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A STUDY ON PROFILE OF MAIZE GROWER IN KARNATAKA

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ABSTRACT

Indian agriculture is pre-dominant with small holders. The maize cultivation is also not an exception. Traditionally, maize has been a poor man's crop in India and therefore, only small and marginal farmers used to cultivate it, mainly for household food/feed consumption. Though, the trend has changed in recent years, even then, the percentage of maize area cultivated by small and marginal farmers have been increasing in many states. India has a big potential for export of maize as grain, feed, seed and specialty corn due to its lower price and less freight costs to the major maize (Asian) importers on account of geo Graphical vicinity. Generally, in India and Karnataka the area of Maize cultivation and maize grower has been increased from the last decade. The present study "A Study on Profile of Maize Grower in Karnataka" aimed to know the socio-economic condition of the maize farmers in Karnataka.

Key Words: Maize, Income, Farmers, Marketing

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1. Introduction

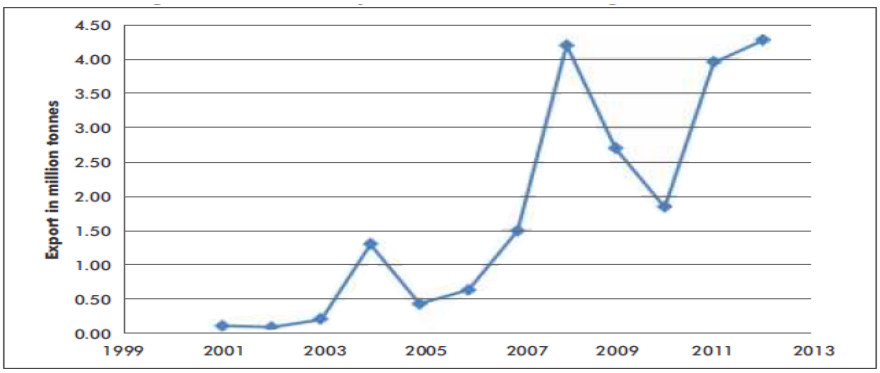
Over the years, maize has emerged as the third largest food grain crop after Rice and Wheat. Although primarily a normal Kharif season crop, it is cultivated during the Rabi season also in parts of southern and eastern India. The maize area in Karnataka has almost doubled during the past decade and, currently it is the largest among all the states in India. It was also the leading producer and exporter of maize in the country.

Indian agriculture is pre-dominant with small holders. The maize cultivation is also not an exception. Traditionally, maize has been a poor man's crop in India and therefore, only small and marginal farmers used to cultivate it, mainly for household food/feed consumption. Though, the trend has changed in recent years, even then, the percentage of maize area cultivated by small and marginal farmers have been increasing in many states.

India has a big potential for export of maize as grain, feed, seed and specialty corn due to its lower price and less freight costs to the major maize (Asian) importers on account of geo Graphical vicinity. Therefore, maize exports have escalated during the post-2000 period and grew to 4.27 Mt in 2012, due to rising demand mainly from South Asian and Gulf countries (Graph 1). India has emerged as one of the top 10 maize exporters in the world with export escalating by more than 10-times from 0.3 Mt in 2000-01 to 4.27 Mt in 2012-13 (Gulati et al., 2013; UNCOMTRADE, 2013).

Graph 1

Maize Exports from India



Source: UNCOM TRADE (2013)

From the above information it is clearly shown that India has more potentiality in Maize production and marketing and it will be also for the maize growers. With this back ground the present research work is aims to study the socio-economic situation of the maize grower in Karnataka.

2. Objectives of the Study

The present research is intended to study the following objectives;

1. To know the social condition of the maize farmers
2. To sketch the economic profile of the maize grower
3. To study marketing situation in the study area.

3. Research Methodology

The present study was carried out in the selected district of Karnataka state which is one of major state in Maize growing states in India. Importantly two districts namely, Davanagere and Chitradurga have been chosen for study. A random sampling technique has been utilized to select the maize growers for the purpose of the study. From these sample districts total 350 maize farmers have been selected and collected the required information from them.

