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Achieving Greater Food Security through South-South Trade? – A CGE Analysis of the Potential Impact of Food Trade Liberalisation

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Abstract

Over the last two decades, a remarkable albeit rarely noted change has occurred in global food markets: developed countries have lost their pre-eminence as the leading producers of food. Of the top 10 producers of food in value terms, six are now developing or transition economies. China alone – the largest food producer in the world – has now an annual agricultural production more than twice as much as the second largest (the United States). At the same time, consumption patterns have change and developing countries have increased their food imports. South-South food trade has increased from 5.1 percent of total food trade in 1990 to 28 percent in 2011. Food security is increasingly tied up with developments in the agricultural markets of other developing countries. Against this backdrop, this paper has three objectives: Firstly, it documents the nature of some of these changes in consumption and production patterns in the developing world (with a particular focus on China). Secondly, it reviews the persistence of relatively high tariff barriers in the context of South-South trade for agricultural goods. Finally, the paper looks at the scope for improving food security and increasing the dynamism of food production in the developing world by reducing tariffs on South-South food trade. Using a computable general equilibrium model (GTAP), we simulate the impact of removing tariffs on South-South food trade and find (within the confines of the model) relatively large positive gains.

Key words: Trade Policy and International Trade Organizations, Trade forecasting and Simulation, Agriculture, Agricultural Policy, Food Policy.

JEL Classification: F13, F17, O13, Q17, Q18

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1. Introduction

Over the last two decades, a remarkable albeit rarely noted change has occurred in global food markets: developed countries have lost their pre-eminence as the leading producers of food. Of the top 10 producers of food in value terms, six are now developing or transition economies. China alone – the largest food producer in the world –had by 2012an annual agricultural production more than twice as much as the second largest (the United States). At the same time, consumption patterns have change and developing countries have increased their food imports. South-South food trade has increased from 5.1 percent of total food trade in 1990 to 28 percent in 2011. In a very real sense, food security is increasingly tied up with developments in the agricultural markets of other developing countries.

Why is the analysis of S-S food trade dynamics relevant? First, the south (particularly China) will account for increases in food consumption which domestic supply will not be able to fulfil and food imports will increase to fill the gap. Second, the regions which can and will experience increasing food production are in the South. And finally, the trends in food trade increasingly point to south-south food trade taking a more dominant position.

This paper is structured as follows. Firstly, it documents the nature of some of these changes in production and consumption patterns in the developing world (with a particular focus on China) (Section 2). Secondly, it discusses the extent to which agriculture has been part of the recent multilateral trade negotiations (Section 3). Third, Section 4 analyses the persistence of relatively high tariff barriers in the context of South-South trade for agricultural goods. Finally, the paper looks at the scope for improving food security and increasing the dynamism of food production in the developing world by reducing tariffs on south-south food trade. Using a computable general equilibrium model (GTAP), we simulate the impact of removing tariffs on S-S food trade (Section 5 and 6). Section 7 summarizes the findings of the paper.

2. The Changing Economic Geography of Global Food Production

In 1990, the global north produced nearly half of the world's food, accounting for 74% of global trade in food. In contrast, the global south, accounting for 80% of the world's population, produced less than 54% of food production and accounted for less than 25% of global food trade. Nearly 70% of the southern food imports came from the North.

Two decades later, while the north continues to dominate global food trade (63%), the centre in agricultural food production and consumption has started to move to the south. Between 1991 and 2011, global food production more than doubled from USD 1,500 billion to USD 3,740 (in current USD) with 40% of this increase being accounted by China alone. Between 2003 and 2011 other developing countries experienced increases in agricultural production with Angola (13.7%), Chad (11.9%), Ethiopia (9.3%) and Mozambique (7.4%) having some of the highest average annual growth rates. Trade patterns reflect this change, with 48% of food imports for the South in 2012, coming from other southern countries relative to 28% in 1990.

Agricultural food products, compared to other commodities such as oil and minerals, are quite distinct as production and consumption tends to be heavily localised, with only a small percentage of total production being available in international markets. For example, while global food production in 2011 was USD 3,740 billion, global food trade in that year was USD 350 billion. In contrast the ratio between crude oil production and exports is nearly 50%.

In terms of global consumption, the largest producers also tend to be the largest consumers of food products, leaving a smaller surplus for trade purposes. Table 1 shows the consumption as a share of production for the top five producers for wheat, rice and coarse grains. China and India tend to consume nearly all of their domestic production, while some surplus is available from the United States, Russia, the EU, Viet Nam and Brazil.

Table 1: Consumption as a share of domestic production (2011 - 2012)- top-five producers for wheat, rice and coarse grain

	Production	Consumption	Cons as % of Prod
	Wheat ('000 tonnes)		
EU 27	137,355	126,780	92%
China	117,920	121,450	103%
India	86,870	81,220	93%
Russia	56,231	37,570	67%
United States	54,413	32,180	59%
	Rice ('000 tonnes)		
China	140,700	139,600	99%
India	105,310	93,334	89%
Indonesia	36,500	39,550	108%
Bangladesh	33,700	34,300	102%
Vietnam	27,075	19,650	73%
	Coarse Grain ('000 tonnes)		
United States	323,905	290,053	90%
China	201,080	203,040	101%
EU 27	147,133	147,920	101%
Brazil	75,824	54,949	72%

Source: Pocket World in figures, 2014 edition (The Economist, 2014)

The impact of China on global food markets is going to become increasingly important. The Chinese domestic policy has been geared towards food self-sufficiency, but it is increasingly clear that domestic resources are no longer enough to ensure food security and China is turning towards international food markets to meet its demand. It has moved from net surplus to net deficit in a number of traditionally consumed food categories, while changing tastes have led to the emergence of new categories of food imports.

