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elengo: BUILDING BUSINESS MODELS TO ADDRESS MACRO-OPPORTUNITIES (a)

Trevor Wright wrote this case under the supervision of Nicole Haggerty solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

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By late 2018, Chris Janssen’s first venture, Textbooks for Change (TFC), was successful, and he was looking to start a second impact-focused company. He flew to Nairobi, Kenya, to finalize his market research before officially starting his next venture in the agricultural sector. With many start-ups, international organizations, and large-scale donors investing in the East African agricultural industry, Janssen suspected there were many opportunities for building ventures. He identified three challenges within the Kenyan food supply chain that presented significant opportunities for innovative business models: climate change, inaccessible markets, and ineffective educational systems. Before landing in Kenya, he wanted to do an evaluation of each of these challenges. He knew that he first needed to assess the Kenyan economy so that he had a good understanding of the major trends that would drive economic activity in the coming years. Then he wanted to analyze the resources and processes that he could leverage for tackling the problem in the agricultural sector that he chose to focus on. Finally, Janssen needed to develop a strategy for learning more about Kenyan farmers; he would be in Kenya for only three months, so he needed a systematic and efficient plan for learning more about his future customers.

Chris Janssen

Janssen graduated from the honours business administration program at Ivey Business School in 2013. Following graduation, he researched small-scale enterprises in Kenya for five months and then founded TFC. TFC provided affordable and accessible educational material to students across the globe. Fifty per cent of the textbooks collected were donated to partner university libraries in East Africa, 30 per cent were recycled, and 20 per cent were resold at discounted prices to students across North America. TFC had become a North America–wide venture, and Janssen had built a team that could manage TFC while he explored opportunities to create another impact-driven company. Universities such as Moi University in Eldoret, Kenya, respected and appreciated Janssen because TFC was able to supply them with textbooks they previously could not access.

KENYA: MARKET BACKGROUND

Kenya’s Political and Economic Environment

Corruption remained a persistent issue in Kenya’s political economy. Allegations of government officials siphoning funds were routine, and real estate developers factored graft expenses into their budgets.[[1]](#endnote-1) Despite ongoing claims by administrations that they were tackling the issue, the general attitude among Kenyans was that corruption would persist and that they should not rely on their government for social development.[[2]](#endnote-2)

Despite governance challenges, Kenya had an overall positive economic outlook. The World Bank expected growth to exceed 5.5 per cent per year beyond 2020, and they believed that the Kenyan federal government was creating an effective climate for private investment.[[3]](#endnote-3) The 22 million Kenyans who were considered members of the middle class were driving this growth through their spending.[[4]](#endnote-4) Kenya had a well-educated English-speaking urban population, an existing industrial base, and regional export ports, all of which encouraged investment.[[5]](#endnote-5) Foreign direct investment (FDI) rose 71 per cent to US$692 million in 2017.[[6]](#endnote-6) Access to domestic credit remained a challenge despite increasing FDI.[[7]](#endnote-7) Multinationals like Johnson & Johnson Inc. and Microsoft Corporation opened regional headquarters in Kenya’s capital, Nairobi, in 2018.[[8]](#endnote-8) This optimistic environment did not come without its challenges. Notably, foreigners could only lease land,[[9]](#endnote-9) and 36.1 per cent of Kenyans lived on less than $40 per month.[[10]](#endnote-10)

Agriculture was an integral component of the Kenyan macroeconomy, representing 27 per cent of gross domestic product and 37.21 per cent of employment.[[11]](#endnote-11) At the microeconomic level, over half of Kenyans spent 66 per cent of their income on food.[[12]](#endnote-12) Food price volatility meant families had inconsistent access to education, health care, and consumer goods. The agricultural industry was extraordinarily fragmented, with most Kenyans producing their own food. Sixty-three per cent of the country’s agricultural output was produced by 15.9 million rural smallholder farmers;[[13]](#endnote-13) in urban areas, 30 per cent of households managed urban farms.[[14]](#endnote-14)

**Population**

Kenya had an estimated population of 48 million people, 27 per cent of whom lived in urban areas, and urbanization was growing at 4.23 per cent per year. Rapid population growth in East Africa was a looming concern for policy-makers, development experts, and any global citizen with an interest in global security and stability (see Exhibit 1). The scope of forthcoming population growth could not be overemphasized: the population of the African continent would grow from 1.2 billion in 2017 to 2.2 billion by 2050.[[15]](#endnote-15) By 2050, urban areas were expected to house an additional 400 million people.[[16]](#endnote-16) Ten million youth would enter the workforce every year in the sub-Saharan region until the end of the century.[[17]](#endnote-17) Population growth rates such as these implied that societies would primarily be composed of young people. Already, 63 per cent of Kenyans were under the age of 25.[[18]](#endnote-18) This large youth demographic created both extraordinary opportunities for society building and significant risks for instability.

