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COMPETITIVENESS OF GEORGIAN AGRICULTURE: INVESTMENT CASE STUDIES

HIPP GEORGIA

8 August 2014

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DATA

Author(s):	Simon Appleby (ISET), Eric Livny (ISET)
Reviewed by:	Natalia Beruashvili, Dennis Hall, Nikoloz Chachkhiani
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ABSTRACT

This case study analyses a foreign-owned enterprise established in the central Georgian region of Shida Kartli in 2006 as part of the global organic baby food group owned by the Hipp family of Germany. Hipp Georgia's plant in Agora processes apple into conventional and organic juice concentrate and aroma in a process adhering to one of the most rigorous organic food production regimes in the world. The company takes advantage of the GSP+ free trade agreement with Europe to export its organic products to Germany for incorporation in Hipp's organic baby food production. The study focuses on how neglected uplands areas can become fertile ground for organic food entrepreneurs, and how startups may upgrade technical capacities to be certified to the most rigorous standards of food safety and quality assurance, providing them with open access to lucrative export markets. We conclude with policy recommendations for both government and private investors.

ACRONYMS

DCFTA	Deep and Comprehensive Free Trade Agreement with the European Union
ENPARD	European Neighborhood Program for Agriculture and Rural Development
ERP	Enterprise Resource Planning (system)
EU	European Union
GSP+	Generalized System of Preferences (in trade with the European Union)
HACCP	Hazard Analysis and Critical Control Points (a systematic preventive approach to food safety)
IDPs	Internally Displaced Persons
ISO	International Organization for Standardization
ISO22000	ISO family of international standards addressing food safety management
QA	Quality Assurance
USAID	United States Agency for International Development
WEF	World Economic Forum

CONTENTS

I.	EXECUTIVE SUMMARY	4
II.	APPENDICES	6
A.	Background.....	1
B.	Methodology	3
C.	Findings.....	3
	The Business Enabling Environment	3
	The Effects of the Investment in Georgia	6
D.	General Conclusions and policy recommendations	9
	Recommendations for the Government	9
	Recommendations for Investors.....	10

I. EXECUTIVE SUMMARY

Hipp Georgia LTD is a subsidiary of Hipp Switzerland, part of a global organic baby food group owned by the Hipp family of Germany. A philanthropist with long-standing ties to Georgia, Klaus Hipp has been looking for an opportunity to do business while at the same time serving Georgia's needs to enhance the livelihoods of poor smallholders. He identified a supply chain opportunity that remained untapped because of poor infrastructure and unsophisticated competitors, utilized his group's global market reach for organic apple products, and worked closely with smallholders to maintain tight food safety standards.

The company made a decision to invest in organic apple processing in 2006, following the imposition of Russian embargo on Georgian agricultural exports. With no access to its traditional export market and limited storage capacity, the Georgian apple industry went into a protracted crisis, with supply of fresh apples greatly exceeding demand, particularly at harvest. Hipp also took notice of the dire state of apple growers in many uplands regions, such as Racha-Lechkhumi and Mtskheta-Mtianeti. Due to the high cost of transportation, smallholders in these upland areas could not capture neither the manufacturing nor fresh apple markets in the lowlands. The company attempted to transform these weaknesses of Georgia's apple growing industry into a strength by sourcing conventional apple from the lowlands, and developing a network of 1000 apple growers complying with a rigorous in-house organic quality assurance program in the upland areas.

Hipp Georgia had initially commissioned organic and conventional apple juice products from other factories. In 2009, however, the company invested in its own plant in Agara, Shida Kartli – an economically depressed area bordering on Russia-occupied South Ossetia region that also happens to be home to a large population of Internally Displaced Persons (IDP's). By creating 75 permanent positions and hiring additional 180 seasonal workers, the company is thus making a non-negligible contribution to job creation in a region stricken by chronic unemployment problems.

Developing the necessary skills in both labor and management to operate a food factory to the highest international standards of food safety and quality assurance was no easy task, but with assistance from a sister company in Turkey and with rigorous training, the enterprise was certified with ISO22000, HACCP and the in-house Claus Hipp Bio Segel, one of Europe's most demanding organic certification schemes. The company's organic products are currently exported to Germany, where they are incorporated in organic baby food production under Hipp's brand. Its conventional products are supplied to the global market, including Coca Cola factories in Azerbaijan and Kazakhstan.

The study examines Georgia's business enabling environment and how the enterprise was able to transform major challenges -- old orchards, dilapidated infrastructure, loss of an export market for fresh apple, and lack of skills in QA management – from a major liability to a major competitive strength of the enterprise. We analyze the effect of Hipp Georgia on employment and smallholders' welfare, government revenue and exports, process innovation and new product development.

