

# Current Trends and the New Development Role of Commodities



## Common Fund for Commodities

*visiting address*

Stadhouderskade 55  
1072 AB Amsterdam  
The Netherlands

*postal address*

P.O. Box 74656  
1070 BR Amsterdam  
The Netherlands

*tel* +31 (0) 20 575 4949

*fax* +31 (0) 20 676 0231

*telex* 12331 cfc nl

*e-mail* [managing.director@common-fund.org](mailto:managing.director@common-fund.org)

*website* [www.common-fund.org](http://www.common-fund.org)

*graphic design*

Grafisch Atelier Wageningen

*print*

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# Current Trends and the New Development Role of Commodities

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## Foreword

“Current Trends and the New Development Role of Commodities” is a study commissioned by the Common Fund for Commodities as part of its Advocacy action in the context of its Five-Year Action Plan 2003 to 2007. The Fund intends to commission occasional reports, as part of its Commodity Issues Series to serve as background information to stimulate international dialogue, policy orientation and development actions. These studies, we believe are important to raise awareness and recognition by the international community on the issues, which have direct linkages with the economic development and poverty reduction of commodity dependent developing countries. It is also intended that planners and policy makers in commodity dependent countries could be best advised to take informed decisions on their commodity development strategies and to make their choices on the basis of the prevailing trends in the international commodity trade.

Through its specific commodity related development projects, CFC acquires specific experiences on specific commodity related issues, which have implications on global supply, quality and health standards, price stability, as well as broader development implications. These need to be studied and their effects on global commodity economy need to be analysed and measures and actions aimed at addressing these issues need to be considered. The periodic studies that the Fund intends to conduct will enable such issues to be broadly considered and knowledge and experiences to be exchanged. This is among the mandates of the CFC, which is the promotion of co-ordination with regard to measures in the field of commodities and their financing with a view to providing a commodity focus. The Fund intends to pursue the achievement of this goal much more effectively.



Ambassador Ali Mchumo  
Managing Director

# I. Introduction and Summary

The last two years have seen a revived interest in commodity production and trade as a development vehicle (cf. Mayer & Fajarnes 2005; UNCTAD 2006). This is based on increases since 2002 in demand and price for a range of minerals and some agro-commodities, apparently linked to the emergence of Developing Asia generally, and China in particular, as major commodity consumers. This study describes current trends for agro-commodities and asks if they justify claims that such commodities can again play an active role in the economic development process.

The study begins by identifying tendencies in agro-commodity trade over the past decade and argues that, while some positive changes in demand are occurring, so far these barely compensate for declines in demand in the second half of the 1990s and are unevenly distributed

between commodities. Furthermore, they are benefiting different groups of commodity-producing countries to quite different extents. The profile of commodities for which demand is increasing, as well as changes in standards, value-chain structure and trade regulation, are mainly benefiting low cost, large-scale operations and countries that are less commodity-dependent, rather than traditional small-scale producers and traditional commodity-producing countries. However, the latter should also be able to benefit more from increased Asian demand for a number of traditional crops, as well as increased global demand for fresh vegetables and cut flowers. The study concludes by proposing ways in which the competitiveness of traditional producers and producing countries, can be improved.

*Further analysis is available in a separate Background Report which aims to provide more detailed information on trends in trade for each of the 17 agro-commodities discussed in this Report.*

*The information presented here is derived from analysis of the UN COMTRADE online database and recent academic research, consultancy reports and trade journals. Supplementary data sources used include different international commodity organisations such as the International Coffee Organisation as well as the US Department of Agriculture. Some commodities are covered well by the different data sources and in the recent literature, others much less well. This accounts for differences in the level of detail with which trends in the different commodities examined are here described.*

*COMTRADE data was analysed using SPSS by Jon Mortensen. Lone Riisgaard wrote the commodity trend studies on bananas and cut flowers, while Michael Friis Jensen wrote those on seafood and fresh and chilled vegetables. Peter Gibbon wrote all the remaining studies. The contributors are all members of the Trade & Development research group, Danish Institute for International Studies, Copenhagen.*

**Prepared by Dr. Peter Gibbon, Danish Institute for International Studies, Copenhagen  
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## II. Commodity Trade, 'Commodity Developers' and Commodity-Dependent Developing Countries

### Commodity Trade, 1993-95 to 2003-05

#### Volume and Value of Trade

Agro-food commodities are normally divided into the categories of livestock and meat, tropical beverages, milled products (grains, sugar), oilseeds/trees, fibres, fruits, nuts and vegetables. Some definitions add seafood, cut flowers and timber. To present a picture of trends across the full range of agro-commodities produced in developing countries, the study focuses on one or two commodities from all these groups except nuts. Table 1 summarises developments in respect of volume and value of trade for this representative group of 17 agro-commodities over the past decade.

Many sources (e.g., Gelhar & Coyle 2001) report that since 1980 the share in total agro-commodity trade of certain higher-value commodities such as seafood, fresh vegetables and poultry has increased steeply. Over the period covered here aggregate trade in these products, plus very high value ones

such as cut flowers and beef, increased by 46.7% - whereas trade for all other commodities considered here increased by 29.6%. However, amongst 'bulk commodities'<sup>1</sup>, trade in soybeans, bananas and rice all also grew by over 40%, while trade in cotton and tea grew by 50-70%. At the other extreme, the value of trade in coffee declined due to a large decrease in unit price. It also declined for tropical timber, due to increased domestic consumption in producing countries and because of import bans in some markets.<sup>2</sup>

Despite strong increases from 2002 onwards, nominal unit prices for the commodities reviewed here fell over the period in all but five of the 16 cases for which price data is available.<sup>3</sup> In only two cases (fresh / chilled vegetables and soybeans) were there nominal unit price increases greater than 5%. Falls in nominal unit price occurred even for some products subject to demand growth, e.g., chicken and cut flowers.

For the decade 1993-95 to 2003-05 as a whole, the most important development for agro-

Table 1: Trends in the Volume and Value of Commodity Export Trade 1993/95-2003/05

Commodity	Change	Change	Unit price	Av. value of	Av. value of
	in volume (%)	in value (%)	change (%)	trade (USD bn)	trade (USD bn)
	93/5 - 03/05	93/5 - 03/05	93/5 - 03/05	93-95	93-95
Seafood	n.a.	+47.8	n.a.	31.1	46.0
Beef	+21.5	+23.4	+1.6	14.9	18.4
Chicken	+97.8	+61.3	-18.4	6.9	11.1
Cocoa	+44.3	+38.3	-4.2	2.5	3.5
Coffee	+16.9	-32.0	-41.9	8.6	5.9
Tea	+54.0	+65.4	+3.0	1.8	3.0
Rice	+67.5	+41.7	-18.4	5.2	7.4
Corn/Maize	+25.6	+21.5	-0.3	9.3	11.3
Soybeans	+99.9	+118.9	+9.5	7.1	15.5
Sugar	+38.8	+14.6	-17.7	9.2	10.5
Cotton	+48.3	+51.1	+1.9	5.4	8.1
Natural Rubber	+45.2	+38.6	-4.5	5.4	7.5
Bananas	+39.7	+43.4	+3.1	3.5	5.0
Fsh & chld Veg	+69.7	+106.8	+17.5	3.2	6.7
Cut flowers	+72.9	+48.7	-4.4	3.4	5.1
Tropical Logs	-12.6	-20.8	-9.3	2.3	1.8
Trop. S/wood	-5.1	-15.9	-11.5	2.9	2.4

Notes: All tables are based on Comtrade. Data on tropical timber in this table uses ITTO data for 1995 and 1996 and 2002 and 2003. No volume figures are provided for seafood in Comtrade. (n.a. = not applicable)

commodities as a group was a steep decline in prices between around 1995 and 2000-01. If prices in 2000 are indexed at 100, then in January 1995 those for food crops stood at 130, while those for oilseeds, tropical beverages and agricultural raw materials all stood at between 150 and 185. By the end of 2005 the prices of all groups of agro-commodities were in a range between 110 and 145 (UNCTAD 2006, 19). Hence the period 2002-05 has been one where agro-commodity prices have partially recovered from historical lows, rather than one in which they broke away from a long trend of secular decline. The 'commodity boom' of 2002-05 is in reality confined to minerals, ores and metals, whose indexed prices increased by almost 100% during 2002-05, as well as to crude petroleum, whose price increased by 114% (UNCTAD op. cit., 17).

#### *Geographical Pattern of Trade*

The most striking change in the geographical pattern of agro-commodity trade over the past 20 years is that developing countries became net importers of food. This reflected high population growth, rising incomes, rapid urbanisation and a retreat from policies favouring national food self-sufficiency (FAO 2004). A second change was that developed countries lessened their dependence on agricultural imports from developing countries, as intra-EU and intra-NAFTA trade increased sharply, not least due to increased protectionism. Exports from developing countries only managed to retain their share of global agricultural trade (at around 36%) due to increases in trade between developing countries (Aksoy 2005a).

Developing country agricultural imports have a different composition from imports of developed countries. While seafood is the leading category by value for both groups, and while together with fresh and processed vegetables it is also the fastest growing, imports of certain bulk commodities play a greater role for developing countries than for developed ones. In some cases (e.g., sugar, soybeans) their importance is even increasing, as growth of developing country processing capacity leads to imports of raw material replacing imports of processed products.<sup>4</sup> Developing country imports of animal feed and oilseeds are growing at annual rates well above 5% (Aksoy op. cit.).

This is associated with a polarisation in developed country participation in global agricultural export markets. At one pole are a few developing countries prominent in exports of certain bulk commodities for which demand is expanding, on a highly competitive basis. Some members of this group are also leading exporters of a variety of higher value commodities including horticulture or aquaculture products. A second group of countries are mostly specialists in export of commodities for which demand has been flat in developed countries in recent years – i.e., they almost exclusively export traditional 'tropical' products.

The first group of countries enjoy relative land abundance and are mostly characterised by reasonable infrastructure and more plentiful capital. These countries have attained very large economies of scale in post-harvest handling and often in farm production., enabling them to dominate international markets on a volume and price basis. They have generated large agricultural trade surpluses and ploughed these back into further agriculture and aquaculture investment. This has been linked to a pro-active role in spotting and responding to new market opportunities. All this, in turn, feeds into wider economic development. These countries can be described as 'Commodity Developers'. Most of them have actually become less commodity-dependent over the past decade.<sup>5</sup> Members of this group include Argentina, Thailand, Malaysia. However, easily the leading 'commodity developer' is Brazil, which has had the largest agricultural trade surplus in the world since 2001 and by 2005 was occupying a leading or near-leading position in 9 of the 17 sectors examined. It had either the largest or second-largest world market share for coffee, beef, soybeans, sugar, chicken and tropical sawn wood. It was also in the leading 5-6 exporters for cotton and corn and in the top 10 for bananas.<sup>6</sup>

A currently emerging 'commodity developer' is Vietnam, which over the last decade has re-established its traditionally leading role in the international rice trade while achieving leading positions in the coffee, cashew nut and aquaculture markets. A full picture of Vietnam's emerging role is elusive, since it does not report trade data to Comtrade.



