

# **Transforming the agrifood industry to develop rural livelihoods under global change**

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## **1. Introduction**

The global food system is facing unprecedented pressure from global change processes. These pressures are exacerbated by multiple transformations in the food system through the expansion of agrifood corporations that are consolidating their power in the global food chain: in their control over the technology of production, the distribution of food commodities, their procurement policies and marketing techniques. In this paper, I discuss how these wider trends can and need to be harnessed in order to build more adaptive rural communities that are therefore more resilient to the global change processes that have a negative impact on their livelihoods. With this in mind, there is a delicate balance to be struck between the profit-making objectives of the private sector and an agenda for developing viable rural livelihoods. I argue that both of these objectives can be met if all parties have an active and equal role in shaping the governance of the food system. However this can be criticised as a utopian view that does not take into account power dynamics and that will be difficult to implement in practice since it would require the full buy-in and co-operation from all stakeholders. Bearing this critique in mind, I put forward an argument for including the private sector in the rural development agenda and I present empirical evidence that some of these companies are willing to engage with local capacity development around the food system and that this is indeed mutually beneficial for all parties concerned. There is definite scope for a critical examination of the relationships that form from such projects and there will be a need to consider the power dynamics, underlying agendas and other system-distorting mechanisms that are at play when such relationships are built, but that is beyond the scope of this preliminary paper.

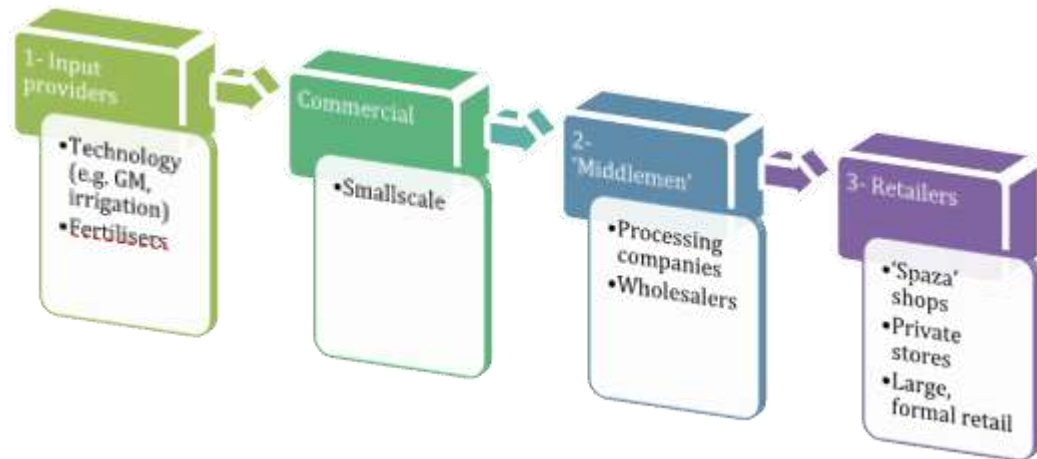
The question discussed in this paper is how African farming systems should respond to these new trends in the global food system and if so, how can policy help small-scale farmers to start engaging with the agrifood industry. The main premise of this paper is that in order for development and food security needs to be met in sub-Saharan Africa, there needs to be a transformation in the way that the private sector engages with small-scale farmers: by creating markets that these farmers can sell into rather than dictating to farmers how they need to farm in order to sell to these markets. This paper therefore sets the stage for a greater discussion on how to navigate this transformation, which will undoubtedly be tricky and will form the basis of subsequent work in this field.

### **1.1. The Private sector in the food system**

The role that large private sector actors play in the food system has become highly significant over the second half of the last century. These actors can be classified into four broad categories: 1- the companies providing inputs in the agricultural system in the form of seeds, irrigation technology, farming machines, fertilisers etc., 2- the farmers that produce the food whether they are large, commercial farmers or small-scale farmers, 3- the middlemen that buy the produce from farmers and then 4- retailers that sell the final produce directly to consumers (see Figure 1). These are

not mutually exclusive roles, but can often be played by the same actor further concentrating power in an already unequal system (see von Braun and Diaz-Bonilla 2008, Patel 2008).

Figure 1: A simplified schema of agribusiness in the food system



However, these actors and the processes that they are involved with do not occur uniformly across temporal and spatial scales. Rather it is possible to differentiate macro-trends between Western economies, other developed and emerging markets and the rest of the world. As we are all end consumers of food, these trends can be classified into different stages to form a typology of food consumerism, which will be discussed below. How and what we eat is largely determined by the contextual socio-economic, political and cultural fabric of the food system in which we find ourselves and processes of change cannot be divorced from these contextual factors. The aim of the first section of the paper is to provide the context of the multi-level processes that are influencing how we eat and how this impacts farming systems, the second part then makes use of qualitative empirical data to elaborate how these wider trends are playing out in the South African food system and the final section draws conclusions as to how these wider trends in the formal food sector can be harnessed to build more adaptive and resilient rural communities.

