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## Influence Of Micro-Finance On Small Scale Wheat Farming Technology In Moiben Division, Uasin-Gishu County, Kenya

**Keror Isaac Kipruto**

Head Of Department, Economics And Development Studies  
Mount Kenya University, Kenya

**Francis Kipkemboi Sang**

Part-Time Lecturer, Moi University, Kenya

### **Abstract:**

*This paper therefore examined how microfinance institutions have influenced small scale farming of wheat in the adoption of technology. Statistics show that wheat production has declined due poor technological input as well as environmental factors. This study used descriptive survey design. The target population constituted small scale wheat farmers from Moiben Division. Purposive sampling was first adopted in the choice of study area. This is because most small scale farmers have resorted to microfinance services towards improving wheat production. Simple random sampling was used to select 200 study participants where proportionate strategy was used to get representative samples from the five selected locations. The study found that through microfinance some of the small scale farmers have managed to hire tractors in ploughing of their land, planters for sowing and combined harvesters for harvesting of their produce. Microfinance institutions have enabled some others to: apply adequate fertilizer to their crops and thus increased production; and purchase insecticide and other pesticides to be able to manage their wheat and improve the quality of their production. The study recommends that the government to intervene and assist farmers in terms of wheat harvesting since the technology involved (combined harvester machine) is very costly and the government to increase the number of extension officers to provide training to farmers on the benefits of adopting technology in farming.*

**Key words:** micro-finance, small scale, wheat farming, technology

### **1.Introduction**

Agriculture in Kenya contributes about 30% to the GDP (GOK, 2001). It also contributes significantly to exports, employment and income. Despite the disproportionate concentration of poverty in rural areas the provision of financial services to poor and low-income people has tended to gravitate away from agriculture borrowers. As the industry matures, however, practitioners are increasingly turning to the vast and largely under-served rural frontier, and to the thorny challenges of financing small-scale agriculture. Even though delivering small-scale loans and savings mechanisms can be particularly challenging in areas of low population density, especially where the distance between clients is wide, dilapidated road network and low income farmers which may affect repayment pattern, micro financial institutions are more flexible and convenient to these farmers than banks and other financial institutions. Given that most rural citizens depend at least in part on agriculture for their livelihood, these conditions make the prospect of operating a self-sustaining, rural microfinance institution an integral part to small scale farmers and to improve their technology

However, despite its importance, the full potential of the agricultural sector has not been realized. This is attributed to various reasons which include declining crop yields, decreasing farm sizes, inadequate use of appropriate technology, and high cost of farm inputs and lack of land use policies (Ibid). As a result, Kenya is faced with various challenges including food shortages, unemployment crisis, increase in poverty and lack of capital all of which have resulted to the declining economic growth rate which reached a negative rate of 0.3% in the year 2000 (GOK, 2001). Wheat farming in Kenya goes back to the colonial era. It is grown both on large extensive lands and small-scale lands and it was introduced by Lord Dalamere in the cool highlands of the Rift valley Province in Nakuru. Small-scale farmers grow wheat in small areas of less than 10 acres. Currently, Rift valley produces the bulk of the country's wheat output of more than 70% of the country's total output (Williams and Mumu 2004).

### **2.Income from Agriculture**

Table 1 shows the value of marketed production in the agricultural sector for the period 2004 to 2008. The total value of marketed production at current prices increased marginally from Kshs. 178,634.9 million in 2007 to Kshs. 178,856.6 million in 2008. Tea, maize, fruits and sugarcane contributed to the marginal increase in the value of marketed output. The aggregate value of livestock and products marketed increased by 3.2 per cent from Kshs. 29,691.4 million in 2007 to Kshs. 30,629.1 million in 2008. The value of marketed cereals declined by 8.3 percent from Kshs. 14,617.6 million in 2007 to Kshs. 13,398.4 million in 2008.