The present study was adopted primary research followed by quantitative and qualitative assessment. The required primary data were gathered through interview from Maize growers. The information collected from the sample units has been arranged in tabular form and graphs. The statistical tools such as 'T' test, percentage and average have been utilized.

4. Data Analysis and Interpretation

The present section includes three parts. The first part briefly explains the social conditions of the sample farmers, second part includes economic situation of the samples and in the third part analyse the marketing situation of maize crop and relationship between the different characteristics of the households.

A) Social Profile of Maize Grower

Age is a noteworthy component which could decides economic activity of an individual. The age group of selected sample farmers has been presented as in below table.

Table 5.1

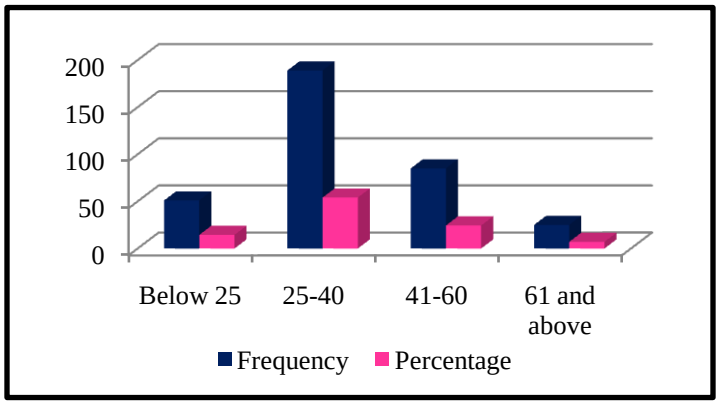
The Age Group of the Respondents

Age Group	Frequency	Percentage	Mean	SD
Below 25 Years	51	14.57	32.091	6.941
25-40 Years	189	54.00		
41-60 Years	85	24.29		
above 60 Years	25	07.14		
Total	**350**	**100**		

Source: Field Survey

Graph 5.1

The Age Group of the Respondents



The age group of the Respondents has been presented in the table 5.1. The above table exhibits that the 54.00 per cent of the respondents (189) were belongs to the age group of 25-40 years, followed by 24.29 per cent of the respondents (85) were in the age group of 41-60 years, and 14.57 per cent were below 25 years and remaining were above 61 years i.e. 7.14 per cent.

Hence, it can be inferred that the majority of the farmers were in the age range between 25-44 years, which can be mature age in the life span. The average age of the farmers was 32.09 years and standard deviation value is 6.94. Hence, it is evident from the present study that the middle

age individuals are actively participating in agricultural activities. The same has been presented in the Graph 5.1.

Table 5.2

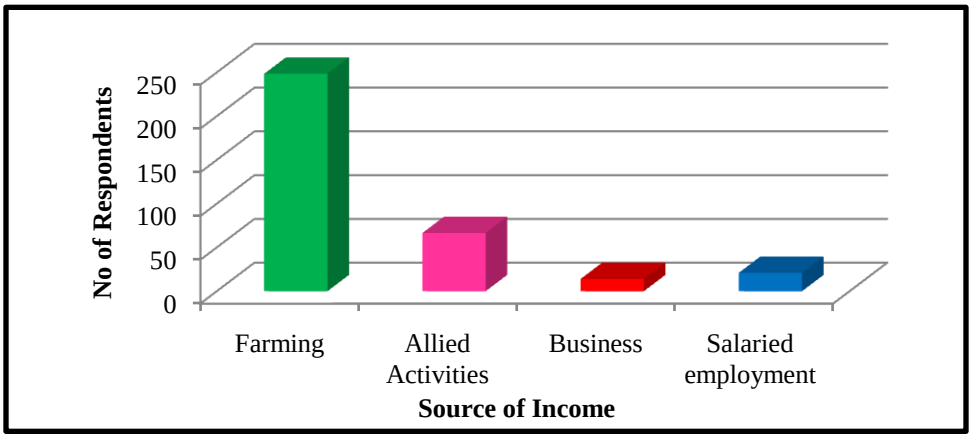
Main Occupation of the Respondents

Source of Income	Frequency	Percentage
Farming	248	71.86
Allied Activities	67	19.14
Business	14	4.00
Salaried employment	21	6.00
Total	**350**	**100**

