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Estimating of Minimum Support Price (MSP) of Crops Using Data Analysis

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Abstract: Agriculture is the main occupation in India. Almost half of the population depends on agriculture. In recent years contribution of agriculture towards GDP is declining. One of the main factors is the cost which farmers are getting for their production. To protect any sharp declining in the cost of crops government of India insures a minimum price this is known as Minimum Support Price (MSP). The MSP is fixed by government before sowing season, but awareness level among farmer is very low. Hence this study focuses on the method of estimating MSP based on 2018 Budget proposed by the government whiz "at least 50 per cent more than the weighted average cost of the production. A portal would be developed to create awareness among the farmers.

Keywords: Agriculture, MSP, Crop, Portal, agricultural policies

I. INTRODUCTION

During 1960s, the shortage of food and excess of demand of food grains is due to the government policies on agriculture and other government mechanisms evolved in India . Certain rules were introduced like system of procurement and distribution of major food grains and statutory minimum prices were set even though it was not strictly implemented. There are three main agricultural price policy in India which includes: support, procurement, and issue price. Usually during the sowing time the minimum support price is announced, and the government completely takes the responsibility to sell the crops at the prescribed price. The prescribed prices guarantee to the farmer that, if there happens to be mass production leading to oversupply in the market, the value of crops what farmers have produced will not fall below the support price. Support prices effect the farmer indirectly when the famer decides on which soil to grow his crops, ultimately the location matters a lot. Based on the quantity of crops that were grown previous year the farmers decide in which areas what type of crops to be sowed. Based on government's needs for the distribution of crops in public the quantity to be procured is determined.

From past few years, the total quantity produced is total dependent on the grain that is put up on sale by the farmers at a price that is fixed by the government. The support prices are lesser than the these government fixed prices but the free market prices are much more higher than the fixed ones. During a good harvest, the market prices would be lower, but tends to run higher than the procurement prices once the surplus is cleaned up completely. The importance of reasonable prices to the farmers is known by the government, hence motivating them to use improvised technology and also promoting investments for an increased production of agriculture. In India, the agricultural pricing policy has a price structure that is quiet balanced which has the ability to fulfil all the requirements of the Indian economy along with the protection of both the producers and consumer's interests.

The main aim of the above mentioned policy is to help to provide a suitable approach towards achieving the groth and equity for the economic development of India. The minimum support prices which are used as the incentive prices are really useful for the successful running of the agricultural production based programs which is based on technologies that help in high yielding of the crops. Similarly, for the high production of food grains, the undue dependency cannot be put onto the environment of increased prices as an incentive. Adequate institutional arrangements are required for price support policies and its implementation so that purchase of quantities is offered for sale at that price itself.

The market price for any kind of product or services is found out by the demand and supply interaction because in an Indian market, price can never be under control. This shows the willingness of the consumer and the producer to buy or sell a particular product respectively.

The following steps need to be followed to determine the supply and the demand:

1) For demand

a) Consumer tastes and preferences

b) Number of buyers in the market

c) Consumer Income

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d) Price of related goods
e) Purchaser desire without bounds
2) For supply
a) Info Cost
b) Creation innovation
c) Duties & endowments
d) Cost of different merchandise the provider could deliver
e) Number of dealers/providers

II. PROBLEM STATEMENT

In India 49% of population depends on Agriculture, which plays an important role in Indian Economy. Agriculture contributes only 19% of GDP, hence the rural youth is moving away from agriculture to other sectors. In-order to achieve a dream of developed India we need to boost our agricultural policies. The main reason why the farmers are moving away from their occupation is due to lack of technologies, lack of transparent mechanism for deciding MSP and lack of communication channel between policy makers and famers. So the focus is on to develop a portal which can solve the problem of pricing policy and role of farmers in policy making.

