GADCO: A Holistic Approach to Tackling Low Agricultural Incomes

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Sector • Agriculture
Enterprise Class • SME
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Executive Summary

Agriculture is a compelling sector for growth driven by the demand and supply-side trends. These trends present many African states with a strategic opportunity to leverage their comparative advantage in agriculture for economic and social impact, but require market-based solutions and private sector skills. The development challenges of the 21st century require new approaches and models to achieve results. GADCO is an agri-food company, based in Ghana, that is building an integrated agricultural business focused on delivering on three key areas—hybrid grain production, infrastructure which adds value to agriculture produce, and marketing of Copa consumer products. The company integrates these activities to transform its captive commercial, smallholder, and third party grains into Copa branded consumer foods in Africa. GADCO, through its COPA Connect programme, links smallholder farmers to the company’s value chain. It created the Copa brand to deliver high-quality products to low-income markets. GADCO was founded in 2009, and now operates the largest integrated rice farm in West Africa. GADCO’s business model is prudent, market-driven, and adopts risk management techniques at each stage of it’s value chain. GADCO combines a strong international team with proven operational capabilities in Africa and Brazil. It additionally benefits from international partnerships with Governments in Africa and cross-regional transfers of world-class technology, skills and technical assistance from Brazil to the company’s operations in Africa.

GADCO’s approach to transforming smallholder livelihoods, through its Copa Connect program, is a model that has attracted strong support. The company aims to assist smallholder farmers to shift from subsistence agriculture to commercial farming through its outgrower scheme, called the Copa Connect Initiative. In addition, its innovative and inclusive approach to community-based leasing of farmland has allowed the company to expand operations in tandem with community economic and infrastructure development. The results are already beginning to show. Economically this is reflected in increasing quality rice output in Ghana, with balance of payments and employment dividends. It also has the potential to improve food security concerns as well as livelihoods in these poor farming communities. GADCO offers an example of how a strategic alliance between private, public and civil sector organizations can work together to transform agri-business sector in Ghana and, more generally, in Africa.

GUIDING QUOTE

“...value chains are the only way that you can move the rural poor out of poverty. I don’t think there is any other passage or sector that has the absorption capacity that can take a million farmers in Africa and think about doubling or tripling their income over the next 5 years” (Iggy Bassi, 22nd June 2012)
Introduction

This Case Study examines the operations of GADCO, an agribusiness that focuses on the production and marketing of cereals in Ghana. Following their business goals, the company further aims to assist smallholder farmers in shifting from subsistence agriculture to commercial farming through the company’s out grower scheme, the Copa Connect Initiative, in which farmers are connected to GADCO’s nucleus farms. The company also markets its own ‘Copa’ brand of rice, in Ghana, with plans to expand further in West Africa. The report highlights the business model of the company and how it relates to all the stakeholders in the value chain. The achievements and challenges of the company are also presented in the report.

Context

SMALLHOLDER FARMERS: THE FACE OF POVERTY IN GHANA

The agricultural sector contributes significantly to the welfare of most households in Ghana. It contributed about 28% of GDP in 2010. It continues to be a key source of employment to the majority of Ghanaians – in 2005/2006 agriculture employed almost 56% of the total labour force (Osei, 2012). Smallholder famers dominate the sector. The incidence of poverty for Ghana has almost halved from the early 1990s – it decreased from about 51.7% in 1991/1992 to about 28.5% in 2005/2006. However, while export farmers experienced a significant drop in poverty, the situation with subsistence farmers remained almost unchanged. Undoubtedly, high levels of poverty among smallholder farmers are generally attributable to their very low yields, which result from underutilization of appropriate and modern inputs such as fertilizer and improved seeds, lack of knowledge about more efficient production techniques, lack of credit, and the overdependence on rainfall (lack of irrigation) (GIZ, 2012). In Ghana, most crops have yields far below their estimated achievable levels. For example, statistics from the Ministry of Food and Agriculture (MoFA, 2011) reveals that yields for maize and rice in 2010 were respectively 1.89 tons and 2.71 tons per hectare, compared to the achievable yields of 6.0 and 6.5 tons per hectare respectively.

Farmers also face other serious constraints, such as limited access to land and lack of access to markets. An important step to lifting smallholder subsistence farmers out of poverty is a transition from food crop to cash crop production. Growth in the agriculture sector therefore offers great potential for spearheading poverty reduction and food security, as majority of the labor force is involved in agriculture and related sub-sectors.

