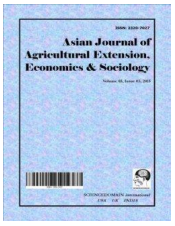

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Is the Traditional Role of Milk Cooperatives Still Relevant? Evidence from Western Kenya

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Authors' contributions

This work was carried out in collaboration between all authors. This research was part of author SW's PhD thesis. Authors KBN and FMM were his thesis advisors. All authors contributed to the current form of the manuscript.

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ABSTRACT

This study investigated the extent of performance of modern functions among milk cooperatives in Western Kenya. Data was collected from all the ten active cooperatives, Kenya Dairy Board and the livestock department through interviews using checklists. The study found that milk cooperatives in the region have not taken off on a business path due to inefficiencies in management, technological and entrepreneurial skills. Assessment of extent of performance of modern roles showed that they were still far from embracing vertical linkages. Owing to a large number of inactive members (91%), idle capacity (91%), inadequate technical facilities and non professional managers, it is recommended that re structuring into new cooperative models should be done to enable them remain relevant in competitive value chains.

Keywords: Milk cooperatives; traditional role; modern functions; business entities; competitive value chains; new cooperative models.

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1. INTRODUCTION

Agricultural cooperatives have and continue to play an important role as intermediaries between individual farming households and chain actors such as supermarkets, processors, consumers, service providers and policy makers [1]. In developing countries where small scale farmers are scattered, cooperatives have addressed market failure through collecting, marketing and processing of agricultural products [2,3]. The traditional role of cooperatives has mainly been collective action since farmers are not able to realise economies of scale individually. However, farmers all over the world are facing changing market conditions characterised by a shift towards liberalization policies and consumer demand for quality, reliability, food safety and traceability [3]. To respond to these demands, many cooperatives have embraced modern functions such as vertical integration from input supply to marketing continuum and chain partnerships [3,4]. These value-added functions enable cooperatives to provide access to inputs and capital, means of risk reduction and sharing, quality management, bargain for higher prices, and an institutionalized framework of knowledge sharing. The challenge for both farmers and cooperatives is two-fold: firstly, how to remain suppliers in a competitive economic environment and integrated value chains. Secondly, collective action, and shared ownership, both present coordination problems, and encourage the inefficient use of resources, if society members do not take into account the costs that their use will incur on the society as a whole [5,6]. In developed countries, cooperatives are moving towards new models, consolidation, mergers and acquisitions [7,8] due to investment constraints emanating from free rider, horizon, portfolio, control and influence problems [9]. These constraints emerge because ownership rights are restricted to members, are non-transferable, redeemable and have benefits distributed proportional to usage rather than investment [10]. In Sub Saharan Africa (SSA), due to scattered nature of production, cooperatives have been useful in enhancing collective marketing. However, they too have experienced challenges of transition from the era of monopoly and state control to new freedom of operating in a competitive liberalized environment, often leading to decline or collapse as a result of waning member commitment, mismanagement, political interference and corruption [11,12]. Among the agricultural cooperatives, milk cooperatives have so far been the largest sector accounting for 57% of cooperatives in European Union [8] and India [13]. Kenya, with the most successful dairy sector in SSA [14] had 343 milk cooperatives by 2012 [15]. The purpose of this study was to assess the performance and to what extent milk cooperatives in Western Kenya have embraced modern functions to put them on a commercialization path in competitive value chains.

2. MATERIALS AND METHODS

2.1 Study Area

The study was carried out in Busia, Bungoma, Kakamega and Vihiga counties of Western Kenya between 2012 - 2013. Western Kenya lies on the Equator between latitude 0.03ºN to 1ºN and 34ºE to 35.30ºE longitude. The region has a human population of 4.3 million people (GOK, 2009), an estimated 99000 smallholder dairy farmers keeping about 192300 improved dairy cattle population [16]. Western Kenya produces about 215 Million litres of milk and experiences persistent milk insufficiency [17] and 27 milk cooperatives [18]. Most of the region lies in Agro Climatic Zone (ACZ) Low Midland 1 [19] characterised as sugarcane-maize zone, at an altitude of 1200-1500 Meters above sea level. Mean annual rainfall is 1500-2000 mm and is bimodal with long rains occurring in March-May and short rains in October-December. Farmers practice mixed livestock-crop farming. Dairy farming is a key activity in the four counties with most of the milk marketed through informal channels while cooperatives control about 5% of the market share [17].

2.2 Study Variables, Data Collection and Analysis

The categories of variables investigated included: performance indicators (milk intake, registered suppliers, active suppliers, capacity, price); economic analysis (gross margins); and assessment of management, and extent of performance of traditional and modern functions. Data was collected from a survey of ten active cooperatives in the region, interviews with cooperative officials, Kenya Dairy Board and observations of facilities. Data was analysed and discussed along thematic areas.