**Figure 1: Commodity-Dependent Developing Countries, 1993-95 and 2003-05**

1993 - 1995			2003 - 2005		
Bahamas	Gambia	Paraguay	Armenia	Honduras	Rwanda
Belize	Ghana	Peru	Belize	Kenya	Sao Tome &
Benin	Grenada	Reunion	Benin	Kyrgystan	Principe
Bolivia	Guatemala	Rwanda	Botswana	Madagascar	St Vincent & the
Burkina Faso	Guinea	St Kitts & Nevis	Burkina Faso	Malawi	Grenadines
Burundi	Guyana	St Lucia	Burundi	Maldives	Seychelles
Cameroon	Honduras	St Vincent & the	Central African	Mali	Sierra Leone
Central African	Kenya	Grenadines	Republic	Mongolia	Togo
Republic	Kiribati	Sudan	Cook Islands	Mozambique	Uruguay
Colombia	Madagascar	Togo	Cote d'Ivoire	Namibia	Tanzania
Comoros	Malawi	Uganda	Cuba	New Caledonia	Uganda
Costa Rica	Maldives	Uruguay	Eritrea	Nicaragua	Zimbabwe
Cote d'Ivoire	Mali	Tanzania	Ethiopia	Niger	
Dominica	Mozambique	Vanuatu	French Polynesia	Panama	
Ecuador	Nicaragua	Zimbabwe	Ghana	Papua New Guinea	
Ethiopia	Niger		Guinea	Paraguay	
French Polynesia	Panama		Guyana	Peru	

Notes: 1. Coverage is of Comtrade reporters only. Non-reporters are listed under the heading 'n/a' in Annex A; 2. Listing is in alphabetical order. For orders of commodity-dependence see Annex A.

**Table 2: CDDC Shares of World Export Trade (% by value) and of Average Unit Export Price for World Exports (% above or below world unit price) 1993/95 to 2003/05**

Commodity	1993-1995		2003-2005	
	Trade share	Price share	Trade share	Price share
Seafood	5.2	n.a.	4.1	n.a.
Beef	2.9	-29.2	4.1	-38.6
Chicken	0.1	-28.9	0.0	-6.3
Cocoa	81.6	+7.8	70.6*	+29.1
Coffee	52.7	+5.3	20.1*	-1.5
Tea	2.6	-53.8	20.5	-41.5
Rice	3.5	+2.0	0.8	-24.7
Corn/Maize	1.0	+13.4	0.8	-17.7
Soybeans	3.5	-23.4	3.9	-19.0
Sugar*	8.0	-14.1	4.4	-6.3
Cotton	14.7	-0.6	13.9	-23.5
Natural Rubber	2.7	0.0	1.9	-10.5
Bananas	67.4	-15.6	7.4*	-6.1
Fresh/chilled vegetables	1.3	-30.8	3.3	+19.9
Cut flowers	18.3	-36.0	12.4*	-44.3
Tropical logs*	10.4	-4.3	5.2	+42.4
Tropical sawn wood*	21.4	+8.5	11.8	+16.2
All agro-commodities**	4.1	n.a.	2.9	n.a.
All commodities	5.8	n.a.	4.2	n.a.

Notes: \*affected by graduation; \*\* not including tropical timber. See note to Table 1 for tropical timber data period and source.

At the other pole are a group of countries that have lost their traditional cost and quality advantages in developed country markets for crops such as coffee, cocoa and cotton, while figuring very little in trade for those bulk commodities in high demand. As a result, their share of world commodity trade is stagnant or falling, along with their capacity to diversify into higher value commodities or manufacturing. This group combines declining performance in commodity trade with ongoing commodity-dependence.

### **Commodity-Dependent Developing Countries (CDDCs)**

While the term 'CDDCs' is commonly used in international fora, typically it is not defined. The definition adopted here is that of developing countries for which 50% or more of all merchandise exports are made up of non-oil commodities.<sup>7</sup> Oil is omitted because its high value can easily distort overall export composition. Furthermore, most oil exporters face a qualitatively different range of challenges to countries dependent on the export of non-oil commodities.

During 1993-95 there were 47 developing countries reporting to Comtrade whose average annual exports for the period were more than 50% dependent on non-oil commodities. In addition, of the 46 countries that did not report trade data to Comtrade, probably at least half were also CDDCs.<sup>8</sup> By 2003-05 there were 43 countries reporting data to Comtrade that were CDDCs.<sup>9</sup> In addition, of the 31 countries not reporting to Comtrade, again around half were probably also CDDCs. In other words, there were around 70 CDDCs in 1993-95 and around 55 in 2003-05. The largest single concentration of CDDCs is in Africa, where more than two thirds of all countries reporting trade data to Comtrade fall into this category.

CDDCs' share of all commodity trade fell from 5.8% to 4.2% during the period. For agro-commodity trade it fell from 4.1% to 2.9%. These falls were the result of graduation from CDDC status by 13 countries including Colombia, Ecuador and Costa Rica (Annex A)<sup>10</sup>, a process that also affected CDDCs' shares of trade for some

individual commodities. Besides their low overall share of commodity trade, CDDCs are weak in trade for most commodities experiencing meaningful increases in demand or more stable prices (the exceptions are cut flowers and tea). Unit prices received by CDDCs were lower than the average world unit price for 10 of 16 commodities in 1993-95 and for 12 of 16 in 2003-05, presumably reflecting lower than average quality.

With a few exceptions such as Paraguay and Uruguay, most countries that remained CDDCs in 2003-05 were characterised by traits such as low average farm size, poorly developed infrastructure and financial systems as well as high risk premia for investments. In general, they were struggling to defend historical positions in markets where they had traditionally enjoyed a degree of natural protection, either for agro-ecological reasons or because of abundant supply of very cheap labour.

### III. Challenges Facing Commodity-Producing Countries

Commodity-producing developing countries are confronted by a common set of challenges when participating in international markets. These include structural over-supply of undifferentiated basic product for many commodities; erosion of trade preferences as a result of multilateral trade liberalisation; and – at least in respect of OECD agro-commodity markets - proliferation of standards and rationalisation of global value chains.

#### Structural Over-Supply of Undifferentiated Basic Product

Structural over-supply or at least over-capacity applies in respect of almost all the commodities discussed here, although it is more acute for traditional 'tropical' products. The origins of this are manifold. On the supply side the collapse between 1989 and 1999 of International Commodity Agreements regulating price and volume of product circulating on the world market led to increases in production by the leading existing players. Secondly, in the cases of meats, grains, sugar, oilseeds and cotton, producing countries in the developed world have stimulated over-supply as a result of domestic subsidy systems. Thirdly, there have been large productivity gains for crops such as corn, rice, sugar, soybeans and coffee following propagation of new higher-yielding crop varieties and greater farm mechanisation. Fourthly, spectacular increases in production by late entrants have been recorded for a number of products. In addition to the Brazilian and Vietnamese examples described, this occurred in the cases of tea (Kenya), shrimp (India), salmon (Chile) and fresh fruit and vegetables (China).

Over-supply also reflects developments on the demand side for several products. In some cases declines in consumer demand occurred, due to health concerns (sugar and beef in developed countries). In other cases it results from technological changes allowing increased substitution (tropical timber, cocoa) or reductions in raw material requirements (tea), or increased ability to use raw material of lower quality (tea, cocoa). Furthermore, tea packers and coffee roasters have partly freed themselves from dependence on particular varieties and origins through greater attention to blending.<sup>11</sup>

#### Erosion of Trade Preferences

From the 70s, most developing countries had access to trade preference schemes devised by developed countries under the Generalised System of Preferences umbrella. In addition, the EU offered enhanced preferences to the African, Caribbean and Pacific (ACP) group of developing countries under the Lomé Convention (later the Cotonou Agreement). In the 1980 and 90s these schemes were complimented by bilateral arrangements between the EU and US on the one hand, and countries on their respective peripheries on the other. They were further complimented in 2000-01 by the EU's Everything But Arms initiative (for all LDCs), and by the US's Africa Growth & Opportunity Act.

The literature on preferences<sup>12</sup> emphasises the limited practical value of most of these schemes, as a result of low effective margins of preference (often below 5%), limited product coverage, and administrative restrictions such as Rules of Origin. Nevertheless, it also notes the positive nature of the benefits conferred on specific products by a few schemes. For example, 75% of the value of all preferences under the Cotonou Agreement is accounted for by special protocols on bananas, sugar and beef (Brenton & Ikezuki 2005), giving certain ACP producers duty free entry to the EU for fixed volumes of exports.

Figure 2: EU Tariff Rate Quotas for Beef

53,000 tonnes (boneless equivalent) of frozen beef from any non-EU country (zero tariff)
58,100 tonnes (boneless equivalent) 'high quality' beef from the US, Canada, Uruguay, Brazil, Australian and New Zealand (zero tariff)
50,700 tonnes (carcass weight equivalent) of frozen forequarters and boneless cuts from any non-EU country, for processing only (zero or reduces tariff, according to end product)
52,000 tonnes boneless beef from Botswana, Namibia, Zimbabwe, Madagascar Swaziland and Kenya (8% tariff)

Source: Spencer (2003)

Arrangements of this 'tariff rate quota' (TRQ) kind, providing zero- or very low tariff access to fixed volumes of product, are common amongst developed countries.<sup>13</sup> In many but not all instances (see Figure 2) they are reserved for a restricted number of beneficiary countries. While usually independent of generalised preference arrangements, they are a source of advantages for the countries listed. Normally, the countries in question are selected on the basis of past export performance. This may lock-in trade patterns, thus restricting expansion by rising exporters - even where the latter are highly competitive. In most cases there is a built-in phasing out process. Trade liberalisation, whether it is unilateral as in the EU's decision to phase-out its Cotonou Agreement protocols, or multilateral on the basis of WTO negotiations, will expose preference holders to fierce competition.<sup>14</sup>

### **Proliferation of Standards**

Twenty years ago only two sets of standards applied to agro-commodities. The first were private quality standards<sup>15</sup>, distinguishing product varieties (e.g., Robusta and Arabica coffee), national origins and grades.<sup>16</sup> These were associated with systems of premiums and discounts in relation to an international reference price, for example Cotlook A. The second were public health standards, applied mainly to meat and seafood. While the former were global, the latter were found mainly in developed country markets.

The intervening period has seen several trends. One has been for a decline in the proportion of crop classified according to traditional quality standards based on variety, origin and grade, especially in the cases of cocoa, coffee, cotton and tea. This is partly a result of market liberalisation in producing countries, which has been associated with a breakdown in the use of grading systems. The technological changes referred to have also contributed, reducing the dependency of processing on intrinsic crop qualities. The reverse side of this trend is that structural shortages of traditionally superior origins and grades have arisen in the parts of the market for which traditional standards are still important.

A second trend concerns the rise of new types of private standard. Proprietary customised

technical product specifications are now apply to 70% of world trade in natural rubber (Cecil & Mitchell 2005); they also apply to most of the cotton trade in the US as a result of adoption of technologies for measuring additional crop properties (Townsend 2005). Proprietary product presentation specifications apply where fresh produce is sold through supermarkets or certain specialist retail outlets, particularly in OECD countries. However, proprietary or semi-public technical process specifications are the most novel and ubiquitous of the new generation of standards, again especially in OECD countries. Under this heading fall standards referring to environmental sustainability of production methods and standards assuring prescribed characteristics of animal feeding regimes, animal 'biographies' (e.g., herd origin) or plant genetic origin. In certain countries particular process specifications are becoming de facto mandatory in some market segments, for example EurepGAP for fresh fruit and vegetables in large EU supermarket chains or MPS for cut flowers in Dutch auctions.

A distinction can be drawn between those technical process specifications that imply formalised and more complex methods for monitoring quality (e.g., risk assessment and risk management systems) and those that resemble traditional commodity standards in that they mainly involve increased monitoring of labour. Investment, process re-engineering and training requirements are quite different in the two cases. A final trend is for OECD country public sanitary and phytosanitary standards to be tightened (lower thresholds), broadened in scope (to cover institutional arrangements in exporting countries such as the designation of enforcement authorities and the design of national inspection systems) and also re-defined in process terms.

While the rise of new generations of product presentation, technical process and sanitary and phytosanitary standards is well-documented in OECD countries, and to some extent in developing country export sectors serving these markets, it is much poorer documented in emerging markets such as 'Developing Asia' and the former Soviet Union. The general tendency amongst commentators and academics is to assume that standards are lower in these markets. Although

there are some intuitive reasons why this might be the case such as the low share of formal retail operations in domestic food sales<sup>17</sup>, empirical evidence for and against is in short supply (but see Section IV below).