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1 This is based on a poverty line of US$1.25 per day
2 See appendix for a table on yield gaps in Ghana


Business Model

GLOBAL AGRI-DEVELOPMENT COMPANY: GADCO

GADCO is an integrated agri-food company that focuses on cereal production. As of late 2012, GADCO operates in Ghana but has plans of expanding to other sub-Saharan African countries. The company focuses on building and integrating sustainable agri-food and agri-processing to create packaged food products to serve the African market. It currently operates from Fiave near Sogakofe in the South Tongu district of the Volta Region of Ghana. The company currently focuses on rice production and boasts about one thousand hectares of rice farm, the biggest in Ghana, and intends to produce other cereals in the future.

Two entrepreneurs, Taks Abimbola and Iggy Bassi, founded GADCO in 2009. The idea that formed the basis of the company was born from a research project undertaken by the founders in 2007. This research project looked at the cross section between building markets and making an impact. The entrepreneurs therefore started GADCO on the belief that markets are the key to leveraging Africa’s agricultural resources to deliver on what the company terms ‘the triple bottom line’ – social, financial and environmental returns – for all stakeholders (GADCO, 2012).

Although the company now operates in the Volta region of Ghana, there are plans to extend operations to other parts of the country and subsequently to other parts of Africa. The district in which GADCO currently operates in has the advantage of having the largest river in Ghana, the Volta River, passing through it. This consequently will enable the company to undertake irrigated agriculture as well as aquaculture.

GADCO’s plan is to operate primarily in the Ghanaian market. Once the model is properly developed in Ghana and investor confidence has grown, they will then set up branches in other countries. In the meantime they are making use of some of their ‘international partners’ who are more experienced and established in the food value chain, such as Finatrade, to build awareness of the products and the brand. In this way they can have links into the West Africa market even if production is currently only in Ghana.

DEFINING THE BUSINESS MODEL

GADCO’s business model is essentially built on three value propositions

• To provide nutritional, reliable and safe Copa3 foods at competitive prices for customers;

• Provide continual innovation to business operations to ensure shared value for all stakeholders; and

• Transform the livelihoods of smallholder farmers and build food security through markets.

These value propositions are at the heart of GADCO’s business model. Innovation and working with smallholders to transform their farming businesses has allowed GADCO to

3 ‘Copa’ is the brand name for GADCO’s food products, and was launched in 2011.
sustainably provide customers competitively priced food. The business model is built around the belief that “value chains are the only way that the rural poor can be moved out of poverty” (Iggy Bassi, 22nd June 2012). Therefore the company aims to connect smallholder farmers to GADCO’s farm infrastructure (improved seeds, fertilizer, irrigation infrastructure, tractor and equipment and production techniques) and a modern processing plant. The processing plant will be on site and is to start operation by the second quarter of 2013. The support is provided at a fee agreed with the farmers, which is deducted once the farmers’ produce are sold. At the moment, rice is processed outside of the company. At the other spectrum of the value-chain, GADCO is working on building market share by working with Finatrade to help market the ‘Copa’ brand in both the country and beyond. In the company’s view this business model will enable farmers move from subsistence farming to entrepreneurial farming. GADCO has built a solid and innovative relationship with the community in which they work, fostering a deep-seated sense of ownership; consequently, the community is fully committed to supporting the company in achieving its mission.

THE GADCO NUCLEUS FARM

Nucleus farms are typically large farms that act as pilots particularly in cases where the entrepreneurs engage local farmers. In a sense they act as experimentation as well as demonstration plots for potential outgrowers. GADCO’s nucleus farm of about 1000 hectares (as of Dec 2012) is in the Fiave area in the South Tongu district. The size of the farm is expected to reach about 2000 hectares by the end of 2013. The company envisions the size of the farm expanding at a rate of 1700-2200 hectares per year over the next 5 years. It is expected that smallholder farmers will work half of the total projected size of the farm. “It is important to note that in the next 5 years, GADCO sees 6% of their grains coming from small holders...we are taking it seriously and recognise the advantage of engaging the smallholder farmers” (Dabo Abimbola, July 2012). The founders of GADCO acknowledges that securing large tracts of land for commercial agriculture can be very difficult, especially for smallholders. They thus believe in providing the necessary market driven infrastructure to smallholder farmers who in turn will produce the quality of rice GADCO expects. Under this arrangement, GADCO will buy the produce of these farmers under the Copa brand. The company currently grows a Jasmine rice variety and has an average per hectare yield of about 5.5 tonnes per harvest cycle.

