



Growing Inclusive Markets

Business Works for Development • Development Works for Business

CASE STUDY

Sub-Saharan Africa • Kenya

Kenya Agricultural Commodity Exchange (KACE): Linking small-scale farmers to national and regional markets

Prepared by • Winifred N. Karugu
Sector • Agriculture; ICT
Enterprise Class • MSME



Executive Summary

Kenya Agricultural Commodity Exchange (KACE) is a Kenyan micro, small and medium enterprise (MSME) that provides a forum through which small-scale farmers can access mainstream markets for agricultural commodities. Kenya has three main commodity exchanges: The Nairobi Coffee Exchange, The Tea Auction based in Mombasa and the Kenya Agriculture Commodity Exchange (KACE), which is a spot exchange.

KACE is the first and only national agricultural commodity exchange in Kenya, and it differentiates itself by dealing with a variety of commodities of which maize and beans are the most heavily traded. KACE acting as an intermediary further empowers rural farmers with market information and provides capacity enhancement, business training and technical assistance. In contrast, the Nairobi Coffee Exchange and the Tea Auction each trade one commodity, i.e. coffee and tea respectively.

Prior to the formation of KACE, small scale farmers¹ (especially the subsistence farming majority) lacked access to mainstream markets for agricultural produce, leaving them vulnerable to the forces of the market², as well as to exploitation by country buyers. Small scale farmers were offered very low prices because individual farmers generally produce small amounts that translate to poor bargaining power. Small scale farmers were characterized by small farms, low education, low levels of technology, lack of access to quality markets and low levels of organization. In addition to this, for any one crop; the marketing chain consists of multiple middlemen, each taking a margin at every stage between producer and consumer and to have a competitive final price the small scale farmer bears the losses. The country buyers took an additional part of this margin, and were not above squeezing prices to the extent that the subsistence farmers at the bottom of this chain were often forced to sustain losses. In the long term this was clearly not sustainable, as evidenced by rising poverty levels.

The main activities of KACE include linking farmers and mainstream buyers by collecting information on the prices in different markets of various commodities on a daily basis from market vendors then availing them to the farmers in real time. Modern information communication technology (ICT) makes this possible through mobile phone handsets and personal computers³. Trades are made through competitive bids and offers, once a buyer and a seller agree to trade, KACE acts as a clearing house and (for a commission) arranges the financial and logistical aspects of the sale thus giving the farmers options as well as bargaining power. KACE's services include: a mobile phone short message service (SMS),

¹ The Ministry of Agriculture in Kenya classifies small-scale farmers as those that cultivate less than 20 hectares. The great majority of small-scale farmers practice farming on less than three Hectares per family, and are hard pressed to eke out a living.

² This is in sharp contrast to the situation in most of the developed world where farming is not only officially protected from competition but is also highly subsidized.

³ Poor farmers are rarely on personal computers but they generally have access through cybercafés in their local trading centres or rural towns. However, 80% of Kenyan adults own mobile phones.



Growing Inclusive Markets

Business Works for Development • Development Works for Business

interactive voice response (IVR) service, daily radio bulletins, a live radio auction service and online computer services.

The marketing department at KACE confirms that it reaches millions of small-scale farmers in Kenya and surrounding countries particularly in Uganda and Tanzania. Since inception in 1997, KACE has empowered small scale farmers to receive fairer prices and access markets previously inaccessible to them. Mainstream buyers such as manufacturers, cooperatives, wholesalers, and exporters have also benefited through increased availability at fair price. Consumers ultimately gain through increased availability, better quality and reduced transaction cost.

KACE's business model is simple, it avails up to date market information inexpensively, regularly and consistently, to farmers across the country through mobile phone alerts, radio programs and computers online. This information on price and availability is compiled by KACE agents in different markets at dawn each day and immediately uploaded on the ICT platform. Farmers are thus able to compare prices in different markets and negotiate accordingly with country buyers. In addition to this auction, services link buyers and sellers together. Other activities include educating and organizing farmers into local groups in the interest of bargaining power.

Introduction - The Value Proposition

Kenya Agricultural Commodity Exchange (KACE) is a private sector firm based in Kenya, whose objective is to provide reliable and timely market information to both buyers and sellers of agricultural commodities. Founded in 1997, KACE has two objectives: firstly to link farmers and traders for business in agricultural commodities, whereby KACE members of staff collect daily information on the prices of various commodities from market vendors in Nairobi, Bungoma, Machakos, Kisii, Kisumu, Mumias and Eldoret, among other towns in the country. The information is then forwarded to KACE headquarters, where it is processed and made available to the public via the Regional Commodity Trade and Information System (RECOTIS) pages on the KACE website, on notice boards at Market Information Centers (MICs) across the country, through mobile phone short message service (SMS), or fax. The information is mostly about price and availability but it does at times feature other aspects such as government alerts⁴, and requests for supply from large domestic or foreign buyers. Farmers, traders, or indeed any interested parties can easily access the information by sending a text message to a prescribed number requesting specific information such as the price of maize. Small scale farmers generally sell their produce to country buyers and cooperatives that bulk produce for onward sale to manufacturers, wholesalers, supermarket chains and sometimes foreign buyers. KACE empowers farmers by enabling them to access information that improves their bargaining position with country buyers. Sometimes the farmers even bulk the produce locally themselves so as to improve their bargaining power. KACE does not physically handle any produce nor do they normally get involved in transactions. The

⁴ This includes weather patterns, livestock diseases, and imminent infestations such as army worms, quarantines and support programs.



Growing Inclusive Markets

Business Works for Development • Development Works for Business

transactions take place between buyers and sellers. KACE's role is more an intermediary or broker. The message is charged at a premium but affordable rate of 5 Kenyan shillings (Ksh) per text message which is about US\$0.05. The sender receives a reply by SMS instantly informing on the price of maize in major towns. Alternatively, depending on their different circumstances, subscribers to the online service can log on for daily updates on prices, or stakeholders can listen to the daily radio broadcasts, or visit Market Information Centers (MIC) notice boards.

Trades are made through competitive bids and offers, which the system prioritizes according to price and time of receipt, while posting them on the platform. Once a buyer and a seller agree to trade, KACE acts as a clearing house and for a commission it arranges the financial and logistical aspects of the sale. KACE also provides information on prices of a wide range of commodities, as well as news on agri-business issues to stakeholders. Some bids come from countries outside Kenya and these are often locally unattainable, in that the amounts required are larger than can be supplied. In such cases, KACE facilitates importation of commodities from neighboring countries in order to meet demand.

