

# Agribusiness for Rural Development: A Peripheral View?

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## Abstract

This paper argues that new technology used in the production of biofuels and adopted rapidly during the recent oil and food price crisis has altered the long-term relationship between energy and food prices as these products have now become much closer substitutes in consumption. In future, food expenditure could account for a larger share of poor consumer income not only in times of economic recession but, paradoxically, also in times of global prosperity when energy prices rise. Alarming symptoms of this over the past year pressured the World Bank into funding a global food response programme and triggered renewed interest in agriculture and agribusiness as ways of combating poverty. The paper contends that a greater focus on agribusiness issues is required in development thinking if meaningful numbers of smallholders are to capture higher returns in this new economic environment. It argues that more innovative thinking and research is required on how these smallholders can be effectively linked to markets through vertical and horizontal coordination, and calls for a better understanding of informal supply chains and global commodity chains to find ways of improving their performance for smallholders. It is concluded that efforts to link smallholders with higher-value supply chains in the hope that they would improve their returns have seldom been replicable at scale because they were founded on naïve understanding of what smallholder participation in supply chains offers and requires, and on inappropriate producer organisations.

## 1 Introduction

Consumers worldwide benefited from productivity increasing technology adopted by farmers in rich countries after World War 2, and by farmers in South Asia during the 1960's (Southgate *et al.*, 2007, pp.49-62) . Dramatic increases in yield reduced the real prices of corn, wheat and rice by more than 75% over the period 1950-2000 (Southgate *et al.*, 2007, pp. 49-59 & 83). These authors attribute some of the declining emphasis on agricultural research and development since the 1990's to complacency induced by cheap food. In many developing countries, especially in Sub-Saharan Africa, budgets for agricultural development have declined (Southgate *et al.*, 2007, pp. 64-67). However, strong global economic growth over the period 2003-2007, particularly in China and India, increased the demand for energy and raised the price of crude oil. Changes in relative prices encourage investment in technological innovation (Ruttan & Hayami, 1998) and efficient new plant soon made it financially feasible to convert crops into ethanol and biodiesel.

This has introduced a new dynamic into the poverty problem. In future, food expenditure could account for a larger share of poor consumer income not only in times of economic recession but, paradoxically, also in times of global prosperity when energy prices

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rise and crops earn more in biofuel than in food markets – an outcome graphically demonstrated by the recent food crisis which followed sharp increases in the price of crude oil from August 2007 until July 2008. This new dynamic has added to the vulnerability of poor consumers, many - if not most - of whom depend heavily on agriculture and natural resources for subsistence and income. Not surprising, the World Bank (2008) has promoted agriculture to the top of its development agenda - a position that it lost 25 years ago after decades of patchy results (and perhaps complacency about cheap food). Along with this new emphasis on agriculture has come a focus on agribusiness and the role it could play in alleviating poverty. This paper concentrates on agribusiness, and supports the view that agribusiness needs to occupy a prominent place in development thinking if meaningful numbers of smallholders are to capture higher returns in this new economic environment. In particular, it argues that more innovative thinking and research is required on how these smallholder producers can be effectively linked to markets through both vertical and horizontal coordination.