Our key recommendation for government is about the need to promote Georgia's fresh apple – both conventional and organic – to new export markets so as to trigger a round of private investment in internationally demanded apple varieties and organic production methods. Achieving access to the lucrative fresh apple markets is indeed critical because, in the long run, apple processors, such as Hipp Georgia, will not be able to secure their supply chain of manufacturing apple other than as a byproduct of a thriving fresh apple industry. Measures to achieve this may include government-led export promotion, improved communication with the various actors in the apple value chain, improvement of uplands road networks and storage capacity, finance for replanting of smallholders' orchards, renovation of irrigation systems and finance for on-farm irrigation systems.

Investors are advised to take advantage of Georgia's access to markets in Europe by targeting organic or other niche products in order to avoid competition with giant Chinese or Turkish producers. If contemplating organic food processing, investors have to conduct detailed market research and supply chain analysis before commencing investment. As far as local supply chain quality and stability are concerned, investors should be aware of the ample opportunities to collaborate with aid donors seeking to build the capacity of smallholder farmers, link them to relevant value chains and service providers. Likewise, investors should consider the opportunities to benefit from the recent changes in Georgia's legislation and agricultural support policies which prioritize the development of farmer organizations and improve access to finance for agricultural producers and agribusinesses. Finally, given the sorry state of Georgia's vocational training systems, investors should be prepared to devote considerable resources to training for Georgian work force.

II. APPENDICES

- A. BACKGROUND
- B. METHODOLOGY
- C. FINDINGS
- D. GENERAL LESSONS LEARNED AND RECOMMENDATIONS

A. BACKGROUND

The Hipp family of Germany rose to prominence in the late 19th century as food manufacturers. The company bearing their name has remained in the family, with Klaus Hipp, the grandson of the founder, still running the company. The firm began by producing baby foods from cereals and fruits, and in the 1950's it became a pioneer of organic foods in Europe. The first several decades were marked by difficulty, but Hipp is now a market leader in its segment in Germany. The company has 60 representatives worldwide, producing a wide range of baby food products.

Klaus Hipp is a friend of Gabriela von Habsburg, Georgia's ambassador to Germany in 2009-2013, and his acquaintance with Georgia and Europe-based Georgian professionals goes back to the early 2000s. Mr. Hipp visited Georgia multiple times for both business and philanthropic reasons, looking for a profitable business opportunity that would at the same time serve Georgia's needs to enhance the livelihoods of poor smallholders. The company first began internal discussions about Georgian business activities in 2004, conducting extensive market and production base research. In 2006, shortly after Russia imposed a trade embargo on many Georgian agricultural products, including apples, Hipp Switzerland decided to establish a local subsidiary and build a modern apple processing facility. The idea was to process conventional apples and pioneer a new product line: organic apple juice concentrate. As a well-financed multinational firm, the Hipp was able to rely primarily on its own financial resources rather than seek expensive finance from local institutions.

The decision to launch an apple processing operation was based on both commercial and non-commercial motives. On the one hand, by making this investment, Hipp intended to help lift the economy of a fragile and strategically important Shida Kartli region – Georgia's apple-growing heartland. Centered on the Mtkvari (Kura) Valley, this is a densely populated region adjacent to the line of control with Russian occupant forces in so-called South Ossetia. Apples, peaches and pears are common orchard crops in this region, traditionally constituting a major source of income for local farmers and, since the August 2008 war between Georgia and Russia, also for the huge population of Internally Displaced Persons (IDP's).

On the other hand, the presence of IDPs and the loss of Russia as a traditional export destination for fresh apples also presented a business opportunity. With no access to alternative export markets and limited internal capacity to absorb excess supply following the 2006 Russian trade embargo, farm gate prices dropped to 10 tetri/kg for processing apples and around 60tetri/kg for table apples. With such a low cost of raw materials and labor, and free access to the EU market under the GSP+ regime, investment in processing made sense.

Transforming the market weaknesses into strengths, however, required a sustained effort on the part of Hipp to develop a stable supply base. Most apples grown in the area were Soviet-era table apple varieties, and modern orchards cultivating internationally accepted apple varieties were few and far between¹. Local producers, in both lowland and upland areas, tend to be subsistence farmers with a handful of trees rather than commercial orchardists. The most common pattern was five to six trees per family, with few producers having more than 100 trees. Moreover, apple trees were generally already aged (30-40 years old), and hence past their productive prime. Infectious diseases in such aged trees have generally been untreated and so production levels were very low. To add insult to injury, at the going level of prices for conventional apples, few orchardists could afford replacing primitive flood irrigation or dryland methods with modern pumps, filters and drip systems. Uprooting old trees and replanting orchards was also not an option for most smallholders.

¹ While there are few young trees present in the apple growing areas of Shida Kartli, Racha or Mtianeti, some entrepreneurs believe that the opening of the Russian market will create a profitable market for table apples and have been developing modern drip-irrigated orchards planted with the dwarf varieties of apple favored in the Russian market.