DR. ADRIAN MUKHEBI – FOUNDER AND CHAIRMAN

Founder and Chairman Dr. Adrian Mukhebi is an agricultural economist who studied the history of agricultural commodities trade while attending university in Kansas, USA in the mid-1970s. On returning home, he first worked as an economist for the Ministry of Agriculture, and then taught the subject at the University of Nairobi. He subsequently worked for International Livestock Research Institute (ILRI)⁵, from where he retired to start KACE. Dr. Mukhebi says *“my experience with development agencies both direct and indirect, indicated that development programs were almost invariably geared towards increased production that led to lower prices for small scale farmers often below breakeven. I knew that this had to be addressed.”*



Prof. Mukhebi (left) pictured with Mr. Kofi Anan when the latter visited KACE on 15th July 2007 (Photo credit: KACE)

After personally experiencing how the exploitation by middlemen affected his own family, Dr. Mukhebi established KACE to improve the situation for small-scale farmers. Dr. Mukhebi grew up on a small holder farm in Western Kenya, but growing crops and rearing cattle did not bring in enough money to care for the whole family. As a result, Dr. Mukhebi's sisters had to drop out of school after primary education and were eventually married off to collect the dowry that would allow the sons in the family continue their education. The fate of his sisters, though not unique in rural Kenya, bothered Dr. Mukhebi and was a key factor in choosing his career.⁶

⁵ A member of the Consultative Group on International Agricultural Research (CGIAR) originally ILRAD later ILRI

⁶ Ashoka Fellows, Adrian Mukhebi, <http://www.ashoka.org/fellow/3619>



Growing Inclusive Markets

Business Works for Development • Development Works for Business

Dr. Mukhebi was recently appointed to the board of National Cereal and Produce Board and has also assisted in setting up commodity exchanges in Malawi, Uganda, Ethiopia, Nigeria, and Ghana (a system now serving nine member countries of the Economic Community of West African States or ECOWAS). He is currently assisting in setting up a warehouse receipt system in East Africa, as well as in Zambia.

Dr. Mukhebi's personal experience coupled with his experience as an agricultural economist in government, academia and ILRI, "*instilled in me a deep desire to improve the lot of peasant farmers who he had witnessed suffering a great deal of hardship and who subsequently contributed very little to the economy as a whole.*" Peasant farmers typically rely on small low-margin crops that yield volatile harvests and fetch low prices in markets. They have low ability to organize distribution and delivery of their produce and have to rely on country buyers to purchase their harvest at prices that are often below break-even thus perpetuating a vicious cycle in which poor farmers become ever poorer. These farmers are characterized by very small farms, low education, low levels of technology, lack of access to quality markets and low levels of organization, making them easy targets for traders with a short term vision. They constitute the majority of the farmers in Kenya in a country where 70% of the population still depends on agriculture⁷.

In 1986, Dr Mukhebi was part of a study to assess the loss of livestock during the severe 1983/1984 drought in which 50% of small animals and 60% of cattle were lost.⁸ They noted that since 1895 there has been a 10-year cyclical drought, and therefore made many recommendations that would mitigate further loss of livestock during droughts.

Prior to the formation of KACE, peasant farmers had very few options and were often victimized. Before the introduction of Structural Adjustment Programs (SAPs) in the early 1990s, peasant farmers had enjoyed substantial protection through giant marketing cooperatives, statutory boards, soft loans, price controls and even direct and indirect subsidies for selected commodities such as maize. This protection had already begun to unravel before SAPs scuttled it altogether. Under the subsequent system, a new breed of middlemen (sometimes known as country buyers) entered the market and was able to bulk rural produce to realize economies of scale that made them unusually high profits, though not the farmers. Storage facilities for farmers were disorganized and most farmers had no access to credit. The country further lacked institutional mechanisms for setting prices, arising from poor supply/demand signaling effect. The National Cereals and Produce Board (NCPB) still acted as a buyer of last resort but in any case most peasant farmers did not produce enough to warrant delivery to NCPB. From the onset, the SAPs, regulation of quality and standards in the grain sector became de-institutionalized leading to poor quality produce and a free-for-all commodity market that deteriorated into a disorganized market. Furthermore, weak government monitoring systems and regulatory mechanisms had led to the proliferation of

⁷ Government of Kenya (2009) Economic Survey 2009

⁸ Mukhebi and Gitunu, 1986



Growing Inclusive Markets

Business Works for Development • Development Works for Business

country buyers⁹ whose activities placed both farmers and consumers at a disadvantage. As peasant farmers became poorer and their output fell, the traditional¹⁰ middle businesses suffered reduced availability and lower quality of raw materials, while consumers suffered by paying high prices for lower quality produce. Due to these problems, many products previously taken for granted begun to disappear from the Kenyan market, thus opening the door for cheap imports. All this was taking place in a country that had been self sufficient in food, and it contributed to increasingly frequent famines on larger scales for the most vulnerable groups.

It was under these conditions that Dr. Mukhebi conceptualized KACE that has increased the bargaining power of small scale farmers through four key objectives¹¹:

- Facilitation of linkages between sellers and buyers, and exporters and importers of agricultural commodities
- Providing farmers and market intermediaries (traders, brokers, processors and consumers) with relevant and timely marketing information and intelligence, and other services that enhance their bargaining power and competitiveness in the market place
- Providing a transparent and competitive price discovery mechanism
- Harnessing and applying the power of information and communication technology (ICT) as a strategic tool for rural value addition and empowerment. This is done by providing mobile phone services¹², radio broadcasts and email services to smallholder farmers, as well as communities in the remote rural areas in which they are located. Marketing Resource Centre (MRC) staff underwent training under the Digital Villages¹³ Program to bridge this gap, allowing KACE to take computers and internet to rural Kenya.

KACE empowers peasant farmers so that they are less vulnerable to exploitation, and at the same time, increases both their access to markets and their ability to compete. Nowadays, farmers and other stakeholders have markets at their fingertips and they are increasingly able to navigate wider markets. During his time with different employers, Dr. Mukhebi had noted the great diversity of circumstances in Kenya. For example he noted that, *“when there is drought and food stress in some parts of the country, there is also surplus produce and lack of markets in other markets at the same time.”* Dr. Mukhebi thus envisaged a situation in which surplus could flow to stressed areas for mutual benefit. His vision is being realized in that

⁹ Many of the country buyers were “cowboy” operators who saw an opportunity for abnormal profits and moved quickly to take advantage of it, before moving on to other activities when abnormal profits subsided.

¹⁰ These included agricultural cooperatives, manufacturers, wholesalers and retailers.

¹¹ KACE, About us, http://www.kacekenya.com/index.php?option=com_content&task=view&id=12&Itemid=26

¹² 80% of Kenya’s population own mobile phone handsets. Please include the source for this info.

¹³ The Digital Villages Program is a massive Kenyan government initiative that is availing internet access to all corners of the country, as well as training the public in its use. For example, most government documents are now available for downloading on the internet, and even people with low literacy are increasingly using this method.



