

An empirical analysis of agriculture sector: NITI Aayog Vision 2020

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ABSTRACT

Agriculture is the dominant sector in the Indian economy as it employs more than 50% of the population and accounts for 18% of India's GDP (Business & economics journal). It comes under the priority sector of the government. Government has the target to double the farmer's income up to 2022. So, to achieve this target the 'think tank' of government of India called Niti Aayog have short term plans for 3 years called as vision 2020. This study has been made to check the progress in vision 2020. This study has been made to check the impact of government schemes on farmer's income. This research also tried to find out whether farmers are shifting towards modern agriculture or not. Primary data has been collected for conducting this research from farmers via Questionnaire in Ujjain and Bhopal district of Madhya Pradesh. Data analysis has been made through SPSS. The findings indicate that the farmers who got the benefit of the scheme have more income as compared to others. The government should try to make them more aware through camps and cooperative society about schemes and new technology should be made available to the farmers at cheaper rates so that the productivity would be increased. After doing all these things we would be able to achieve vision 2020.

KEYWORDS: Agriculture, Vision 2020, Niti Aayog, Government, Schemes, Income.

INTRODUCTION

Agriculture upholds to be the mainstay of the Indian economy. This sector is the largest source of livelihoods in India. India is an agriculture-based country, where more than 50% of the total population is relied on agriculture and which also contributes 18% of country's GDP (gross domestic product). In Madhya Pradesh, agriculture sector is described as the backbone of its Economy. As, it is the main source of employment for over 65% of the population and also contributes almost one fourth of the gross state domestic product (GSDP). Despite, being a dominant sector of the economy, there are many challenges emerging so far. 'VISION 2020' has been framed by the Indian council of agricultural research, an apex organization which conducts agricultural research. This study ascertains whether the agricultural aims of VISION 2020 have been accomplished. And it also verifies the availability of infrastructural facilities to farmers. This paper examines whether the farmers are getting benefits from schemes and checks utilization of technology by farmers to increase their yield is prevalent, as mentioned in script. This research paper is an attempt to study the ground realities of the agriculture sector in Ujjain and Bhopal district of Madhya Pradesh. (Ghatwai, n.d.)

Review of literature

Several studies based on 'India vision 2020' each paper has their own distinct view point, approach and analytical structure on the agricultural scenario and development. These are some research papers and reports which we have reviewed in our study.

S. no	Year	Topic of study	Authors/Department	Objectives	Results
1.	2004	Agricultural policy Vision 2020	Auth. Panjab Singh Planning commission of India	Emerging trends in agriculture sector. Demand of agriculture commodity in 2020 Yield Target till 2020 Priority states for increasing national average yield of the crop.	Increase of cereals and non- cereals agriculture commodities will have to be essentially achieved through increases in productivity as the possibilities of expansion of area and livestock population are minimal.
2.	1999	Andhra Pradesh Vision 2020 Policies and strategies for crop research and development in Andhra Pradesh	N.G.P Rao and K.VRao	% Change in crop cultivation from 1970-1993 Major cultivated crop from 1970-1993 Classification of area on the basis of different crop.	The main losses were in millets and minor oil seeds and pulses because % Increase in production is slower than the higher value crop like rice. Rice occupied 30% of area.

3.	2002	<ul style="list-style-type: none"> India: Vision 2020 	Dr. S.P Gupta	Stages of Agricultural Development Growth in agriculture sector Produce the food its population requires Agro-climatic variety, irrigation, scientific capabilities	India needs to sustain an agricultural growth rate of 4.0 to 4.5 per cent in order to reduce food insecurity and poverty, while increasing rural
				Low labour cost— to become a low cost, high profit producer for the world market	purchasing power. From diversifying production to other value-added agricultural products more emphasis can be placed.
	1999	Vision 2020	Indian Council of Agricultural Research, New Delhi	Agricultural Scenario in India and World. Agriculture Infrastructure growth	One-third of the Gross Domestic Product is contributed by agricultural sector. Work-force employed in this sector is nearly two third.