3. RESULTS AND DISCUSSION

3.1 Performance Indicators

The findings showed that only 8.8% capacity of the region's milk coolers was utilized. Out of total of 27600 litres capacity, cooperatives received only 2420 litres of milk on daily basis delivered by farmers. Only 8.6% out of 11841 registered members were active. The study also revealed that cooperatives bought milk from farmers at between KES 30 to KES 55, while other buyers (hotels, institutions paid an average of KES 60 (Table 1).

From our interviews, constraints facing cooperatives were identified as: low milk supply, farmer apathy, delayed or defaulted payments, mismanagement, low technical, financial and business skills among officials, competition from other buyers and high operational costs (Table 2). Farmer pathy which affects milk supply, manifested itself in the high numbers of inactive members (91%) is a real problem in many cooperatives, referred in the literature as the "free rider" problem [5,6,20]. Similar results have been reported by [10] in South African Cooperatives.

3.2 Costs and Gross Margins in Cooperatives

Table 3 shows the costs, revenues and gross margins in the ten cooperatives across the four counties. 50% of cooperatives had a negative gross margin, meaning that operational costs were more than revenue received. The low revenue received by cooperatives in this study could be attributed to the low volumes of milk intake, reliance on raw milk sales alone, lack of product diversification and lack of marketing beyond production location. Thus these findings reveal that cooperatives in the region are not yet on a business path. According to [9], a life cycle of a cooperative goes through a five stage process: formation, growth, re organization, decline or exit as they adapt to changing economic and technological change. Thus cooperatives in the region were either in the decline or exit stage due to problems associated with management, financing, free riding and political interference (Table 4). These findings further suggest the need for restructuring dairy cooperatives into viable business entities.

3.3 Management of Cooperatives

The majority of officials had school certificate (70%), above 50 years of age (85%), and without training in financial management. 70% of the cooperatives had a history of leadership wrangles, 70% were indebted and only 30% had a strategic plan. These results suggest that cooperatives in the region were either in the decline or exit stage due to problems associated with management, financing, free riding and political interference (Table 4). Unlike in the past when they dominated milk marketing, milk cooperatives are today the least popular marketing channel for milk in Kenya due to history of mismanagement, corruption and delayed payments [21-22,16]. These problems are inherent in the provisions of the Cooperative Act. The International cooperative Alliance [23] defines a cooperative as "an autonomous association of persons united to meet their economic, social and cultural needs and aspirations through jointly-owned and democratically-controlled enterprise". This definition by extension, assigns certain rights including voting to free riders. Major policy decisions are based on the one-member, one-vote principle, regardless of each member's investment in the cooperative. [9] suggests that to survive exit, new generation cooperatives have restructured through mergers, consolidations, acquisitions or converted into another business form. The new cooperative models "Business-at-cost" [7] ensure professionalism while benefits are proportional to investment. Thus, a member who accounts for 5% of the volume of agricultural products delivered to the cooperative would receive 5% of the net earnings derived from the handling, processing and marketing of those products [10]. [24] reported that the Cooperative in Columbus, Ohio with membership of 45000, majority of who were free riders, was facing bankruptcy and had to re structure to retain only quality members. [4] also reported how Japanese Agricultural Cooperatives (JAs) went through structural reforms to become major contributors to Japan's economic and industrial development. Value chains are about clear criteria for inclusion or exclusion [25]. Not all actors can be part of a value chain.

Table 1. Parameters on performance of dairy cooperatives

Parameter	Busia		Bungoma			Kakamega			Vihiga		
	Nambale	Funyula	Kitinda	Naitiri	Kimilili	Butere	Kwitsero	Kakamega	Hamisi	Bunyore	Overall
Registered suppliers	210	300	9000	1300	25	305	270	250	31	150	11841
Active suppliers	101	16	50	300	11	215	200	65	9	50	1017
Capacity of cooler (litre)	2500	0	10000	5000	1000	1000	2500	2500	2500	600	27600
Intake /day (litre)	350	50	250	800	50	400	250	200	20	50	2420
Quantity sold/day	300	50	250	800	50	400	180	200	20	50	2300
Buying Price (KES /litre)	55	45	40	30	45	46	45	40	45	45	43.60
Selling Price (KES / litre)	60	50	50	37	50	55	60	50	60	55	52.70