Growing Inclusive Markets

Business Works for Development • Development Works for Business

farmers now actively seek out prices in various domestic (and sometimes foreign) markets and subsequently sell where prices are best. The farmers have learnt to collaborate with one another so as to bulk produce for greater bargaining power. KACE has played an instrumental role in this by encouraging farmers to cooperate so as to sell produce collectively rather than individually. Once KACE set this in motion farmers have proceeded to own the process. And the upcoming warehouse receipting system will give farmers greater flexibility than before as they will be able to warehouse produce and use the receipts to obtain cash or credit up to 80% of the value of the delivery. The warehouses will maintain ideal storage conditions that enable produce to remain in peak condition for long periods of time. The warehouse system will enable the country to bulk produce for strategic reserves as well as meet large foreign orders. Several collaborators are partnering to make this possible including the National Cereals and Produce Board, banks, the East African Grain Council and the governments of East African countries including Kenya, Tanzania, Uganda, Rwanda and Burundi.

The Business Model

KACE has its headquarters in the Westlands area of Nairobi and it has market information and linkage systems (MILS) across the country (see appendix 3). KACE employs 25 members of staff in total. KACE is a private family-owned company with a social agenda, and it was founded using the savings from the shareholders. No loans have been necessary up to the present. Generally, profits are ploughed back into the business as the shareholders have agreed to reap dividends in the future.

Developed in 1997 MILS enables KACE to collect and updates and disseminate market information on various crop and livestock products. Currently information is collected on 42 commodities, classified into cereals, pulses, tubers, vegetables, fruits, livestock and farm inputs. The markets covered are Nairobi, Mombasa, Nakuru, Eldoret, Bungoma, Machakos, Kitale and Chwele, which are the main agricultural commodity wholesale markets in the country.

Various development agencies have come to view KACE's activities as central to their own activities and chosen to inject funds. Typically, a development agency will support a particular activity such as a radio program, or ICT or even a particular crop like maize as in the case of USAID.



Growing Inclusive Markets

Business Works for Development • Development Works for Business

TRADING FLOOR



A farmer accesses cattle prices via his mobile from his farm (Photo credit: KACE)

When KACE first started, it established a trading floor in Nairobi at the Jamhuri Park's farmer's dairy banda¹⁴; Dr. Mukhebi rented it and set up trading boards. This operation was financed by the founder's savings because he wanted to put in place a mechanism to catalyze the flow of information, produce and money. They advertised but the suppliers that came to trade were not the targeted SME farmers, rather many of the traders who responded to the advertisements were large domestic or international buyers and sellers. Thus, he shelved the trading floor for the time being, as he realized that most of his targeted suppliers were located in the rural areas, and unlikely to

trade in such a forum. KACE then established a virtual trading floor to improve the matching of offers and bids through a rural-based FM radio program and through www.kacekenya.com. Using the latter, a visitor to the trading floor can view commodities on offer or on bid freely. However, in order to be able to offer to sell or to bid to buy, one has to be a subscriber to KACE or to pay a placement fee. The seller/bidder is prompted to enter their membership number or to subscribe by filling a form and paying the placement fee.

KACE's original trading floor concept is set to return in another format through collaboration between KACE, the East African Grain Council (EAGC) and Equity Bank. This will take the form of a warehouse receipt system. The system allows farmers to deposit maize and other grains in designated certified warehouses during the harvest period that usually occurs between the months of December and March¹⁵. After delivery, farmers will be issued with warehousing receipts to wait for better prices. Farmers with an urgent need for cash can then borrow from Equity Bank¹⁶ (or indeed any other commercial bank) at standard market rates, against the warehousing receipts. They can then sell their stored maize at a good margin during the months of May to August when prices are expected to have risen and thus repay the loans. This empowers farmers by removing the pressure to sell at prices that are at breakeven or below. Previously farmers were subject to great pressure to sell at untenably low prices during harvest time because they needed to maintain their families and replant for the next season. The warehouse receipt system enables farmers to receive significantly higher prices for their produce such that they can repay their loans and yet make a profitable return from farming.

EAGC has negotiated for minimum storage costs with warehousing owners, who shall be approved by the Council based on specified criteria that spells out technical aspects of the

¹⁴ A banda is an exhibition stall that is used to display the products of various institutions during the annual international trade fair. Jamhuri Park is a large park in Nairobi designated for use in exhibitions, fairs and national day parades.

¹⁵ Agriculture in Kenya is largely dependent on seasonal rains. During harvest all farmers have produce so prices are usually low but over time prices improve as market supply decreases.

¹⁶ Equity Bank is a microfinance bank that advances loans to small and micro entrepreneurs located in rural areas. It has a large network of branches in the grass roots.



Growing Inclusive Markets

Business Works for Development • Development Works for Business

warehouses. Farmers can deliver produce to warehouses and use the receipts issued to obtain up to 80% of the cash value of produce from Equity Bank in the form of credit. The loan is repaid when the produce is sold. Equity Bank has already advanced loans to farmers based on the 'warehousing receipt' system while other banks such as Kenya Commercial Bank, The Cooperative of Kenya and Family Bank have shown interest in joining this collateral scheme. The warehousing receipt system is assisting farmers to pay school fees and meet other household and production needs without feeling undue pressure to turn to country buyers. The warehouse system is set to extend regionally to incorporate Tanzania, Uganda, Rwanda and Burundi, in addition to Kenya.

ICT SOLUTIONS

KACE has invested heavily in modern information and communication technology (ICT) as a strategic tool for rural value addition and empowerment in order to achieve its objectives of providing farmers with low-cost reliable and timely market information to enhance the bargaining power of the farmer for a better price in the market place, and to link the farmer to markets more efficiently and profitably. This is done through its various ICT components as described below.

Short Message Service (SMS)

Mobile phone short message service (SMS), which uses mobile telephony for information delivery to farmers, is provided in partnership with Safaricom Limited, the leading mobile phone service provider in Kenya that currently has over 15 million subscribers.¹⁷ An interested person sends an SMS with the name of the commodity in question to 411¹⁸ and instantly receives a reply citing that day's wholesale prices in the main markets collected and compiled by the KACE staff for that commodity. For example, the wholesale price of maize would be cited in Nairobi, Mombasa, Eldoret and Kitale. A farmer thus knows the current price at the nearest market and has a basis for bargaining with potential buyers. Mobile phone coverage in Kenya currently stands at about 20 million out of a total population of 36 million, and most adults own a handset, making affordable mobile-based services a viable option for people in the low end of the market. The cost of a single SMS for this service is 5 cents in USD¹⁹, which is about double the cost of a normal SMS, half of this goes to cover the cost collecting and processing the information.²⁰ Fifty thousand people against a targeted 100,000 people a month use this service. This translates to 2,500 USD a month as revenue generated from the Short Message Services to KACE. KACE frequently organizes the poorest most

¹⁷ Safaricom, 2009

¹⁸ 411 is the number used to retrieve this information from Safaricom Kenya Limited – the main mobile service provider in Kenya with a subscriber base of over 15 million people. The second biggest mobile service provider is Zain with a subscriber base of over 4 million. Zain is expected to offer the same service by October 2009. The Zain service will include both wholesale and retail prices in major markets.