### **Restructuring of Global Value Chains**

Restructuring has occurred over the period since the early 1990s in the value chains for almost all the products considered, with the exception of cotton. In most cases supply chains today are geographically more global and more tightly coordinated, although the actors driving this process and the forms taken by coordination vary considerably between chains.

The most striking change concerns the inter-related chains for beef, chicken and shrimp and for animal feed crops such as soybeans and corn. Prior to the mid-1990s, these chains were largely national or regional in geography. Economically, they were integrated with each other to a significant degree only in the US. Today, as a result of a combination of large-scale foreign direct investment (FDI) and market opening, a complex of interlocking chains has emerged linking animal production in the US, Europe, Oceania and Asia (as well as shrimp production in Asia) with animal feed production in the US and Latin America, and with food and feed processing in all these locations. The leading actors in this process include US agribusiness giants such as Cargill, ADM, ConAgra and Bunge – most of whose core businesses combine grains, oilseeds and meat; more specialised US, Japanese and French meat producers such as IBP/Tyson, Nippon and Doux; and agribusiness combines from 'Developing Asia' such as the Chareon Pokphand Group (Thailand). The resulting chains are highly integrated vertically and horizontally.<sup>18</sup> The main actors also have a strong presence in food sectors such as seeds/ biotech, food ingredients, sweeteners (both sugar and artificial) and seafood. Many have also made initial investments in bio-fuels, and will be well placed to play leading roles in this sector should demand take off.<sup>19</sup>

A second change is the rise of retailer-driven chains for fresh produce. Unlike the first change, this is largely confined to trade destined for OECD markets. The chains concerned date from the early 1990s, with decisions by a few powerful UK

supermarket groups to offer year-round supply of a full range of fresh vegetables. Large supermarket groups copied this model across mainland Europe and North America. All worked in similar ways, by designating one or two importers as 'first tier suppliers' for given product categories, and then broadening their range of responsibilities to include management of logistics, inventory and new product development. As a result less fruit, vegetables and cut flowers pass through wholesale/ consignment markets and less flowers and fish through auctions – although these trends are less marked in Southern than in Northern Europe. In the case of bananas, the traditionally dominant grower-distributors such as Dole and Chiquita are now bypassed by some supermarkets' first tier suppliers, who have established direct links with producing country growers. In response, Dole and Chiquita are reconfiguring themselves as 'marketers', competing with importers on providing downstream services, while widening the range of tropical fruit they supply.

A third change concerns the tendency for the global chains for coffee, cocoa, rubber and tea to become shorter and more dominated by highly concentrated groups of processors, who are active in re-allocating functions along the chain. In coffee, the handful of roasters who dominate the international market (such as Kraft, Nestle, Sara Lee, Proctor & Gamble and Tchibo) are obliging trading houses to manage inventories on their behalf and to procure directly in producing countries. In the case of cocoa, companies such as ADM, Barry-Callebaut, Cargill and Hosta have integrated the roles of trader, processor and intermediate chocolate manufacturer. In the case of tea and rubber, packers and tyre manufacturers are bypassing auctions, brokers and trading houses and dealing direct with estates. Finally, the chains for sugar and tropical timber have evolved in similar ways, with FDI by processors in production or extraction in a widening range of producing countries.

## IV. Opportunities Available to Commodity-Producing Countries

The opportunities presented by the current context include rapidly expanding demand for certain commodities in Asian markets, growing demand- apparently mainly in OECD markets - for most 'higher value' variants of many products, the trend toward production contracts for a range of commodities, and (on the horizon at least) improved market access as a result of multilateral trade liberalisation.

### The Changing Character of Demand in 'Developing Asia'

Table 3 summarises recent changes in import demand in markets in 'developing Asia' (i.e., Asia other than Japan) and China for the commodities reviewed in this report. Whereas the aggregate global import value of the group of commodities discussed here increased by 43% from 1993-95 to 2003-05, it increased by 267% in 'Developing Asia' (Asia other than Japan) and by 416% in China. However, the spectacular increase in aggregate import demand for agro-commodities masks huge variations in the trends for particular products. Import demand in both Developing Asia and China

has soared for seafood, tea, rubber, bananas and above all soybeans. In Developing Asia (but not China) it has also soared for cocoa, while in China (though not Developing Asia) it has soared for chicken, tropical wood, coffee and cut flowers – in the last two cases from levels that were negligible in 1993-95.

These developments have certainly breathed new life into world commodity markets. The extent to which they are revolutionising them, in the sense of introducing qualitatively new economic opportunities for commodity exporters, is another question (cf. UNCTAD 2006, 75-88). The only commodity reviewed here where a fundamental change in direction of trade toward Asia has coincided with an equally fundamental increase in aggregate global demand is soybeans. Some of the highest upward shifts in Asian demand have been for products for which global demand is increasing at less than 5% annually (tea, rubber), or where it is stagnant (cotton) or even falling (tropical logs and tropical sawn wood).

**Table 3: Developing Asia's Imports by Value and By Share in World Imports 1993/5-2003/5**

Commodity	Change in global value (%)	Change in Dev. Asia share (%)	Change in Chinese value (%)	Dev. Asia share 03/05 (93/95) (%)	Chinese share 03/05 (93/95) (%)
Seafood	+44.4	+111.0	+361.1	14.2 (9.7)	4.4 (1.4)
Beef	+29.7	+65.5	+106.4	7.1 (5.6)	0.1 (0.0)
Chicken	+74.9	+60.7	+353.7	11.8 (12.8)	3.5 (1.3)
Cocoaxx	+84.8	+441.1	+27.9	10.9 (3.7)	1.0 (1.5)
Coffee	-25.7	-20.3	+348.7	2.3 (2.1)	0.2 (0.0)
Tea	+57.2	+267.0	+143.0	13.7 (5.9)	0.3 (0.2)
Rice	+36.4	+26.8	-10.8	19.9 (21.4)	3.2 (4.8)
Corn/Maize	+27.6	+12.0	-99.7	17.3 (19.8)	0.0 (3.3)
Soybeans	+138.8	+943.5	+17388.3	51.6 (11.8)	41.6 (0.6)
Sugar	+38.5	-0.4	-41.2	17.3 (24.1)	2.8 (6.7)
Cotton	+14.5	+67.2	+230.7	68.1 (46.7)	29.2 (10.1)
Natural Rubber	+49.4	+130.7	+364.0	31.3 (20.3)	19.4 (6.3)
Bananas	+45.7	+99.7	+316.3	3.4 (2.5)	1.3 (0.4)
Fsh & chld Veg	+104.6	+89.1	-12.5	2.1 (2.2)	0.0 (0.1)
Cut flowers	+56.0	-1.6	+616.5	0.5 (0.9)	0.0 (0.0)
Tropical Logs	-19.0	+43.2	+367.3	77.4 (43.8)	49.3 (8.6)
Trop. S/wood	+1.2	+18.9	+309.4	64.8 (54.5)	29.1 (7.2)

ITTO data for tropical timber covers periods 1995 and 1996 and 2003 and 2004 and refers to volume, not value.

This seems to support Christian's (2006) thesis that increased consumption of industrial crops in Asia is mainly replacing consumption elsewhere, as industries such as tyres, textiles and plywood manufacture experience changes in economic geography. For food crops, the changes mainly reflect a shift in Asian diets (human and livestock) toward higher protein content. Thus, rising demand for seafood, meat, fruit and soybeans is offset by stagnant or falling demand for rice, sugar and corn.

Another way to consider the impact of current changes on the structure of global agro-commodity markets is to consider Developing Asia's and China's shares of total imports of various commodities. Especially relative to its share of world population (58% in 2006), Asian shares of world imports for most products remain rather low despite recent increases. The changes in direction of trade that have occurred are not yet great enough to give Developing Asia and China global import market dominance. In 2003-05 the region's share of world imports exceeded 20% only for soybeans, cotton, rubber and tropical timber of the

crops reviewed here, while China's share of global imports exceeded 5% also only for the same group of products. The trends for seafood and tea are moving in the same direction, but still have some way to go.

#### *CDDCs and import demand in Developing Asia*

The global agro-commodity market shares of CDDCs reported in Table 2 above refer to exports rather than imports, and therefore this data is not strictly comparable with that reported in Table 4 below. However it does seem that CDDC market shares in both Developing Asia and China are currently lower for almost all products than they are in global markets. Between 1993-95 and 2003-05 there were significant improvements in CDDC import shares in Developing Asia and China for cocoa, tea and cotton – crops all subject to growing aggregate demand in the region (cf. Table 3). However, in other sectors where Developing Asia's and China's imports grew fast (soybeans, seafood, chicken, natural rubber, bananas) CDDC trade shares remained negligible or actually declined –

**Table 4: CDDC Share of Developing Asia and China Imports (% of total) 1993-95 and 2003-05**

Commodity	Developing Asia		China	
	1993-95	2003-05	1993-95	2003-05
Seafood	3.3	3.1	4.2	1.6
Beef	0.7	0.1	0.0	1.8
Chicken	0.0	0.0	0.0	0.0
Cocoa*	8.2	28.0	0.0	45.0
Coffee*	18.5	12.1	56.3	2.2
Tea	0.2	46.3	0.0	14.9
Rice	0.1	1.1	0.0	0.0
Corn/Maize	0.0	0.0	0.0	5.4
Soybeans	0.0	0.6	0.0	0.8
Sugar*	2.9	0.6	15.3	5.0
Cotton	7.0	10.9	8.4	14.6
Natural Rubber	0.6	0.0	0.0	0.1
Bananas*	34.6	1.3	33.3	0.0
Fresh/chilled vegetables	0.0	0.1	0.0	0.8
Cut flowers*	6.3	0.4	0.0	0.0
Tropical logs	n/a	n/a	n/a	n/a
Tropical sawn wood	n/a	n/a	n/a	n/a

\* affected by graduation

**Figure 3: Forms of Differentiating 'Higher-Value' Products**

Form of differentiation	Commodities applied to	Examples
Intrinsic varietal differentiation (with or without guarantees of volume and good quality)	all except cocoa and natural rubber	Darjeeling tea; jasmine rice; white corn; upland cotton; tiger shrimp; meranti timber; arabica coffee
Presentation	fresh fruit and vegetables, cut flowers, beef, chicken, shrimp, fish	washed and sliced lettuce; chicken nuggets; chilled boneless beef cuts; heads off shrimp; fish fillets
Assurance of non-standard crop or animal management practices	all except natural rubber	Organic meat, grain, oilseeds etc.; 'sustainable' coffee, timber and seafood; corn-fed beef /chicken
Assurance of non-standard labour practices	cocoa; coffee; cotton; tea; rice; cut flowers; fresh fruit and vegetables; bananas	Fair Trade; 4Cs code (coffee); 'Ethical Tea Partnership'; International Code of Conduct for Cut Flowers
Customisation	natural rubber	Long-term technical collaboration between end-user and growers
Branding	tea, coffee, chicken	Estate tea or coffee; Region of Origin labels; 'Label Rouge' whole chicken

albeit in one or two cases with graduation as a decisive factor.

Summing up, it seems that, while Developing Asia and China represent expanding markets for a few traditional tropical CDDC exports, there is a general mismatch between the dynamics of Asian demand and CDDC supply capacity and supply response. This suggests that the Asian market cannot in and of itself drag CDDCs out of their current difficulties.

### Growing Demand, Mainly in OECD Markets, for 'Higher Value' Products

Commodities can have 'higher-value' in two senses. Firstly, the standard form of a given commodity can command a higher unit value than the standard form of another commodity. In this sense, fresh produce and meats are high value products. Secondly, all commodities may be traded in non-standard or differentiated forms, giving them higher value than standard ones. In a context of saturated markets processors and intermediaries see product differentiation as a key competitiveness strategy. Consumers, especially in OECD countries, are also interested in differentiated products for reasons of taste, status, ethical concerns or simply convenience.

