

POLICY IMPLEMENTATION AND ITS ECONOMIC IMPACT ON POTATO MARKETING VALUE CHAIN IN KENYA

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Abstract

Potatoes (*Solanum tuberosum* L.) are second in importance after maize in Kenya as food crop. It is grown mainly by small scale farmers in more than 100,000 ha country wide producing more than 1 million tonnes annually. The marketing value chain has been described as ineffective, with farmers getting far much lesser compared with other players. Recognizing this, the Government of Kenya developed laws in 2005 to streamline the chain and ensure farmers gain from the potato production. It also established some specific laws in 2008 to interpret the 2005 laws in target chain levels. This study was carried out between December 2009 and February 2010 to monitor implementation, enforcement and economic impact of legal notice no. 113 of 2008 of the Government of Kenya using formal questionnaires administered to traders and farmers in selected seven markets and regions. Information was also obtained from focused group discussions as well as stakeholder participation in a workshop. The findings show that traders and farmers are aware of the regulations but are not implementing them. Farmers had higher (97%) knowledge of regulations compared with traders (92%). The major reasons cited by farmers for not being able to implement the regulations included cartels, lack of storage facilities and information about the potato production costs and prevailing market prices at any given time. Calculations show that the contribution of potatoes to the Kenyan economy is 300% higher than what is in government records. This study provides more evidence of the effect of the legal notice on the potato marketing value chain in Kenya and policy recommendations to ensure enforcement of the regulations and streamline the potato value chain.

Key words: ware potato, potato policy, farmers, extended bags, standard bags, potato value chain

Introduction

Potato (*Solanum tuberosum* L.) is the second most important food crop in Kenya after maize both in production and consumption. The current production is 1.4 million tonnes annually grown under 108,000 ha mainly from three provinces, Central, Rift valley and Eastern. Nyanza, Coast and Western provinces are the lowest producers of the crop (GoK, 2009). The crop is grown under rain-fed conditions in two main seasons, April-June and October-December by small-holder farmers for home consumption as well as a source of family income. While the Kenyan population has been increasing, the potato production per person in Kenya has been declining (FAOSTAT, 2008), which is in contrast to the increasing demand of the commodity. The per capita consumption of potatoes in Kenya is 28.5 kg (FAOSTAT, 2003). In major production areas, where potatoes are often eaten daily, the per capita consumption is estimated to be 116 kg annually (Durr and Lorenzl, 1980). Most often at harvesting, there is glut of supply and farmer's income is reduced ostensibly due to low prices offered in the market. The lack of storage facilities reduces the ability of farmers to negotiate prices as potatoes are perishable and farmers will dispose them off sooner before they deteriorate. Another contribution to low income gained by farmers is the role of the market cartels, which dictates commodity prices (Wang'ombe, 2008). Poor road infrastructure is known to increase the transportation expenses while lack of market intelligence information at farmer level contributes to exploitation of farmers by traders. Another price setter of prices is the potato quality as well as varietal choice.

The reported total value of potatoes at farm gate level in Kenya is KES 5 billion, which is half of the total value at consumption (GOK, 2009). The difference is mainly due to the price disparity at the two levels brought about by many factors particularly associated with marketing aspects. To address this price disparity, the Government of Kenya has developed several standards targeted to different players within the potato value chain, including production, marketing and processing, through Legal Notice No. 44 of 2005 (GOK, 2005). The regulations indicate that, among other things, ware potato should only be packaged in a sisal or jute bag while the size of these bags should not exceed 110 kg. In 2008, the Government of Kenya interpreted the Legal Notice No 44 of 2005 for adoption by councils in the markets, by establishing Legal Notice No. 113 of 2008 (GOK, 2008). This legal notice empowered the councils to enforce the regulation of ware potato packaging size and weight. The objective of this study was to monitor effectiveness of the enforcement of the Legal Notice No. 113 of September 2008 and assess its impact on the potato marketing value chain.

