Commodities and Sustainable Development

The Main Public Policy Concerns Associated with Commodity Production and Trade

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1. Introduction

The world is producing more food than ever before. However, after decades of declining numbers of hungry in the world, the number of people who go hungry is increasing. Between 1997 and 2001, the number of hungry people globally increased by 18 million to a total of 798 million, most of them landless. The World Food Program provides food to about 90 million people every year, but the remainder simply are beyond the reach of the international community. In part, infrastructure is the problem, as many of the hungry simply live in remote and isolated places where they neither have access to sufficient food nor the possibility to grow subsistence crops. In many cases, it is not clear that food availability would actually result in more people being able to afford it. The issue is income rather than access.

To put this in context, in India, despite overflowing granaries, about 20% of the country’s population are still hungry. This situation is more and more common—as total food production goes up and price comes down, a significant proportion of the world’s population cannot afford food, at least at current prices. Some of the poorest people on the planet spend upwards of 75 percent of their income on food but still go hungry. Producing more food is not the answer, and even producing food that is less expensive is not likely to address the issue either. Similarly, handing out food to increasing numbers who need it is nothing more than a band aid, even though it can prevent thousands of deaths a day.

The final point is clear: food production strategies and poverty alleviation strategies, while not unrelated, need to be de-linked. Producing more food will not necessarily feed more people. The focus now needs to be on creating more jobs, income and equity. Some have referred to the problem as one of a “famine of jobs and livelihoods” rather than a lack of food. Over the past 35 years, the production of food has increased faster than population growth. Today, everyone on the planet could have a daily diet of 2,800 calories and still have food reserves.

The majority of those who cannot afford access to the food that they and their families need live in rural areas. However, for the most part they are not landowners, so rural development programs intended to boost the livelihoods of small farmers must trickle down if they are to reach these people.

This, then, is the context in which commodities and sustainable development need to be analysed.

2. Global Agricultural Commodities—Production and Markets

To have a useful discussion about commodities, it is important to ensure that we are starting with some essential background information. There are a number of myths about agricultural commodity production. Five appear to be key to the July 14-16 commodity discussion, as they will influence not only the types of policy tools being discussed but also the ultimate strategies and goals.
2.1 Myth 1— most agricultural commodities are traded internationally.

In 2000, a number of crops were produced primarily for export (e.g. coffee with 76% traded internationally; tea with 50%; cocoa virtually 100% depending on the year; soybeans 57%; palm oil 47%; cashews 62%, rubber 84%; tobacco 83%; shrimp from aquaculture 91%; salmon from aquaculture 95%). However, this is not the case for the vast bulk of basic food staples: many are produced primarily for domestic consumption. These include orange juice (with 13% sold internationally), sugar from cane (16%), bananas (21%), cotton (26%), wood pulp from plantations (12%), wheat (22%), rice (4%), corn/maize (14%), sorghum (13%), cassava (9%), and beef (23%). In fact, when horticulture and fruit are taken into account, some 90% of all food is consumed in the country of production (Clay 2004).

2.2 Myth 2— most of the raw material producers are developing countries and most of the consuming countries are developed ones.

While this holds for crops that can be produced primarily in the tropics, it does not hold for crops that can also be produced in temperate zones or for total, global food production. The US is the largest producer and exporter of soybeans, corn/maize, and sorghum, and is the largest exporter of wheat. The US, EU or Australia are the main producers and exporters of beef and salmon, and the US, EU or other developed countries are major producers and exporters of orange juice, sugar, cotton, wood pulp from plantations, tobacco, and rice. In fact, in order to meet their current food needs, a number of developing countries are significant importers of agricultural commodities. Oxfam estimates that some 20 percent of global grain exports are currently used for famine victims and refugees. In general, developing countries are net importers of all cereals and developed countries are net exporters. Similarly, with the exception of Latin America, developing countries are net importers of meat, and developed countries are net exporters (Clay 2004).

2.3 Myth 3— most people eat a wide range of different foods.

In fact, rice, wheat, corn and cassava account for 73 percent of global food caloric demand. By adding 4 more cultivars—potatoes, sorghum, bananas, and sweet potatoes—the total percent of food calories is about 90 percent. This is not to say that vegetables and fruits are not essential to diet and health, but rather that only a handful of commodities are key when addressing hunger (a shortage of overall calories in the diet).

2.4 Myth 4—the price of food is increasing.

This is perhaps the most complicated myth. While the price of food to the ultimate consumer may be rising in specific instances, the price paid to producers, when adjusted for inflation, for nearly every staple foodstuff, is lower than a generation ago. According to the Economist, the price of most foods is at the lowest level it has been at for any time for which there are records. Furthermore, the percentage of total household budget that people in developed countries pay for food has declined to an all-time low (e.g. about 14% in the US). By contrast, the poor in developing countries can pay as much as 75 percent of their income for food and still be hungry. Taking into account relative impacts on household budgets, food prices, in absolute terms, can be higher in
developing countries for some key commodities (e.g. rice, beans) of the same quality than they are in developed ones.

Another complicating factor understanding this myth and its implications is that not only has the percentage of income spent on food tended to decline, but the percentage of the money kept by farmers has declined as well. In the US in 1900, for example, a farmer tended to receive about 70% of every dollar spent on food. Today it is about 3-4 percent on average, less on commodities and more on fresh fruits and vegetables. That means that farmers receive 1-2 percent of the price consumers pay for a loaf of bread or a box of cereal. Farmers in developing countries do a little better. And, globally, farmers receive about a third of the total food value, but given today’s trends estimates suggest that they will receive about 10 percent in 25 years.

2.5 Myth 5--Agriculture represents a declining share of commerce in most countries.

One of the things that is happening is that there is more value being added to agriculture than ever before. American farmers, for example, represent 0.9% of US GDP, but the entire food market chain is about 14 times that big. In most other countries, both of these figures are larger, making agriculture a very significant, if not the most significant, driver of total commerce.

3. Agricultural Commodities and Price Volatility

Considerable attention has been paid to the overall decline in commodity prices. Even more important than price declines, however, is the volatility of commodity prices. A study commissioned by the World Bank (ARD, PREM and FRM 2004) to stimulate discussion and debate at a recent May board meeting had a number of interesting findings that are directly relevant to any discussion of commodities and sustainable development. The most significant, perhaps, is illustrated in Figure 1.
Figure 1. The Impact of a Commodity Price Shock Takes Several Years to Dissipate

Note. Figure shows the impact of a two standard deviation change of the country-specific commodity price index (Deaton Miller index) on real output (GDP) in a typical low-income country. The impact is the percent change in GDP for low income countries, on average.

