

Session 3: Food Security and Sustainable Crop Production

Can Trade Liberalization Promote Sustainability of Crop Production and Food Security?

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Due to a smaller number of exporting countries and a larger number of importing countries in international food trade caused by continuous tariff reduction under the WTO (World Trade Organization) system, the recent grain prices are more responsive to changes in supply-demand balance. Moreover, the sense of insecurity becomes a cause of export restraint and raging grain speculation, thereby increasing grain price volatility.

Food importing countries recognized after the recent world food crisis that each country should maintain a certain level of basic food production in its own country. However, the current WTO criteria for reducing agricultural protection focus on economic efficiency or maximization of the total economic welfare. The meaning of “efficiency” is narrowly defined without considering the equitable distribution of wealth and external economies such as national security and environmental protection. Furthermore, it is said that a total ban on export subsidies by the end of 2013 was agreed in the WTO, but the pledge is very unlikely to be fulfilled because many “hidden” export subsidies are left out of this agreement. Consequently, further global tariff reduction will unfairly penalize small-scale farming in many importing countries, while it is apparently favorable to exporting countries with large-scale farming industries.

Thus, while some advocate that trade liberalization promotes sustainability of crop production and food security, the current world trade rules are insufficient. Simple and continuous tariff reduction will destroy crop production and food security in many countries. We will also lose biodiversity, nitrogen balance, local landscape, traditional culture, and so on (see tables 1 and 2 as examples). Therefore, if further tariff reduction deteriorates environmental roads, the damage should be taken into account as a cost of trade liberalization.

Although protection by direct payments instead of tariffs is an alternative way, this replacement is difficult for many countries because of severe budgetary constraints. Therefore, we should develop detailed indicators of agricultural multifunctionality to incorporate into the current WTO rules, and realize more comprehensive trade rules for sustainable growth of diversified agriculture in the world.

**Table 1. Estimated impacts of free trade under FTAs and WTO on rice markets:
Changes in economic welfare. (billion yen)**

Variables		Japan-Korea FTA	East Asian FTA	WTO
Japan	Consumer surplus	152.4	2108.1	2115.4
	Producer surplus	-140.2	-1020.0	-1020.2
	Government revenue	-98.8	-98.8	-98.8
	Total surplus	-86.7	989.2	996.4
Korea	Consumer surplus	-390.2	1089.0	1095.1
	Producer surplus	419.6	-864.5	-868.3
	Government revenue	-11.6	-11.6	-11.6
	Total surplus	17.8	212.8	215.1
China	Consumer surplus	20.4	-1336.9	-1202.9
	Producer surplus	-20.4	1384.3	1241.3
	Government revenue	0	0	0
	Total surplus	0	47.4	38.4
U.S.	Consumer surplus	23.9	23.9	-68.3
	Producer surplus	-24.3	-24.3	73.7
	Government revenue	0	0	0
	Total surplus	-0.4	-0.4	5.5

Source: Estimated by N. Suzuki and J. Kinoshita.

**Table 2. Estimated impacts of free trade under FTAs and WTO on rice markets:
Changes in environmental indicators.**

Variables		Unit	Actual	Japan- Korea FTA	East Asian FTA	WTO
Japan	Water-use inefficiency: Virtual water	km ³	1.5	3.8	33.2	33.3
	Nitrogen accumulation increase:					
	Total nitrogen capacity of farm land (A)	1,000t	1237.3	1207.5	827.2	825.8
	Domestic food-derived nitrogen supply (B)	1,000t	2379.0	2366.0	2199.4	2198.8
	B/A	%	192.3	195.9	265.9	266.3
	Deprivation of biodiversity:					
	Tadpole shrimp	million	4,456	4,138	81	66
Tadpole	million	38,987	36,209	708	576	
Red dragonfly	million	371	345	7	5	
World total	Transportation energy consumption: Food miles	points	457.1	207.6	3175.9	4790.6

Source: Estimated by N. Suzuki and J. Kinoshita.



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