Materials and Methods

Data were collected using a formal questionnaire designed to capture information on knowledge and enforcement of the Legal Notice no. 113 of 2008, targeting mainly farmers and traders. Seven markets; two in Nairobi (Kangemi market and Wakulima wholesale market), Nyeri (Karatina wholesale market) Meru (wholesale market), Nakuru (wholesale market), Mombasa (Kongowea wholesale market), and Eldoret (wholesale market) were purposively selected for enumeration to represent main markets in the country, being the main markets where potatoes are traded. The questionnaire was pre-tested in Kawangware private market and Kibera Othaya market. Enumerators from Kenya National Potato Farmers Association (KENAPOFA) were trained on data collection before and during the pre-testing. Face to face interviews were conducted in each market targeting 10 randomly selected traders. In addition, potato growers neighbouring the target market were visited and 10 farmers randomly selected for interviewing. In the market, council officials were interviewed concerning potato regulations and their implementation. All the interviews were conducted in December 2009, which was the peak harvesting period and high season for potato consumption due to the festive seasons during the month. All the traders and farmers were randomly selected for the interview. Apart from the use of questionnaire, key informants from KENAPOFA were interviewed in January 2010 followed by a stakeholder workshop held in February 2010 to present and examine the findings with intention of validating and improving the information collected. Data was keyed in excel spread sheet and analyzed using descriptive statistics based on the SPSS statistical software. Means and their standard deviation (SD) are provided.

Results

Characteristics of the traders

Majority of the interviewed traders were men (64%), with a large number of them being wholesalers (86%). The rest were vendors (8%) and brokers (6%). On average, traders had been in the business for 16 years. However, this ranged from 1 to 40 years (SD 11 years). The source of ware potatoes throughout the year in each market was varied, with traders reporting Narok (36%) as the main source, followed by Kinangop, Meru and Nakuru (each 22%), Nyandarua (18%), Mau (14%), Iten and Mt Elgon (each 10%) response. Other reported areas including Lari, Naromoru, Nyeri, Timau, Nyahururu, Timboroa, Marakwet, Keiyo, Burnt forest, Lelan, Chelongoroo and Kapcherop were mentioned but with lower response. A large percentage (10%) of the respondents acquired potatoes from transporters who bring them to the market (Figure 1).

Wholesale traders have three ways/options that they use to source potatoes for their business (Figure 1). Some wholesalers buy directly from farmers, others use brokers and the rest acquire their ware potato from transporters. Those wholesalers who get ware potato from farmers or brokers are forced to hire transporters with exception of few who have their own transportation. Transporters buy directly from farmers but others use brokers to acquire their ware potato. However, all transporters sell their ware potato only to wholesalers.

