DIIS · DANISH INSTITUTE FOR INTERNATIONAL STUDIES
STRANDGADE 56 · 1401 COPENHAGEN K · DENMARK
TEL +45 32 69 87 87 · diis@diis.dk · www.diis.dk

AGRO-COMMODITY DEPENDENCE AND RECENT TRENDS IN AGRO-COMMODITY MARKETS

Peter Gibbon

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Danish Institute for International Studies, DIIS
Strandgade 56, DK-1401 Copenhagen, Denmark
Ph: +45 32 69 87 87
Fax: +45 32 69 87 00
E-mails: diis@diis.dk
Web: www.diis.dk
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Peter Gibbon is senior researcher with the research unit on Trade and Development, Danish Institute for Development Studies

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Abstract

This paper examines trends in agro-commodity trade over the decade to 2005, in relation to the changing patterns of import demand and price trends, globally and in Developing Asia. It also examines the performance of 'commodity-dependent developing countries' (CDDCs) in agro-commodity trade. It finds that the 'commodity boom' does not extent to agro-commodities, although demand in Developing Asia is becoming an increasingly important factor, at least in less differentiated market segments. The agro-commodity trade performance of CDDCs is weak and apparently declining. The paper goes onto discuss reasons for the latter and to suggest policies that may mitigate these trends.

1. Introduction

It is widely acknowledged that commodity dependence is a serious problem for a large number of developing countries. Indeed, since the beginning of the 1980s this has been acknowledged on both a more frequent and widespread basis. On the other hand, 'commodity dependence' is rarely defined in a precise way, so the real extent of the problem has been little explored. Moreover, for some observers, such a discussion has lost some of its relevance in the last few years. This has been in the context of a partial re-evaluation of the development potential of commodity trade, on the basis of the post-2002 'commodity boom'. Albeit with great caution, Mayer & Fajarnes (2005) and UNCTAD (2006) argue that rising demand in 'Developing Asia' promises a new trajectory of development for countries with factor endowments in commodities in general and in a number of commodities in particular. In most cases, the commodities in question are minerals. However, a number of agro-commodities are also named in these studies as cases where demand in Developing Asia is rising sharply and where countries, even in Africa, can expect a sustained increase in export incomes over a number of years.

Against this background, this paper sets out to answer four main empirical questions. Firstly, it provides an answer to the question of the dimensions of the problem of non-oil commodity dependence. It does so by proposing a clear operational definition of this term and measuring developing countries' export composition in these terms over two periods, 1993-95 and 2003-05. Secondly, it evaluates whether the boom in demand and prices widely recognised to be taking place across a wide range of minerals, also pertains to agro-commodities. This is addressed by looking at trends between these two periods in export values and unit prices for 17 different agro-commodities, spanning the whole range of meats, traditional tropical beverages, animal feed crops (including oilseeds), traditional and modern food crops, industrial crops, cut flowers and tropical timber. Thirdly, it addresses the extent of changes in demand and prices for these commodities in Developing Asia and China, also between 1993-95 and 2003-05. Fourthly, it examines how 'commodity dependent developing countries' (CDDCs) have fared in the trade for the commodities concerned, globally and in Asia, in terms of market shares and shares of global unit prices over the same period.

The paper's four initial sections focus on these questions in turn. They conclude that global demand for agro-commodities has been generally flat over the last decade and that prices have generally fallen in real terms. On the other hand, demand has been buoyant for a number of commodities in Developing Asia and China, though unit import prices in these markets continue to be well below world averages. Meanwhile, CDDCs have witnessed declining market share and

declining shares of global unit prices in world agro-commodity markets. CDDCs' market share in Developing Asia and China is much lower than in world markets, and is not improving. Finally, there is insufficient evidence to comment in detail on the unit import prices commanded by CDDCs in Asian markets.

The two remaining sections of the paper discuss which countries' agro-commodity trade performance has improved over the last decade, while those of CDDCs has faltered. They go on to discuss some of the reasons behind this divergence in performance and to review policy options for improving CDDCs' commodity trade performance.