Non-standard versions of commodities may be differentiated in a number of ways. Discussion here is confined to ways that producers or first-stage processors such as meat or vegetable packers, tea factories or cotton ginners can differentiate products. Further down the chain, a variety of other differentiation strategies are available to final stage processors and retailers. Opportunities available to producers and first-stage processors are listed in Figure 3 in order of the complexity and cost.

Currently, assurance of non-standard crop/animal management and labour practices is receiving great attention in OECD markets. Such assurance is normally on the basis of third party certification, to the range of standards described earlier. The 'sustainability' market is growing fast, and when combined with the market for producer-branded products makes up very high proportions of consumption of products like coffee in OECD markets. In the Netherlands in 2006, for example, certified coffees alone had a market share of 27.8% (Dutch Coffee Coalition 2006, Figure 3). On the other hand, 'sustainability' markets are smaller and thinner for other products, and few evaluations of costs and benefits of this type of differentiation have yet appeared.



**Table 5: Average Unit Prices for all Imports, Developing Asia and China, 1993-95 and 2003-05 (% above or below world unit import price)**

Commodity	Developing Asia		China	
	1993-95	2003-05	1993-95	2003-05
Seafood	n.a.	n.a.	n.a.	n.a.
Beef	-22.1	-26.2	*	-24.6
Chicken	-44.6	-33.3	-76.0	-42.2
Cocoa	-8.9	-33.1	-19.3	-0.6
Coffee	-18.2	-27.7	*	-41.9
Tea	-7.8	-26.5	*	-2.6
Rice	-25.0	+3.5	-32.5	+24.1
Corn/Maize	-12.5	-12.5	0.0	*
Soybeans	+7.7	+3.5	0.0	+3.4
Sugar	-20.0	-29.4	-27.5	-26.5
Cotton	+1.8	+2.8	+8.4	+2.9
Natural Rubber	-11.0	-6.7	-11.0	-2.5
Bananas	-32.7	-37.7	-51.0	-52.8
Fresh/chilled vegetables	-64.4	-75.0	*	*
Cut flowers	-55.2	-58.2	*	*
Tropical logs	-13.6	-6.7	-33.7	-15.8
Tropical sawn wood	-32.9	-32.0	-48.5	-29.0

ITTO data for tropical timber covers periods 1995 and 1996 and 2002 and 2003

\* average import from all countries worth less than USD 5 million/year, unit prices therefore not calculated

**Table 6: Average Unit Import Prices of CDDC Imports into the Developing Asia Market and Chinese Market, 1993-95 and 2003-05 (% above or below average price of all imports in the market concerned)**

Commodity	Developing Asia		China	
	1993-95	2003-05	1993-95	2003-05
Seafood	n.a.	n.a.	n.a.	n.a.
Beef	-8.3	*	*	*
Chicken	*	*	*	*
Cocoa	+24.3	+65.8	*	+6.6
Coffee	+21.2	+61.7	*	*
Tea	*	+7.7	*	*
Rice	*	+13.3	*	*
Corn/Maize	*	*	*	*
Soybeans	-3.6	+6.7	*	-3.3
Sugar	-3.1	0.0	-13.8	-4.0
Cotton	+5.3	-2.1	+8.3	0.0
Natural Rubber	-27.6	*	*	*
Bananas	0.0	*	+33.3	*
Fresh/chilled vegetables	*	*	*	*
Cut flowers	**	*	*	*
Tropical logs	n.a.	n.a.	n.a.	n.a.
Tropical sawn wood	n.a.	n.a.	n.a.	n.a.

\* average imports worth less than USD 2 million/year, unit prices therefore not calculated; \*\* import data not credible

Nonetheless even in OECD markets, by far the commonest forms of differentiation for producers and first-stage processors remain those that are most accessible and cheap. These are firstly differentiation along the lines of crop/animal variety and good quality, and secondly product presentation. The latter's popularity is mirrored downstream in the most widespread form of value addition in food manufacturing and retail: 'higher value-added (does not mainly) reflect increases...in nutrient value but (in) the value-added service embodied in products, reducing preparation time. (Although there is also growth for nutrient-enriched and low fat products), the fastest growing lines in developed countries are ready-to-eat meals' (Regmi & Gelhar, 2005).

As for non-OECD markets, indirect evidence suggests an ongoing salience for 'lower value' rather than 'higher value' product variants. Table 5 presents data on prices in commodity import markets in Developing Asia and China. Although prices in Developing Asia may be lower than at global level partly because of high volume buying (for example, by state owned import agencies in China), the trend expressed in this table is so monotonic that it must be concluded that consumer preference in these markets is mainly for product that is minimally differentiated or not differentiated at all. Only for products (such as soybeans and cotton) where Developing Asia has very high shares of global imports do prices into its markets resemble global prices.

Only in a few cases do discussions in the existing literature directly take up the issue of bifurcated global demand that this data suggests. One case where it does so is the chicken trade, where it is pointed out that Developing Asia mainly imports frozen chicken parts such as wings, legs, feet and head – in large part from countries like the US where 'higher value' chilled white breast meat from the same animals is the preferred choice of domestic consumers (Spencer 2003). Another is that of the sugar trade, where demand in Africa and parts of Asia is satisfied by 'direct plantation whites' such as Brazilian cristal sugar – unrefined cane sugars that can pass as refined.

The evidence presented in Table 6, comparing unit prices for CDDC commodity exports into Developing Asia's markets relative to average unit

import prices in these markets, appears to indicate that CDDC exports are generally not at the same quality disadvantage in these markets as they are in global ones (cf. Table 2). However, in a majority of cases the average value of imports from CDDCs was so low that firm conclusions to this effect could be drawn.

### Growth of Contracting

For producers, the advantage of contracts over open market relations is that they reduce the transaction costs of marketing and input procurement, as well as conferring greater credit-worthiness. Contracts are also associated with obtaining higher prices over the long run.<sup>21</sup> Traditionally, long-term agro-producer contracts in developing countries were confined to crops such as tea and sugar, where attaining export quality required that exporters invest in factories close to fields. In turn, factories could be run economically only with a consistent supply of raw material. Cooperatives or marketing boards provided the input credit necessary for production of other crops to reach export grade. International trade usually involved arm's length transactions between the latter and trading houses.

In the 1950s, contracting emerged for the first time in developed countries, for chicken. This followed from the substantial investments made by processors in semi-automated plants, which could be run efficiently only with input of consistent size, quality and volume. From the early 1990s, as packer concentration accelerated and plant size increased across the chicken, pork and beef sectors, contracting between farmers and packers became a norm. This provided a foundation for an extension of contracting to animal feed crops. As the Thai shrimp sector grew in the 1990s, contracting of farmers for feed supply also seems to have occurred (although without much contracting of shrimp farmers themselves). In the last decade the contracting system has been exported from the US and Thailand to all the countries involved in the global meat, animal feed and shrimp feed complex.

Contracting between producers and buyers has also emerged in other sectors under a variety of circumstances. One is where a rapid shift in value chain structure occurs, with the emergence of new categories of 'buyer' seeking to secure a supplier

base. This is evident in the banana trade, where Dole, Chiquita etc. are exchanging a production for a marketing role, while the supermarkets who were their customers now designate importers to buy direct from independent producers. Another is where demand expands faster than supply for a particular crop variety or quality, particularly when the crop variety in question depends upon a specific input or crop management regime. This has stimulated contracting between coffee roasters and estates for 'specialty' beans, and between cotton traders and growers of high quality handpicked cotton in southern Africa. Thirdly, contracting has emerged for production of crop or animal varieties with unique attributes, where segregation is required to preserve uniqueness and where contracts guarantee the levels of supply necessary to pay for segregation. This applies in some cases where crops are certified as 'sustainable', or where seed varieties subject to intellectual property protection are used.

#### **Improved Market Access as the Result of Multilateral Trade Liberalisation**

Agricultural commodities are the most protected product group in world trade. In many countries they enjoy both high levels of border protection and direct subsidies. For OECD countries, direct subsidies currently make up 37% of total protection. Agricultural commodities were first subjected to multilateral disciplines during the WTO Uruguay Round. The Round concluded in 1995 with member countries agreeing to convert all border protection to tariffs (with provision for TRQs where border protection had been very high) and to reduce tariffs themselves. Developed countries agreed to reductions averaging 36% and at a minimum of 15% by 2001. On domestic support, developed countries agreed to reduce price support and product-related subsidies by 20% also by 2001, from a base period of 1986-88. Production-limiting programmes were permitted, while for export subsidies caps rather than reductions were agreed.

The Round only led to very limited liberalisation. Developed countries registered high bound tariffs, entailing a need for applied ones to be reduced only minimally. For domestic support, the base period chosen was one of high support, so that

actual post-1994 changes again could be minimal. By 2000 average applied tariffs on agricultural goods were 12% in the US, 20% in the EU and 22% in Japan. Direct support in the form of subsidies actually increased, and the overall rate of agricultural protection in OECD countries as a result rose between 1995 and 2000-02. OECD direct subsidies are concentrated on dairy, beef, rice, wheat, corn, sugar and cotton.<sup>22</sup> Overall protection in developing countries also remained largely unchanged. In these countries, tariffs are higher than in developed countries, but direct subsidies play only a limited role (Aksoy 2005b).

Medium- and even long-term prospects for further multilateral liberalisation of agricultural trade seem dim. Pressure both for developed country tariff reductions and for reductions in developed country subsidies are both weak. However, the stalling of the WTO Doha Round makes it probable that powerful middle-income agricultural exporters such as Brazil will use the WTO Dispute Settlement Mechanism to further test the legality of US and EU direct subsidy provisions. Therefore it may well be that any new liberalisation-related opportunities that do arise for developing countries will be mainly for products currently subject to heavy subsidisation. However, since OECD country tariffs are likely to remain high, the resulting opportunities are more likely to be in third country markets rather than OECD ones themselves.

## V. Responding to the New Structure of Challenges and Opportunities

Low cost, large-scale and better-resourced commodity producers appear well-placed both to ride out the new generation of challenges and to take advantage of the emerging structure of opportunities. Their cost structure and size allows them to survive the saturation of mainstream commodity markets while at the same time better absorb and spread the costs of conformity with new standards and types of product differentiation that are capital intensive or entail sophisticated process controls. They are further likely to be net beneficiaries of whatever preference erosion and trade liberalisation may materialise in the medium term<sup>23</sup>, as well as to become preferred suppliers or contract farmers where buyers seek to squeeze out transaction costs from supply chains.<sup>24</sup> Finally, because of their status as price leaders in the chains for animal feeds and meats, they will inevitably gain most from the main areas of expanding demand in Asia.

Such producers are found in large concentrations in the 'Commodity Developer' producing countries described earlier. These countries have managed to institutionalise low cost large-scale production and post-harvest handling systems across a range of products, supported by access to cheap land, relative efficient infrastructure and financial systems – and the FDI that these have attracted. Brazil has done so most successfully, on the basis of a steady expansion of very large-scale farming operations into the under-populated centre-west 'Cerrado' region, where a core farming system has emerged linking rangeland beef production, soybean and corn in rotations, while creating economies of scale for feed manufacturers to promote integrated large-scale poultry production (see Annex C). The probability is that Brazil and a handful of developing countries like it will continue to dominate a broad swathe of international commodity trade in the coming decades.

On the other hand, it seems likely that there will still be room for smaller-scale producers to participate in some of the markets concerned. This is partly because of the ongoing salience of varietal, origin and traditional good quality differentiation in segments of the markets for a number of commodities. Historically, family farming systems have been superior in assuring these dimensions,

because of their comparative advantage in monitoring labour. Similar considerations apply to certain new quality dimensions emphasising 'sustainability'. Demand may also expand in Asia for crops where quality demands are less exacting, but where family farming also predominates (cocoa, rice). Furthermore, smaller producers can compensate for lower scale economies on the basis of being organised in larger entities.