Source: World Bank staff calculations

With Figure 1 as a backdrop, the authors of the report offered a number of additional and interrelated observations that are directly relevant to our discussions:

- Commodity prices are more volatile and more subject to shocks than are the prices of other tradable, industrial goods.
- Some commodities experience shocks more frequently than others.
- Commodity price shocks tend to be persistent.
- The maximum impact of a price shock is typically achieved only after about 4 years.
- Long-term impacts can persist for much longer—some will take as much as 20 years to return to the starting point if nothing else happens in the interim.
- Since the 1973-energy crisis, global commodity prices have become much more volatile.
- Shocks and economic growth are closely related and large negative shocks cannot be offset by later positive developments through economic growth.
- Poverty tends to increase from negative shocks due to declines in growth and incomes.
- Positive price shocks tend to be “buffered” from producers (e.g. not passed on as quickly or as
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thoroughly as negative shocks). In short, commodity booms are never as good as commodity busts are bad.

There is, however, another issue that was not raised in the above-mentioned paper that may be very significant for our overall discussions. Namely, what is the significance of a sharp price spike or rise in the short term on longer-term agricultural commodity prices? Put another way, could abrupt changes in agricultural commodity subsidy regimes in developed countries, and to some extent in developing ones as well, trigger shocks throughout the world for the affected commodities?

Given the price elasticities of many agricultural commodities, a sharp or even a small rise in price of any given commodity is very likely to trigger a large producer response that could result in precisely the type of picture (and the associated consequences laid out above) depicted in Figure 1. The factors that might affect the extent and duration of the impact would be whether it was an annual, semi-annual or perennial crop. The longer the productive life of the crop, the longer the impact on the market.

4. Competitiveness in commodity production

There are at least five trends of note regarding competitiveness in agricultural commodity production.

4.1 Trend 1—Competitiveness through Technology (e.g. genetics, management, inputs, etc.)

The first trend is that there have been significant genetic and overall management gains (e.g. the increased and more efficient use of technology, inputs, and energy) that have allowed many commodities to increase production far more rapidly than they have area under production. Since 1900, the area under cultivation globally has increased by about a third, but total production has increased some six-fold. This trend pushes producers (large and small) to become much more competitive to stay in business. This contributes to competitiveness through reductions in the costs of production.

4.2 Trend 2—Competitiveness through Globalization

In 1900, most European and North American countries were self-sufficient in agricultural products, at least those that could be grown in temperate areas. Colonies were essential to give colonial powers access to tropical agricultural products as well (e.g. rubber, coffee, sisal, jute, cocoa, bananas, and cotton). With the growth of populations in the North as well as the fact that many northern countries did not have their own colonies, international trade in agricultural commodities began in earnest. This trend contributed to competitiveness through preferred access to technology, infrastructure, markets, and capital.

The competitiveness gained through these processes was not just about agricultural production but also about trade, manufacturing of food products based on those commodities, and the distribution of those manufactured food productions. In short, globalization of trade through
colonial structures created competitive advantage for some groups over others throughout the market chain, not just at the production level.

4.3 Trend 3—Competitiveness through Policies

The public sector policy dimensions that shape overall competitiveness within agricultural commodity production take two forms—preferential access of foreign producers to domestic markets and domestic commodity-linked agricultural subsidies. Regarding the first, after each successive world war in the past century, the number of colonies decreased. Former colonial powers usually gave former colonies some form of preferential access to their domestic markets. At the same time, after World War II, food security and domestic food production were very important political issues, particularly in Europe. Over time, the use of trade policy instruments such as tariffs and subsidies escalated and spread throughout the world, at least to countries who could afford to protect their own producers.

Over the past 10-15 years, the International Monetary Fund (IMF) has restructured many developing country economies. A cornerstone of this restructuring has been the removal of agricultural subsidies and protective tariffs, as well as the privatization of commodity production and marketing more generally. However, until the subsidy regimes are similarly dismantled in developed countries, producers and food manufacturers in developing countries will not be competitive within most international markets.

In this context, the EU began an internal process of reducing the preferential treatment of former colonies to EU markets over the past decade. This has been done not by eliminating preference but by extending it to a larger class of countries based on their overall level of development. The EU has still not reduced commodity-specific subsidies for its own domestic producers and this has led, at least in the case of sugar, to the protection of sugar beet producers and the subsidized export of their product while at the same time allowing some poor cane sugar producers access to the EU market. This is a fairly expensive and inefficient policy regime.

As the WTO begins to rule on subsidy regimes (e.g. bananas, cotton and sugar) it is clear that the ability of former colonial powers to give preferential market access to former colonies will be reduced, if not eliminated. This will also happen with the protection of domestic producers. However, this issue is not limited to developed countries. Many Asian countries protect domestic rice production through both subsidies and trade barriers. China protects domestic soy producers through tariffs on raw and processed soy from abroad. India and Pakistan protect both sugar and cotton production through a host of different policies.

These three trends have helped shape commodity production competitiveness throughout the past century. Competitiveness, in this context, has been increasingly determined by cost of production and increasing efficiency either of production, transport, and/or processing/manufacturing. As subsidy regimes are dismantled either voluntarily or as a result of WTO or IMF pressure, governments are losing the ability to prop up less efficient producers. While the main focus of subsidy discussions has been on the US and EU, subsidy regimes have had very significant impacts in many developing countries as well.
4.4 Trend 4—Competitiveness through Comparative Advantage

Many countries have a “natural” comparative advantage for producing crops that is usually related to their environments and climate. The US is extremely well suited to produce corn, soy, wheat, meat, fruits and vegetables. Likewise, many developing countries have a clear comparative advantage in producing tropical crops such as coffee, cocoa, rubber, cashews, palm oil or even wood pulp from plantations when compared to developed countries which lie mostly in temperate agricultural zones.

However, it is important to look at the world in terms of evolving trends, not just past performance. As technology allows for the genetic manipulation of crops like soybeans, the US is losing its comparative advantage to countries such as Brazil, where the longer growing season allows more harvests than in the US. Similarly, wild harvested timber for pulp wood, due to the uniformity of the trees and the relatively small number of species made the US and Canada especially strong pulp producers in the past. New technology, however, makes single species plantations in the tropics where trees grow all year round much more competitive than in the past. It appears this will be the trend in the future.

Similarly, fish protein (from capture fisheries and increasingly from aquaculture) is an extremely important income generator for developing countries. In spite of very high fishing subsidies in developed countries, by 2001 developing countries accounted for about half of the export value (more than $56 billion) of all fisheries products (Valdimarsson 2004). In 2002, the $28 billion in gross exports generated by fisheries from developing countries resulted in some $18 billion in net revenues. In the same year, the $18 billion in net revenues received by developing countries for their export of fish products was more than twice the net revenues of coffee, bananas, rubber, tea, rice and the export of all other meats combined.