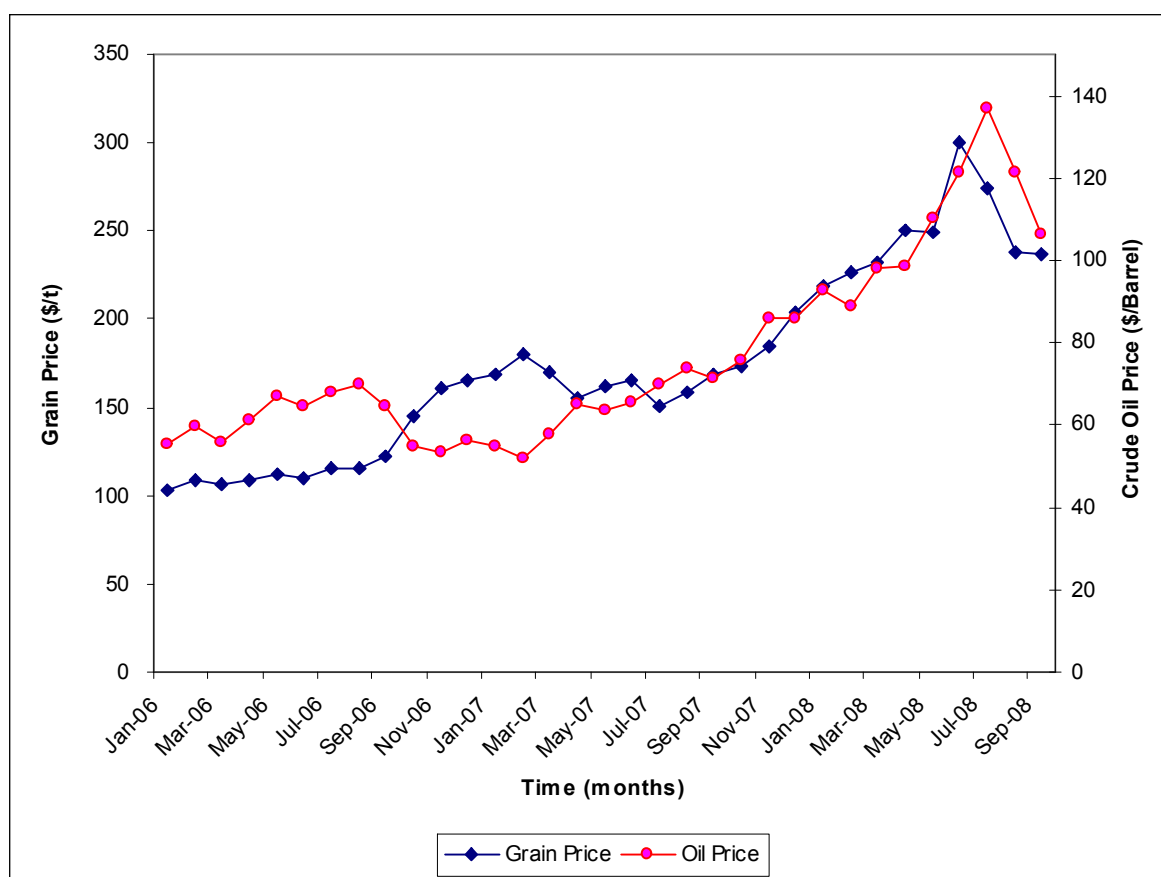
## **2 The importance of agribusiness for rural development**

After decades of relatively cheap food, world food prices started to rise sharply from July 2007, tracking a steep increase in crude oil prices. Confronted with rising grain prices (Figure 1), international aid agencies announced that they would have to cut food relief – precisely when more poor people were becoming vulnerable to hunger. In April 2008, the United Nation's World Food Program predicted a shortfall of US\$755 million to fund its relief programs over the rest of the year (MSNBC, 2008).

In July 2008, oil and food prices started to slip - but this downturn was not driven by expectations of increased food production but rather by expectations of reduced demand for commodities as jobs lost in the wake of the financial tsunami dragged down household incomes. Even though food prices have started to fall, the food crisis will not ease unless prices fall relative to household incomes. Unfortunately, economic recession tends to be hardest on the poor as the burden of unemployment falls heaviest on the least skilled.

The important lesson to take from the food crisis is that investment in new biofuel technology has given food staples a close alternative use. In economic parlance, the opportunity cost of food has increased and food prices will, in future, track the price of crude oil regardless of how much more food we produce because biofuel accounts for such a small share of the energy market. Investment in new ethanol and biodiesel plant increased from US\$111 million in 2005 to US\$740 million in 2006 (Biodiesel Refuel Guide, 2007). Now that this capital has been 'sunk', the price at which it becomes profitable to convert food into

biofuel is likely to diminish - so extending the range of prices over which food and biofuel compete for crops.



**Figure 1: World prices of crude oil and grain, 2006 -2008**

Sources: IGC (2008); EIA (2008).

Most of the world's poor are smallholders or landless rural people living in developing and transition economies, and most poor people are net consumers of food (World Bank, 2008, pp. 3 & 108). For poor consumers, the rising opportunity cost of food represents a double blow because the number of families forced to spend most of their income on food could increase just as easily in times of strong global prosperity as in times of recession. That this became so obvious during the food crisis shows that the benefits of global prosperity did not reach many poor consumers. Likewise, opportunities created by rising world food prices for net producers of food have not been widely captured by poor smallholders and farm workers (Shepherd, 1998, pp. 1-22). In May 2008, the World Bank created a new US\$1.2 billion rapid financing facility - the Global Food Response Program - to speed assistance to the neediest countries. It also made 'agriculture for development' the theme of its 2008 World Development Report - agriculture's first lead appearance in 25 years. While the Report recalls

old stalwarts like the need for more agricultural research, trade liberalisation and land tenure reform, it recognises the crucial roles of agriculture and agribusiness in alleviating poverty.