Table 2 shows exports as a percentage of domestic production and imports as a share of domestic consumption between 2000 and 2011. For all products, in 2011, China's exports as share of domestic production are negligible, and have decreased (apart from wheat and beef where there is a small increase) between 2000 and 2011.

Although China is one of the largest food producers in the world, with its growing domestic demand, little surplus has been carried over into the export markets. As for the share of imports

in domestic consumption, three different trends are observed between 2011 and 2000. For corn, meat (both swine and beef), sugar, soy bean oil seeds and wheat a larger share of domestic consumption is being met by imports. Milk, soy bean oil and rice on the other hand have seen the share of imports in consumption fall (the corresponding fall in exports as a share of production for these items would indicate a the lowering of imports for consumption may have come at the cost of lesser exports as a share of production for these items). In general

Table 2 supports the argument that as production levels have increased in China, greater domestic consumption is lowering exports and increasing imports at the same time; supporting China's overall move from a trade surplus to deficit.

Table 2: Exports as percentage share of Production, and Imports as Percentage Share of Consumption for selected Food Items for China.

Product	Exports /Production		Imports /Consumption	
	2000	2011	2000	2011
Corn	6.9	0.1	0.1	2.1
Dairy, Milk, Fluid	0.3	0.1	0.2	0.1
Rice, Milled	1.4	0.4	1.0	0.7
Meat, Swine	0.4	0.5	0.2	1.1
Oil, Soybean	1.6	0.6	17.5	11.3
Sugar, Centrifugal	6.2	0.7	0.5	1.5
Oilseed, Soybean	1.4	1.5	373.9	471.1
Wheat	0.6	0.8	0.2	1.3
Meat, Beef and Veal	0.9	1.1	0.3	0.8

Source: Calculated from USDA data, accessed March 2012 (based on volume and not value data)

At this time 12% of the land available for cultivation is being utilised (with 30% of the earth's land in total available for agricultural use.) Theoretically 1.5 billion hectares of land is available for agricultural production. As Table 3 indicates, Asia Pacific currently utilises the largest share of irrigated land (64%), followed by the Middle East and Africa, North America and Latin America. Between 2000 and 2010, the proportion of globally cultivated irrigated land increased by 7.1 per cent. Two-thirds of this irrigated land lies in Asia and has been a major source of agricultural output growth in that region.

Table 3: The global distribution of cultivated land (hectares, percentage)

	Arable Land	Irrigated Land	Permanent Cropland
World - 000 Hectares	1,379,000	307,000	147,000
% Change (2000-2010)	0.1	7.3	11
Share of global land use			
Asia Pacific	30	64	44
Middle East and Africa	19	10	22
North America	16	8	7
Latin America	11	7	14
Western Europe	7	6	9
Eastern Europe	15	4	4
Australasia	3	1	0

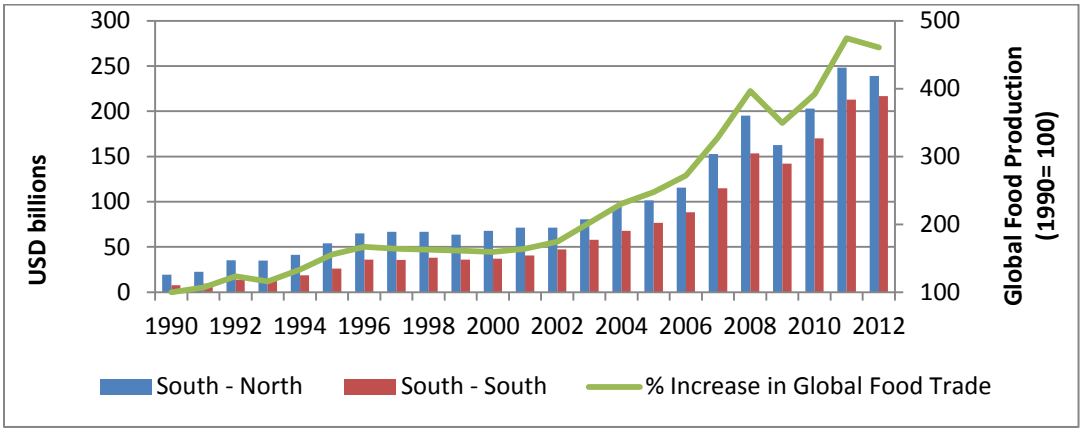
Source: Compiled from Euromonitor International data Online.<http://www.portal.euromonitor.com> (accessed February 2011).

Increased land usage is one possible avenue for increased food production; however there are a number of constraints. The Food and Agriculture Organisation (FAO) (2009) assumes that whereas land under cultivation grew at an annual rate of 0.3% per year between 1961 and 2005, the rate of increase of cultivated land will fall to 0.1% per year between 2005 and 2050. A large share of the feasible land for cultivation is located in Latin America and Africa, with more than half of this land frontier limited to seven countries – Brazil, Argentina, Colombia, Bolivia, the Democratic Republic of Congo and Sudan. There is no significant land frontier available in Asia in general, and in China and India in particular (Farooki and Kaplinsky, 2012). While increase in productivity, per hectare yields and technology will allow for production increases in other regions, agricultural land utilisation is likely to be seen in the south. One indication of this already is the issue of 'land grab', where countries as diverse as Saudi Arabia, South Korea and India have acquired land, on long term leases, for cultivation in Africa[i].

The limited ability of China to meet its growing food consumption from domestic production is indicative that the surplus demand will spill out on to international markets. India's economic growth as well as additional demand from other developing countries, will contribute to an overall increase in demand for food. Table 3 suggests that the increase in food production is more likely to happen in other southern patterns than in the north. Thus increasingly southern production and consumption will begin to influence food trade flows. Figure 1 shows the level of food imports, for the south, by origin. Between 1990 and 2012, global food imports have nearly

quadrupled, with 53% of the South's imports coming from the north in 2012, a considerable drop from the 71% in 1990.

