Impact Highlights

The Kieni Onion Revolution: A 4430% increase in turnover per acre

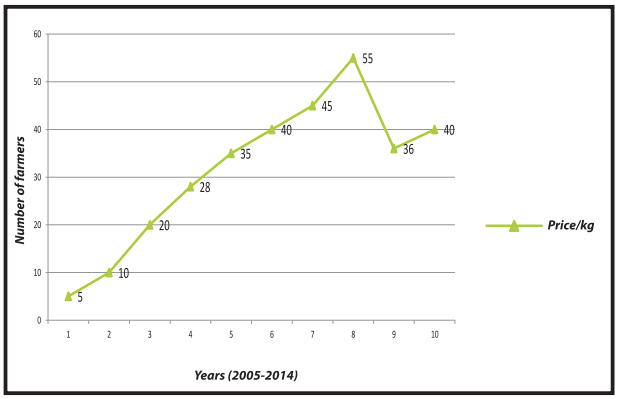
Highlights of multiple impact Dimensions in Commercial Villages

For many years in the past, farmers in Kieni, Nyeri County have been involved in Onion production as part of their efforts towards increased incomes. However, their onion failed to graduate into a commercial crop due to low yields, poor farm gate prices, lack of incentives to invest in hybrid seed resulting to low profits and hence less income from the enterprise.

Farm Concern International (FCI) commercialization efforts commenced with a pilot programme with 300 smallholders households in 2005 and a current scale up support by the Bill & Melinda Gates Foundation from 2010 that currently involves 12,000 Households. As a result, over the period (2005-2014), Commercial Villages have experienced 'Onion revolution' based on highlights discussed below.

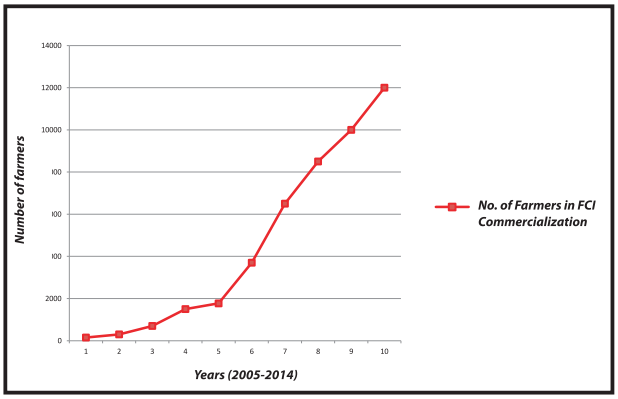
Impact dimensions pathways discussed below includes number of smallholder farmers graduating into onion commercialization, yield, farm gate prices, turnover and a spillover impact which was unintended but noted as a direct effect on the efforts; value of land in Kieni

Fig1: *Onion price trends*



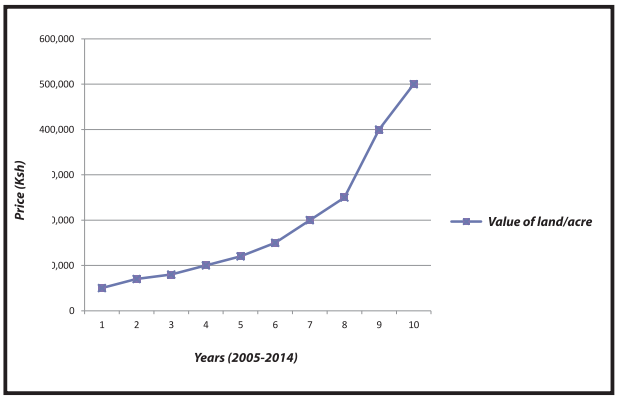
The price of onion per kilogram increased from Ksh. 5/kg, and now stabilizing at an average of Ksh.40/kg

Fig 2: *Number of farmers in FCI Commercialization for Onions*



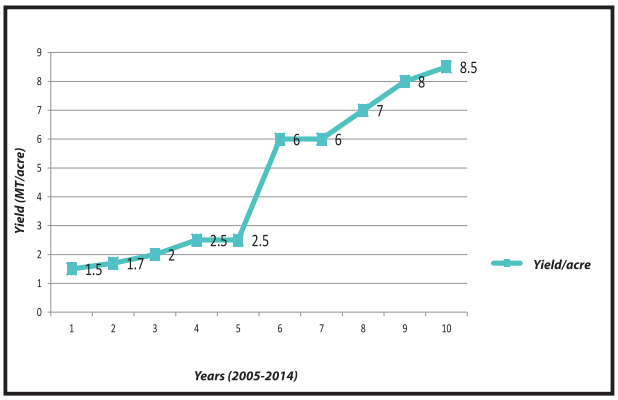
The number of farmers in the commercialization of Onion within the area increased exponentially over time, reaching over 12,000 smallholder farmers.

