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**IMPACT OF TRADE LIBERALIZATION IN RICE: ASSESSING
ALTERNATIVE PROPOSALS**

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Introduction

Rice accounts for about 20 percent of global calories consumed globally (FAO, 2004).

Rice is the major dominant staple food crop in developing countries. Rice production has increased faster than the population over the last three decades mainly due to technological progress (Wailes 2004). As a staple food the demand for rice is not responsive to price and income. However, in many Southeast Asian developing countries the traditional rice diet is being replaced by fruits, vegetables, and meats making rice an inferior good with respect to income. Rice demand has the close substitute of wheat, especially in South Asia.

Major rice importing countries are Indonesia, Bangladesh, the Philippines, Malaysia, Japan, and Singapore in South Asia and Southeast Asia. However the imports in these countries are subject to natural calamities that impacts domestic production. Some of the other major importing countries in the Middle East are Iran, Iraq, Saudi Arabia, UAE and Turkey. Nigeria, Cote D'Ivoire, Senegal, South Africa, Sierra Leone, Madagascar, Guinea, and Benin are rice importing countries in western and southern Africa. Latin American countries that import rice are Brazil, Mexico, Cuba, Haiti and the Dominican Republic.

The major rice exporting countries are Thailand, Vietnam, India, the United States, China, Pakistan, Australia, Italy, Uruguay, Argentina, Egypt, and Spain. The major rice consumption is in Asia. China is the largest consuming nation, followed by India, Indonesia, and Bangladesh.

Study Objective

The global rice trade has grown by 7 percent annually throughout the 1990s to reach 25 million tons. Developing countries currently account for 83 and 85 percent of total imports and exports respectively (FAO, 2004). The global rice trade is projected to increase by 2.3 percent annually from 2005/06 until 2014/15, reaching a record of about 34.5 million metric tons in 2014/15 according to USDA baseline projections (USDA, 2005). Increased global rice trade is due to rising import demand from Indonesia, Bangladesh, and Sub-Saharan African countries. Also global consumption is projected to increase largely due to rising population in Asia and due to a modest rise in per capita income of many non-Asian rice-consuming countries.

Fifteen year's ago, global rice trade was 4 percent of the consumption. However, over the past five years (2000 - 2005), the global rice trade accounted for 6.5 percent of the world's consumption, still negligible compared to wheat trade at 18.3 percent, corn at 11.9 percent, and soybean at 34.5 percent (Wailes, 2004b). The thinness of rice trade is due, in parts, to protectionist mechanisms based on national policy objectives to achieve self-sufficiency in major rice producing and consuming countries. Agricultural trade barriers and producer subsidies impose real costs, both on the countries that use these policies and on their trade partners. Trade barriers help to keep inefficient domestic producers in operation, resulting in forgone opportunities for a more resourceful allocation of national resources, and also reduce demand for trade partner's products.

Oversupply of agricultural commodities induced by domestic supports can result in lower world prices creating competition for producers in other countries; which may thereby create a need for export subsidies to dispose of excess domestic production. The

effect of trade barriers by importing nations is deleterious not just because of distortions to induce more inefficient domestic production but also higher costs of imports. So we conclude that tariffs and subsidies can lead to economic inefficiencies. The objectives of this study are to analyze alternative proposals in the current Doha WTO round for trade liberalization in major rice exporting and importing countries.

Background on trade liberalization in rice

Uruguay Round of Agriculture Agreement

Although countries agreed to reduce their average tariffs, the tariff rates have remained high for rice. However, compared to rice trade in the 1970s and 1980s, the post-Uruguay Round trade has doubled by volume and consumption (Wailes 2004a). Wailes studied protectionist policies and impact of liberalization and found stated that the medium grain rice markets are far more distorted than the long grain market mainly due to the tariff rate quotas and other barriers in the major medium grain rice importing countries like Japan and Korea. Domestic price supports are another source of the trade distortion in the world rice market. However, the long grain rice markets are less protected as compared to the medium grain markets. Also, tariffs in the low quality rice importing countries such as Indonesia and Bangladesh are estimated to reduce world rice export price. The protection mechanism in the long grain rice markets was estimated to reduce world export prices by 10 to 20 percent.

Doha Development Agenda (DDA)

Following completion of the URAA, an opportunity for further liberalization is being sought in the DDA. In November 2001 at the fourth WTO ministerial conference held in

Doha, Qatar, a declaration was reached on agriculture. However, the negotiators missed the deadline of 31 March 2003 on setting the numerical target formulas, and other modalities for countries commitments to further reform. Finally on 1 August 2004, a DDA framework was agreed upon. The WTO framework negotiated in the DDA was revised on December 2004. The revised Harbinson draft proposed export subsidies to be eliminated by five years for developed countries, 10 years for developing countries, and 12 years for the rest of the world. The revised draft on export credit states that export credit should be subjected to discipline, terms, and conditions like repayment terms and interest rates. There should be transparency and notification about export credit. Special treatment should be offered for developing countries with exceptions in case of emergency.

The draft proposed criteria for determining whether there is a genuine need for food aid or whether it should be determined by recognized international organizations. Export and State trading Enterprise or Single desk operators should operate on a commercial basis, without subsidy, government support, or financial privileges. Other export enterprises should be allowed to compete with the government or state enterprise. The draft would outlaw “new” export restriction and taxes except in certain circumstances (the general expectations of GATT Articles 11, 20 and 21).

The revised first formula on modalities of tariffs and the tariff rate quotas states that there should be a mix or harmonizing of both the Swiss and the Uruguay round in negotiations. Tariff reduction formula of the Harbinson proposal is summarized in appendix table 1.

The draft proposes no obligation to reduce in-quota duties, preferential tariff free and quota free programs for tropical products, or those used to diversify agriculture.

There would be a reduction in quota duties when less than 65 percent of the quota is used.

The tariff quota volumes would be expanded to 10 percent and 6.6 percent of the domestic consumption for developed and developing countries respectively. The implementation time frame would be 5 years in developed countries and 10 years in developing countries.