¹⁹ The average exchange rate in September 2009 is Kenya shilling 78 per US dollar.

²⁰ The SMS fee is shared between Safaricom and KACE (and Zain and KACE) more or less equally. It is income not profit. The income table and graph in the appendix (appendix 2 & 4) shows that so far this is not a significant source of income for KACE as yet.



Growing Inclusive Markets

Business Works for Development • Development Works for Business

vulnerable farmers into groups to buy mobile phones (KACE pays 50% and group members pay 50%). One member is then selected to download information daily and inform the rest.

Interactive Voice Response (IVR)

Interactive Voice Response (IVR) service is a service which uses voice mail for information delivery, where a user dials a special phone number (0900552055) to access the information through simple menu steps; this service is provided in partnership with the Interactive Media Services Limited and was launched in 2005. IVR provides the same information to callers as the SMS service described above but in this case it takes the form of a voice message. KACE has now incorporated a second service provider known as Zain in addition to Safaricom. The SMS service is more popular because most Kenyan adults own mobile phones, messages are stored in the handset and can be referred to later, and most people prefer reading a text to listening to an electronic voice.

Marketing Information Centre (MIC)

Marketing Information Centre's (MICs) are KACE field offices that have internet connectivity and serve as liaison points between KACE and the remote Marketing Information Points. They are located in major markets around the country where employees routinely record prices daily and forward the information to the KACE headquarters in Nairobi. This information is promptly uploaded using the service providers' networks. Access to telecommunications is limited and usually expensive in rural areas. However, the MICs are equipped with phone, fax and computers with a dial-up connection to the Internet, so that members of farmers' associations, unions, cooperative societies and small traders can log on to the KACE website and place their offers or bids. They can also obtain agribusiness news and information that is intended to encourage business partnerships and promote trade both within Kenya and with the rest of Africa, or the world.

For the farmers, the centers have brought many benefits. They do not have to go far to find the market information they need, and many are now far more self-reliant. Many visit the centers regularly to check on the prices of crops such as maize, millet, potatoes, bananas, sorghum or soybeans on different markets, and so can decide when and where to sell their produce for the best prices.

At first the farmers were indifferent, especially when they learned that it would cost them a few shillings to check prices at the MICs or to place offers and bids. Then they realized that it was far better to invest a small amount now than to lose thousands of shillings to country buyers later. A very encouraging recent development is that small-scale farmers have begun to form new associations for pooling their produce in order to access better markets where the prices are higher.

Radio

KACE has gained credibility by disseminating timely and accurate information on prices of agricultural commodities in various major markets through a daily bulletin on Kenya Broadcasting Corporation (KBC) radio that airs at 6 pm every day. KBC is state-owned and



Growing Inclusive Markets

Business Works for Development • Development Works for Business

the radio station has national coverage. KACE charges an established minimal placement fee (about US\$0.14) for an offer or bid, and a negotiable modest commission (0.005 – 0.05%) on successful transactions through the program – ‘Soko Hewani’ (roughly translated as market in the airwaves). The sale of advertisement air time also helps sustain the program on air. KACE also collaborates with a second FM radio station known as West FM based in Bungoma in Western province by hosting a radio trading show that airs every Tuesday at 8 pm where offers and bids are made. The MRCs²¹ must verify the veracity of an offer or bid, in regard to the commodity or service availability, quantity, quality and any other characteristic deemed necessary. The MRCs submit verified offers and bids to KACE through written form, phone, fax, SMS, IVR or e-mail. A KACE Soko Hewani Program Manager examines compiles and registers the verified offers and bids for trading through the Soko Hewani radio program. The Program Manager then goes to West FM Radio studio with the registered offers and bids for trading. In this show, sellers of agricultural commodities announce availability and invite bids. Interested buyers can then call the sellers to negotiate price. People can connect directly with real-live buyers, rather than faceless exchange-led buyers, which is why the show is popular. This service has been in place since October 2007. West FM covers a radius of 200 km encompassing Western Kenya, and parts of Nyanza, Rift Valley and eastern Uganda. The area covered houses an estimated 5 million people. KACE charges US\$1.50 per announcement. The radio program staff on standby during the Soko Hewani broadcast match the large number of offers and bids, using mobile phone calls and SMS, or reference back to the specific MRC which submitted the offer or bid for further negotiation and conclusion of deals. Soko Hewani has been very successful so far and will be expanded to Eastern Kenya by the end of 2010 and to the whole country by 2011. During the last financial year this service recorded transactions worth US\$14 million.

Online subscription

KACE has taken its services online. The computer service is known as Regional Commodity Trade and Information System (RECOTIS). Stakeholders have the option of subscribing through the payment of US\$65 for six months, or US\$125 per annum to the online service and accessing prices of 25 different commodities daily. Currently, the service has 700 subscribers from 26 countries in Africa Europe and Asia and website hits averaging 195 per day. Since its launch in March 2002, this trend has been increasing steadily (please see section on funding).

BUSINESS INNOVATIONS

KACE has initiated innovations centered on outsourcing its District-level Market Information Centers (MICs) and Rural-based Market Information Points (MIPs) to local entrepreneurs. It embarked on converting the marketing information points (MIPs) and the marketing information centers (MICs) into market resource centers (MRCs) for local private

²¹ MRCs refers to Marketing Resource Centers which provide agricultural and development information on all aspects of agriculture, as well as communication services to small holder farmers, development workers, traders, and trainers on stocks and prices in various markets in Kenya using modern communication technologies. They further link buyers and sellers of agricultural products.



Growing Inclusive Markets

Business Works for Development • Development Works for Business

entrepreneurs to operate commercially in order to improve access by poor smallholder farmers, and small and medium-scale agriculture-based enterprises (SMEs) to market information. KACE also facilitates market linkage and other relevant services such as transport brokerage which has been diagnosed as a major constraint in matching offers and bids by the smallholder farmers; in addition to this it also provides warehousing and storage services usually for short periods of time while the produce awaits sale at potentially better prices on the following market day. It also offers weighing services as there are virtually none available to smallholder farmers in some rural markets; quality control services such as testing for grain moisture using moisture meters at the marketing resource centres (MRCs); and sale of genuine high quality farm inputs (fertilizers, seeds) at affordable prices. The MRCs are designed to be financially self-sustaining after two years of operation, while providing affordable services targeted at smallholder farmers and rural SMEs.

KACE oversees the activities of the franchised MRCs to ensure that they develop services which are standardized, affordable and appropriate to the needs of poor smallholder farmers and their communities.