Such trends not only need to focus our attention but perhaps suggest fundamental shifts in our approaches to commodities as well. Valdimarsson of the FAO (2004) predicts that between 1997 and 2020, the percentage of all fisheries product exports from developing countries will increase from 72% to 79%. In the same period, Valdimarsson expects the percentage of fisheries production from aquaculture in developing countries to increase from 31% in the same period to 41% (since 1970, global aquaculture production has grown by 9.2% per year). Moreover, during the same period, food fish consumption in developed countries is predicted to remain static, while in China it will increase more than 36% and in all other developing countries by about 61%. In short, production, consumption and exports will all be in and among developing countries, representing an overall trend that needs to be taken into account in building an agricultural commodities strategy. For example, increases in soy consumption are static in the EU and US but are growing dramatically in China and throughout Asia.

Another issue that is raised here is that comparative advantage may not be enough to survive if producers cannot remain competitive. Many producers in the US, Europe and Japan are affected by high land values, high labor costs, regulations, and other factors that are far less significant in many other countries. This means that even though the climate and quality of the land may be
good, such countries will lose their advantage to others. In this climate, the most efficient producers in southern countries are likely to come to dominate much of global production and international trade. Given that consumption in developed countries is rather flat, and that food manufacturing may also come to be more efficient near the sources of production, food manufacturing is likely to shift to developing countries, and trade among developing countries will likely increase.

4.5 Trend 5—Competitiveness on Domestic Markets

There is an assumption that the opening up of domestic markets through the elimination of production subsidies and market tariffs will primarily affect developed countries. There is considerable evidence that many developing country producers could not compete on price within their own domestic markets with producers from other developing or even developed countries. For example, Brazil has a competitive advantage to produce sugar. If allowed, Brazilian sugar could be produced and exported to most other sugar producing countries at costs below that of domestic production. In fact, analysts looking at changes in EU sugar policies predict that Brazil would fill at least half of the newly opened market and perhaps much more.

Similarly, US corn and Australian wheat can be grown and shipped to most parts of the world at lower prices than the production costs of domestic producers. This is because American and Australian producers are extremely efficient in the production of these crops, and many of their costs are amortized over large volumes due to their overall scale.

The issue that this raises is rather simple: there may be 30-50 countries in the world that do not have any comparative advantage or competitive ability to produce even the most basic food needs in their countries compared against other efficient producers. However, since the population of many of these countries is primarily agricultural, allowing cheaper imports will not only force many out of farming as a market activity, it will reduce all the employment associated with it in the local economy. This issue will be extremely important for many developing countries, either for a few commodities or for many.

5. Other Commodity Production Issues

5.1 Multi- vs. Single-commodity Producers

Most commodities around the world (with the exception of small farmer crops such as coffee), are produced by individual farmers who focus most if not all of their attention on a single crop or on a small number of crops grown in rotation (e.g. soy/corn or soy/corn/cotton rotations in the US and Brazil respectively). Very few producers of any scale or commercial market integration produce more than 2-3 commodity crops at any single time. Even most small farmers produce only 1-2 commodity crops, often grown in association with other subsistence foods, which generate most of their income. In general, the global trend is to produce more volume of fewer crops to reduce the cost per unit of production and remain competitive. Current globalization only accelerates this process, but the trend has been increasing for a century.
5.2 High-tech vs. low-tech production

The production of most food, agricultural commodities and fiber on the planet, and the vast majority of what is traded internationally, comes from high input, intensive production systems. Even the production of most foods that are consumed fresh (e.g. vegetables and fruits) comes from increasingly high input agriculture. In fact, the inputs used for market-oriented horticultural production even in developing countries are far more high input than most agricultural commodities. Similarly, the production of most non-food industrial crops also comes from high input, intensive production systems. These crops include cotton, wood pulp, rubber, tobacco, sisal, hemp, flax, and jute, but these crops combined represent only a tiny fraction of the land that is devoted to food crops.

The current answer to feeding the world is large-scale, high-input, monoculture agriculture production systems that have existed for only 50-100 years. There is little question that the environmental problems caused by such production systems perpetuate and intensify earlier agricultural impacts that severely degraded parts of the Andes, Meso-America, North Africa, the Middle East, as well as parts of Europe, South and Southeast Asia and the Great Plains of the United States.

Despite all the problems with intensive industrial agriculture, it is equally clear that low-input cultivation systems, as they were practiced in the past, cannot meet the current food and industrial needs that people around the world have come to expect from agriculture. Somewhere between these two extremes are systems of production that are more sustainable and productive and that make better use of fewer resources than either the less input-intensive or the more input-intensive systems that currently dominate global agricultural production.

5.3 Subsistence or Export-led Agriculture

Around the world, agriculture is practiced by a range of producers whose practices differ in intensity, scale, and focus. Whether they sell 100% of their product to markets or are primarily subsistence oriented and only sell surplus into markets, agricultural producers are increasingly in competition. Globalization will only accentuate this process.

So, what does this mean for farmers globally? For the past few years, the total number of farmers in the world has declined in absolute terms and the number of farms has declined even more. The productivity of farms, by contrast, has increased considerably.

Simultaneously, the number of hungry people in every country except China increased by an average of 11 percent from 1970-1990. In Africa, between 1980 and 2000 the number of hungry people actually increased in absolute terms. Over the past 35 years, per capita food production has grown 16 percent faster than population. Still, people are hungry. In Africa, agriculture employs about two-thirds of the labor force, accounts for 37 percent of GNP and is responsible for half of exports. Still, the sector is doing little to generate wealth among the poor. In South Asia, agriculture generates 27 percent of the GNP but also has little impact on reducing inequality.
Hunger and malnutrition are more about distribution and income than they are about agricultural production. But, in all likelihood, this will not always be the case. Production will not keep pace with population and consumption increases in the future as it has in the past. In fact, cereal yield growth rates have declined for nearly 16 years. Furthermore, per capita land and water quality, and availability of these inputs for agriculture, are declining.

5.4 Value-added Production and Development

Farmers and those who work with them have long wanted to find viable ways to add value to the commodities that they produce rather than sell raw materials where others make most of the money beyond the farm gate. For the most part, however, markets have only tolerated value-added activities that actually improve the quality and differentiation of raw commodities, rather than its transformation into a fundamentally different product. Coffee needs to be processed locally by drying, husking, and sorting by size, but coffee roasting is done near the consumers because roasting decreases shelf life and/or increases packaging costs. Similarly, farmers in the US traditionally added value to their corn and soy production by feeding livestock to produce milk, meat, and/or eggs. However, small producers cannot achieve the efficiency of scale of the very large, efficient operations.