Figure 1: Food Imports for the south by origin



Source: calculated from UNCTAD statistics, accessed via WITS <wits.worldbank.org> (accessed 14th April, 2014)

3. Global Agricultural Trade and the Multilateral System

Whilst worldwide food and agricultural production structure has evolved rapidly over the last 10-15 years, relevant markets at multilateral level continue to be regulated by the 20-year old Agreement on Agriculture, signed at the Uruguay Round. In the year 2000, the Doha Declaration provided a clear mandate "to establish a fair and market-oriented trading system through a programme of fundamental reform encompassing strengthened rules and specific commitments on support and protection, in order to correct and prevent restrictions and distortions in world agricultural markets" (WT/MIN(01)/DEC/1 ; paragraph 13). Comprehensive negotiations in all three pillars of market access, domestic support and export competition have stalled, however, since December 2008, when the latest Agriculture modalities (Revision 4) were abandoned.

The successful conclusion of the 9th WTO Ministerial Conference in Bali has certainly contributed to revitalizing the multilateral negotiation process, but in concrete terms its agricultural components have entailed only minor changes to the status quo. Decision WT/MIN(13)/W/9 has incorporated in the non-exhaustive list of general services also programmes related to land rehabilitation, soil conservation and resource management, drought management and flood control, rural employment programmes, issuance of property titles, and farmer settlement programmes. In addition, Ministerial Decision WT/MIN(13)/W/10 has put in place an interim peace clause that ensures that WTO "members shall refrain from challenging

through the WTO Dispute Settlement Mechanism… support provided for traditional staple food crops in pursuance of public stockholding programmes for food security purposes" (paragraph 2).[ii] Beyond the two above items, the other decisions adopted in Bali on agricultural issues – namely the one on Tariff Rate Quotas Administration (WT/MIN(13)/W/11), the one on Export Competition (WT/MIN(13)/W/12), and the one on Cotton (WT/MIN(13)/W/13) – are characterized by rather vague wording and best endeavour clauses.[iii]

Against this background, even though the Bali package recommitted WTO members to the development objectives set out in the Doha Declaration, it is unclear how a controversial dossier, such as agriculture, will be addressed. At the time of writing, a number of negotiators from developing countries (African Group included) would like to re-start the discussions from the December 2008 modalities; some developed countries – US in primis – would instead prefer to start the negotiation afresh.

What is clear from the evidence on the ground is that global agricultural markets are radically different from the time of the Uruguay round. The previous analysis of worldwide production patterns certainly corroborates this statement, but significant changes have taken place also with respect to other facets of agricultural market. Developed countries' support to domestic agriculture has also evolved radically since 1994, in line with the provision of the Agreement on Agriculture. Green box subsidies nowadays account for the bulk of funds, mostly disbursed in the form of decoupled income support (notably for environmental purposes), insurance payments, and structural adjustment assistance for rural development or resource retirement programmes. Yet, even though the shift towards green box subsidies has allowed developed countries to respect the bound limits for domestic support, the analysis of notifications to the WTO shows that the total notified domestic support has not necessarily declined.[iv]

Coupled with the persistent barriers to agricultural market access to developed economies (notably in terms of stringent Non-Tariff Barriers see next section), the above trends have given rise to the widespread perception that the demands of developing countries have so far been eluded. At this stage, the analysis carried out in the rest of the paper seeks to demonstrate that, regardless of the uncertain prospects of the multilateral agenda, greater integration of food and

agricultural markets amongst developing countries could go a long way to enhancing food security.

4. Persistent Barriers to Food and Agricultural Trade

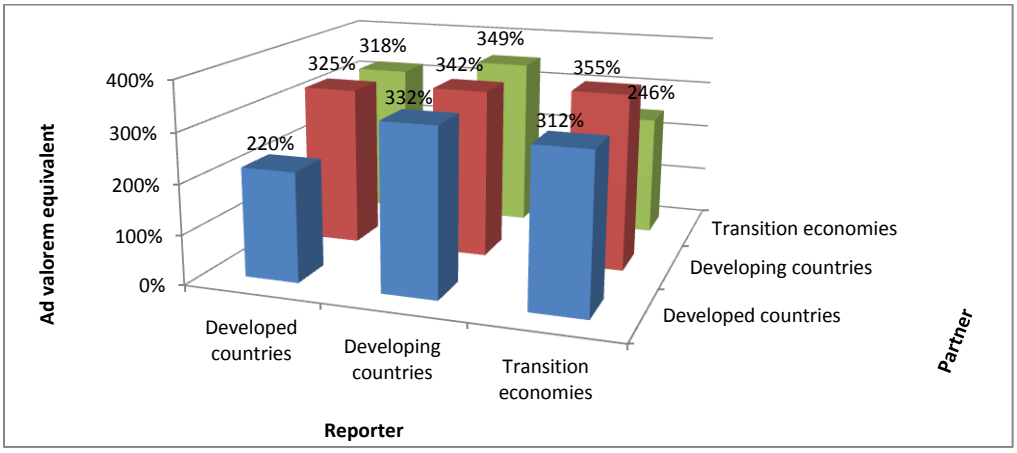
Despite the recent increases in production, international trade in food and agricultural products continues to face significant barriers worldwide.[v] Moreover, whether one is looking at tariff or non-tariff barriers, transaction costs hampering food and agricultural trade appear to be relatively higher than those affecting international trade in manufactured goods (Arvis et al., 2013). In order to shed more light on the above issue and reinforce the arguments made later on, the present section reviews evidence from the ESCAP-World Bank Trade Costs Database, which allows assessing trade frictions between each pair of trading partners, and disentangling the impact of tariff barriers as opposed to all other elements affecting comprehensive trade costs.[vi]