A tariff quota for special and differential treatment under the revised draft proposes that developing countries would be give duty free access for key products. Developing countries would not have to expand tariff quotas for selected “special products” (SP’s) for food security, rural development, and livelihood security.

State trading or importing enterprises in developed countries should not undermine their market access commitments and should notify information on the enterprise operation regularly, whereas developing countries would be allowed leeway to meet food and livelihood security objectives and for rural development. As per the revised draft the Aggregate Measurement of Support (AMS) under the amber box would be reduced from final bound of 60 percent over 5 years for developed countries and 10 years for developing countries. Developed countries with current rights to exclude a minimal (“de minimis”) level of support from reduction commitment would be halved from 5 percent of agricultural production to 2.5 percent over five years. The green box subsidies would be maintained, with some changes in their structure. There would be no change in reference period. The criterion for compensation on green box subsidies will be tightened. The compensation that is allowed for protecting animal welfare will be

increased. Under the special and differential treatment, developing countries have a new form of direct payments with adjustment in criterion.

The current blue box payments would be capped and bound. They would be either halved over the 5 years for developed countries and 10 years for developing countries or there would be an option of merging the blue box subsidies into amber box, with a provision for developing countries to delay merging for a period of 5 years. Blue box subsidies would apply to program payments for which no production is required.

Analytical Framework

On the basis of the Harbinson draft four comprehensive alternative proposals have been developed and they are analyzed in the remainder of this paper for trade reform in the global rice market. To conduct this analysis the Arkansas Global Rice Model is used to simulate trade, prices and domestic production and consumption in major rice importing and exporting nations. The Arkansas Global Rice Model is a multi-country econometric framework representing the world rice economy. The model consists of six sub regions. The regions are the U.S, South Asia, North Asia, Middle East, the Americas, Africa and Europe. Each region has several countries in it (Fuller, Wailes, and Djunaidi, 2003).

Each country model has a supply sector, demand sector, and trade and price linkage equations. Estimates are based on exogenous macroeconomic factors such as income, population, inflation rate, technology development, and especially government determined policy variables. Thai FOB and California ex mill FOB are used to clear the international rice market for the long grain and medium grain, respectively. The projections in the model are based on national levels of production (area harvested and

yields), consumption, stocks, net trade, and prices. The baseline projection and policy analysis are estimated by simulation (Fuller, Wailes, and Djunaidi, 2003).

Assumptions

The Model does take into consideration imperfect nature of the international rice market. Model does not assume a perfectly competitive market structure. All government distortions are clearly stated in the model's structure. The policies are incorporated in model equations for supply, demand, export (or import), ending stocks and price transmission equations and are thus embedded in the model solution (Fuller, Wailes, and Djunaidi, 2003).

Policy Assumption for Analyzing Alternative DDA Proposals

The US, the EU, G-20 and G-10 proposals are analyzed based on the policy changes over a period of eight years (2007-2014). The analysis of the proposals is based on the AGRM 2006 baseline. The computation of tariffs is based on Ad Valorem Equivalents (AVE) with changes expressed in percentage of AVE equivalent.

The US Proposal

The US proposal analysis is based on a previously published study by FARPI, which used the AGRM framework. The assumptions can be summarized into three sections.

Market Access

US proposal on market access can be seen in appendix table 3. The analysis of the US proposal assumes that rice will be treated as sensitive product for Japan, South Korea and Philippines. Similarly the Minimum Market Access (MMA) is assumed to be 7.5 percent of the average annual domestic consumption of year 1999-2001. Sensitive products are assumed to be 1 percent of total tariff lines. There would be elimination of in-quota tariffs

over a period of 10 years, the out-quota tariff reductions would be reduced as stated in the appendix table 3. The TRQ expansion would be based on 7 percent of the domestic consumption to base year 1999-2001(CARD, 2005)

Export Competition

All export subsidies will be eliminated by 2010 for developed countries, while developing countries would reduce the export subsidies over a period of 6 years (CARD, 2005)

Domestic Support

The domestic support cuts are implemented linearly over time with Special and Differential Treatment (SDT) for developing countries. AMS cuts in the US proposal are summarized in appendix table 4. Blue box subsidies are capped at 2.5 percent of the value of production based on 1999-2001. *De minimis* support would be cut from 5 to 2.5 percent and from 10 to 5 percent for developed and developing countries, respectively (CARD, 2005).

Specific assumptions are made for the US and EU. In the US, target prices for rice are reduced by 7 percent from the baseline, while loan rates are reduced by 11 percent from the baseline levels (CARD, 2005). Target price and loan rate are reduced linearly. US direct payments and EU single farm payments are assumed to be green box and therefore not disciplined (CARD, 2005).

The EU Proposal

The EU Common Agriculture Policy (CAP) is regarded as the most complex framework for maintaining protection for agriculture in general (European Commission, 2005). The EU DDA proposal is based on achieving substantial improvement in market access. The

proposal states EU commitment to move from trade distorting domestic support to decoupled support. The framework agreement for the tariff reduction is progressive reduction of tariffs, which would be achieved through deeper cuts in higher tariffs and with flexibility in sensitive products. The tariff reduction for developing countries would be two-third of the developed countries. The EU has a linear approach in tariff reduction as also proposed by the G-20 which would help in building a mutual consensus among WTO members (ICTSD, 2006). There would be flexibility on tariff cuts of a minimum tariff cut of 20 percent in the lowest band and maximum of 45 percent (European Commission, 2005).