Fig 3: *Trends in Onion yields per acre over the years by Kieni farmers*



Due to the onion revolution in the area, the farmers attest to an increase in the value of land, with an acre costing about Ksh400,000 in 2014 from Ksh. 50,000 eight years ago in 2005

Fig 4: *Trends in Onion yields per acre over the years by Kieni farmers*



The shift from open pollinated varieties (OPV) to use of hybrid seeds, the yield per acre has also increased, resulting in more into the farmer's pocket. In the year 2014, the yield has been reported to be 10MT/acre compared to 1.5MT/acre in the year 2005

Turnover per acre

Impact Variables	2005	2010	2014
Yield [Kg/Acre]	1,500 Kg	6,000Kg	8,500Kg
Price [Kshs/ Kg]	5	35	40
Turnover [Yield* Price]	7,500	210,000	340,000
% Increase	Baseline	2,700%	62% [from 2010] 4430% [from 2005]

Turnover per acre has increased by a total of 4430% over the period 2005-2014 based on yield and price. The increased is influenced by both price and yield. The turnover here refers to the sale per acre.

Sekazuba Charles, now the progressive farmer (USD. 461 to USD 3,600 savings per season)

The Domestic Horticulture Market Development (DoHoMa) for smallholder farmers was designed for domestic market mainstreaming with a focus on Traditional Africa vegetables (TAVs), bulb Onions and Irish potatoes.

FCI uses the Market Hub model and other Business models as an approach to change the livelihoods of the communities they work with. Prior to the intervention by FCI, Irish potato farming in Musanze was commercial but not aligned to market structured demand.

Sekazuba Charles cultivated Irish potato, brokers and transporters gave him wrong market information on market prices so as to benefit more from dealing Sekazuba's produce. Sekazuba said, "I could not deliver my farm products to the markets and deal with the traders directly. I remember in some seasons, I could harvest from 1-5 tons and still not be able to sell it because of lack of market information recurred for indulgence with these traders. A trader would come from Kigali and negotiate prices at the farm gate upon which I could give the produce on credit. Later that day, the trader would return to inform me that the market price had slumped and therefore he got into loss. I would lose a lot of money; I remember losing about 8 tons of potatoes which got rotten in two consecutive seasons."

> ***"This has raised my savings from Rwf. 300,000 (USD. 461) to between Rwf. 2,300,000 - 2,500,000 (USD. 3,538.5 - 3,846.2) per season. I am able to cater for my family needs, carry out my responsibilities and pay school fees and medical insurance for my family"***
>
> ***he says barely concealing his pride***

"Things changed from the time I started working with FCI, through Village Business Forums and market exposure, I am now familiar with the market dynamics. I get my produce's worth by being in touch with traders; access information on the market prices, and know what and when they need. I decide which market to supply depending on the quality and size of my yields. I harvest my produce knowing that Seburo (trader linked by FCI) is ready to come and collect it, and moreover pay in cash. I can monitor my crops, when and which best period to harvest, how to get market information and double check the market prices in collaboration with traders from Kigali," he says.

Sekazuba says that, "transportation of commodities is now easy: I do not need to worry since, I no longer harvest and search for transport on my own; Seburo trader from Kigali comes with his own transport and pays the agreed price and amount at the farm gate. Ever since I started working with FCI, my income has increased. From the income earned, I have purchased 30 acres of land.

Cassava Village Processing Mobile Cassava Chipper [10 Metric Tonnes / Day] transforms the local economy in Tangakona Commercial Village

The CVPP aims at commercializing and processing of cassava at village level for food security and further graduation into a commercialized commodity for feeds and industrial use, for improved livelihoods for poor communities.

The Tanga Kona Cassava Village Processing Project (CVPP) is one of the organized CVs that form trading blocs for agricultural commodities. Moses Odwali, a Commercial Village Facilitator (CVF) is a farmer and a member of Tanga Kona CV and a member of Lukatumnak Commercial Producer Group (CPG) – one of the project sites within Tangakona, Teso District. Moses adapts quickly to new technology and embrace change.

Moses ensures that his CPG spearhead each and every chipping exercise in Asinge location so that they are able to learn more and even how to operate the chipper. He has chipped his own ½ tone of cassava for animal feed industries and ¼ tones for his home consumption.