Before entering into the analysis, some methodological caveats are worth mentioning. Comprehensive trade costs are derived indirectly from an inverse gravity framework: they are inferred from the observed pattern of trade and production on the basis of a standard gravity model (see Novy, 2012; and Arvis et al. 2013). By construction, comprehensive trade costs are measured in ad-valorem equivalent relatively to domestic trade costs, and their nature is intrinsically bilateral, since they are obtained as the geometric average of trade costs in both directions, i.e. those facing exports from country i to j, and those facing exports from country j to i.[vii]

With these caveats in mind, the following considerations can be drawn from the analysis of comprehensive trade costs. In general, international trade in food and agricultural products tends to incur higher comprehensive trade costs than trade in manufactures.[viii] Broadly speaking, this trend holds true across country income groups, and can be traced largely to the disproportionate impact of non-tariff barriers. Beyond global averages, however, it is particularly interesting to look at the bilateral trade relations across country groups, as done in Figure 1. Comprehensive trade costs for agricultural goods appear to be significantly higher when developing countries are involved, exceeding 300 percent in ad-valorem equivalent.[ix] Equally insightful, whereas developed and transition economies face significantly lower comprehensive trade costs when trading with their "peers", than with partners belonging to different country groups, South-South

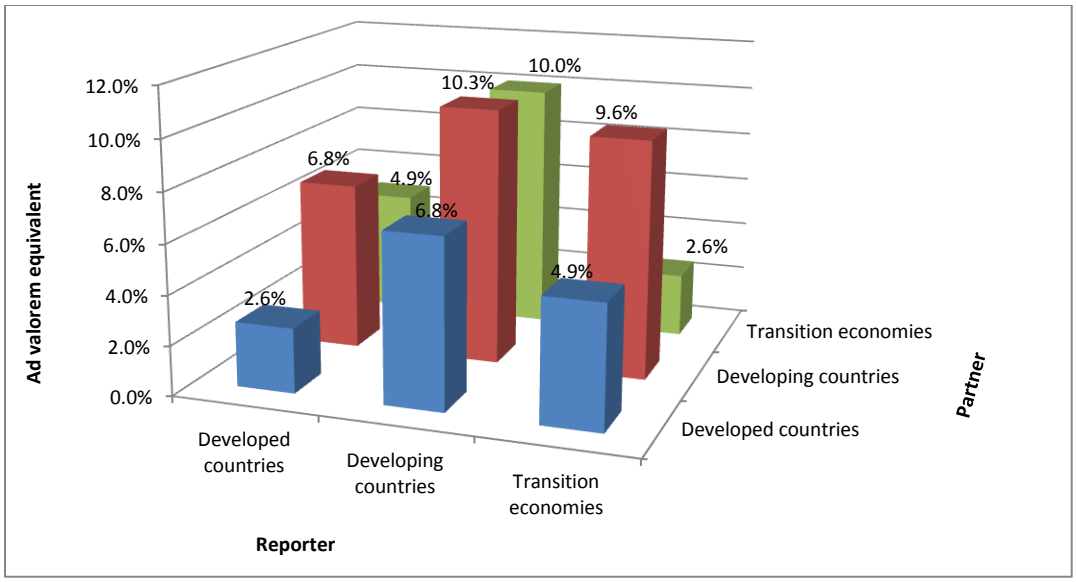
agricultural trade is essentially as costly as trade with developed or transition economies. This stylized fact points to the widespread persistence of trade frictions not only in North-South agricultural trade, but also within the South itself.

Figure 2: Bilateral comprehensive trade costs for agricultural goods by country group (2005-2011 average)



Source: ESCAP-World Bank Trade Costs Database

Figure 3: Bilateral tariffs costs for agricultural goods by country group (2005-2011)



Source: ESCAP-World Bank Trade Costs Database

Against this background, and keeping in mind that the value of comprehensive trade costs cannot be directly traced to specific policy changes (see footnote vii), it is insightful to look at the component of comprehensive trade cost that is explained by tariffs. In order to do so, Figure 2 essentially replicates the above analysis taking into consideration the geometric average of tariffs applied from country i to agricultural exports originating in country j, and vice versa.[x] Though

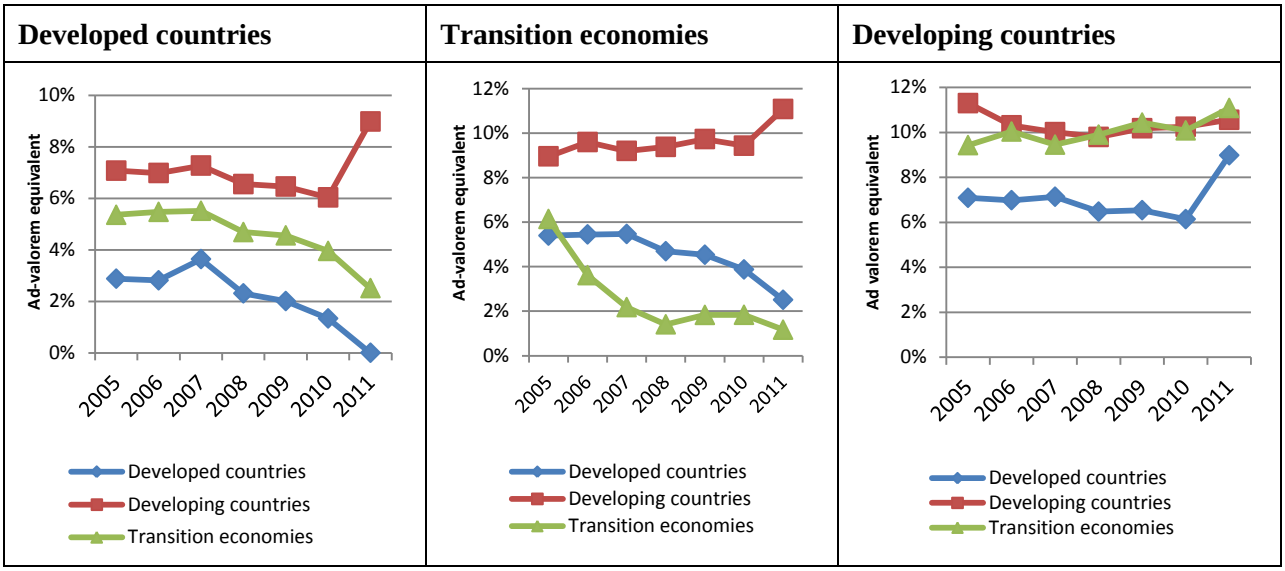
tariffs play a quantitatively minor role compared to other elements captured by the comprehensive trade costs, Figure 2 vindicates the argument made above. Indeed, developing countries' trade in agricultural goods tends to be subject to relatively higher tariff costs regardless of the partner. Moreover – and perhaps even more strikingly – on average South-South agricultural trade faces the highest tariff costs across all pairs of country groups.

