

Impact of Specialization and Diversification Reengineering Strategies on Farm and Off-farm Activities for Sustainable Food Security in Kenya

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Abstract

Reengineering strategies aim at rethinking and redesigning the business processes and practices to improve performance in the areas of cost and output to achieve a new higher level of competitive advantage. Ideally, reengineering builds competitive advantage, in this case, farmers shifting from farming for subsistence to doing it as a business. It is a paradigm shift that reflects specialization and diversification in farming sector to boost farming profitability. The government of Kenya in vision 2030 has enumerated various ways in which agriculture can drive the Kenyan economy to the next stage of sustainable profitability and guaranteed food security. Specialization and diversification of farming activities are some of the critical suggestions to reengineer agriculture as a business. Off-farm activities offer a credible strategy of expanding marketability of farm produce and necessary shield to cushion farmers from absolute loss of income due to farming risks especially post-harvest challenges. This paper explores how the stated reengineering strategies impact on sustainable food security in Kenya. The objective of this study was to examine how specialization and diversification strategies influenced farming and off-farm activities among farmers for sustainable food security in Kenya. Using a sample survey design, data was collected through questionnaires and interview schedules. Data was analyzed descriptively. The findings revealed that diversified farming activities were motivated by desire by farmers to cushion themselves against risks while off-farming engagements was encouraged by ease of conversion and high returns. The production trend beyond subsistence demonstrates benefit of specialization reengineering strategy to boost family income. This study concludes that engagement in farm and off farm activities is a viable specialization and diversification reengineering strategy that boosts profitability. It also promotes sustainable food security due to enhanced purchasing power.

Key Words: Specialization, Diversification, Reengineering Strategies, Food Security, Farm and Off-Farm Activities

INTRODUCTION

Reengineering strategies aim at rethinking and redesigning the business processes and practices to improve performance in the areas of cost and output to achieve a new higher level of competitive advantage (Flicker and Ferguson, 2012). Ideally, reengineering builds competitive advantage, in this case, farmers shifting from farming for subsistence to doing it as a business. It is a paradigm shift that reflects specialization and diversification in farming sector to boost farming profitability by targeting high income sustainable farming engagements (Tuladhar, 2003; Alila & Atieno, 2006). Despite the

existence of food and nutrition security and poverty reduction policies globally, now well coined into a Millennium development goal (MDG.1), many people around the world, particularly third world population remain food and nutritionally insecure. The government of Kenya in vision 2030 has enumerated various ways in which agriculture can drive the Kenyan economy to the next stage of sustainable profitability and guaranteed food security (G.O.K, 2007; Alila & Atieno, 2006; USAID, 2008). Specialization and diversification of farming activities are some of the critical suggestions to reengineer agriculture as a business. Off-farm activities offer a credible strategy of expanding marketability of farm produce and necessary shield to cushion farmers from absolute loss of income due to farming risks especially post-harvest challenges. In pursuit of Specialization reengineering strategy, farmers sustain competitiveness by doing intensive farming especially those under smallholder farming. As for diversification, they can diversify to higher-value crops and value-added products that provide a market-linked basis for profitable enterprises that can raise incomes and grow economies in ways that safeguard the rural poor against food insecurity (USAID, 2008). Food insecurity is a state where people lack secure physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active, productive and health life (Cleaver & Okidegbe, 2006).

The challenges in the agricultural sector this 21st century especially as a result of severity of hydro meteorological disasters due to climate change and global warming have made farming a nightmare. Risks associated with crop failure are so high that farmers have been encouraged to reengineer their approach to doing farming to stay afloat. Engaging in farming as a business driven by specialization and diversification strategies has been one such outstanding suggestion (Alila & Atieno, 2006; G.O.K., 2007). As asserted by Bhargava (2006), perennial food insecurity in developing states like Kenya remains a challenge in spite of farmers being encouraged to grow crops for consumption and commercial purposes. The government of Kenya in vision 2030 has enumerated various ways in which agriculture can drive the Kenyan economy to the next stage through reengineering (G.O.K. 2007). Impact of such strategies especially on perennial food security challenges is yet to be widely conducted and documented. This paper attempts to fill this gap having investigated how specialization and diversification re-engineering strategies in agricultural practices among sampled farmers impacted on farm and off-farm activities for sustainable food security in Kenya. The objective of this study was to examine how specialization and diversification strategies influence farming and off-farm activities among farmers for sustainable food security in Kenya.

Diversification refers to how broadly a household distributes its economic efforts. A diversified household distributes its efforts across many activities such as food crops, several cash crops, livestock, and a range of off-farm activities (G.O.K. 2007). A specialized household distributes its efforts across few activities such as focusing on a few cash crops and buys most of its food. Further, agricultural diversification implies increasing the variety of agricultural commodities produced at the farm level. This is a trend that has become popular with subsistence farmers in Kenya to reduce risks arising from climatic, biotic or seasonal factors (Delgado, 1997; Bhargava, 2006). Diversification and specialization are the inverse of each other (Kimenju *et al.*, 2005). This paper explores application of these strategies and how they assist farmers improve on food security concerns in Kenya.

