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AGRICULTURAL MECHANIZATION AND ITS IMPACT ON ECONOMIC DEVELOPMENT OF FARMERS IN NANDED DISTRICT

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Abstract:

In the era of globalization, the technological developments have taken place in Indian agriculture in past few decades. Agricultural mechanization had brought a revolutionary improvement in agricultural production. Specially, the increase rate in production of food grains and particularly the production of wheat and rice was considerably higher than any increase in other agricultural production. India was facing acute shortage of food grains up to 1980s, but now it has become self-sufficient and also an exporter of food grains to the world. This has been happened only due to revolution in high yielding varieties of crop, use of pesticides and chemical fertilizers, development of irrigation and crop & plant protection measures.

KEYWORDS-

Agricultural Mechanization, economic development etc.

INTRODUCTION-

It is a need of time for mechanization of all agricultural operations. Generally, there are some good chances and scope to reduce the cost of agricultural production, if farming operations are done with machines, because it saves efforts labour, both human and animal. In lack of mechanization, the increasing wage rate of human labour with shortage and cost to upkeep the animals in draught could have increase the cost of agricultural operations and production considerably higher. Moreover, it can reduce the risk arising due to weather risk and shortage of labour and thus wastage can be minimized. Timely marketing i.e. selling grains in market is also become possible by faster mechanical transportation, cleaning and handling the agricultural produce.

The use of agricultural mechanization have increased the opportunities for employment in both, on farms and in non-farm sectors through increase in area of land under ploughs, multiple cropping pattern, development of agro-based industries. On the other hand, disappointment of human labour may take place and the demand for semi-skilled agricultural labour at the place of unskilled labour could get increased.

Farmers of Nanded district are also using the machineries for agricultural purposes. They are also getting the benefits of mechanizations that are discussed above. This paper aims to know the pattern of agricultural mechanization in Nanded district and its impact on the economic development of the farmers.

Agricultural Mechanization – Meaning:

Agricultural mechanization means the using improved and modern agricultural tools, implements and machinery for different agricultural operations to increase productivity of land, labour and also of the other resources like seeds, fertilizers etc. through timeliness of operations, optimum use of inputs, and quality improvement in duality of produces, safety, easiness and comfort of the farmers. Agricultural mechanization also reduces the in loss of agricultural production.

Use of the machines and technology in agricultural sector, is known as farm mechanization or agricultural mechanization. Mechanized Agriculture or Agricultural Mechanization is the process of using

agricultural machinery to mechanize the work of agriculture, greatly for increasing farm worker productivity. In recent times, machines have replaced many jobs in farming that were formerly performed by men or the animals such as oxen, horses and mules.

Importance Of Agricultural Mechanization:

Agricultural mechanization helps to increase the crop intensity and yielding. Thus, it ensures better crop returns to the mechanized farmer. As machines complete the work in less time, it reduces the weather risks and also the risk of non-availability of labour, while labour shortage. Importance of agricultural mechanization could be discussed with following some points also.

Increase Production & Income:

Use agricultural machinery in farming is useful for increasing the production and productivity. The machine completes all type of works in considerably less time as compared to human efforts. So, the works like sowing, cutting of crops, threshing etc get completed within very less time. So timeliness helps to improve the production. Any machine can complete the work of few labourers at one time. So, it could be sent to other farms for works and the owner of machinery can earn extra money.

Comfort & Safety

The agricultural machineries carry out their work automatically, with one operator only. The workers or operator can comfortably works with machines, because he don't have to spent his more time in farming like manual working. The trained worker can work with farming machines more safely than a worker working with oxen or horses.

Return And Profitability To Farmer

As machines helps to sow, to cut and threshing of crop production in proper and in less time, the wastage of the crop gets reduced. Early sowing through machine gives good production, whereas if we use machine for cutting and threshing the grains to not get dehydrated. So, return and profitability increases which is beneficial for the farmers.

Saving in labour requirement & no dependence on animals

Now-a-days, every industry is facing the problem of labour shortage, so how could agricultural be save itself. When machines are utilized in farming, the farmer has not need to rely on the labourers for completion of the works. The use of machinery in agriculture also reduces the dependence upon animal power which is costly and slow. There is always a fear of animal death when it is over burdened and it could be a huge financial loss.