Source: Field Survey

Graph 5.2

Main Occupation of the Respondents



The table 5.2 and Graph represents the data relating to the main occupation of the respondents in the study area. The study shows that farming is the main occupation for 71 per cent (248) of the sample farmers, followed by the allied activities (19.14 per cent), salary (6per cent) and business (4 per cent). It can be inferred that the agriculture is the main occupation and as well as major source of income to the sample respondents.

The education plays a pivotal role in development of socio-economic condition of various communities. Thus, it is also considered that the education is one of the key factors to empower farmers which could help in to choose right quality and quantity of seeds, source of irrigation,

season for the crop, pesticides and fertilizers etc, which is very important in agricultural activities. The educational status of the sample farmers recorded in the table 5.3. as follows.

Table 5.3

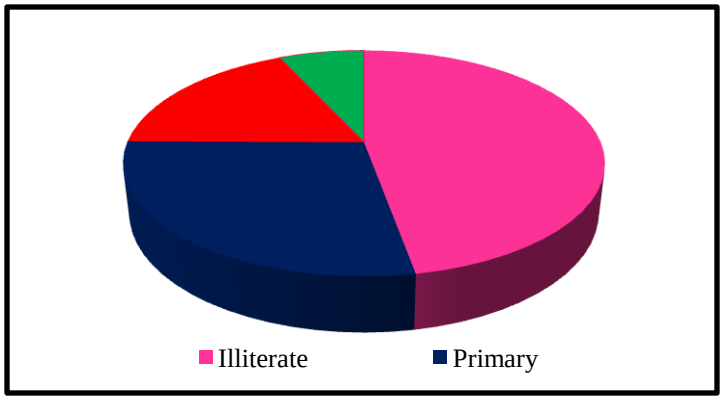
The Educational Level of the Farmers

Level of Education	**Frequency**	**Percentage**
Illiterate	165	47.14
Primary	98	28.00
Secondary & PUC	63	18.00
Degree & above	24	6.86
Total	**350**	**100**

Source: Field Survey

Graph 5.3

The Educational Level of the Farmers



The educational level of the farmers in the study area has been shown in the table 5.3 and Graph 5.3. In the study area 47.14 per cent of the farmers were illiterate, 28.00 per cent of the farmers are studied up to primary level education, 18 per cent of the farmers completed the education secondary level and PUC and remaining 6.86 per cent of the respondents were studied up to graduation and above (including technical and professional education). From the above table it can be inferred that the majority of the farmers were illiterate in the sample area. This indicated that the people with less education are involved in the agriculture activities with compared to well educated.

Table 5.4

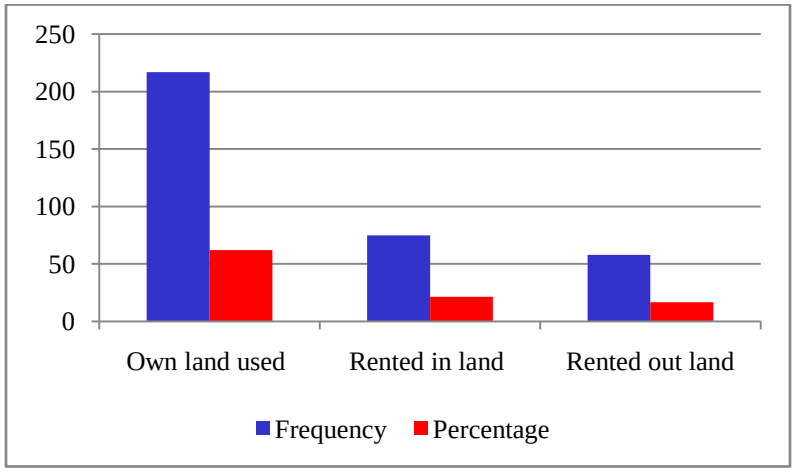
Land Holding by the Respondents

Category of Land	Cultivated	
	Frequency	**Percentage**
Own land Cultivated	217	62.00
Rented in land	75	21.32
Rented out land	58	16.68
Total	**350**	**100**