While providing capacity enhancement, business training and technical assistance to the franchisees; KACE also brokers financial services to farmers through banks and micro-finance institutions. For example, KACE offered financial guarantees for the start-up phase credit of MRCs under a Rockefeller Foundation guarantee fund through a local bank – the K-Rep Bank²². K-Rep Bank is a well established former micro-finance institution that offers pro-poor financial services to rural enterprises in Kenya. KACE approached K-Rep Bank and requested a partnership in the franchising scheme. The financial guarantee fund is provided by the Rockefeller Foundation to cover the risks to the bank arising out of the credit advanced to the franchisees for the start-up phase. Under an agreement with KACE, K-Rep provided business training to franchisees, including the development and implementation of business plans and establishment of business accounting systems. The aim of this training was to equip franchisees with the necessary knowledge and skills to provide services to smallholder farmers and SMEs on sound commercial business lines and enhance the chances of their financial success.

As a result of this intervention KACE has recorded improved earnings for farmers ranging from 22% to 150% depending on the commodity, the location and the season. Manufacturers, cooperatives, exporters and other big buyers have more reliable access to better quality commodities at lower prices. Consumers benefit through better quality products at lower prices.

²² For more information on K Rep, see GIM 2008 case study: Karugu, Winifred & Kanyagia, Diane N. "K-REP Bank: Alleviating Poverty through Micro-Finance." GIM Case Study No. A023. New York: United Nations Development Programme, 2008



Constraints

Some of the challenges KACE has faced limit ICT use and market access by farmers or greatly increase their transaction costs. They include:

- Relatively high costs of mobile phone calls, SMS and IVRS to users
- ICT illiteracy among smallholder farmers
- Small quantities of produce of varying quality offered by smallholder farmers (lack of bulking)
- Limited KACE human and financial capacity to scale-out and scale-up the KACE market information and linkage system (MILS).

Dr. Mukhebi notes that for small scale farmers, agricultural markets are characterized by several constraints, including long chains of transaction between the farmer and the consumer; poor access to reliable and timely market information; small volumes of products of highly varied quality offered by individual smallholder farmers; and poorly structured and inefficient markets.

Economic conditions for smallholder farming in Sub-Saharan Africa are especially tough, and have shaped smallholder behaviour in a way that is not always the best from the standpoint of increasing incomes. Missing or incomplete input and output markets are some of the structural constraints small-scale farmers have to cope with. These structural constraints manifest themselves in high and often prohibitive transaction costs. Overcoming these transaction costs can be considered to be at the heart of a strategy for increasing the access of smallholders to the assets, information, services and markets necessary to grow their incomes. KACE's operations have so far been very successful in this. This is because farmers are now in a position to obtain relevant and timely market information much more easily making them more self reliant. Farmers can make regular visits to the centers in order to check prices of farm products like potatoes, maize, bananas, soybeans, millet, sorghum, or other products in different markets. Alternatively they can obtain such information through their mobile phones or online. The farmers can then decide where and when to present their produce for sale for the best prices. KACE has benefited farmers by enabling them to make a lot more money from their farming activities. Small-scale farmers have begun to collaborate in order to increase their bargaining power.

The Actors

After inception, KACE's diverse operations soon caught the attention of various development partners who have provided more funding, generally pegged to specific projects that entails scaling up and capacity building. These partners include United States Agency for International Development (USAID), Rockefeller Foundation, Technical Centre for Agricultural and Rural Cooperation (CTA) of Netherlands, and the Hans Seidal Foundation (Germany).



Growing Inclusive Markets

Business Works for Development • Development Works for Business

USAID partnered with KACE through the Kenya Maize Development Programme²³ whose purpose to improve maize production provided funding for the improvement of maize yields. There had been a general decrease in bags per acre linked to increasing soil acidity caused by DAP²⁴ fertilizer. An alternative fertilizer known as mavuno (harvest in Swahili) has resulted in vastly increased maize yields.²⁵ Mavuno is manufactured by a cement making company known as Athi River Mining (ARM), and it consists of nitrogen, phosphorous and potassium (10:26:10) enriched with calcium, magnesium, sulfur and baron manganese.

The Rockefeller Foundation assists in food security programmes in Western Kenya through provision of quality inputs to small-scale farmers, and the development of information-systems in KACE and its franchises. CTA Netherlands also helped develop information systems. Alliance for a Green Revolution in Africa (AGRA) funded by Bill & Melinda Gates Foundation partnered with KACE on programmes on soil fertility, quality input and marketing, while Hans Seidal Foundation organizes workshops across the country for helping small-scale farmers cope with liberalization. The training workshops include: post harvest handling, storage access and using information to upgrade capacity.

KACE worked with Africa Harvest to market tissue culture²⁶ bananas and subsequently set up ripening chambers. It trained farmers on correct harvest techniques, and sourced supermarket orders. Prices doubled and local entrepreneurs soon dominated this by setting up independent ripening chambers.

Commonwealth Agricultural Bureau International (CABI) has assisted in the evaluation of users of the information system, while the Ministry of Agriculture has assisted in the identification of poor farmers who can benefit from subsidized inputs through a voucher scheme under the National Agricultural Accelerated Input Access program (NAAIAP). The Ministry identifies, through its Extension Service, deserving small-scale farmers, and provides them with vouchers. KACE procures the inputs in bulk and avails to the farmers in small affordable quantities in exchange for the vouchers. KACE is then paid by the government for the vouchers.

The Government of Kenya is partnering with AGRA, the International Fund for Agricultural Development (IFAD), Equity Bank and KACE in a program known as Kilimo Biashara (which means *agriculture business* in Swahili) in a voucher scheme under which poor farmers are enabled to purchase quality inputs.

²³ Prior to this project, USAID had been mostly interested in horticultural crop projects.

²⁴ Diammonium phosphate fertilizer is used to increase the PH of soils but over time it makes soils more acidic.

²⁵ During the 1960s and 1970s peasant farmers had achieved 25 bags of maize per acre on average, but by the mid 1990s this had fallen to as low as 9 bags per acre due to acidity. With mavuno yields have risen to as much as 56 bags per acre (source: Dr. Mukhebi).

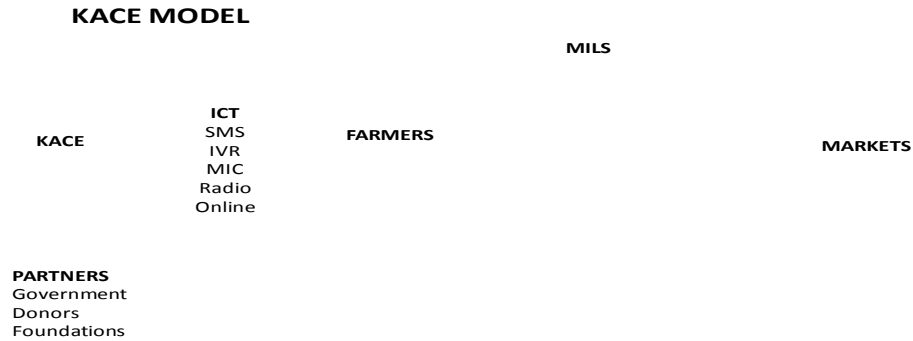
²⁶ Tissue culture is a method of propagating plants under sterile conditions to produce exact copies of plants with desirable characteristics.



