhance agricultural productivity.

(v) Enhance digital inclusion:

The use of a variety of policy measures and technical means to bridge the gap between regions and groups in the country will help to promote access to the internet at a subsidized price for the rural population. Promotion in access to educational content and broadband connectivity in primary education will accelerate digital literacy among the rural population. Targeted technology information among community-based organizations will reduce inequalities in digital literacy levels and promote the development of a workforce for the digital economy.

(vi) Encourage e-commerce cooperation:

With cross-border trade facilitation, encouraging e-commerce cooperation can strengthen agricultural e-commerce in India. E-commerce cooperation can influence existing and future e-commerce projects to use ideas and concepts that are successful. This will also eliminate the time, effort and resources required to start new e-commerce projects at rural level.

(vii) Encourage agricultural e-commerce investment:

With the evident profitability of e-commerce in different areas, promote investors to invest in agricultural e-commerce through government support system. This will encourage entrepreneurs to explore different agricultural areas that can take advantage of e-commerce. This, in turn, will also attract researchers to delve into doing research in agricultural e-commerce. This will help the rural community-based organizations to market their produces on a larger scale.

(viii) Promotion of GI based crops:

With many crops having GI tag in India, government assistance in promoting these crops is quite essential. The government at the state level needs to form special teams to identify the communities that are involved in producing such GI crops and provide assistance to framing communities that are involved in growing these crops. Assistance can be in the form of modern agricultural techniques, use of ICT, marketing, and promotion. This will strengthen these community-based farmers in exploring new techniques that will enhance agricultural production.



ACTION PLAN

☒ Organising un-organised Groups: It is identified that the growers in general does not have any control on both produces and price. The community in particular is separated from the technique of Price fixation. The farmers who grow jasmine rely on their traditional system of handing over their produce to Agents and continue to trust in the current system of Price fixation unscientifically. The basic flaw in the process is their participation. If they are in a position to negotiate, it will have a positive impact. A very strong formal organization can uplift Jasmine growers bargaining power.

Limited use of Jasmine: The flowers are used for such occasion which indirectly restrict their ability to earn more revenue out of Jasmine. If at all various avenues are identified in the use of Jasmine, it might expand their market in terms of buying and thus will generate new income sources. Use of Jasmine as Gift item, mementos etc. would be appropriate.

Authorized Centers for Selling: It is observed that most of the flower shops do sell Udupi Jasmine on regular basis. However, there is no authenticity in terms of Quantity of Udupi Jasmine sold to a customer. Many flowers shops indulge in practices of pulling the string and thus convert the visible quantity (Unit wise). This practice is to be counter acted by a weighing system instead of Unit selling method. It is proposed to have few Selling Points in and around Udupi to deal with this issue.

Preservation: Even though the shelf life cannot be extended, preservation of Udupi jasmine would also be a via media to control too much price fluctuations in the market. The current practice of using Banana Leave to Pack Jasmine is very ideal and use of refrigeration serve the purpose to some extent, packaging with bio-degradable material could be an alternative to increase the shelf life.

Members Data Base: The growers are spread across Udupi region in the area connected to Shankarapura. The average Land holding is .50 acre and farmers do participate in the jasmine growing activities as a part time work. If their data base is available, it would be helpful to reach them easily under one roof.

Therefore, for several agriculturally grown GI products in India, the future lies in gaining acceptance and attention to a wide set of customers. Udupi Jasmine, being a Jasmine variety grown by marginal and small farmers have not been able to establish GI identity in the global marketplace. This stumbling block can rather be viewed as an opportunity than a hindrance for organizations, associations, manufacturers, and growers to create, communicate and regulate standard value for global markets. Jasmine enjoys a distinct advantage as there is no other variety of Jasmine grown in the nearby vicinity which enjoys a GI tag.



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