## 1.2. Waves of consumerism

### 1.2. a). Developed, Western nations

Western food systems have undergone four fundamental changes over the past two centuries:

- industrialisation followed by urbanisation
- the establishment of supermarkets as self-service locales where all one's food can be purchased
- the globalisation of supermarkets
- the return to 'alternative food networks' as a response to the increasing disconnect between the majority of consumers from how their food is produced

The industrial revolution sparked a mass movement away from farms into urban areas and so there was a need for a steady supply of produce being moved from farms (that therefore needed to produce higher quantities to feed urban populations)

into the cities. With this came the need for stores from which people could purchase these food products. The industrial revolution also brought with it increased mechanisation of agriculture and a move away from it being a labour intensive sector to one more reliant on other input costs. These inputs were also associated with industrialisation and its concomitant scientific discoveries. One of the most notable of these discoveries was the Haber-Bosch process<sup>1</sup>, first observed in 1909, that contributed to vast increases in the amount of food that could be produced on the same amount of land. This transformation of agriculture can be likened to the Green revolution that took place in the 1960s in the developing world as a response to the Malthusian fear that low farming yields from traditional agricultural practices would not be able to provide sufficient food for the growing populations in the global South<sup>2</sup>.

The next big trend that transformed the food system was the evolution of the supermarket craze that started in the United States in the early twentieth century and then spread to Western Europe in the 1940s (Shaw 2005). Although supermarkets are attributed to Americans, it was actually European groups that pioneered the establishment of the grocery stores that were to become the giants in the global food retailing business a century later. The first Sainsbury's was officially opened in 1869 by J Sainsbury and his wife in Holborn, although the company was only privately listed in 1922. The next biggest extant supermarket was founded in 1887 in the Netherlands by Albert Heijn and became Ahold. The French followed soon after with the establishment of the first Casino store in 1898<sup>3</sup>. These retail giants were to become part of the food retail oligopoly that would come to dominate the western world over the course of the twentieth century and then spread to all reaches of the globe (STORES 2011). The remainder of this exclusive group of food retailers were established in the mid-twentieth century; the UK's Tesco's in 1952, France's Carrefour in 1958 and the US's Wal-Mart in 1962.

The evolution of supermarkets has been thoroughly discussed in the literature, but according to Shaw (2005) in essence they were revolutionary for four main reasons:

- 1- Their patterns of innovation created what Schumpeter described as 'disruptive competition.' By continuously reinventing their format, processes and channels of distribution, they created novel business models that became impossible to outcompete as they were constantly adapting.
- 2- They transformed consumer culture in that customers came to expect a variety of products on offer in one convenient location where they were free to roam the aisles at their own pace<sup>4</sup>.
- 3- Their competitive edge and adaptive business model make them so successful that it led to the rapid growth of supermarkets and so their influence spread quickly.
- 4- This rapid growth also had universal applicability and so was soon transferred to a range of economies. Having spread the business model throughout the US and Western Europe, in the latter part of the twentieth century, these companies became multinationals, establishing themselves in foreign

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<sup>1</sup> The Haber-Bosch process occurs when Nitrogen (N<sub>2</sub>) is fixed into Ammonia (NH<sub>3</sub>), a form of Nitrogen that can be used directly by plants and is therefore a large component of fertiliser.

<sup>2</sup> See Baur 2012 for an in-depth discussion on the construction of soil fertility as a technological system over the last century

<sup>3</sup> Casino kick-started the innovation process in supermarket marketing by instituting a loyalty programme for customers in 1907! See <http://www.groupe-casino.fr/en/Group-History.html> for a full history.

<sup>4</sup> The pioneers of the 'self-service' concept upon which the supermarket is based were the Alpha Beta store in Los Angeles, established in 1912 and the Piggly Wiggly store established in Memphis in 1916 (Shaw 2005).

markets either directly or by getting their foothold in the market through forming partnerships with local companies.

The recent process of globalisation is directly linked to this phenomenon of the global expansion of supermarket chains into multi-national corporations (MNCs). These companies now have the power and the networks to source and supply anything from everywhere and it has become commonplace to be able to find Indian mangoes, South African avocados, Kenyan green beans and Chilean grapes all in the same aisle at your local supermarket. However, this monopolisation of the global food system by a few companies (Patel 2008) has brought with it a backlash as consumers want to know more about they are eating- how it is grown/reared/caught. In response, the evolution of 'alternative food networks' has attempted to bridge the ever-increasing divide between food production and consumption. These alternatives include the local and slow food movements and the more mainstreamed or commercialised processes of food labelling and certification. The essence of the argument is captured in the following quote from Goodman (2009: 10):

"This shift towards the production of quality local foods, as opposed to the generic 'placeless' commodities of productivist agriculture, which often are sold into the closed 'internal markets' of conventional supply chains and contract production relations, is variously conceptualised as the re-embedding, re-socialising, and re-localising of food systems. SFSCs<sup>5</sup> are a major institutional expression of these reconfigured production-consumption relations, whether in the form of direct, face-to-face contact at farmers' markets, for example, or narrated to distant consumers by symbols, logos and labels of quality and 'qualification' of place, process, and product, or the 'three Ps', according to Ilbery et al (2005). Thus farmers are encouraged to 'short-circuit' industrial supply chains and to reconstruct the producer-consumer interface by engaging with different conventions and constructions of quality "that evoke locality/region or speciality and nature"(Marsden et al 2000: 425)."