Rice was chosen as the first GADCO product due to its huge market potential in Ghana. For instance statistics from the FAO show that Ghana imported over 320,000 metric tonnes of rice in 2010. However the company aims to eventually go into the production of other grains and subsequently into poultry farming. For the Jasmine rice variety the cycle is about 90 -120 days to harvest from the day of planting. This means that three harvest cycles can be obtained in any given year. The company reports that it achieved 2.5 harvest cycles in 2011. This translates to an annual yield of about 13.75 tonnes a year per hectare. This compares quite

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4 Finatrade is a major procurer and distributor of food in West Africa
5 The FAO statistic was accessed on 11/12/2012 from [http://faostat3.fao.org/home/index.html](http://faostat3.fao.org/home/index.html)
favourably to the average 2010 yields for Ghana, which was about 2.7 tonnes per hectare (Ministry of Food and Agriculture, 2011).

To maintain the fertility of the land, GADCO plans to cultivate different crops, including soybeans, at different times. Rice will be grown on a given parcel of land for about five years, after which it will switch to the production of another crop, such as soybeans. In this way, the essential nutrients in the land will be maintained. GACDO’s facilities and technological know-how should be accessible to nearby smallholder farmers, allowing them to learn about production techniques firsthand. Farmers are encouraged to cultivate the same crops as GADCO in order to benefit from the technology, expertise, and market provided by the company.

Irrigation Infrastructure on GADCO Farm

Irrigation is critical to achieve higher annual yields. The company uses basic technology plus gravitation to irrigate their fields. For most of the fields currently under cultivation, they use gravitational force from the water to irrigate them. In other parts of the field where the water cannot reach due to the low force, pumps have been installed to push the water further with the help of a generator. GADCO hopes to switch from the use of generators to electricity soon as the generators are very expensive to run. There are plans to connect the farm area to the national grid by end of the first quarter of 2013.

The company uses a state-of-the-art planter that is able to plant about 25 hectares of rice a day on a flat land. This machine enables them to plant and apply fertilizer at the same time. The extra advantage of this equipment is its ability to plant other grain crops.

GADCO COPA CONNECT INITIATIVE

Copa Connect Initiative is an innovative scheme developed by GADCO to link smallholder farmers to the GADCO Copa rice brand. Under this scheme, smallholder farmers benefit from
GADCO technologies and market driven infrastructure (including irrigation, seeds, agro-chemical inputs and technical support) that will enable them to produce the quality of rice required to be competitive in the market, and under a known brand name. GADCO in turn buys the produce from these farmers – deducting a service fee for the infrastructure and support provided - and sells it to its marketing partners (Finatrade). The service fee charged the farmer is comprised of three components. First is the direct production cost which includes the improved seeds, chemicals and fertilizers that is provided to the farmer. Second, is the capital expenditure cost which includes the use of machinery (threshers and reapers), processing and storage infrastructure. Third is the overhead costs, which covers personnel and related costs. The calculation of the charges is done by Copa Connect staff. This is then shared and explained to the farmers and all the stakeholders of the program at the onset and before planting. However the framework within which this arrangement works allow for some adjustments within the season. As one of the officials note “Although the basis of the calculation method and fee structure can be determined before planting, our current idea is to have a system where part of the charges are incurred before planting and the rest is accounted at harvest, given the smallholders’ cash flow needs – Copa Connect will deduct the charges from the revenues that are due to the smallholders at harvest. The revenue owed to the smallholders will also have to be determined at harvest since that depends on yield, quality and market prices at the time” (Junko Tashiro, 18th January, 2013).

The benefit for GADCO is the assurance that they always have enough supply to meet its’ demand. For the smallholder farmers it guarantees a ready market. In effect, GADCO provides the seal of confidence in the quality of rice and also the platform for negotiating price. GADCO uses Finatrade because the latter has the relevant infrastructure and expertise marketing within the sub-region.

To pilot this scheme, GADCO has rolled out an advocacy programme called GADCO Copa Connect Advocacy. Under this programme, 20 farmers benefit from GADCO’s support to produce a hectare of rice each (currently 20 hectares in total). This is to serve as a model farm (demonstration) and ensure better buy-in from other farmers within the catchment area of GADCO. After the pilot, the Copa Connect Initiative is planned to be rolled out on a larger scale. The initial set of beneficiary farmers are key stakeholders in the community and those whose activities were directly affected by GADCO operations; for example, specific community members or families who used to farm the GADCO farm area.
for their livelihood. They are leaders in the advocacy programme and are supposed to bring colleague farmers on board once the Copa Connect initiative is expanded. For the initial 20 farmers in this advocacy programme their yields of about 5.67 tons per hectare in 2012, was higher than that of the GADCO farm. This was certainly very positive for the Copa Connect programme as it signals that the potential for smallholder farmers to increase their incomes is real and achievable, making it an interesting endeavor for other members of the community to participate in. The increased income will come from both quantity and price dividends from being connected to the market through GADCO who will have considerable market power. A beneficiary of the scheme who also doubles as the chairman of the community council indicated that the smallholders had no idea that rice could even be cultivated in their area and remained very thankful to the organization. The community council is the body of local opinion leaders who are appointed from the four communities that have leased land to GADCO.