The situation was even more extreme for apple growers in upland areas, such as Racha-Lechkhumi and Mtskheta-Mtianeti. Because roads leading to these remote areas were in such poor condition, both fuel costs, and wear and tear on trucks caused transportation costs per ton to be quite high. Because of high transportation costs, smallholders growing apples in upland areas could not capture both the *conventional* manufacturing and table apple markets in the lowlands, where all of the processing and cold storage capacity was. This meant that growers could not engage in commercial production of apples, and, hence, discontinued use of pesticides and fertilizers on their trees (if, in fact, they had ever used them before). As a result, yields of apples per tree dropped, and the inevitable occasional infestation with pests resulted in apples that, while quite tasty, were not of suitable appearance for the fresh apple market and too expensive for the conventional manufacturing apple market. Typical uses of such apples were consumption as fresh apple in the home, processing into compote, barter with neighbors for other products, or consumption by pigs. In each case, no cash income was generated by the ownership of apple trees.

Perhaps paradoxically, Hipp saw the poor road infrastructure in upland areas as a mutually beneficial opportunity for *organic* farming and processing. Farmers could earn a bit of cash by selling apples that otherwise would only be consumed in the home, and the company could use manufacturing-grade organic apples to produce high-value food ingredients. Because organic apple products have a higher market value than conventional apple products, Hipp Georgia could afford to pay a price for such manufacturing apples that smallholders in uplands areas were willing to accept, pay for the expensive freight from these uplands areas to their lowland factory in Agara, process the apple, and still generate a profit. Processors of conventional apple products would never consider sourcing from the upland areas due to high cartage costs, thus Hipp had these catchment areas to itself.

Before it invested in manufacturing capacity, the company wished to contract out production while establishing operating procedures and a sustainable supply chain. They contracted an apple processing plant in Agara, Shida Kartli, owned by a local entrepreneur, to process apple into juice concentrate. Unfortunately, the manufacturer breached that contract in 2007, resulting in over 200 tons of apples being discarded at a considerable loss to Hipp. Despite this setback, the company was committed to proceeding with business in Georgia.

In 2007, the company built an EU-standard food factory shell in Khashuri. The war of August 2008 resulted in a delay in construction that caused the harvest to be missed, concurrent with very little apple being harvested in the factory's catchment area. Before the new factory could be commissioned, the factory in Agara, which had had been in the hands of Hipp's contractor, came up for auction by the state, including a great deal of equipment. Hipp purchased the facility in June 2009, freezing activity at the Khashuri enterprise to renovate their new asset. Operations at the Agara plant commenced in October 2009.

Under Hipp, the Agara factory produces organic apple juice concentrate, conventional apple juice concentrate, and apple aroma. Organic juice concentrate is sold to Hipp Germany, and other materials are sold worldwide to third parties. Turnover varies significantly from year to year, up to US\$6 million. The company has 75 permanent employees and 180 additional seasonal laborers. Initially, Hipp Turkey had seconded a Turkish manager to the plant for several years, and they still provide ongoing technical and laboratory support functions. This was considered necessary as an interim measure due to the lack of technical experience, particularly in commissioned facilities, of local personnel.

In a relatively short period of time, Hipp Georgia managed to attain the company's in-house organic certification, the Claus Hipp Bio Segel. As there is no global standard for organic food production, Hipp developed its own in-house certification system that is more rigorous than those used by most other organic food companies. The EU organic standards permit a low level of pesticides in food that Hipp does not accept. For example, according to Hipp standards, all soils from producers' operations must be tested for contaminants, which is not a feature of the EU organic standard. Raw material is tested for over 1000 contaminants, and each bottle of product passes through up to 260 quality and

safety controls. The company has voluntarily imposed strict thresholds on contaminants and pollutants that are far more stringent than the EU organic certification requirement, ISO22000, or HACCP. The European market regards Hipp's standard as rigorous, which has enabled the firm to capture substantial market share.

Hipp Georgia was the first substantial organic enterprise in Georgia, and arguably has Georgia's strongest market links to the EU. Taking advantage of preferential market access for apple products to the EU market under GSP+, the firm established a strong reputation for organic food ingredients emanating from Georgia and has pioneered the way for other firms to ride the wave into the market. To achieve this in only a few years was a major achievement. Germany-based organic certification company BCS Öko-Garantie audit Hipp Georgia's procedures every year to ensure that standards remain high.

Incidentally, the owners of Hipp Georgia are seeking to sell the business, having already built up an efficient management system, appropriate physical infrastructure, well-organized marketing channels and a rigorous food safety system. An incoming owner would no doubt find that much of the heavy lifting in terms of staff training and establishment of standard procedures has been done, allowing them the time and management resources to grow the business to the next level.

B. METHODOLOGY

This case study is based on a series of interviews with the General Director of the enterprise, Archil Zhvania, who shared confidential information about his business and investments, including data on predicted sales. After initial interviews with company leaders, the study team identified challenges, successes, lessons learned and themes that could support broader conclusions about the investment environment.