2. Commodity-dependent developing countries (CDDCs)

While the term 'CDDC' is commonly used in international fora, typically it is applied in a rather vague way. The most common variable employed in describing the extent of countries' commodity dependence is the share occupied by one, two or three commodities in total exports, although the precise indicator justifying when to employ the term is rarely mentioned. The definition adopted here is more precise: developing countries for which 50% or more of all merchandise exports (by value) were made up of non-oil commodities, in either or both the periods 1993-95 and 2003-05. 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. The source employed to generate this and all other trade data reported in the paper is the UN Comtrade data base.[1]

During 1993-95 there were 47 developing countries reporting data to Comtrade whose average annual exports for the period were more than 50% composed of non-oil commodities. In addition, of the 46 countries that did not report trade data to Comtrade, probably at least half were

[1] This is employed in preference to FAOSTAT, mainly because Comtrade distinguishes the trade of the People's Republic of China from that of other Chinese territories throughout the period covered. There are also grounds to consider it more reliable.

also CDDCs.[2] By 2003-05 there were 43 countries reporting data to Comtrade that were CDDCs.[3] 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. 13 countries graduated from CDDC status between the periods, including some relatively large exporters such as Colombia, Ecuador and Costa Rica. The largest single concentration of CDDCs is in Africa, where more than two thirds of all countries reporting trade data to Comtrade fall currently into this category. A list of non-reporting countries is provided in Appendix A.

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

1993-95		2003-05	
Bahamas	Kiribati	Armenia	Mongolia
Belize	Madagascar	Belize	Mozambique
Benin	Malawi	Benin	Namibia
Bolivia	Maldives	Botswana	New Caledonia
Burkina Faso	Mali	Burkina Faso	Nicaragua
Burundi	Mozambique	Burundi	Niger
Cameroon	Nicaragua	Central African	Panama
Central African Republic	Niger	Republic	Papua New Guinea
Colombia	Panama	Cook Islands	Paraguay
Comoros	Paraguay	Côte d'Ivoire	Peru
Costa Rica	Peru	Cuba	Rwanda
Côte d'Ivoire	Reunion	Eritrea	Sao Tome & Principe
Dominica	Rwanda	Ethiopia	St Vincent & the Gren-
Ecuador	St Kitts & Nevis	French Polynesia	adines
Ethiopia	St Lucia	Ghana	Seychelles
French Polynesia	St Vincent & the	Guinea	Sierra Leone
Gambia	Grenadines	Guyana	Tanzania
Ghana	Sudan	Honduras	Togo
Grenada	Tanzania	Kenya	Uganda
Guatemala	Togo	Kyrgystan	Uruguay
Guinea	Uganda	Madagascar	Zimbabwe
Guyana	Uruguay	Malawi	
Honduras	Vanuatu	Maldives	
Kenya	Zimbabwe	Mali	

Coverage is of Comtrade reporters only. Non-reporters are listed in Appendix A. Listing is in alphabetical order.

[2] 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.

[3] 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 1.

3. Agro-Commodity trade, 1993-95 to 2003-05

(A) 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**,** one or two commodities are examined from each of 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 reviewed here increased in aggregate by 29.6%. However, amongst 'bulk commodities'[4], 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.[5]

Despite strong increases from 2002 onwards, nominal unit export prices for the commodities reviewed here fell over the period in all but five of the 16 cases for which price data is available.[6] 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.

[4] 'Bulk commodities' are defined here as commodities whose price was below $0.50/kg. in 2003-05.

[5] The overall trade tropical timber has not fallen; more tropical timber is being exported from producing countries in processed forms.

[6] Anderson, Martinez-Garmedia & King (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%.

Table 1: Trends in the volume and value of commodity export trade 1993/95-2003/05

Commodity	Change in volume 93/95 to 03/05 (%)	Change in value 93/95 to 03/05 (%)	Unit.price change 93/95 to 03/05 (%)	Average value of trade 1993-95 ($ bill)	Average value of trade 2003-05 ($ bill)
Seafood	Not applicable	+47.8	Not applicable	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

All tables are based on Comtrade. Data on tropical timber in this table uses International Tropical Timber Organisation (ITTO) data for 1995 and 1996 and 2002 and 2003. No volume figures are provided for seafood in Comtrade.