More people living in rural areas resulted in less food reaching cities, driving up food prices for urban dwellers. However, rural population growth negated the benefits of increased prices. Denser rural areas equated to less surplus to sell, and higher prices were not making up for lost sales volume; therefore, farmers were experiencing lower incomes (see Exhibit 2).[[19]](#endnote-19)

As a result of these demographic factors, the Food and Agriculture Organization of the United Nations estimated that food production in East Africa would need to double by 2050.[[20]](#endnote-20)

**Mobile Phones**

Mobile phone adoption in East Africa reached 80 per cent per household in 2014, while landline adoption remained at 3 per cent.[[21]](#endnote-21) This phenomenon could be explained by the low cost of running mobile networks in densely populated areas and the emergence of inexpensive cellular hardware. Even more exciting for mobile solutions providers was the rapid development of the smartphone ecosystem in East Africa. As the cost of smartphones fell 40 per cent from 2015 to 2017, smartphones as a percentage of mobile phones increased from 18 to 34.[[22]](#endnote-22) Low-cost and flexible mobile data plans made smartphones economical to operate. Smartphone growth was intrinsically linked to the large youth population since youth highly valued the connectivity and opportunities mobile networks offered; low-cost hardware and mobile- coverage providers had been able to economically meet this demand.

Like the North American mobile application (app) market, numerous mobile apps were created to cater to people’s needs. The most renowned of these services was M-Pesa, a mobile wallet that allowed participants to store Kenyan shillings on a SIM card that was installed in a mobile phone. A user’s cell phone number then also became his or her SIM bank account number. Participants could “text” money to other market participants using the service. Nearly every business accepted M-Pesa payments. The mobile money was linked to the cash economy by an expansive network of certified M-Pesa agents, who took deposits and offered withdrawals. Entrepreneurs had designed systems to use M-Pesa for lines of credit, loans, and savings accounts. M-Pesa met the needs of the “unbanked” sector of society, with 80 per cent of Kenyan households adopting M-Pesa within four years of the app’s introduction.

CHALLENGES IN THE Agricultural SECTOR

Climate Change

Climate change was making Kenya hotter and drier. Average temperatures in East Africa were projected to rise by 3.2 degrees Celsius by the end of the century.[[23]](#endnote-23) Precipitation would become more infrequent and be more intense, causing flooding and destroying crops.[[24]](#endnote-24) A drought that began in 2016 significantly reduced Kenyan farmers’ yields, increasing staple food prices by 30 per cent nationwide.[[25]](#endnote-25) Climate-induced variability was expected to continue indefinitely, creating significant uncertainty for farmers’ future success. In East Africa, most crops were already near the maximum temperature in which they could grow, so modest temperature increases could make farmland significantly less productive. Drought led to failed crops and desertification of soil, making future crops harder to grow.

Market Access

Market access enabled and incentivized innovation and increased productivity. Market access was composed of access to agricultural input markets (e.g., technologies, fertilizer, and finance) and market services (e.g., transportation, advisory services, storage, and price information).[[26]](#endnote-26) Research strongly suggested that access to formal markets increased incomes and food security for smallholders.[[27]](#endnote-27) Smallholder farmers accounted for 63 per cent of agricultural output in Kenya,[[28]](#endnote-28) yet less than 50 per cent of all the crops they grew were marketed for sale outside of the farmers’ immediate community.[[29]](#endnote-29) A World Bank report estimated that $300–$400 billion in investment in the African food supply chain was necessary to meet the $1 trillion demand for food products that would exist in 2030.[[30]](#endnote-30) Janssen was puzzled by how effective markets had not emerged to leverage farmers’ profit potential, even though Kenya was made up of so many intelligent, hard-working people.