Increase in the cultivable land area

Machines like Dodger, Pock lane, Bulldozers and tractors help to convert the uncultivable land to agriculture usable land through advanced tilling technologies. The barren land area can be cultivated easily with the help of such machine, so seeds can be sowed and it results in increased crop production.

RESEARCH PROBLEM:

The research problems under study are given below.

1. Why farmers in Nanded district are using the machines in agricultural operations?
2. Is the agricultural mechanization is beneficial for them or not and how?
3. Can it help to economic development of farmers in Nanded district?

Objectives of the study:

The present study was been conducted for:

1. To know the mechanization pattern in Nanded district.
2. To benefits arising out from agricultural mechanization in Nanded district.
3. To reveal that, whether it is helping to improve economic conditions of farmers.

HYPOTHESES OF THE STUDY:

1. Farmers are getting benefits from agricultural mechanization.
2. It is helping to economic development of farmers in Nanded district.

RESEARCH METHODOLOGY & SAMPLING:

Data:

The primary and secondary data was been used for the purpose of the study. The interview, observation & farm survey methods are used to collect primary data. The secondary data was collected from published research papers, books, internet resources etc.

Sampling Method:

As the population of the farmers using machines is very huge and no record is available of such farmers. So, the samples were selected by using the Purposive sampling method. By using purposive sampling, researcher has selected 10 respondents from each village of Nanded district given below. The data related to use of only five machines is collected from primary sources.

The machines selected for the study:

1. Tractors
2. Threshing Machines
3. Sprinklers and Drip Irrigation
4. Spray Pumps
5. Seed Driller (for sowing)

SIGNIFICANCE OF THE STUDY:

The study reveals the benefits of agricultural mechanization. It can motivate to the people to use machines in farming. The study also gives a reference for further research in the same field.

LIMITATIONS OF THE STUDY:

Due to time binding, the study is conducted only four villages i.e. Limbgaon, Ardhaur, Loha and Mudkhed of Nanded district. Information is collected about the use of only five machines that are mostly used in Nanded district.

Agricultural Mechanization and Its impact on economic development of farmers:

The farmers in Nanded district are using above given five machines for their agricultural operations. So, the discussion and analysis of data is given below which is based on the primary and secondary data collected for the purpose of study.

Table 1: Pattern of Using Machines in Agriculture Operation in Nanded district

Machines? Villages?	Tractors	Threshing Machines	Sprinklers and Drip Irrigation	Spray Pumps	Seed Driller (for sowing)	All of these Machines	Total
Limbgaon	03	01	01	02	00	03	10
Ardhapur	02	02	00	02	00	04	10
Loha	04	03	00	00	01	02	10
Mudkhed	03	01	01	01	00	04	10
Total	12 (30%)	07 (17.75%)	02 (5%)	05 (12.5%)	01 (2.5%)	13 (32.5%)	40 (100%)

Source: Field Survey

The above table shows that, the most farmers i.e. 32.5% are using the machine given above. 12 farmers i.e. 30% are using tractors for various purposes like ploughing, seed sowing and cultivation etc. It reveals that the most farmers are using the machineries for their farming operations. Some, farmers own the threshing machines and some are using these machines on rent. Whereas, very few farmers were using the sprinklers or drip irrigation.

Opinions of respondents about use of Tractors:

Tractor can be used for various agricultural operations such as ploughing, cultivating, tilling, harrowing and leveling the land etc. Tractor can carry out these all works faster than human labour. So, it saves the time. As there is an acute problem of labour shortage in agriculture, tractor is reducing the dependence on the labourers and animals. It increases the cost of farming at first time while purchasing, but it can reduce the cost in long time by generating income. It is also useful for transportation of the agricultural produce to the markets.

Opinions of respondents about use of Threshing Machine:

Thresher is a machine used to mechanically separate kernels of grain from chaff and stalks. It is one of the most important machines in advanced agricultural operations. Threshing machine can cut & clean the wheat crop and soya bean etc. It can perform 10 times work of a labourer and a common harvester. It helps to cut the crop over hectares of land within few hours, which may take several days for harvesting by labourers. It makes the crop ready to send in markets instantly, so the problem of storage gets solved. As the shortage of labourer, a farmer is unable to cut crop in proper time, which results in dehydration of crop and less production. But due to thresher, these limitations of human labourer could be overcome.