5.5 Some Issues to Consider Regarding Small Farmers and Comparative Advantage

- Small holders need access to risk management instruments; this need will be accentuated by trade liberalization and globalization.
- Small holders need time to adjust as well as specialized technical assistance to effectively integrate into global commodity trading systems.
- Our thinking needs to expand beyond producer organizations to find additional channels/mechanisms to deliver risk management to smallholders.
- Small holder strategies won’t work in isolation. They need to be linked to similar commercial incentives for the intermediate actors who deliver them.
- Focus cannot be on producers or producer organizations alone, or it will limit the overall impact and uptake/adaptation/adoptions of the approach elsewhere.

6. International Market Trends that affect Commodities

There are a number of market trends that influence commodity production and trade. Many of these trends have not been created by government regulations (or lack thereof) but rather by the private sector and consumer perception. The challenge is to examine these trends closely to understand where the key leverage points are for change, either within public or private sector policies.

6.1 Trend 1—Consolidation and Integration within the Food Market Chain

Perhaps the single most important issue that has arisen within the past 10-20 years with regard to
food and agricultural commodities globally is integration and consolidation. Less than half as many large, multi-national companies exist today as did twenty years ago. The consolidation has occurred both horizontally and vertically. Globally for any single commodity, only some 300-400 buyers make key purchasing decisions, not millions of consumers.

Nowhere are these integration trends clearer than with the spread of supermarkets all over the world. In China, supermarket sales went from 0.4% of retail sales in 1995 to 6.5% by 2000. In the last decade in 10 Latin American countries, supermarkets have increased their share of total food sales form 10-15% to almost 60%. In South Africa, supermarkets have increased their share of total food sales by 55%. These trends occur because supermarket chains can achieve efficiencies of scale, product standardization and quality, and satisfy increasingly global food tastes and preferences.

Similar efficiencies are being driven on the production side, where higher quality, larger volume and lower costs are the order of the day. Market prices are greatly influenced by the largest, most efficient producers. These producers don’t set prices, but they tend to influence them—especially to lower prices. The efficiency of market dominators must be matched by government interventions (e.g. protection, subsidies or tariffs), subsidies from nature (e.g. environmental impacts), or lower profit margins and standards of living for other less efficient producers, including small-scale producers.

6.2 Trend 2—Increased Consumer Concerns about the Quality of Food

Globally, consumers are sending clearer signals than ever before about what they want (or more often, don’t want) in their food—higher quality as well as healthier, safer and tastier products. This is sending signals to all players from fork to farm. This consumer interest in food has been fanned, especially in Europe, by a succession of mad cow disease, hoof and mouth, e-coli, salmonella, PCBs, dioxins, contaminated fishmeal in feeds, etc. However, the concerns are not limited to Europe. Organic food consumption and production in the US (40% of global) is another clear indication of food residue and consumer health concerns. In China, the market for green food products has exploded, and similar moves are underway in other parts of Asia and Latin America.

Ironically, residues in food, food bioterrorism, and food traceability are all putting pressure on food commodity production systems to be able to trace a product from “field to fork” or from “pond to plate.” Furthermore, such systems are not limited to the actual commodities themselves, but also to all inputs. For plants, this includes fertilizers and pesticides. For animals, it includes eggs, seed, and feed. Whether plant or animal, product residues are also being monitored, and it doesn’t matter whether the residue comes from the environment or was introduced specifically by the producer. Residues are increasingly not tolerated, even for commodities.

NGOs and consumers have driven the GMO debate and have forced—at least in the EU and Japan—the private sector to separate and label GM products. While many large-scale traders resisted this move, commodities have long been differentiated based on size, quality, and other attributes that people are willing to pay for. The largest unintended consequence of the GMO issue is that it is de-commodifying some agricultural food commodities (e.g. corn, soy, and canola). This is happening not only with regard to segregating the unprocessed commodity, but also
differentiating animals, for example, that have not been fed with any GM ingredients. This has
tremendous implications for what can be done within commodity systems (both production and
trade).

Whether the concerns are always well founded or not, they are real. As a consequence, most food
companies are exploring ways to ensure that they have more control over the production processes
for agricultural commodities as well as overall product quality. Certification is one way to do this,
as is ownership of an increasing portion of the market chain. In some instances, companies are
developing their own producer guidelines, which producers who want to sell products to them are
required to follow. Because this is voluntary, it does not fall under the WTO. This has huge
implications and shows the extent to which voluntary, private sector-based policies and programs
could fundamentally bring PPM (production, processing and manufacturing) issues back into the
global trade agenda even when these may be at odds with prevailing WTO norms.

There are a few other trends in the global market that should be noted.

- There is an increasing use of producer contracts to guarantee production for buyers and to
  reduce risks (e.g. residues, product safety, traceability).
- There is a significant increase in product testing throughout the market chain arising both from
  bioterrorism concerns (in the US) and food safety and GMO issues (in the EU and Japan). Such
  testing provides financial incentives for products to be segregated once tested.
- Retailers are acting as watchdogs and even developing first and second-party certification
  programs and standards. Retailers increasingly explain the differences between various
  ecolabel and certification programs.
- As a consequence, Eurepgap (1,700 companies representing 70% of food sales) has developed
  unified industry standards for such products as fruits, vegetables, meat and coffee and has
certified more than 20,000 producers in 60 countries. Other standards are being added. This has
implications for segregation and differentiation of mainstream commodities.
- In the face of all these trends, the main consumption increases globally are likely to be in
developing countries and as of this time, there is far more concern about price than any other
single factor. What may be developing globally is a trade system where volume and value are
important in developing countries, and quality and uniqueness are major determinants in
developed countries.

7. The Subsidy Regime and Commodity Production

There are a few key, underrepresented themes that emerge from the subsidy debate around
commodities.
7.1 Subsidy Regimes in Developing Countries

Many of the subsidies and market protection in developing countries have been dismantled as part of overall restructuring programs with the IMF and others. However, while the subsidy regimes that remain are not as large in value or focussed on as many commodities as those in developed countries, they are nonetheless extremely important for producers. Subsidies and market protection in developing countries, while only a fraction of the value of those in the EU, US, and Japan, are still quite significant in some countries and for certain crops. Elimination of such subsidy regimes due to WTO rulings could have significant and in many cases unexpected impacts. It will be important to transition such programs gradually so as not to produce the kinds of “exogenous shocks” described previously in this paper.