Farming Education

Kenyan farmers produced 66 per cent less output per hectare than farmers in rich industrialized countries.[[31]](#endnote-31) Due to lack of arable land, improving farmers’ productivity was essential to meeting future food demands. There were three traditional forms of farming education in East Africa: community education, extension workers,[[32]](#endnote-32) and tertiary education. Each form had limitations for addressing the gravity of population growth and climate change. Within communities, traditional gender roles were misallocating education resources. Despite women constituting over 60 per cent of food producers,[[33]](#endnote-33) they were 20–30 per cent less productive than men.[[34]](#endnote-34) This was largely attributed to less access to educational resources.[[35]](#endnote-35) For example, men and women’s primary form of technology knowledge sharing was social groups, but women attended these less because of time spent taking care of children and managing households.[[36]](#endnote-36) Moreover, only 12 per cent of all Kenyans acquired tertiary education, with most university graduates living in urban areas. These education-sector challenges, coupled with rapid population growth, were fostering significant youth unemployment: 55 per cent of men and 70 per cent of women aged 15–24 were unemployed.[[37]](#endnote-37) Moreover, jobs that did exist for youth were often low skilled and low paying. Weak or non-existent enforcement of labour regulations meant that youth often found themselves doing dangerous work.

**EMERGING SERVICES FOR FARMERS**

Other impact-driven entrepreneurs were trying to build solutions for different stages of the East African food supply chain. These start-ups used different value propositions to try to help farmers increase their productivity and adapt to the changing climate. Wefarm Limited (Wefarm) was attempting to address the lack of practical education while leveraging mass SMS (short message service) access by creating a peer-to-peer service that allowed people to text questions to the Wefarm platform and receive answers from other farmers somewhere in the world who had a solution. As of September 2018, the platform facilitated one million questions and answers per month, with an estimated 20 per cent of Kenyan and Ugandan farms using the platform.[[38]](#endnote-38) Wefarm did not have a consistent source of cash flow; the company hoped to sell insights from data collected by the platform or become a broker for agriculture inputs or financing.[[39]](#endnote-39) Arifu provided a similar service; however, instead of another farmer answering the question, the user engaged with a conversational interface that was well versed on a library of common farming challenges. Arifu had incorporated supply chain stakeholders into its service by connecting farmers with financing and agricultural input suppliers, as per the needs of the farmers. Apollo Agriculture designed packages of inputs, education, insurance, and loans for maize farmers and monitored the farmers using satellite imaging. A partnership led by Safaricom PLC*,* M-Pesa’s parent company and Kenya’s largest mobile network provider, enabled iProcure Limited (a distribution start-up), Arifu, and a major Nairobi microcredit bank to offer comprehensive farming solutions. They hoped to improve the entire supply chain by sharing data among the platforms.

BUILDING A BUSINESS IN THE Agricultural VALUE CHAIN

Janssen’s Capabilities

Janssen had a few notable strengths and constraints when considering how he might build a business model that would improve food security in East Africa. In terms of strengths, Janssen was a natural leader. He was able to use compelling stories to build the teams he needed to execute his visions. Additionally, Janssen had two Canadian colleagues who were willing to lend their specialized knowledge to Janssen for the purpose of starting a new venture. The first was a mentor with previous experience as a chief operating officer and a chief financial officer. This mentor was looking to co-found an impact-driven business with Janssen. As a co-founder, he would manage the finances and organizational structures of the new venture. The second colleague was a retired software engineer who wanted to use his career’s worth of experience to help design systems that improved people’s lives. This engineer had extensive experience using free open-source platforms for building websites. Janssen could be based in Kenya and communicate with these colleagues using the Internet. Finally, Janssen had a highly collaborative relationship with Moi University in Eldoret. Moi University was highly regarded and trusted by Kenyans. Janssen was constrained by having little cash with which to start a business. He estimated that he would need to demonstrate a growing customer base to investors before he could raise cash. Moreover, as a foreigner, he would have difficulty earning people’s trust in Kenya, so local collaborations would be essential to building a large-scale business.

Next Steps

While Janssen found each big challenge in the Kenyan agricultural industry compelling, he realized that he would need to identify a core issue that was currently unaddressed. Moreover, he would need to ensure that he had the necessary resources and processes available to build a business that tackled this issue. Janssen needed to assess each challenge in the agricultural market, identify how the resources and processes he had available to him could address each issue, and think about how he would finalize identifying his value proposition while in Kenya.

Exhibit 1: Population Projections, 2015–2100

Source: “Total Population (Both Sexes Combined) by Region, Subregion and Country, Annually for 1950–2100 (Thousands) Estimates 1950–2020,” 2019, United Nations: Population Division, Department of Economic and Social Affairs, accessed , <https://population.un.org/wpp/Download/Metadata/Documentation/>.

Exhibit 2: Net farm income per hectare owned

Source: Milu Muyanga and T. S. Jayne, “Effects of Rising Rural Population Density on Smallholder Agriculture in Kenya,” *Food Policy* 48 (October 2014): 105, https://doi.org/10.1016/j.foodpol.2014.03.001.

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