III. BACKGROUND WORK

In recent years analysis on the different policies of wheat and rice in India has not received much consideration. A few researches examined on individual characteristics or policy in segregation. For example," Jha et al. (2013)" studied various elements of transferring income on basis of data collected in Andhra Pradesh, Rajasthan and Maharashtra from crops which are subsidised e.g. - sugar, rice, wheat. Several inefficiencies were found and errors of Targeted Public Distribution System and the probability of increasing the problems by introducing the National Food Security Act. Sharma (2012) in his revising emphasized on expenditure of the system – After 1991, the subsidy produced by government organizations. The outcome recommends that there have been improvements in the efficiency of FCI in terms of operations in spite of the increasing cost of food subsidy. Swaminathan in 1999 - studied on performance of FCI, it also suggests that Food Corporation of India (FCI) had upgraded its productivity in 1990s and FCI was more economical than other sectors in many states. Kulkarni and Gaiha in 2005 conducted an expansive analysis of agricultural policy determining effects on production, growth of stocks, exports, prices, productivity. The Swaminathan report was much more unfavourable of action taken by government. The study also revealed that the subsidies given by government deterred the productivity of food grain by restraining public investments in agriculture sector. The authors of the report also suggest that MSP given by government have a positive outcome on stocks of crops. They also gives insights like, as MSP of crop increases as there wholesale price, which have more effect on consumer prices as they also increases. Umali Deininger and Deininger in 2001 focused on wide range of policies in wheat and rice sector. To show that the system produced inefficiencies and it is more costly they used collective and household level data. The more critical point was system was not advantageous to majority of poor people. Hence authors, without any important organizational changes suggested several reform options within the current system. What could be the impact of procurement prices on open market prices, output, procurement, an analysed has been done by Gulati and Sharma in 1990. The study finds the major factors of driving market prices are the procurement prices and volume of the procurement was mainly affected by the difference between market and procurement prices and the level of output.

The rates of the products of agriculture are never stable. It might be due to the difference in the supply of the commodity or absence of the market integrity along with information. As in, whenever there is good yield, the price of that product will have a sharp drop that year and this will have a huge effect on the future supplies for the following years. This then leads to a huge price increase for the consumers. Hence focusing on this problem, MSP has been fixed for important products of agriculture have been fixed by the government. MSP provides assurance to the farmers that their major products will have a fixed price, before their season of sowing commences. It guarantees at least minimum rate that is provided by the government. The MSP is fixed on the recommendations of the Commission for Agricultural Costs and Prices (CACP). It is statutory body that provides separate reports on prices of the Rabi and Kharif seasons. After the consideration of the reports and view by the State Government and also by considering the overall supply and demand chain, the Central Government takes it's final decision.

A. *Limitations of existing system:*

To summarize the various limitations in the current functioning and operations of the Minimum Support Price, the following would be the ones which are currently absent from the present system:

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1) *Building responsiveness on MSP among the farmers* the awareness about the MSP to the farmers is very low and that's the reason why the farmers are facing problem while deciding the MSP of their crops. There might be a ray of hope that famers may earn profit from MSP but that's the rare case. There are may reasons like middlemen intervention, less knowledge about the government policies which makes them to sell their crops at a much lesser price than MSP .
2) *Involment of farmers in estimating MSP* CACP decides on the MSP on 23 agricultural products based on few parametrs like: cost of production, price trends in the market, the demand and suppy etc. These are the parameters which might be used for MSP calculation . Every year during the budget release the parameters changes for MSP calculation and these changes are still not transparent to the farmers.
3) *To minimize the cost of production* Farmer income levels is determined by the cost of production while farming. Cultivation costs are very agile and depend on several factors like price of seeds, fertiliser, fuel, electricity, labour wages. Indian agriculture lacks many analysis techniques which can be used by the farmers to grow their costs effectively.

IV. PROPOSED SYSTEM

The proposed system is aimed at enhancing the overall efficiency, bringing transparency and using of different modern technologies like data science, data mining, big data to predict the crop yield and deciding its prices. The usage of these modern day techniques will improve the the datasets that are been fed into the system for better prediction of crops.

In Indian mandi there are only 23 commodities for which MSP is given and with the inclusion of standard and transparent system more and more commodities can be added and a proper system can be placed and hence the government can avoid the loss of budget over farming.

The following table gives an idea of amount of water require as per the climate change.

Table 4.1

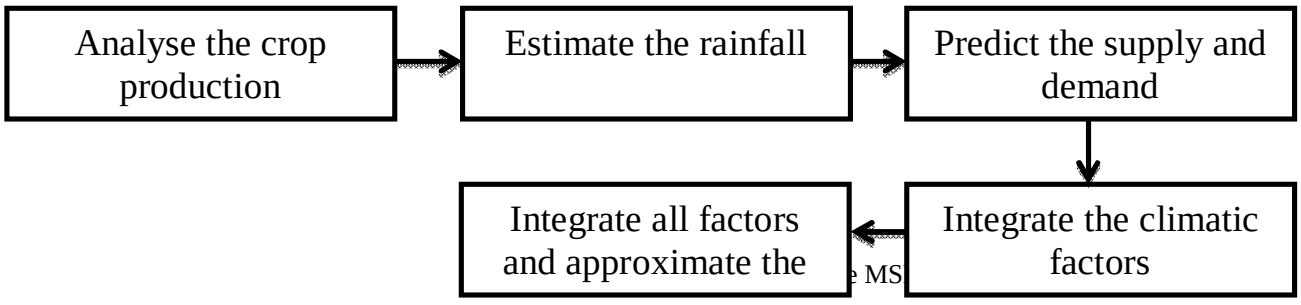
Water needed according to the climate.