For the decade 1993-95 to 2003-05 as a whole, the most important development for agro-commodities as a group was a steep decline in prices between around 1995 and 2000-01, to a series of historical lows. Subsequently there has been a partial recovery, but not enough for prices to re-attain their 1993-95 real values. 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).

The main reason for low agro-commodity prices is structural over-supply, especially of undifferentiated basic product. 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 (Gibbon & Ponte, 2005). 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 (see

e.g., Fernando-Cornejo & Caswell, 2006; Gudoshnikov et al., 2004; Childs, 2005). Fourthly, spectacular increases in production by late entrants have been recorded for a number of products. This has occurred for several commodities in the cases of Brazil and Vietnam, as well as for 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.[7]

(B) 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 is 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, 2005).

Developing country agricultural imports have a different composition from those 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

[7] 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).

capacity leads to imports of raw material replacing imports of processed products. [8] 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 developing 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. Some members of this group of countries have been referred to above; their characteristics will be described in Section 6. 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.

This is 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.

4. The changing character of demand in 'Developing Asia'

Table 2 summarises recent changes in import demand in markets in Developing Asia (i.e., Asia other than Japan) and China for the commodities reviewed. It is clear from the table that such growth in global demand as there has been in the last decade is a result of increased demand in Developing Asia. Whereas the aggregate import value of the group of commodities discussed here increased globally 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, these spectacular increases in aggregate import demand mask huge variations in the trends for particular products. Import

[8] See Gudoshnikov et al. (2004) on sugar refining and Ash et al. (2006) and LMC International (2003) on soybean crushing.

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.

Table 2: Developing Asia's imports by value and by share in world imports 1993/95-2003/05

Commodity	Change in global value (%)	Change in Dev. Asia value (%)	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)
Cocoa*	+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)
Nat.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)
Fr./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.

* 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.

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 only moderately (tea, rubber, cotton), or is falling (tropical logs and tropical sawn wood).

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 in Asia 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.

Two interlinked themes of a great deal of the contemporary literature on trade in agro-commodities are the escalation of standards and the growth in demand for 'higher value' variants of these commodities (Daviron & Ponte, 2005). In the case of meat and seafood, OECD country food safety standards have become more stringent following a succession of food safety scares. In the case of almost all the commodities discussed here, standards assuring specific crop management, animal management and labour conditions have been also adopted on a considerable scale in OECD end markets. In these countries the markets for products with 'sustainable' characteristics, when taken together with ones for product variants distinguished by producer 'brands' (e.g., estate tea and coffee, region of origin labels, animal herd origin) make up very high proportions of total consumption. In the Netherlands in 2006, for example, coffees certified to different 'sustainability' standards alone had a market share of 27.8% (Dutch Coffee Coalition, 2006, Figure 3). However, 'higher value' variants of products are not all expensive to produce (Regmi & Gelhar, 2005), 'sustainability' standards are not all exacting or costly to conform to (Daviron & Ponte, op. cit.) and non-standard variants of some commodities are typically differentiated in less exacting ways, most commonly intrinsic varietal differentiation and product presentation.

On the other hand, in the case of non-OECD markets, evidence suggests the ongoing salience for 'lower value' rather than 'higher value' product variants. Table 3 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 differentiated only in terms of more traditional standards or not 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.

Table 3: Average unit prices for all imports, Developing Asia and China, 1993-95 and 2003-05 (% above or below world unit import price)

	Developing Asia		China	
Commodity	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 $5 million/year, unit prices therefore not calculated

Discussion of standards in the existing literature rarely takes 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 , the Middle East and parts of Asia is satisfied by 'direct plantation whites' such as Brazilian cristal sugar – unrefined cane sugars that can pass as refined (Gudoshnikov et al., 2004: 157).