Market Access

The EU proposal on market access is summarized in appendix table 5. There would be no cap placed on sensitive products for developed countries. There are higher thresholds for the top tiers and 2/3 less in cuts for developing countries under Special and Differential Treatment (SDT). The estimated average tariff cuts are of 39 percent and 43 percent as per USTR and EU estimates, respectively (CRS Report 2005). The EU proposal under the market access requires that a limited number of the products be treated as “sensitive”, which is a key objective of the framework Agreement for Agriculture under Doha Development Agenda. The sensitive products are required to have expanded tariff rate quota (TRQ) with a lower tariff cut. The EU proposal the choice of tariff cut deviation and TRQ would help to achieve a desirable outcome and will be achieved with current market realities. The TRQ is expressed as a percentage of total current import quantity. It is assumed Japan, South Korea, and the Philippines would declare rice as a sensitive product. The proposed sensitive products would have a TRQ expansion as a

percentage of total imports. $\text{TRQ increase (percentage of imports)} = 80 \text{ percent} \times \text{Full Tariff cut percent} - \text{Reduced tariff cut percent} / (100 \text{ percent} + \text{Initial AVE percent})$ (European Commission, 2005b). The above-mentioned formula is consistent with the framework agreement for agriculture in DDA. TRQ expansion would increase over a period of 10 years based on the above mentioned formula. In-quota tariffs would be reduced to zero in 7 years, while over-quota tariffs should follow the same cuts as proposed in the schedule. Minimum Market Access (MMA) would be 5% of the annual domestic consumption in year 1999 -2001 (USTR, 2006).

Domestic Support

The EU proposes a substantial reduction in trade-distorting support. A three-band reduction for AMS (amber box support) is suggested. Japan and the EU would fall into the upper tier with 70 percent reduction in AMS. The US would fall into the second tier making 60 percent cuts in AMS, while other WTO members would be subjected to 50 percent reduction in AMS. The overall trade distorting support should be reduced by same percentage as stated above. The product specific AMS caps would be calculated on the basis of the whole UR implementation period. *De minimis* support would be reduced from present 5 percent to 1 percent for all developed countries, reduction would be on both product and non product specific support (Brink, 2005). The EU proposal cuts for Total Aggregate Measures of Support and AMS are summarized in appendix tables 6 and 7. EU proposes about 5 percent ceiling to maintain support on going and future farm efforts with clear discipline on the blue box payments. The EU proposal strongly objects to the US Counter Cyclical payments classified as blue box payments. It is assumed that the US direct payments and EU single farm payment are classified as green box, while

loan rate and CCP are classified as amber box.

Export Competition

The EU proposal agrees to elimination of the export subsidies by 2013 and discipline on export credits including credits, export credit guarantees or insurance programs.

Subsidies are reduced linearly. The objective behind the equal annual reduction is that there needs to be a smooth transition as stated in the CAP 2003 reforms (European Commission, 2005).

The G-20 Proposal

The G-20 group has a major emphasis on market access with full compliance of the Doha mandate with respect to substantial reduction in domestic support and elimination of all forms of export subsidies.

Market Access

The G-20 proposal on market access is summarized in appendix table 8. There would be progressivity in tariff reduction, a tariff reduction formula that involves equal (as opposed to progressively higher) percentage cuts on items within each band. The developing countries would make lower reductions; and binding of all tariffs with different ceilings for developed and developing countries. There would be provisions for adequate special and differential treatment (S&D) for developing countries. A declaration by Japan, South Korea, and Philippines for rice as a sensitive product is assumed in the analysis. The G-20 proposal states that no new tariff-rate quotas will be created for products designated as sensitive. There would be capping of the sensitive products.

A higher number of sensitive products would be allowed higher compensation and the proposal calls for a maximum deviation from the tariff reduction formula of 30 percent. (A part from existing TRQ as agreed under the Uruguay Round's Agreement on

Agriculture). It is assumed that developed countries should at least expand the existing TRQ on products designated sensitive to an increased minimum access level equivalent to 6% of annual domestic consumption in the base period (G-20, 2005d). The base period for the annual domestic consumption will be the most recent three year period. The analysis assumes the average (current) domestic consumption of year 1999-2001. Other assumptions include: elimination of In-quota tariff by 2014 and TRQ expansion will be based on the principle of the Most Favored Nation (MFN) (www.g-20.mre.gov.br).

Domestic Support

The G 20 proposes bands and cuts for developed countries as defined by the July 2004 framework, with overall cuts adjusted to AMS, Blue Box and *de-minimis* as seen in paragraph 10 and 12 of the framework. The G-20 proposal on domestic support for developed countries is summarized in appendix table 9. *De-minimis* reduction will be made to both product and non-product specific *de minimis* payments adjusted to the rate of cuts for the overall trade distorting support (G-20, 2005b). There would be special and differential treatment for developing countries. The G-20 proposal on AMS is summarized in appendix table 10.

Export Competition

The G-20 proposal calls on immediate elimination of export subsidies. It assumes that all export subsidies should be eliminated by 2010.

The G-10 Proposal

The G-10 countries in general have a high level of farm subsidies and import tariffs (ITCSD, 2006). Almost every G-10 country is a net food importer. G-10 countries

include Iceland, Israel, Japan, South Korea, Liechtenstein, Mauritius, Switzerland Norway, and Taiwan.

Market Access

G-10 WTO proposal on market access is summarized in appendix table 11. There would be no capping of tariffs under the G-10 proposal. Under the G-10 proposal Japan, South Korea, and Philippines would treat rice as a sensitive product. The schedule for tariff cuts and TRQ expansion for sensitive products is summarized in appendix table 12. The formula in appendix table 12 would be used to determine the appropriate level of tariff cut and subsequent increase in TRQ. A standard combination of 15 % is assumed in the cases of Japan, South Korea, and Philippines. TRQ expansion would be based on domestic consumption of the product. If the current TRQ for sensitive product is equal or less than 5 percent of domestic consumption then it should be doubled. If the TRQ is greater than 5 percent of the domestic consumption, it would be increased in progressively lower amounts (ICTSD 2006). The MMA would increase progressively if the present MMA is more than 5 percent of the domestic consumption over a period of 10 years. While MMA would almost doubled if it is less or equal to 5 percent of domestic consumption.

Export Competition

There would be complete elimination of export subsidies by 2013. The export subsidies would be reduced over a period of 7 years with uniform cuts every year. The assumption about elimination of export subsidies is in coherence with the Hong Kong WTO ministerial meeting (ICTSD, 2006).