Objectives of the study

- To check whether the farmers productivity is increased or not.
- To examine whether the farmers are getting benefit from Minimum support price schemes.
- To check whether the farmers are using technology to increase their yield.
- To analyze the acceptance of organic farming.
- To analyze the effectiveness of the scheme launched by the government for mitigating risk.

Hypothesis

H₀: There is no significant relationship between adoption of Minimum support price scheme and their income level.

H₀: There is no significant relationship between utilization of new technology and their income level.

H₀: There is no significant relationship between adoption of crop insurance scheme and their income level.

Significance of the research

This research is important from the point of view of government. We all know that farmers are backbone of the country and approximately 61.5% of the population is dependent on agriculture and their average monthly income is low. It's an aim of the government to double farmer's income by 2022. To achieve this big goal the 'think tank' of government of India called NITI Aayog formulated small targets called vision 2020. This generates research interest to analyze and examine the progress of vision 2020. So, this study will help government to frame policies and strategies to achieve vision 2022 i.e., doubling the Farmer's income.

RESEARCH METHODOLOGY

1. Data and Source of data: This study is based on both primary and secondary data.
2. Sample size and technique selected for study: We collected the data from 171 respondents. Data was collected through random sampling.
3. Area of the study: The study has been carried out among the farmers of Ujjain and Bhopal district of Madhya Pradesh.
4. Period of study: Primary Data pertaining to our research is of 2020 and secondary data is from 2015-2020.
5. Tools used: SPSS was used to analyze the data. Before conducting the study reliability of the questionnaire is examined using Cronbach alfa test in SPSS which came out as 0.81 and we also performed chi-square analysis for drawing conclusions.

→ Reliability			
Scale: ALL VARIABLES			
Case Processing Summary			
		N	%
Cases	Valid	169	99.4
	Excluded ^a	1	.6
	Total	170	100.0
a. Listwise deletion based on all variables in the procedure.			
Reliability Statistics			
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items	
.819	.807	26	

Limitation of the study

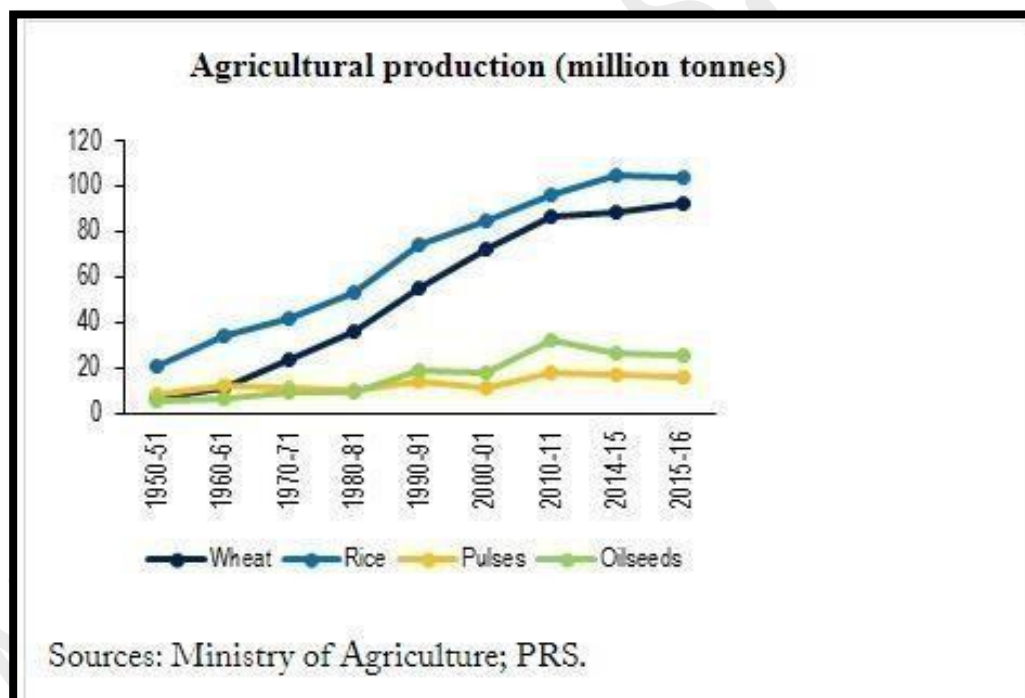
1. Doing this research with large sample size might have generated more accurate results.
2. The data pertaining to our research is from 2015 to 2020.
3. This study has been carried out only in Bhopal and Ujjain district of Madhya Pradesh.
So, limited geographical area is covered.

