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A STUDY ON THE MARKETING OF AGRICULTURAL SEEDS WITH SPECIAL REFERENCE TO QUALITY MANAGEMENT IN NAGAPATTINAM DISTRICT

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ABSRTACT

The district is occupied by the delta region of the river Cauvery the farmers of the district are adopting traditional method and old technology for cultivating mostly paddy and cereals like black gram and green gram. Even though they have been engaging in agriculture for long period the output per acre is not appreciable. The improper use of quality seed may be one of the reasons for the low output. This article highlights a study on the marketing of agricultural seeds with special reference to quality management in Nagapattinam district.

INTRODUCTION

In a country like ours agricultural sector is a dominant one. The agricultural production is depending upon various factors like the fertility of the land, availability of water or the irrigation system, the technology adopted and the quality of the seed. Of these factors the seed quality alone is affecting the output by 15 to 20%.Realising the fact that the seed is the pivotal in the enhancement of the agricultural production in the country, the Government of India has implemented. "National Seed Project phase-I" in 1977-78, phase-II in 1978-79 and phase-III in 1990-91 Also the government has pronounced New Seed Development Policy in 1988-89.

The Indian seed industry is occupied by both the governmental agencies and private seed traders in the Indian agricultural sector. A major portion of agriculturists are either using their own seeds or they procure from the local agriculturists who are having surplus seeds The green revolution during the 1970's enabled the private commercial traders to enter into the Indian Seed Industry. The economic liberalization made it possible to import seed from abroad and thereby the entry of foreign companies to market genetically

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improved varieties of seeds. Apart from these players in the Indian Seed Industry, State Seed Corporation is also playing a vital role in the production and marketing of seeds.

IMPORTANCE OF THE STUDY

India is primarily an agriculture-based country and its economy largely depends upon agriculture. It plays an important role in the life of an economy. Agriculture is the backbone of Indian economic system. Agriculture provides food and raw material and also employment opportunities to a sizeable portion of population.

In the course of economic development, agriculture employs a majority of people of the country. Agriculture enhances the level of the national income and standard of living of the common man. The rapid rate of growth in agriculture sector gives progressive outlook and further motivates the development. As a result, it helps to create proper atmosphere for general economic development of the economy. Thus, economic development depends on the rate at which agriculture grows.

STATEMENT OF THE PROBLEM

There has been spiralling demand for quality seed in India, despite the implementation of seed certification and the enactment of the Indian Seed Act, 1966. The entry of private companies in the Indian Seed industry and establishment of State Seed Corporations has not resolved these problems entirely. There has been a vast gap between the demand and supply of seeds. In the state of Tamilnadu the actual requirement of seed was 2.79 lakhs tonnes but supply has been 1.05 lakhs tonnes. In India the seed production has been steadily increasing. The total production of seeds was 1.0396 million tonnes during 2002-2003 and it was spurred up to 2.5035 million tones, during 2008-2009 (Seed Division of DAC) Even then, the demand for seed has not been fully met. The seed certification has not improved the quality of seed available to the Indian farmers as a major portion of them are using locally available seeds. Hence, a study of this nature is considered timely and urgent for assessing the quantity available of selected seeds and the quality of the seeds used by the farmers.

Unfortunately, our agricultural seed sector is really suffocating due to a variety of problems. Generally, the price of a commodity must be either cost based or demand based. However a close observation of the prices trends show that this principle does not have much significance in the case of our major seeds including paddy, cereals (green and block gram),cotton, sugarcane and gingelly and so on. Similarly, any upward trend in the price of seeds should benefit the farmers. But it is paradoxical to see that the farmers of seeds never get the benefits of price hikes but they have to bear all the evils of adverse market conditions. This is a clear evidence to believe that there is something wrong with the present marketing systems of agricultural seeds. The present study is an attempt to look into these aspects for the purpose of gathering more information for improving marketing of agricultural seed in Nagapattinam district of Tamil Nadu.

In the study area paddy, black gram and green gram cultivation have been under taken in large scale. Out of the 2,42581 hectares of total land cultivation, the paddy cultivation is taking place in 1,54945 hectares and green gram, black gram cultivating are taking place in 6553 hectares. Even though the paddy, black grams, green grams are the major crops in the study area, the production as well as the productivity (per acre yield) are not in appreciable level. It may be due to the several factors like the climate, irrigation facility, fertility of soil and the availability of the mechanism for the pest control. Apart from these factors the quality of seed used for the cultivation of paddy, black grams, green grams is the major factor hindering the increasing of the output. Even though the farmers are using the certified seeds over the years the quantity of output has not been showing any significant increase in the yield per acre. The researcher of the study is himself a cultivator of paddy has inclined to know the reason for the low output despite certified seed is used in the name of the quality seed and hence a study of the nature may be interesting and it may give fruitful findings. So this study is attempted with the following objectives.