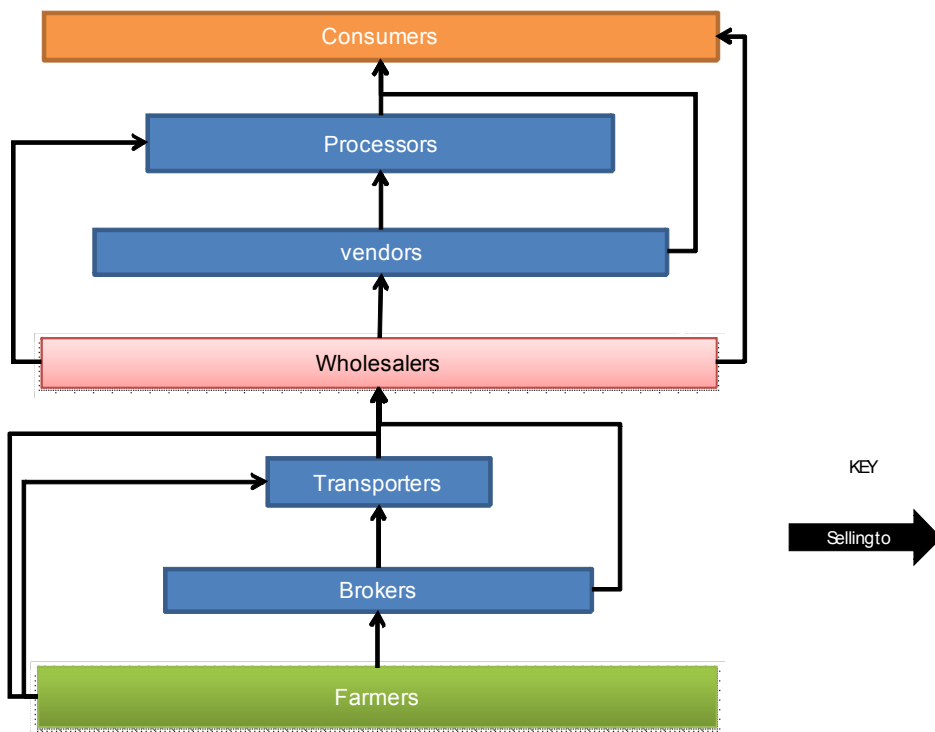


Fig.1: Illustration of potato market value chain actors in Kenya as depicted by farmers and traders in December 2009

Most traders (78%) purchase their potatoes directly from farmers mainly (98%) in whole sacks. Of all the respondents, only 12% buy potatoes packaged on the government-recommended bag size. However, majority (86%) use the legally recommended sisal/ jute bag types.

On average, traders estimated that the weight of the recommended bag at 130 kg (SD 19) and extended bag at 163 kg (SD 19), which was similar to the weight of the bags they were trading with (153 kg, SD 24). General observations by enumerators found on average 16 standard sized bags weighing 138 kg per trader and 47 bags per trader weighing 160 kg among those who claimed to be trading with standard sized bags and extended sized bag per market, respectively. They observed an average of 75 standard sized bags and 820 extended sized bags distributed among 202 potato traders per each market visited (i.e., 8% recommended bag sizes per market).

On average, farm-gate price of recommended-sized bag was KES 1,027 and KES 1,483 at wholesale. The extended-sized bag was KES 1337 at farm-gate and KES 2047 at wholesale. Traders reported huge profits from trading with extended sized bags (with 53% gains) compared with the recommended bags (with 44% gains) (Figure 2).

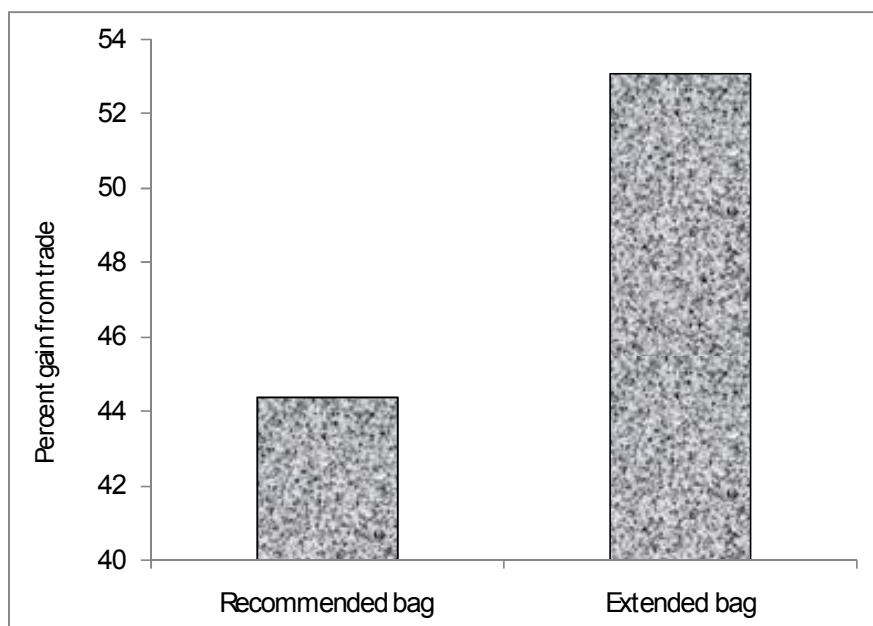


Fig.2: Percent gains from selling recommended and extended sized bags as reported by wholesale traders December 2009.