Data Analysis & Hypothesis Testing

Analysis 1: To check whether the farmers productivity is increased or not.

Farm or agricultural productivity is defined as the ratio of agricultural outputs to agricultural inputs and is calculated by comparing an index of agricultural inputs to an index of output. By increasing the agricultural productivity, food production also increases and it can also help to alleviate poverty as majority of the population of India are employed through farming. (1, n.d.)

The productivity of region's farm is very crucial as it enhances the region's prospectus for growth and competitiveness on the agricultural market.



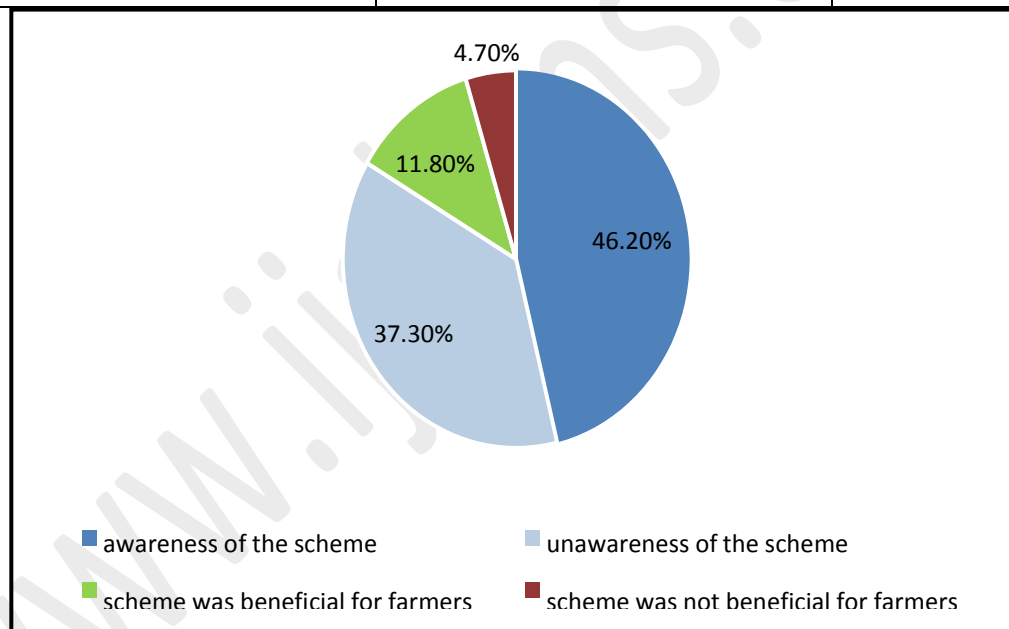
As seen in figure, agricultural production increases with the increase in agricultural productivity.

As per the Vision 2020 of NITI Aayog, prime minister has called for doubling the farmers by 2022. So, increasing productivity of farms is the most important factor for increasing income of farmers. Total factor productivity is the ratio of an output index to input index and it is an important source of output growth which leads to cost saving and thus, increase in income.

As per the policy paper 2017 of NITI Aayog

Analysis 2: To examine whether the farmer's are getting benefit from Minimum support priceschemes.