Domestic Support

The domestic support reductions are based on the Hong Kong round of WTO negotiations. The G-10 WTO proposal on overall trade distorting support is summarized in appendix table 13. The AMS reductions agreed by G-10 members at the Hong Kong WTO ministerial meeting are summarized in appendix table 14.

Result and Discussion

Long grain rice prices increase with the US, EU, G-20 and G-10 proposals. An increase in world prices is largely attributed to decreased import tariffs of major long grain importing countries like Nigeria, Indonesia and Philippines. By 2014, world prices would increase by 9.4, 7.4, 9.0, and 2.3 percent under the US, G-20, EU, and G-10 proposals, respectively (Table 1). A larger increase in world price for the US and EU proposals are due to deeper import tariff cuts in Nigeria and China. However G-10 proposal results in only a minor increase of 2.30 percent in world price. A standard combination of 15 percent increase in TRQ with simultaneous 15 percent decrease in tariff over a period of 7 years does not increase imports in long grain rice importing countries.

The medium grain world reference price (US No.2 MG Rice fob CA) would increase by 58.6, 48.4, 23.9 and 15.9 percent under the US, G-20, EU, G10 proposals, respectively. Increased medium grain world reference price is largely attributed to elimination of in-quota tariffs in South Korea and TRQ and MMA expansion in Japan and South Korea, respectively.

World rice trade increases by 4.0, 2.9, 3.2, and 0.8 percent in the U.S., G-20, EU, and G-10 proposals, respectively.

Table 1. Impact of Alternative WTO Proposals on Rice Prices and Trade, 2007-2014

	2007	2008	2009	2010	2011	2012	2013	2014	Average
Long Grain Thai Price									
	(US Dollars per Metric Ton)								
Baseline	253	248	263	276	286	298	311	323	
	% Change								
US Proposal	1.18	2.79	4.25	5.66	7.27	8.15	8.79	9.44	5.94
G-20 Proposal	0.78	2.30	3.51	4.12	5.20	6.12	6.73	7.40	4.52
EU Proposal	0.82	2.17	3.36	4.45	6.05	7.31	8.23	8.99	5.17
G-10 Proposal	0.19	0.96	1.72	1.61	1.68	2.04	2.11	2.30	1.58
Medium Grain US No.2 MG Rice fob CA									
	(US Dollars per Metric Ton)								
Baseline	571	541	551	569	564	556	541	542	
	% Change								
US Proposal	7.01	18.52	25.44	40.49	54.75	57.30	56.91	58.61	39.88
G-20 Proposal	6.44	16.44	23.92	34.57	44.95	47.40	47.01	48.40	33.64
EU Proposal	-1.38	1.33	5.29	10.39	8.69	17.89	15.18	23.89	10.16
G-10 Proposal	1.38	5.75	17.43	8.97	15.83	13.17	20.26	15.89	12.34
Total Trade									
	(Thousand Metric Tons)								
Baseline	29,530	29,906	31,054	31,736	32,197	32,762	33,301	33,826	
	% Change								
US Proposal	0.68	1.22	1.45	1.84	2.41	2.93	3.44	4.02	2.25
G-20 Proposal	0.49	0.52	0.39	0.71	1.34	1.86	2.31	2.86	1.31
EU Proposal	0.26	0.60	0.83	0.98	1.16	1.91	2.36	3.22	1.42
G-10 Proposal	0.12	-0.08	-0.07	-0.58	-0.06	0.10	0.64	0.85	0.12

Table 2. Impact on net trade in major exporting and importing countries, 2007-14.

	2007	2008	2009	2010	2011	2012	2013	2014	Average
Net Exporters									
US									
	(Thousand Metric Tons)								
Baseline	3,342	3,391	3,427	3,490	3,543	3,590	3633	3,706	
	% Change								
US Proposal	1.43	1.36	-1.39	-3.86	-4.48	-3.30	-2.27	-0.48	-1.62
G-20 Proposal	1.07	-2.82	-7.38	-7.87	-6.18	-4.83	-3.64	-2.00	-4.21
EU Proposal	-0.09	-0.70	-2.46	-5.33	-7.70	-5.97	-5.75	-2.40	-3.80
G-10 Proposal	0.27	-4.64	-8.74	-12.84	-10.12	-9.70	-6.38	-5.10	-7.16
Thailand									
	(Thousand Metric Tons)								
Baseline	8,492	8,973	9,169	9,370	9,541	9,716	9,897	10,073	
	% Change								
US Proposal	0.41	0.77	1.17	1.71	2.43	3.00	3.65	4.33	2.18
G-20 Proposal	0.27	0.65	0.96	1.23	1.80	2.31	2.79	3.33	1.67
EU Proposal	0.29	0.61	0.92	1.33	2.00	2.60	3.21	3.86	1.85
G-10 Proposal	0.07	0.29	0.47	0.45	0.62	0.86	0.97	1.14	0.61
Vietnam									
	(Thousand Metric Tons)								
Baseline	4,368	4,545	4,810	5,094	5,362	5,626	5,883	6,134	
	% Change								
US Proposal	0.83	1.67	2.37	2.61	2.35	2.43	2.63	2.79	2.21
G-20 Proposal	0.54	1.37	1.92	2.11	1.70	1.83	2.01	2.16	1.71
EU Proposal	0.57	1.32	1.88	2.27	1.98	2.19	2.45	2.62	1.91
G-10 Proposal	0.13	0.61	0.98	0.82	0.75	0.63	0.68	0.72	0.67
China									
	(Thousand Metric Tons)								
Baseline	822	822	874	911	935	963	982	1001	
	% Change								
US Proposal	1.36	-5.43	-8.89	-4.81	1.82	3.45	7.71	8.23	0.43
G-20 Proposal	1.03	1.20	0.55	0.81	2.23	3.15	4.32	5.45	2.34
EU Proposal	-1.46	-8.71	-11.60	-10.62	-8.28	-4.48	-1.95	3.91	-5.40
G-10 Proposal	0.94	6.14	13.54	12.83	21.42	23.80	30.36	32.60	17.70
India									
	(Thousand Metric Tons)								
Baseline	4,757	5,146	5,219	5,143	5,087	5,060	5,004	4,930	
	% Change								
US Proposal	0.43	0.99	1.56	2.17	2.86	3.31	3.67	4.05	2.38
G-20 Proposal	0.28	0.80	1.29	1.61	2.07	2.50	2.83	3.19	1.82
EU Proposal	0.29	0.77	1.24	1.72	2.38	2.95	3.42	3.85	2.08
G-10 Proposal	0.07	0.33	0.63	0.66	0.70	0.85	0.91	1.02	0.65
Pakistan									
	(Thousand Metric Tons)								
Baseline	2391	2376	2413	2319	2331	2321	2303	2286	
	% Change								
US Proposal	0.45	1.39	2.47	3.77	5.10	6.23	7.13	7.89	4.30
G-20 Proposal	0.30	1.09	2.02	2.92	3.78	4.64	5.40	6.12	3.28
EU Proposal	0.31	1.05	1.94	2.98	4.15	5.35	6.43	7.36	3.70
G-10 Proposal	0.07	0.42	0.93	1.26	1.42	1.62	1.80	1.98	1.19