6 The council essentially liaises between the communities and GADCO. They meet on a monthly basis to discuss issues relating to GADCO’s operations or other issues that the company would like to pass on to the communities and vice versa. The company expects about one thousand (1,000) farmers to join the Copa Connect Programme by the end of 2013. In the medium to long term, the company is going to scale this up to about eleven thousand (11,000) farmers, including some from other parts of the country. “For the Copa Connect, we are looking at 1,000 this year but for the next 5 years, we are looking at 11,000” (Ameku, July 2012). GADCO considers scaling up as important because they foresee about 6 per cent of Ghana’s grains in the next 5 years coming from smallholders. “The goal of the Copa connect initiative is to help farmers see farming as a business and not just a source of livelihood” (Dapo Abimbola, July 2012).

CONSTRAINTS AND SOLUTIONS STRATEGIES

Constraints

Some of the main challenges that GADCO had to overcome include:

Land: The security of tenure for large tracts of land for agricultural purposes can be problematic particularly for large commercial farming in Ghana. Goldstein and Udry (2008) suggest that complex and uncertain land tenure relations seem to hamper private investments in Ghanaian agriculture. As noted also by Chamberin (2008) most smallholders face land constraints. The problem of land is further compounded by the fact that several families own the land and so it is difficult to get a large contiguous land from one person or family. Not surprisingly, land market reforms have been critical in agricultural transformation in other parts of the world that have faced similar challenges. For example, it is noted that agricultural revolution in China and Vietnam were preceded by significant land market reforms (Kerkvliet, 2006). Other findings show, as much as 80% of Ghana’s arable land is uncultivated in part due to insecure property rights (Goldstein and Udry, 2008). In GADCO’s

6 GADCO leases land from farmers and landowners in the local communities; GADCO then pays a portion of its output to the land owners. The community council contains representatives from the communities that have leased land being used in GADCO’s current operations.
case the community land was being used by different individuals who had been allocated these lands by the chiefs and family heads, and were doing subsistence farming. The challenge for GADCO was twofold. First, the need to get a large contiguous land for the farm required negotiating with different chiefs and family heads. Second, it needed to negotiate the lease of the land in a way that would discourage future litigation.

**Low Skills and Commitment of smallholder farmers:** Smallholder farmers who were to participate in the Copa Connect Initiative had little experience with rice farming. In addition to this low skill level of these farmers, they also had other commitments which adversely affected their participation in the training that GADCO had to offer with respect to rice farming. Indeed the low commitment of the farmers is not totally unexpected. Ghana is replete with many agricultural projects which promises much but achieve little.

**Marketing the Copa brand of GADCO:** There is a strong demand for imported rice (long grain perfumed rice) in Ghana. This is manifested in the growing excess demand for rice (ISSER, 2011). The challenge for GADCO here was getting around the tastes and preference of the Ghanaian consumer for imported rice and creating a significant market share. These attitudes and tastes are usually hard to change in the short to medium term. The costs associated with advertising and distribution of the Copa brand imposes extra cost burdens on the company.

**Institutional and infrastructure constraints:** The constraints here relates to the institutional bottleneck associated with intra-regional trade. Marketing the products across the Economic Community of West African States (ECOWAS) region is bound to face many challenges in spite of progress made with respect to regional integration. Even though there are protocols which are supposed to make the movement of goods and people seamless across the region, this is not so in practice. The lack of enforcement of some of these protocols is a reflection of the low political will to see to increased regional integration (Omoluabi, 2010). Added to that is the poor physical infrastructure connecting the different parts of the sub-region. Typically it takes a lot longer and therefore more costly to transport goods across borders in the ECOWAS region.

**High Initial Capital Outlays:** Starting an efficient nucleus farm plus working with outgrowers on the scale that GADCO is undertaking requires very high capital outlays. Production costs alone (excluding the potentially high overheads for such a business model) for cultivating currently 1000 hectares of rice amount about US$2.21 million (see Figure 1, page 11). If this money were being borrowed on the Ghanaian financial market, it will come with a nominal interest rate of between 21.5-28.4%\(^7\). Given that this is an agriculture investment, it will put many an investor off, as there may be less risky investments. Indeed one of the safest instruments in Ghana today is the government treasury-bills, which attract an interest rate of about 22% per annum (for 91-day bills\(^8\)) at time of writing.