Awareness of the scheme	78	46.2%
Unawareness of the scheme	63	37.3%
Scheme was beneficial for farmers	20	11.8%
Scheme was not Beneficialfor Farmers	8	4.7%
Tota l	169	100%



Minimum Support price is an agricultural price stated by the government of India to give guaranteed price and assured markets to farmers. According to one of the reports of NITI Aayog 2016, government of India declared MSP of 22 crops. The study found that 46.2% of the farmers are aware of the scheme, 37.3% of the farmers are unaware of the scheme and only 11.8% of the farmers are benefited from the scheme in 169 respondents. There are large number of farmers who couldn't take much advantage from the scheme.

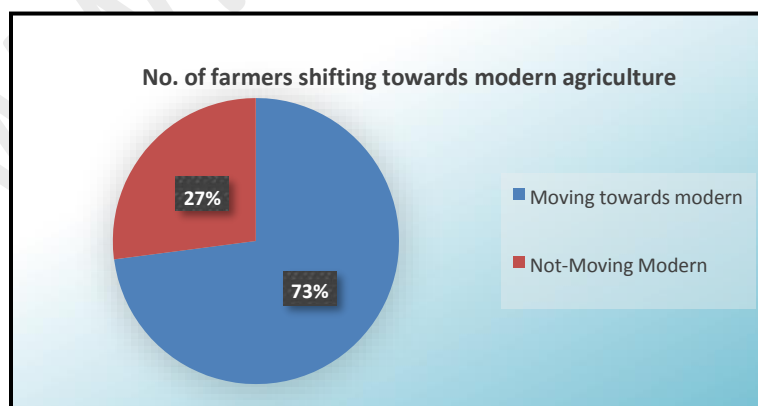
H0: There is no significant relationship between adoption of Minimum support price scheme and their income level.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	78.033 ^a	24	.000

As per the chi-square value at p less than .05 (78.003, 24) the hypothesis is rejected the chi-square result is insignificant and the alternate hypothesis has been accepted it means that there is significant relationship between these two variables. This clearly indicates that adoption of minimum support price scheme lead to increase in the income of farmers

Analysis 3: To check whether the farmers are using technology to increase their yield.

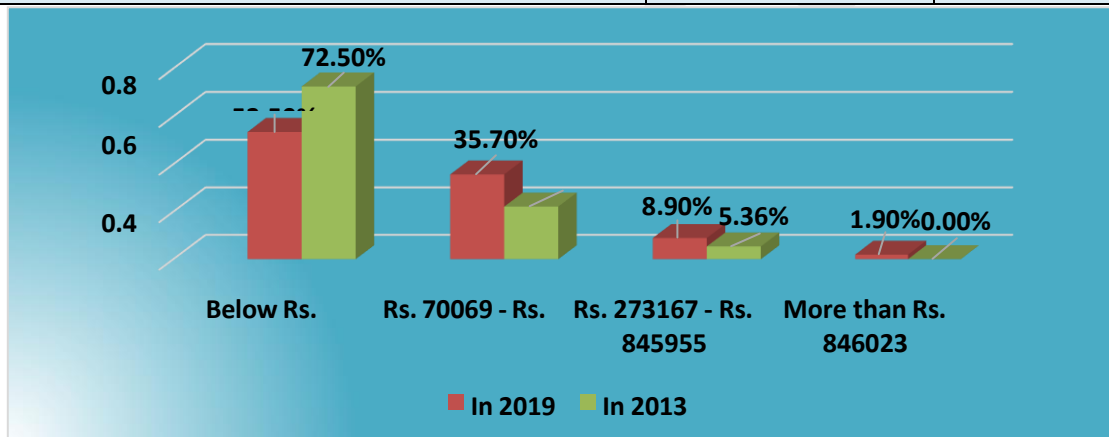
No. of farmers shifting towards Modern agriculture		
Moving towards modern Agriculture	116	73%
Not-Moving Modern Agriculture	43	27%
Total	159	100%



Modern agriculture shows much more advancement in the agriculture sector. As per NITI aayog report, 3 per cent annual growth in productivity is increased through efficient use of input by adopting new technologies. The figure shows that majority of farmers are shifting towards modern agriculture, farmers are not completely adopting modern techniques, equipment, and methods of

agriculture but they are moving largely towards modern agriculture by improving efficiency to their resources. Modern agriculture development helps the farmers to increase their income. Table..... Shows that in 2013, 22.14% of the farmers have an income of Rs. 70069 to Rs. 273098 but in 2019 the percentage is increased to 35.70%. In 2013 72.50% of the farmers had a income below Rs. 70069 but in 2019 it is 53.50%. Over the year Income of the farmers are increasing because of the modern agriculture practices there are new methods of tilling, irrigation and harvesting which will helps the farmers to cultivate, irrigate and harvest their land at a large extend with a limited resources and it will lead to increase income of the farmers.