The handling of cassava has also improved compared to how it used to be done before FCI's intervention. This has made the farmers start drying their produce on the tumplines, unlike previously when they used to dry on the ground. Moses and the Lukatumnak CPG are now at the front line in promotion of the Mobile chipping technology across other villages within the area. At least 70 villages are participating in processing technologies using traditional and mechanized methods in each of the sites.

The innovation employs traditional processing practices which have been modified to meet modern production and quality standards. These interventions have attracted the attention and support of other partners including the Kenya Agricultural Research Institute (KARI) and the Ministry of Agriculture in the form of provision of equipment including posho/hammer mills, cassava graters and pressing machines for starch production

Moses has benefited and knows how to plan his farm by practicing crop production schedule. He has mobilized the youth of "Lukatumnak CPG" to save money. The money saved was used to purchase new variety of cassava seed for each member to multiply. Moses' CPG has further diversified to have seedlings of water melons which is about to be transplanted. He is also interested in planting passion fruits.

Moses always confesses that there power in collective action, unlike individual efforts that result in high cost of production, inputs and markets penetration. He has a vision for the CPG to own a hotel in Asinge Shopping center for selling Cassava products, other associated inputs and transport facilities.

The Power of Commercial Village Approach in access to Community services: How Identity Cards (IDs) were issued to create an avenue for financial services

e-Warehouse is an innovative platform that supports households to store and manage their grain post-harvest and bulking during harvest time, link them to financial institutions to provide partial advances against the value of stored crop and also connect Commercial Villages with markets for sale, within three months after harvesting. The project focuses on cereals and pulses (maize, beans, pigeon peas, cow peas, green grams and dolichos).

E-warehouse project was launched in November 2012 East of Meru town with the aim of serving farmers from the 30 mapped villages. To be registered, one needs to be an adult farmer and in possession of the National Identification Card (ID) as a verification document. In addition, the ID was also required by the financial service provider e.g. banks who offer loans and other monetary transaction.

Kanthenge Commercial Village is one of the villages where E-Warehouse project was implemented. Kanthenge CV is 35 Kilometers East of Meru town and approximately 10 kilometers from the nearest market.

When the registration exercise for e-warehouse project in Kanthenge started, hundreds of farmers attended the commercialization campaign but unfortunately they could not register with the project as more than 90 % of the adult farmers did not have the ID Cards. The situation was made worse, when FCI staff found cases of sons who could not acquire IDs as their fathers did not have them as well. FCI officers detected the need and took up the issue to liaise with the office of registrar of persons to get these farmers IDs.

To get an ID, these farmers would travel 10 kilometers to Mikinduri, the market place. The total cost of the journey and ID registration process was costing approximately KShs. 700 (USD. 8.2). Even though the farmers had shown interest in the project, the logistics cost was far too much for them to afford.

In this regard, FCI further negotiated with the office of registrar of persons to have the registration conducted within Kanthenge Village. FCI in collaboration with the local Chiefs organized the community to compile a list of farmers without identity cards. A total of 300 farmers showed interest in acquiring the identity cards and footed the cost of bringing the 8 registry personnel to Kathenge. As a result, 523 farmers were issued with national identity cards. This exercise cost the community a total of Kshs 26,150, which is cheaper than what each farmer would have paid individually.

E-Women AFMAX (Africa Markets and Farms Exchange): How farmers have saved 297,507 km of movement in 2 months by ordering farm inputs via the mobile platform, FCI innovation

AFMAX (Africa Markets and Farms Exchange) is a mobile phone based innovation developed by Farm Concern International. The innovation is aimed at reducing labor and time spent by women small holder women farmers in accessing quality farm inputs, services and market information with minimal mobility. Farm Concern has been implementing the pilot phase of this innovation in 10 commercial villages in Central and Eastern Kenya targeting 5000 small holder farmers.

Under e-women dial up initiative under GCE – Bill & Melinda Gates Foundation, Farm Concern International has collected critical data and information that has analyzed distances and time taken that women and smallholder farmers travel to get to reliable sources of farm inputs which are prohibitively challenging.