Labelling in particular seeks in essence to create a sense of trust that the product in question has been made according to particular set of 'ethical' standards- although quite often what the specifics of these are is unknown both to the consumer and even to those selling the product. Fair Trade wine, Rainforest Alliance coffee and even Organic cheese are certified labels that all have an impact on production based on the preferences of 'ethical' consumers and effectively puts them (and the certification bodies) in charge of how food production is undertaken. This has particularly interesting repercussions for farmers in the developing world where much of the changes are taking place. For example, studies on the Roundtable on Sustainable Palm Oil (RSPO) have shown that despite an attempt at full equality and engagement among multiple stakeholders, the major processors and traders still fill the majority of the seats at the table (Paoli et al 2010). Fair Trade certification similarly suffers from good intentions in the North that do not necessarily translate into actual change for producers in the South. A study on Fair Trade coffee farmers in Nicaragua showed that most of them were unaware of the scheme that they were involved in and that although the community did see the results of some of the social development projects, the price premium on produce was often not much better than the price offered by the mainstream market and they could actually sell more of their harvest through the conventional channels without quality or certification standards (Valkila and Nygren 2010). This then begs the question of why consumers continue implicitly to trust the labels on their food and why they feel the need to be 'ethical consumers' in the first place. Although Carrington et al (2010) argue that ethical consumerism has become mainstream (in the West), they qualify this trend towards absorbing the values of ethical consumerism with the fact that this is not often seen

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<sup>5</sup> Slow Food Supply Chains

to result in actual changed consumption behaviour- a study by Futerra (2005: 92) showed that whilst 30% of UK consumers stated that they would purchase ethically, only 3% actually did. A recent review of the Fair Trade literature by Andorfer and Liebe (2011) found that most of these studies focussed on consumers in the USA and UK and had a rather narrow theoretical focus- they recommended more experimental and cross-country surveys to be conducted in order to gain insight as to how differences in market structures, cultural traits and other path dependencies affect patterns of individual consumption. In this paper, I assume that, although still a niche market and not available for all products, the 'alternative food trend' is likely to continue to grow and expand its customer base.

There are also certification schemes and standards that are not driven by consumer markets, but that have a significant impact on how food is grown throughout the world. In 1995, the World Trade Organisation (WTO) prescribed a set of sanitary and phytosanitary requirements for traded food products (the SPS agreement). These are aimed at ensuring that consumers are being provided with food that is considered 'safe' by international standards, but that these regulations are not being set unduly high in order to protect domestic producers. WTO members countries are encouraged to adhere to these international standards, but may set their own, higher standards where there is sufficient scientific evidence to justify this. However, unfortunately it is often quite impossible for small-scale producers to meet these rigorous requirements and so their ability to trade internationally is compromised (Stiglitz 2006). Another set of standards that producers are often required to adhere to if they are to sell their produce are those set by retailers in order to assure their customers of the quality and safety of their food. GlobalG.A.P is just such a retailer-led standards system that was instituted by European retailers and is now employed internationally, including by South African retailers<sup>6</sup>. Although initially intended to ensure transparency in the system thereby reducing risk, they have landed up creating a situation where farmers de facto need to meet their requirements if they are to sell their produce- therefore if farmers cannot meet the requirements or afford the certification process, they lose out on the market (Tennent and Lockie 2012). These retailer-led standards offer a novel form of value chain governance in the globalising food system, but in doing so they reinforce the oligopolistic structure of the food system where power is concentrated in a few actors that set the rules of the game (Tennent and Lockie 2012). Furthermore, the top-down governance structure where the producers have very little input into the process, creates dependencies between producers and retailers. (Tennent and Lockie 2012).

The creation of a market where knowledge about the production process can translate into a price premium has important implications for governance of the system so that trust is maintained. Under this scenario, there are three forms of governance that govern the functioning of farming systems, the first two are top-down and the third is more heterarchical.

- 1- Consumer-driven governance is driven by creating a market for knowledge about how products are produced and the mechanisms it employs to ensure trust in certification and labelling schemes. It relies on customers wanting to ensure a certain ethical standard in the production of their food.
- 2- Retailer-led standards are arguably also formulated in order to meet customer requirements, but are designed by retailers in isolation and dictated to farmers rather than including them in the process. International standards from the WTO can be included under this type of governance as standards are set by a third party that is neither involved in producing the product nor consuming it.

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<sup>6</sup> See <http://www.globalgap.org/> for more information.

- 3- A mutual process between producers and buyers that addresses the needs of both- the key is to build on meeting mutual needs and thus creating equal benefits: retailers want produce that they can sell to their customers and farmers want a market- the real contention lies in how the specifics are negotiated and if the negotiation is conducted in the spirit of partnership and mutual understanding rather than through dictated terms, this is more likely to meet the requirements of both parties better (Pereira and Ruysenaar 2012).

