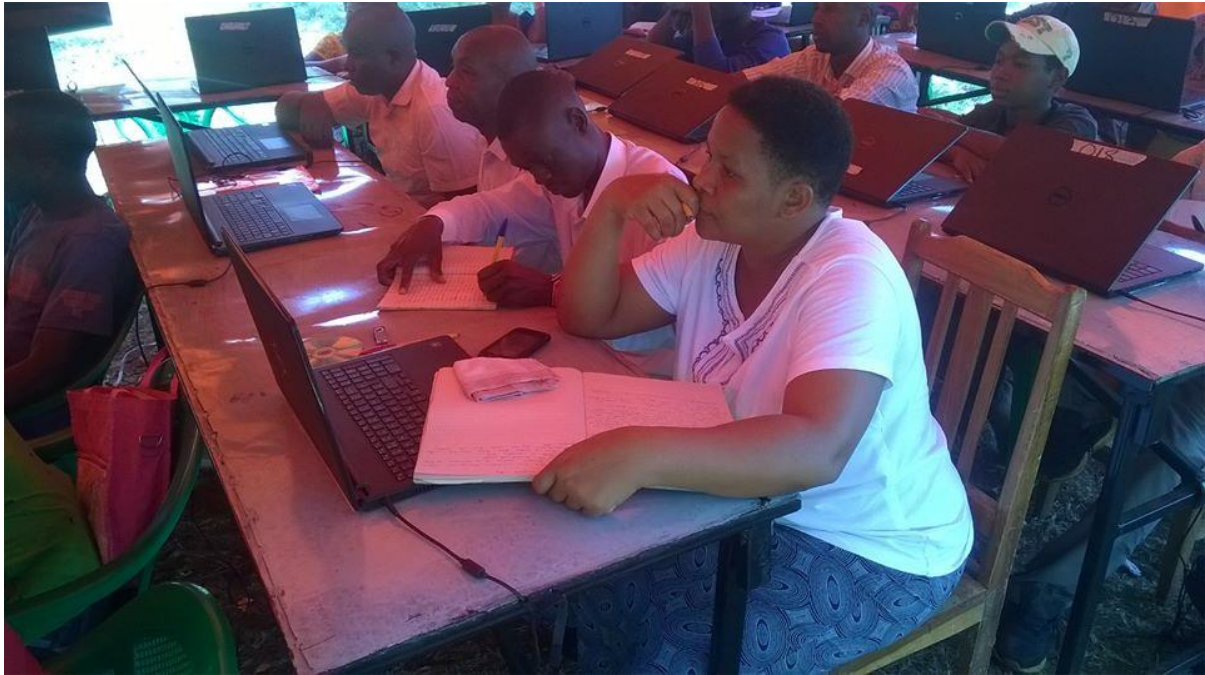




MUCHO MANGOES

PROVIDING AN SMS-BASED MOBILE PLATFORM AND
DIGITAL SKILLS TRAINING TO MANGO FARMERS
IN KENYA



A farmer training session in Kenya. Photo credit: Mucho Mangoes

EXECUTIVE SUMMARY

Mucho Mangoes was founded in early 2015 to empower rural, smallholder farmers to improve crop production and reduce waste and losses in the mango farming industry in Kenya. Mucho Mangoes' methods include providing a short message service (SMS)-based mobile platform to share information and advice to farmers on what to do to prevent pests and diseases as well as provide training on how to use their system. Mucho Mangoes' business model depends on generating profits from sales of the products that they empower farmers to produce. Their target is to reach 200,000 farmers by the end of 2020.

Keywords: agriculture, mobile communication, digital literacy, rural, Kenya

CONTEXT

Agriculture plays a vital role in the livelihoods of Kenyans. Based on statistics from the Food and Agriculture Organization (FAO), the sector contributes 26 percent of the country's total gross domestic product (GDP), and another 27 percent through linkages with other sectors. Moreover, it employs more than 40 percent of the total population, and 70 percent of rural citizens. Kenyan farmers do not have sufficient access to the information that can help them improve crops and reduce waste and losses after harvest, thus affecting their productivity and income. In particular, the percentage of post-harvest loss of mango fruit is about 45 percent in Kenya, compared to 40 percent in developing countries. Small-scale farmers experience these losses due to limited post-harvest skills and limited information on the impacts of climate change.