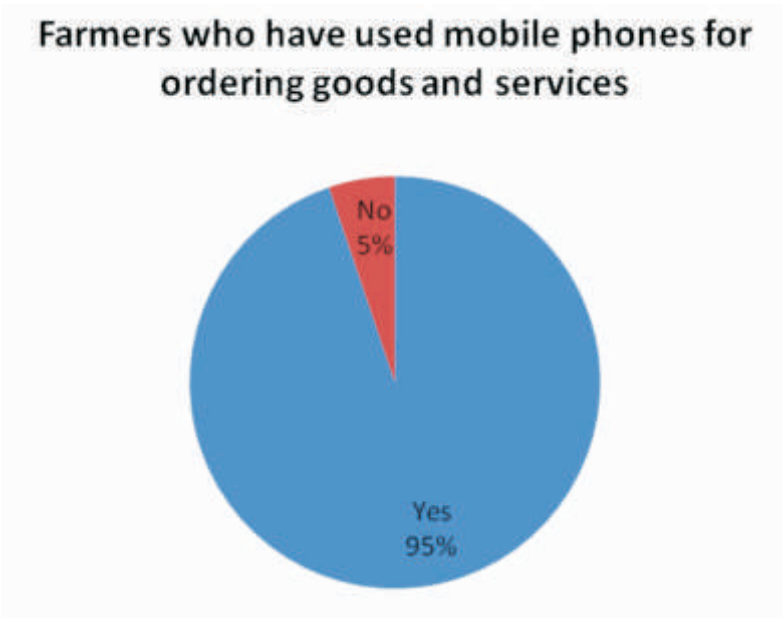
FCI conducted a survey targeting 2,390 small holder farmers who had been put on the AFMAx pilot phase. It was established that 77.8% of these farmers covered 10 km round trip on average to purchase farm inputs from the nearest shopping center. Assuming that farmers visit the shopping center once a week (thus 4 times a month), this implies that the total distance covered by these farmers is 77.8/100 x 2390 x 10km)x 8 x 2months = 297,507 km. If the AFMAx initiative is scaled up in Africa and reaches one million smallholder farmers, it means that the total distance that they will save is 124.48 Million kilometers.

Of the farmers surveyed 63% use on average Kshs100 (1.2 USD) for a round trip to the market to obtain farm inputs. If this trip is made once a week, this translates to Kshs1.5 million (US$ 14,171) for two months that the farmers are actively involved in sourcing farm inputs in a year. If this is scaled up to 1 million farmers, the saving amounts to Kshs 504 Million (US$5.9Million)Of the 2390 farmers surveyed, 77.5% of the them spent on average 1 hour to travel to the nearest inputs market, meaning that the total time taken is 1852 man hours. If farmers visit the inputs market once a week during the two months of which they are actively involved in input sourcing in a year, this amounts to a total of 14,816 man-hours spent. If this is scaled up to target 1 million farmers in Africa, the total saving on man hours will be 3.1 Million man-hours per year.

This is time that will be spent on productive on farm or agribusiness activities.

According to our survey 95% of the farmers use mobile phones for ordering goods and services. It was further established that of 38% of the farmers utilize their mobile phones to order for inputs. This indicates a significant potential in scaling up the uptake of the AFMAX initiative in Africa.

Fig 5: *Farmers who use mobile phones for ordering goods and services*



Source: Farm Concern International 2014

The survey showed that 68.1 % of the farmers travel more than 5 km to access markets where commodities are sold, this means out of the 2390 surveyed farmers a total of 1627 farmers travelled over 5 km to access market for their commodities. This means that during the 2 seasons farmers travel to the market 3 times a week for 2 months for each season. The total distance covered in this period is 3 times/ week*4 weeks*2 months*2 seasons*5km minimum= 240 km/ farmer * 1627 farmers = 390480km total utilized. With more market information available through the AFMAX innovation, the buyers of the farm produce will have more information about available supply and therefore plan with more certainty about accessing the produce at the farm gate.

Farm Concern International AFMAX innovation therefore rides on the mobile phone revolution in Kenya where currently there are over 30 million mobile phones and a robustly regulated mobile phone network that permeates all villages in Kenya and

supporting the over 43 Million population. The highly innovative and regulated mobile money transfer system is also one of the critical support systems that have since been integrated to reduce time for mostly cash paid service to mobile based payment system. This therefore provides an opportunity to offer an integrated solution to address the challenges of access to farm inputs, logistical or BDS services as well as accessing markets through a dial up system that provides mobile phone based sourcing and payments particularly for rural poor women. Through the mobile phone that is accessible in all villages in Kenya, rural women farmers sends text or dial up phone number to a business line provided by the AFMAX innovation to access farm inputs, services and markets through virtual linkages to inputs companies and buyers of commodities.

Overall Goal is to increase productivity of women small holder farmers by reducing labor and time burden thus increasing household incomes through use of mobile phone technology. AFMAX platform is designed to increase efficiency of small holder women farmers by saving on labor and time by as well as enhancing access to quality inputs, services, markets for their commodities and financial services with minimal mobility. The platform is designed to leverage on the use of mobile telephones and mobile payment services to allow women small holder farmers access this services.