### **1.2. b). The developing world and in particular Africa**

Trends in agrifood business are therefore not limited to the countries within which these companies are based, but have a global impact on farming systems everywhere. The 1960s Green Revolution transformed the food system through a phenomenal increase in agricultural yields (Borlaug 2000). The same transformative power is evident in the current wave of western consumerism that has direct implications on how and what is grown globally and although the Green revolution largely skipped Africa, the same cannot be said for this new globalisation of food sourcing. Global trends in agrifood business as well as the consumer-driven 'alternative' backlash are having a substantial impact on farming systems everywhere. In fact, the reform of the European Common Agricultural Policy (CAP) has encouraged some scholars to consider this a new form of rural development policy offering opportunities for diversified rural livelihoods (Goodman 2009). However, will something similar work in the African context and should African farmers be looking to tap into the globalised agro-industrial complex of supermarket supply chains, to create these markets at home or to provide (and mainstream) the 'fair trade'/'organic'/'traditional' alternative?

Agriculture still forms an important part of African economies, accounting for 70% of the labour force and contributing over 25% to GDP (UNECA 2009). Despite the importance of agriculture in these economies, African agriculture is still viewed as local, subsistence production – rain-fed with low inputs. It is therefore difficult for many of these producers to meet the stringent requirements for export or even to supply local supermarkets, however, there is increasing evidence of some successful farmers tapping into this new market (Rao and Quaim 2011). It is therefore necessary to understand the nuances and variation of rural African communities and in particular how they face increasing pressure from urbanisation and deagrarianisation (although this has become a contested point, see Potts 2012). For those farming communities that remain in farming, they face increasing environmental variability as well as economic volatility (both in input prices, but also in commodity prices) resulting in compromised subsistence agriculture (FAO 2011). As they can often no longer meet household food requirements, these rural households have become reliant on buying food from the private sector in order to meet their food security needs and this is why the dramatic food price increases on 2007/08 caused such a food security crisis (Mittal 2009).

Indeed, in southern Africa most rural households are increasingly net food buyers and livelihood strategies are reflecting this through diversification out of agriculture, urbanisation and migration (Bryceson 2002). This leaves a gap of firstly, where food is being produced and secondly, from where rural households are buying their food. In terms of the latter, this role is being taken on by local entrepreneurs and in some instances, through the expansion of supermarkets (Pereira et al submitted). As local producers face pressures from an unpredictable climate, this trend will continue to place increasing pressure on agribusiness to meet the food requirements of a nation. The implications will be to ensure that this expansion occurs in a way so as to build resilience in rural communities rather than increasing people's vulnerability to

environmental and socio-economic stresses. This necessitates not only making food available, but ensuring that it is affordable (that people have sufficient means to buy it), which means incorporating the expansion of the agrifood industry into the discussion on rural livelihoods. There is therefore a dual element to the discussion of the role of agribusiness in African food systems. The first is from the production perspective and how demand from the West is affecting what is being grown in African agricultural systems as well as how it is being grown. The second is through the expansion of these markets into African countries, creating local demand for supermarket-style food consumerism that needs to be met.

This rest of this paper focuses mainly on the latter's importance in defining African food systems although the role of demand in the West is equally important and parallels can be drawn between the two processes. Food consumption in the developing world has undergone terrific transformation since the 1980s with the expansion of supermarkets into Asia and Latin America (Reardon et al 2003). Although this revolution largely missed Africa, this is unlikely to continue and indeed there is evidence of this food consumer revolution happening in many African urban centres (Weatherspoon and Reardon 2003). Indeed, figures for a rural area in South Africa confirm this trend and show that all households purchase some, if not most of their food (Pereira et al submitted). If sub-Saharan Africa (and the rest of the developing world) is jumping on the food consumerist bandwagon, is it inevitable that it follows the same trends as in the West? It seems that for those countries whose agricultural systems were transformed by the Green Revolution, they are already on this conventional consumerist development path- from industrialisation and mechanisation to supermarket expansion, increasing disconnect of consumption from production (and the rural areas where production takes place) and perhaps then a similar response demanding the alternative. These processes are already being seen in the developing world (Reardon et al 2007; 2009), but they are having some effects that did not occur in the West. Whilst rural economies in the West are kept productive through farm subsidies (e.g. the CAP), this is not the case for developing countries that are made to abide by stringent regulations on liberalisation enforced through structural adjustment programmes or WTO regulations for tropical crops with only a few Least Developed Countries (LDCs) gaining preferential access to European markets. As a result, African farming systems cannot withstand urbanisation and deagrarianisation pressure because their farming systems have been neglected for so long (Mittal 2009). Farming policy should therefore seek to address and reverse these trends that leave rural areas unproductive and an income sink rather than a source. Using South Africa as a case study, section 2 discusses whether the private sector can be mobilised to meet some of these challenges.

