

वर्तमान आर्थिक मुद्दे एवं चुनौतियाँ

राष्ट्रीय शोध संगोष्ठी

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IMPACT OF COST OF CULTIVATION ON FARMER'S INCOME (Special Reference to Damoh District)

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Agriculture occupies an important place in India's economy. Its contribution to gross domestic product is 14% and the contribution to exports is about 11%. World's 57% of population is still dependent on agriculture for its income. Also agriculture is the main source for industry's raw materials. Overall, the country's economy is agricultural. At present, the needs of the increasing population are causing an abundant pressure on the land. While this natural resources are limited in existence and therefore in this situation it becomes necessary to increase the productivity of land by new techniques, improved seeds and usage of fertilizers and also expansion of irrigation facilities.

The estimation of income from agriculture depends upon the cost of crop production. This estimation gets affected by the minimum support price, control in price and stability, inspiration of farmers, management of production and quantity. The increase in cost and minimum monetary returns has led individually and overall agriculture to be the most less returns area. The possibility of change in both cost and returns depends upon the size of holding. The reason for increase in cost of cultivation is due to the usage of modern techniques in agriculture. The usage of modern seeds, modern fertilizers, modern irrigation facilities and modern agriculture inputs are the main reason behind expensive agriculture investment.

The question here is whether modern agriculture techniques give the farmers effective results in agriculture investment or not? In comparison to the marginal and small farmers the big and medium class farmers earn more income than the cost of agriculture because the size of the holdings of the small farmers is small in size. As a result these farmers become prey to indebtedness. Due to increased agriculture costs, small and marginal farmers the decision to make agriculture related matters also get affected. The truth is that these farmers are engaged in agriculture because for their subsistence.

The use of modern techniques in agriculture has led to increased cost in agriculture of farmers which ultimately has led to indebtedness among small farmers, suicides, dependence on big farmers etc. which have posed a serious problem. Along with class discrimination and caste discrimination there is farmer's class discrimination among the farmers. The small and marginal farmers are prone to exploitation by big farmers. In addition to this if a small farmer belongs to a low caste then the level of exploitation becomes heinous. The rise in agricultural costs leads to more side effects on farmers and therefore our study highlights these above specified problems which gives us an idea that the farmers which are financially and socially weak and are exploited by big landholders are to be given support by several developmental program for their benefit.

Research method

To the study in district data is collected by questionnaire and schedule. In this way comprehensive survey was done. The study has been done with 70 farmers. Apart from this by meeting the farmers, discussion with farmers, visiting the various agriculture centers and discussing with agricultural scientists and discussing with various NGO related to problems of agriculture, the data was compiled by all this too.

Enumeration of cost of cultivation:

Cost A1 = compensation expenditure [Human + Machine] + Seeds + Fertilizers + Fertilizer Cow dung/Compost + Irrigation + Plant conservation + Marketing.

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Cost A2 = Cost A1 + The rent paid by the farmer for the land on lease.

Cost B1 = Cost A1 + The interest decided by the land owner on its asset.

Cost B2 = Cost B1 + the rent of the landowner's land + the rent paid for the land on lease.

Cost C1 = Cost B1 + The value of superimposed by family labour.

Cost C2 = Cost B2 + The value superimposed by family labour.

Cost C3 = Cost C1 + Risk and Management expenditure (10% of C2)

Gross Value of output :

GVO = Yield per hectare + cost of yield per quintal.

Net profit = GVO - Total cultivation cost of per hectare [B2]

Net income holdings = Gross income - cost C1.

cost of cultivation in Madhya Pradesh

The main crop in Madhya Pradesh is wheat and gram. In upcoming part we will study about main crops. The crops are affected due to the uncertainty of rainfall and because of this reason farmers are forced to invest more in irrigation facilities. This becomes a reason of farmers increased irrigational cost. In M.P. most of the farmers approximately up to 68% come under the status of small and marginal farmers and most of the farmers does their agricultural works on un accumulated lands which leads to less production and more production costs.