Opinions of respondents about use of Sprinklers and Drip Irrigation

This revolution in irrigation has saved crores of liters of water. Sprinklers can irrigate the land properly with washing the plants, which helps to avoid plant diseases. Drip irrigation gives proper amount of water to each plant, by the wastage of water could be avoided. So, the production gets increased. These two methods of irrigation, causes the expenditure at first, but next days they become more useful because there is no need to appoint the labourers for irrigating the land.

Opinions of respondents about use of Spray Pumps

Spray pumps are used by many farmers to spray the pesticides on the plants and crops. Usually, these are used on Cotton, Tur, Soya bean etc. They help to maintain rigorous health of plants. As the crop becomes healthy and the diseases are avoided, the huge production could be got from the agriculture. These machines are not more costly but they give huge economical benefits to all the farmers.

Opinions of respondents about use of Seed Driller (for sowing)

Seed Drillers are used for sowing the seeds in the land. But very few farmers are using these machines. Only 01 farmer from the respondents is using the Seed Drillers. Actually many farmers are using the tractors, this machine also is used with the tractor. So, they have given information of this machine with tractor. Seed Driller is very useful when the area of land is too large; there is less time for sowing. It could sow seed about 10 acres in one day for which 3 to 5 labourers may consume 5 to 7 days. In this way, Seed Driller Machine saves the time and also avoids the problems of labour shortage.

Opinions of respondents about use of All machines.

Basically, all the machines are used by farmers due to the labour shortage. If a farmer have huge sow able area, and labourers are not available then he has to use the tractor and seed driller. These machines also work faster, so they save time and complete work in proper time. If farmer use machines like tractors, spray pumps, threshers, the cost of production decreases and the production increases. The large landholder farmers can bear the cost of the mechanization; on the other hand mechanization is not more useful for small farmers because their landholding and economic efficiency is less.

The farmers using all these machineries are from rich families. They are generally sowing the cash crops. By the use of machines their production is increasing and income is also increasing. They also give

these machines on rent to other farmers, so this is another source of income for them.

Finally, one thing was repeated by all respondents that, if mechanization is adopted in the agricultural, definitely the productivity of farming increases. It is also solving the problems like labour shortage and the high payment of wages.

TESTING OF HYPOTHESES:

- 1.As all farmers have told that mechanization in agriculture is giving some benefits to them, the researcher also could say that mechanization of agricultural is really giving benefits to farmers. So, here first hypothesis is proven to be correct.
- 2.Agricultural mechanization is helping to increase the crop production and income of farmers. It means that, economic condition of farmer can change with mechanization. When mechanization can help to economic development of farmers, obviously it results in the economic development of the Nanded district.

CONCLUSION

After analysis of the primary data and knowing the opinions of the researcher has come to some conclusions that are given below:

- 1.Farmers of Nanded district are using the machine to complete the agricultural works in proper time, by that the risk of weather could be reduced.
- 2.Shortage of labour is another cause for the mechanization of the agriculture in Nanded district.
- 3.Mechanization of agriculture is proving beneficial to the farmers, because it helps to increase the production and income also.
- 4.As due to mechanization, income and crop production is increasing, the economic conditions of farmers could be improved.
- 5.Many farmers are using small machines in agriculture, but large farmers are using all type of machines in the agriculture.
- 6.The benefits like completion of work in proper time, no waiting for labourers, improvement in production etc are the benefits for farmers using machines.

SUGGESTIONS:

- 1.All farmers should try to use the machines in group, by that they could afford the prices and mechanization will be beneficial for them also.
- 2.The Government should lend money to the self help groups of farmers, established for purchasing machines and land cultivations.
- 3.If there is a problem of labour shortage, the farmers should not wait for the labourers, and they should start their work with machines.
- 4.The Government and Govt. Agency should try to develop these machines in small size and at fewer prices, by that small farmer can also take the benefits of mechanization.
- 5.The large farmers should give their machines on rent to other farmers. This will be mutually beneficial. First one will get income and second farmer will get the benefits of mechanization.

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