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OBJECTIVES OF THE STUDY

This study has been under taken with the following specific objectives.

1. To study the marketing procedures adopted by the seed marketers pertinent to select agricultural seed in the study area.
2. To study the quality management of agricultural seeds by the sample traders in the study area.
3. To assess the extent of use of certified seeds in the study area.
4. To evaluate the impact of quality management on agricultural seeds in the production of selected crops.

SCOPE OF THE STUDY

The present study is an attempt to make an enquiry into the marketing of agricultural seeds with reference to quality management in Nagapattinam district of Tamilnadu. The scope of the present study is both wide and narrow. The present study could also be viewed as narrow. It covers marketing of agricultural seeds, sources of irrigation, cultivation of seeds, farmers' opinion, problems faced by the farmers towards marketing of agricultural seeds, various government programmes toward marketing of agricultural seeds and quality management.

HYPOTHESIS OF THE STUDY

Based on the objectives of the study the following null hypotheses were formulated and tested

Ho (a) Government certified seed increases the output

(b)Government certified seeds do not increase the output.

Ho (a) Certified seed and uncertified seed are all of the same quality.

(b) Certified seeds are generally better quality than the uncertified seed.

Ho (a) The seed produced locally increases the output.

(b)The seed produced locally do not increase the output.

RESEARCH METHODOLOGY

The study is primarily aims at assessing the availability of quality seeds in Nagapattinam District. For the nature of this study, survey method was found suitable.

SAMPLING METHODS

Area of the study

The study has under taken in the Nagapattinam district of the Tamilnadu state. Nagapattinam district comprises of eight Taluks namely Kevalur, Kuthalam, Mayiladuthurai, Nagapattinam, Sirkali, Tharangambadi, Vetharanyam and Thirukuvalai.

Sampling

Purposive random sampling has been used for the study purpose. 60 samples were selected from each taluk and farmers who have been engaging actively in the cultivation of paddy, black gram, and green gram were chosen as samples for the study. So the total sample size of the study was 480 and it was considered adequate for the main objective of the study.

Pilot Study

The pilot study was conducted among 50 agricultural farmers and 10 seed marketing firms. The reliability of variables in each segment of the schedule was confirmed through the pilot study. On the basis of the result of pilot study, a certain modification in the statements or variables was made. The final schedule was prepared for data collection. Accordingly, the interview schedule has been restructured and the final schedule was prepared and approved by the research guide for conducting the field work.

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DATA COLLECTION

Primary Data

The required information was collected with the help of structured and unstructured interviews and through discussions with the respondents. The study required both the Primary and Secondary data. The primary data was collected through two schedules. The two schedules, one to the sample agricultural farmers and another to the sample seed marketing traders, were administered for collecting the required information for the purpose. The primary data were collected directly from the sample farmers through a well-devised interview schedule. For data collection the researcher visited the farmers at their residents more than once, at their leisure and at their convenience.

Secondary Data

The sources of secondary data are publications and seasonal crop report in Tamil Nadu and various other unpublished works like Ph.D. Thesis, M.Phil, dissertations and other Research Reports, Books, Journal articles, research articles, magazines, newspapers and websites, for the collection of some source materials.

STATISTICAL TOOLS FOR ANALYSIS

The collected primary data have been statistically analysed and tabulated by using appropriate methods. Tables and statistical results have been derived with the help of computer software package called SPSS (Statistical Packages for Social Sciences). From these SPSS generated results the interpretations and inferences were made properly. For analyzing the present study Reliability analysis, Percentage analysis, Independent sample t-test, One-way ANOVA, chi-square test and Correlation analysis have been used.

PERIOD OF THE STUDY

The study covered both primary secondary data. The present study covers the period of five years from 2010-09 to 2013-14. The primary data collected in a period of six months from November 2014 and April 2015 for the purpose of analysis and evaluation.

LIMITATIONS OF THE STUDY

The limitations of the study have been identified in this study.

1. The study is based on the reported responses evoked through the schedules and direct interview technique rather than on direct observation of what agriculture farmers actually do. Sometimes respondents were unwilling to answer and it was difficult to convince them to get answers for all the questions.
2. The research work was carried out only in Nagapattinam district (eight Taluks) only.
3. No specific theoretical model on agricultural seeds towards quality management is applied in this present study.
4. The study covers only agricultural seeds namely paddy, and cereals (green gram and black gram) and have the findings may not be relevant to others. Further, the study is based on the responses obtained from agricultural farmers on Nagapattinam district of Tamilnadu state and hence generalizations need not be fully accurate.