### **3 Linking smallholders to markets: vertical and horizontal coordination**

Agriculture can produce food for consumers and income for smallholders and farm workers, but it can only do so if farmers have access to reliable markets. In much of the developing and transitioning world, food markets are still dominated by informal supply chains, often referred to as wet markets. There is a perception that these chains perform poorly, with volatile prices, high marketing costs, inefficient transport, inadequate cool storage, variability in product form, supply and quality, and poor information flows (Batt *et al.*, 2006; Cadilhon *et al.*, 2006; Murray-Prior *et al.*, 2006; Woods, 2004). Such chains can be long, with many intermediaries (Batt *et al.*, 2006; Murray-Prior *et al.*, 2006), and the conclusion is often drawn that producers in these chains are vulnerable and exploited by the opportunistic behaviour of traders, and so capture only a small proportion of profit in the chain.

However, there is some evidence that traders and other participants in these informal chains are also very poor and do not capture excessive returns (van Wijk *et al.*, 2006), along with observations of cooperative, rather than opportunistic, behaviour between chain participants (Batt, 2004; Wei *et al.*, 2004; Woods, 2004; Martin & Jagadish, 2006; Martin *et al.*, 2008). Since informal chains will remain the only marketing outlet available to many smallholders for some time to come, there is a need to better understand why they function as they do, and how they might be strengthened and their performance improved for smallholders.

One alternative to informal chains for many small producers has been to participate in formal chains linked to global commodity markets. However, these chains present their own challenges. They are usually fiercely competitive, with the focus being on achieving a low-cost position and so out-competing other suppliers in the international marketplace. Prices tend to be volatile, reflecting the realities of global supply and demand, and cost pressures within the chain create a predisposition towards antagonistic relationships within the chain and downward pressure on the prices that producers and other intermediaries receive for their product. As with informal supply chains, global commodity chains will continue to provide a marketing outlet to smallholders in many transitioning and developing economies. Once again, there is a need to better understand how smallholders can extract the best returns and

mitigate their risk from operating in these chains through their farm management and marketing practices.

In addition to international commodity markets, small producers in developing and transition economies can link to top-end supermarkets internationally, regionally or domestically, and niche markets that value credence attributes in products grown by smallholders. However, these high-value markets also present challenges, with small producers in developing or transition economies facing stiff market competition - often from small producers in other developing or transition economies. Warding off such competition requires supply chains that are both cost-efficient and effective in meeting customer needs. Top-end supermarkets value quality, continuity of supply, food safety and shelf-life, while niche markets can have even more stringent requirements. Niche markets often value credence attributes associated with human ethics, animal welfare, organic production techniques or environmental sustainability which add new standards and compliance costs.

In reality, it is not easy for smallholders to access these high-value market segments. The same limitations that can impede the performance of informal market chains and global commodity chains can prove to be even greater constraints for formal, high-value markets with their more demanding requirements. Marketing and transaction costs are often prohibitively high owing to inadequate physical, legal and regulatory infrastructure (Johnson & Berdegue, 2004). Increasing consumer demands for high quality, safe, value-added food products further reduce market access because smallholders do not produce sufficient quantities of the required quality to cover the fixed costs of compliance (Hallam *et al.*, 2004). Of course, high unit transaction costs also deter the intermediaries that would otherwise purchase and process smallholder products - even when these products possess the ethical or environmental attributes that command premiums in niche markets. In addition, the threat of opportunistic behaviour confronting both producers and intermediaries becomes more pronounced when asset specific investments are required to add value to farm products (Williamson, 1985).