Source: Field Survey

Graph 5.4

Land Holding by the Respondents



In the table 5.4 illustrates the data pertaining to the land holding pattern by the farmers in the study area. The majority i.e. 62 per cent of the respondents had own cultivated land and 21.32 per cent of the respondents were obtained the land on rented base and cultivating and remaining 16.68 per cent of the respondents given part of the land for rent to the other farmers for cultivation activities (Graph 5.4). Hence, it can be inferred that the all sample farmers are engaged in agricultural and allied activities (cultivated land).

B) Economic Profile of Maize Grower

Table 5.5

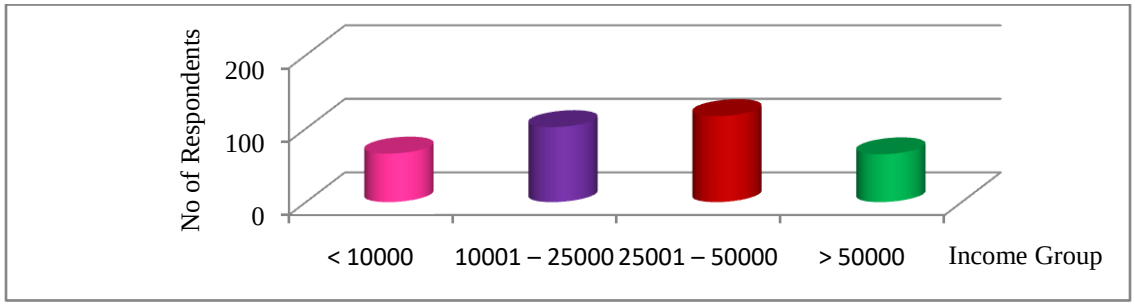
Annual Income of the Respondents

Income Group (in Rs)	Frequency	Percentage
< 10000	66	18.86
10001 – 25000	102	29.14
25001 – 50000	117	33.43
> 50000	65	18.57
Total	**350**	**100**

Source: Field Survey

Graph 5.5

Annual Income of the Respondents



The data pertaining to the annual income of the sample respondents has been reveals in the table 5.5. The study results shows that around 33 percent of the respondents were earned income between the range of Rs. 25001 – Rs. 50000 in a year, followed by 29.29 per cent of the farmers were in the income group of Rs. 10001-Rs. 25000. 18.57 per cent of the sample farmers were got the income below Rs. 10000 per annum, and remaining 18.86 per cent of the farmers were earned above Rs. 50000 per year. Hence, majority of the farmers are earning income more than Rs. 25000 per annum.

Table 5.6

Sources of Income during Last Cropping Year

Income Source	Frequency*	Percentage
Rented/sharecropped out land	63	18.00
Rented out oxen for ploughing& other	87	25.90
Salaried employment	21	06.00

Farm labour wages	105	30.00
Non-farm labour wages	73	20.86
Non-farm agribusiness (e.g. grainmilling/trading)	28	08.00
Drought/flood relief	60	17.14
Sale of maize& other crop residues	350	100.0
Sale of dung	35	10.00
Rental property (other than land and oxen)	32	09.14
Interest from deposits	38	10.85

Source: Field Survey, *Multiple Answers.

In the study area the farmers were earned the income from agriculture as main occupation and along with they were undertaken other sources for earning the income for their livelihood. In the table 5.6 presents the data relating to sources of income of the farmers. Agriculture became the main source of income to the all respondents along with this occupation 30 per cent of the respondents were earned the income as an agriculture labour.

Followed by 25.90 per cent of them were got the income from the rented out of Oxen for ploughing & other purposes, around 21 per cent of the respondents earned income through Non-farm labour wages. 18 percent of the farmers even had the source of income through Rented/sharecropped out land. In the sample area farmers also earned income through the sources like Drought/flood relief, Interest from deposits, Sale of dung, Rental property (other than land and oxen), Non-farm agribusiness (e.g. grain milling/trading) and Salaried employment. Hence, from the above table it can be inferred that the all respondents are earning their income from agriculture and allied activities. Though, some of them are have other sources as supporting to their earnings during last cropping year.