	2004	2005	2006	2007	2008
<b>CEREALS</b>					
Maize	6,880.5	6,342.4	7,170.2	7,969.2	8,326.6
Wheat	1,864.0	2,232.3	2,073.4	3,074.1	2,613.8
Others	2,055.3	3,329.5	3,843.2	3,574.3	2,458.1
Total	10,799.8	11,904.2	13,086.8	14,617.6	13,398.4
<b>HORTICULTURE</b>					
Cut flowers	18,720.0	22,896.8	23,560.6	43,101.5	39,765.9
Vegetables	12,068.0	13,891.4	17,822.9	22,354.3	16,128.7
Fruits	1,803.0	2,049.9	1,737.3	1,797.9	2,071.2
Total	32,591.0	38,838.1	43,120.8	67,253.7	57,965.8
<b>TEMPORARY INDUSTRIAL CROPS</b>					
Sugar –cane	8,389.8	9,169.6	9,998.9	11,704.3	12,291.1
Pyrethrum	305.7	158.1	74.1	98.6	91.9
Others	644.6	859.0	602.5	808.5	786.5
Total	9,340.1	10,186.7	10,675.5	12,611.4	13,169.5
<b>PERMANENT CROPS</b>					
Coffee	7,284.5	8,999.1	10,023.6	9,089.9	6,859.3
Tea	41,212.2	38,829.9	45,162.0	43,887.0	55,383.1
Sisal	1,275.4	1,289.2	1,228.2	1,492.9	1,451.4
Total	49,772.0	47,948.2	56,413.8	54,469.8	63,693.8
<b>TOTAL CROPS</b>	102,502.9	108,877.2	123,296.9	148,952.5	148,227.5
<b>LIVESTOCK AND PRODUCTS</b>					
Cattle and Calves	11,284.8	13,063.5	13,403.2	13,451.6	13,494.1
Dairy Produce	4,385.0	5,313.2	6,494.4	8,462.2	8,368.7
Chicken and eggs	1,705.7	1,901.5	2,186.7	2,575.5	2,788.8
Others	3,391.2	3,980.7	4,291.5	5,202.1	5,977.6
Total	20,766.7	24,258.9	26,375.8	29,691.4	30,629.1
<b>FISH</b>					
Freshwater fish	7,182,213	7,207,619	8,070,557	7,983,627	8,382,808
Marine fish	327,592	305,871	334,624	422,046	443,148
Crustaceans fish	221,106	99,278	123,105	145,437	152,709
Other marine products	29,895	39,098	38,485	43,382	45,551
<b>TOTAL</b>	7,760,806	7,651,866	8,566,771	8,594,492	9,024,216
<b>GRAND TOTAL</b>	131,030.4	140,788.0	158,239.5	187,238.4	187,780.1

Table 1: Recorded Marketed Production At Current Prices, 2004-2008 (Ksh Million)

Source: Economic Survey 2009

Statistics from Table 1 above revealed that the value of marketed maize increased by 4.5 per cent from Kshs. 7,969.2 million in 2007 to Kshs. 8,326 million in 2008, as a result of high prices offered in the market. The value of marketed horticultural produce declined by 13.8 per cent from Kshs. 67,253.7 million in 2007 to Kshs. 57,965.8 million in 2008 mainly due to lower unit prices for horticulture in the export market. The decline in wheat was explained by poor technological input as well as environmental factors. This paper therefore examined how microfinance institutions have influenced small scale farming of wheat in the adoption of technology.

### 3. Methodology

This paper is based on a study carried out among small-scale wheat farmers in Moiben Division, Uasin Gishu District between in October 2007. The Division is found in Uasin Gishu County which extends between longitude 34° 50' and 35° 37' East and 0° 03' and 0° 55' North. The division has a total area of 778 km<sup>2</sup> with a population of 92,717 (District Statistic Office, Eldoret, 2001). The division consists of 10 locations and the study was carried out in five of the 10 locations namely; Moiben, Kaplolo, Koitoror, Sergoit and Mumetet.