7.2 Subsidies and the Global Environment

There has been considerable attention focussed on the impact of developed country subsidy regimes on poverty globally. While this issue is clearly important, there are other equally important impacts of subsidy regimes. Globally, subsidy regimes result in more environmental impacts than any other single set of policies. Producers whose production or exports are subsidized or whose markets are protected have an unfair advantage over those who do not receive similar support. To compete, producers who are not subsidized often cut corners to reduce their costs of production and remain competitive.

7.3 Subsidies and Better Management Practices

Subsidy regimes can also be the greatest impediment to the adoption of BMPs (better management practices). When producers make profits because of subsidies, they have little incentive to change. As prices decline, however, efficiency becomes more and more important. Given the overall decline in world commodity prices, it is quite likely that some of the most innovative BMPs for different commodity production systems are being developed at this time. It would be very important to document and disseminate those practices throughout the world, not the least because most research shows that most BMPs pay for themselves within 2-3 years and actually make more money than less efficient practices. It is important to monitor what happens to producers who benefited from past subsidies: their strategies may be a key place to look for innovation.

7.4 Production without Subsidies

The vast majority of agricultural production is not subsidized in any country. For example, there are few direct subsidies or market supports for horticultural crops—the higher priced fresh fruits and vegetables that many around the world eat every day. Subsidy regimes tend to be focussed on durable commodities which by their very nature can be produced and substituted for each other all around the world and which tend to allow or even encourage international trade.

Globally, subsidies affect only a handful of commodities: e.g. sugar, cotton, dairy, fisheries and rice. Some subsidies, while not globally significant in terms of overall trade, can have severe
regional consequences (e.g. the EU olive oil subsidies on the greater Mediterranean production area). The EU’s subsidy regime for sugar and dairy products (including subsidized exports so that the EU is the second largest exporter of sugar after Brazil and the largest exporter of dairy) and the US subsidy regime for cotton are perhaps the most important subsidy regimes globally. While the US subsidizes rice production, only 4 percent of rice produced each year is traded internationally (FAOSTAT 2002).

8. Changes in Production and Marketing—The Impacts on Poverty Alleviation and the Environment

There is arguably more food produced on the planet on a per capita basis than ever before, yet there is increasing poverty and hunger. Food security in a very real sense has not been addressed because people cannot afford to buy the food that is often available. Moreover, trends in food production efficiency tend to undermine and marginalise not only many small-scale producers but, in some cases, virtually any producers of some commodities in different countries. Increased food production in places such as India and China have been somewhat de-linked from poverty alleviation, malnutrition, and rural development. Those who fight this trend have often succeeded in creating little more than poverty maintenance programs that might maintain a current lifestyle for another generation, but they do not fundamentally increase benefits to the poorest of the poor. It is important to take a step back and see if it doesn’t make sense to de-link poverty, income, asset building and malnutrition programs from agricultural production programs.

Globally, food production is becoming more intensive as well as more vertically and horizontally integrated. For the past 30 years, concerns about overall food availability and food security have successfully spurred drives to increase total production as well as production efficiency. There has been a simultaneous increase in the vertical integration of food production systems that have increased overall efficiency by reducing the number of players. Such shifts are not neutral. For example, supermarkets increasingly send very clear signals about what they do and do not want (see the previous comments about Eurepgap). With consolidation comes standardization and trends toward monopolization.

It seems clear that it is possible to increase total food production through traditional agricultural production programs, but that these programs may not be the only or even the best ways to reduce poverty or malnutrition. Furthermore, it is not clear that agricultural production programs can continue to result in higher yields and food production if the overall environmental impacts of agriculture are not brought more in line with general principles of sustainability. Here are just a few trends of note in this regard:

- More than half of all habitable land on the planet is used for agriculture or livestock. Some 90% of all land is farmed unsustainably (e.g. there is a net loss of soil nutrients and soil carbon each year) so new land (0.25-0.5%/year) must be brought into production. It doesn’t take a rocket scientist to see where this is headed.

- Some 70% of all water used by humans is used for agriculture. In a water-scarce world, more
than 60% of all water used for irrigation is currently wasted, but solutions are expensive and are not generally available to most small farmers.

- Many of today’s production packages have reached technological ceilings. For example, the per hectare production of rice is seen to be as high as it can go commercially given today’s technology. Another technological breakthrough will be needed to achieve higher levels of production.

- Most biodiversity is in the soil and in areas of agricultural use, yet current production systems are mining the soil for short-term gains and market advantage.

- The use of inputs such as fertilizers to offset some of these issues do not appear to be long-term solutions. For example, the amount of nitrogen required to produce a given unit of corn in the US doubled from 1970 to 1990. Quick, technological fixes may not provide continuous improvements in productivity and food availability in the future.

In short, the environmental impacts of agricultural production over the past 30 years, while often greatly improved from the practices of a century ago, are still unacceptable. Fortunately, some production strategies are being developed that will help. For example, in many parts of the world it is more profitable to rehabilitate degraded land than to clear natural habitat and incorporate it into agricultural production. Similarly, abandoning the more marginal areas (say from 5-15 percent) on most farms actually increases total production, reduces costs and impacts (up to 50% of environmental impacts), and increases profits. However, few of these solutions are appropriate for small-scale farmers attempting to produce on more marginal lands and at scales that are often not competitive. To put it another way, addressing the environmental impacts of agricultural production on small farms (unless they are capital intensive or fully market integrated) is much more difficult than it is for medium to large-scale farms. This, too, has implications for any overall strategy or set of policy implications.

9. Likely winners and losers from commodity trade liberalization—categories of countries, producers at different levels of the value chain, consumers.

There will be winners and losers throughout the market chain from commodity trade liberalization. In order to understand the impacts, it is important to have a clear understanding of the following:
- which commodities will be affected by liberalization,
- which commodities can be substituted for those (e.g. by producers, manufacturers or consumers)
- which producers will be affected,
- what impacts will be felt by whom throughout the market chain, and
- what interest, if any, consumers currently have in the issue.

However, trade liberalization is only one factor, albeit an important one, that will affect trade. It is
equally important to identify where increased demand is likely to arise in the world for commodities as well as where the low cost traders and food manufacturers are likely to be in the new commodity world. Most of the studies to date suggest that overall consumption in developed countries will increase only slightly if at all for many commodities. In fact, this is already true for soy in Europe and bananas, coffee, rubber and fish protein, among others, in Europe and North America. With the exception of paper pulp, the consumption of most agricultural commodities is actually stable or declining in developed countries.

Real increases in consumption are likely to result from dynamic economic growth in the South. The sustained 8% or better growth in China over the past decade or more has in fact not just increased the demand for raw materials that directly fuel that economy. It has also driven the demand for more overall calories and higher protein-based diets as well. In fact, the entire expansion of soy in South America is directly linked to the increased consumption of animal protein in China. People are “eating up the food chain.” Since China’s population has not increased during this period, the entire increase is due to increased levels of consumption. China is not only importing all the resources to satisfy this consumption, since last year it has been the largest agricultural producer globally as well, surpassing the US for the first time in recent history. These same trends (increased consumption and stimulation of local food production) will likely result in any developing countries that are able to increase and sustain overall economic growth.

