

# **Factors Influencing Green Maize Harvesting Towards Achieving a Knowledge Economics Through Research and Innovation: a case study of South Nandi District**

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## **Abstract**

The purpose of this study was to assess the challenges facing the society specifically the farmers and the country on the growing popularity of the green maize harvesting within the growing areas. The study was geared towards finding out the role of policy makers in understanding the reasons why farmers were opting to sale green maize rather than wait to dry up. The study investigated the role played by the provincial administration and the Ministry of Agriculture in either promoting or discouraging green maize harvesting towards achieving a knowledge economy through research and innovations. The research also investigated the effects of green maize harvesting on farmers food security, National food security policy in Kenya. The study was guided by motivational theories. The study aimed at achieving the following objectives; to establish the factors that influence green maize harvest in South Nandi district; to evaluate pros and cons to which commercialization of green maize

**harvesting affects the socio-economic status of farmers; to examine the consequences of green maize harvesting. The study utilized purposive and simple random sampling technique. The study employed descriptive survey design with questionnaires and interview schedules as data of collection instruments. Both qualitative and quantitative methods were used to analyze data. Based on the findings, recommendations were made to capture all that benefits the farmer, the consumer and the state as the regulator towards being food secure.**

**Keywords:** *Green maize, Food Security, Challenges.*

## **Introduction**

In recent years, Kenya's cereal (maize) farming has over time become more commercialized. The yields realized from farming however depend, on rainfall patterns. This questions the country's position towards fighting food and crisis for use of alternatives means of maize production that would involve irrigation of arable areas. Maize is a popular cereal and is considered a staple food (*ugali*) in Kenya. Reports within Africa indicate that, farmers and consumers in Kenya, Malawi, Zambia and Zimbabwe are the greatest beneficiaries of maize farming. It is noted that maize consumption with vegetables (especially the traditional vegetables) improves local diets and live hoods. Like in many parts of the world, farmers locally in Kenya have suffered the consequence of dependency on rainfall maize production over time with the worst year being the 1984 drought, which saw them lose all their valuable crops (Daily Nation Feb 2010). This resulted in farmers failing to service the loans they had borrowed from AFC (Agricultural Finance Corporation) and as such, it became evident that the agricultural institution was no longer in good terms with commercial farmers. This has however changed in recent years thanks to AFC's ability to adopt policies that will help the farmers mitigate economic

hardship that are as a result of drought. In North America, maize was and is grown to supplement human food and fodder for animals in the dairy sector. Maize cereals also provides for the extraction of products that are used in many industries as a source of energy and alcoholic beverages i.e. beer and local brews. In Asia, this crop has rapidly become a staple food in addition to the many uses in both the dairy and industrial sectors. It has also been used as an alternative source of energy in countries like the USA who consider hydro energy as a more expensive source of energy

When the maize crop is harvested, it is dried and shelled. From this the maize cereals attained and can be put to different usages' such as *posho* flour for making *ugali*. In most households in the developing world, dried maize cobs from the maize has been shelled serve as alternative source of energy which is used for cooking. Secondly most countries are advancing their dairy sector and maize cereals are providing materials to make the dairy meal for dairy usage. (McCann, 2000), pointed out that, by 1920s maize cereals had become a dominant cereal crop both to African & European farmers in Kenya.

Currently green maize is becoming popular with the urbanite populations who use the maize to make *githeri* (local meal of mixed beans and maize). Green maize harvesting has constantly been influenced by price in relation to resource allocation in both production and consumption and this is an agreement with what Timer (1995:293) says in another context on price policy that 'on markets trace the effect of changed price levels, especially of food grains, on consumers, producers and the government budget as a result of food shortage.

The unfavorable climatic conditions have over the period changed and have given the researchers, governments, lead companies and farmers to ensure that maize production does not collapse. Ngethe and Owino, (1990: 34) asserts that, "Policies on food security and

self-sufficiency span all the major policies for increasing agricultural productivity, such as marketing and pricing, research and extension, infrastructure, credit and major input policies”.

Evidence suggests that green maize sale is affecting food security and exacerbating household poverty.