There have been various ICT-based initiatives and projects by the government and the business sector to provide information for farmers in Kenya. One of these platforms is the Kenyan Farmer Website, which allows farmers to research, connect with other farmers, and market their products. In July 2017, there was a hackathon in Eldoret, Kenya, where technology-savvy people from across Kenya gathered to present different ideas on how to revolutionize the country's agriculture. In the same month, Heifer International announced its partnership with Wefarm to provide Kenyan farmers who do not have access to Internet with agricultural information via free text messages. The government is also running its Digital Literacy Program to improve the international competitiveness of the Kenyan labor force as part of the Kenya Vision 2030 plan.

Kenya			
Population (UN, 2015)	46,748,617	Fixed broadband subscriptions (%) (ITU, 2016)	0.33
Population density (people per sq.km) (UN, 2015)	80.55	Mobile cellular subscriptions (%) (ITU, 2016)	81.28
Median household income (Gallup, 2006-2012)	US\$ 1,870	Individuals using the Internet (%) (ITU, 2016)	26
Education (Mean years of schooling) (UNDP, 2013)	Male: 7.1 Female: 5.4	Individuals using the Internet by Gender (%) (ITU, 2016)	N/A

PROJECT DESCRIPTION

Mucho Mangoes' mobile education center provides training in both ICT skills and agricultural production techniques. Using training materials and the Internet, farmers learn techniques such as pre- and post-harvest crop handling, pest and disease control, and crop husbandry. Through this training, farmers also learn techniques to continue digitally based agricultural education and use the Internet to connect to online knowledge-sharing communities. The training, which

consists of two-hour daily sessions over the course of two months, is mobile for the purposes of allowing farmers to both participate in the course and remain close to their farms.

Project details			
Technology	Wireless Internet, SMS-based mobile app 30 laptops	Training	3 months of training consisting of 3 daily sessions, 2 hours each
Year program started	2017	Cost to users	Free
Geography	Rural	Total cost of program	US\$ 25,000
User profile	Women and youth make up more than 70% of participants	Associated organizations	Department of Agriculture Farmer Association FIRE

PROGRESS AND RESULTS

The program was initially geared toward mango farmers, but the interest was so great that the training was opened to farmers of all ages, backgrounds, and crop specializations. The only requirement for enrollment is literacy. Most participants are women and young people, and, additionally, a significant portion of participants is over 60 years old. Mucho Mangoes deliberately recruited a majority of women in recognition of the fact that women in rural African communities are excluded both from social spaces and online. While the program does not have any tangible outcomes in terms of harvest production and loss until the completion of a year, Mucho Mangoes is targeting 200,000 farmers by the end of 2020.

CHALLENGES

Insufficient staff – Mucho Mangoes has found that demand for the training they offer exceeds the amount of training they are able to supply. This signals an untapped market and strong possibilities for building a business, but also overwhelms the project in its initial stages.

Low levels of traditional literacy – Participants enter the training with varying degrees of digital literacy and experience. Classes are offered throughout the day in order to provide scheduling flexibility for working people but do not differentiate according to any other metric. A mixed class means that students learning at different levels are also learning at different paces. Older participants, for example, tend to take longer to absorb the lessons of the programs and often repeat classes or extend their participation in the training.

Limited and irregular electricity access – Irregular power supply is a common problem in rural parts of the region. The project team is exploring ways to integrate solar power options into mobile training center construction and supply.

MUCHO MANGOES' SUGGESTIONS FOR FUTURE PROJECTS

Mobile training to suit user needs can improve participation and reach more farmers – Mucho Mangoes' mobile training model provides maximum possibility for participation. If the training facility were a fixed location in a centralized location, most farmers would likely not be able to access it due to limited time and money for travel. With a flexible schedule, convenient location, and no fee, the mobile locations are able to reach a wider range of farmers in the region.

SOURCES

Mzrai, D. (2017, July 28) Personal Interview
Project website: www.muchomangoes.com