Factors based on climate	Irrigation water need	
	high	low
sunlight	Sunny(no clouds)	Cloudy(no clouds)
Humid	Hot	Cool
Temperature	Low(dry)	High(humid)
Wind speed	Windy	Little windy

Therefore a portal would be developed which would give away the MSP of the agricultural products based on the parameters like demand supply, rain and production of crops.

The farmer will get a transparent look how the MSP is been decided for the crop as well as the government can avoid the loss in budget.

The portal would be user friendly and the farmers will have the option of selecting the crop, and the location in which they are growing. Thus this will increase the interest of the farmer to grow the crop which can even balance the demand and supply in the country.



V. CONCLUSIONS

According to the survey what is been done, there are still chances that the result might get improved. During the research which we have carried out it is observed that the most of the algorithm and methods which is been used by most of the authors does not use a collective approach where all the factors that affect the crop yield can be simultaneously be used for predicting the yield and hence

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deciding the price of the crop. There can be further improvements because in some analysis very few amount of datasets have been used. Therefore the result can be improved by using a large dataset. Larger the datasets the better the results are. During calculation of prices role of farmers could be extended and a system can be build which is more transparent and accessible to farmers. A methodologically calculated msp would reduce the role of intermediates in selling of crops as farmers will have better picture of value of their production.

The future work would be as follows:

1) Automatic integration of changes made by the government in the MSP policies to be updated automatically into the portal.
2) Provide transperancy by providing the portal in all the indian languages.
3) Build a communication bridge between the farmers and the government regarding the discussion of MSP policies and prices though sending and receiving of messages.