## **Materials and methods**

The study adopted the descriptive and exploratory research design, this being a case study. According to Kothari (1990), descriptive research studies are concerned with the description of characteristics of an individual or a group of people. Exploratory studies on one hand are concerned with the formulation of problems which generates facts leading to more investigations. Another scholar Mugenda (2003), the design in uniqueness involves and offers an in-depth study of a social unit. From descriptive survey, the research design in the study was able to offer information with more emphasis on variables related to the green maize business in the design location. The aim of the study was to investigate the relationship between genders, age, respondents' class, respondents' type on the factors influencing the green maize harvesting. The questionnaire was used to obtain data for the study. Data obtained was analyzed using both descriptive and inferential statistics. This method employed offered a successful investigation into the relationship between variables towards a successful study.

The target population for the study was the farmers, middlemen and the businessmen in areas of Kesegon, Kaptumo, Kibwareng and Nandi Hills locations was 4000. The said population excluded the children, even those going to school. Purposive and random sampling was used to select the farmers who have participated in one way or another to the success of the green maize of the business. As from what the study opted, this basically was to help reduce the margin errors at the end. The participants were owners of the green maize, being middlemen or the business men and women. The study

included other stake holders the public officers; Public Administration, Ministry of Agriculture in the district. Purposive and random sampling was used to identify the sampled group of 626 individuals. The researcher obtained 188 as the representative sample for the study.

## Discussions

### Response rate

The sampled study comprised of 188 farmers who were both men and women. The study wholly comprised of the farm owners, businessmen, middlemen, Ministry of Agriculture and the public administration. The study indicated that from the four areas showed the distribution based on gender on total participation towards the growth of green maize sale.

**Table 3: It gives the general laid out of respondents in the study areas**

	M	F	A/M	MOH	TL	%
Kibwareng	22	30	1	-	53	100%
Kaptumo	30	22	2	2	56	96.7%
Kobujoi	12	22	4	4	42	96.7%
Nandi Hills	11	10	4	3	28	86.7%
	82	84	11	9	179	100%

*Source: primary data*

The study was carried out in four locations of Kibwareng, Kaptumo, Nandi Hills, and Kobujoi of South Nandi district. A total of 188 questionnaires had been distributed with each location with 47 questionnaires.

In Kibwareng location, the response showed 100% participation where live experience was shaped by the daily operations. The study therefore attributed this response to some factors like farmers' awareness and the general knowhow concerning farming as business enterprise. In the assessment it showed that Kaptumo and Nandi Hills locations performed equally well on business related activity. Kobujoi, as indicated in the table showed that male and female doing farming as a business adopted the willing buyer.

### **Displaying roasted maize business**



*Source: Field photo collection; 2011*



*Source: Field photo collections; 2011*

### **Gender Distribution**

From the questionnaires the researcher found out that both male and female participated in the sale of green maize. It also shows that the number of male respondents was low in nearly all the locations, other than in Kobujoi where they nearly equaled women participants.

Photo 2 shows women participants in green maize business. Generally women do a lot of work in farm and other duties that generate finances in the homestead.

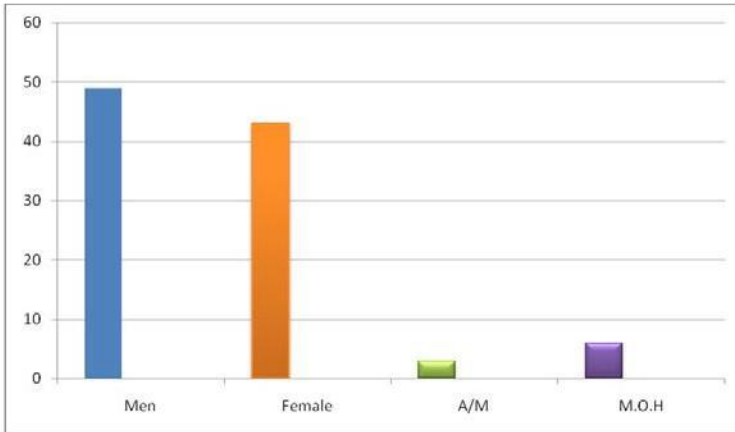


Figure shows the distribution of men and women in the sale of green maize. From the study it shows that women in the business are forming 43% whereas male 49%, while those in administration 3% and the ministry officials 6%. Generally women were active players in most areas (location) where G.M.S is taking place.