Since figure 3 averages out all values spanning the period 2005-2011, it is instructive to look at the evolution of bilateral costs over time as done in Figure 3. The three panels of the chart report bilateral tariff costs (i.e. the geometric average of tariffs applied from country i to agricultural exports originating in country j, and vice versa) faced by developed transition and developing economies respectively, against each partner-country groups. Two key considerations can be drawn in this respect.

First, Figure 4 confirms that bilateral tariff costs for agricultural goods are systematically higher for developing countries than for other country groups. Only agricultural trade between developing countries and transition economies is as costly as trade amongst developing countries themselves (see panel 3). Secondly, whereas bilateral tariff costs on agricultural trade involving developed and transition economies appear to be gradually shrinking, tariff costs for developing economies stubbornly hover around their 2005 level without any clear downward trend.[xi]

Overall, the evidence reviewed here clearly points to the persistence of significant barriers to international trade in food and agricultural products, particularly with regards to South-South trade and more generally trade involving developing countries. Whilst this situation stems from a wide array of factors – ranging from poor infrastructures and trade facilitation issues, to Sanitary and Phyto-Sanitary measures – the pattern of applied tariffs suggests that tariff costs on agricultural trade are especially pronounced within the South. This adds further relevance to the arguments and simulations developed in the rest of the paper.

Figure 4: Bilateral tariff costs of agricultural goods, by partner-country group



Source: ESCAP-World Bank Trade Costs Database

5. Simulation Methodology

There are a number of past simulation studies which have focussed on the welfare benefits inherent in liberalising South-South trade flows further. A study by Fugazza and Vanzetti (2008) suggests that S-S trade liberalization is the scenario that produces the best result for developing countries overall. Using the Global Trade Analysis Project (GTAP) model —a static general-equilibrium model—Fugazza and Vanetti simulated the effects of the elimination of tariffs for each of North-South and S-S trade. While the opening up of northern markets provided estimated annual welfare gains to developing countries of nearly USD 22 billion, the welfare effects of S-S trade liberalization were around 40% higher (See also Kowalski and Shepherd, 2006.) In another recent paper using GTAP 7.0 to simulate various scenarios of South-South trade liberalisation, Mold and Prizzon (2013) find relatively large gains (59 billion USD) from reducing tariffs on S-S trade to the levels prevalent on North-North trade. The gains are particularly pronounced in terms of manufacturing exports and production. None of the above simulation exercises, however, focus specifically on agricultural or food trade. That is the focus of the current exercise.

The standard GTAP model used in this paper is a static, multiregional, multisector, CGE model that assumes perfect competition and constant returns to scale. The database used for the simulations is the version GTAP 8.0. The regional aggregation for this paper involves allocating

countries between South and North categories (transition countries are ignored in the simulations), and distinguishing between four different broad categories of food/agricultural outputs. All other products are placed in a residual 'rest' category. Descriptions of the aggregations are to be found in the annex.

The simulations were based on the standard GTAP closure, adapted to allow for fixed real wages in the South. In line with the hypothesis of the classic Lewis two-sector model of development, this proxies for un- and under-employment in the South. Input-output tables in the GTAP model reflect the links between sectors, assuming that investment adjusts endogenously to changes in savings. The trade balance can vary, so that at the national level a change in exports need not equal the change in imports. Real exchange rates are implicit in the model and are assumed to be fully flexible. In the labor market it is assumed that the amount of skilled and unskilled labor is fixed and cannot move between regions (although it can move readily between sectors) (see Hertel, 1997, for a full description of the GTAP model).

Table 4: Average Applied Tariffs on Food Trade

1.Grainscrops	North	South
North	4.8	8.2
South	6.1	8.1
2 Meat/Livestock		
North	7	9.1
South	19.2	6.6
3 Extraction		
North	1.1	1.9
South	2.4	2.7
4 Processed Food		
North	4	13.4
South	8.9	12.8
5 Rest		
North	0.7	4.5
South	1.5	4.1

Source: Own elaboration, from GTAP simulations

Initial tariff levels as computed through the GTAP database for the North and South aggregates roughly correspond with the analysis in earlier sections of this paper. South-South tariff levels, as revealed by average applied tariffs, are particularly high on processed foods (12.8 percent) compared to North-North tariffs of 4 percent.[xii] But tariffs are also nearly double the level of

North-North tariffs on the essential (from the point of view of basic food security) grains and crops sectoral aggregation (Table 4). The simulation involves eliminating all tariff barriers on South-South food trade.