Individual producers who are able access preferred markets tend to control more land, capital and financial resources than the typical semi-subsistence farmer, and produce sufficient quantities of quality product to keep unit compliance and transaction costs down to a level that is manageable both for them and the intermediaries in formal supply chains. This is not the case for the vast majority of an estimated 1.5 billion smallholders in poor countries (World Bank, 2008, p. 3). To participate in preferred supply chains and avoid informal supply chains or global commodity chains, these very poor producers must pool their small

individual surpluses and market them collectively. For example, a processor would find it cheaper to negotiate, monitor and enforce a single, large supply contract with a farmers' association than to negotiate, monitor and enforce separate, small contracts with each member of the association. Affordable contract enforcement also reduces the threat of opportunistic hold-up, so promoting asset-specific investment by both the farmers and the processor. Similarly, smallholders seeking organic certification for produce would find it much more affordable to share the costs of group accreditation than to be assessed individually. In other words, smallholders must coordinate horizontally in order to link vertically with intermediaries in preferred supply chains.

Horizontal coordination can range from informal agreements between farmers to coordinate purchases and sales, to groups that are formally constituted to facilitate collective action (like farmers' associations) and ultimately to groups that elect or hire managers (like farmers' cooperatives and investor-owned companies). The latter examples represent horizontal integration, an extreme form of horizontal coordination in which farmers surrender decision-making power to a manager in exchange for a different set of property rights, namely benefit and voting rights

While horizontal coordination and integration can reduce transaction costs and improve smallholder access to preferred markets, group arrangements introduce other costs and institutional problems that discourage smallholder participation and investment. Indeed, farmer organisations have only a mixed track record of good performance, as do user groups intended to manage common pool resources like communal forests, grazing, fisheries, irrigation water and storage space. One possible reason for this patchy performance is that these organisations tend to confer ill-defined property rights on their members that discourage their participation and investment of equity capital. Experience from developed countries suggests that, where membership of such groups is closed and equity contributions are fully transferable, appreciable and in direct proportion to an enforceable level of patronage, then the efficiency-robbing effects of these ill-defined property rights can be eliminated (Cook & Iliopoulos, 2000).

To encourage compliance with standards and to raise the capital needed to finance value-adding plant, many traditional marketing cooperatives in developed countries, such as the USA, have converted to New Generation Cooperatives (NGCs). In other developed countries, like New Zealand, where cooperatives are not subsidised and are legally permitted to offer benefit and (limited) voting rights to non-patron investors, traditional cooperatives are converting into investor-share cooperatives (ISCs) (Lyne & Collins, 2008). In developing and

transition economies, ISCs could also provide a vehicle for equity-sharing joint ventures between smallholders and strategic partners that already have market access and who are able to transfer technical, managerial and administrative skills to the smallholders and their elected directors. In South Africa, such equity-sharing partnerships have become a productive, albeit small, component of the government's land reform programme, with applications in farming, agribusiness and ecotourism ventures (Knight *et al.*, 2003) - several of which involve common pool resources. However, experience with the 'linking farmers to markets approach' suggests that attempts to coordinate smallholders have not, in general, been replicable at scale. Shepherd (2008) attributes part of the blame for this to inappropriate organisational models and, in some cases, to government and NGO hostility towards the private sector.

#### **4 Conclusions**

New technology used in the production of biofuels and adopted rapidly during the recent oil and food price crisis has made it easier to substitute food with energy. In future, food expenditure could account for a larger share of poor consumer income not only in times of economic recession but also in times of global prosperity when energy prices rise. Alarming signs of this during the year commencing August 2007, when world oil and grain prices both doubled, pressured the World Bank into funding a global food response programme and triggered renewed interest in agriculture and agribusiness as ways of combating poverty.

In essence, one of the key challenges of 'agribusiness for development' is to increase smallholder returns by improving their market choices through some degree of vertical coordination, whether this done through informal market chains, global commodity chains or high-value chains, such as top-end supermarkets and niche markets that value credence attributes. Successful vertical coordination is particularly challenging in high-value chains that require regulated quantity and quality, and asset-specific investment to meet consumer preferences in niche markets. In these chains in particular, horizontal coordination is required to achieve size economies, and to manage shared resources. However, attempts to link smallholders with higher-value supply chains have seldom been replicable at scale. This suggests a poor understanding of the factors that limit the performance of informal supply chains and global commodity chains, and the conditions needed to sustain alternative high-value chains, and what these more formal chains offer and ask of smallholders and intermediaries. In particular, policy-makers and development practitioners need to think

beyond traditional cooperatives to promote market access, and beyond user groups to manage common pool resources.

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