There are also reasons to believe that there still will be room for CDDCs in the coming period. Some crops, such as fresh vegetables and cut flowers, are not well-suited to the flat, empty landscape of the Cerrado. Instead they require large volumes of labour and water, allowing highland tropical regions in Africa and elsewhere to be competitive in OECD markets, when these conditions are complemented by access to capital for investment in core large-scale farm operations and by good infrastructure. Secondly, again because of their labour surpluses, CDDCs are not at a disadvantage in presentational forms of product differentiation favoured in OECD markets, since these are typically labour intensive. Thirdly, because they generally have family farming systems, they should have the capacity to produce to those new quality standards where monitoring labour is critical to conformity. The main preconditions for them to improve their position are that they attain greater economies of scale, better access to inputs, finance and extension, and more effective national systems for institutionalising traditional quality dimensions. Further prerequisites include meeting initial costs of conformity to the new quality dimensions dependent on monitoring labour, and meeting costs for improvements to trade-related infrastructure.

## VI. Commodity Policy Initiatives

Until the late 1980s, international commodity policy mainly took the form of support to international commodity agreements promoting supply management, as well as to multilateral and bilateral compensatory finance mechanisms. Against the background of a fundamental shift in commodity policy discourse in the 1990s all interventions that distort markets, directly by managing supply or indirectly by compensating participants for declining prices, now have been discarded. Conversely, policies that seem to promote market principles, or to help weak participants leave markets, have gained ground. This section will briefly review the two policies given the most prominence the current period, price risk management and support to diversification, before identifying a complementary set of three alternative policy interventions in CDDCs that address the combination of challenges and opportunities these countries (and small producers more generally) face.

### Price Risk Management (PRM)

Traders and large producers have used commodity futures markets to hedge price risk for almost a century, although with one or two exceptions<sup>25</sup> they long ago ceased to be the main users. More recently, traders also have used markets for options, which give users greater flexibility but whose participation costs are higher. In addition to the international exchanges where futures and options are traded, governments in a few producing countries like Brazil have promoted option schemes for domestic producers' use. These do not seem to have been run on fully commercial lines though.

For over a decade the World Bank has advocated PRM using options and related instruments as a market-friendly approach to managing commodity price problems. Despite devoting considerable resources to creating smallholder-friendly versions of such instruments, it has succeeded in launching only a handful of pilot schemes of this kind, whose outcomes are unclear. Meanwhile, independent commentary on the subject emphasises that even well-functioning PRM instruments give most producers results little better than traditional forward contracts, but in a more costly way (Maizels 1994, 2000; Page & Hewitt 2001; Murphy 2002). The greatest benefits of PRM

are for large traders, trading a range of commodities and using a variety of currencies.

Since the beginning of the post-2002 revival in commodity prices, disincentives have appeared even for some categories of trader to use PRM instruments for hedging risk. This has been the result of greater so-called basis risk, i.e., increased levels of deviation of commodity prices in financial markets from those in physical markets. This is attributed by UNCTAD (2006, 22-23) to increased activity by hedge funds and other speculative investors in markets for commodity-related financial instruments (see also Christian 2006).<sup>26</sup>

### Diversification

Diversification from commodity production has been a theme of policy discussion since the late 1980s. Arguments in favour are recently forcefully restated by UNCTAD (2004). Such arguments are hard to refute: the fact that CDDCs could become more competitive in certain commodity markets may contribute to their obtaining higher shares of international markets and/or prices, but it will not lead to an improvement in overall price levels as conditions of over-supply will sooner or later re-appear, and overall prices therefore fall.

At the same time it is useful to note that it is much easier to advocate diversification than to achieve it. While there have been many donor projects supporting diversification in various countries, most again appear to have been of a pilot nature. Further, they usually involve promoting production of an alternative commodity (normally one or another type of fresh produce) rather than movement out of commodity production, and most seem to run up against barriers to diversification. This is exemplified by EU diversification assistance to ACP banana suppliers during 2000-05. Despite considerable expenditure, the main outcome was a series of small-scale projects which, when implemented, mainly 'highlight(ed) the difficulties faced in promoting diversification in the particularly difficult environmental and geographical circumstances faced' - and which were eventually abandoned in favour of budget support linked to trade liberalisation (CTA 2006). As in other cases there proved few realistic cash-crop alternatives to the commodities cultivated historically - for agro-ecological reasons, because small farmers were

averse to reducing their food crop areas and because change to new crops entailed writing off some sunk costs as well as making new investments in 'specific assets'.<sup>27</sup>

Diversification remains a central priority for CDDC economic policy, but the conditions under and extent to which it can be successfully undertaken require better and more research-based elaboration than they have received to date. Furthermore, relevant support to diversification seems likely to entail heavy resource commitments – which in turn need to be aligned with other emerging 'Aid for Trade' instruments.

### **Support to Improved Producer Economies of Scale**

An underlying difference between producers in CDDCs and those in more successful commodity-producing countries is that farm and post-harvest operations in the former tend not to benefit from economies of scale. Whereas average farm size in Brazil's Cerrado is 1,500 hectares, in most of tropical Africa and Asia it is less than five. This has implications for farm and post-harvest costs (operational, input purchase, handling and first-stage processing, marketing and certification), for the transaction costs of potential buyers, and for suppliers' negotiating power.

Historically in CDDCs, public and private action favoured cooperatives as a means of improving economies of scale. Ironically, while there are a number of success stories of cooperatives delivering scale economy-type benefits in non-CDDCs such as Brazil, Colombia, Australia and the US, there are few or none from CDDCs themselves. Cooperatives in these countries have been plagued by political interference, leading to loss of effectiveness and to public scepticism at attempts to revive them.

In the past few years, a number of donors and NGOs have supported the formation in Africa of 'farmer groups' as a bottom-up alternative to old-style cooperatives. While there seem to be some success stories (e.g., the US Aid-supported NASFAM in Malawi) it is too soon to come to definitive conclusions concerning their potential. A point that nevertheless seems clear is that their role in greatly enhancing economies of scale will be probably limited.

A second, and in this case proven, route to greater economies of scale has been contract farming. Traditionally, contracting in CDDCs was confined to sugar, tea, rubber and tobacco, although more recently it has emerged for cotton, table fish, and fresh vegetables – in the last two cases usually in the context of parallel investments in larger-scale ('nuclear') operations. It is hardly a coincidence that CDDCs tend to be more competitive for most of these products than for agro-commodities generally.<sup>xxviii</sup> There is a strong case for CDDC government and donor support to be directed toward providing incentives for trading houses and others to create contract-farming schemes for one or more established crops in existing regions of production. In many cases, combining two cash crops on a scheme would make sense. This should improve economies of scale and scope without contributing to large increases in global production. Incentives to investors could include providing tax and credit advantages, improving infrastructure in scheme areas, supporting agricultural research and extension dedicated to local conditions and devising licensing arrangements that would discourage free-riding by competitors. An initial step could be donor support to CDDCs to set out credible plans for sector development, that would increase confidence to invest on the part of trading houses and other private commercial operators.

### **Support to Systems Promoting Better Conformity with Traditional Quality Dimensions**

Besides the scale advantages that have already been mentioned, contract farming's association with monopsony allows buyers to provide inputs on credit, in the knowledge that the latter can be recovered in the process of crop purchase. In addition, it creates economies of scale for some post-harvest processing (e.g., pulping, fermenting and washing for mild arabica coffee) and for subsequent sorting (or testing) and grading. Together, these economies of scale make it more likely that the harvested crop will be of good quality and that good post-harvest practice will be followed. This likelihood will be strengthened if growers are paid a premium for product of good quality.

As already noted, for many products different national origins command price premiums or discounts on the global market, partly depending on intrinsic varietal factors, but mainly on reputation. Premiums and discounts based on national origins are normally significant (around 5% or more), even between countries in the same supplying country region. In some cases they can be as much as 70% (for tea, between Uganda and Kenya (ADB 2002)). The gains that improved quality could bring to CDDCs are underlined by the discounts on average world unit prices that they are currently conceding (Table 2). As noted above, CDDC crops generally do not seem to be punished in price terms in Developing Asian markets. However it is notable that in the case of cotton, where the CDDC unit price on the global market has declined sharply relative to the global average, this trend applies also to CDDC unit prices in Developing Asia. In Developing Asian markets too therefore, improvement of performance in relation to traditional quality standards is of great importance.

Defending a good national reputation or improving one that is not so good depends upon a well-functioning national system of mandatory grades and differential pricing. In turn, such systems can work properly only if they involve all main players and provide means to resolve disputes between them. Larsen (2004) describes the operation of such a system in the Zimbabwean cotton sector between market liberalisation in the early 1990s and 2001. Estur (2004) suggests that, where such systems are effective, they can be also used to enhance suppliers' negotiating power, for example by pooling large volumes of product of average quality and organising its sale on tender. Unlike initiatives to promote contract farming (which is however a necessary condition for quality improvement), system coordination should not in itself require more than nominal levels of expenditure. Donors' role in relation to it could comprise providing a 'good offices' function in the formation of national steering committees.

### **Support for Initial Costs of Conformity with Product Differentiation Forms that are Labour Intensive or Standards that Emphasise Monitoring of Labour**

As noted, standards and product differentiation by no means all entail complex and costly technical changes, even in OECD markets. Some mainly require assurance of increased volumes of efficiently applied labour. For example, in a low-input African context, conformity with certified organic standards mainly requires assurance of familiar farming practices such as use of manure and mulching using weed residues. Amongst product differentiation methods, remunerative presentational changes may involve only cutting to size or slicing, washing, drying, arranging and packing.

On the other hand, initial costs of conformity, as well as initial establishment costs for cold storage, light processing and packaging can be high. Conformity with organic farm production standards alone, for example, requires that exporters register farmers, set up an internal control system and obtain international certification. Both in this case and that of product differentiation via presentation, CDDCs and donors could combine short-term support for conformity with measures aimed at making such initiatives sustainable over the long-term – for example, by supporting agricultural research on low-input plant health treatments. Ideally, support of this kind could be linked to supporting improved economies of scale and better conformity with traditional quality dimensions.

The measures proposed here will not enable CDDCs to compete with Brazil on its own terms, but at least they should enable them to better exploit their existing trade opportunities as well as those emerging in Asia and elsewhere. Finally, donors may be more inclined to support such measures across a number of CDDCs, if a 'CDDC' group of countries could be differentiated in the international political arena.

