



INTERVENTION OF MECHANIZATION IN AGRICULTURE WITH SPECIAL REFERENCES TO KAMRUP DISTRICT OF ASSAM

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Abstract

In the age of globalization agriculture has taken a major role to mitigate the problem of global hunger. In this context farm mechanization is one of the major inputs which has boost the agricultural output. The farm mechanization in agriculture has the potential to revolutionize the way we produce food and manage resources. This article explores the role of farm mechanization in agriculture, with a specific focus on the Kamrup district of Assam. By examining the objective, hypothesis, literature review, primary data collection, findings, discussion, and conclusion, we will gain insights into the impact of mechanization on agricultural practices in this region.

Keywords

Globalization, Global Hunger, Farm Mechanization, Agricultural Practice

Introduction

The agricultural sector plays a crucial role in the economy of Assam, with a significant portion of the population engaged in farming. However, traditional farming practices often face challenges such as low productivity, lack of access to markets, and vulnerability to climate change. Farm mechanization have the potential to address these challenges and improve agricultural practices. Mechanization in agriculture would reduce the production cost and labour burdens and at the same time increase their farm productivity.

Objective

The objective of this study is to assess the impact of farm mechanization on agricultural practices in the Kamrup district of Assam. By analyzing the use of mechanization such as tractors, power tillers, pump set and knapsack sprayer we aim to understand their effects on productivity, cost efficiency, and overall sustainability.

Hypothesis

We hypothesize that the adoption of farm mechanization in agriculture will lead to increased productivity, cost efficiency, and enhanced sustainability in the Kamrup district of Assam.

Methodology

To arrive the above objectives, we have used stratified random sampling method. First district is selected and then two community development blocks – one from south bank of Brahmaputra River named Boko CD Block and one from north bank of Brahmaputra River – named Bihdia Jajikona CD Block is selected. Then from each CD Block five villages are selected. Accordingly, ten villages are found. After that from each village randomly 25 farmers are selected for study the problems. As a result of which we have found 250 farmers as sample size.

Literature Review

Numerous studies have highlighted the benefits of farm mechanization in agriculture. For example, use of tractors and power tillers have shown the increasing the efficiency of farming techniques and reduce input costs. Similarly, pump set and knapsack sprayer can help the farmers in increasing the production by proving the water to their farm field and control pest attack and provide nutrients, thereby help in crop growth and production.

Primary Data Collection

To assess the impact of farm mechanization in the Kamrup district, we conducted a primary data collection exercise. This involved surveying farmers, agricultural extension officers, and machinery providers in the region. The data collection process included interviews, questionnaires, and field observations.

Table 1 show the number of farmers participated in face-to-face interview and survey from different village of Kamrup district as follows-

Name Of Village	Number Of Farmers Participated	Number of farmers used Tractors	Number of farmers Uses Power Tiller	Number of farmers Uses Pump Set	Number of farmers used Knapsack Sprayer	Financial Assistance Received from Govt.	
						Yes	No
Balapara	25	02	05	05	12	05	20
Ghilabari	25	01	06	06	15	04	21
Hahim	25	0	05	08	10	03	22
Panbari	25	01	10	11	13	08	17
Telipara	25	03	11	10	15	09	16

Bhehbari	25	02	09	09	14	05	20
Kalmoni	25	01	08	05	11	03	22
Madhukuchi	25	02	07	05	12	04	21
Sutargaon	25	0	08	06	10	03	22
Tulamati	25	03	09	08	12	06	19

Here the data chart indicates the village wise data from the face-to-face interview, survey and questioner