Growing Inclusive Markets

Business Works for Development • Development Works for Business

Figure 1: KACE model



Funding

KACE operates as a private firm, albeit with several partners in order to facilitate their operations accordingly. The initial funding available for KACE operations was obtained from its chairman, Dr. Mukhebi's, family savings. Further funding from the development partners mentioned earlier enabled KACE to develop and establish its operations to the point of self sustainability through income generating activities that include:

- Placement fee of Ksh 500 (US\$6.25) for offers and bids
- A commission on transactions ranging from 0.05% to 5% depending on volume - the higher the volume the lower the percentage charged
- A subscription fee for online information of Ksh 10,000 (US\$125) per annum
- A revenue sharing agreement with mobile telecommunications companies Safaricom and Zain for mobile services. The SMS fee is shared between Safaricom/Zain and KACE more or less equally. It is income not profit. The income table and graph in the appendix 2 shows that so far this is not a significant source of income for KACE as yet.
- A marketing resource centre placement fee of Ksh 100 (US\$1.25)
- Income generated from packaging seed and inputs in small amounts (in collaboration with USAID). This has necessitated KACE's expansion to benefit more small-holder farmers across the country.



Table 1: Details about KACE's income in 2009

KENYA AGRICULTURAL COMMODITY EXCHANGE LTD	
BREAKDOWN OF INCOME FOR YEAR 2009	
Details	Amount (Ksh)
Receipt from Donors	14,665,627.90
Business Income	
Kilimo Biashara	750,500.00
NAAIAP Income	29,430,800.00
Sale of Data (price statistics)	120,000.00
S.M.S Statistics	548,789.47
Income	30,850,089.47
Trade Linkages	
Offer fee and bid fees	10,200.00
RECOTIS Subscription	29,139.90
Sale of commodities	2,664,845.15
Other Income	315,152.00
TOTAL	48,495,714.52

KEY

- NAAIAP - National Agricultural Accelerated Input Access Program
- RECOTIS – Regional Commodity Trade & Information System
- Kilimo Biashara – Means *agriculture business* in Swahili and refers to a voucher scheme partnership between the Government of Kenya, AGRA, Equity Bank and IFAD

Dr. Mukhebi has won a fellowship award from Ashoka²⁷ for setting up KACE and facilitating the flow of information between small-scale farmers and commodity markets, thus increasing farmers' negotiating power and improving rural food distribution and household food security. Ashoka recognizes social entrepreneurship that is business that gives advantages to the less privileged in society, and has potential for scaling up or building capacity. Dr. Mukhebi won the fellowship for his achievements including: warehouses, marketing resource centres across the country including pastoral communities, livestock marketing in the Horn of

²⁷ Ashoka: Innovators for the Public, is a nonprofit organization supporting the field of social entrepreneurship worldwide.



Growing Inclusive Markets

Business Works for Development • Development Works for Business

Africa and developing a web portal (database with information) with access to historical data. The fellowship has raised his profile and helped smooth the way for KACE activities.

Impact of the business

ECONOMIC AND SOCIAL RESULTS

KACE is currently working on an East African regional exchange which may become reality within the next five years. KACE's activities are important because according to Dr. Mukhebi Sub-Saharan Africa currently spends 40 billion USD on food imports²⁸, a figure that is expected to reach 100 billion USD by 2020 if nothing is done. KACE has concentrated on developing the whole value chain thereby widening the pipeline for the smallholder farmers. This is done by providing price information, assisting in access to inputs²⁹ such as seed, fertilizer etc, and providing back-up services including linkage of buyers and sellers. KACE does all this at prices that are affordable to the most vulnerable farmers.



Victoria at the Machakos Marketing Resource Centre (MRC)
(Photo credit: Winifred N. Karugu)

KACE reaches 1 million farmers a day through radio, SMS or direct contact. In addition to this, an estimated 250,000 small-scale traders in agricultural commodities access their services on a daily basis. KACE prides itself on having enabled more women to improve agricultural-based incomes or to trade in agricultural commodities. Appendix 1 is a profile of a positively impacted female farmer, Victoria Mutuku. Victoria says that *“the quality of her life changed for the better after joining KACE because she was able to increase the volume of produce*

from her farm and obtain better prices for her produce through access to daily market information, as well as by the marketing and trade links facilitated by KACE”. This enabled her to pay school fees and take care of her family. She thus recommends KACE to all farmers she comes across because of the benefits she has gained.

KACE has also impacted on employment in the agricultural sector. By opening up markets for small-scale farmers and improving profitability, more of the rural poor are engaging in farming.

ENVIRONMENTAL RESULTS

KACE has impacted on the environment by providing poor farmers with much needed reliable price information and quality inputs, thus enabling them to improve their income levels. Poor farmers are prone to degrading the environment by depleting soils of nutrients, contributing to soil erosion and destroying natural vegetation. But when the farmers obtain fair prices and make a reasonable living from improved yields in their activities, they become interested in sustainability, and thus actively participate in protecting the environment.

²⁸ Interview with Dr. Mukhebi, 2010

²⁹ KACE buys in bulk and sells in small lots that are affordable to smallholders.



Growing Inclusive Markets

Business Works for Development • Development Works for Business

PUBLIC POLICY

KACE is frequently invited to contribute to public policy formulation in agriculture and rural development. Their involvement has encouraged the government to go beyond focus on production to focus on markets and market development. Focus on the value chain is more sustainable in the long run. Other countries in the region and Sub-Saharan Africa have borrowed the KACE model.

Future growth and outlook

The impact of KACE is huge although it is largely in the realm of public good. An estimated 80% to 90% of the farmers³⁰ in the areas served by KACE use their services, and have reported improved prices, and 60% of traders have also reported improved incomes, the West FM auctions moved Ksh 1 billion (US\$12.5 million) during the last calendar year and KACE's influence is felt not only in Kenya but also in countries that have been helped to set up similar services³¹.

In the future, KACE intends to scale up input access activities, ensure the establishment of the warehouse receipt system in Kenya by June 2010 and the East African region³² by the end of the year. KACE will continue to scale up marketing information services and generally facilitate agricultural trade in the region to ensure that small-scale farmers are able to farm sustainably.

KACE is currently piloting a franchising model for the MRCs, where they can develop and broker a wider range of demand driven services, e.g. transport, storage, input supply, product bulking and quality control. Four MRCs were franchised in 2007. However, three of them were unfortunately seriously vandalized and damaged during the post national election violence in 2008. The one that survived, located in Chwele Market in Bungoma Central District, western Kenya, continues to thrive and is currently financially self-sustaining, where its revenue more than covers its total operational costs.