C. FINDINGS

THE BUSINESS ENABLING ENVIRONMENT

Since 2003, Georgia has been steadily climbing many international rankings that are supposed to reflect the quality of local business environment. The most dramatic of these was ranking 8th of 189 countries in the IFC/World Bank's Doing Business survey, but Georgia has also done well in World Economic Forum's Global Competitiveness Index and Transparency International's Corruption Perceptions Index. Despite these very important advances, all surveys point to a number of major bottlenecks for further investment and economic growth.

For example, according to the Georgian Executive Opinion Survey conducted by The World Economic Forum (WEF) in 2012-13, the three most problematic factors for doing business in Georgia are access to finance (19% of responses), an inadequately educated workforce (14.2%), and poor work ethic in national labor force (12.2%). Of almost 100 competitiveness indicators analyzed by the WEF, Georgia ranks lowest on *local supplier quantity* (136 out 148) and *quality* (129). The country is lagging far behind on other key indicators as well, including *financing through the local equity market* (126), *property rights* (120), *foreign market size* (114), and *domestic market size* (102).

While the WEF indicators provide a high level view of the overall investment environment, the contours and characteristics of an individual investment will determine how much of an impediment these issues are in any given case.

Hipp's experience in Georgia presents a few examples of how constraints on Georgia's competitiveness manifest in the day-to-day operations of a foreign investor and how these very constraints and weaknesses can be transformed into strength.

MARKET SIZE

External market size is not an issue for Hipp Georgia. Georgia qualified for the GSP+ status in January 2006 to allow over 700 product classes duty-free and quota-free access to the EU market. Apple juice concentrate was one of these products. This breakthrough in market access was very much a government initiative supported by business, and was a significant factor in improving the company's fortunes.

Hipp Georgia took advantage of the zero tariff trade terms with the EU (under the GSP+ regime) in order to export apple juice concentrate products to Germany and successfully incorporate them in Hipp's organic baby food production. It is also a supplier of Coca Cola in Azerbaijan and Kazakhstan.

A major constraint for Hipp Georgia, however, is the fragmented nature and small size of the supply chain of both organic and conventional apple. These, in turn, greatly depend on export market opportunities for Georgia's fresh apple.

The loss of the Russian fresh apple market in 2006 was a severe blow to the Georgian apple growing industry. To this date, competition from huge Chinese and Turkish exporters prevents Georgia from gaining significant market share for its fresh apple. As a result, apple growers lack the incentives (and the resources) to expand production, replant old trees and make more efficient use of existing capacity through the adoption of better cultivation and post-harvest handling techniques.

In the short run, the lack of fresh apple market can be seen as an opportunity for an apple processing operation such as Hipp Georgia. However, to be able keep up and increase production levels in the longer run, the company will depend on the Georgian apple growing industry as a whole going (or not) through a process of investment, consolidation and rejuvenation. Such a process can only be triggered by improvements in market access conditions for the more lucrative fresh apple products.

ACCESS TO FINANCE

As part of a substantial European business group, with distribution in 60 countries and several factories in Europe and abroad, Hipp has been well backed financially by the parent company in Switzerland. It can fund its activities from offshore if local financing is unavailable or too expensive. Given that Euro lending rates are below inflation now, comparing very favorably with Lari financing, if it can be obtained. The low cost of financing gave Hipp a competitive edge over most of its domestic processing competitors, which rely predominantly on financing through local banks.

Until 2012, Hipp's apple-farming suppliers often claimed that the lack of access to finance was a major bottleneck for them to improve existing production or expand acreage. Indeed, the cashflow implications of uprooting old orchards and replanting, and the difficulty of obtaining finance for this procedure, were one of the reasons for an ever increasing share of apple trees in the region to survive well past their productive prime.

The introduction of new agricultural support policies in 2013-14, including free vouchers and the cheap loan program, provide an interesting test of the "financial bottleneck" theory as far Georgian apple farmers are concerns. These policies have certainly improved farmers' access to finance, however it remains to be seen whether they will be willing to take advantage of the new, much more affordable borrowing opportunities in order to upgrade production, or, else, investment will continue to be held back by a lack of market access and related marketing risks.

LABOUR QUALITY

As a company with over a century in the food trade, Hipp has brought to Hipp Georgia its deep knowledge of both conventional and organic food supply chains, which tend to be lacking within the industry. Local management have supplemented this with knowledge of the local supply base for conventional apple products.

Hipp management has raised few complaints about the work ethic of their labor force, and they describe their middle management as having sound technical education from the Soviet period. When operations commenced under Hipp management, managers were concerned that employees were initially very “Soviet” in their approach, with both junior management and workers being very hierarchical and inefficient. This is a common concern with employers of village workforces in Georgia and is by no means unique to Hipp. When queried about the contrast between the labor force in Germany and in Georgia, the German-trained Georgian management identified many differences. In Germany, the labor force is very punctual and disciplined, demonstrating responsibility and accountability, in contrast to a lack of autonomy previously witnessed amongst Georgian employees. To the extent possible, this lack of autonomy has been addressed through training and leadership.