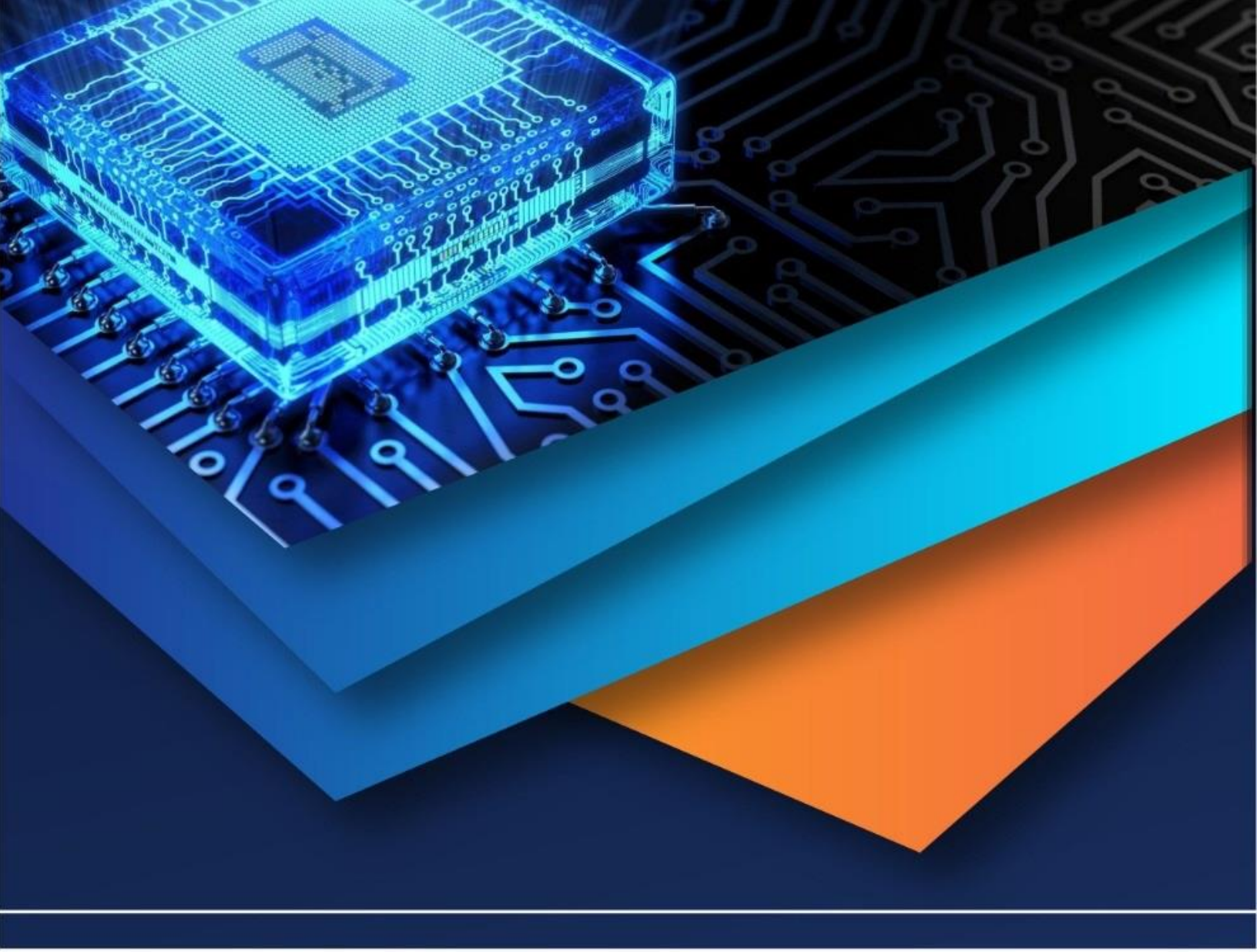
VI. ACKNOWLEDGMENT

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REFERENCES

[1] K.S. Aditya, S.P. Subash, K.V. Praveen, M.L. Nithyashree, N. Bhuvana and Akriti Sharma-“Awareness about Minimum Support Price and Its Impact on Diversification Decision of Farmers in India.”, Asia & the Pacific Policy Studies, Vol. 4, No. 3, pp. 514–526, September 2017.
[2] Monali Paul, Santosh K. Vishwakarma, Ashok Verma-“ Analysis of Soil Behaviour and Prediction of Crop Yield using Data Mining Approach”, Computational Intelligence and Communication Networks (CICN), 2015 International Conference.
[3] Yogesh Gandge, Sandhya -“ A Study on Various Data Mining Techniques for Crop Yield Prediction”. Electrical, Electronics, Communication, Computer, and Optimization Techniques (ICEECCOT), 2017 International Conference.
[4] Shoumitro Chatterjee, Devesh Kapur -“ Understanding Price Variation in Agricultural Commodities in India: MSP, Government Procurement, and Agriculture Markets”, National Council of Applied Economic Research July 12–13, 2016.
[5] Rohit Singh, Udai S Mehta(2016)-“ Minimum Support Price and Farmers’ Income.A Case Study for Wheat Production in Chittorgarh, Rajasthan (India)”, CUTS International, 2015.
[6] Praveen sharma, Kailash Saini(2017)-“A study of Wheat Production and Minium Support Price(MSP) in Rajasthan, P: No. 2231-0045 RNI No. UPBIL/2012/55438 VOL. -5, ISSUE-3, February-2017.
[7] Abishek.B, R.Priyatharshini, Akash Eswar M, P.Deepika(2017)-“Prediction of Effective Rainfall and Crop Water Needs using Data Mining Techniques”. 2017 IEEE International Conference on Technological Innovations in ICT For Agriculture and Rural Development
[8] P. S. Vijayabaskar, Sreemathi.R, Keertanaa.E-“CROP PREDICTION USING PREDICTIVE ANALYTICS”, 2017 International Conference on Computation of Power, Energy, Information and Communication (ICCPEIC).
[9] James W. Jones, John M. Antle,”Toward a new generation of agricultural system data, models, and knowledge products: State of agricultural systems science”, Volume 155, July 2017, Pages 269-288 ELSEVIER journal.
[10] R. Sujatha, P. Isakk- “A study on crop yield forecasting using classification techniques”, Computing Technologies and Intelligent Data Engineering (ICCTIDE), International Conference 2016.
[11] ZEF-Discussion Papers on Development Policy No. 197(2015)- Marta Kozicka, Matthias Kalkuhl, Shweta Saini and Jan Brockhaus. Zentrum für Entwicklungsforschung (ZEF) Center for Development Research.

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