6. Simulation Results

The results of aggregate welfare gains from the complete liberalisation (admittedly an unrealistic scenario, but one which gives some indication of the scale of potential gains) are shown in Table 5. Welfare gains are in the order of USD 20 billion (1984) for the South as a group. There are corresponding relatively small welfare losses of 1.7 billion USD for northern food producers, essentially as they lose market share in the developing world from the reduction on South-South tariffs.

These figures are certainly, by global standards, quite small orders of magnitude. Nevertheless, by the standards of the kind of welfare benefits commonly obtained in CGE models nowadays, the benefits are actually quite significant. As pointed out in Fosu and Mold (2008), and Ackerman (2005), because of a combination of more complete databases, more accurate information on existing preferential market access, and better modelling techniques, CGE models now typically show much smaller benefits from trade liberalisation than was the case in the 1990s, when the use of this kind of model became commonplace. Welfare benefits from total global liberalisation are now typically calculated in the order of US 120 billion – a really quite small total for a global economy in 2012 in excess of US 72 trillion. Moreover, some simulations show an even smaller share of global benefits accruing to

Table 5: Welfare results

EV	(Sim)
North	-1700.76
South	19884.4

Source: Own elaboration, from GTAP simulations

This implies that the gains from South-South agricultural liberalisation alone would contribute about 15-20 percent of the global gains from total global liberalisation. Driving these results is are marked improvements in both allocative efficiency and endowments, i.e. from changes in the availability of primary factors— for example, increases in the stock of agricultural land (the endowment effect). Improvements in the terms of trade also play a role (Table 6).

Table 6: Welfare decomposition

WELFARE	1 alloc_A1	2 endw_B1	3 tech_C1	4 pop_D1	5 tot_E1	6 IS_F1	7 pref_G1	Total
1 North	14.9	0	0	0	-1803.3	87.7	0	-1700.8
2 South	3428.3	14740.4	0	0	1803.4	-87.7	0	19884.4
Total	3443.2	14740.4	0	0	0.1	0	0	18183.6

Source: Own elaboration, from GTAP simulations

With regards to the impact of the tariff reductions on South-South trade, particularly noticeable is the impact on grains/crop imports (12.1 percent), meat/livestock (10.6 percent), and processed commodities (15.8 percent) (Table 7), The trade balance in processed foods with the North, in particular, improves markedly as tariffs are reduced on S-S trade (Table 8). This finding is encouraging with regards to the scope for enhancing manufacturing and processing capacities for food and beverages in the South.

Table 7: Aggregate imports

Qiw	North	South
GrainsCrops	-0.7	12.09
MeatLstk	-0.17	10.6
Extraction	-0.21	3.21
ProcFood	-0.02	15.81
Rest	-0.03	0.17

Source: Own elaboration, from GTAP simulations

Table 8: Trade balance post-simulation

DTBALi	North	South
GrainsCrops	-2818	1158
MeatLstk	-1723	1562
Extraction	-35	3
ProcFood	-10586	8323
Rest	18020	-13903

Source: Own elaboration, from GTAP simulations

South-South trade increases by a total of US 51 billion, a result which is mostly due to trade creation between southern partners, although part (USD 9.3 billion) is also the result of trade deflection from partners in the North (Table 9).

Table 9: Total Exports between North and South

Source/Destination	1 North	2 South	Total
1 North	5410	-9300	-3889
2 South	-9861	51902	42041
Total	-4450	42602	38152

Source: Own elaboration, from GTAP simulations

An associated development is the impact that the liberalisation has on both food prices and production in the south – implications which are especially important in terms of improving food security. Grains/crops decline in price by -4.2 percent, while for processed foods, the decline is even larger (-7.1 percent). Relatively small declines like this can make a big difference for households on low incomes in terms of being able to afford food.

Table 10: Changes in Global Prices

Pim	North	South
GrainsCrops	-0.03	-4.2
MeatLstk	-0.09	-2.98
Extraction	-0.03	-1.44
ProcFood	-0.11	-7.21
Rest	-0.02	-0.01

Source: Own elaboration, from GTAP simulations

[TO BE ADDED – Alternative simulation with disaggregated South regions (Latin America, SSA, Asia) to explore if some regions in the South benefit much more than others].

7. Conclusions [To be completed]

Barriers to agricultural and food imports - particularly for Southern exporters to Northern markets - have been a constant stumbling block in multilateral negotiations. In this paper, we argue that, while these impediments to agricultural exports are indeed serious, there is another dimension to the issue which needs to be taken fully into account, namely, the extent to which developing countries in the south continue to impede agricultural trade. This will become all the more important as the centre of economic gravity of global food production continues to shift towards the developing world, as documented in the first half of this paper.

This paper subsequently reveals some modest (by global standards) but important potential gains from South-South food trade liberalisation. Moreover, the static nature of the simulations needs stressing. Defenders of the results of CGE models often suggest that it is misleading to focus

simply on the static impact of trade liberalisation because it ignores the potential benefits from a dynamic perspective, and that those dynamic benefits could be a multiple of the estimated static gains.[xiii]

Of course, S-S tariff reductions on agricultural and food tariffs represent a necessary but not sufficient condition to expand S-S agricultural trade flows. A further practical dimension that must not be forgotten is the prevalence of NTBs - and this is something not captured in our simulation results (which relies on tariff data). Access to markets is often impeded by a myriad non-tariff barriers (NTBs) – a long list including licensing, quotas and tariff quotas, voluntary export restraints and price-control measures, and extending to import controls on food and phytosanitary standards– and the problem is not just a North-South problem (Mold, 2005).