	2007	2008	2009	2010	2011	2012	2013	2014	Average
Net Importers									
Indonesia									
	(Thousand Metric Tons)								
Baseline	989	1,223	1,442	1,587	1,703	1,781	1,829	1,817	
	% Change								
US Proposal	7.40	14.33	18.47	19.69	21.40	24.77	28.93	33.70	21.09
G-20 Proposal	-1.08	-4.12	-6.77	-9.71	-11.86	-13.66	-15.28	-17.52	-10.00
EU Proposal	8.76	16.71	21.63	24.30	26.29	28.82	31.82	35.94	24.28
G-10 Proposal	1.01	0.43	-0.82	-0.97	0.09	0.35	0.86	1.20	0.27
Japan									
	(Thousand Metric Tons)								
Baseline	482	482	482	482	482	482	482	482	
	% Change								
US Proposal	27.49	54.98	82.47	109.96	137.45	137.45	137.45	137.45	103.09
G-20 Proposal	21.99	43.98	65.98	87.97	109.96	109.96	109.96	109.96	82.47
EU Proposal	1.59	3.19	4.78	6.37	7.96	9.56	11.15	12.74	7.17
G-10 Proposal	2.83	5.66	8.49	11.32	14.15	16.98	19.81	22.64	12.74
Philippines									
	(Thousand Metric Tons)								
Baseline	1,190	1,315	1,358	1,382	1,460	1,614	1,742	1,875	
	% Change								
US Proposal	4.30	8.21	12.48	18.52	26.30	32.13	37.41	42.50	22.73
G-20 Proposal	6.97	13.13	19.98	28.75	39.42	47.14	54.64	62.08	34.01
EU Proposal	5.11	9.59	14.41	20.12	27.77	33.16	38.07	43.00	23.90
G-10 Proposal	0.60	0.05	-0.67	0.41	1.86	3.16	3.83	4.23	1.68
South Korea									
	(Thousand Metric Tons)								
Baseline	266	287	307	327	348	368	388	409	
	% Change								
US Proposal	0.00	0.00	4.41	9.68	14.34	18.48	22.18	25.52	11.83
G-20 Proposal	0.00	0.00	1.90	7.33	12.12	16.38	20.20	23.64	10.20
EU Proposal	-13.36	-6.08	0.24	5.77	10.66	15.00	18.89	22.39	6.69
G-10 Proposal	0.00	0.00	0.00	0.32	3.32	5.99	8.38	10.53	3.57
Taiwan									
	(Thousand Metric Tons)								
Baseline	127	127	127	127	127	127	127	127	
	% Change								
US Proposal	14.39	28.77	43.16	57.54	71.93	71.93	71.93	71.93	53.95
G-20 Proposal	11.50	25.88	40.27	54.65	69.04	71.93	71.93	71.93	52.14
EU Proposal	4.80	19.18	33.57	47.95	62.34	76.72	91.11	105.49	55.15
G-10 Proposal	10.00	20.00	120.00	44.39	54.39	64.39	74.39	84.39	58.99

Table 3. Impact on major long grain exporters and importers, 2007-14.**Net Long Grain Exporters -**