Farmers who have access to off-farm income are in a better position to gain access to resources critical for agricultural production and soil management. For instance, they can afford to pay for the escalating costs of farming and soil inputs, hire labour, and purchase land (FAO, 2002). It further illustrates that, given the risky business of agriculture; women diversify their options by engaging in multiple off-farm coping strategies to sustain their livelihoods and food security. This is especially the case for farmers who cannot depend on food and income from farming alone (Wegulo & Obulinji, 2001). Using Keiyo district as a case reference, this study interrogated the scale of farmers' engagement in farm and off-farm activities propelled by specialization and diversification strategies.

MATERIALS AND METHODS

The study adopted a survey design. It was concerned with describing, analyzing and interpreting conditions involving how specialization and diversification reengineering strategies have been employed by farmers in Kenya, using Bungoma North District as a case reference. The researchers did not manipulate any variables or arrange events to happen. This was done by selecting a sample of the population of farmers in the area after a preliminary exploratory survey. To arrive at sample size of 197 farmers, the researcher adopted a sample determination table used in social research (Cohen *et al.*, 2005, p. 95; Saunders *et al.*, 2009, p. 212).

RESULTS AND DISCUSSIONS

Reengineering builds competitive advantage, in this case, farmers shifting from farming for subsistence to doing it as a business through engagement in a blend of farm and off-farm activities (USAID, 2008; Flicker & Ferguson, 2012). This study sought to establish farmers' responses on how specialization and diversification strategies influenced their farm and off-farm activities for boosted profitability/family income and sustainable food security. Farmers were asked to rank various farming activities in order of contribution to family income through off-farm activity or whether farming was done purely for subsistence. Responses given are summarized in Table 1.

Table 1. Impact of specialization and diversification strategies on farm and off-farm activities

Farm and Off-Farming activities					
Gender	Impact Rating	Maize	Passion	Livestock	Poultry
Male	1 High Contribution	13(7)	31(15)	16(8)	25(13)
	2 Moderate Contribution	46(23)	28(14)	51(26)	32(16)
	3 Minimal Contribution	16(8)	27(14)	09(5)	17(9)
	4 Subsistence only	51(26)	40(20)	50(25)	52(26)
Female	1 High Contribution	09(5)	21(11)	04(2)	06(3)
	2 Moderate Contribution	17(9)	14(7)	26(13)	20(10)
	3 Minimal Contribution	05(3)	05(3)	04(2)	06(3)
	4 Subsistence only	40(20)	31(16)	37(18)	39(20)
Sub-Total		197(100)	197(100)	197(100)	197(100)

Note: The figures in parentheses are percentage frequencies n=197

Source: Field data, 2011

According to gender, 75 (38%) male and 31 (16%) female rated maize as having contributed to family income as compared to 51 (26%) male and 40 (20%) female who rated maize as being for subsistence only. Generally, 54% of the respondents rated maize as having contributed to family income as compared to 46% who rated it as being for subsistence only. This suggests a shift in perception of maize farming from pure subsistence to commercial farming where part of it is sold to generate income for the family. As for passion fruit, 64% of the respondents as a whole rated it as having contributed to their family income through off- farm engagement as compared to 36% who farmed it for subsistence only. Livestock had slightly lower figures compared to passion fruit at 56% of the respondents as a whole rating it as having contributed to their family income through off-farm engagement as compared to 43% who practiced it for subsistence only. Poultry rating was similar to that of maize with 54% of the respondents rating it as having contributed to family income as compared to 46% who rated it as being for subsistence only.

From the study, traditional farming activities: Maize production, poultry and livestock posted a similar trend where over 50% of the respondents indicated an inclination towards off- farming activities to raise income for the family as opposed to engaging in them purely for subsistence. This shift in attitude to do farming as a business reflects current trends of blending specialization and diversification to reap optimal benefits especially by smallholder farmers as suggested by similar studies and captured by government policy initiatives in agriculture (Anderson *et al.*, 2002, G.O.K, 2007). The range of activities: maize, livestock and poultry constitutes a diversification strategy which raises the aggregate income to families in spite of subsistence tendencies.

Passion which carried 64% from respondents suggests how families could be diversifying to fruit farming majorly for commercial purposes with minimal tendencies for subsistence to boost family nutrition needs. The uptake of passion fruit farming among traditionally cereal biased Rift Valley reflects influence of diversification strategy on farming and off farm activities. Generally, 43% of respondents across gender rated the four farming activities: maize, passion, livestock and poultry as moderate and high contributors to family income. This suggests that most families have adopted diversification as a strategy to raise income out of farming ventures. This increased interface between off farm and farming activities as a means to sustainable family income is in agreement with studies done by Wegulo and Obulinji (2001).