5. Trade performance of CDDCs, 1993-95 to 2003-05

(A) CDDCS' PERFORMANCE IN GLOBAL TRADE

CDDCs account for only a tiny proportion of global commodity trade (Table 4). CDDCs' share of *all* commodity trade (including trade in minerals) was 5.8% in 1993-95 and 4.2% in 2003-05. For agro-commodity trade it was 4.1% in 1993-95 and 2.9% in 2003-05. Not too much should be made of these falls, since they were the result of the graduation of 13 countries from CDDC status noted in Section 2 (the 1993-95 cohort of CDDCs had a commodity trade share of 6.0% in 2003-05), a process that also affected CDDCs' shares of trade for some individual commodities. Of more concern is the very low overall trade share of CDDCs, given their large numbers and their high levels of commodity dependence. Furthermore, it is notable in 2003-05, CDDCs had a global export market share higher than 10% for only two (tea, cotton) of the seven agro-commodities for which global demand was expanding fastest (the others being bananas, seafood, chicken, soybeans and fresh/chilled vegetables).

Across the range of commodities discussed, the median of all average unit export prices commanded by CDDCs, expressed in terms of shares of all global average unit export prices, was -14.1% of the global average in 1993-95 and -17.7% in 2003-05. Average unit export prices received by CDDCs were lower than the global average unit price for 10 of 16 commodities in 1993-95 and for 12 of 16 in 2003-05. These lower prices presumably reflect a predominance of CDDCs' sales in lower-value forms (for example, frozen as opposed to chilled meat and seafood), in varieties and national origins with average or inferior reputations (for example, African tea) or which were characterised by other dimensions of poor quality. It may also to a certain extent reflect a predominance of sales on poorer commercial terms, due to lower volumes or inability to lock-in forward prices through combining volume and predictability of output (Gibbon, 2001).

Table 4: 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	1993-95		2003-05		Commodity	1993-95		2003-05	
	Trade share	Price share	Trade share	Price share		Trade share	Price share	Trade share	Price share
Seafood	5.2	n/a	4.1	n/a	Cotton	14.7	-0.6	13.9	-23.5
Beef	2.9	-29.2	4.1	-38.6	Natural Rubber	2.7	0.0	1.9	-10.5
Chicken	0.1	-28.9	0.0	-6.3	Bananas	67.4	-15.6	*7.4	-6.1
Cocoa	81.6	+7.8	*70.6	+29.1	Fresh/chilled veg.	1.3	-30.8	3.3	+19.9
Coffee	52.7	+5.3	*20.1	-1.5	Cut flowers	18.3	-36.0	*12.4	-44.3
Tea	2.6	-53.8	20.5	-41.5	Tropical logs*	10.4	-4.3	5.2	+42.4
Rice	3.5	+2.0	0.8	-24.7	Tropical s. wood*	21.4	+8.5	11.8	+16.2
Corn/Maize	1.0	+13.4	0.8	-17.7	All agro-com..**	4.1	n/a	2.9	n/a
Soybeans	3.5	-23.4	3.9	-19.0	All commodities	5.8	n/a	4.2	n/a
Sugar*	8.0	-14.1	4.4	-6.3					

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

(B) CDDCS' PERFORMANCE IN 'DEVELOPING ASIA'

The global agro-commodity market shares of CDDCs reported in Table 4 above refer to exports rather than imports, and therefore this data is not strictly comparable with that reported in Table 5 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. Whereas the median of CDDCs' shares of the global export markets for the commodities reviewed was 5.2% in 1993-95 and 4.4% in 2003-05 (Table 4), it was 0.7% in Developing Asia and 0.0% in China in 1993-95 and 0.6% in Developing Asia and 1.6% in China in 2003-05. In other words, CDDCs' exports appear to be disproportionately directed to markets in other regions, mostly developed country ones, where prices are somewhat better but where demand is generally stagnant or declining. Given the fact that CDDCs are not improving their trade performance relative to other commodity producers in global markets, it is of particular concern that their performance in Developing Asia is so weak.

Some grounds for optimism may be found in the fact that there were significant improvements in CDDC import market shares in Developing Asia and China for cocoa, tea and cotton between 1993-95 and 2003-05 – crops all subject to growing demand in the region (cf. Table 2). However, for other products where Developing Asia's and China's imports grew fast (soybeans, seafood,

chicken, natural rubber, bananas) CDDCs' market shares in Asia remained negligible or actually declined – albeit in one or two cases with graduation as a decisive factor.