Income of the Farmers	In 2019	In 2013
Below Rs. 70069	53.50%	72.50%
Rs. 70069 - Rs. 273098	35.70%	22.14%
Rs. 273167 - Rs. 845955	8.90%	5.36%
More than Rs. 846023	1.90%	0.00%
Total	100.00%	100.00%



H0: There is no significant relationship between utilization of new technology and their income level.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	59.066 ^a	8	.000

As per the chi-square value at p less than .05 (59.066, 8) hypothesis is rejected the chi-square result is insignificant and the alternate hypothesis has been Accepted it means there is significant relationship

between these two variables. (2, n.d.) This result indicates that farmers which are using technology have higher income as compared to who don't use.

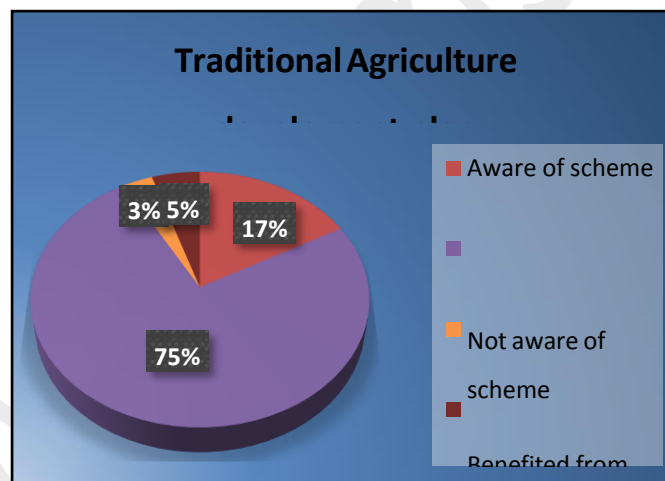
Analysis 4: To analyze the acceptance of organic farming.

The main objective of the organic farming is to produce agriculture product free from chemical, pesticides and to avoid the adverse effect of the use of chemical in agriculture. Objective is to promote such technologies and practices which are eco-friendly and safe such practices should be tested by research institutes then it will be promoted.

As per one of the report of NITI Aayog 50 lakh farmers are working on zero budget farming in different states of India by adopting Tradition farming techniques such practices result in reducing the cost of farming and strengthen market for organic product.

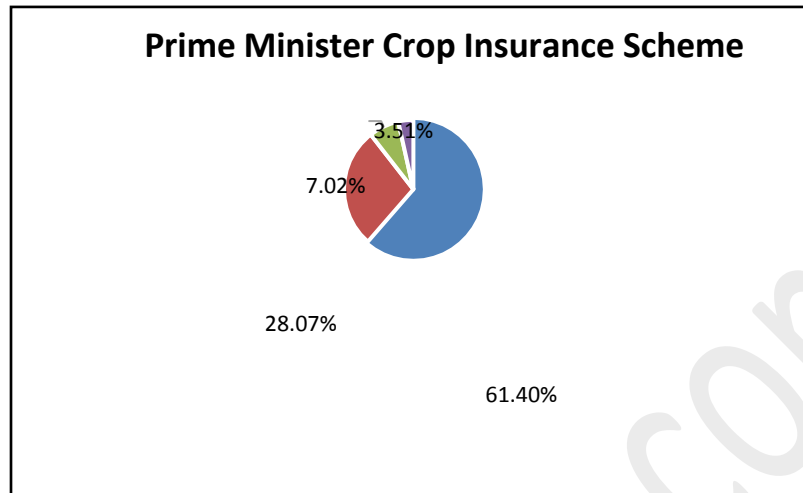
In 2016-17 government of India estimated budget to promote organic farming with a provision of 412crore under the scheme of Paramparagat Krishi Vikas Yojana.