Figure 1: Use of Mechanical Devices

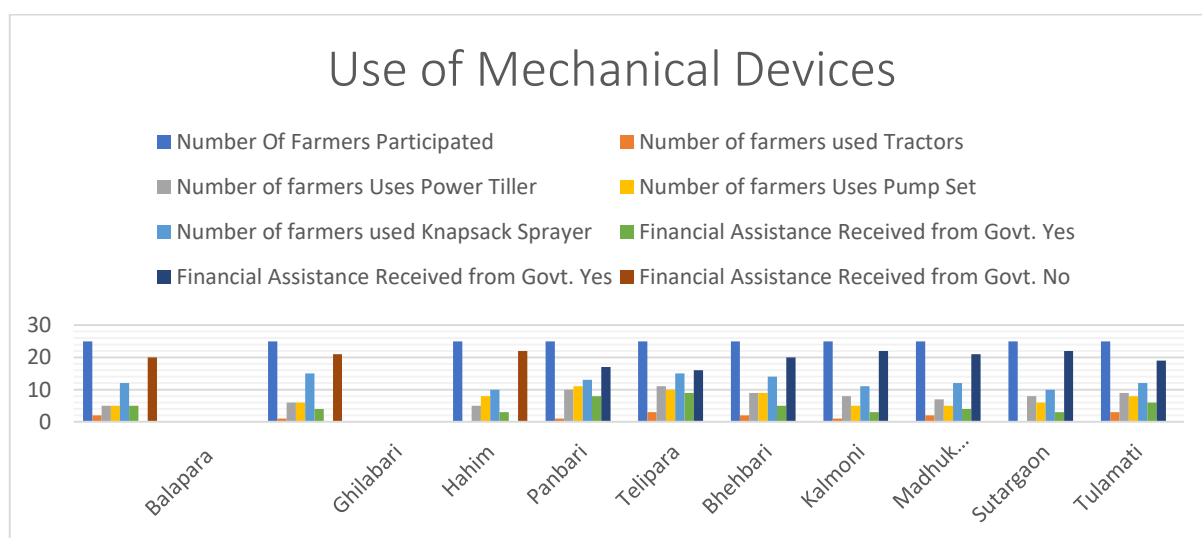


Table 2 – Productivity

Name of Village	Number of Farmers Participated	Productivity (Bigha / Mond) (7.5 Bigha = 1 Hactor, 40kg = 1 Mond)	
		Pre-Mechanization	Post -Mechanization
Balapara	25	8 Mond	30 Mond
Ghilabari	25	12 Mond	35 Mond
Hahim	25	09 Mond	25 Mond
Panbari	25	08 Mond	30 Mond
Telipara	25	10 Mond	35 Mond
Bhehbari	25	08 Mond	31 Mond
Kalmoni	25	12 Mond	35 Mond
Madhukuchi	25	10 Mond	30 Mond

Sutargaon	25	11 Mond	32 Mond
Tulamati	25	12 Mond	33 Mond

Data analysis

We have started interviews, questionnaires, and field observations among the 25 farmers from randomly selected tenvillage of kamrup district. We started from

In village Balaparawhere 25 farmers participated from whichonly 02 number of farmers used tractors, 05 number of farmers used power tiller,only 05 number of farmers used pump set for irrigating the farm field and 12Number of farmers Uses knapsack sprayer.In this village only05 number of farmers got financial assistance and 20 number of people have deprived from obtained any assistance from govt so far as financial assistance of farmers are concerned.

In village Ghilabari where 25 numbers of farmers participated. Out of which only 01 number of farmers used tractors, 06 number of farmers used power tiller, only 06 number of farmers used pump set for irrigating the farm field and 15Number of farmers Uses knapsack sprayer.In this village only 04 number of farmers got financial assistance and 21 number of people have deprived from obtained any assistance from govt so far as financial assistance of farmers are concerned.

In village,Hahimthere were 25sample farmersparticipated in this survey. Out of which no farmers were foundhavingtractors, only 05 number of farmers used power tillers, 08 number of farmers used pump set for irrigating the farm field and 10Number of farmers Uses knapsack sprayer.In this village only 03 number of farmers got financial assistance and 22 number of people have deprived from obtained any assistance from govt so far as financial assistance of farmers are concerned.

In village,Panbari where 25 numbers of farmers participated. Out of which only 01 number of farmers used tractors, 10 number of farmers used power tiller, only 11 number of farmers used pump set for irrigating the farm field and 13Number of farmers Uses knapsack sprayer.In this village only 08 number of farmers got financial assistance and 17 number of people have deprived from obtained any assistance from govt so far as financial assistance of farmers are concerned.

In village,Teliparathere were 25 sample farmers participated in this survey. Out of which 03 number of farmers were found having tractors, 11 number of farmers used power tillers, 10 number of farmers used pump set for irrigating the farm field and 15Number of farmers Uses knapsack sprayer.In this village only 09 number of farmers got financial assistance and 16 number of people have deprived from obtained any assistance from govt so far as financial assistance of farmers are concerned.