But China demonstrates another likely trend in food commodity market chains as well. Historically, most commodity trade was not only dominated financially by developed countries, it was also managed physically as well. Goods were often shipped to developed countries, held or transformed and then reshipped. This is changing. Overhead in developed countries (from labor and management costs, to warehousing and compliance with laws and regulations) is becoming much more burdensome. In the recent past, China bought its soy from the US; now it buys directly from Brazil. China, in fact, is already investing in Brazil’s port and transport infrastructure to improve that country’s overall efficiency as a supplier. This is likely just the beginning of that trend.

It is more efficient to deal directly with the main producers. For this reason, many of the developed country traders and processors will likely be cut out of the south-south trade that will dominate the next 20-50 years of agricultural production unless they shift their operations to the new centers of production. [This is what ADM, Cargill, and others are doing for soy in Brazil and Nutreco and Stolt are doing with salmon in Chile.]

Another very large problem here is that a number of countries (perhaps 30-50 and most in sub-Saharan Africa) have little if anything that they can produce competitively at this time for sale on a world market. In fact, trade liberalization may actually accentuate such countries’ plights. Currently they protect their own agricultural producers through tariffs and trade barriers. In the future that may not be possible. Yet, efficient commodity producers could quite likely produce and ship half way around the world products that would be cheaper and often of higher quality than those produced locally. Unfortunately, while such imports would certainly put local producers out of business, it is not clear whether, without agriculture, many in the local market would have money to buy the imported food at any price since local food production is the largest engine in
most of those economies.

Even gaining access to EU and US markets is not likely to help most producer countries. Sugar illustrates the problem. Recent research in the EU suggests that, conservatively, some 50 percent of any increased market for sugar in the EU that might result from reforms in the sugar subsidy regime would go to Brazil. In fact the figure could be much higher. Every MT of sugar Brazil produces will tend to lower its overall production costs relative to its competitors. The only factor that would noticeably change that would be the rapid growth of Brazil’s economy which would increase its currency’s value and then make exports less competitive on global markets.

10. Looking ahead—The changing role of the public sector for achieving a pro-poor and pro-environment commodity agenda.

There are two major trends of note regarding the role of the public sector in any pro-poor or pro-environment policy agenda. The first is the overall reduction of the role of government and the resources available to government in almost every country in the world. The second is the increasing focus on security and terrorism. While eradicating poverty is considered somewhat important as a strategy for reducing the number of potential terrorists, little money is being spent on it now, globally, compared to other wars on terrorism. Environment is nowhere to be found in the new counter-terrorism strategies of most developed countries.

What, then, are the trends of government with regard to commodity food production systems? Simply put, less of everything. Here are a few examples of the implications:

- Fewer regulations for agriculture and less funding for the monitoring and/or enforcement of existing environmental laws and performance standards.
- Less funding for agricultural research and extension.
- Less funding for residue and product testing and a shifting of the responsibility (and cost) to the producer or producer country. If anything this is being privatized (and becoming a cost of doing business) through HACCP or Eurepgap. Producer countries are required to show traceability.
- Decentralization of power to lower units of government where local elites often have significant self interest in agriculture and natural resource exploitation. This often produces neither pro-poor or pro-environment results.

10.1 License to Operate

Agricultural production does not take place in a vacuum. This is especially true for commodity production. Issues of scale and capital investment are very important. Governments, neighbors and society at large, NGOs, and even food manufacturers and retailers all have an interest in the impacts of farming. The pressures that these groups can bring on farming collectively have been
referred to as the “license to operate.” This license to operate is changing. Here are a few of the more significant recent changes:

- In the past, producers were required (though it was not always enforced) to obey the law. Today, this has shifted to obeying the law in the consumer country. This is a result of private sector initiatives, testing, and the ability of countries to require of other producers what they require of their own.

- In the past, the goal was do no harm or to produce with no net loss. This was driven both by NGOs, local government and buyers. Today, at least in the private sector, this is shifting to doing good and performing “beyond compliance.” Even the International Finance Corporation (IFC) of the World Bank requires its borrowers to go beyond just obeying the law.

- In developing countries, cheap food for cities may well be the most important issue driving food companies’ license to operate. While this may lead to a flood of imports and displaced local farmers, it may still be seen by government as preferable to food riots or the strengthening of urban-based opposition political movements. WTO rulings on subsidy regimes may well even encourage this trend by reducing market protection.

- There is also a shift in emphasis from scale or equity to one of scale and equity. In the past, it was accepted that it was impossible to achieve both scale and equity. Today, it is increasingly required to achieve equity as well as produce at a scale that makes one competitive on global markets because retailers are not willing to pay more. Some experiments suggest that both can be achieved through worker equity programs (employee stock option plans - ESOPs); joint ventures between investors, producers, food manufacturers and/or retailers; and worker incentive programs. Brazil has more of these experiments underway in agriculture than any other country. They can be found in sugar, fruit concentrate, palm oil, forestry, mixed rotation farms (corn, soy, cotton), and coffee. In each of these cases, workers not only earn wages, they also receive bonuses or equity.

11. The Increasing Role of the Private Sector and Its Implications

The last twenty years has been marked by a number of interesting trends. These include the overall reductions in the budgets of most governments for agriculture, the reduced role of government in product inspection and testing, and now the increasing pullout of subsidy programs, first in developing and now finally in developed countries. In many significant ways, one of the most notable trends is that the private sector is increasingly filling this void. They are doing this in a number of ways. There are, first of all, the Eurepgap type programs described above where the private sector is requiring and certifying (to ensure compliance with government laws and requirements) production processes and product origin. There are also programs where individual companies or small groups of companies are attempting to reduce the most important social and environmental impacts of the production of specific commodities. This is being done out of financial opportunity, corporate responsibility, market position, consumer demand, or a combination of all of the above. Finally, there are a wide range of ecolabel and certification
programs that are voluntary in nature yet where the private sector is attempting to exert pressure over the entire commodity production chain to improve performance around key issues.