US		(Thousand Metric Tons)							
Baseline	2,571	2,609	2,643	2,713	2,785	2,850	2,912	2,996	
	% Change								
US Proposal	0.24	-0.76	-2.80	-5.80	-6.58	-6.21	-4.94	-3.26	-3.76
G-20 Proposal	0.16	-4.17	-8.61	-9.81	-8.10	-7.16	-5.55	-3.64	-5.86
EU Proposal	0.16	-0.71	-2.46	-5.03	-6.11	-5.85	-4.67	-3.07	-3.47
G-10 Proposal	0.04	-4.21	-8.74	-10.04	-8.78	-7.71	-6.01	-4.03	-6.19
Thailand		(Thousand Metric Tons)							
Baseline	8,492	8,973	9,169	9,370	9,541	9,716	9,897	10,073	
	% Change								
US Proposal	0.41	0.77	1.17	1.71	2.43	3.00	3.65	4.33	2.18
G-20 Proposal	0.27	0.65	0.96	1.23	1.80	2.31	2.79	3.33	1.67
EU Proposal	0.29	0.61	0.92	1.33	2.00	2.60	3.21	3.86	1.85
G-10 Proposal	0.07	0.29	0.47	0.45	0.62	0.86	0.97	1.14	0.61
India		(Thousand Metric Tons)							
Baseline	4,757	5,146	5,219	5,143	5,087	5,060	5,004	4,930	
	% Change								
US Proposal	0.43	0.99	1.56	2.17	2.86	3.31	3.67	4.05	2.38
G-20 Proposal	0.28	0.80	1.29	1.61	2.07	2.50	2.83	3.19	1.82
EU Proposal	0.29	0.77	1.24	1.72	2.38	2.95	3.42	3.85	2.08
G-10 Proposal	0.07	0.33	0.63	0.66	0.70	0.85	0.91	1.02	0.65
Vietnam		(Thousand Metric Tons)							
Baseline	4,368	4,545	4,810	5,094	5,362	5,626	5,883	6,134	
	% Change								
US Proposal	0.81	1.64	2.32	2.56	2.30	2.39	2.59	2.74	2.17
G-20 Proposal	0.54	1.37	1.92	2.11	1.70	1.83	2.01	2.16	1.71
EU Proposal	0.56	1.29	1.84	2.23	1.94	2.15	2.40	2.58	1.87
G-10 Proposal	0.13	0.59	0.96	0.80	0.74	0.61	0.66	0.71	0.65
Pakistan		(Thousand Metric Tons)							
Baseline	2,391	2,376	2,413	2,319	2,331	2,321	2,303	2,286	
	% Change								
US Proposal	0.45	1.39	2.47	3.77	5.10	6.23	7.13	7.89	4.30
G-20 Proposal	0.30	1.09	2.02	2.92	3.78	4.64	5.40	6.12	3.28
EU Proposal	0.31	1.05	1.94	2.98	4.15	5.35	6.43	7.36	3.70
G-10 Proposal	0.07	0.42	0.93	1.26	1.42	1.62	1.80	1.98	1.19
European Union		(Thousand Metric Tons)							
Baseline	121	107	104	98	90	83	76	69	
	% Change								
US Proposal	-0.25	-0.08	-4.45	-6.71	-8.93	-8.82	-9.14	-8.67	-5.88
G-20 Proposal	0.19	-0.51	-4.13	-6.69	-9.11	-8.94	-9.13	-8.57	-5.86
EU Proposal	0.51	1.12	1.42	1.56	-2.14	1.34	-1.75	1.61	0.46
G-10 Proposal	0.05	0.27	0.02	-4.25	-1.80	-4.34	-1.59	-4.91	-2.07

	2007	2008	2009	2010	2011	2012	2013	2014	Average
Net Long Grain Importers									
Indonesia	(Thousand Metric Tons)								
Baseline	989	1,223	1,442	1,587	1,703	1,781	1,829	1,817	
	% Change								
US Proposal	7.40	14.33	18.47	19.69	21.40	24.77	28.93	33.70	21.09
G-20 Proposal	-1.08	-4.12	-6.77	-9.71	-11.86	-13.66	-15.28	-17.52	-10.00
EU Proposal	8.76	16.71	21.63	24.30	26.29	28.82	31.82	35.94	24.28
G-10 Proposal	1.01	0.43	-0.82	-0.97	0.09	0.35	0.86	1.20	0.27
Bangladesh	(Thousand Metric Tons)								
Baseline	1,099	1,028	1,133	1,129	1,116	1,132	1,181	1,266	
	% Change								
US Proposal	-0.03	-3.47	-8.62	-15.51	-22.00	-25.33	-27.62	-29.32	-16.49
G-20 Proposal	-0.02	-2.32	-6.89	-12.67	-18.03	-19.82	-21.39	-22.70	-12.98
EU Proposal	-0.02	-2.41	-6.61	-12.18	-18.28	-21.15	-23.77	-25.75	-13.77
G-10 Proposal	-0.01	-0.58	-2.74	-5.86	-7.52	-8.35	-8.22	-8.18	-5.18
Philippines	(Thousand Metric Tons)								
Baseline	1,190	1,315	1,358	1,382	1,460	1,614	1,742	1,875	
	% Change								
US Proposal	4.30	8.21	12.48	18.52	26.30	32.13	37.41	42.50	22.73
G-20 Proposal	6.97	13.13	19.98	28.75	39.42	47.14	54.64	62.08	34.01
EU Proposal	5.11	9.59	14.41	20.12	27.77	33.16	38.07	43.00	23.90
G-10 Proposal	0.60	0.05	-0.67	0.41	1.86	3.16	3.83	4.23	1.68

Table 4. Impact on major medium grain exporters and importers, 2007-14.