The route to greater S-S trade in food products will be multiple - in S-S forums like the Sao-Paulo Round, through region integration schemes, or through bilateral negotiations.[xiv]

REFERENCES

ACKERMAN, F. (2005), "The Shrinking Gains from Trade: A Critical Assessment of Doha Round Projections", Global Development and Environment Institute, Tufts University, Working Paper 05-01, Medford, MA.

Arvis, Jean-François & Duval, Yann & Shepherd, Ben & Utoktham,Chorthip, 2013. "Trade costs in the developing world: 1995 - 2010,"Policy Research Working Paper Series 6309, The World Bank.

FOSU, A.K. and A. MOLD (2008), "Gains from Trade: Implications for Labour Market Adjustment and Poverty Reduction in Africa", African Development Review, Vol. 20, No. 1, pp. 20-48.

FUGAZZA, M. and D. VANZETTI (2006), "A South-South Survival Strategy: The Potential for Trade Among Developing Countries", UNCTAD POLICY ISSUES IN INTERNATIONAL TRADE AND COMMODITIES STUDY SERIES No. 33.

HERTEL, T.W. (ed.) (1997), Global Trade Analysis: Modeling and Applications, Cambridge University Press, Cambridge and New York

MOLD, A. (2005), "Non-Tariff Barriers and the Hong Kong Negotiations: How much of a Risk do Phytosanitary Controls Pose?", Bridges, Year 9, No. 10, December, Available at: www.ictsd.org/monthly/bridges/BRIDGES9-10.pdf#page=19.

Novy, Dennis, 2013.*"Gravity Redux: Measuring International Trade Costs With Panel Data"* Economic Inquiry, Western Economic Association International, vol. 51(1), pages 101-121, 01.

PIERMARTINI, R., and R. TEH (2005). 'Demystifying Modelling Methods for Trade Policy'. WTO Discussion Papers 10, WTO, Geneva.

Valensisi, Giovanni & Karingi, Stephen, 2014. "*From Doha to Bali: the unfinished business and the lessons for Africa,"* mimeo

Weeks, John (1996), 'Regional Cooperation and Southern African Development', Journal of Southern African Studies, volume 22, Number 1, March, pp. 99-117

Annex:

	Old	region		New	region
3	xoc	Rest of Oceania	2	South	Low income/southern countries
4	chn	China	2	South	Low income/southern countries
5	hkg	Hong Kong	2	South	Low income/southern countries
8	mng	Mongolia	2	South	Low income/southern countries
9	twn	Taiwan	2	South	Low income/southern countries
10	xea	Rest of East Asia	2	South	Low income/southern countries
11	khm	Cambodia	2	South	Low income/southern countries
12	idn	Indonesia	2	South	Low income/southern countries
13	lao	Lao People's Democratic Republic	2	South	Low income/southern countries
14	mys	Malaysia	2	South	Low income/southern countries
15	phl	Philippines	2	South	Low income/southern countries
16	sgp	Singapore	2	South	Low income/southern countries
17	tha	Thailand	2	South	Low income/southern countries
18	vnm	Viet Nam	2	South	Low income/southern countries
19	xse	Rest of Southeast Asia	2	South	Low income/southern countries
20	bgd	Bangladesh	2	South	Low income/southern countries
21	ind	India	2	South	Low income/southern countries
22	npl	Nepal	2	South	Low income/southern countries
23	pak	Pakistan	2	South	Low income/southern countries
24	lka	Sri Lanka	2	South	Low income/southern countries
25	xsa	Rest of South Asia	2	South	Low income/southern countries
28	mex	Mexico	2	South	Low income/southern countries
30	arg	Argentina	2	South	Low income/southern countries
31	bol	Bolivia	2	South	Low income/southern countries
32	bra	Brazil	2	South	Low income/southern countries
33	chl	Chile	2	South	Low income/southern countries
34	col	Colombia	2	South	Low income/southern countries
35	ecu	Ecuador	2	South	Low income/southern countries
36	pry	Paraguay	2	South	Low income/southern countries
37	per	Peru	2	South	Low income/southern countries
38	ury	Uruguay	2	South	Low income/southern countries
39	ven	Venezuela	2	South	Low income/southern countries
40	xsm	Rest of South America	2	South	Low income/southern countries
41	cri	Costa Rica	2	South	Low income/southern countries
42	gtm	Guatemala	2	South	Low income/southern countries
43	hnd	Honduras	2	South	Low income/southern countries
44	nic	Nicaragua	2	South	Low income/southern countries
45	pan	Panama	2	South	Low income/southern countries
46	slv	El Salvador	2	South	Low income/southern countries
47	xca	Rest of Central America	2	South	Low income/southern countries