The average levy charged per bag by the council in the market was not significantly different ($P>0.05$). On average, standard sized bags were charged KES 54 (SD 24) while extended sized bags were charged at 45 (SD 26). Traders also noted that although there were no levies charged between farms and the market, they were forced to bribe in road-blocks with an average of KES 58 per extended-sized bag and KES 31 per standard sized bag. This shows that on average total levies per standard and extended sized bags is 85 and 103, respectively.

Characteristics of the farmers

Among the farmers interviewed, 68% were men. Majority of the farmers (71%) sold their potatoes at farm-gate and the rest utilized all market avenues, including taking their produce to the market. Also, majority of farmers (95%) sold their potatoes to brokers but they usually pack the potatoes in extended bags (100%) provided by the brokers (87%), which are either jute or sisal type (80%). Farmers reportedly received on average KES 850 and KES 1224 per recommended and extended sized bags, respectively as farm gate price. When compared with the reported prices per bag by the traders, this is equivalent to 21% and 9% of the farm gate price per recommended and extended sized bag, respectively, amount which goes to brokers.

Knowledge and implementation of potato regulations on size and packaging (Legal Notice No. 113 of 2008)

Among the traders, 92% were aware of the current potato regulations on packaging though only 16% implemented them. Among the non-compliant, 49% noted lack of enforcement while 51% indicated absence of additional benefit/incentive to comply. The key challenge to implementation of the regulations by traders was competition (24%), i.e., extended sized bags is highly demanded and those with standard sized bags have less market for their potatoes.

Among the farmers interviewed, 97% were aware of the new regulations governing potato packaging. About 82% of the farmers correctly reported the maximum allowable weight as 110 kg per bag. In addition, 97% of the farmers were affirmative that brokers do not comply with these regulations, basing this on market stiff competition (63%) and lack of enforcement by government agencies (27%). When asked whether the regulations have been beneficial since their introduction, 57% objected. The affirmative indicated that the regulations have helped them to avoid being exploited (11%) and they usually get more money (52%) from potato sales.

Focused group discussion in Mombasa

The potato stakeholders in Mombasa noted that potatoes from Tanzania, which usually supply the market in February, are always in standard sized bags of either jute or sisal. However, this is not so for potatoes sourced from Kenyan growers as all bags are usually extended with weight of 130-200 kg. The group acknowledged awareness of the recommended bag size and weight but suggested that the government has to enforce. This can be done by making sure growers are compliant and also at designated areas for monitoring movement of the ware before it reaches the market.

Discussion with informants (KENAPOFA enumerators and national officials)

The key informants observed that the regulations have not been implemented throughout the markets visited. The councils were not enforcing the regulations, even with provisions of legal notice No. 113 of September 2008 being available and a circular from the Permanent Secretary (PS), Ministry of Local government of September 2009 instructing the councils to enforce the regulations. There was no reason for lack of enforcement by the councils particularly for ware potato sourced from Kenya since the potato imports from neighbouring countries comply with the regulations. In addition, potato exports, particularly to Uganda comply with the regulations though this is after acquiring the potatoes using the unrecommended bag size and types, which they later repack. In some markets, traders have created two collection centres within same growing area whereby one centre is for local market and packages are extended while the other is for export and bags are standard sized. The informants suggested several strategies to be used to enforce the regulations: 1) Media interaction to enhance awareness of the regulations, 2) Ministry of Agriculture to gazette inspectors as provided by the Legal Notice No. 44 of 2005 to lead in enforcement. These will ensure the regulations are enforced at farm and market level, 3) Ministry of Local Government to monitor and ensure enforcement and compliance to Legal notice No. 113 of 2008, as they usually do with council by laws, 4) Amendment of regulations to clearly state that the standard bag should be flat and has no extension. It should also be sown and have holes running on the length of the bag for quality inspection, 5) The regulations and enforcers should target all value chain actors, 6) Construction of community based storage facilities, which is currently happening in some areas such as Mt. Elgon. This will reduce farmer exploitation since they do not have to dispose their ware potato when market prices are not good, 7) Formation of National Potato Council that would work closely with KENAPOFA to ensure implementation, 8) Information and knowledge sharing: farmers need to be advised at the end of cropping season in terms of the production costs. In addition, information on prevailing market prices should be disseminated to farmers to reduce exploitation, 9) Establish KENAPOFA secretariat to aid in the administrative issues and enforcement of the regulations and, 10) Finalizing, legalizing and implementing the National Potato Policy, which will ensure all actors have their roles well stated.