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\(^8\) This is obtained from Bank of Ghana’s website; [www.bog.gov.gh](http://www.bog.gov.gh) (Accessed 29/08/2012)
Overcoming the challenges

Security of Tenure of Land: The company is pursuing what it terms an ‘engagement model’ with respect to land. This involves working with communities to get them to appreciate the implications of GADCO’s business model. There are two key aspects of this approach that help in dealing with the security of tenure problem. First, payments for the leased land that is used by the nucleus farm are linked to revenues from output. This means that the payments for the land are flows linked to the company’s growth. The community therefore has a stake in the company’s growth. All monies that accrue to the community are paid to a community council, which was formed independently by the community. The council is made of distinguished individuals identified by the traditional leaders and from the four communities who own the land on which the company farms. The council was set up to regularly assess GADCO’s operations. In addition, the committee helps direct the use of resources from the leased land to community infrastructure and other development projects. For example, the revenues accruing to the communities from the first harvests sales by GADCO have been invested in putting up classroom blocks for some of the communities as deemed fit by the community council. In this way this committee has direct responsibility for the use of monies that accrue as a result of the land leasing agreement that it has with GADCO. In other words it is the committee that decides how the money is used.

Improving Capacity and Commitment of Farmers: GADCO designed a training program for the farmers and equipped them with knowledge and skills. The advocacy programme was also expected to not only give the farmers hands-on training but also to demonstrate the potential income that they could make from being a part of the Copa Connect Initiative. With the realized yields and financial benefits from 2012, the interest in the Copa Connect Initiative has increased.

Building Market Share: Due to current volumes, GADCO’s primary market is currently Ghana, but the company aims to expand to the West Africa markets subsequently. Since expansion into these markets is part of GADCO’s business plan, the company has already thought of ways to overcome constraints of moving into them. To reach out to the intended markets, GADCO has partnered with Finatrade, a lead organization in the rice marketing value chain in West Africa, to sell its branded Copa rice in the initial years of operations. GADCO believes that quality, reliability, and R&D all matter in consumer markets and so partnering with international partners is necessary to build the domestic capacity and consequently link smallholder farmers into that value chain.

Access to Capital: Fortunately GADCO currently has a good global investor base including Summit Capital, Root Capital, Acumen Fund, and recently, Deutsche Bank. This they have managed as a result of the strategy of systematically identifying all the problems along the value chain and tackling them. In particular they offered meticulous solutions for each of the constraints and with sustainability always in mind. This approach, which was helped by the background of the entrepreneurs, made it easier to sell their idea to investors.
The Business and its Relationships

Formed in 2009, GADCO has attracted strong institutional investor backing and has gained growing recognition as a pioneering agribusiness with strong support from global and regional partners, as well as foundations and institutions. Some of the current key actors include the following:

Entrepreneurs: The Founders of GADCO are Toks Abimbola and Iggy Bassi, who sit on the Board of Directors and lead the overall strategic direction of GADCO.

INVESTORS

These are different organizations that believe in the vision and mission of GADCO and have decided to inject capital resources to advance this mission. They include Summit Capital, Acumen Fund, Root Capital and Africa Agriculture and Trade Investment Fund (AATIF) (managed by Deutsche Bank and KfW banking group).

- **Summit Capital**: Summit Capital specializes in optimal allocation of private client portfolios with over 70 years of investment experience through a global multi-asset investment programme ($750m). Through its innovative strategies, Summit Capital put capital to work in asset classes, investment vehicles and underlining securities deemed most attractive from a fundamental value perspective at various points throughout a full market cycle.

- **Root Capital**: This is a non-profit social investment fund that grows rural prosperity in poor, environmentally vulnerable places in Africa and Latin America. It does this by lending capital, delivering financial training and strengthening market connections for small and growing agricultural businesses. Root Capital particularly aims to enable small and growing rural businesses to access global markets and create sustainable livelihoods for small scale farmers. It provides working capital debt for GADCO’s operations.

- **Acumen Fund**: Acumen Fund is among a few organizations in the world that uses an investment model to fight poverty in developing countries. It is built on a strong philosophy that spreading ideas will change the world. As a result, supporting companies and leaders forms the foundation that defines every other thing that they do. In addition to providing capital, they advise GADCO on different impact strategies and frameworks. They also work with GADCO to build capacity. For instance, they provide GADCO with Acumen Fund Fellows to help in the development of the Copa Connect program.