**KES = Kenya shillings. 90 KES = 1 US dollar; Source: Cross sectional survey data*

Table 2. Qualitative parameters

Parameter	Outcome										
Main buyer	**HH**	**HH**	**Supermarket**	**Processor**	**HH**	**School**	**HH**	**HH**	**HH**	**HH**	**HH**
Mode of payment	Fortnight	Monthly	Cash	Monthly	Monthly	Weekly	monthly	Monthly	Monthly	Monthly	Monthly
Quality test used	Alcohol	Lactometer	Alcohol	Lactometer	Monthly	Lactometer	Alcohol	Lactometer	Lactometer	Lactometer	Lactometer
Problem with milk	Adulteration	Adulteration	Clotting	Clotting	Adulteration	Clotting	Clotting	Clotting	Clotting	Adulteration	Adulteration
Value added product	Nil	Nil	Yes	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Main constraint faced	Low milk supply	Low milk supply	Low milk supply	Low management skills	Low milk supply	Low financial capital	Low financial capital	Mismanagement	Mismanagement	Mismanagement	Low capital

**HH = Households; Source: Cross sectional survey data*

Table 3. Costs and Gross margins in dairy cooperatives

	Busia		Bungoma			Kakamega			Vihiga	
Parameter	Nambale	Funyula	Kitinda	Naitiri	Kimili	Butere	Kwitsero	Kakamega dairy	Hamisi	Bunyore
Revenue/month (KES)	540000	75000	375000	888000	75000	660000	324000	300000	36000	82500
Variable costs /month(KES)	543834	75335	325200	747150	78335	639200	430967	296970	39500	81335
GM	-3834	-335	49800	140850	-3335	20800	-106967	3030	-3500	1165

** Variable costs included: milk costs, rent, electricity, licences and personnel salaries, while Revenue was calculated as Quantity sold*Price; Source: Cross sectional survey data*

Table 4. Selected parameters on management, traditional and modern roles among cooperatives

Management	Description	Percent of cooperatives
Level of education of officials	School certificate	70
Age	A level	30
	< 50 yrs	10
	>50 yrs	90
Competency	Training in financial /agribusiness skills	0
Disputes	History of leadership wrangles	70
Interference	External interference by politicians	30
Indebtedness	Indebted to farmers, banks	70
Vision	Availability of strategic/ business plan	30
Traditional roles		
Bulking / chilling	Availability of cooler	90
Milk testing	Availability of milk testing equipment: alcohol test, lactometer	90
Other services	Provision of extension services/ input supply	10
Member commitment	Active members	9
	Free riders	91
Modern roles		
Logistics	Own transport	0
Quality assurance (QA)	Availability of quality / traceability system	0
Processing and value addition	Product differentiation	10
	Packaging / Certification by Kebs	0
Contract with buyers	Forward integration with consumers (supermarkets etc)	10
Service Diversification	Backward integration: Input supply, extension, information exchange	0
Professional managers	Technical and financial managers	0

Source: Cross sectional survey data

3.4 Traditional vs Modern Roles

Regarding the extent of performing traditional roles, the study found that 90% of the cooperatives had milk coolers and basic milk testing facilities. However, only 10% provided extension and input supply services. A high proportion of members (91%) were not delivering milk to the cooperative and hence free riders. Out of the six modern roles evaluated, four were non existent while only 10% of the cooperatives had very limited processing of milk and contract with reliable buyers (supermarket). There was no evidence of chain partnerships or vertical integration. Cooperatives had a large proportion of members as free riders, lacked professional managers, had poor financial status. Majority of the cooperatives had weak linkages with farmers, buyers and service providers. There was little value addition since the only product sold was raw milk. [4], in a review of cooperatives in Japan, argues that cooperatives are neither social clubs nor charity organizations and should be managed in a business-like manner.

3.5 Restructuring Milk Cooperatives into Business Entities

From these findings, a vertical coordination strategy could be a better option to upgrade cooperatives into business entities so that they become chain leaders and attractive milk buyers. Restructuring is necessary at four levels: First, management change that entails experienced, trained and professionally qualified staff under the supervision and control of a board of directors. Secondly, membership restructuring: closed membership, payment of share capital to ensure every member has a stake, selective incentives in service provision [3,24]. Third, backward integration with farmers to provide: input supply, Artificial insemination and breed procurement services, extension services, feed supply, improved technology, credit, and information exchange. Fourth, vertical linkages (chain partnerships) which entail forward integration with buyers through contract marketing of milk, price negotiations, product upgrading and diversification. When cooperatives are restructured in both management and functions, they can indeed become attractive to farmers and viable business partners in the value chain as reported in the Netherlands [8], USA [24], South Africa [10]; North America and Europe [7] and Japan [4]. India became the world leading milk producer due to a strong milk-driven cooperative sector [13].

4. CONCLUSION AND RECOMMENDA-TIONS

This study revealed that milk cooperatives in Western Kenya were not yet on a business path due to inefficiencies in management, technological and entrepreneurial skills. Assessment of extent of performance of modern roles showed that they were still far from embracing vertical linkages. Owing to a large number of inactive members, idle capacity, inadequate technical facilities and non professional leadership, it is recommended that re structuring into new cooperative models which take into account local innovations and capabilities should be done to enable them remain relevant in competitive value chains.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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