	2007	2008	2009	2010	2011	2012	2013	2014	Average
Net Medium Grain Exporting Countries									
US (Thousand Metric Tons)									
Baseline	770	783	784	777	757	740	720	710	
	% Change								
US Proposal	4.50	7.51	4.29	5.67	6.67	10.68	10.58	11.67	7.70
G-20 Proposal	4.13	1.70	-3.23	-1.08	0.90	4.14	4.06	4.92	1.94
EU Proposal	-0.89	-0.21	-0.79	-2.50	-7.51	-1.38	-4.83	2.76	-1.92
G-10 Proposal	0.89	-3.03	-2.87	-13.38	-7.12	-9.11	-2.01	-4.59	-5.15
China (Thousand Metric Tons)									
Baseline	352	351	360	368	373	377	381	388	
	% Change								
US Proposal	1.48	2.81	2.67	4.31	4.95	4.21	4.04	4.42	3.61
G-20 Proposal	1.37	2.52	2.68	3.61	4.16	3.71	3.51	3.84	3.18
EU Proposal	-0.26	0.50	0.90	1.36	0.51	2.38	1.06	2.87	1.17
G-10 Proposal	0.30	1.00	2.72	0.01	2.16	1.08	2.59	1.26	1.39
European Union (Thousand Metric Tons)									
Baseline	151	142	151	140	147	134	145	145	
	% Change								
US Proposal	16.91	21.74	99.02	127.84	165.26	166.52	159.05	151.74	113.51
G-20 Proposal	4.55	29.09	87.39	118.76	147.83	149.16	141.33	133.37	101.44
EU Proposal	-1.14	0.52	2.87	5.91	73.28	8.80	74.61	11.94	22.10
G-10 Proposal	0.94	3.83	11.41	79.39	16.97	77.50	11.28	78.26	34.95
Australia (Thousand Metric Tons)									
Baseline	602	610	632	652	672	669	670	672	
	% Change								
US Proposal	3.41	7.97	10.32	16.38	20.79	21.06	20.41	21.31	15.21
G-20 Proposal	3.13	7.07	9.74	13.93	17.09	17.53	16.96	17.69	12.89
EU Proposal	-0.67	0.63	2.19	4.13	3.06	6.63	5.17	8.39	3.69
G-10 Proposal	0.67	2.51	7.28	3.24	6.17	4.95	7.52	5.77	4.76
Net Medium Grain Importing Countries									
Japan (Thousand Metric Tons)									
Baseline	682	682	682	682	682	682	682	682	
	% Change								
US Proposal	19.43	38.86	58.28	77.71	97.14	97.14	97.14	97.14	72.86
G-20 Proposal	15.54	31.09	46.63	62.17	77.71	77.71	77.71	77.71	58.28
EU Proposal	1.13	2.25	3.38	4.50	5.63	6.75	7.88	9.00	5.07
G-10 Proposal	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	9.00
South Korea (Thousand Metric Tons)									
Baseline	266	287	307	327	348	368	388	409	
	% Change								
US Proposal	0.00	0.00	4.41	9.68	14.34	18.48	22.18	25.52	11.83
G-20 Proposal	0.00	0.00	1.90	7.33	12.12	16.38	20.20	23.64	10.20
EU Proposal	-13.36	-6.08	0.24	5.77	10.66	15.00	18.89	22.39	6.69
G-10 Proposal	0.00	0.00	0.00	0.32	3.32	5.99	8.38	10.53	3.57
Taiwan (Thousand Metric Tons)									
Baseline	127	127	127	127	127	127	127	127	
	% Change								
US Proposal	14.39	28.77	43.16	57.54	71.93	71.93	71.93	71.93	53.95
G-20 Proposal	11.50	25.88	40.27	54.65	69.04	71.93	71.93	71.93	52.14
EU Proposal	4.80	19.18	33.57	47.95	62.34	76.72	91.11	105.49	55.15
G-10 Proposal	10.00	20.00	120.00	44.39	54.39	64.39	74.39	84.39	58.99

Prospects for Long Grain Rice Market

Trade liberalization under all four proposals would increase exports for major long grain exporting countries except for the US and EU. Decreased exports in the US and EU are largely attributed to substantial cuts in amber box subsidies and declines in area harvested. There would be a substantial decreases in long grain US exports under the G-10 proposal when compared to the G-20, EU, and US proposals. The decline would be due to a decrease in farm payments with no subsequent decrease in tariffs of major long grain importing countries like Indonesia and Philippines. There would be a increases in exports for Thailand, India, Vietnam, and Pakistan under the US proposal followed by EU, G-20 and G-10 proposals.

Major long grain importers would be Indonesia and Philippines. There would be a large increase in imports for Indonesia under the EU and US proposals about 35.9 and 33.7 percent respectively. However, under the G-20 proposal, imports decrease in Indonesia because of a minimal reduction in tariffs. The Philippines would increase imports mainly due to the decrease in in-quota tariff. Bangladesh would decrease imports in almost all proposals by about 25 percent, due to increases in yields and area harvested.

Prospects for Medium Grain Rice Market

Major exporters of medium grain would be the US, EU, China, and Australia; whereas major importing countries would be Japan, South Korea, and Taiwan. In the US proposal there would be a significant increase in medium grain exports primarily due to TRQ expansion in major importing countries like South Korea, Taiwan, and Japan. However the US exports would decrease under the G-10 proposal by 4.6 percent with a minimal increase in exports of about 4.9 percent and 2.8 percent under the G-20 and EU proposals

respectively. Decreased US medium grain exports are attributed to protected markets under G-10 proposal. Japan is assumed to declare rice as a sensitive product, however it would increase imports by 97 and 77 percent under the US and G-20 proposals, respectively. Japanese imports would increase only marginally by 9 and 16 percent under the G-10 and EU proposals, respectively. China would increase exports by almost 4 percent under the US and G-20 proposals. Australia would have the largest increase in exports under the US and G-20 proposals primarily due to increases in TRQ and decreased in-quota tariff of major medium grain importing countries. There would be increases in Australian exports imports by 21.3 and 17.7 percent under the US and G-20 proposals. South Korea has agreed to increase its MMA by 2005 to 205,000 Mt, but under the US, G-20 and G-10 proposals it would increase its MMA by almost 20 percent. The EU proposal would increase MMA in Taiwan by about 105.5 percent which would be higher than the increase of 73.91 percent under the US and G-20 proposals.

Conclusion

Global rice trade increases with all four proposals, but the US proposal would have the most significant impact followed by the EU, G-20, and G-10. The US proposal, which tends to be the most ambitious among all proposals, would open the medium grain rice market to a much greater extent than any other proposal. The global net rice trade would increase by 4 percent under the US proposal. The EU and G-20 proposals increased global rice trade by 3.2 and 2.9 percent, respectively. The EU proposal has deeper cuts on domestic support, however the G-20 proposal has more intense policy reforms for expansion of TRQ and MMA when compared to EU proposal, but still there is less of an impact by the G-20 proposal on overall trade. China, India, Thailand, Vietnam, and

Pakistan would remain net exporters with a steady increase in their exports, while Indonesia, Japan, Philippines, South Korea and Taiwan would be net importers with an increase in imports under all proposals, except in the case of Indonesia, where the import tends to decrease under the G-20 proposal. Decreased imports in Indonesia are due to less tariff cuts for developing countries under G-20 proposal. Trade expansion in long grain rice would be primarily due to a decrease in tariff and reduction in domestic support. Net long grain exporters with increased exports under all four proposals would be Thailand, India, Vietnam, and Pakistan. However there would be a decrease in the US and EU long grain exports due to reduction in US domestic support and decrease in long grain area harvested in EU. However, higher world prices would compensate in part for the decrease in domestic support over that period. The US and G20 proposals would increase US medium grain exports by 11.6 and 4.9 percent respectively, both the proposals have emphasis on TRQ expansion, increased MMA and eliminated in-quota. However there would be a minor increase in medium grain exports for G-10 and EU proposals, due to no significant expansion of TRQ and MMA access. The EU would have the largest increase in medium grain exports by 151.7 and 133.3 percent under US and G-20 proposals, largely due to an increase in japonica area harvested. Assessing the alternative proposals for trade liberalization in rice would increase global rice trade irrespective of the proposal accepted by WTO.