Hipp Georgia assesses professional skills as being adequate, particularly in basic engineering, mechanical and electrical skills. Yet, because of Georgia’s “lost generation” between 1991 and 2003 and the sorrow state of the country’s vocational education system, few people of age 25-50 have the skills for modern manufacturing. This contrasts very unfavorably with Germany, where factory owners can recruit workers and foremen that have been trained to a high level of proficiency in vocational colleges and technical schools, supplemented with on the job training in other commercial enterprises. In Georgia, one must rely on one’s own resources to train staff until such time as local vocational colleges improve their standards.

According to management, with an investment in training, skills can be raised to internationally accepted levels in a relatively short time. The enterprise’s ISO22000, ISO9001 and HACCP certifications are evidence that staff training has been effective; these certifications are a great challenge to obtain and just as difficult to maintain. Intensive staff training and the institution of well-developed operating procedures consistent with these standards had a dramatic effect upon staff performance, morale and productivity. The QA team are recognized as particularly strong within the company – a substantial achievement given that these three certifications require rigorous QA programs involving all elements of the company from senior management to factory floor. The company is now an authorized supplier to Coca Cola subsidiaries in Azerbaijan and Kazakhstan, both acknowledged as very demanding buyers.

MARKET SUPPORT SYSTEMS, SERVICE PROVIDERS AND SUPPLY CHAIN

The firm has not relied on outside support for market development, instead using its own resources. As a firm focused on selling organic output to the EU market of over 340 million consumers, Hipp feels no constraint from the size of the local market, and they have no concerns about finding export buyers for nearly 100% of their output. Domestic competitors with weaker downstream market development do not enjoy the same phenomenon in general.

Hipp Georgia uses local legal and audit services (Ernst and Young). Utility payments are the second largest expense each year after raw material purchase, so payments to providers of gas, water and electricity are substantial and this no doubt improves the fortunes of local utilities providers in a town with little industry. Local machinery vendors do not support the kind of equipment that Hipp Georgia requires. The company has imported equipment directly from Europe, and services it through its own maintenance department. In common with the WEF analysis, Hipp assesses the post-sales service from local equipment vendors in Georgia to be poor and therefore bypasses them.

Despite supply chain being a significant challenge, the company has so far opted not to establish its own apple production base. On the one hand, this is very capital intensive and time consuming. On the other, the most profitable market for apples is high quality table apples, which command a huge premium to juicing apples.

The company’s organic apple supply chain from uplands areas is managed in-house under the aegis of the Hipp Bio-Siegel, with a large number of smallholder suppliers maintaining strict food safety standards for this supply chain. The company’s conventional apple supply chain from lowlands apple producing areas is coordinated through traders and there is as yet no direct contact between such

smallholder growers and the factory. Supply is from early September to Christmastime from fresh apples, and until May from apples stored on-farm. Cool weather from September to May enables this.

There is the possibility that the formation of apple-marketing cooperatives under the new law on farmer organizations and with the support of the Georgian government and EU's ENPARD program may obviate the need to deal with traders and allow for a closer relationship between growers and factory. In Hipp Georgia's experience, individual small farmers don't adhere to contracts, and the resulting volatility in supply presents a serious operational risk. Management has had strong aspirations from inception to make cooperation with small farmers an essential part of the business, but this has been a challenge given the lack of supportive environment. Cooperative formation may result in more professional behavior amongst suppliers, making the mutually beneficial forward contracting a real possibility.

INFRASTRUCTURE

A major constraint for the development of company's supply chain in Shida Kartli, identified by both farmers and consultants over the past decade, has been the poor state of irrigation in orchards, further hurt by Russia's military occupation of adjacent territories in 2008. As a result, channels are in poor repair and often empty in summer. It is worth noting, that in combination with pruning and proper nutrition and crop protection, a modern irrigation system can pay for itself in 2-3 seasons, with yields increasing by 50-100%.

Management considers water to be expensive. They are paying a water license for a well that produces up to 120m³/hr and disposal of waste water.

The company describes the basic infrastructure around its factory as satisfactory. Once again, it was the poor road infrastructure in upland areas that indirectly created the conditions for a large supply of de facto organic product. As roads are improved, it will be interesting to see if these producers remain organic producers or if they move towards conventional table apple production for markets that are now cheaper to cart product to.

At present, apples are stored at room temperature in quantities up to 5,000 tons for no longer than a week. In peak season the company uses some offsite storage. Should growers also begin to build their own apple storages, the supply of relatively cheap processing apple in season may also be limited further.

THE EFFECTS OF THE INVESTMENT IN GEORGIA

LOCAL EMPLOYMENT AND WORKFORCE DEVELOPMENT

One major benefit of many foreign investments is knowledge transfer, a key aspect of which can be employee training and workforce development. This often includes technical and operational training as well as knowledge upgrades in management, health and safety.

