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Doubling Farmers Income by 2022 in Madhya Pradesh : Roadmap, Trend, Issues and Challenges

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Introduction

The faster agriculture growth is the most effective route to inclusive growth, especially when the share of agriculture in Gross Value Added (GVA) is just above 17 per cent, (2014-15) which is shared by more than half of our population. Simple mathematics shows that the per capita income of those involved in agriculture is almost one third of an average Indian. Further, within the agriculture sector, the inequitable distribution of land holdings (85 per cent of SF/MF cultivating in 45 per cent of area) makes the small and marginal farms the poverty hotspot of the country. Hence, every effort to inclusive growth has to address the income enhancement in agriculture and those weaknesses, within the sector. The Government of India (GoI) announcement of doubling farmers' income by 2022, having a direct impact on almost half of the population, comes as an endorsement of the above strategy, aiming for a sense of income security to farmers in a time bound manner.

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 50% 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 hybrid seeds, chemical fertilizers, advanced irrigation facilities and modern agriculture technology are the main reason behind expensive agriculture investment.

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 head 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. Madhya Pradesh Government prepared a roadmap for doubling farmers' income. The roadmap has delineated sub-sector-wise interventions (and targets) and the financial resources required. The document also presented the projected contribution of different pathways to the income increase.

Table 1 : Roadmap for Doubling Farmers Income in Madhya Pradesh

Pathways of Income Increase- Particulars Share in Projected increase in	**Income (%)**
1 Reduction in input cost for agriculture operations	15%
2 Increase in productivity	30%
3 Area Increase	14%
4 Agriculture Diversification	20%
5 Reduction in Post-harvest Losses	6%
6 Better remunerative prices for farmers (Agriculture marketing /dissemination of prices, etc)	15%
Total	100%

Source: Roadmap for Doubling Madhya Pradesh Farmers' Incomes in 05 years. Government of Madhya Pradesh, 2016.

The estimated contribution given in above table rises the point that productivity increase and diversification are two important routes accounting for half of the projected income augmentation. The roadmap provides detail of targets and interventions for eight sub-sectors namely, crop sector, agro-forestry, horticulture, food processing, animal husbandry, fisheries, sericulture and bee keeping, bamboo and other minor forest produce. The building blocks of the roadmap rest on simple assumptions. For example, bridging the gap in the recommended seed rate for soybean and the actual seed rates observed in field conditions will help reduction in cost of inputs. Thus, efforts of such kind can go a long way in identifying the sources of cost reduction that can be implemented straightaway. Agriculture being a state subject, it is imperative that each state government takes up similar exercise.

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. The ability of taking decisions in agriculture related matters of small and marginal farmers are also affected due to increasing the agricultural costs. The truth is that these farmers are engaged in agriculture because for their subsistence.

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. Increasing in agricultural costs leads to more side effects on farmers. Therefore our

study highlights these above specified problems, which gives us an idea that the farmers which are financially and socially weak and exploited by big landholders are to be given support by several developmental program for their benefit. The new India vision document aim will be beneficial to farmers.

Research methodology

Questionnaires and schedules have been used to collect data. Information has been received from 70 farmers for the study, apart from this, meeting with farmers and discussing, visiting various agricultural centre's and discussing with agricultural scientists and various non-governmental organizations related to problems of agriculture, etc. are included in this study. In this way extensive survey has been done.

Estimation of cost of cultivation

Cost A1 = compensation expenditure [Human + Machine] + Seeds + Fertilizers-Cow dung/Compost + Irrigation + Plant conservation + Marketing.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 soybean. 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 do their agricultural works on un-accumulated lands which leads to less production and more production costs. Production of wheat in the year 2004-05 was Rs. 16900 per hectare while per hectare total cost of cultivation was Rs. 13244. Profit of farmers in the year 2004-05 was Rs. 3656 per hectare in the year 2006-07 there was an increase in gross production price and was Rs. 26822 per hectare. While per hectare total cost of cultivation also increased to Rs. 17651.

Profit of the farmers in the year 2006-07 was Rs. 9171 per hectare. In the year 2008-09 the gross production price increase more and was Rs. 31777 per hectare while per hectare total cost of cultivation was Rs. 20299. Profit of the farmers in the year 2008-09 was Rs. 11478. In the year 2010-11 the gross production price was Rs. 51265 per hectare while per hectare total cost of cultivation was Rs. 24617. Profit of the farmers in the year 2010-11 was Rs. 17111. In the year 2017-18 the gross production price was Rs. 47775 per hectare while per hectare total cost of cultivation was Rs. 40291. Profit of the farmers in the year 2017-18 was Rs. 7484. Farmers total cost of cultivation per hectare was increased three times from 2004-05 to 2017-18, but with the same speed there is no increase in the profit of farmers. After 2009-10 it was seen that there was increase, in the total cost of cultivation per hectare and till 2017-18 it is increased rapidly. Due to this profit of farmers is affected. In this way

the profit got by farmers is not satisfactory whereas the farmers had to face problem in total cost of cultivation.

Table 2 : Net form Income and farm Business Income from Madhya Pradesh main Crops

Year	Net farm Income	farm Business Income
Wheat	3435	12198
Gram	796	12997
Grain	19321	24190
Soybean	515	7154

Source : Assessed by formula.

By observing the above table, we come to know that, in M.P. (year 2017-18), there were huge differences earned from the main crops. The net holding income earned from wheat was Rs. 3435 per hectare. The difference between gross product and net cultivation cost C2 leads to result in net income holdings. FB1 was Rs.12198 per hectare and FBI is calculated from the difference between the value of gross product and the cost of A2. The net income holdings of wheat were three times less than the FBI. On the contrary, the net income holdings of gram are less i.e., Rs.796 per hectare and the FBI of gram is approximately Rs.12997 per hectare, which is more than the FBI of wheat.

Among kharif crops, grain had net income holdings to about Rs. 19321 per hectare whereas soybean's net income holding was Rs. 515 per hectare. On the other hand, the FBI of grain was Rs. 24190 whereas soybean had a FBI of Rs. 7154 per hectare. Comparatively, grain had more income from soybean. This was approximately 3 times more than it.

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.

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 storing 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

depending upon nature of land or water but it also depends upon economic conditions. Labor cost is more important than any other cost.

The availability of labours effect the harvesting. Harvesting is depending on labours. 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 formers do not get 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 an interest. To find relation between the usage of modern techniques in agriculture and the increase in the indebtedness of the farmers we conducted an interview of the farmers and we come to know that about 41 farmers think that by using modern techniques in agriculture has led to increase in indebtedness of the farmers.

The class/caste which lags socially are more prone 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 x^2 and tested it $x^2 = 3.841$ (schedule value) and calculated value was 22.33 which was less. Therefore $x^2t < x^2c$ 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 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 soya bean and the value of soya bean was 0.68. The relationship of wheat had a minimum unit of 0.86 and maximum limit 0.46. Whereas soya bean 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 co-relationship.

Table 3 : Variance analysis (wheat)

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

Source: on the basis of own survey.

Various varieties of production can be seen between farmer categories. Therefore to know this we collected several different agricultural categories of medium variance ratio. It is clean 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 V1 = 3.V2 = 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.

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 centre 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 hectare agriculture land and their livelihood is dependent upon agricultures. Therefore, it becomes necessary to start multiple objectives equipment's 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 inn ease 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 irrigation, training, resource availability and research.

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