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**Implications of the Recent Developments in Myanmar to the  
Regional Food Security**

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## **Introduction**

After the successful implementation of the general election in November 7, 2010, Myanmar has accelerated political reforms, which were followed by several bold economic policy initiatives. After a prolonged stagnation of economy under the ‘Burmese Way to Socialism’ since 1962, and even under the military regime led by SLORC/SPDC after 1988, when a bold economic liberalization policy was (at least once) adopted, it seems that now Myanmar is finally going to start a step towards real rapid development and change, which is expected to give substantial impacts on the regional economy, given the very important geopolitical location of the country.

In the pre-War period Myanmar emerged as one of the major rice exporting countries in the world under the British colonial rule, with more than 3 million tons of export at its peak in the 1930s. After independence in 1948 Myanmar maintained its status as a major rice exporter for some time, although the export volume reduced to around 1.5 million tons. However, rice export from Myanmar drastically reduced since the mid-1960s, which continued up to the present. On the other hand, with the advent of economic liberalization, particularly opening to the world economy since the early 1990s, Myanmar started to export pulses and import palm oils in large volumes.

Myanmar is basically blessed with rich and diversified natural resources, with a big potential for the agricultural sector (in a wider sense) to develop. And the priority of the new ‘democratic’ government of Myanmar is to develop agriculture and allied sectors such as food processing at first. Therefore, it is expected that Myanmar agriculture (including livestock and fisheries) and agro-industries will experience a drastic transformation and development in the near future, which gives far-reaching implications to food security and trade in the neighboring regions, including Southeast Asian countries, China, Bangladesh and India.

The main objective of this paper is to review the recent developments in agriculture and allied sectors in Myanmar, with due consideration to the basic structure of the sectors which was historically formed, and to discuss on its implications to the regional food security and trade.

## **1. Myanmar Agriculture and Allied Sectors with Special Reference to Recent Developments**

### **1-1. Outline of Myanmar agriculture**

In Myanmar, agricultural sector still accounts for 43-44 per cent of GDP, being comprised of agriculture

(35 per cent), livestock and fisheries (7-8 per cent) and forestry (0.5 per cent) in 2007/08 (CSO 2010). In terms of employment, although there is no firm statistics, 60-70 per cent of workforces are estimated to engage in the agricultural sector.

Myanmar has a population of roughly 60 million<sup>1</sup> in 67.7 km<sup>2</sup> of land. Net sown area accounts for only 17 per cent (11.9 million ha) of the total, but 'cultivable waste land' (5.7 million ha) is very large and nearly half of the net sown area. Reserved forest accounts for 26 per cent (17.5 million ha) and 'other forest area' is 15.8 million ha, thereby forest is still having a large share (49 per cent) in Myanmar. Myanmar is also blessed with rich water resources, which remain largely unexploited, especially groundwater resources in the Lower Ayeyarwady River basin.

The share of net irrigated area in net sown area is around 17 per cent, and the net irrigated area of 2.22 million hectare in 2007/08 is composed of canal (0.63 million ha; 28%), pump (0.85 million ha; 38%), tank (0.33 million ha; 15%), well (0.15 million ha; 7%), and others (0.27 million ha; 13%). Note that pump irrigation means lifting water from surface bodies, including the Ayeyarwady River. The cropping intensity is estimated to reach about 170 per cent.

Table 1 shows the sown area of major crops. Apart from rice and other food cereal crops, the sown area under oil crops has been very large in Myanmar because edible oil is indispensable for the people's diet. In contrast, the production of various kinds of pulses increased rapidly during the last 20 years or so mainly for export<sup>2</sup>. The other important cash crops include cotton, rubber, sugarcane, and vegetables & fruit. Recently maize for animal feed is also becoming an important crop for both domestic and export market. Table 2 shows recent movement in the average yield of major crops.

It should be noted here, however, that such statistical data published by the Myanmar government are largely unreliable, especially after the mid-2000s. Under the strong pressure for increased production given by the military government, overestimation has become rather common. Besides, since 2004 the responsibility to collect agricultural statistics was shifted from the Ministry of Agriculture and Irrigation to the Peace and Development Council at the State or Division level. Table 3 shows, for example, the two series of data set of rice production; one is the Myanmar government's and the other is the United States Department of Agriculture (USDA)'s. At present, as the table shows, the Myanmar government's estimate reached nearly double of the USDA's. In the year 2009/10 the USDA's estimates for rice sown area and yield were 7000 thousand hectare and 2.60 ton/ha respectively, compared to 8094 thousand hectare and 4.03 ton/ha of the Myanmar government's (in 2008/09). Overestimation in crop yields seems to be much more serious. The rapid increase in crop yields, including non-rice crops, since 2004/05 observed in Table 2, therefore, is also quite questionable.