Table 5: CCDC share of Developing Asia and China imports (% of total) 1993-95 and 2003-05

	Developing Asia		China	
Commodity	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

Because of the generally low levels of imports from CDDCs into Developing Asia and China, data on average unit import prices commanded by CDDCs in these markets is rather sparse. Table 6 presents unit price data for commodities where CDDC imports were worth an average of $2.0 million or more during 1993-95 and/or 2003/05. In both periods, imports from CDDCs had this value only for just over half of the commodities discussed in this paper in Developing Asia markets and for less than half in China. For the commodities where trade was above this level, it appears that CDDC imports command above average unit prices in these markets.

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. On the other hand, there are few signs that CDDC exports to these markets are penalised on quality grounds in the same way that they are on global markets. However, there is still little to suggest that Asian demand can in and of itself drag CDDCs out of their current difficulties.

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 $2 million/year, unit prices therefore not calculated
** import data not credible

6. Winners and losers in agro-commodity trade, 1993-95 to 2003-05

(A) THE WINNERS

While CDDCs' agro-commodity trade performance has faltered over the last decade, countries such as Thailand, Columbia, Indonesia, Vietnam and above all Brazil have maintained or risen to dominant market positions across several commodities. In 2003-05, Brazil occupied a top ten place by magnitude of export value for eight of the commodity export trades reviewed here (including three first places and three second places). Thailand and Indonesia each occupied top ten places for five (including two first places for Thailand), and Columbia for four. Vietnam almost certainly also falls into this category, although the precise dimensions of its success are elusive as it does not report data to Comtrade. However, it is known to have re-established its traditionally leading role in the international rice trade by 2003-05 (Childs, op. cit.) while achieving leading positions in the coffee (ICO, 2006), cashew nut (Icon Group International, 2006) and shrimp markets (Josupiet, 2004).

This group of countries enjoy relative land abundance and are mostly characterised by reasonable infrastructure and availability of capital. They 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, has fed into wider economic development. In the process, most have become actually less commodity-dependent over the past decade. The overall average level of non-oil commodity dependence of Brazil, Thailand, Indonesia and Columbia as a group fell from 35.1% in 1993-95 to 29.1% in 2003-05 (Comtrade).

With the possible exception of Vietnam, easily the main agro-commodity trade winner over the last decade has been Brazil. Not only does the country occupy a leading export position for more commodities than any other, but for three of these commodities (beef, corn and cotton) it has attained top five statuses from positions that in 1993-95 were outside the top ten. Moreover, it occupies top five export positions in three of the five agro-commodity trades covered that are growing most rapidly globally (soybeans, chicken and cotton). Brazil has also been the world's leading exporter of unmanufactured tobacco throughout the last decade, and in 2002 enjoyed a 91% world market share for concentrated orange juice (Diop & Jaffee, 2005).

Brazil's agro-commodity export expansion has been based on the opening up of the centre-west Cerrado region from the 1960s-70s onwards, initially on the basis of government credit and price support for grains. The region comprises 137 million hectare of good potential land, of which less than 40% is so far occupied. It is an area of highly capitalised estate-type farms (average size 1,500 hectare), utilising advanced mechanisation, and irrigation and state of the art technologies including GPS to exploit precision farm practices. The agricultural economy of the region is highly integrated, horizontally and vertically. Horizontally, production of beef, rice, corn and soybeans is linked in rotations. Vertically, corn and soybean-based animal feed production is integrated with chicken production via local processing, as well as being directed to export markets for animal feed processing there. It is cultivated on the basis of contract farming systems organised in Brazil by large multinational corporations such as Bunge, Cargill and ADM, who also undertake its international transport and processing in importing countries. Another kind of vertical integration is exhibited in very large-scale corporate export farming operations in coffee, beef and cotton (Azevado et al., 2004; Matthey et al., 2004; Schnepf et al., 2001; Schmitz et al., 2002; Steiger, 2006).

In contrast, 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 premiums 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 supplies of very cheap labour.

(B) FACTORS DRIVING POLARISATION IN PERFORMANCE

Two factors may be considered particularly important in the polarisation of agro-commodity trade performance between the handful of countries just described on the one hand and CDDCs on the other. These comprise new scale economies of associated with commodity market bifurcation and the restructuring of the global value chains for these products.