48	xcb	Caribbean	2	South	Low income/southern countries
86	kaz	Kazakhstan	2	South	Low income/southern countries
87	kgz	Kyrgyztan	2	South	Low income/southern countries
88	xsu	Rest of Former Soviet Union	2	South	Low income/southern countries
89	arm	Armenia	2	South	Low income/southern countries
90	aze	Azerbaijan	2	South	Low income/southern countries
91	geo	Georgia	2	South	Low income/southern countries
92	bhr	Bahrain	2	South	Low income/southern countries
93	irn	Iran Islamic Republic of	2	South	Low income/southern countries
95	kwt	Kuwait	2	South	Low income/southern countries
96	omn	Oman	2	South	Low income/southern countries
97	qat	Qatar	2	South	Low income/southern countries
98	sau	Saudi Arabia	2	South	Low income/southern countries
100	are	United Arab Emirates	2	South	Low income/southern countries
101	xws	Rest of Western Asia	2	South	Low income/southern countries
102	egy	Egypt	2	South	Low income/southern countries
103	mar	Morocco	2	South	Low income/southern countries
104	tun	Tunisia	2	South	Low income/southern countries
105	xnf	Rest of North Africa	2	South	Low income/southern countries
106	cmr	Cameroon	2	South	Low income/southern countries
107	civ	Cote d'Ivoire	2	South	Low income/southern countries
108	gha	Ghana	2	South	Low income/southern countries
109	nga	Nigeria	2	South	Low income/southern countries
110	sen	Senegal	2	South	Low income/southern countries
111	xwf	Rest of Western Africa	2	South	Low income/southern countries
112	xcf	Central Africa	2	South	Low income/southern countries
113	xac	South Central Africa	2	South	Low income/southern countries
114	eth	Ethiopia	2	South	Low income/southern countries
115	ken	Kenya	2	South	Low income/southern countries
116	mdg	Madagascar	2	South	Low income/southern countries
117	mwi	Malawi	2	South	Low income/southern countries
118	mus	Mauritius	2	South	Low income/southern countries
119	moz	Mozambique	2	South	Low income/southern countries
120	tza	Tanzania	2	South	Low income/southern countries
121	uga	Uganda	2	South	Low income/southern countries
122	zmb	Zambia	2	South	Low income/southern countries
123	zwe	Zimbabwe	2	South	Low income/southern countries
124	xec	Rest of Eastern Africa	2	South	Low income/southern countries
125	bwa	Botswana	2	South	Low income/southern countries
126	nam	Namibia	2	South	Low income/southern countries
127	zaf	South Africa	2	South	Low income/southern countries
128	xsc	Rest of South African Customs	2	South	Low income/southern countries
129	xtw	Rest of the World	2	South	Low income/southern countries

Notes:

[i] It is unclear how much global land is under 'foreign' lease, estimates vary. The International Land Coalition (an NGO) reports nearly 80 million hectares were under negotiation for the 2000-11 period. The World Bank estimates a much lower figure, around 57 million hectares, while IFPRI provides an even lower figure of between 15 and 20 million hectares. However, there is consensus that nearly half the area under such land lease deals is in Africa, followed by Asia and Latin America (The Economist, 2011).

[ii] Notice that the interim "peace clause" for developing countries shall apply until a permanent solution is found. However, it is subject to a number of conditions:

i) It only applies to programmes existing as of the date of the Decision;

ii) beneficiaries must have notified the WTO's Committee on Agriculture that they are exceeding or at risk of exceeding their Aggregate Measurement of Support limits, and shall regularly notify their domestic support;

iii) Beneficiaries must disclose on annual basis relevant information about each public stockholding programme.

[iii] For a more detailed analysis of the Bali package, refer to Valensisi and Karingi, 2014.

[iv] For instance, EU's trade-distorting farm subsidies (i.e. Amber box+ Blue box + de minimis) for the year 2010-2011 fell to €11 billion, compared to nearly €67 billion in 2000/2001. Yet, another €68 billion were disbursed in the form of green box subsidies. The case of the US is even more revealing: though the level of trade-distorting subsidies was well below the bound level, the recourse to green box subsidies was so pronounced that total notified domestic support in 2011 was nearly twice as much as 10 years before: USD 139 billion in 2011, compared to $72 billion in 2001. See ICTSD 2014.

[v] For example, according to the World Bank World Development Indicators, the food production index in 1994 – i.e. at the outset of the Uruguay Round's Agreement on Agriculture – was only two thirds of its value in 2001: 75.3, compared to 117.6.

[vi] The full dataset (available at http://artnet.unescap.org/trade-costs.asp) covers over 180 countries, and spans the period 1995-2011; to maximize data coverage, however, the present analysis focuses on the 2005-2011 period.

[vii] In light of their computation, comprehensive trade costs need to be interpreted with caution due to the following reasons:

i) Their numerical value depends, at least partly, on the theoretical model from which they are derived, and is sensitive to the parametrization; as a consequence they should preferably be used for comparative exercises, rather than taken at their absolute value.

ii) Changes in the value of comprehensive trade cost potentially conflate price and volume effects.

iii) Being the geometric average of trade costs in both direction, and being measured relative to domestic trade costs, they cannot be directly traced to policy changes implemented in any of the two countries.

[viii] Notice, however, that in the database the country-pair coverage is wider for manufactured goods than for agricultural ones.

[ix]

reports the simple (i.e. non trade-weighted) average of bilateral comprehensive trade costs across reporter/partner country groups, where all data spanning the period 2005-2011 have been considered to maximize data coverage.

[x] Again,

reports the simple average of bilateral tariff costs across reporter/partner country groups, where all data spanning the period 2005-2011 have been considered.

[xi] Bilateral tariff costs for developing countries actually appear to be on the rise in 2011, particularly for what pertains to their trade with developed countries. Figures for the latest year should be taken, however, with a pinch of salt, since data coverage is significantly lower than in the previous years. More specifically, the number of

observations available in the database is 7'636 in 2005, 7'664 in 2006, 7'476 in 2007, 7'328 in 2008, 6'256 in 2009, 5'104 in 2010, and only 1'700 in 2011.

[xii] These tariffs are not as high as may be anticipated.

[xiii] For instance, the World Bank (2002:Chapter 6) argues that results need to consider the impact of the degree of openness of the economy on productivity growth. In their own model of benefits from trade liberalisation, they incorporate these dynamic gains in the model by assuming a direct relationship between openness and productivity growth, with a resultant increase in the estimated benefits from trade liberalisation for the world economy from US$335 billion to US$832 billion (i.e. approximately 2.5 times greater).

[xiv] Weeks (1996) makes the strong case for the large scale benefits available to COMESA countries from greater agricultural trade due to the potential complementarities of production structures across Eastern and Southern Africa. Evidence on patterns of grain imports and exports among the countries suggests that in a year of normal rainfall the entire region of Eastern and Southern Africa would be near self-sufficient.