The study found that only 17% of the farmers are aware of these schemes and only 3% of the farmers get benefited from the scheme in 170 farmers. Large numbers of farmers are not aware of Paramparagat Krishi Vikas Yojana which is around 75% because of lack in information and knowledge about the schemes. There are large numbers of farmers who are not availing the scheme but they follow and continue traditional method or old age farming method.



Analysis 5: To analyze the effectiveness of the scheme launched by the government for mitigating risk.

Awareness of the scheme	105	61.40%
Unawareness of the scheme	48	28.07%
Scheme was beneficial for farmers	12	7.02%
Scheme was not beneficial for farmers	6	3.51%
Total	171	100%

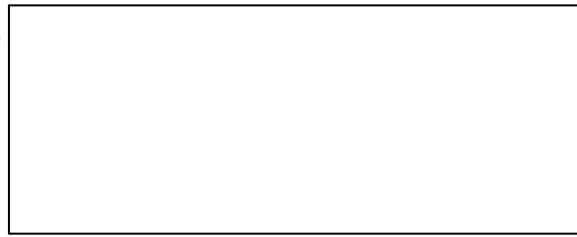


The Pradhan Mantri Fasal Bima Yojna (Prime Minister Crop Insurance Scheme) was launched in 2016 by Prime Minister Narendra Modi to mitigate risks of the farmers and to provide financial support to

farmers suffering from crop loss/ damage. (3, n.d.) The scheme ensures steady flow of credit to agriculture sector which will enhance growth and competitiveness of the sector.

The scheme was implemented in February 2016 with the initial budget of INR 5500 crores for 2016-17 and now it is increased to as per union budget 2020. These are the measures taken by the government to protect the farmers from risks such as crop loss. The study found that 61.40% of the farmers are aware of the scheme but only 7.02% of the farmers are benefited from the scheme in 171 respondents. As per the study, though government is investing in the scheme but either farmer are unaware of the schemes or they are not benefited through the scheme being aware of it.

H₀: There is no significant relationship between adoption of crop insurance scheme and their income level.



As per the chi-square value at p less than 0.05 (80.937, 24) the hypothesis is rejected the chi square result is insignificant and the alternative hypothesis has been accepted it means there is significant relationship between these two variables. Farmers who availed the benefit of crop insurance have more income as compared to others.

Findings

- Only 12% of the farmers got the benefit of Minimum support price scheme.
- Farmers who got the benefit of minimum support price scheme have more income as compared to others.
- 73% of the farmers are shifting towards modern agriculture by using technology in agriculture.
- Farmers who are using more technology have more income as compared to those who are using less.
- Only 3% farmers got the benefit from organic farming schemes. 62% were aware about crop insurance schemes but only 7% got the benefit of the scheme.
- Farmers who are taking benefit of crop insurance schemes have more income as compared to others.

Suggestions

- Awareness campaign should be organized to make farmers aware about the schemes.
- More initiatives should be taken by the government to shift towards organic farming.
- New technology should be made available to the farmers at cheaper rates so that the productivity would be increased.
- After 72 years of independence also majority of the farmers are facing the problem of irrigation and power supply. These problems should be resolved at the earliest.

CONCLUSION

Agriculture is the dominant sector of our Indian economy approximately 60% of the people is engaged in agriculture. It is the priority sector of the government. Government has a vision to double farmer's income up to 2022 so, to achieve this big target the 'think tank' of government of India called Niti Aayog has 3-year short term goals called vision 2020. This study shows that they are trying to achieve the target by bringing various schemes and policies related to farmers. But their efforts are lacking in some fields. So, there is a dire need for taking concrete steps to remove the problems faced by the farmers then only **vision 2020** would be achieved.

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