### **1.3. South Africa as a case study**

South Africa provides a microcosm of the global consumerism divide as it has characteristics of both the developed and the developing world. South Africa, a leader in agribusiness on the continent, has a well-established agrifood sector that is facing increasing pressure from various sources; including climate variability affecting production, a global drive towards 'sustainability,' certification and the need to support local capacity development in the agricultural sector (Pereira and Ruysenaar 2012). At the same time, with very high levels of poverty, especially in rural areas, the South African government's New Growth Path strategy launched in 2011 highlights the need for rural development with a specific focus on smallholder job creation (EDD 2011). This paper aims to assess how these larger trends are affecting livelihood choices at the local level and how they can be harnessed to

improve the adaptive capacity of rural households to the uncertain future impacts of climate change.

South Africa has a triple prerogative regarding the food system:

1. To ensure development and job creation in order to establish a customer base that can afford their products (this is especially true of those retailers expanding into rural areas).
2. To build a successful food sector through creating and sourcing products that meet not only the requirements of customers, international food safety requirements, but that are also socially acceptable for an 'African context' (Malan 2005).
3. To ensure that these above objectives are resilient under pressure from global environmental change.

It is imperative that these processes are understood in the context of South Africa's food system's ability to provide food security. Navigating this balance will prove tricky, but it is vital if South Africa, and the continent, is to turn the double threat of climate change and a changing global food system into an opportunity to build resilience and ensure food security. The next section provides empirical data from semi-structured interviews with corporate executives in three South African food companies: Tiger Brands, Pick 'n Pay and Woolworths Ltd. These were conducted so as to allow the interviewees freely to discuss issues of adaptation as well as the challenges and constraints on implementing the requisite change. In order to meet its triple prerogative, two key areas for targeted change were identified and expanded upon. These are:

- 1- The need to make small-scale agriculture more productive with minimal input costs (of fertiliser/water etc.), but at the same time more resilient to climate change and that, as a first priority, meets the nutritional requirements of the people growing it and their communities.
- 2- Based on the types of farming systems mentioned above, there will be a need to create markets for their produce and so product innovation will also be necessary. There is a need to create a market for crops that farmers actually can grow under unpredictable environmental conditions.

The argument proposed in this paper is that if true rural development is to occur, rather than small-scale farmers having to respond to the demands of the market, which is often quite difficult for them to do, the private sector needs to create markets that rural farmers can feed into. What we see below is evidence that there is sufficient capacity (and arguably intention) within the private sector to enact these necessary changes. Furthermore, rather than following the trends dictated by European and North American markets, African countries need to develop their own markets and create the types of farming systems that fit within the African context- from the types of crops that are grown to the forms of retail channels that deliver these products to consumers. South Africa is uniquely placed to spearhead such changes because it has a developed, formal agrifood system together with a rural, under-developed rural system that still suffers from the legacy of apartheid and is undergoing rapid transformation from urbanising pressures. The next section provides a brief overview of some of the trends identified from the private sector in South Africa around building adaptive capacity in the South African food system and how addressing the challenges will require a holistic, multi-stakeholder approach.



## **2. The South African private sector**

This section provides two examples of where there is capacity within the private sector that will allow the food system to adapt to pressures from global change while still ensuring outcomes like food security. These two areas are procurement strategies and through product innovation.

### **2.1. Procurement policies**

A primary trigger for retailers to rethink procurement policies is grounded in the impacts that climate change is currently having and is anticipated to have on agriculture in South Africa. Despite the problem of distinguishing between the effects of natural climatic variability and anthropogenic climate change, retailers have already experienced the impacts of a variable climate on procurement, particularly on stone fruit, peaches and nectarines that were a month late at the end of 2010 due to a cold snap that hit the Eastern Cape (Pick 'n Pay Interview December 2010). Since adaptation is done in response to these actual impacts, retailers have adopted three main responses in terms of their procurement of produce under increasing uncertainty of production.

The first has been to 'spread the risks' in the interim by sourcing from different provinces.

“What we do though is we have five suppliers on one product. So we will have one in Hoedspruit, one in Cape Town, one in Durban, one in PE (Port Elizabeth)... all over the place and it's really about spreading the risk. So we as retailers have no other choice, we have to spread our risk and therefore... that adds onto the cost of food because if you have one supplier with a pack-house now, you've got to have five suppliers with exactly the same pack-house so it does add, but you're not sure.” (Pick 'n Pay Interview December 2009).

The implications of this are two-fold. Firstly, it shows that retailers are willing to take on some of the risk of procurement in order to ensure the availability of supply (mainly to their urban centres). However, this has direct cost implications, which are then passed on to consumers who then have to pay the price for a surety of supply. On the other hand, this does not build the resilience of the farmers themselves who are affected by environmental stresses. Not only do they face the risk of losing their crop, but they face increasing competition in good years when there is an ample harvest from all suppliers. It is therefore necessary to understand the full systemic consequences of such initiatives and how to minimise the negative effects on the farmers who are most vulnerable to climate variability. Better initiatives that do not compromise farmers' livelihoods need to be negotiated within this context of retailers hedging their procurement bets.