C) Marketing Situation of Maize Crop

Table 5.7

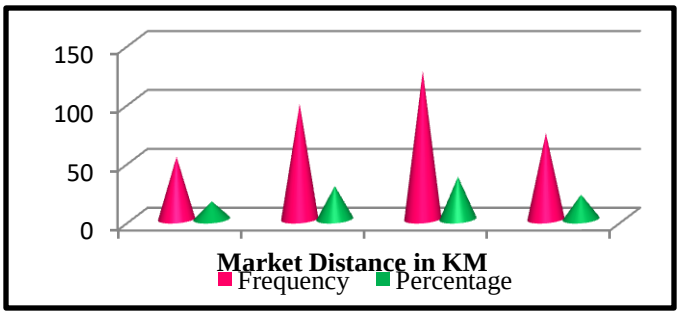
Market Distance from the Village

Distance (in KM)	Frequency	Percentage
<5	53	15.14
6 – 10	98	28.00
11 – 15	126	36.00
>15	73	20.86
Total	**350**	**100**

Source: Field Survey

Graph 5.6

Market Distance from the Village



The market distance from the place of production has been shown in the table 5.7. the majority i.e. 36 per cent of the respondents were opined that they need to transport their production 11-15 km to reach the market, followed by 28 per cent of the farmers were nearby the market place with a distance of 6-10 km, around 21 per cent of the respondents were need to transport their production to reach market place (>15 km) and remaining 15 per cent of them responded that they were transported their production with a distance of <5 km to reach market place (Graph 5.6). It can be inferred that the majority of the respondents are need to transport their production to reach market places with a range of distance between 6 km-15 km.

The data pertaining to the household characteristics like Sex and Literacy Status of the households. Access to Credit Services and Market Information to the farmers in the study area has been presented in the table 5.8.

Table 5.8

Household characteristics in the study area

Variables	Items	Frequency	Percentage	χ^2 test
Sex	Female	37	10.57	6.13***
	Male	313	89.43	
Literacy Status	Illiterate	165	47.14	3.62**
	Literate	185	52.86	
Access to Credit Services	No	146	41.71	0.04*
	Yes	204	58.29	
Access to Market Information	No	33	9.43	0.14*
	Yes	317	90.57	

Note: ***, ** and * statistically significant at 1 per cent, 5 per cent and 10 per cent level

Source: Field study

Generally the head of the household is responsible for the managing of the household activities. As such it is include some attributes such as education, health, marriage and in the specification of market participation decisions. The survey data presented in the Table 5.8 which revealed that both male and female household heads were engaged in production of maize. Among sample respondents, 89.43 per cent were male headed households and remaining 10.57 per cent were female headed. The Chi-square test result shows (χ^2 =6.13, p=0.01) that there is significant difference between household heads.

Another important attribute is the literacy status attained by the heads of the household, normally, who are the decision-makers. Education also enables the person to do basic communications for various purposes. With regard to literacy status 52.86 per cent were literate and remaining 47.14 per cent of them were illiterate in the study area. The Chi-square test result shows (χ^2 =3.12, p =0.05) there is a significant difference in terms of education of the household head.

The survey data indicated around 204 (58.29 per cent) of the sample farmers has access to credit and remaining i.e. 146 (41.71 per cent) of them did not taken credit both on-cash and in-kind to

purchase inputs like fertilizer (DAP and Urea), seed, chemicals and sprayer. This is because of fear of interest rates levied on principal amount.

The farmers marketing decisions are based on the market price information, and poorly integrated markets may convey inaccurate price information to the farmers, which leads to inefficient production movement. In the present study, the majority of sample respondents 317 (90.70 per cent) have access to market information (APMCs, Traders, Middlemen's, Neighbors etc.).