### The Gender Graph

Responses	Participant	%	M.o.H	%	A/M	%
Male	82	49	5	31.25	7	66.7
Female	80	43	11	68.75	3	33.3

Source: Author, 2012

The table shows the role played by men in the green maize harvest and sale shows that they control the entire process. Among the government officials (participants) men dominated the work force in enforcing departmental policies. The table further elaborates the role



played by female in the expansion of the same. It explains the expectation and the rewards which have assumed their duties and their environmental demands.

**A photo taken of a maize boiler at a trading centre Cheptiret.**



*Source: Field photo collection; 2011*

The clip shows a ready maize farm, which according to the farmer is like cash at hand depending on the arising needs. The owner of the ten acre farm believes that it is upon the government to protect the farmers from constant exploitation from the middlemen. This farmer openly expressed fear of dry maize prices and that is why he was preparing to sell green maize.

**Green maize truck lorry at several stop over between while on the business.**



*Source: Field Photo collection; 2011*

The plate shows a busy transporter, dealing with green maize at one of the destination (Moi University) where the number of consumers of the same has been attracting many consumers. Trading centre.

**Age distribution of respondents**

<b>Response Age bracket</b>	<b>Male</b>	<b>%</b>	<b>Female</b>	<b>%</b>
18-24	24	25.4	6	6.4
25-31	28	29.8	16	17.0
32-38	22	23.4	32	34.2
39-45	15	16.0	16	17.0
46 above	6	6.4	24	25.4
<b>Total</b>	<b>94</b>	<b>100</b>	<b>94</b>	<b>100</b>

*Source: Primary Data; 2011*

Table indicates that male participants were active in GMS between the age bracket of 18- 24 standing at 25.4 %, 25-31 at 29.8 % and 32-38 at 23.4%. In this age bracket, the youthful men are attracted to trade and in the company of successful middle men, transporters and farmers who are selling off their maize. But as men advance in age they become more conserve and are interest in pure farming but not in the green maize sale. They are not ready to sale their maize.

### Occupation of the Respondents in the Area of the Research

	<b>M-youth</b>	<b>F-youth</b>	<b>M =%</b>	<b>F=%</b>
Farmer	10-18	4-0	72.5	27.5
Businessman	4-30	2-5	66.5	33.5
Middlemen	2-17	0-4	100	0
Ministry officials	2-3	2-2	50	50
Public administration	2-2	2-3	50	50
Other	22-15	18-15	20	80
<b>Total</b>	<b>42-85</b>	<b>28-29</b>	<b>55</b>	<b>45</b>

*Source: Primary Data; 2011*

Table illustrates the daily entry of individuals in the designated duties, and where farmers are participating; the results attained showed that the male farmers do participate most in the exercise. Nonetheless this may not be a true picture among the Nandi community where men held a lot of authority. The scenario here is direct roles played by men, towards the creation of self made complaints are raised by their spouses or female partners are taking of their family needs. The response provided information that 72.5% against 27.5% men and women respectively, were highly involved in maize business at whatever dealings.

### **A tractor and pick up selling green maize**

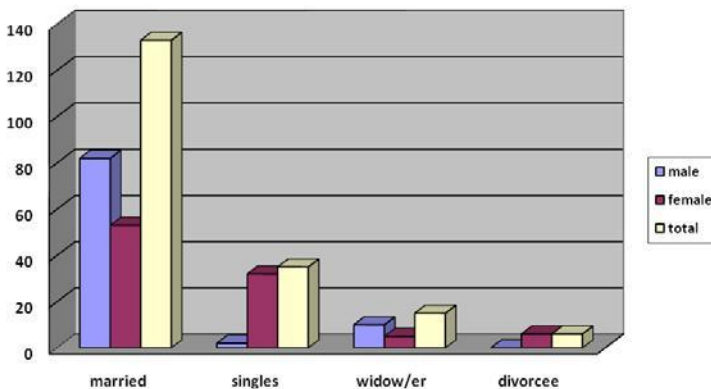


*Source: Field Photo Collection; 2011*

The plate shows owners of a pick-up. On average over ten lorries were seen transporting the green maize to different market destinations.