Hipp Georgia employs 75 full-time staff and as many as 180 seasonal workers in Agara, a town with a major unemployment problem². Seasonal labor is used for apple unloading and sorting. Machinery operators are idle half the year on half-pay, which is more efficient than training new operators every year.

The company engages in in-house training of its labor force, including ISO workshops. The firm had consultants in the past, and strong technical training support from Hipp Turkey in the early days of the enterprise. As a result, the company recognized dramatic increases in productivity and consistency of quality parameters over the past years. Indeed, by their own measure productivity per process worker has doubled since the plant was commissioned.

² Rural unemployment in Georgia runs at over 60% according to CRRC's Caucasus Barometer Survey (2013)

In-house training of managerial personnel and leading hands has been intensive since commissioning to upgrade skills to meet HACCP, ISO22000 and Hipp Bio Segel standards. Managers have been sent to Hipp Turkey for further training and orientation in the past. Management assesses that managerial efficiency has increased since startup but only enterprise-wide efficiency measures are available.

There is no real-time monitoring of processing efficiency, but every four days the production line is shut down for thorough cleaning, at which time the company calculates raw material in, finished product out, chemical used, and labor utilized. It is at this point in the process that the company tracks quality parameters from the multiple QA samplings they take during production. As a result, the company accumulates solid management data on both the labor efficiency and consistency of product quality parameters.

The company uses no Enterprise Resource Planning (ERP) system for performance monitoring or operational management, but they do not feel they need one. They record their data in spreadsheets, and they feel that they get a satisfactory result from this simple system. In contrast, almost every European food manufacturer of significance has an ERP system in place to allow rapid traceability of every grower contributing to every carton of goods. As Georgia moves closer to EU norms under the DCFTA, this requirement will grow and existing primitive information management systems will need to be upgraded.

EFFECTS UPON LOCAL SERVICE PROVIDERS AND SUPPLIERS

Agara has few skilled tradesmen or machinery maintenance contractors, so the company maintains its own maintenance crew. As mentioned before, expenditure on water, gas and electricity is the second largest expense in the enterprise, providing significant revenue to local companies in a town with few business clients.

The company has 1000 approved organic apple suppliers in upland areas that conform to the Claus Hipp Bio Segel program. Having gone through rigorous checks of their procedures, soil characteristics and record keeping, these small scale producers now have a market for their apples where no market existed before. While income from a handful of trees is only modest, it does serve to supplement the income of families living in districts with high unemployment rates and low take-home pay. The impact upon these suppliers from Hipp's presence in the market is significant as they were generating no cash income from their apple harvest prior to their involvement in their communities.

Hipp's conventional apple product supply chain is managed through local traders, who have relationships with the thousands of small scale lowland apple producers in Shida Kartli. Most of these producers are targeting the table apple market, for which prices are markedly higher than processing apple, but always a certain percentage deemed unfit for table apple segment finds its way into the hands of such traders who sell it to processors of juice, concentrate, puree and aroma. The company has not yet been able to develop direct supply relationships with these lowland smallholders.

Hipp Georgia is not an apple producer, but since the company's establishment Mr. Claus Hipp has been seeking ways to interact with suppliers to upgrade their skills and trees, both as a CSR measure to improve their livelihoods and to help ensure a stable supply chain of raw material. To date the company has not found an effective mechanism to consistently address this goal. Going forward, Hipp Georgia could play a role in incubating apple farmer organization and co-ops, the creation of which is encouraged by the recent changes in Georgia's legislation, and is supported – financially and technically – by international NGOs involved in EU's ENPARD program. Despite Hipp Georgia's focus on organic products (which allows paying a premium for manufacturing grade organic apple), in the longer run the company will be more likely to contribute to the development of Georgia's apple farming – and at the same time secure its organic supply chain – by encouraging the production and export of fresh organic apple of internationally-demanded varieties.

GOVERNMENT REVENUE AND EXPORTS OF GOODS

The company pays 1% property tax on the rated value of its two factories, which is a substantial sum for local revenue. The company did not share its income tax remittances, but its annual payroll is substantial, adding 20% of payroll as personal income tax withholdings to state coffers.

Almost 100% of the company's organic apple product lines are exported to the EU, where they are sold as part of Hipp's extensive suite of baby food products in Germany and the rest of the EU. The company's conventional apple products are sold worldwide and domestically through ingredient traders and directly to factories. With a total turnover approaching USD\$6 million, Hipp Georgia is one of the larger export-oriented food factories in the Shida Kartli region.

PRODUCT AND PROCESS INNOVATION

Hipp Georgia produced the first EU-certified organic apple juice concentrate product in Georgia and remains the only player in this space. It has attempted to develop a new line of pear juice concentrate in the past, but could not develop a reliable enough supply of raw material to make this into a commercial prospect.