(i) New economies of scale

The proposition that economies of scale become more important as product and process standards proliferate and become more stringent is well-known (Cf. Unnevehr & Hirschhorn, 2000). The argument is that costs of conformity per unit of production fall in direct proportion to production volume, since these costs are typically physically indivisible. Hence, where greater economies of scale are enjoyed in agro-commodity production and post-harvest processing and handling, operators benefiting from them will enjoy higher marginal returns. Furthermore, higher

volumes will enable an optimisation of the benefits of whatever premiums are attached to standards conformity.

Moving to the case of markets characterised by low standards and low prices, it is evident that operations enjoying economies of scale will again be substantially more competitive than those that do not. This is because, providing they specialise, they can in this case use higher volumes to compensate for low margins. Where markets are bifurcating, as in the case of many of the agro-commodity markets discussed here, large operators can not only take advantage of economies of scale in either high value or low margin markets but also enhance their economies of scale further by physically dividing their operations between a sub-operation geared to producing to high standards and another geared strictly to volume production. Such a sub-division allows for pooling inputs, labour, processing and handling facilities, transport and marketing capability - to the extents that standards conformity conditions permit.

Examples of very large-scale operations combining bulk production for the undifferentiated market with lower volume production certified to fairly exacting standards are found for several commodities in those countries occupying dominant positions in global commodity markets. For example, in Brazil's Cerrado region are found coffee farms with up to 2,000 hectare under high input farming systems where bushes are planted vineyard-style in spaced rows to allow mechanical picking and where processing is also mechanised. On these same estates a few hundred hectares may be also set aside for one or another form of 'sustainability' certification. Here, inputs will be used sparingly, the crop may be partially covered by shade trees, picking will be by hand and beans will be sun dried (e.g., Holland Coffee, 2003). Only where farm operations are extremely large, capital easily accessible and market information good are such operations possible.

(ii) 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 types of lead firm driving this process and the forms taken by coordination vary greatly between chains.

Just as markets are increasingly subject to bifurcation, so is the process of value-chain restructuring. While the chains for animal feeds, meats and shrimp are being organised increasingly on the basis of vertical coordination organised by processors, those for fresh produce and some traditional tropical commodities are more and more characterised by vertical disintegration by retail-

ers and end-processors. However, in both cases there are associated processes of supplier concentration.

Prior to the mid-1990s, the value chains for animal feeds, meats and shrimp 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 and market opening, a complex of interlocking chains has emerged linking the inter-continental animal feed production systems described earlier in this section with animal production in the US, Europe, Oceania and Asia and with shrimp production in Asia. The large corporate trader-processors mentioned are 'partnered' in one location after another by more specialised US, Japanese and French meat producers such as IBP/Tyson, Nippon and Doux; and with agribusiness combines from 'Developing Asia' such as the Chareon Pokphand (CP) Group of Thailand (Heffernan et al., 1999; Spencer, op. cit.; LMC International, op. cit.).[9] The point of such integration is to promote greater standardisation of production and optimal utilisation of capacity. Standardisation of production is facilitated via standardisation of inputs and greater control over their use. This in turn allows production of units of consistent size and quality, thereby facilitating lower handling and processing costs. Greater control over production of inputs also enables greater consistency in volumes, thereby allowing better cost-spreading.

Unlike the developments just described, the rise of retailer-driven chains for fresh produce 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 transferring to them responsibilities for management of logistics, inventory and new product development (cf. Dolan & Humphrey, 2004). 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-

[9] 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.
The main actors today 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.

distributors such as Dole and Chiquita are now by-passed 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 (Kasteele & Stichele, 2005).

A related change concerns the tendency for the global chain for coffee to become shorter and more dominated by a highly concentrated group of processors, who are active in re-allocating functions along the chain. The handful of roasters who dominate the international market for this commodity (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 (Daviron & Ponte, op. cit.).