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<sup>1</sup>Precise data is not available because the population census has not been conducted after 1983.

<sup>2</sup>Black gram, green gram and pigeon pea are the three major pulses for export from Myanmar.

**Table 1 Sown Area of Major Crops in Myanmar** ('000 ha)

	1990/91	1995/96	2000/01	2004/05	2005/06	2006/07	2007/08	2008/09
Paddy	4945	6138	6359	6858	7389	8125	8090	8094
Wheat	150	93	80	108	112	92	98	100
Maize	141	167	217	293	321	327	346	355
Sorghum	180	230	250	230	253	239	204	207
Pulses and beans	881	1862	2610	3129	3347	3572	3786	3849
Black gram	147	474	620	782	815	898	980	988
Green gram	117	460	742	823	949	1006	1066	1039
Pigeon pea	71	250	362	553	534	567	589	612
Chick pea	179	166	166	205	224	269	280	299
Cow pea	30	74	135	141	150	146	157	183
Soy bean	33	72	114	145	156	157	158	166
Krishna mung	75	117	150	146	157	146	152	153
Lablab bean	76	76	89	95	99	99	108	110
Butter bean	45	44	52	54	57	65	66	66
Others	108	129	180	185	206	219	230	233
Oil crops	1895	2050	2603	2817	2895	2969	3343	3498
Groundnut	554	527	590	684	730	756	815	844
Sesame	1324	1276	1424	1496	1338	1443	1508	1570
Sunflower	NA	221	518	516	690	613	835	884
Mustard	17	18	52	67	70	75	92	98
Oil palm	NA	8	19	54	67	82	93	102
Oil palm (harvested area)	NA	4	8	10	13	20	24	29
Cotton	157	379	324	306	332	354	368	367
Jute & Fibres	37	50	47	34	37	36	21	17
Rubber	77	105	181	203	226	295	380	428
Rubber (harvested area)	NA	49	62	91	108	123	138	144
Sugarcane	48	67	139	146	134	149	169	165
Tea	59	62	73	79	83	85	87	90
Fodder crops	219	297	390	402	464	423	447	450
Vegetables	139	180	297	419	443	458	481	508
Chilli	NA	64	101	129	131	123	129	130
Onion	NA	27	59	63	73	66	71	69
Garlic	NA	12	18	24	24	26	29	26
Potato	15	19	29	35	35	37	37	38
Fruits	195	230	343	454	479	510	539	541
Total	9138	11929	13942	15513	16550	17671	18396	18707

Source: CSO, 2010 and DAP, 2010.

**Table 2 Yield per Hectare of Major Crops in Myanmar** (ton/ha)

	1990/91	1995/96	2000/01	2004/05	2005/06	2006/07	2007/08	2008/09
Paddy	2.92	3.08	3.38	3.64	3.75	3.83	3.93	4.03
Wheat	NA	0.86	1.17	1.42	1.42	1.55	1.61	1.74
Maize	NA	1.70	1.73	2.68	2.87	3.16	3.32	3.39
Sorghum	NA	0.66	0.68	0.79	0.84	0.87	0.94	0.94
Pulses and beans								
Black gram	NA	0.78	0.87	1.17	1.25	1.34	1.41	1.46
Green gram	NA	0.74	0.74	0.96	1.00	1.05	1.12	1.19
Pigeon pea	NA	0.60	0.90	1.01	1.14	1.16	1.24	1.27
Chick pea	NA	0.59	0.73	1.17	1.18	1.25	1.26	1.35
Soy bean	NA	0.92	0.97	1.15	1.21	1.30	1.37	1.46
Oil crops								
Groundnut	NA	1.15	1.25	1.38	1.42	1.46	1.50	1.55
Sesame	NA	0.34	0.33	0.38	0.40	0.48	0.52	0.54
Sunflower	NA	0.76	0.54	0.75	0.81	0.82	0.85	0.88
Oil palm	NA	3.89	9.10	7.99	8.86	8.60	8.90	7.34
Cotton	NA	0.51	0.51	0.65	0.71	0.76	0.84	1.23
Jute & Fibres	NA	0.91	0.95	0.86	0.96	0.93	1.00	1.01
Rubber	NA	0.53	0.58	0.57	0.59	0.60	0.64	0.65
Sugarcane	NA	51.17	44.38	52.36	55.72	56.57	59.27	61.20

Source: CSO, 2010 and DAP, 2010.

**Table 3 Rice Production in Myanmar (ton)**

	Myanmar gov.	USDA
2000/01	1217	1077
2001/02	1251	1044
2002/03	1245	1073
2003/04	1320	1015
2004/05	1413	957
2005/06	1580	1044
2006/07	1765	1060
2007/08	1795	1073
2008/09	1860	1015
2009/10	1925	1055

Source: CSO, various issues and USDA, Rice Outlook, various issues.  
 Note: Myanmar gov. series are estimated by multiplying 0.58 to the paddy production data.