Food safety parameters within the framework of ISO22000 and HACCP are controlled by the company's own laboratory, which operates to EU standards. During the regular twice-weekly cleansing operations, each machine is checked by the laboratory and all tests are diligently recorded. Each bottle of product passes through 260 quality assurance processes, one of the most rigorous programs in the country. The Hipp Bio Segel standard is amongst the most demanding organic food certifications in the world, testing for over 1000 different contaminants of soil, water and machinery as well as packaging material. Hipp Georgia's QA personnel are arguably the most highly trained staff in this discipline in the country, and could no doubt find gainful employment in any food factory in the country or abroad. The standard of quality of both the company's products and its QA personnel, both of which meet the highest international standards, is a major innovation for a Georgian enterprise, competing with much less sophisticated and demanding players.

An example of an efficiency-enhancing process innovation is the company's decision to reduce the weight of glass used in packaging by over 15% over the past decade. This decision based on the finding that recycling of glass baby food jars is neither cost-effective nor environmentally sound. As a result, fuel cost per carton delivered has been reduced.

COMMUNITY RELATIONS AND ROLE OF GOVERNMENT

The company's management assess their relations with the community as being sound. Hipp Georgia is one of the larger employers in Agara and provides much-needed seasonal work opportunities to many people in a district with high unemployment. It also has developed a sustainable business amongst impoverished subsistence farmers in the upland areas of Mtskheta-Mtianeti and Racha-Lechkhumi to supplement their incomes with cash payments from production of organic apples. This is well regarded in both districts.

Claus Hipp is a major private philanthropic donor in Georgia, accounting for 30% of foreign private philanthropic donations in Georgia since 2007, according to management. As a respected German industrialist, he was able to solicit in-kind donations from many German firms in the wake of the August 2008 war, such as trucks, medical and other equipment, for the relief of communities affected by the war. Mr. Hipp and his company are hence held in high regard by the Shida Kartli community.

Relations with the Georgian government and the Shida Kartli government are considered to be sound.

D. GENERAL CONCLUSIONS AND POLICY RECOMMENDATIONS

While there are many mid-scaled processors of horticultural produce in Georgia, there are arguably none that are so diligent or rigorous in the protection of their consumers from harmful food contaminants than Hipp Georgia. The enterprise has gone from a rather difficult start in the 2008 post-war environment of Shida Kartli to a stable processing business with well-regarded products. The issue of a foreign military occupation of adjacent territories interfering with irrigation supply of its production base could not have been easily foreseen. It is still a timely reminder of the interaction between sovereign risk and operational risk.

The firm was a pioneer in organic food processing in Georgia, and indeed it created a market for apple in uplands areas where no previous market existed. It is to be hoped that other investors will follow their lead to add value to indigenous commodities sourced from poor uplands areas, which might include rose hip, juniper and other wild berries.

To go from a startup in 2007 to earning ISO9001, ISO22000, HACCP and Claus Hipp Bio Segel certifications in less than five years is a major achievement. To train operating staff so that workers per machine could be halved over that period is a substantial productivity increase. Also, to take on Soviet-trained technicians and middle management with basic technical skills, and to upgrade their managerial, technical and administrative skills to the highest international standard in a short period of time, is a major feat that should be emulated by local firms. The investment in QA and food safety standards has resulted in a product that can be freely traded in the EU and worldwide.

Despite these successes, Hipp Georgia is operating in a competitive market with many lowland traders competing for processing apple, and China is capable of putting massive quantities of apple juice concentrate on ships for any destination, at low cost, at very short notice. The small area planted to apple in Georgia, and the generally poor state of productivity of most orchards, is a strategic issue that Hipp Georgia will ultimately need to contend with.

RECOMMENDATIONS FOR THE GOVERNMENT

- **Government-led export promotion.** For the Georgian apple industry as a whole to survive and, indeed, thrive, it must find new export markets for its fresh apple. On the one hand, this would require a multi-year effort to replant existing orchards and expand acreage (see more below) under internationally demanded varieties. On the other, the government would have to worry about removing political restrictions on access to the Russian market (additional restrictions on export of fresh fruit and vegetables from Georgia have been relaxed in late June 2014, however the signing of DCFTA with the EU raises the specter of a renewed trade war) and undertaking export facilitation measures targeting other potential markets.

As far as both fresh and processed products are concerned, there are considerable opportunities for Georgia in the EU and other markets. The EU has been open to organically-produced horticultural produce from Georgia under the GSP+ program for many years but very few firms have taken advantage of this. The Deep and Comprehensive Free Trade Agreement with the EU will significantly expand the list of fresh and processed agricultural products freely admitted into the EU market. The market for organic food in the affluent United Arab Emirates, Qatar and Saudi Arabia is also substantial and there are few barriers to entry.

To take advantage of these opportunities, Georgia has to improve coordination among the various actors – including smallholders – in each value chain. Such coordination can be provided or assisted by private sector leaders, such as Hipp or Ferrero, or in the absence of an obvious

leader, by a specialized export promotion agency³. Georgia's embassies abroad, and the Ministry of Economy, may also be of assistance to local entrepreneurs seeking to emulate Hipp's success in connecting them with potential distributors abroad.