CHI - SQUARE TEST (GOVERNMENT CERTIFIED AND UNCERTIFIED SEEDS) – AN ANALYSIS

Chi-square test is applied statistics to test the goodness of fit to verify the distribution of observed data with assumed theoretical distribution. Therefore, it is a measure to study the difference between the observed (actual) values and expected values (frequencies). If the calculated value of chi-square is greater than the table value of chi-square at certain level of significance, stated that the hypothesis is rejected. If the calculated value of chi-square is less than the table value of chi-square at certain level of not significance, stated that the hypothesis is accepted.

Certified Seeds

Certified seed is done to encourage the production of adequate quantities of genetically pure and good quality seeds, particularly of high yielding improved varieties and hybrids of different crops. The following are given Table 1(a) and 1(b).

Table 1 Chi-square test for Government Certified Seeds

Quality testing of Seed	Government Certified Seeds increase the output					Total
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Yes	191 (39.8%)	199 (41.5%)	7 (1.5%)	20 (4.2%)	37 (7.7%)	454 (94.6%)
No	4 (0.8%)	0	1 (0.2%)	21 (4.4%)	0	26 (5.4%)
Total	**195 (40.6%)**	**199 (41.5%)**	**8 (1.7%)**	**41 (8.5%)**	**37 (7.7%)**	**480 (100.0%)**

Source: Primary data,

Table 1(b) Chi-Square Test

Calculated chi-square value	Degree of freedom	Level of significance
0.1865	4	0.001 (Significance)

Source: Computed from Primary data,

Ho 1: There is no association between certified and uncertified agricultural seeds and their quality testing of seed.

Ho 1 (a): *There is no association between certified agricultural seeds increase the output and their quality testing of seed.*

Table 1(a), 1(b) shows that chi-square test for certified agricultural seeds increase the output on the basis of their quality testing of seed. It is observed from the table that 94.6 per cent of them are positive (yes) and 5.4 per cent of them are negative answer (no). Hence, it is concluded that the majority of them are positive answer compare than the other groups.

The calculated chi -square value 0.1865is significant at 1 per cent level. Therefore, the formulated hypothesis of certified agricultural seeds increase the output on the basis of their quality testing of seed is rejected.

Uncertified Seeds

Uncertified seed is done to encourage the production of adequate quantities of genetically is not pure and bad quality seeds. The following are given Table 2 (a) and 2(b).

Table 2(a) Certified Seed and Uncertified

Quality Testing of Seed	Certified seed and Uncertified seed are all of the same quality.					Total
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Yes	40 (8.3%)	50 (10.4%)	7 (1.5%)	199 (41.5%)	158 (32.9%)	454 (94.6%)
No	4 (0.8%)	21 (4.4%)	1 (0.2%)	0	0	26 (5.4%)
Total	**44 (9.2%)**	**71 (14.8%)**	**8 (1.7%)**	**199 (41.5%)**	**158 (32.9%)**	**480 (100.0%)**

Source: Primary data,

Table 2(b) Chi-Square Test

Calculated chi-square value	Degree of freedom	Level of significance
0.1033	4	0.001 (Significance)

Source: Computed from Primary data,

Ho1 (b): *There is no associations between uncertified seed are all of the same quality and their quality testing of seed.*

Table 2 (a), 2(b) shows that chi-square test for uncertified seed are all of the same quality and their quality testing of seed. It is observed from the table that (94.6 per cent) of them are (yes) 8.3 per cent, 10.4 per cent, 1.5 per cent, 41.5 per cent, and 32.9 per cent of the respondents are strongly agree, agree, neutral, disagree and strongly disagree respectively. 5.4 per cent of them are strongly agreeing (no). Hence, it is concluded that the majority of them are strongly disagree answer compare than the other groups.

The calculated chi -square value 0.1033 is significant at 1 per cent level. Therefore, the formulated hypothesis of certified agricultural seeds increase the output on the basis of their quality testing of seed is rejected.