Stakeholder Meeting

After presenting the findings of the study to key stakeholders in the potato market value chain, they suggested that in addition to what was presented: 1) The regulations should be amended to encourage trading of potatoes by weight (kg) compared with the use of bags, and, 2) the government should explore mechanisms of how KENAPOFA can play a role in enforcing the regulations.

Economic Impact of non implementation of the Legal Notice No. 113 of 2008

The price of the ware potato per kg converted from prices of extended bags varied highly at farm gate, broker and trader levels in December 2009. The average price/kg was KES 7.51, 8.20, 12.56, respectively (Tables 1-3). Comparably, prices per kg from conversion of the prices per standard bag were KES 6.54, 7.90 and 11.46, respectively, showing that in December, on average farmers trading with standard bags were highly exploited (Table 2). This may be because these bags had no demand hence they attracted low prices. From farm gate, transaction costs at broker, roadblocks and council levies raised the potato prices at market (wholesale) level, recording a 74% and 67% increment for standard and extended bags, respectively. However, at retail level, the price per kg does not depend on the bag size since the most important is weight (measured in kg) not bag size. This stood at KES 22 in December. Based on the reported annual production of ware potato in the country, which stands at 1.4 million tons (1,400,000,000 kg), the annual value of potatoes at farm gate was KES 10.4 billion while at consumption (retail) was KES 30.8 billion annually (Table 3). The ware potato value at wholesale market level was KES 17.5 million. The amount of money lost throughout the chain due to lack of transparency in trade (corruption) include amount that goes to the brokers (KES 1.04 billion), and corruption at roadblocks (KES 490.6 million). In addition, the lost revenue at council level brought about by lack of implementing the regulations is KES 300.7 million.

Table 1: Matrix of ware potato value in Kenya based on December 2009 prices: Trading in extended bags in December 2009

	Level of operation					
	Farmer	Broker	Roadblocks	Council	Market (wholesale)	Retail
Amount of ware potato annually* (kg) (x10⁶)	1,288.00	1,288.00	1,288.00	1,288.00	1,288.00	1,288.00
Price¹, KES	7.51	8.20	8.56	8.83	12.56	22.00
Value² (x10⁶)	9,672.88	10,561.6	11,025.28	11,373.04	16,177.28	28,336
Farmer³, KES (x10⁶)		888.72	1,352.4	1,700-16	6,504.4	18,663.12
Broker³, KES (x10⁶)			463.68	811.44	5,615.68	17,774.40
Roadblock³, KES (x10⁶)				347.76	5,152.00	17,310.72
Council³, KES (x10⁶)					4,804.24	16,962.96
Market³, KES (x10⁶)						12,158.72

*Annual production denotes 92% of total ware potato annual production in Kenya (1.4 million tons) that was reported to be traded in extended bags; ¹Prevailing prices in December 2009; ²Value calculated by getting product of the annual production and price; ³Value calculated by getting the difference of value in the corresponding column

Table 2: Matrix of ware potato value in Kenya based on December 2009 prices: Trading in standard bags in December 2009

	Level of operation					
	Farmer	Broker	Roadblocks	Council	Market (wholesale)	Retail
Amount of ware potato annually (kg)* (x10⁶)	112.00	112.00	112.00	112.00	112.00	112.00
Price¹, KES	6.54	7.90	8.14	8.56	11.41	22.00
Value² (x10⁶)	732.48	884.80	911.68	958.72	1,277.92	2,464.00
Farmer³, KES (x10⁶)		152.32	179.20	226.24	545.44	1,731.52
Broker³, KES (x10⁶)			26.88	73.92	393.12	1,579.2
Roadblock³, KES (x10⁶)				47.04	366.24	1,552.32
Council³, KES (x10⁶)					319.20	1,505.28
Market³, KES (x10⁶)						1,186,080,000.00