The engagement in the four faming activities all of which have been rated above 58% confirm that diversification in farming activities pays in terms of positive change to family income. Similar studies by Reardon *et al.* (2002) concur with this finding. These percentages suggest a relationship between the range of farming activities and involvement in off farm activities. This finding is in agreement with a study by Iiyama (2006) on land use change in Kerio Basin and its implication on household income. Of the four activities, passion fruit ranked highly (68.3%) with regard to the interface between farming and off farm engagement compared to maize, livestock and poultry. This finding suggests a higher market value associated with passion fruit farming compared to maize farming. Similar findings have been suggested by Tirop (2011) and Alila and Atieno (2006) who focused on the changing trends of farming among the farmers. Livestock competed favorably with upcoming farming engagements like passion

fruit in spite of being a legendary farming practice among the Keiyo community. According to Iiyama, Keiyo have embraced livestock production for both subsistence and monetary gain which this study confirms.

From the findings, it can be observed that gender characteristics stand out even in terms of farming and off farming activities. This study established that female perceive food bracket (maize and passion fruit) more for nutrition than for sale. However, the ease of conversion also influenced female's perception as indicated by higher rating of maize. Overall the mean % of female engaged in off farm activities was less at 48.0% compared to 61.2% for male. This finding is in agreement with previous studies by Wegulo and Obulinji (2001).

Farmers were further asked to indicate the type of off- farm activities they were engaged in and their responses are as summarized in Table 2.

Table 2. Impact of specialization and diversification strategies on farm and off- farm activities

(a) Gender	Type of off Farm activities						Total
	Agro-Inputs	Retailing	Charcoal	Brick making	Juice processing	Not Applicable	
Male	14(7)	64(32)	16(8)	04(2)	06(3)	22(11)	126(64)
Female	07(4)	40(20)	10(5)	02(1)	03(2)	09(4)	71(36)
Sub-Total	21(11)	104(52)	26(13)	06(3)	09(5)	31(16)	197(100)
Marital Status							
Marr	18(9)	87(44)	23(11)	04(2)	06(3)	22(11)	160(81)
Sing	02(1)	17(9)	03(1)	02(1)	03(1)	09(5)	36(18)
Wed	01(1)	00(0)	00(0)	00(0)	00(0)	00(0)	01(1)
Sub-Total	21(11)	104(53)	26(13)	06(3)	09(5)	31(16)	197(100)

Note: The figures in parentheses are percentage frequencies n=197
Source: Field data, 2011

According to gender, 14(7%) male and 7(4%) female cited agro-inputs business, 64(32%) male and 40(20%) female named retailing, while 16(8%) male and 10(5%) female mentioned they engaged in charcoal selling. As for brick making, 4(2%) male and 2(1%) female said they engaged in it while 6(3%) male and 3(1.5%) female cited juice

processing. On the contrary, 22(11%) male respondents and 9(4%) female respondents did not engage in any off farm activities.

According to marital status, 18(9%) married, and 2(1%) singles said they engaged in agro inputs business, compared to 87(44%) married and 17(9%) singles who indicated that they engaged in retailing. 23(11%) married and 3(1%) singles mentioned that they engaged in charcoal selling, while 4(2%) married and 2(1%) singles cited they engaged in brick making. Only 6(3%) married and 3(1%) single said they engaged in juice processing as an off farm activity. However, 22(11%) married and 9(5%) singles did not engage in any off farm activity.

Out of 126 male respondents 104(83%) reported engaging in some form of off-farm activity as compared to 22(17%) who were not engaged in any. Of the 71 female respondents, 62(87%), reported engaging in some form of off-farm activity as compared to 9(13%) who said were not engaged in any. Off- farm activities are aimed at cushioning the farmers from risks associated with farming. The activities, however, are accompanied by a set of risk, where male are more averse than female respondents. The results show a normal distribution of engaging in off farm activities between male and female respondents indicating no skew in respect to gender.

The study finding confirms a linkage between agriculture and the capital economy as deduced by Wegulo and Obulinji (2001). Most of the respondents engaged in retailing with few others engaging in charcoal selling, juice processing, brick making and agro input businesses. The big number/ percentage of respondents engaged in retailing activities reveals a direct link between farming activities and what is brought to market on retail basis (owner-manager). It reveals a scenario where farmers themselves engage in some form of business (off-farm activity) to dispose off their farm produce to get income for their households. Other activities that are on a smaller scale suggests diversified investment by a few farmers after selling some excess farm produce, perhaps as an off-farm engagement.

These findings were confirmed by interviews with key informants who indicated that some farmers after selling their produce do engage in some activities (off-farm) to circulate their income and as part-time venture (moonlighting).

CONCLUSIONS

This paper concludes that specialization and diversification reengineering strategies have an impact on farm and off-farm activities. The strategies spur the interface between the two activities. The range of farming activities engaged in and the dualistic element of subsistence and commercial farming cushions farmers against risks besides boosting their purchasing power and resilience to food insecurity.

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BIO-DATA

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