Linked directly to this is retailer expansion into sourcing from other countries in Africa. This can be quite challenging because the basic infrastructure is not there and there are data shortages (Pick 'n Pay interview January 2010). Woolworths (Pty) Ltd already sources from Zimbabwe and realises that as the country stabilises, it could be a viable option for expansion. Expanding into procuring from more arable parts of Africa has become even more of an option considering some of the areas in South Africa are becoming increasingly unviable for commercial agriculture: areas like the Eastern Cape that were thought to be fairly good choice from a rainfall perspective, were in a drought in 2010 resulting in a supply shortage (Woolworths interview August 2010). Although year-on-year weather variability is common in southern Africa, being unable to source produce between one year and the next has

substantial impact on retailer's procurement strategies in order to maintain customer loyalty (if they do not stock a product for a year or if it is at a premium price, customers will look elsewhere). Their strategy to expand procurement into Africa has further implications that are discussed in their next two responses: building up people's skills and educating farmers in the most environmentally sustainable practices that could help mitigate climate change as well as prove adaptive to it.

Pick 'n Pay has started to follow another South African food retailer, Shoprite, in expanding into Africa, but has decided to deal with environmental issues and social upliftment at the same time. For example, Pick 'n Pay has promised the Zambian government that they will employ local people in new stores (and that family stores will be franchised to local owners) and that they will 'upskill' (sic) farmers through an 'outgrowers' scheme that aims to provide local farmers with the skills and capacity to be able meet requirements to supply these stores (Pick 'n Pay interview August 2009).

"So we're going in there in a very different mindset, but we're hoping to get the support and kind of bridge that gap between [our] countries and if Africa can just pull together and we have this commonality between one another... in essence we become a net exporter of food at some stage down the line." (Pick 'n Pay interview August 2009).

At the same time as providing skills in other African countries, the same sort of projects are being implemented domestically in South Africa. Retailers have identified a 'double whammy of uncertainty' that the food system faces in the country from the combined effects of climate change and land reform, which has resulted in many farms collapsing due to a shortage of skills (Pick 'n Pay interview August 2009). Building capacity in local farmers has is the third response to addressing issues of procurement in South Africa (Pereira et al submitted).

Building skills has gone together with an emphasis on sustainable agricultural practices. Water is the most obvious area around which to focus farm management practices because South Africa is a semi-arid country<sup>7</sup>. Despite very good water and other environmental legislation in South Africa (e.g. NEMA 2008 and NWA 1998 as amended), there is very little enforcement (GWI 2011). Woolworths found that most of their suppliers were not even compliant with legislation – they have therefore emphasised wastewater management practices and reducing over-irrigation (Woolworths interview August 2010). They have also established the 'Farming for the Future' initiative, which aims to change farming to shift towards more organic practices through educating farmers about exactly what inputs are required rather than relying on what the fertiliser or chemical suppliers say.

"That's where it starts tying in with our food security side... basically we were finding that yields were starting to decrease, I mean for years and years people just [applied] more fertiliser and more chemicals and thought that was the solution for everything and it has proven not to be the case. So I think our bigger response is about changing farming practices to make sure that we have a more *resilient* food supply chain, hoping that will deal with some of the impacts of climate change and food security." (Woolworths interview August 2010, my emphasis).

Although Woolworths admits that most of the work has been done with larger suppliers, there is discussion about trying to extend the programmes to include small-scale producers. However, there are a lot of challenges from the capacity perspective: from having access to sufficient resources to be able to finance the

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<sup>7</sup> As aptly put during the interview at Woolworths (August 2010), "If climate change is the shark, water is the teeth."

crops as well as putting up pack-houses and distribution networks. Sartorius and Kirsten (2004) echoed this finding in that they found that although smallholders could compete with large-scale producers and be cost-effectively incorporated into modern retail chains, they generated a higher transaction cost and that this needed to be addressed in order for mass inclusion of smallholders into these supply chains. Woolworths' response to some of these challenges was to match small-scale producers with some key primary suppliers. In this sort of "buddy-system", the small-scale farmers have access to the infrastructure that is provided by the primary suppliers including pack-houses and trucks and are at the same time mentored and increasingly brought into discussions. However the benefit is not as direct as Woolworths initially foresaw the project would be and so there is a need to revisit and be flexible to the situation as it is on the ground and adapt programmes accordingly (Woolworths Interview August 2010).

The procurement policies of retailers therefore have a significant impact on the food system's capacity to adapt to future climate change and concomitant uncertainty. At the same time, however, there is a need to be cognisant of other direct and indirect impacts that they may be having. A study by Michelson et al (2012) on supermarkets sourcing from smallholders in Nicaragua showed that farmers often made a trade-off between entering into contracts where they were assured a set range of prices for their goods versus leaving the price to be determined by the market. The domestic retailer proved to be a fairer negotiator of these contracts (offering similar prices to the traditional market) than the foreign company even though the foreign company picked up the produce direct from the farms thereby cutting out the cost of transport. A similar study by Rao and Quaim (2011) in Kenya showed that when farmers had effective negotiators on their side, this helped them to enter into fair contracts with supermarkets and the authors recommended that negotiation support should become a part of institutional support programmes for farmers. Furthermore, their findings showed that increasing domestic demand for high-end products can expand the positive smallholder income effects previously restricted to high-value exports, but that a potential negative consequence could be that those farmers that do not supply supermarkets (for reasons like not meeting quality standards or having sufficient production) are driven out of the market (Rao and Quaim 2011).