KACE proposes to scale up its price information service into fully fledged MILS, initially in Kenya, and subsequently in the EAC regional market. The vision of the KACE MILS is to be a leading private sector source of reliable, accurate and timely agricultural marketing information and market intelligence in Kenya, and eventually in the EAC region, for use by actors in agricultural commodity value chains, such as farmers, traders, processors, wholesalers, retailers, exporters, importers, policy makers, researchers, and development practitioners.

³⁰ Currently, an estimated 10 million people are reached by Soko Hewani and within 2 years the entire country will be covered. Kenya has a population of 39 million people of which 70% are supported by agrarian activities.

³¹ Mukhebi, 2010

³² The East African region consists primarily of Kenya, Uganda, Tanzania, Rwanda and Burundi.



Growing Inclusive Markets

Business Works for Development • Development Works for Business

KACE intends to achieve sustainability beyond government and donor support by developing a revenue generating MILS model. Marketing information and market intelligence services will be provided through platforms where users pay modest fees for access. In addition, KACE is developing and brokering demand driven complementary marketing services at a fee, for instance market linkage, transport, storage/warehousing, quality testing/verification/certification, etc.



REFERENCES

INTERVIEWS

- Kundu, Stephen, Managing Director, Kenya Agricultural Commodity Exchange, 15 September 2009, 11 November 2009, 19 March 2010, 22 March 2010
- Mukhebi, Adrian, Chairman, Kenya Agricultural Commodity Exchange, 22 March 2010, 20 September 2009, 11 November 2009
- Victoria Mutuku, Farmer, 31 March 2010
- Jacinta Mwilu, Marketing Resource Center Manager in Machakos district, 30 March 2010

PUBLICATIONS

- Government of Kenya, (2009) “Economic Survey 2009” Ministry of Planning, Government Printer, Nairobi
- Government of Kenya, (2009) “Statistical Abstracts 2009” Ministry of Planning, Government Printer, Nairobi
- Mbaru, Jimnah (2009) Former Chairman of the Nairobi Stock Exchange
- Mukhebi Adrian (2007) Linking farmers to markets through modern information and communication technologies in Kenya. KACE, Nairobi
- Mukhebi, Adrian and Gitunu, Anthony, (1986) “Identification and ranking of production constraints in agropastoral systems of Machakos district in Kenya” The Epidemiology, Diagnosis and Control of Helminth Parasites of Ruminants FAO

WEBSITES

- Kenya Agricultural Commodity Exchange, www.kacekenya.com/, accessed 10 October 2009.
- Okolla Abraham. (2002): The Kenya Agricultural Commodity Exchange: ictupdate.cta.int/.../The-Kenya-Agricultural-Commodity-Exchange, accessed 20 November 2009.
- Safaricom Kenya Limited. (2009) Half Year 2010 Report. www.safaricom.co.ke/ accessed 9 May 2010.



Annexes

ANNEX 1: PROFILE OF A FARMER - VICTORIA MUTUKU

Background

The Machakos Agricultural Resource Center was established in April 2004 through a collaboration project between: CAB International, Kenya Agricultural Commodity Exchange and the Department for International Development (DFID), UK. It is located in the central business district of Machakos town, about 50 kilometres to the East of Nairobi.

The Marketing Resource Center (MRC) under its Manager Ms Jacinta Mwilu provides agricultural and development information on all aspects of agriculture, as well as communication services to small holder farmers, development workers, traders, and trainers on stocks and prices in various markets in Kenya using modern communication technologies. It further links buyers and sellers of agricultural products

Profile of the Farmer



Victoria on her farm (Photo credit: KACE archives)

Mrs. Victoria Mutuku a beneficiary of Machakos Agricultural Resource Center owns a one acre piece of land at Kasinga, just outside Machakos town on which she cultivates assorted vegetables, as well as maize and beans on crop rotational basis.

She first joined the KACE programme in the year 2004 together with her self help group (Kinyini Horticultural Growers) whereby she benefited from attending a number of workshops, trainings and field visits, as well as buying a mobile phone for the purpose of accessing daily information using the SMS sokoni technology. This was all sponsored by KACE.



Victoria's farm (Photo credit: Winifred N. Kaauru)



Victoria at the Machakos Marketing Resource Centre (MRC) (Photo credit: Winifred N. Kaguru)

Prior to joining KACE, Mrs. Mutuku explained that there was no ready market for her produce and most farmers like her had to sell their produce to the brokers who offered extremely low prices making farming a very unattractive business venture. The quality of her life changed for the better after joining KACE because she was able to increase the volume of produce from her farm



Growing Inclusive Markets

Business Works for Development • Development Works for Business

and obtain better prices for her produce through access to daily market information, as well as by the marketing and trade links facilitated by KACE. This has enabled her to pay school fees and take care of her family. She thus recommends KACE to all farmers she comes across because of the benefits she has gained.

Challenges

Victoria describes the major challenges experienced by farmers in Machakos as storage and transportation facilities of their produce. For example, currently most farmers in the area are experiencing good harvest, but have no access to appropriate storage for their produce while they wait³³ for good prices. This has caused deterioration of quality as well as outright losses. Farmers also lack affordable transport facilities to enable them to transport produce to viable markets across the country, or beyond. Another challenge is lack of market information³⁴. Victoria is happy that these challenges are currently being addressed by KACE through trainings, workshops, pooling of transportation, and the lease of suitable storage facilities.

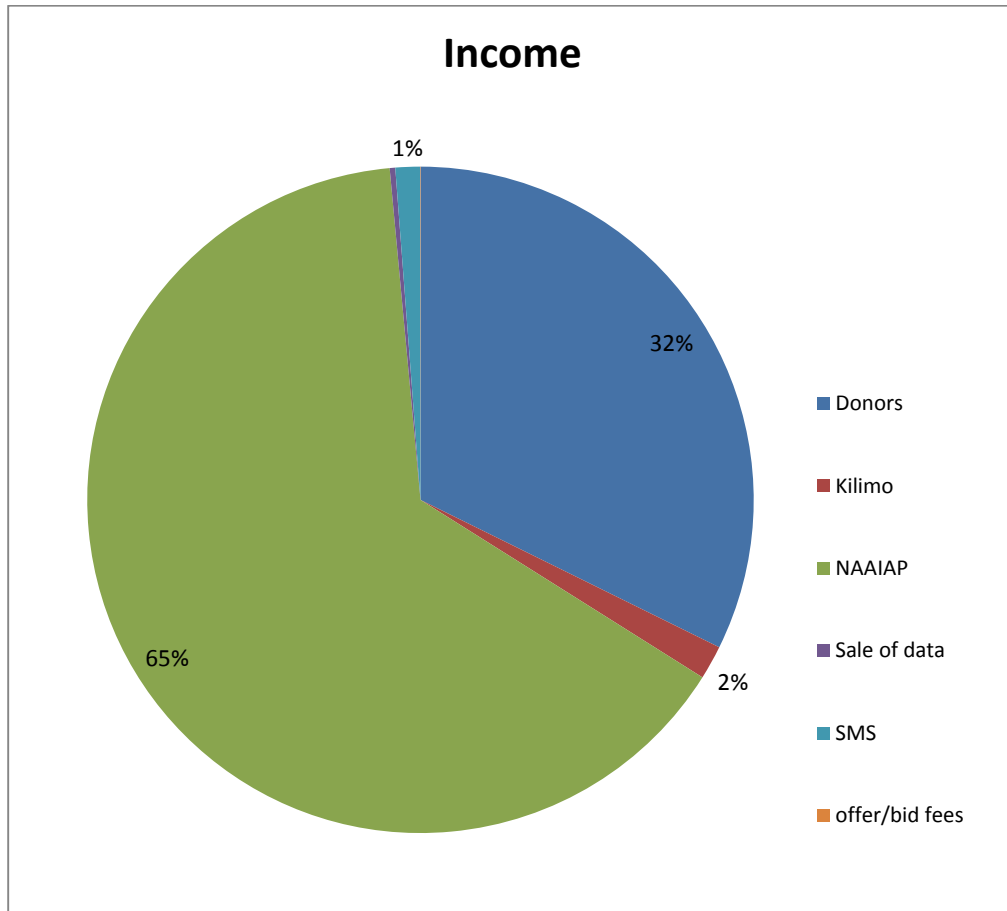
³³ Machakos district is in the arid and semi-arid land (ASAL) zones of Kenya and most agricultural production is rain dependent. Thus all farmers harvest at the same time, which in turn lowers prices due the laws of supply and demand. Good storage facilities would enable them to wait for prices to rise as generally happens between harvests.