- **AATIF**: A public-private fund launched by the German Government and its development bank KfW and Deutsche Bank. The fund focuses on improving African food security and livelihood development through markets. In addition to capital, AATIF works with GADCO to ensure that all the environmental and social standards are met.
STRATEGIC PARTNERS

Different international partners bring different but important expertise to the operations of the company. The key partners include Syngenta, Finatrade, AECF & AGRA, and Agropecuária Foletto.

- **Syngenta**: This is a world-leading plant science business with the objective of promoting sustainable agriculture mainly through research and development. It supports the agricultural production component of the GADCO operations. GADCO has an agreement with Syngenta to supply seeds and inputs (which they buy from Syngenta), protect crops as well as establish an on-site R&D for rice and Soya. It works with Syngenta’s HQ in Basel and in Brazil.

- **The World Bank**: The World Bank signed an MOU with GADCO in which the World Bank has agreed to conduct a rigorous impact evaluation to measure the associated financial and social impacts of the pilot Copa Connect initiative. The results from this evaluation will help inform model development to upscale and replicate this work in Ghana and beyond.

- **Finatrade**: The Finatrade Group of companies is a major procurer, processor and distributor of consumer food in West Africa. They come in with a strong infrastructure base and have multi-country capability in food distribution in West Africa. Under an exclusive agreement with GADCO, Finatrade is responsible for the sales and marketing of all GADCO Copa products in Ghana.

- **African Enterprise Challenge Fund (AECF) and Alliance for Green Revolution in Africa (AGRA)**: Provided financial and technical support respectively for the Copa Connect program aimed at improving smallholder farmer productivity and incomes through market-based value chains. GADCO has been awarded an initial $1m by AECF for Copa Connect Initiative (Dec 2012).

- **Agropecuária Foletto**: They provided early help and management from Brazil. It has extensive knowledge and experience in processing, commercialization of agriculture and productivity enhancements. This provides significant insights and ensures the company’s long-term sustainable competitive advantage and skills transfer.

**Smallholder farmers**: These are local farmers who benefit from GADCO’s infrastructural facilities, inputs, and services on credit. The management of the farm (plots) is the responsibility of these farmers. The company buys all the produce at harvest from these smallholders.

**Communities**: The communities on whose land GADCO currently farm are in the Fiave area, located in the South Tongu District of the Volta Region. Although there are different communities involved, Fiave is the seat of the paramount chief and all the other communities pay allegiance to the paramount chief.
The company reports that they will be announcing a series of new partnerships in 2013 in the areas of R&D, Copa Connect implementation and Brazilian technology.

**Results**

**ECONOMIC**

**Increased Rice Production in Ghana:** GADCO currently has a nucleus farm of 1000 (December 2012) making it the biggest rice farm in Ghana and West Africa. The size of the farm is expected to reach about 2000 hectares by end of 2013. The company projects that the farm will expand at a rate of 1700-2200 hectares per year over the next 5 years (Interview with Iggy Bassi, 22nd June 2012). Even with the current annualised per hectare yield of about 5.5 tonnes, a 2000 hectare farm will add about 22,000 tonnes of rice to current production. This compares quite favourably to the current domestic production of about 278,000 metric tonnes in 2011 (ISSER, 2012).

**Increased Incomes:** GADCO expects that annual income of the smallholder farmers will at least double from the current levels of about $280 (as at 2012) over the next two years (Interview with, Iggy Bassi, 22nd June 2012). Indeed, projections made in this paper suggest that farm profits, a good proxy for farmer incomes, may exceed GADCO’s projections.

The communities that lease land to GADCO also gain economically, as they are paid a percentage of the output.

The net gain to the smallholder farmer is found to be very high. The following basic assumptions are based on interviews with GADCO and also using information from the Ministry of Food and Agriculture. The main assumptions used to generate these numbers are shown in a Table A3 in the appendix.

In Figure 1 we show the potential profit margins for a farmer doing the traditional cassava and maize versus the farmer who is part of the Copa connect initiative. The difference
between the scenario GADCO1 and GADCO2 is that in the latter we added the interest on the borrowed money. Even in the latter scenario, the profits that accrue to a farmer of about US$1,792.40 is about 3.5 times higher than what they will have been making doing maize and cassava. Scaling this up to say 1000 smallholder farmers in the community gives indication of the magnitude of the impact of GADCO in the community. Even considering only this first order impacts, this is a significant annual addition to aggregate demand in the community.

**Balance of Payments Dividend:** At the current size of 650 hectares, with the given annual yields of 13.75 tonnes per hectare, and using the going market price of imported rice of about US$1,684 per tonne, we estimate that GADCO production will improve Ghana’s terms of trade by almost US$15 million.