SUMMARY OF MAJOR FINDINGS

- The predominant age group of the respondents 159 (33.13 per cent) belong to the age group of 51-60. Out of total 480 respondents 31.88 per cent in above 60 years and 26.88 per cent in 41-50 years. It is evident that 92 per cent of the respondents have an age of above 40 years, of which 31.88 per cent are above 60 years.
- Majority of the samples 452 (94.17 per cent) are married and only 28 (5.83 per cent) are unmarried.
- The majority of the respondents family size 170 (35.42 per cent) of the sample respondents have 4-6 members and 161 (33.54 per cent) have above six members in their family. Among the sample farmers 149 (31.04 per cent) have 1-3 Members shows the least position.
- Majority of the 356 (74.17 per cent) respondents are doing agriculture as a main occupation. Among the sample respondents about 32 (6.67 per cent) are working as a government employee. Likewise 28 (5.83 per cent), 57 (11.88) and 7 (1.46) of respondents are working as a Semi-Government Employee, private employee and others.
- Out of 117 respondents seven are in below income of Rs.5000 which is 5.98 per cent of the total sample. Among the sample respondents 9 (7.69) are in the income group of Rs.5001-10000. From the analysis 62 (52.99) are in the income group of Rs.10001-15000. Remaining 39 (33.33) respondents belong to the above Rs. 15000 income group.
- Out of 480 respondents majority of the farmers 212 (44.17 per cent) earning income in the group of above Rs.75000. The sample farmers 149 (31.04 per cent) are earning agriculture income between Rs.50001-75000. Agriculture income between Rs.25001-50000 are earning by 85 (17.71 per cent) sample farmers during the year. From the analysis only 34 (7.08 per cent) respondents are earning below Rs. 25000.
- The majority of the respondents 453 out of 480 are having own land which is 94.38 per cent and remaining 27 are not having own land which forms 5.63 per cent of the sample respondents.
- Most of the respondents have own land which constitutes 453 (94.38 per cent) out of 480. From the above analysis most of the own agricultural lands are inherited which shows that the 368 (76.67 per cent) and only 85 (17.71 (per cent) sample farmers purchase their own land from outsiders. Among the sample farmers 27 (5.62 per cent) respondents take the lease land for agriculture purpose.
- The majority of the respondents 184 (50.00 per cent) out of 368 inherited their agriculture land more than ten years ago. Among the sample farmers 97 (26.36 per cent) respondents' land was inherited below ten years ago. From the analysis sample farmers of 49 (13.32) and 38 (10.33) respondents' land was inherited below five years ago and more than five years ago respectively.
- Out of 85 sample respondents 49 are in less than five years, which is 17.71 per cent of the total sample.

Among the sample respondents 36 farmers are their land in more than five years, which shows 7.50 per cent. It clearly states that most of the agriculture lands coming from inherited and only 85 sample respondents' land have purchased from others.

- The majority of respondents (188) have more than 15 years experience the opinion expressed by them will be worth for the study.
- Majority (38.13 per cent) of respondents are more than 30 years of experience. This is an indication to strengthening the agriculture activities.
- Majority of the sample farmers 138 (30.46 per cent) having arable own land and Out of which 11 (40.74 per cent) respondents are having arable lease land shows between 4-6 acres.
- Majority of the sample farmers 317 (68.19 per cent) having unarable own land and Out of which 25 (92.59 per cent) respondents are having unarable lease land shows between 3 acres.
- The majority of the sample respondents are cultivating the samba on one time to others of kuruvai and thalladi cultivation.
- That 432 (90.00 per cent) sample respondents are cultivating Green Gram and remaining 48 (10.00 per cent) respondents only not cultivating the Green Gram. The evident of the black Gram are cultivating about 454 respondents which show 94.58 per cent and only 26 (5.42 per cent) respondents are not cultivating the Black Gram.
- The major reason found that for purchase of seed from other agencies is store located nearly to their residence.
- Most of the farmers are purchased Gingerly, Paddy and Groundnut shows highest of 38.36 per cent, (Gingerly, 15.75 per cent, Groundnut 14.38 per cent and paddy 20.55 per cent).
- Most of the sample respondents give preference to Government agency for purchase of seed.

SUGGESTIONS AND DISCUSSION

- The evolution of seed quality determination has not reached an end point and there are interesting developments in the pipeline that take account of the changing needs of the market.
- In the seed technology area transparency in and scientific exchange of the latest results remain of crucial importance for continued progress.
- Production and marketing of certified seed of all agricultural crops is highly regulated at both the national and international level. a transparent and efficient regulatory system is crucial to ensure that farmers have access to high quality seed at a reasonable price.
- Quality management systems have been successfully introduced and put into practice at the national level. An evaluation of the results of this (e.g. proficiency tests, performance of accredited laboratories compared to non-accredited laboratories) demonstrate that this has been success in optimizing the performance of laboratories and minimizing the risk of inaccurate testing.

CONCLUSION

Agriculture is vital for a country like ours and it is even more vital for district like Nagapattinam District, since a major portion of population of the district are engaging in agriculture for the past several centuries and getting the livelihood through agriculture. The district is occupied by the delta region of the river Cauvery the farmers of the district are adopting traditional method and old technology for cultivating mostly paddy and cereals like black gram and green gram. Even though they have been engaging in agriculture for long period the output per acre is not appreciable. The improper use of quality seed may be one of the reasons for the low output. There have been problems of getting the quality seeds and using for the cultivation over the past and hence the study. After making analysis of the data collected from the farmers and the seed marketers, it was found that there is a problem in the seed quality in the study area and hence the study concludes that there is need for specific and special monitoring agency in the district, especially for marketing of agricultural seeds with the strict adherence of the quality in the seeds of paddy, there will be a quantum jump in the production of paddy in the agrarian district of Nagapattinam.

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