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Appendix Tables

Table 1. Main provision of the Uruguay round Agreement on Agriculture		
Implementation Period		
Negotiated Reduction	Developed countries (1995 – 2000)	Developing countries (1995 – 2004)
Market access	Percent	Percent
Average tariff for all ag. Products	-36	-24
Minimum tariff cuts per product	-15	-10
Domestic Support		
Total cuts in aggregate measurement of support	-20	-13
Export subsidies		
Value cut	-36	-24
Volume cut	-21	-14
The Least developed countries were required to bind their tariffs but are otherwise exempt from reduction commitments.		
Source: WTO secretariat at www.wto.org		

Table 2. The banded approach for developed and developing countries		
Developed Countries		
Tariff rate	Average cut	Minimum cut for any product
90 % +	60 %	45 %
15-90 %	50 %	35 %
0-15 %	40 %	25 %
Developing Countries		
120 %	40 %	30 %
60-120 %	35 %	25 %
20-60 %	30 %	20 %
0-20 %	25 %	15 %
Special products*	10 %	5 %
* Developing countries have four bands of tariffs rates and a special products category cut over 10 years		
Sources: WTO 2004.		

Table 3. US proposal on market access				
	Developed Country Cut (%)		Developing Country Cuts (%)	
Thresholds of ad valorem equivalents to tariffs	Beginning tier	Ending tier	Beginning tier	Ending tier
0<d<=20	55.00	65.00	36.67	43.33
20<d<= 40	65.00	75.00	43.33	50.00
40<d<= 60	75.00	85.00	50.00	56.67
60<d	85.00	90.00	56.67	60.00
Tariff Cap	75 %		100 %	
Source: CARD Working Paper 05-WP 417 December 2005				

Table 4. US proposal on domestic support for developed countries			
AMS + Blue box + de minimis	AMS		
Thresholds (U.S. billion \$)	Linear cuts	Thresholds	Linear cuts
> 60	75 %	> 25	83 %
10 < ds ≤ 60	53 %	15 < ds ≤ 25	60 %
0 < ds ≤ 10	31 %	0 < ds ≤ 15	37 %
Source: CARD Working Paper 05-WP 417 December 2005			

Table 5. EU proposal for market access negotiations in the Doha Round.			
	Developed Countries	Developing Countries	
Bands	4	4	
Threshold within AVEs	Linear cut	Threshold within AVEs	Linear cut
0-30	35	0-30	25
30-60	45	30-80	30
60- 90	50	80-130	35
90 and above	60	130 and above	40
Capping	100	Capping	150
Source: Directorate-General for Agricultural and Rural Development, European Commission 2005.			

Table 6. EU proposal on Amber Box Cuts		
Tier	Countries	Cuts
Highest Tier	EU	70 %
2 nd Tier	Japan , US	60 %
3 rd Tier	Other Developed	50 %
Source: CRS Report for Congress, November 9, 2005.		

Table 7. EU proposal on overall ceiling cuts		
Tier	Countries	Cuts
Highest Tier	EU	70 %
2 nd Tier	Japan , US	60 %
3 rd Tier	Other Developed	50 %
Source – CRS Report for Congress, November 9, 2005.		

Table 8. G-20 proposal on market access			
Developed Countries		Developing Countries	
Tiers (%)	Linear cut (%)	Tiers (%)	Linear cut (%)
0-20	45	0-20	Less than 30 (25)
20-50	55	30-80	Less than 40 (30)
50-75	65	80-130	Less than 50 (35)
Above 75	75	Above 130	Less than 60 (40)
High Tariffs & Cap	100	High Tariffs & Cap	150
Source:www.g-20.mre.gov.br			

Table 9. G-20 WTO proposal on domestic support for developed countries.	
Bands (Thresholds in US\$ billion)	Cuts
Over 60 billion	80 %
10-60 billion	75 %
0- 10 billion	70 %
Source: www.g-20.mre.gov.br	

Table 10. G-20 proposal on AMS	
Bands (Thresholds in US \$ billion)	Cuts
Over 25 billion	80 %
15-25 billion	70 %
0 – 15 billion	60 %
Source: www.g-20.mre.gov.br	

Table 11. G-10 WTO proposal on market access					
Developed Countries			Developing Countries		
Tier	Linear Cut	Flexibility	Tier	Linear Cut	Flexibility
0<=20	27	32 +/- 7%	0<=30	27	32 +/- 7%
>20<=50	31	36 +/- 8%	>30<=70	31	36 +/- 8%
>50<=70	37	42 +/- 9%	>70<=100	37	42 +/- 9%
>70	45	50 +/- 10%	>100	45	50 +/- 10%
Source: CRS Report 2005.					

Table 12. G-10 schedule for the tariff cut and TRQ expansion for sensitive products.			
(Option A)			
(Reduction rate)		(Tariff quota commitment)	
(0)		(40)	
(#)		(#)	
5		25	
10		20	
Standard combination	15 %	Standard combination	15 %
20		10	
25		5	
(#)		(#)	
(30)		(0)	
Source: ICTSD 2006			

Table 13. G-10 WTO proposal on overall trade distorting support.		
Bands	Proposed Reduction	Countries
Highest	75 %	EU
Middle	65 %	US, Japan
Lowest	45 %	Other developed and developing countries
Source: ICTSD 2006		

Table 14. G-10 WTO proposal on AMS.			
Bands	Proposed Reduction	Countries	
Highest	70%	EU	
Middle	60 %	US, Japan	
Lowest	40 %	Other developed and developing Countries	
Source: ICTSD 2006			