## VII. Notes

- 1 'Bulk commodities' are defined here as commodities whose price was below USD 0.50/kg. in 2003-05.
- 2 The overall trade tropical timber has not fallen; more tropical timber is being exported from producing countries in processed forms.
- 3 Anderson et al (2003) also report declines in unit prices over the period 1990-2000 for the two most traded seafood species, shrimp and salmon. In the case of salmon the decline was 65%.
- 4 See Gudoshnikov et al (2004) on sugar refining and Ash et al (2006) and LMC International (2003) on soybean crushing.
- 5 Commodity exports made up an average of 30.3% of the exports of Argentina, Malaysia, Thailand and Brazil in 1993-95. This figure fell to 25.0% in 2003-05 (see Annex A).
- 6 Brazil also enjoyed a 91% world market share for concentrated orange juice in 2002 (Diop & Jaffee 2005). A decade earlier it had been largest or second-largest exporter only for coffee, soybeans and tropical sawn wood. While it was in the top five for sugar and chicken it was in sixth position for beef and did not feature in the top 10 for cotton, corn or bananas.
- 7 A list of non-oil commodities is provided in Annex B.
- 8 Of the 43 non-reporters for the period 1993-95, 20 had become reporters during 2003-05. Of these, eight were CDDCs in 2003-05.
- 9 In 1993-95 there were three commodity-dependent developed countries according to this definition (Greenland, Australia and Iceland). Iceland was still commodity-dependent in 2003-05 and had been joined in this status by the Faroe Islands (a non-reporter in 1993-95). Greenland was also a non-reporter in 2003-05. Exports from these countries have been excluded from the figures provided in Table 2.
- 10 The 1993-95 cohort of CDDCs had a commodity trade share of 6.0% in 2003-05.
- 11 In the case of tropical timber, plywood equivalents such as oriented strand board can be manufactured from industrial wood residues or waste paper (Peck 2001). In the case of tea, teabags require only half as much tea per cup as loose tea while mechanised processing allows increased utilisation of tea of middling quality (Oxfam 2002). For cocoa, vegetable oils can be substituted for cocoa butter and 'expeller' processing allows extraction of butter from poor quality beans (Kox 2000). For coffee, steam cleaning of robusta allows its use in higher-quality blends (van Dijk et al 1998).
- 12 Cf. McQueen & Stevens (1989), Brenton (2003) and Stevens & Kennan (2004).
- 13 In the EU, US and Japan TRQs cover 38%, 26% and 13% of agricultural tariff lines respectively (Aksoy 2005b). Their prevalence increased as a result of the WTO Uruguay Round, where they were accepted as a step from very high levels of protection towards agricultural tariff liberalisation.
- 14 Partial liberalisation of the EU banana protocol saw Caribbean producers' share of total ACP exports fall from over 50% (1999) to 16% (2004) (CTA 2006).
- 15 For certain crops grades were given legal force by some producing country governments.
- 16 Grades never seem to have been applied for tropical timber.
- 17 In India, for example, formal sector retail operations are estimated to account for only 3% of sector turnover, while supermarkets barely exist outside the four largest cities. Analysts predict that formal sector retail's Indian food market share will reach 10-12% by 2011, following the entry of Reliant Industries and others (Financial Times, 20 October, 2006).
- 18 An overview of these chains a decade ago can be found in the contributions of McMichael (2000) and Francis (2000) to a special edition of World Development. The critical subsequent change includes the inclusion of the EU, Latin America and China in what was originally a Pacific Rim complex. This change is linked mainly to the expansion of the trade in soybean.
- 19 Interest in bio-fuels has had three origins historically. The first is in terms of the environmental benefits of reduced dependence on fossil fuels. The second relates to the possible economic benefits should oil prices remain over USD 60 per barrel for a prolonged period. The third, and until now dominant origin has been as a means of increasing the long-term financial viability of sugar, grain and oilseed sectors by allowing surplus stocks to be disposed of when prices are low. The two main bio-fuels are ethanol (an additive to petrol, which can be produced from cane and beet sugar and wheat), and bio-diesel (an



additive to diesel which is mainly derived from vegetable oils). There are well-established publicly supported ethanol projects in Brazil, the US and France, and both ethanol and bio-diesel projects underway in a number of other countries. In 2006 the EU set a target for the bio-fuel energy content of all road fuel consumption of 5.75% by 2010, backed by tax incentives. Should this be implemented, the main effects are likely to be on oilseed demand and prices, since diesel has a higher share of fuel consumption than petrol and since oilseed production globally is much lower than production of sugar and grains. However, long-term and large-scale public support for bio-fuel production is required for the target to be met, and it remains to be seen whether this is forthcoming.

- 20 The major discrepancy between cocoa global export and import values (cf. Table 1) is the result of the fact that the Comtrade global export data used here was cleaned to remove re-exports of roasted beans from Netherlands, Germany and the US. It was not possible to clean global import data in the same way. The very large increase in Asian import values (and Asian share of global imports) is due mainly to the doubling of origin grindings in Malaysia (using beans from the region), from 3.5% of global grindings in the mid-90s to 6.9% in 2003-05. Very little Malaysian grindings are consumed in Asia.
- 21 MacDonald et al (2004) report average prices for US contract farmers exceeding average spot prices by between 7% and 27%, depending on crop. A number of studies comparing producer prices for contract and non-contract farmers in developing countries also report higher prices for contract farmers (e.g., ADB 2002)
- 22 OECD countries' direct subsidies to these crops in 2000-02 were dairy USD 41 bn, beef USD 36.7 bn, rice USD 25 bn., wheat USD 17.3 bn., corn USD 10.6 bn., sugar USD 6.5 bn. and cotton USD 5.8 bn. Total OECD country producer support increased from USD 243 bn. in 1986-88 to USD 279 bn. in 2004 (OECD 2005).
- 23 Anderson, Martin and van Mensbrugge's (2006) recent CGE model estimation of potential benefits to developing countries from WTO Doha Round liberalisation indicates that Argentina, Brazil, China, India, Indonesia and Thailand could expect to receive 73% of all developing country benefits and that Brazil alone could expect 22.4% of all developing country gains.
- 24 MacDonald et al (op. cit.) report that whereas 11% of all US farmers were under contract in 2002, 41.7% of farmers with sales over USD 0.25 mill. were. This group had an average of 42.2% of production contracted. Those farmers whose sales exceeded USD 1 mill. had 46.6% of production contracted.
- 25 The SICOM natural rubber exchange in Singapore is mainly a 'traders' exchange'.
- 26 Estur (2004) complements an account of why West African cotton traders refrain from, and 'even fear', use of futures markets with an overview of the physical arrangements they actually use to hedge risk. He also points out the benefits that would follow if ginners were able to use such arrangements.
- 27 See Eicher & Baker (1992) and Johnson (2005) for similar arguments.
- 28 CDDCs' average share of world trade across these commodities increased from 5.8% to 8.0% between 1993-95 and 2003-05, in contrast to a fall in trade share for agro-commodities generally (see Table 2).

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## Annex A: Commodity-Dependent Developing Countries

### Share of Non-Oil Commodities in Total Exports 1993-95

Reporter	Commodities (USD)	Total (USD)	% Dependence
Burundi	163.209.013	169.599.659	96.23
Uganda	486.109.702	512.192.464	94.91
Greenland	316.217.166	335.192.032	94.34
Mali**	385.404.629	409.521.792	94.11
Burkina Faso	155.921.709	170.945.472	91.21
Central African Rep.	88.618.368	97.553.912	90.84
Sudan	616.923.680	685.193.216	90.04
Benin****	295.727.622	332.872.640	88.84
United Rep. of Tanzania***	521.969.971	598.168.576	87.26
Kiribati	6.250.127	7.191.233	86.91
Guyana***	463.965.000	536.224.000	86.52
Ethiopia	364.965.333	421.935.072	86.50
Iceland	1.391.434.996	1.609.498.539	86.45
Malawi	330.275.005	385.215.088	85.74
Honduras	541.849.863	635.029.088	85.33
Rwanda***	8.312.739	9.757.476	85.19
Nicaragua	304.001.181	375.936.699	80.86
Madagascar	250.782.070	316.070.875	79.34
Vanuatu	16.380.372	20.734.153	79.00
Guinea	550.578.487	701.860.800	78.45
Ghana**	1.917.029.096	2.466.951.168	77.71
Comoros	8.413.372	11.024.356	76.32
Paraguay	613.501.427	820.460.288	74.78
Mozambique	124.626.000	169.136.000	73.68
Réunion	139.795.627	189.834.336	73.64
Panama	418.204.265	577.208.256	72.45
Maldives	35.444.624	49.804.380	71.17
Togo	191.409.241	272.244.376	70.31
Kenya*	954.778.171	1.361.698.944	70.12
Zimbabwe	1.292.884.530	1.845.905.792	70.04
Niger	190.057.011	273.417.184	69.51
Bolivia	712.050.945	1.038.126.720	68.59
Côte d'Ivoire	2.476.867.621	3.736.867.840	66.28
Costa Rica	1.601.150.334	2.461.095.936	65.06
French Polynesia**	163.004.516	251.155.120	64.90
Grenada	13.849.468	22.500.269	61.55
Guatemala	979.092.550	1.592.057.728	61.50
Saint Vincent and the Grenadine	33.430.160	55.833.105	59.88
Uruguay	1.153.183.914	2.010.324.864	57.36
Australia	27.136.918.170	47.377.852.179	57.28
Dominica	26.307.143	46.160.899	56.99
Belize	80.418.018	143.738.417	55.95
Gambia	10.341.899	18.737.044	55.19
Cameroon	841.845.782	1.538.718.208	54.71
Ecuador	1.977.174.755	3.741.615.445	52.84
Saint Lucia	56.829.272	107.807.517	52.71
Saint Kitts and Nevis	11.863.691	22.658.091	52.36
Colombia	4.482.146.783	8.620.667.733	51.99
Bahamas***	94.020.400	181.385.696	51.83
Peru	2.540.076.499	4.914.295.040	51.69
El Salvador	445.542.273	903.498.176	49.31
Argentina	8.079.050.587	16.639.656.960	48.55

Reporter	Commodities (USD)	Total (USD)	% Dependence
United Arab Emirates	1.595.181.252	3.379.667.968	47.20
New Zealand	5.668.362.462	12.163.016.992	46.60
Guadeloupe	71.089.320	157.116.176	45.25
Seychelles	23.508.175	52.449.610	44.82
French Guiana	68.515.242	153.514.112	44.63
Chile	5.078.418.667	12.192.690.517	41.65
Kyrgyzstan	171.238.129	412.041.280	41.56
Martinique	91.965.170	230.259.864	39.94
Kazakhstan	2.073.484.840	5.226.721.870	39.67
Morocco	1.597.313.491	4.149.803.179	38.49
Israel	7.327.316.920	19.047.421.952	38.47
India	10.165.979.855	26.755.163.477	38.00
Rep. of Moldova	229.220.411	655.762.772	34.95
Bhutan	22.158.279	66.101.580	33.52
So. African Customs Union	8.688.390.436	26.037.815.296	33.37
Jordan	519.908.719	1.596.588.288	32.56
Mauritius	471.123.172	1.451.127.381	32.47
Sri Lanka	958.312.093	3.028.302.044	31.65
Brazil	13.292.959.557	42.921.198.933	30.97
Suriname	152.136.363	509.719.072	29.85
Greece	2.760.678.231	9.712.436.608	28.42
Senegal**	112.417.177	409.322.528	27.46
Jamaica	290.119.485	1.075.372.393	26.98
Thailand	12.437.140.684	46.280.555.880	26.87
Haiti	8.174.094	31.693.488	25.79
TFYR of Macedonia	294.723.714	1.145.185.408	25.74
Jamaica**	332.728.652	1.386.874.309	23.99
Indonesia	9.228.054.425	40.764.710.912	22.64
Barbados***	58.756.061	282.927.072	20.77
Latvia	236.001.905	1.147.348.128	20.57
Egypt	711.068.361	3.458.338.560	20.56
Turkey	3.718.361.395	18.351.189.489	20.26
Denmark	8.202.583.741	42.520.828.587	19.29
Estonia	343.534.660	1.840.378.240	18.67
Bangladesh	484.361.045	2.714.553.949	17.84
Poland	3.506.679.981	20.028.249.500	17.51
Cyprus	176.317.908	1.019.686.485	17.29
Hungary	1.758.763.011	10.463.975.059	16.81
Norway	5.819.022.835	36.129.240.925	16.11
Netherlands	24.382.608.975	151.531.563.691	16.09
Dominican Rep.**	644.143.846	4.097.815.808	15.72
Lithuania	357.191.212	2.367.331.104	15.09
Belgium-Luxembourg	25.039.206.788	168.153.612.288	14.89
Spain	10.954.059.573	74.590.803.285	14.69
Malaysia	8.700.184.114	59.915.989.467	14.52
Canada	23.376.159.594	167.334.642.917	13.97
China	16.568.774.978	120.509.902.587	13.75
USA	64.466.042.852	520.019.564.412	12.40
Azerbaijan**	77.686.794	631.244.864	12.31
Russian Federation**	10.840.919.506	88.703.000.000	12.22
Tunisia	552.370.319	4.621.189.567	11.95
Philippines**	2.412.661.373	20.542.472.192	11.74