11.1 Better Management Practices (BMPs) and Commodity Production

There is perhaps no private sector initiative that is more at the heart of sustainable commodity production than the development and adoption of BMPs. Many companies are involved in the identification, analysis, adaptation and adoption of BMPs to reduce the impacts of commodity production. In most cases, the companies are looking for win-win situations where producers and other market chain actors can each benefit from the utilization of BMPs through the overall increased efficiency and profitability. BMP-based investor, buyer, and government screens are being created for key commodities to send mutually reinforcing signals to producers. While most BMPs are not scale neutral, there are BMPs for every scale and intensity producer. Here are a few of the interesting issues raised by BMPs for most commodities that might affect policy decisions and overall commodity strategies. BMPs:

- Are different for different crops. There is no one-size-fits-all approach that will work. There is still much to be learned across commodities.

- Improve product quality, reduce risks and residues, and increase overall efficiency.

- Reduce environmental and social impacts (e.g. reduce soil degradation, input use, and waste, while increasing productivity, worker income and profits).

- Pay for themselves within 2-3 years, some more quickly. The BMPs that do not pay for themselves can be sequenced so as not to put financial pressure on producers.

- Are not always immediately bankable, so short-term financial lending may be required during an initial transition until banks see that they are profitable.

- Social BMPs are probably the least understood but have the greatest potential for gain (e.g. education, worker incentives, ESOPs, equity, working with neighbors and local communities, etc.).

Producers create most BMPs to solve problems. One way to encourage the development of BMPs that reduce the most significant impacts of commodity production to acceptable levels is to set rigorous yet achievable standards and let individual producers find different ways to achieve them. Instead, many government and private sector programs tell producers how to farm. They tell them what to think, not how to think. This undermines innovation.

11.2 The Limitations of Eco-labels to Commodity Production

Most ecolabels and fair trade certification programs have tried to create parallel marketing chains that allow consumers to pay a premium that supports the environment and producers. However, few of these programs are aimed at commodities. Ecolabels are intended primarily to create new
markets for differentiated products rather than be applicable to commercial commodity production on a large scale. In short, they create niche markets rather than change commodity markets. From a commodity point of view, most ecolabels are Band-Aids. Perhaps the single most important way to change commodity production at this time would be to develop commodity certification programs that are meaningful, measurable and applicable to and within the grasp of a far larger share of commodity producers. Of course, the private sector needs to be driving these for them to have widespread uptake by producers unless the certification programs actually increase net profits to producers. In addition, to be credible, programs must actually measure and be able to demonstrate results against baseline performance. Finally, certification systems that are to cover their own costs (e.g. be financially sustainable) need to be limited to monitoring and measuring the most significant impacts rather than laundry lists of them.

Side-by-side comparisons of ecolabel, certification programs for the same commodity (e.g. shrimp, coffee, or bananas) show most ecolabels to be subjective. The approach tends to be proscriptive—do this or don’t do that. They do not measure performance or results, and they do not have baseline data against which to show improvement. As a consequence, very few ecolabels can actually back up the marketing claims they make or insinuate.

It is important to measure the impacts of ecolabels. Organic is a good example. It is a process-oriented certification program; it does not measure results. Natural chemicals are used instead of synthetics ones. IPM, tillage and mulching are used instead of pesticides. But what are the results? Organic production can produce as much soil erosion as conventional agriculture and more than no-till agriculture. Organic agriculture has no water standards and uses water less efficiently than well managed conventional farms. Finally, the natural chemicals used in organic agriculture (e.g. copper, sulfur, nicotine, and rotenone) can be far more toxic to the environment and biodiversity than many synthetic chemicals used in conventional agriculture.

Why are these issues important? Because we need to compare the impacts of different production standards on the same grounds, e.g. apples with apples. In a recent WWF project to reduce toxicity of potato production in Wisconsin, most organic growers could not be certified because they were too toxic. And, while only 5 percent of producers in the state were certified, in only three years total toxicity was reduced by 50 percent in the state and the number of producers ever using class 1 or 2 chemicals was reduced from 35% to less than 2%.

Organic agriculture as it is currently promoted does not have the ability to move conventional producers in a step-wise process to more sustainable production practices. Moreover, organic certification tells producers what to do or not to do rather than identifies standards and lets producers find different ways to achieve them. A recent study on PCB and dioxin contamination in farmed salmon in Canada showed that the organic farmed salmon had far higher levels of contaminants than other farmed or wild salmon. This problem is related to organic’s certification standards that suggest that trimmings and waste from wild fish are acceptable “organic” sources of feed. While using waste is laudable, it is not acceptable in global trading systems where such waste is known to store the bio-accumulated toxins from pollution in the natural environment.

Fair trade does not address environmental impacts directly, though certification is often linked to
The Main Public Policy Concerns Associated with Commodity Production and Trade

organic or other environmental standards. In addition, fair trade is not fair for everyone, only for small-scale producers. While this may or may not be a laudable goal, it is not going to change most commodity production systems and the myriad of people who depend on them. It may be possible to better address poverty and income issues through more equity-based programs rather than small-farmer programs.

12. Problem Areas With Commodity Production and Sustainable Development

A number of problematic areas have been identified in this paper with regard to commodity production and sustainable development. A few important issues, however, do not fit in the outline of this paper. They are addressed here.

12.1 The analytic focus on commodities has not been particularly balanced or thoughtful

To date, the social and poverty alleviation focus has been more on structural and macro issues, while the environmental focus has been more on the micro, individual farm-level issues. Either approach, by itself, misses key problems and opportunities. Individual producers can improve performance and become more competitive, but they often face problems in commodity prices that are neither created by nor fixed through a macro or international focus.

On the environmental side, the reverse is true. Much of the commodity focus to date has been on reducing impacts of individual producers. Those problems can be fixed without necessarily addressing the larger cumulative-impact or carrying-capacity issues. It is now clear that the production of commodities can have aggregate impacts on biodiversity and ecosystem functions. For example, the expansion of coffee (Vietnam, Sulawesi, Central Africa, and most recently in Myanmar), cocoa (West and Central Africa, Sulawesi, and most recently Vietnam), soy (Brazil, Paraguay and Bolivia) and palm oil (Malaysia, Indonesia, New Guinea and parts Central and South America) can significantly reduce biodiversity and ecosystem functions.

Does paying a fair trade price for coffee actually change market structures in any significant way or simply act as a price guarantee? Does paying a fair trade price for coffee address what may be a fundamental issue in coffee such as over production? In fact, does a fair trade price actually encourage more planting of coffee by fair trade producers?

Globalization is likely to increase production in a number of different commodities (e.g. sugar, cotton, soy, corn/maize, dairy) and more than likely cause international prices to decline even more sharply at least over the 3-5 years after a policy change. This in turn could have particularly negative implications for poverty and hunger.

A business case analysis suggests that many of the more marginal lands (e.g. steep slopes, riparian areas and watersheds) are not profitable to farm even in the short term. The most effective regulations might be those that are based on a good business case where there is self-interest to do
it right. However, many of the more marginal farming areas around the world are actually farmed by resource-poor farmers who have little other choice in agricultural land. Evidence from around the world suggests that the most impacts per hectare of production of commodities come from small-scale producers who cannot afford better land and/or better practices.