*Annual production denotes 8% of total ware potato annual production in Kenya (1.4 million tons) that was reported to be traded in standard bags; ¹Prevailing prices in December 2009; ²Value calculated by getting product of the annual production and price; ³Value calculated by getting the difference of value in the corresponding column

Table 3: Matrix of ware potato value in Kenya based on December 2009 prices: Annual value of ware potato

	Level of operation					
	Farmer	Broker	Roadblocks	Council	Market (wholesale)	Retail
Amount of ware potato annually (kg)* (x10⁶)	1,400.00	1,400.00	1,400.00	1,400.00	1,400.00	1,400.00
Price¹, KES	7.43	8.18	8.53	8.81	12.47	22.00
Value² (x10⁶)	10,405.36	11,446.40	11,936.96	12,331.76	17,455.20	30,800.00
Farmer³, KES (x10⁶)		1,041.04	1,531.60	1,926.40	7,049,840,000.00	20,394.64
Broker³, KES (x10⁶)			490.56	885.36	6,008,800,000.00	19,353.60
Roadblock³, KES (x10⁶)				394.80	5,518.24	18,863.04
Council³, KES (x10⁶)					5,123.44	18,468.24
Market³, KES (x10⁶)						13,344.80

*Annual production total ware potato annual production in Kenya (1.4 million tons) that was reported to be traded in standard bags; ¹Prevailing prices in December 2009 (price kg in appendix 6.1*0.90)+(price kg in appendix 6.2*0.08); ²Value calculated by getting product of the annual production and price; ³Value calculated by getting the difference of value in the corresponding column

Discussion

The study confirmed that the marketing value chain of ware potato in Kenya is complex and inefficient as previously reported (Wang'ombe, 2008). This has led to income losses accruing to farmers. The observed use of the recommended bag type for potato packaging is quite encouraging and it implies that traders are keen to maintain ware potato quality even though the material is more expensive compared with other materials. However, most traders still use sack material not legally recommended for the bag extension even when the main bag is made of jute/sisal, affecting the quality of the ware potato that they otherwise want to protect. Enforcement of the current regulations would ensure only the recommended bag types are used for packaging purposes, ensuring preservation of the potato quality. Lack of implementation of the regulations by farmers suggests that many factors are at play to the farmers' disadvantage. Knowledge about the ware potato packaging size and bag type was high among the stakeholders, showing that channels used to create awareness and sensitization on the requirements have been effective. However, lack of implementation shows gaps in enforcement and this should form the main area of policy intervention if the chain is to be streamlined. Previous studies suggest that it is more profitable for farmers to sale their produce at farm gate particularly in groups (Dijkstra, 1999). This implies that promotion of community stores would enhance price negotiation by farmers and reduce exploitation by traders. Also, contract farming may reduce economic risk that farmers face while at the same time the trader will be assured of regular supply (Burch *et al.*, 1990). The local supermarkets offer potential for contract farming (Neven and Reardon, 2004) as well as other processors. To avoid exploitation, farmers would be encouraged to join grower associations.

Conclusion

This study showed that traders and farmers are aware of the provisions of the legal notice no. 113 of 2008. However, only few are implementing these, claiming that the enforcement mechanism by the government is lacking. It was not clear why the councils are not enforcing the regulations. Lack of the enforcement of the legal notice has resulted to continued trading of the extended sized bags (more than 110 kg). The study shows that the national value of ware potato at farm level is KES 10 billion while at the retail level it is KES 30.8 billion. The huge discrepancy is due to many players within the potato marketing chain, which showed that about KES 2 billion is lost, an amount that would accrue to farmers.

Recommendation

Due to lack of enforcement of the legal notice no. 113 of 2008, this study recommends that the Ministry of Agriculture should appoint inspectors who will ensure regulations are enforced. In addition, the Ministry of Agriculture and Ministry of Local Government should work closely to ensure enforcement. Community stores should be promoted to enhance farmer capability of bargaining for better prices while market intelligence information sharing should be expanded to include daily updates that should reach farmers in the potato growing areas. Farmers should always get seasonal financial advice to understand the amount of money that they likely used during production per bag so that they have a base value for price negotiations.

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