- **Improvement of uplands road networks and storage capability.** Paradoxically, if government dramatically improves road quality in upland areas and freight costs fall substantially, upland apple producers may switch to conventional table apple production. While this may have an adverse impact on Hipp's supply chain *in the short run*, a general improvement of uplands road systems will assist smallholders in getting their product to market quickly and cheaply. Cooperative investment in storage and transport capability may further increase the gains for smallholders. The measurable economic benefits to the communities of Samtskhe-Javakheti adjacent to the MCC-funded highway is a case in point. Most importantly, however, the government must recognize that the only way to provide the apple processing industry with a stable source of supply *in the long run* is not to conserve Georgia's backwardness but rather expand scale. In leading apple producing countries, such as China, US or Turkey, manufacturing grade apple is a bi-product of a vibrant fresh apple industry, constituting up to 10% of total harvest.
- **Irrigation system renovation and finance for on-farm irrigation systems.** Another factor constraining apple production is irrigation water availability and a lack of resources for orchardists to move water from channels to their trees via drip systems. Increases in yield of 50-100% per year are not uncommonly seen with such innovations, so a combination of government-funded infrastructural renovation, and finance for simple on-farm irrigation systems, may yield significant improvements in yields, to the benefit of the smallholders and the processors who wish to increase production.
- **Finance for replanting of smallholders' orchards.** Georgia's long growing season provides some competitive advantages over countries further north in production of orchard crops like apples, pears, peaches and nectarines. In each case, however, trees are aged in general and of varieties no longer in vogue in the international market. Smallholders are reluctant to cut down aged trees and replant with more suitable varieties due to the 3-4 year gap in cash flow after replacement. For many years there has been talk of government providing cheap long-term loans to smallholders for this purpose but it has yet to take form. If smallholders are aggregated into small cooperatives and share common marketing facilities, these units are arguably a more suitable target for cheap mortgages for replanting than individual smallholders would be.
- **Government communication with industry.** In considering initiatives to channel public sector support to increase apple production, government must work closely with industry to ensure that the products to be harvested are in fact demanded in the market, and that producers can reach agreement on purchase prices with processors, retailers, and exporters.

RECOMMENDATIONS FOR INVESTORS

- **Engage in detailed market research if considering organic food processing:** The case of Hipp Georgia demonstrates that new entrants can find new market niches for themselves and exploit them to the mutual benefit of smallholder suppliers and their own processing and distribution operations. Given that many upland areas have not been treated with agrochemicals for many decades due to poverty, there may be many sourcing opportunities for local and foreign organic food and beverage entrepreneurs that have not been considered to date. These

³ A good example of such an agency is Israel's [Carmel Agrexco](#). In its last year as a public company (2007), Agrexco Carmel marketed 435,000 tons of fresh agricultural produce with a turnover of €653 million mainly consisting of vegetables (47%), cut flowers (19%), and fruits (14%). Today, Agrexco Carmel is a privately owned company connecting growers and consumers around the world.

opportunities could be sustained in the long run despite expected improvements in road and other types of infrastructures given the premium associated with organic farming and processing.

- **Invest in training:** Pessimism concerning the ability of Georgian food processing labor and management to perform to the highest international standards of food safety and quality have proven to be unfounded in this case. Investors should take to heart that patience and investment in human resources may result in operations certified to international standards and trusted by importers and consumers in lucrative export markets as well as domestically.
- **Engage in detailed supply chain analysis before commencing investment.** It is of great importance that manufacturers fully understand quantity, quality and seasonality issues to do with their supply chains, and determine how to efficiently and economically obtain raw materials at competitive prices. Political risks, weather events and other factors that may interrupt supply must be evaluated and the risks of these occurrences quantified in order to manage risk.
- **Establish direct contact and cultivate relationships with local suppliers:** The importance of establishing direct contact with suppliers or groups of suppliers is demonstrated here, partly for reasons of cost control and partly for reasons of traceability and quality assurance. Such relationships are not quickly established and it is important to recruit trustworthy people with strong community links to develop these supply chains.
- **Consider collaboration with aid donors to improve supply chain continuity and product quality.** In many cases, donor funds are available for technical extension activities in fields such as pruning, modern irrigation, nutrition, crop protection and post-harvest management. In addition to funds, such donors was provide foreign and local technical experts to engage in train-the-trainer activities for factory supply chain teams. Factories that develop in-house agricultural production expertise and training capacities have a competitive advantage over pure trading operations as they can develop more robust and sustainable supply chain relationships with growers, particularly if training activities have a measurable effect upon grower's profitability.

USAID Economic Prosperity Initiative (EPI)
6 Samghebro Street
Tbilisi, Georgia
www.epigeorgia.com

Phone: +995 32 43 89 24/25/26

Fax: +995 32 43 89 27