12.2 Value of Strategic Alliances and Partnerships

No single stakeholder group or set of government or private sector policies will make the international commodity system significantly better. Commodity markets involve many players, and if the goal is to use the market to make commodity production more sustainable then many of the different actors in the market chain will need to be involved. There are several groups that are attempting to bring different players together for coffee (e.g. producers, traders, NGOs, food manufacturers, retailers, etc.). There are similar groups working on cotton (e.g. groups led by the Organic Cotton Exchange, Oxfam, and WWF). The IFC and WWF-US are bringing together producers, buyers, manufacturers and retailers to explore the ability of using BMP-based screens to reduce the most significant impacts of producing such commodities such as soy, sugar and cotton. WWF, NACA, FAO and the WB created the Shrimp Aquaculture and the Environment Program to work with shrimp aquaculture producers to reduce the impacts of shrimp production. A similar program is now being started by NGOs, producers, and researchers for salmon and bivalve aquaculture.

12.3 Change will take time

The current production systems took a long time to create. Changing production will also take some time. This issue is further complicated by the fact that it is always easier to build better systems from scratch than it is to retrofit them. Yet, in even the fastest growing commodity production systems it will take 20 years or more before “new” systems equal the output from traditional ones. This raises important strategies issues and has implications for who the key partners will need to be to change commodity production and markets significantly.

12.4 Most agricultural poverty alleviation programs are actually poverty maintenance programs.

There is no entitlement to farm and there will be fewer farmers each year. The poorest of the poor in rural and urban areas do not own land. There is a need to shift our emphasis from small farmer and poverty alleviation programs to a focus on viable scale and equity programs. There are a number of new ways to address equity issues that are also scaled up to work in most commodity markets. They need to be better understood. These include ESOPs (employee stock option plans or worker-owned businesses) and joint ventures for production, value-added manufacturing, processing, and marketing. We need to identify, adapt and extend to new areas the different ways that are being used to address equity issues around the world. We need to be learning rather than reinventing.
12.5 Producing food in the future will be about managing change and how to think, not what to think.

No matter what the competition or the price trends are today, they will worsen in the future as a result of globalization. Given the reduction of price supports, trade barriers, etc., the tendency will be for producers to cut corners. Most of the corners cut will be those that are least regulated (e.g. environmental ones rather than social ones).

By contrast, those producers who learn faster will survive. Production efficiency strategies, BMPs, new crops, etc. take some time to disseminate globally. Even under the best of conditions it can take 8 years or more to disseminate BMPs unless they are patented information and a company is disseminating the technology to make money, e.g. Round-Up Ready soy.

13. The Way Forward

Here are a few thoughts about how to move the commodity and sustainable development agenda forward.

Be strategic. Not all crops or impacts are equal.

One needs to chose the crop carefully depending on the geographic focus, whether the goal is to reduce poverty, reduce hunger, or reduce environmental or social impacts or some combination of the above. Some crops lend themselves to poverty strategies (e.g. perennial crops in the tropics that are labor intensive and don’t lend themselves to mechanization such as coffee, cocoa, fruit crops, palm oil, or rubber; annual, horticultural crops that are labor intensive, e.g. fruits and vegetables; or organic or other more labor intensive crops where labor is substituted for other inputs). In general, perennial crops tend to have fewer environmental impacts, tend to be less easily mechanized, and tend to longer investment periods that discourage larger, more capital sensitive investors. For all those reasons they tend to be ideal for long-term poverty reduction strategies.

Focus on how to think, not what to think.

Don’t be prescriptive and give producers solutions. Instead, help them understand how to solve problems and be innovative. Work with producers to help them understand better management practices and continuous improvement. After all, today’s BMP will be tomorrow’s norm, and the day after that will become the obsolete practice that we are trying to get rid of. Finally, each producer has access to different resources and the optimal combination will be different for each of them as well as each of the crops they produce.

Work with farmers to reduce impacts and increase profits.

The overall goal is to make sure that farmers can still be financially viable in 25-50 years because they are adopting and using sustainable production practices. To do this, they will need to be more
efficient in their use of inputs. They will need to find ways to sell waste or to use it to reduce input costs. Everything about survival in more open, competitive commodity markets in the future will be about efficiency.

**Use the power of the market system to change it.**

Work on agriculture should focus on producers, key market chain players and governments. The focus should not be on just one of these players; the emphasis should be on a mix of both carrot and stick incentives. The goal should be to develop longer-term partnerships that reduce risks and costs of players throughout the market chain. In all likelihood, profitability will have to be found within the current price structure rather than by obtaining price premiums.

**Focus on one commodity at a time.**

Agriculture does not have impacts; specific commodities do. Agriculture isn’t traded on local or international markets, specific commodities are. We need to target key commodities, and then identify those stakeholders who have the largest interest in sustainable production of a specific commodity to ensure that production can continue indefinitely. This generally includes producers, society, government, buyers, manufacturers, retailers, and investors.

**Farming isn’t an entitlement.**

Many if not most small farmer development strategies are more about poverty maintenance than poverty alleviation. Globally the trend is for fewer, more productive, larger-scale farmers. This has to do with issues of efficiency and scale. Bucking this trend will be difficult if not impossible. That being said, however, it is not impossible to find both scale and equity solutions. The largest sugar plantation in Brazil is 100% owned by the workers who have contracted with competent managers and have turned a profit for 8 years running. The largest single passion fruit processing plant in the world is jointly owned by two producer cooperatives and a workers’ union. The loans to buy the plant and provide working capital to it were provided by the Brazilian government, but a European bank was also prepared to provide the funding, working with the largest juice company in Europe and the third-largest food retailer in the world.

**Focus on objective results, not subjective or prescriptive processes.**

There are only a few key impacts that are the most significant (e.g. environmental, social, or price), not laundry lists. Identify key impacts, establish current baseline performance data, then identify acceptable performance levels for the future. Work with producers, key market chain players, and government regulators to encourage performance that exceeds compliance.

**Sustainable agriculture requires entrepreneurs.**

Agriculture is the largest inherited profession on the planet. It is also the profession that has the smallest percentage of new entrants into it. As a consequence, there is considerable room to bring new ideas, innovations and approaches to the sector. At present, EARTH University in Costa Rica
is the only agricultural university in the world that requires each undergraduate to identify a business, write a business plan, borrow money at local interest levels, run the business, pay themselves a salary, and sell it out in order to graduate. Agriculture of all industries needs more job makers and fewer job takers.
14. References