In the case of vertical integration, supplier concentration (corporate and national) follows from the high level of competitiveness attained by the operators concerned and resulting losses of market share by those unable to integrate. In the case of the type of vertical disintegration characterising value chain restructuring for fresh produce and for some traditional tropical commodities, supplier concentration emerges as a result of intermediaries seeking reductions in transaction costs vis-à-vis suppliers. Intermediaries seek these in order to compensate for the increases in costs associated with the absorption of new service functions handed off to them by retailers (or, in the case of coffee, by roasters). Since CDDCs are typically small countries with restricted and resource-poor smallholder supply bases, they tend to be by-passed where supply-base concentration is pursued strategically.

The overall result of these processes is market marginalisation: increasing restriction of CDDCs as a category of countries, and of most producers in CDDCs, to residual lower-priced markets within OECD countries and – the data suggests – to markets in developing countries that are not experiencing as dynamic expansion as those in Developing Asia.

7. Responding to the new structure of challenges and opportunities

(A) THE NEW STRUCTURE OF CHALLENGES AND OPPORTUNITIES

Low cost, large-scale and better-resourced producers appear well-placed both to ride out the current challenges and to take advantage of the emerging structure of opportunities in agro-commodity markets. 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 trade liberalisation and resulting preference erosion that may eventually materialise from the WTO Doha Round,[10] as well as to become preferred suppliers or contract farmers where lead firms seek to squeeze transaction costs out of supply chains, or re-enforce control along them by vertically integrating.[11] 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.

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 (e.g., for cocoa). Furthermore, smaller producers can compensate for lower scale economies on the basis of becoming organised in larger entities.

[10] Anderson, Martin and van der Mensbrugghe'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.

[11] MacDonald, Perry, Ahearn, Banker, Chambers, Dmitri et al. (2004) report that whereas 11% of all US farmers were under contract in 2002, 41.7% of farmers with sales over $0.25 mill. were. This group had an average of 42.2% of production contracted. Those farmers whose sales exceeded $1 mill. had 46.6% of production contracted.

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 most strictly presentational forms of product differentiation favoured in OECD markets (e.g., washing, slicing and mixing for salad, heads-off shrimp, fish fillets, etc) 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 overall is 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 would also generate considerable benefits. Further prerequisites for improved agro-commodity performance include meeting initial costs of conformity to those new quality dimensions dependent on monitoring labour, and meeting costs for improvements to trade-related infrastructure.

(B) 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.

(i) 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[12] they long ago ceased to be the main users. More

[12] The SICOM natural rubber exchange in Singapore is mainly a 'traders' exchange'.

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 and 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, op. cit.).[13]

(ii) 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

[13] 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.

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'.[14]

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.

(iii) 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.

[14] See Eicher & Baker (1992) and Johnson (2005) for similar arguments.

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.[15] 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.

(iv) 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.

[15] 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).

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 4). As noted above, insofar as relevant data is available on this question, CDDC crops generally do not seem to be punished in price terms in Developing Asian markets (Table 6). 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 also 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.

(v) 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.

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Appendix A: Non-reporters to Comtrade

1993-95	**2003-05**
Angola	Angola
Anguilla	Antigua and Barbuda
Antigua and Barbuda	Bhutan
Aruba	Chad
Bhutan	Comoros
Botswana	Dem. Rep. Congo
Cambodia	Rep. Congo
Chad	Djibouti
Cook Islands	Equatorial Guinea
Cuba	Guinea-Bissau
Djibouti	Haiti
Equatorial Guinea	Iraq
Eritrea	Kiribati
Fiji	Laos
Iraq	Liberia
Laos	Marshall Islands
Lesotho	Mauritania
Liberia	FS Micronesia
Marshall Island	Myanmar
Mauritania	Nauru
FS Micronesia	Niue
Mongolia	Palau
Montserrat	Solomon Islands
Myanmar	Somalia
Namibia	Tajikistan
Nauru	Tonga
New Caledonia	Tuvalu
Niue	Turkmenistan
Pakistan	Uzbekistan
Palau	Vanuatu
Samoa	Vietnam
Sao Tomé and Principe	
Sierra Leone	
Solomon Islands	
Somalia	
South Africa	
Swaziland	
Syria	
Tajikistan	
Tonga	
Tuvalu	
Turkmenistan	
Uzbekistan	
Vietnam	
Yemen	
Zaire	