³⁴ This is especially important for those farmers who sell their produce to brokers and middle men who try to obtain the lowest possible price often exploiting farmers with low bargaining power.



ANNEX 2: KACE INCOME

Graph showing source of KACE's income



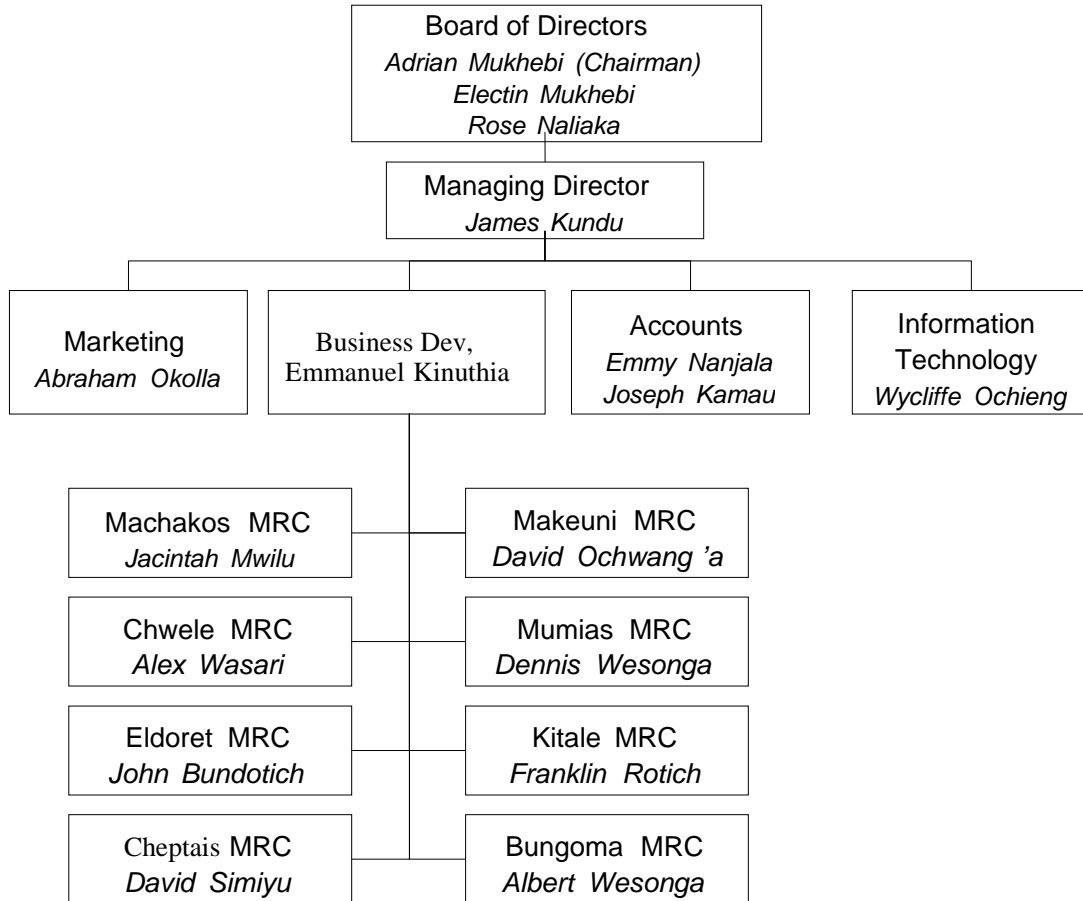
Source: KACE



Growing Inclusive Markets

Business Works for Development • Development Works for Business

ANNEX 3: CURRENT ORGANIZATION STRUCTURE





ANNEX 4: THE KACE MARKET INFORMATION AND LINKAGE SYSTEM (MILS)

The Market Information and Linkage System (MILS) designed to enhance the bargaining power of poor smallholder farmers for better prices in the market place, and hence guard them from exploitation by middlemen was launched in 1997.

Components of MILS include:

- Rural based Market Resource Centres (MRCs)
- Mobile Phone Short Messaging Service (SMS)
- Interactive Voice Response (IVR) service
- Internet based database system
- Radio
- KACE Hub

Source: KACE presentation on “Agricultural market information systems” in Montpellier, France in March 2010.

MRCs are information kiosks³⁵ located in rural markets and serve as sources of reliable and timely market information for farmers (e.g. current commodity prices in different markets), as well as provide market linkage through matching commodity offers and bids. There are 10 MRCs located in Western, Nyanza, Rift Valley and Eastern Provinces of Kenya.

³⁵ A kiosk is a stall or small outlet often of temporary structure.



Growing Inclusive Markets

Business Works for Development • Development Works for Business

The case was completed in September 2010 and released in 2011.

The information presented in this case study has been reviewed by the company to ensure its accuracy. The views expressed in the case study are the ones of the author and do not necessarily reflect those of the UN, UNDP or their Member States.

Copyright © 2011

United Nations Development Programme

All rights reserved. No part of this document may be reproduced, stored in a retrieval system or transmitted, in any form by any means, electronic, mechanical, photocopying or otherwise, without prior permission of UNDP.

Design: Suazion, Inc. (NJ, USA)

For more information on Growing Inclusive Markets:

www.growinginclusivemarkets.org or gim@undp.org

United Nations Development Programme
Private Sector Division, Partnerships Bureau
One United Nations Plaza, 23rd floor
New York, NY 10017, USA