This study used descriptive survey design. According to Mugenda and Mugenda (1999), it is a study design that provides descriptive information and involves the collection of quantifiable information from the sample. The design was useful in this study as it permitted a greater depth of response. It also helped in generating information on the effects of micro-finance on small-

scale wheat farmers in Moiben Division. The target population constituted small scale wheat farmers from Moiben Division. Purposive sampling was first adopted in the choice of study area. This is because most small scale farmers have resorted to microfinance services towards improving wheat production. Simple random sampling was used to select 200 study participants where proportionate strategy was used to get representative samples from the five selected locations.

#### 4. Findings of the Study

##### 4.1. Effects Of Micro-Finance Support On The Level Of Technology

In order to ascertain the effect of the use of Micro-finance on the level of technology, the respondents were asked about the amount of credit they had received the previous year. Table 2 below shows the results:

Amount	Frequency	Percent
5000-10000	18	9
11000-20000	42	21
21000-30000	78	39
31000-40000	52	26
Above 40000 and below 100000	10	5
Total	200	100

Table 2: The Amount Of Credit The Respondents Received The Previous Year

The findings show that 39% of the respondents received loans of 21,000-30,000. They were followed by those who got 31,000-40,000 who were 26% of the total respondents. Quite a small number 9% of the respondents got 5,000-10,000 while only 5% got a loan of 40,000-100,000. As had been explained earlier, the amounts of loan gotten from the Micro-finance institution depend on the savings of the individual respondent. Those who got a loan of 5,000-10,000 averagely had saved only Ksh 3,500 in their account. Those who got between 11,000 and 20,000 had saved averagely Ksh 6,500 subsequently those who got between 21,000-30,000 had saved averagely Ksh 10,000, and those who had saved an average amount of Ksh 35,000 got loan of between 40,000 and below 100,000.

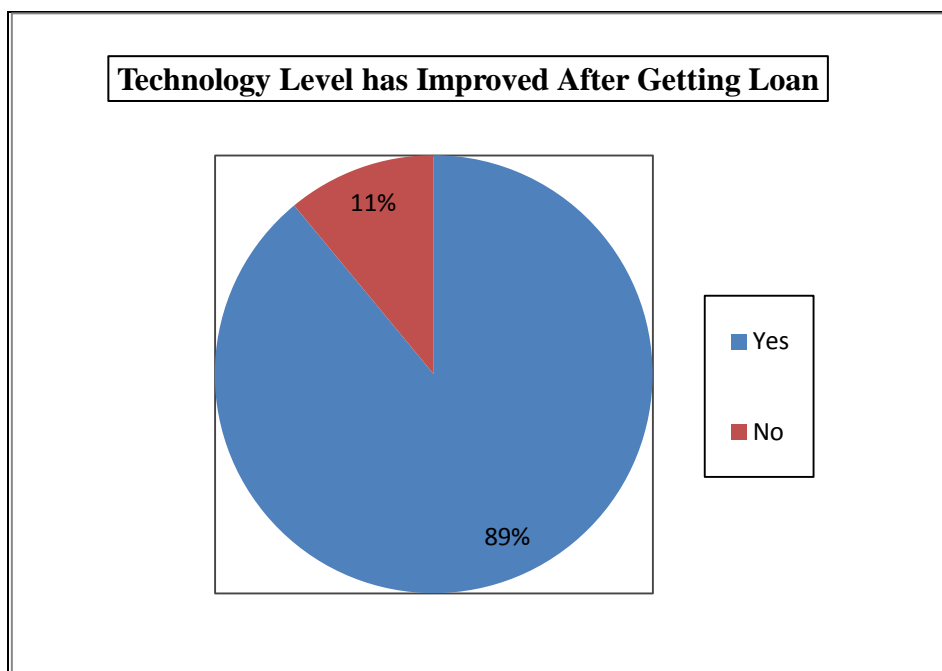
The amount of money an individual saves comes from own source, it was revealed that those who occupied themselves with other occupations had a considerable high savings than those who were only engaged in wheat production. The purchasing power of a respondent depends on whether they perceive the loans given by the Micro-finance institutions as either sufficient or not. Here were the responses of the respondents when they were asked the above question.