Discussion of Village Survey

According to this village survey, it can be seen that there is little differences between the net incomes in block of different districts. We can see these differences in net income due to different class of family, different village, different crops and different classes. Agriculture productions are directly, proportional to the income. Large farmers have more income around Rs. 4869 per hectare while marginal farmers net income is around Rs. 1052 per hectare, marginal farmer have less gross income than large farmers.

Large farmers have Rs. 38381 as the cost of production per hectare while marginal farmers cost of cultivation is Rs. 42598 per hectare. Marginal farmers have more cost of cultivation than the large farmers. The reason for low cost of large farmers is the availability of agriculture inputs. While the marginal farmers have to take rent this is very expensive. The problems faced by the marginal farmers is not a problem of large farmers, they are still in profit. Since large farmer have more area than marginal farmer so that cost of cultivation also gets low. Some inputs such as electricity charge is equal for both type of farmer so it gets expressive for marginal farmers. Large farmers have income about Rs. 4869 per hectare and on the other hand marginal farmers have income of Rs. 1052 per hectare. As compared to large farmers the income of all classes are very low. Large farmers have income 4 times more than the marginal formers which show the inequality in incomes.

We can also see that large farmer's takes high prices for crops and even get ready to sell the crop when they are getting high prices. Whereas the small and marginal farmers sell their crops in nominal price. The reason for this is they have scarcity of resources such as transportation etc. Even they have problem of store the grains so for that also they had to sell their crops.

These figures also show that due to non availability of resources marginal farmer are not successful in doing profitable farming. Crops that were grown by both classes of farmers, marginal farmer get very less net income as compared to large farmers. By this a

very important thing can be noted that the selection of crop to be produced not only depend upon nature of land or water but it also depends upon economic conditions. Labor cost is more important than any other cost.

Large farmers have more area of cultivations compared to marginal farmers. The main reason for this where 1st generation had 80 acre of land. It gets around 10 acres in the 2-3rd generation. Even in marginal farmers this land has been just for name. In the future there are chances that small and marginal farmers will be landless due to family division.

The availability, of labors effect the harvesting. Harvesting is depending on labors. Machines are only available to large farmer whereas small and marginal farmers don't have machines and they depend on large farmers. Most of the farmers don't use irrigation facilities. Bore well is used mostly as a means of irrigation. Almost all farmers take benefit from the farmer credit card. Only large farmers take loan from the farmer credit card. Small and marginal farmers take loan from large farmers or land lords and they pay 60 percent per year as a interest.

In district by using the modern technique there is increase in the agricultural crop. In the study on 70 farmers we have tried to know that by use of modern technique is there a increase in production cost or not. Around 46 (forty six) farmers accepted that by using the modern technique there is increase in cost of production where 10 (ten) farmers in which the cost of production was found high without the use of modern technique. (three) farmers didn't accept that the cost of production is high due to use of modern technique while it was found that 11 (eleven) farmers that didn't adapt modern technique neither they agreed to high cost of production.

This relation was measured in 5 percent level of significance. For independent number 2 table value is $2=3.841$ value and calculated value has 19.25. It means that $19.25 > 3.841$ or $2t < 2c$ that is our null hypothesis is not accepted. There is a relation between modern technique and agriculture cost. By the above investigation or testing we can say that by modern techniques there is a increase in agriculture cost. So, this hypothesis is accepted.

Whether the marginal farmers are satisfied with agriculture or not, we therefore conducted tests of several categories and observed that 2 category has a schedule value of 3.148 and 2 has a calculated value 18.06. Therefore $2t < 2c$ or $31.06 > 3.841$ are not satisfied with agriculture.