The Table 5.9 enlightens the information about comparison of household characteristics among sample farmers of the study area.

Table 5.9

Comparison of Household Characteristics among Samples

Variables	**Mean Values of Variables**	**t-value**
Age of the household head	47.25	-2.56***
Non-farm income	384	3.03***
Market price	1.5	3.71***
Size of land holding	1.79	0.85
Number of oxen	1.72	3.09***
Livestock holding	2.87	8.50***
Distance to the main market	07.49	1.36
Family size	4.33	-2.70***
Volume of Maize production	26.20	1.35
Quantity of marketed surplus of maize	10.37	2.53***
Input cost: Herbicide	30.57	8.63***
Seed	0.32	0
DAP	1.88	-1.19
Urea	2.09	0.14
Maize	0.33	4.77***

Note: ***, ** and *statistically significant at 1 per cent, 5 per cent and 10 per cent significance

level.

Source: Field survey

The different household characteristic of the sample units has been compared and tested. The results of the comparison of the household characteristics have been presented in the above table. In the study area, the family size was with a minimum 3 and maximum size of 10 respectively. The mean family size of farm households was found (4.33) which is significant (P=0.05).

The Livestock production is an integral component of the farming system in the study area and contributes very much for maize production in particular and to crop production in general. Important animals are kept by the sample farmers are cattle, sheep, goats, horses, donkey and poultry. Oxen are the main source of draft power, short transport, harrowing, and threshing. As it is indicated in Table 5.9, the mean livestock holding of farm households in the study area was found to be 2.87.

The Non-farm income can be utilised to finance marketing activities and also accessing on-farm income has a bearing on the market participation. The mean non-farm income of farm samples in the study area was found (384).

The distance to the main markets is a significant factor, which creates a chance for the interaction of the farmers to the market access. The mean time take to reach the main markets of sample farmers in the study area was found 7.49 minutes per trip.

According to data collected, 74 per cent of the household heads sell the maize grain in the market. The mean market price of farm households in the study area was found that the 11.5 Rs/kg. The mean market price of farm households which is significant higher (P=0.01).

According to the survey result, costs of inputs used by households to produce maize grains, pulses and oily crops are different pertaining to its cost and type of commodity. The farmers used modern inputs i.e. seed, fertilizers and chemicals (with an appropriate quality and quantity seen in the pattern of agricultural activities) for maize production. The main costs of inputs the producers incurred were to fertilizers, seed, and chemicals. Inputs cost also varies depending

upon size of land holdings. The mean size of the land holdings in the study area found that the 1.79 acres.

The Volume of Maize production is different from one sample respondents to another it was mainly because adoption of modernization and mechanization in the farming activities, land utilisation and source of irrigation. The mean value found for the production volume of maize in the study area was 26.20/acre.

The Quantity of marketed surplus of maize has been calculated and means value found i.e. 3.60 Qtls. The input cost including herbicide (30.57), seeds (0.32), DAP (1.88), urea (2.09) and maize (0.33) means value of the variable has been found in the study area. Profitability is depending upon input cost and maize production (quantity and price).

It can be inferred that from the above table the age of the household head, non-farm income, market price, size of land holding, number of oxen, livestock holding, distance to the main market, family size, volume of maize production, quantity of marketed surplus of maize, input cost: herbicide, seeds, DAP, urea, and maize. These variables calculated by using mean value and T test (refer Table 5.9)

5. Conclusion

The demand for maize is increasing for various usages - different types of food, livestock feed, poultry feed, beverages, starch, etc. The change in production trend has brought a change in its pattern also. The study reveals that producers adoption of high yield hybrid seeds, application of improved farm technologies, value added products there by enhanced income and food security. Maize has potential for product diversification under a new economic regime. Demand for maize is shifting from food to feed for livestock and poultry. New types of maize based products are in demand among people in the higher income group.

The major constraints and challenges faced by the farmers in the study area are observed as farm inputs, weed management, labour availability and cost, Pest management, fertilizer cost and seed

quality are the major constraints in cultivation of the maize. Weed management occupies first place followed by labour availability and cost.

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