	Frequency	Percent
Yes	10	5
No	190	95
Total	200	100

Table 3: Whether The Respondent Consider The Amount Given As Sufficient

The results show that 95% of the respondents were dissatisfied with the amount of loan they were provided with. Only 5% agreed the amount was enough. While discussing on the issue, the respondents complained that the amount they were given were not based on the amount they needed but on what they had as savings. They said this denied them the opportunity to invest adequately on agriculture as it depended on the amount that they had. The respondents agreed that the Micro-finance support improved their level of technology use in wheat production although not adequately. Here were the results.

A majority (89%) of the respondents agreed that the Micro-finance support helped them to improve their output technologically as it provided them with the means to get fertilizer seeds, and even have access to Knapsack that is used for spraying chemicals. Not all agreed to the fact that the financial support from the Micro-finance institutions had helped them as 11% of the respondents denied this fact. The amount got from the Micro-finance institutions helped them to hire machinery thus improved the level of technology as compared to when they had used human labor maybe, in preparing land.



*Figure 1: The Level Of Technology Improved After Getting Loans*

#### 4.2. Effect Of Technology On Wheat Farming

The Micro-financial support helped most of the farmers to increase the number of fertilizer application as illustrated in the results below when the respondents were asked whether the loans got helped them improve the number of fertilizer application. As a result, the study established that 23.4% of farmers have been able to afford fertilizers which are termed as an effective practice towards increasing wheat production through microfinance institutions.

The study further established that 22.8% of small scale farmers through microfinance institutions have been to adequately prepare their soil ready for planting using machines like tractors. Early land preparation is an important factor in increasing wheat production. Furthermore, early and dry planting may only be possible if there has been early land preparation. The study also established that 18.1% of small scale farmers who participated in the study were able to afford spraying chemicals for their crops. In order to increase the yield of wheat and other crops, spraying to prevent harmful insects is very vital.

Effect of Technology on Wheat Farming	Frequency	Percent
I have Increased application of fertilizer	170	23.4
I have been able to prepare my land adequately using tractors	166	22.8
I have been able to spray my crops effectively	132	18.1
I have been able to manage harvesting machine without any difficulty	168	23.1
my production of wheat farming has improved	92	12.6
Total	728	100.0

*Table 4: Effect Of Technology On Wheat Farming*

In summary, it is clear that:

- Through microfinance some of the small scale farmers have managed to hire tractors in ploughing of their land, planters for sowing and combined harvesters for harvesting of their produce
- Others said that they have been able to apply adequate fertilizer to their crops and thus increased production.
- Others said that due to microfinance, they have been able to purchase insecticide and other pesticides to be able to manage their wheat and improve the quality of their production

#### 5. Conclusion

This paper has established that microfinance institutions have improved farming technology to some farmers but not all. It has enabled these farmers to purchase farm implements like fertilizers, seeds, chemicals among others which initially they did not afford. In general, wheat farming is very expensive and more technological than maize or any other crops. However, despite the interventions from microfinance institutions to boost crop production, adoption and usage of technology farming in wheat crops is still very costly to small scale farmers.

#### 6. Recommendations

Following the above findings, this paper recommends the following:

- The government to intervene and assist farmers in terms of wheat harvesting since the technology involved (combined harvester machine) is very costly. These machines can be either hired to farmers at a subsidized price or given to them free of charge. This will not only motivated farmers but also increase production
- There is need for the government to increase the number of extension officers to provide training to farmers on the benefits of adopting technology in farming. This approach is aimed at improving wheat production culminating to improved living standards.

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