Farmers have played a positive role in and are those with primary education; forming 14.9%. The 24% recorded in the study showed that the elderly members of the society put emphasis on good farming and in them; they accommodate the green maize sale. They still believed that all farmers are supposed to have storage facilities so as to be able fight hunger. Their responses were guided or demand driven. From the study farmers saw it wise for the government to support the farmer to reclaim his lost glory of being a commercialized farmer. Failure to this has led to the growth of green maize.

**Marital statuses**



Source: Primary Data;2011

**Table 8: Summary of activities taking place in the farm**

Response	Popularity	Solution	Is it a sol	Rewarding	Sustainable	Affective	Family decision
Yes-	140	Poverty .68	93	137	50	170	120
No	48	Money. 85	95	51	138	18	68
		Unemployment .35					
Total	188	188	188	188	188	188	188

Source: Primary Data;2011.

The respondents from the table showed that the green maize harvest and sale was truly on the rise. It was from this believe that will make

the government have a second thought and think other wise on the issue of food security in the country. The second column analyzes critically on the causes and its popularity. On the same, it became a reality that, money paid for the green maize is higher than the benefits from the dry maize. Those who thought that money is factor or played a role were 85. Some thought that poverty is making people to sale their crops, and others on the same approach still see it as an eye opener to the locals. Had it not been for poverty farmers would not sale their crops anyhow. And they are about 68. Then another group, who are associated to the green maize, believes that it is a factor of unemployment. Majority of those found to trade on green maize claimed that they cannot fend for their families not unless they get any substitute, as a source of finance.



*Source: Field Photo collection; 2011*

From the picture some activities which have benefited both the married men and women in green maize trading as a business. As

the green maize dries, most owners shell it, and the cereals are dried to reduce the moisture content.

**Plate 9: In a business centre**



*Source: Field photo collection; 2011*



### From the daily nation



*Source: Extract from the Daily Nation News Papers; 2011*

The study showed that about 40% did support the liberalized market, where each person can do what ever he or she thinks best suits his/her farm. The study raised questions about the authenticity of the government policy on the Green maize sale. Issues on the root cause of Green maize sale arose and more so factors that were disregarded by the elderly farmers. The respondents (old) people saw it as a scheme to wipe out their economic strength and open a Pandora box which leads to hunger and deaths in case of emergency.

**Well prepared maize field**



**A girl and woman after buying maize**



*Source: Field Photo Collection; 2011*

The photo shows a ten acre field which the owner sold for 60,000 per acre. Hence for ten he was paid ksh.600, 000.

### **Conclusion and Recommendation**

The study attempted to evaluate the role played by farmers, businessmen, middlemen and the government agency in establishing a food secure and a stable region as matter of security. The report in the study by the respondents' revealed that green maize businesses have existed ever since but from 2004; but each year it is doubling and is greatly affecting food security. The point of poor planning may arise at some time but not because of maize as the source of income to most peasant farmers. Though to some extent have improved farming by having diversity among farmers in the region. Farmers were dissatisfied by the way the Ministry of Agriculture has performing their task. They are actively working with them on the technologies and as a result they are harvesting poor yields. The Green maize business has no standardization during or at green maize trading. The buyer has the sole monopoly over the farmers. And yet the farmers has invested heavily, this impedes the farmer development and thus affects his years long investment.

Another finding is that, Government does have misplaced priorities though she has the best policies. Farmers put it clearly that those in power are not working for the government but to satisfy their own ego. According to their understanding down from the Minister of Agriculture, Livestock, Fisheries and others, they are there to serve their political masters. Political patronage, ethnicity and pride over the agricultural farming communities have made the ordinary Kenyans being subjects of continued poverty. Most farms end up being left fallow. And from them, most of the youths are moving to urban centers, towns and cities as a resort to growing poverty. Another problem is coming

The government commits more towards her policy statements. This will encourage and enable farmers to be access to affordable

farming. Provide with subsidized or loan facilities with the low interest-rates (recent) activities to enhance credit facilities by the financial institutions. There is need for civic education and be conducted among farming communities. This would enable the farmers make a wise decision on the green maize and the future implications.

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