Reporter	Commodities (USD)	Total (USD)	% Dependence
Gabon	268.945.399	2.514.028.544	10.70
Romania	657.219.040	6.317.817.003	10.40
Czech Rep.	1.666.207.833	16.219.736.064	10.27
France	26.067.691.077	258.676.400.128	10.08
Ireland	3.417.651.955	35.680.324.267	9.58
Venezuela	1.707.947.296	17.871.336.960	9.56
Slovakia	692.771.820	7.532.249.856	9.20
Italy	19.013.294.485	210.223.013.888	9.04
Switzerland	6.438.444.417	71.728.563.541	8.98
Mexico	5.594.788.766	64.015.212.544	8.74
Nepal	32.712.286	384.838.816	8.50
Croatia	362.255.410	4.265.609.301	8.49
United Kingdom	16.253.049.953	200.193.758.549	8.12
Congo	79.662.189	990.978.453	8.04
Zambia	70.780.173	1.055.005.568	6.71
Portugal	1.136.342.665	18.922.696.363	6.01
Rep. of Korea	6.059.652.034	101.098.744.491	5.99
China. Macao SAR	107.468.251	1.897.871.061	5.66
China. Hong Kong SAR	8.680.270.963	153.573.482.159	5.65
Slovenia	450.533.828	8.315.799.040	5.42
Austria	2.536.378.055	51.327.557.632	4.94
Andorra	2.347.290	47.803.140	4.91
Germany	20.128.709.291	443.623.871.667	4.54
Singapore	4.369.114.127	96.364.374.699	4.53
Finland	1.287.477.938	31.214.350.336	4.12
Iran***	704.941.606	18.425.255.702	3.83
Cape Verde***	3.113.934	81.534.016	3.82
Sweden	2.310.575.158	62.730.302.805	3.68
Nigeria**	367.580.238	11.393.896.390	3.23
Malta	55.116.222	1.735.436.992	3.18
Oman	164.233.321	5.545.065.472	2.96
Saudi Arabia	475.399.242	44.766.517.931	1.06
Japan	4.096.207.363	399.816.118.068	1.02
Algeria	90.350.953	9.349.383.851	0.97
Bermuda	5.621	64.232.140	0.01
Brunei Darussalam	63.735	2.102.128.448	0.00

\*) 1992; \*\*) 1996; \*\*\*) 1997; \*\*\*\*) 1998. Not available: Angola. Anguilla. Antigua and Barbuda. Aruba. Bhutan. Botswana. Cambodia. Chad. Cook Islands. Cuba. Djibouti. Equatorial Guinea. Eritrea. Fiji. Iraq. Laos. Lesotho. Liberia. Marshall Island. Mauritania. FS Micronesia. Mongolia. Montserrat. Myanmar. Namibia. Nauru. New Caledonia. Niue. Pakistan. Palau. Samoa. Sao Tome and Principe. Sierra Leone. Solomon Islands. Somalia. South Africa. Swaziland. Syria. Tajikistan. Tonga. Tuvalu. Turkmenistan. Uzbekistan. Vietnam. Yemen. Zaire

#### Share of Non-Oil Commodities in Total Exports 1993-95

All commodities	498.642.213.040,50
CDDC share of all commodities (value)	57.535.612.314,67
CDDC share of all commodities (percentage)	11,54
Share of CDDC trade without Australia, Greenland and Iceland (value)	29.007.259.148,33
Share of CDDCs without Australia, Greenland and Iceland	5,82
All agro-commodities	310.316.264.051,67
CDDC share of agro-commodities (value) (without Australia, Iceland, and Faroe Islands)	12.707.456.457,84
CDDC share of agro-commodities (percentage) (without Australia, Iceland, and Faroe Islands)	4,10

## Share of Non-Oil Commodities in Total Exports 2003-05

Reporter	Value Commodities (USD)	Total Value (USD)	% Dependence
Sao Tome and Princip	6.284.564	6.633.656	94.74
New Caledonia	894.684.575	951.969.707	93.98
Burundi	69.673.169	74.313.962	93.76
Botswana*	2.348.552.069	2.532.938.496	92.72
Sierra Leone**	37.830.348	41.421.968	91.33
Mali*	463.825.965	519.310.528	89.32
Faeroe Isds	517.563.692	604.545.780	85.61
United Rep. of Tanza	1.143.206.702	1.342.110.302	85.18
Malawi	412.725.972	485.541.120	85.00
Niger	176.921.977	209.126.176	84.60
Burkina Faso	300.251.402	356.435.360	84.24
Central African Rep.	76.426.689	91.013.418	83.97
Ghana	1.707.479.020	2.051.696.646	83.22
Panama	699.221.373	844.520.187	82.80
Rwanda	41.324.103	50.390.828	82.01
Guyana	414.690.209	507.692.707	81.68
Benin	232.809.860	286.011.258	81.40
Mongolia	678.997.926	845.420.160	80.31
Guinea**	421.799.985	525.437.856	80.28
Iceland	2.144.943.268	2.764.023.620	77.60
Cook Isds	5.983.991	7.818.181	76.54
Madagascar	351.673.679	460.548.956	76.36
Nicaragua	546.275.154	732.894.946	74.54
Paraguay	1.059.373.748	1.433.589.077	73.90
Zimbabwe	1.419.671.977	1.926.065.962	73.71
Ethiopia	377.380.328	512.688.800	73.61
French Polynesia	134.206.074	182.341.323	73.60
Papua New Guinea	1.662.546.956	2.260.152.102	73.56
Armenia	559.676.373	773.230.678	72.38
Uganda	388.446.572	538.955.852	72.07
Cuba*	1.197.458.713	1.664.826.624	71.93
Mozambique	1.272.343.806	1.782.995.180	71.36
Belize	131.630.575	202.835.519	64.90
Seychelles	192.190.661	301.425.415	63.76
Honduras	628.630.272	992.324.922	63.35
Eritrea	4.121.827	6.618.598	62.28
Uruguay	1.592.524.846	2.558.103.332	62.25
Maldives	88.666.052	145.625.690	60.89
Côte d'Ivoire	3.249.623.661	5.493.426.688	59.15
Kyrgyzstan	388.477.942	657.484.975	59.09
Togo	241.454.692	412.957.803	58.47
Peru	5.886.408.445	10.592.135.384	55.57
Saint Vincent and the Grenadine	20.553.369	37.350.684	55.03
Namibia	707.708.348	1.303.668.480	54.29
Kenya	1.345.284.412	2.617.139.420	51.40
Australia	44.638.207.081	91.076.646.989	49.01
Dominican Rep.*	395.826.000	814.348.992	48.61
Fiji	252.893.933	523.529.416	48.31
Gambia	4.396.773	9.417.206	46.69
South Africa	17.899.614.401	39.627.874.133	45.17
Turks and Caicos Isd	4.734.431	11.029.522	42.93
Zambia	520.814.625	1.221.113.854	42.65

Reporter	Value Commodities (USD)	Total Value (USD)	% Dependence
Israel	14.818.868.292	35.201.414.032	42.10
Chile	10.702.842.901	25.485.582.392	42.00
Guatemala	1.165.054.197	2.783.223.674	41.86
Grenada	15.557.173	37.970.608	40.97
Bolivia	786.448.915	1.952.501.028	40.28
Colombia	5.945.380.454	14.910.932.240	39.87
Lebanon	639.607.958	1.634.762.000	39.13
Argentina	13.429.266.267	34.786.509.666	38.60
Ecuador	2.581.221.743	6.822.305.386	37.84
New Zealand	7.332.962.780	19.533.821.581	37.54
Dominica	14.813.260	40.799.055	36.31
Georgia	232.175.296	660.091.176	35.17
Senegal	453.492.361	1.313.956.539	34.51
Brazil	31.870.407.888	94.738.441.534	33.64
Aruba	29.758.209	89.358.827	33.30
India	23.764.657.773	71.440.966.087	33.26
Mauritius	600.267.523	1.930.566.512	31.09
Cameroon	713.303.197	2.390.400.829	29.84
Costa Rica	1.710.955.497	5.876.485.990	29.12
Bahamas*	103.093.037	375.879.744	27.43
Rep. of Moldova	259.231.830	955.934.465	27.12
Saint Lucia	20.101.952	77.478.126	25.95
Sri Lanka	1.321.363.621	5.176.482.567	25.53
Morocco	2.348.823.816	9.349.952.213	25.12
Indonesia	17.670.088.455	70.400.538.767	25.10
Jamaica**	260.936.826	1.104.072.448	23.63
Egypt	1.617.962.079	7.036.762.533	22.99
Bosnia Herzegovina	376.429.952	1.677.116.244	22.45
El Salvador	300.508.380	1.364.856.513	22.02
Jordan	821.464.151	3.750.465.566	21.90
Serbia and Montenegro	820.644.158	3.801.304.573	21.59
TFYR of Macedonia	348.980.932	1.692.664.871	20.62
Barbados	54.163.448	268.678.566	20.16
Greece	3.089.967.436	15.443.262.069	20.01
Nepal	128.445.356	652.694.661	19.68
Swaziland*	131.963.971	677.793.792	19.47
Kazakhstan	3.134.463.905	16.432.648.356	19.07
Suriname*	55.782.000	306.235.000	18.22
Sudan	531.644.698	2.933.980.298	18.12
Gabon	277.847.663	1.549.959.797	17.93
Thailand	16.954.262.905	95.562.949.110	17.74
Bulgaria	1.661.096.197	9.731.720.261	17.07
Albania	94.712.068	568.293.300	16.67
Ukraine	4.974.176.480	29.986.983.819	16.59
Syria	910.776.414	5.556.615.388	16.39
Saint Kitts and Nevi	7.819.751	48.318.068	16.18
Samoa	12.679.66	186.280.381	14.70
Cyprus	174.784.010	1.213.567.741	14.40
Latvia	600.332.732	4.191.682.634	14.32
Denmark	10.381.521.519	74.226.773.630	13.99
Pakistan	1.889.154.909	14.041.451.219	13.45
Spain	22.014.735.447	170.470.141.735	12.91



Reporter	Value Commodities (USD)	Total Value (USD)	% Dependence
Netherlands	33.419.629.391	258.910.469.741	12.91
Andorra	13.526.063	106.252.028	12.73
Bahrain	959.727.609	7.960.170.078	12.06
Belgium	35.868.302.167	298.666.814.339	12.01
Norway	8.900.241.290	74.214.217.038	11.99
Canada	37.068.630.087	316.275.804.509	11.72
Turkey	6.154.855.365	55.186.824.968	11.15
Lesotho**	39.133.668	357.955.648	10.93
Malaysia	12.010.814.865	115.603.718.038	10.39
Bangladesh	602.505.834	5.803.132.577	10.38
Croatia	795.319.212	7.661.108.854	10.38
USA	82.065.185.481	815.284.473.375	10.07
Russian Federation	18.176.305.109	185.511.084.125	9.80
Tunisia	794.373.355	8.519.555.503	9.32
Cape Verde	1.275.537	13.829.673	9.22
Estonia	578.371.905	6.290.823.477	9.19
Poland	5.586.590.365	63.659.106.572	8.78
Lithuania	669.289.377	8.232.234.933	8.13
Italy	25.370.494.145	340.289.291.657	7.46
United Kingdom	25.287.003.130	345.387.295.647	7.32
China. Hong Kong SAR	19.082.198.896	262.123.244.130	7.28
Azerbaijan	253.212.150	3.518.010.301	7.20
France	28.443.531.948	401.074.646.195	7.09
China	39.097.477.502	597.835.500.564	6.54
Venezuela	2.016.096.803	31.487.680.668	6.40
Switzerland	7.162.286.721	115.049.022.168	6.23
Belarus	800.859.240	13.224.830.200	6.06
Philippines	2.354.250.141	39.044.324.761	6.03
Slovakia	1.622.116.570	27.259.410.334	5.95
Portugal	1.960.531.223	33.770.785.188	5.81
Hungary	3.016.793.332	53.905.533.762	5.60
Romania	1.226.061.192	22.944.333.002	5.34
Mexico	10.087.121.412	189.020.174.690	5.34
Luxembourg	605.596.976	11.622.829.553	5.21
Slovenia	828.991.939	15.976.937.957	5.19
Iran	1.715.928.184	33.787.990.477	5.08
Austria	4.536.009.737	102.163.392.148	4.44
Ireland	4.538.985.842	102.448.411.028	4.43
Czech Rep.	2.447.176.326	57.245.917.386	4.27
Yemen	203.961.520	4.829.865.534	4.22
China. Macao SAR	106.785.904	2.696.527.856	3.96
Trinidad and Tobago	207.303.344	5.241.265.465	3.96
Sweden	4.606.645.980	118.346.542.126	3.89
Germany	30.994.334.667	880.714.980.333	3.52
Finland	2.031.054.569	59.552.466.981	3.41
Rep. of Korea	6.919.638.000	244.026.661.967	2.84
Singapore	5.411.053.429	196.082.774.116	2.76
Cambodia	66.597.489	2.458.018.456	2.71
Oman	303.753.802	12.712.950.857	2.39
Malta	48.428.444	2.458.104.738	1.97
Montserrat	46.625	2.484.752	1.88
Japan	7.252.231.284	544.232.616.200	1.33