**Employment:** GADCO currently employs a labour force of about 105 farmers for the nucleus farm. However it argues that this direct employment is not an important component of its employment strategy or goal. Rather the indirect employment through its Copa Connect initiative is where the employment dividend will come from. This indirect employment will mainly be from the smallholder farmers (themselves now gainfully employed) who will be doing commercial farming and are able to employ others to work on their farms. It aims to have about 15,000 smallholder farmers over a 7 year-period, with about half of them in the next 4.

**SOCIAL**

**Improving Livelihoods:** The inclusion of farmers in the business model of GADCO means that these farmers get trained to enable them produce same or similar rice quality as required by GADCO. This in turn results in an improvement in the livelihood of the farmers.

**Improved Food Security:** Food security concerns of the affected communities and their surrounding is significantly eased with the GADCO operations. This result is double-pronged. First, increasing yields and output of rice produced by the farmers means one of the major food staples in Ghana today is more readily available to these farmers. Second, community members are allowed to collect the leftover rice that the machine could not pick from the GADCO farm after harvesting. In commercial agriculture, the combine harvester cannot pick every single grain on the farm. There are some grains that may be left on the farm after harvesting and the community women are granted permission to hand pick these leftovers. Indeed the author observed many women from the community picking rice from the farms. Both of these factors help in improving food security in the area.

**Social Infrastructure for Communities:** GADCO has put in several interventions to assist communities in which they operate. This has involved establishment of the GADCO Foundation, which aims at delivering recurring and scalable impact at both community and environmental levels. Some of the interventions will include building long-term community infrastructure such as clean water, improving food security, and supporting education and health programmes. Additionally, the foundation seeks to develop and invest in sustainable

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9 There is definitely going to be second order impacts through the demand multipliers, for the community
resource management with rural communities, including solar power, and next generation stoves.

**Building Human Capacity:** The company has opened its facility to students from tertiary institutions and other agriculture colleges to embark on practical attachments. The company believes this will deepen their understanding on different ways of cultivating rice as the students get the opportunity to participate in the various stages of the production process. The operations manager of the company indicated their willingness to welcome other institutions that may want to have their students benefit from similar experiences.

**ENVIRONMENTAL**

**Environmental Dividends:** There are three main ways by which GADCO impacts the environment positively. First it undertakes responsible farming by undertaking water and integrated soil management. Second, it ensures that nucleus farm, as well as the smallholder farmers, are EPA\(^\text{10}\) compliant particularly in respect of the use of pesticides and other chemicals. Thirdly, GADCO provides extension services to smallholder farmers on adaptation and resource stewardship. It must be said that the use of generators for pumping water in some parts of the irrigation channels is likely to have adverse impact on the environment.

**Conclusion**

GADCO aims to become the premier integrated agri-food company focused on sustainable triple bottom-line returns in Africa. Although it currently only produces rice in Ghana, it aims to expand into high-demand food products such as maize, soybean, poultry and fish in key breadbasket countries in West Africa. Its’ business model aims to tackle both demand- and supply-side constraints of the market. The model revolves around increasing productivity and scale of the smallholder farmer and ensuring sustainable social, economic and environmental impact. GADCO not only guarantees a market for the smallholder farmer, but it also ensures that there is effective demand over the long term for the output. The company’s business model is scalable and it hopes to expand across multiple countries in key breadbasket regions.

There are two key conclusions that one can make based on this case. First, this case highlights the fact that sustained agricultural transformation can only happen if it is tackled in a holistic way – piecemeal policy measures in agriculture will not engender significant changes, as the literature has shown. Second, agriculture does have the potential to deal with poverty in Africa in a decisive and sustained way with the right partnerships, innovative vision, market driven strategies and global best practices.

\(^{10}\) EPA is the Environmental Protection Agency of Ghana. It is the public body for protecting and improving the environment
References


Persons interviewed during the Case Study

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Name</th>
<th>Role</th>
<th>Date</th>
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<tbody>
<tr>
<td>GADCO</td>
<td>Iggy Basy</td>
<td>Director and Co-founder</td>
<td>June 22, 2012</td>
</tr>
<tr>
<td>GADCO</td>
<td>Dapo Abimbola</td>
<td>General Manager-Operations</td>
<td>July 13, 2012</td>
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<tr>
<td>GADCO</td>
<td>Julius K. Ameku</td>
<td>Copa Connect Community Manager</td>
<td>July 13, 2012</td>
</tr>
<tr>
<td>GADCO</td>
<td>Mr. Cater</td>
<td>Security Officer</td>
<td>July 13, 2012</td>
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<tr>
<td>GADCO</td>
<td>Ms Junko Tashiro</td>
<td>Business Manager for COPA Connect</td>
<td>18th January, 2013</td>
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Appendix