The food system can be made more resilient by leveraging the private sector's infrastructural, financial and knowledge capacity to develop small-scale productive agriculture in as fair and equitable a manner as possible. Retailers' needs for a certain and safe supply, farmers' needs for a certain market to sell their produce and customers' needs for affordable and nutritious food are theoretically not at odds. Practically, however, this is not the case in the current food system. Only by looking holistically at the system will these needs be aligned and met, but it will require flexible and adaptive governance structures that are can respond to changing circumstances.

The second area where the private sector can contribute positively to developing African farming systems is through their capacity to innovate in order to address changing circumstances. If this ability to adapt can be harnessed in favour of small-scale farmers, there is a good chance that African farming systems can be made more productive and more resilient to changes in environmental and market forces. By creating products that use crops that small-scale farmers can grow easily without the need of excessive inputs (e.g. traditional crops like sorghum, millet, sweet potatoes and yams), this will not only create a viable market for these farmers to sell their produce, but with the correct marketing, it will also create a shift in consumer perceptions of traditional crops. In Africa, traditional crops are often looked down on in favour of crops like maize and wheat despite these not being indigenous (Interview

Tiger Brands September 2009). If processors can come on board to reinvigorate crops that are more resilient to the variability of African environments (that are arguably also more resilient to international economic fluctuations as they are not traded) there is the double win of farmers being able to sell crops that they can successfully grow as well as consumers being able to buy products that are not only nutritious, but are not subject to the vagaries of the volatile international market. In the following section, this is explored with reference to some such innovative products.

## 2.2. Innovation

Food processing has become the most concentrated stage in the food value chain with relatively few processing and retailing companies compared to the number of producers and consumers at either end of the chain (Reardon et al 2003; Meijerink and Danse 2009). In terms of governance, processors' strategic role in the food system and high level of market power is complemented by growing liability for food safety in the wake of food scares such as Bovine Spongiform Encephalopathy (commonly known as "mad cow disease"). At the same time concerns with supply under changing market and environmental conditions reinforce their engagement in governance, most notably from a mitigation perspective as agriculture contributes approximately 13% to global Greenhouse gas emissions and the rest of the food supply chain even more (Ingram lecture 2012). However, their role does not simply stop with the mitigation of environmental change, but their role in adapting to a changing environment, particularly in the developing world, is becoming increasingly recognised though progress has been slow (Vogel 2009). Product innovation is one of the key ways in which the adaptive capacity of food processors to global environmental change can be harnessed. Not only is this the area in which processors can respond to adaptive innovation taking place in production (e.g. crop diversification and rotation strategies, organic farming and irrigation), but innovation can also increase adaptation at the consumption end of the commodity chain by providing nutritional alternatives to those vulnerable to food insecurity.

One of the greatest environmental changes predicted to impact the South African food system significantly is global climate change (Jones and Thornton 2003, Easterling et al 2007; Schlenker and Lobell 2010). Predictions for South African agriculture under climate change in 2030 show a major decrease in staple crops like maize, but relatively little impact on 'traditional crops' like sorghum (Lobell et al 2008). The potential benefits of developing the traditional crop sector in Africa are great and more recently the private sector has come on board by providing a market for these crops either in the form of lager beer (e.g. SAB Miller's sorghum-based Eagle beer<sup>8</sup> in Uganda and Zambia and their cassava beer in Mozambique<sup>9</sup>), malt beverages (e.g. Milo) and instant porridges (e.g. Morvite) (Taylor 2003). Some large corporations (including SAB Miller and Tiger Brands) have admitted their role as major water users in drought-prone South Africa and have responded with a corporate commitment to improved water efficiency. As this illustrates, although corporate objectives often clash with environmental and social goals like sustainability and food security, this does not undermine the potential for achieving these goals through innovation. Since many of these environmental constraints are starting to affect companies directly (especially in the developing world countries like South Africa where there is good environmental legislation and an active civil

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<sup>8</sup> See [http://www.delta.co.zw/index.php?option=com\\_content&task=view&id=47&Itemid=90](http://www.delta.co.zw/index.php?option=com_content&task=view&id=47&Itemid=90)

<sup>9</sup> More information is available at: <http://www.businessfightspoverty.org/profiles/blogs/graham-mackay-ceo-sabmiller-cassava>

society), the problem of tokenistic responses to grave problems makes less business sense.

Although the adaptation debate has not yet fully permeated the South African corporate sector (Vogel 2009) there are indications of companies starting to take notice in the food sector. One of the greatest contributions that processors can make is through the development of products manufactured from crops that are less susceptible to climate change impacts than the staples of wheat, maize and rice. This capacity for adaptation through innovation is exemplified by the product Morvite, which is an instant sorghum-based breakfast cereal whose development contributes to food security objectives whilst still meeting the company's commercial interests (Schilpzand et al 2010).