The class/caste which lags socially are more prove to the situation of indebtedness and the reason behind this are the farmers are poor and uneducated. To prove this point we took an independent variable 2 and tested it $2 = 3.841$ (schedule value) and calculated value was 22.33 which was less. Therefore $2t < 2c$ or $22.33 < 3.841$ and therefore it was proved that the farmers of scheduled caste are under more indebtedness.

The study of the relation of total cost of cultivation per hectare and the value of production was done and efforts were made to find that whether cost and production value has a relationship? Agricultural cost and the value of agriculture product had positive medium relationship. The calculated relationship was 0.66. The cost of wheat and the value of production had a relationship of 0.66 and the relationship between the cost of soyabean and the value of soyabean was 0.68. The relationship of wheat and

minimum unit of 0.85 and maximum limit 0.46. Whereas soyabean had a minimum limit of 0.85 and maximum limit 0.47. Therefore, we can say that agriculture cost and agriculture product has a significant relationship.

Table 7
Variance analysis (wheat)

Variance source	Sum of squares	Degree of freedom	variance	Variance ratio
Between sample	546.14 (SSB)	3	182.04 (MSB)	$F = \frac{MSB}{MSW}$ $F=41.65$
Within sample	105.06 (SSW)	24	4.37 (MSW)	
Total	651.02 (SST)	27		

Source : on the basis of own survey.

Various verities of production can be seen between farmer category. Therefore to know this we collected several different agricultural categories of medium variance ratio. It is clear from the above table that the observed value of variant ratio is $F = 41.65$ and the variance ratio of the table costs [$F_{.5}$ for $V_1 = 3, V_2 = 24$] = 3.01. The calculated value of f is 41.65 which is greater than the table value and therefore the difference is significant.

Therefore we can say that by our study we get the given results. There was a positive relationship between net income and the size of holdings. The capitalist, big farmers and peasant get maximum per hectare net income. The productivity of accumulated holdings is less than per hectare. The cost of agriculture of marginal farmers is greater and the cost of big farmers is less. The agriculture to big farmer is more profitable whereas the agriculture to marginal farmers is less profitable. In government policies, the government should keep in mind the benefits of marginal farmers and therefore they should be given first priority. To solve the problems of small and marginal farmers there is a need of isolated policies which will only focus on them. The farmers which are facing problems in their agricultural works, these problems are to be given a special consideration.

To increase the youth participation and to make agriculture profitable there is an important need of making commercialization of agriculture. To encourage the use of vermin compost fertilizer in most areas, government should make efforts. Privatization of mandi should be encouraged which in turn solves the problem of investment. The location of M.P. in the center of country can be developed into a hub of available services. Therefore, several agricultural products can be made available in special markets which will be connected to international markets. The small and marginal farmers should be protected from the brokers by general registration by freeing them from value added tax which will automatically lead to the stoppage of the entree of brokers in the market and the farmer himself will go to the market for selling his product. To increase organization availability credit in agriculture the government should stop policies in matters of agriculture and the reinforcement of financial organization movement is necessary.

Mostly, farmers have less than 2 per hectare agriculture land and their livelihood is dependent upon agricultures. Therefore, it becomes necessary to start multiple objectives equipments which have less cost and less weight for small farmers. We should not be aware evidence of the downfall of agriculture. Foodstuff and human security and along with it national sovereignty are on stake. There is no meaning and importance of overall economic development

rates it 60 percent of the population is not economically healthy and we can't protect our standard of living.

Indian agriculture has problem that maximum food grain crops are produced in the country. If we produce more profitable crops that will not only increase the production but also increase the GDP of the country. Whereas to make agriculture beneficial but still yet we have not made any model that the agriculture has employment opportunities. As a conclusion it can be said that in order to strengthen the rural economy, agriculture is officially presented as a business model. Farmers need to be convinced that agriculture is also a business and has the high potential of profit. For this farmer need to provide and encourage facilities for farming at the grassroots, the same can be made beneficial by the government with the help of regular training, resource availability and research.

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