Reporter	Value Commodities (USD)	Total Value (USD)	% Dependence
Anguilla	45.655	4.993.367	0.91
Algeria	109.298.058	28.347.039.094	0.39
Qatar	57.137.370	19.276.720.195	0.30
Brunei Darussalam	3.073.540	4.144.343.040	0.07
Nigeria	15.607.914	24.078.329.294	0.06

\*) 2001; \*\*) 2002. Not available: Angola. Antigua and Barbuda. Bhutan. Chad. Comoros. Dem. Rep. Congo. Rep. Congo. Djibouti. Equatorial Guinea. Guinea-Bissau. Haiti. Iraq. Kiribati. Laos. Liberia. Marshall Islands. Mauritania. FS. Micronesia. Myanmar. Nauru. Niue. Palau. Solomon Islands. Somalia. Tajikistan. Tonga. Tuvalu. Turkmenistan. Uzbekistan. Vanuatu. Vietnam

#### Share of Non-Oil Commodities in Total Exports 2003-05

All commodities	794.608.811.696,50
CDDC share of all commodities (value)	36.241.525.338,67
CDDC share of all commodities (percentage)	4,56
Share of CDDC trade without Iceland and Faroe Islands (value)	33.579.018.379,17
Share of CDDCs without Iceland and Faroe Islands (percentage)	4,23
All agro-commodities	450.428.721.537,17
CDDC share of agro-commodities (value) (without Iceland, and Faroe Islands)	12.929.973.075,00
CDDC share of agro-commodities (percentage) (without Australia, Iceland, and Faroe Islands)	2,87

## Annex B: List of Non-Oil-commodities

HS 1992 code	Commodity Description
01	Live animals
02	Meat and edible meat offal
03	Fish, crustaceans, molluscs, aquatic invertebrates ne
06	Live trees, plants, bulbs, roots, cut flowers etc
07	Edible vegetables and certain roots and tubers
08	Edible fruit, nuts, peel of citrus fruit, melons
09	Coffee, tea, mate and spices
10	Cereals
12	Oil seed, oleagic fruits, grain, seed, fruit, etc, ne
13	Lac, gums, resins, vegetable saps and extracts nes
15	Animal, vegetable fats and oils, cleavage products, et
16	Meat, fish and seafood food preparations nes
17	Sugars and sugar confectionery
18	Cocoa and cocoa preparations
24 01	Tobacco unmanufactured, tobacco refuse
25	Salt, sulphur, earth, stone, plaster, lime and cement
26	Ores, slag and ash
27 01	Coal, briquettes, ovoids etc, made from coal
40 01	Natural rubber and gums, in primary form, plates, etc
41	Raw hides and skins (other than furskins) and leather
44 01	Fuel wood, wood in chips or particles, wood waste
44 02	Wood charcoal (including shell or nut charcoal)
44 03	Wood in the rough or roughly squared
50	Silk
51	Wool, animal hair, horsehair yarn and fabric thereof
52 01	Cotton, not carded or combed
71	Pearls, precious stones, metals, coins, etc
72 01	Pig iron and spiegeleisen in primary forms
74 01	Copper mattes, cement copper (precipitated copper)
74 02	Unrefined copper, copper anodes, electrolytic refining
75 01	Nickel matte, interim products of nickel metallurgy
75 02	Unwrought nickel
76 01	Unwrought aluminium
76 02	Aluminium waste or scrap
76 03	Aluminium powders and flakes
76 04	Aluminium bars, rods and profiles
78 01	Unwrought lead
78 02	Lead waste or scrap
78 03	Lead bars, rods, profiles and wire
79 01	Unwrought zinc
79 02	Zinc waste or scrap
79 03	Zinc dust, powders and flakes
80 01	Unwrought tin
80 02	Tin waste or scrap
80 03	Tin bars, rods, profiles and wire
81	Other base metals, cermets, articles thereof

# Annex C: Brazil's Development as a Commodity Exporter

## **General**

The rapid expansion of Brazil's export (and domestic) agricultural production over the last twenty years has come about through a physical expansion into the centre-west 'Cerrado' region. This region comprises 137 m ha of good potential virgin land. By 2004 only 50 m ha had been occupied. Of the remainder only 60 m ha can legally come into production under current environmental 'set aside' rules, although as much as 50 m ha of this is good flat land.

The Cerrado was opened up in the 1960s and 70s with government assistance, mainly at this time in the shape of credit and guaranteed high wheat prices. Soybean production took off in the early 80s after the development of suitable tropical varieties. Later corn was introduced. The climate allows two crops per year. The primary cost advantage is the area's low land prices, which even today are only USD 1,800-2,400 per ha.

The average farm size is 1,500 ha. There are 4.5 m ha under cultivation in Mata Grosso but only 3,000 significant commercial farmers. Farm operations are highly capitalised, utilising advanced mechanisation and state of the art technologies including GPS to exploit precision farm practices. Farmers have the size and financial strength to deal direct with the MNCs, who supply them with finance and inputs. In several instances farmers have built their own research, QA and transport infrastructures, either individually or jointly.

There is also highly concessionary public finance (in some cases with interest rates that are negative in real terms) and further public support via crop breeding programmes designed to produce varieties suitable for the region.

A major bottleneck is transport. Over 60% of all products have to be shipped out by truck. Other issues casting a shadow over the region's future development include land seizures by squatters and demands for expansion of Indian reserves.

## **Soybean**

Brazil is the second largest producer globally and leading exporter of soybean. Production grew from 23.2 m tonnes in 1996 to 49.6 m tonne in 2004. Soybean yields are identical to those in the US but production costs are 20-25% lower. The Cerrado (unlike the South of Brazil) is so far GM-free. Cargill, Bunge and ADM are the dominant players and they supply credit, extension services and inputs to contracted farmers. Soybean exports grew from 3.6 m tonnes in 1996 to 19.3 m tonnes in 2004. The growth in exports has been largely directed to the Chinese market, which accounted for 5.6-6 m tones in 2003 and 2004. Soybean accounts for around a third of total Brazilian agricultural exports.

## **Cotton**

Brazil became a net importer of cotton in the late 1980s and the harvested area continued to fall until 1996. But varietal improvements and increasing mechanisation have seen the cotton area in Mato Grosso, Goia and Bahia increase from 0.56 m ha. in 1996 to 0.85 m ha in 2000. By then the Cerrado accounted for 86% of Brazil's cotton crop and cotton had become the second crop after soybean. Yields are 50-70% higher than in the US. Production in 2004 was 2.9 m tonnes, of which 0.33 m tonne was exported. The main export destinations were Indonesia, Pakistan and Japan. The leading operator is SLC Agricola, which controls 32,820 ha.

## **Corn**

Production increased by 74% from 1980 to 2004 (when it was 41.8 m tonne). Brazil became a net exporter for the first time on 2000-01. The main reason for the growth of corn has been as a rotation crop for soybean, to control for nematodes. About 5m tonnes was exported in 2004, up from 0.4 m tonne in 1996. The main export destinations are Korea, southern Europe and the Middle East. Cargill, Bunge and ADM are again the dominant contracting and post-harvest players.

## **Rice**

Rice owes its role in the Cerrado to its role as a first crop after rangeland is replaced. After 1-2 years it is replaced by soya. Brazil's rice area actually declined by 50% from the late 70s, to 3.3 m ha in the mid-90s.

However production has increased substantially since the mid-90s from around 8.6 m tonnes to 13.3 m tonnes in 2004. Only a fraction of this is exported. Exports were 36,700 tonnes in 2004, of which 40% went to Senegal.

### **Beef**

Since 2000 Brazil was able to take over a leading position in the world beef market due to BSE in the US, but against a background of a large increase in its herd size (by 24%, 1994-2005). Its commercial herd is the largest in the world (163.6 m head). One third of the herd is the Cerrado, where however it competes for land with soybean and sugar. Herds have been upgraded to a limited extent using imported semen from classical beef breeds, but the Brazilian product is slower growing and less well muscled than Australian beef. It also commands a lower price. To improve pasture productivity some ranches are leasing land to soybean producers on a sharecropping basis. This land will be under soybean for 3-5 years. Public credit at concessio-nary rates has been available for herd improvement. Government also put USD 0.8m into global marketing.

Beef production increased from 6 m tonnes in 1996 to 8.35 m tonnes in 2004. Exports in 2004 were 0.99 m tones, mostly frozen meat, up from less than 0.1 m tonnes in 1996. The largest export destinations were the Russian Federation, Egypt, Chile and Iraq. Market access to the lucrative US market will not be possible without Foot & Mouth Disease eradication. Globally, Brazil does not compete directly with the US, whose main market is the Pacific Rim. The sector is dominated by Brazilian-owned firms (notably Sadia and Perdigao), mostly belonging to diversified family groups and integrated backwards into ranching. The sector's overall CR4 is 40%, but over 60% in the export sub-sector.

### **Poultry**

The rapid growth of the poultry sector, also on the Cerrado, has been partly driven by the increased availability of corn and soybean meal. Production doubled from 4 m tonnes in 1996 to 8.5 m tonnes in 2004. Exports increased over the same period from 0.6 m tonnes to 2.6 m tonnes. The main export destinations are Saudi Arabia, Japan, Russian Federation and Hong Kong. Poultry is dominated by the same companies as beef, plus Frangosul (owned by the French multinational Doux) and Seara. The export sub-sector CR4 is 80%. Almost all production is based on contracting.

### **Sugar**

Brazil is the world's largest sugar producer and the cost leader. It produces the 'cristal' form of sugar that passes both as a high quality raw sugar and a low quality refined sugar. Production increased from 31.7 m tones in 1996 to 41.6 m tonnes in 2004. This occurred partly on the basis of a geographical shift of production from the north east to the centre-south and centre-west. Exports increased from 4 m tonnes to 9.6 m tonnes over the same period. The main export destinations are the Russian Fed., followed some way behind by India, Egypt and Canada. The export sub-sector CR4 is 24%, with the market leader being Uniaie with 17% of capacity. There is a mixture of vertical integration and production contracts.

The Brazilian government is more directly involved in this sector than others, through its role in determining the proportion of ethanol that must be used in petrol consumed in Brazil. The government increases blending ratios when sugar prices are low. Brazilian exporters are also major beneficiaries of the US sugar trade regime, on the basis of being the second largest TRQ holder into the US market.

### **Coffee**

Coffee production shifted to the area around Patrocinia in the Cerrado in the 1970s and 80s, after suffering from frosts in the Sao Paulo area. About half of all Brazilian coffee now comes from region, as opposed to ca. 15% in the 1970s and ca. 30% in the 1980s. Besides protecting the crop from adverse weather conditions, the shift has allowed Brazil to become a low cost producer, benefiting from irrigation, high fertilisation and mechanisation. Coffee is grown vineyard-style in spaced rows. Traceability to farm level is general. Sales are organised individually by very large corporate estates and cooperatively.

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