The strategic role that such product innovation can have in building adaptive capacity in an uncertain context needs to be recognised more fully and specifically targeted (as opposed to being a by-product arising from some other pressure). Furthermore, there is a need to create consumer awareness around such innovative products so as to make them more marketable, but also as an incentive for innovation. Certification in the developed world has gone far in fostering an understanding of the value chain that links production processes with consumers (Schilpzand et al 2010). However, a similar gear-change needs to be effective in the developing world for food products that meet the changing needs of society, but in a way that builds adaptability rather than compromising it. In this regard, it is interesting to note the involvement of many powerful multi-national food-processing companies in initiatives like the 'Business Fights Poverty'<sup>10</sup> forum that aims to bring the business and development communities together to tackle poverty through strategic business initiatives. SABMiller, Cadbury's, Unilever and Coca-Cola have all been actively involved in this initiative since its inception in 2008 through sharing their experiences at events, writing regular blog posts and pioneering projects like the SAB Foundation's Social Innovation Awards<sup>11</sup> that aim to showcase and scale commercialisable pro-poor innovations that address a challenge faced by the Foundation's identified beneficiary groups (women, youth, the disabled and people living in rural areas). Creating communities where business works towards development goals can be seen as just such a fundamental shift towards creating a more adaptive governance system that recognises the need for social as well as financial benefit from enterprise.

This section of the paper aimed to elucidate the positive role that the private sector can play in building adaptive capacity throughout the food system: from local communities to regional corporations. It by no means argues that the private sector will provide all the solutions, and indeed it is the source of much that is problematic with the global food system. However, it would be foolish not to look at how to leverage its inherent characteristics like innovation in order to increase adaptability within the food system to pressures from climate change. It also highlights how trends in the international food system can be harnessed and adapted to the uniqueness of the African situation without having to buy-in to all the consumer trends.

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<sup>10</sup> <http://www.businessfightspoverty.org/>

<sup>11</sup> <http://www.sablimited.co.za/sablimited/content/en/sabfoundation-projects?oid=2917&sn=Detail&pid=2208>

### 3. Conclusions

International trends in consumerism are affecting African agricultural systems through creating demand for products that need to meet certain specifications ranging from international safety standards to certification of the production process from a social or environmental perspective. Together with this is the process of supermarket expansion in the developing world that is creating markets for local farmers as well as offering consumers in the developing world the sort of product choices and convenient shopping experience that their counterparts in the West have enjoyed for most of the second half of the 1900s. The two key questions that need to be addressed are what impacts these trends will have on farmers and farming systems in Africa and secondly whether African consumers will go through the same waves of consumerism as those in the West or whether it will be possible to create a uniquely African consumer market that meets consumers' needs whilst being both sustainable and fair for farmers. Supermarkets and other private sector actors have a key role to play in deciding which route is followed. By leveraging their power in the food system, their ability to innovate and their procurement strategies, it will be possible to reinvigorate African farming systems so that they are not economic sinks, but contributed productively to the economy. In the case of South Africa, this could entail a combination of reagrarianisation as well as a focus on developing the capacity of current food producers.

Section 2 showed evidence in South Africa of a developing relationship between retailers and small-scale farmers in response to procurement pressure from climate change as well as societal incentives to help build the capacity of the poor to generate an income. These are positive indications, but must be undertaken with caution with a full understanding of the systemic impacts of policies and with multi-stakeholder and institutional support (Pereira and Ruysenaar 2012). There is also a need to focus on which groups are left out of this relationship. Young people and in particular men are the ones that tend to migrate to the cities whilst women are left behind to fulfil their routine tasks- of vegetable gardening, cooking food, buying food with whatever income the family has- none of which are accorded monetary value and yet in the greater food system are exactly the tasks with the most potential for income generation and building food security. Reconciling household duties as legitimate income strategies and involving the youth (and in particular men) to the potential for income generation in rural communities is not going to be an easy task, but it is one that needs to be addressed if these wider trends in formalising African agriculture are to be successful. Quite often the adaptive knowledge of rural women and indeed communities is not recognised for its full worth and this must not be lost in the formalisation process, but harnessed and included as a form of rural reinvigoration.

Policy incentives in the United States have been partially successful in stopping deagrarianisation trends and returning young people to farming (SARE 2009). It will require similar incentives in Africa to reinvigorate rural communities and farming systems and make them more attractive than the city as places to earn an income. Young people will then be more likely to stay in rural areas and contribute positively to their community whether through farming, other economic activities or a combination of the above. Finally, there is no need for Africa to go through the same waves of consumerism as the West- rather there should be a concerted effort to jump directly into a sustainable food system model where the rural is recognised as an important an economic hub as the urban. The key challenge for the private sector is for it to buy into a process where it uses its capacity to create markets that rural

farmers can feed into without compromising their own needs rather than dictating to farmers what those markets are.

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