In village Bhehbari where 25 farmers participated from which only 02 number of farmers used tractors, 09 number of farmers used power tiller, only 09 number of farmers used pump set for irrigating the farm field and 14Number of farmers Uses knapsack sprayer.In this village only 05 number of farmers got financial assistance and 20 number of people have deprived from obtained any assistance from govt so far as financial assistance of farmers are concerned.

In village,Kalmani where 25 numbers of farmers participated. Out of which only 01 number of farmers used tractors, 08 number of farmers used power tiller, only 05 number of farmers used pump set for irrigating the farm field and 11Number of farmers Uses knapsack sprayer.In this village only 03 number of farmers got financial assistance and 22 number of people have deprived from obtained any assistance from govt so far as financial assistance of farmers are concerned.

In village,Madhukuchithere were 25 sample farmers participated in this survey. Out of which 02 number of farmers were found having tractors, 07 number of farmers used power tillers, 05 number of farmers used pump set for irrigating the farm field and 12Number of farmers Uses knapsack sprayer.In this village only

04 number of farmers got financial assistance and 21 number of people have deprived from obtained any assistance from govt so far as financial assistance of farmers are concerned.

In village, Sutargaon there were 25 sample farmers participated in this survey. Out of which no farmers were found having tractors, only 08 number of farmers used power tillers, 06 number of farmers used pump set for irrigating the farm field and 10 Number of farmers Uses knapsack sprayer. In this village only 03 number of farmers got financial assistance and 22 number of people have deprived from obtained any assistance from govt so far as financial assistance of farmers are concerned.

In Tulamati village, there were 25 sample farmers participated in this survey. Out of which 03 number of farmers were found having tractors, 09 number of farmers used power tillers, 08 number of farmers used pump set for irrigating the farm field and 12 Number of farmers Uses knapsack sprayer. In this village only 06 number of farmers got financial assistance and 19 number of people have deprived from obtained any assistance from govt so far as financial assistance of farmers are concerned.

As shown in Table 02 it's found that almost all the village farmers agree with the view that farm mechanization would increase productivity. Most particularly with the use of pump set for irrigating water productivity increase up to three-fold. All of them viewed that in pre – mechanization period their production was in between 8-12 Mond but after the use of farm mechanization it increase up to in between 30 – 40 Mond per bigha.

Findings

The findings of our study indicate that farm mechanizations have indeed had a positive impact on agricultural practices in the Kamrup district. Farmers who used tractors reported higher crop yields and reduced input costs and labour costs as it is used in multifarious activities associated with agriculture. The use of power tiller is helpful to small and marginal farmers for tillage as their plot of land quite fragmented. Moreover, most of the farmer used it for threshing the harvested crops like wise in the changing environmental conditions pump set are very essential to protect the farm from drought like situation. By using pump set farmers don't have to depend on rain feed agriculture. As a result of which farmers income has increase than earlier. Knapsack sprayer helps the farmer to protect the farmer from pest attack and provide nutrients to the plants which in turn help in increasing the productivity of the crops.

Discussion

The discussion section provides a deeper analysis of the findings and their implications. It explores the factors influencing the adoption of technological interventions in the Kamrup district, such as access to information, education levels, and financial constraints. Additionally, it discusses the challenges faced by farmers in implementing these technologies, including the need for training and technical support.

Conclusion

In conclusion, farm mechanizations have the potential to significantly enhance agricultural production in the Kamrup district of Assam. The application of tractors, power tillers, pump set and knapsack sprayer have shown promising results in improving productivity, and sustainability. However, further efforts are needed to ensure widespread adoption and to address the challenges faced by farmers in accessing and implementing these mechanizations. By applying farm mechanization, the agricultural sector in Kamrup district can thrive and contribute to the overall development of Assam's economy. Therefore, government should come forward with more assistance in terms of kinds and cash to the farmers So that farmers can got different tools of farm mechanizations and can apply these in their fields.

In summary, this article has explored the role of farm mechanizations in agriculture, focusing on the Kamrup district of Assam. Through an examination of the objective, hypothesis, literature review, primary data collection, findings and conclusion, we have gained insights into the impact of farm mechanizations on

agricultural practices in this region. It is clear that farm mechanization has the potential to revolutionize the way farming is done, and it is crucial for policymakers to prioritize the integration of farm mechanization into agricultural practices to ensure sustainable and efficient food production.

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