Table A 1  Different crop yields in Ghana, 2004-2010

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<tbody>
<tr>
<td>Maize</td>
<td>1.6</td>
<td>1.6</td>
<td>1.5</td>
<td>1.5</td>
<td>1.7</td>
<td>1.7</td>
<td>1.89</td>
<td>6.0</td>
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<tr>
<td>Sorghum</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0.7</td>
<td>1.2</td>
<td>1.3</td>
<td>1.28</td>
<td>2.0</td>
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<tr>
<td>Millet</td>
<td>0.8</td>
<td>1</td>
<td>0.8</td>
<td>0.7</td>
<td>1.06</td>
<td>1.3</td>
<td>1.24</td>
<td>2.0</td>
</tr>
<tr>
<td>Rice (Milled)</td>
<td>2</td>
<td>1.9</td>
<td>2</td>
<td>1.7</td>
<td>2.72</td>
<td>2.4</td>
<td>2.71</td>
<td>6.5</td>
</tr>
<tr>
<td>Cassava</td>
<td>12.4</td>
<td>12.8</td>
<td>12.2</td>
<td>12.8</td>
<td>13.51</td>
<td>13.8</td>
<td>15.43</td>
<td>48.7</td>
</tr>
<tr>
<td>Yam</td>
<td>12.5</td>
<td>13</td>
<td>13.2</td>
<td>13.5</td>
<td>14.08</td>
<td>15.3</td>
<td>15.48</td>
<td>49.0</td>
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<tr>
<td>Cocoyam</td>
<td>6.4</td>
<td>6.6</td>
<td>6.4</td>
<td>6.6</td>
<td>6.7</td>
<td>6.7</td>
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<tr>
<td>Plantain</td>
<td>8.5</td>
<td>9.6</td>
<td>9.7</td>
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<td>10.7</td>
<td>10.9</td>
<td>10.79</td>
<td>20.0</td>
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</table>

Source: MoFA, 2011

Table A 2  Major crops farmed by smallholder farmers in the South Tongu District of Ghana, 2010

<table>
<thead>
<tr>
<th>Crop</th>
<th>% of cases</th>
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<tbody>
<tr>
<td>Maize</td>
<td>41.6</td>
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<tr>
<td>Cassava</td>
<td>39.5</td>
</tr>
<tr>
<td>Pepper</td>
<td>34.1</td>
</tr>
<tr>
<td>Okro</td>
<td>13.5</td>
</tr>
<tr>
<td>Beans/Peas</td>
<td>6.5</td>
</tr>
<tr>
<td>Water melon</td>
<td>4.3</td>
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<tr>
<td>Other crops</td>
<td>9.3</td>
</tr>
<tr>
<td>Total</td>
<td>149.2</td>
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ISSER-MiDA FBO Data, 2011

Table A 3  Assumptions used in arriving at Gains to Farmer

<table>
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<th>Assumptions</th>
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<tbody>
<tr>
<td>Price of local rice in 2010/kg</td>
<td>0.58</td>
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<tr>
<td>Yield of Rice under GADCO</td>
<td>13750</td>
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<tr>
<td>Yield of local rice/Ha</td>
<td>2710</td>
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<tr>
<td>Price of maize in 2010/kg</td>
<td>0.57</td>
</tr>
<tr>
<td>Yield of Maize/Ha</td>
<td>1890</td>
</tr>
<tr>
<td>Description</td>
<td>Value</td>
</tr>
<tr>
<td>-------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Price of Cassava/Kg</td>
<td>0.21</td>
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<tr>
<td>Yield of Cassava</td>
<td>15430</td>
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<tr>
<td>Cassava cost/ha</td>
<td>1924</td>
</tr>
<tr>
<td>Maize cost/ha</td>
<td>500</td>
</tr>
<tr>
<td>Proportion of Ha used for cassava</td>
<td>0.5</td>
</tr>
<tr>
<td>Proportion of Ha used for maize</td>
<td>0.5</td>
</tr>
<tr>
<td>Cost of irrigated rice/ha as per MOFA Data</td>
<td>4198.3825</td>
</tr>
<tr>
<td>Cost of irrigated rice/ha based on GADCO model</td>
<td>4198.3825</td>
</tr>
<tr>
<td>Cost of valley rice/ha</td>
<td>2961.53</td>
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<tr>
<td>Amount borrowed from GADCO</td>
<td>1236.8525</td>
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<tr>
<td>Interest rate</td>
<td>0.3</td>
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<tr>
<td>Interest on the borrowed amount</td>
<td>371.05575</td>
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