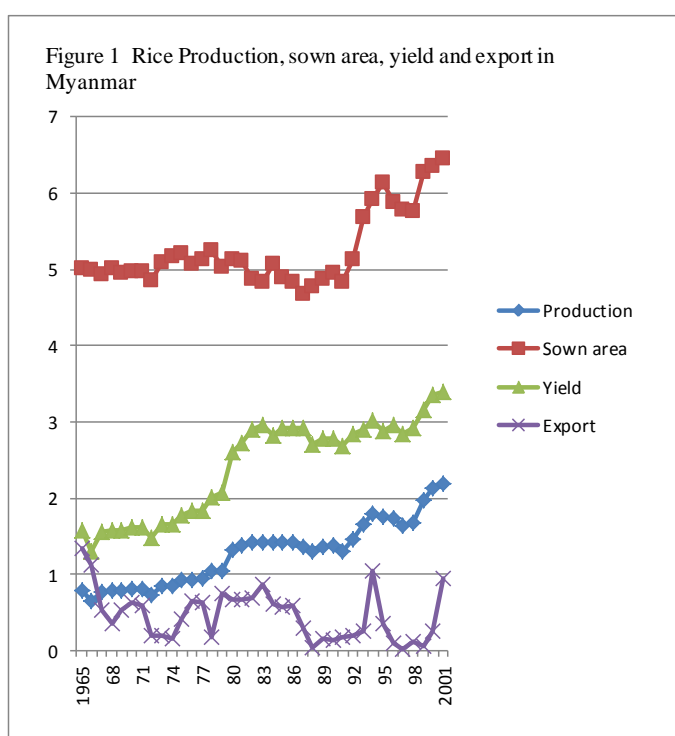


Figure 1 illustrates the trend of rice production, sown area, yield and export in Myanmar since the mid-1960s up to the beginning of 2000s. It is found that rice yield increased rapidly during the late-1970s and the early-1980s from less than 2 to nearly 3 ton/ha, which was attributed to the spread of the ‘Green Revolution’ technologies, mainly supported by the Japanese ODA. However, the overestimation of rice yield seems to be started in this period, because a rise of the average rice yield by more than 50 per cent within 5 years or so seems to be quite impossible. Note that the USDA’s estimate of rice yield is still 2.6 ton/ha at present as already noted. On the other hand, the figure shows that rice sown area increased rapidly in the first half of the 1990s, but this seems to be actually happened because of the government program to promote summer paddy (in the dry season), especially in Ayeyarwady delta, and farmers responded very positively to the program because of the high rice price at that time.

At any rate, the agricultural sector in Myanmar, having been highly suppressed under the state procurement and rationing system in the socialist period, started to change drastically after 1988 when economic liberalization policy, with opening to the world economy, was adopted. Let me summarize the major points based on Fujita and Okamoto (2010).

First, the agricultural prices in general and rice price in particular, which had been kept very low in the socialist period, started to rise sharply and farmers responded to it quickly. One of the results was the rapid development in rice production (especially summer paddy as mentioned above), which brought about an increased rice export reaching 1 million tons in 1995, though it was rather short-lived. Another notable change was the drastic increase in the production of pulses for export, mainly to India (Table 1). Myanmar agriculture has an international comparative advantage in rice and pulses production, but the government's attitude to these two crops was totally different. The government allowed almost total freedom for the production and export of pulses (although the government imposed a 10 per cent export tax to all the export items, including pulses) whereas it continued to control rice production and export. Farmers had to grow monsoon paddy in land categorized as 'paddy field' (*le*) and had to provide the government with 10 baskets of paddy (1 basket is roughly 20.7 kg) per acre at well-below market prices, until the procurement system was finally abolished in 2003. Farmers also had an obligation to grow summer paddy in irrigated paddy field as well, though procurement of paddy was exempted. Furthermore, rice export was monopolized by the Myanmar Agricultural Produce Trading (MAPT), a government agency under the Ministry of Commerce and responsible for the procurement of paddy from farmers. Because of such a restriction of rice export, the domestic price of rice in Myanmar remained at 30-60 per cent lower than the international price. The stagnation of rice production after the mid-1990s was basically attributed to such a low price of rice (and high price of chemical fertilizers and diesel oils that had to be imported), besides the exhaustion of easily irrigable land for expanding summer paddygrowing area.

Second, it seems that Myanmar agriculture had had no comparative advantage in the production of oil crops except for sesame for export. In the socialist period, therefore, farmers were protected from the competition with oil crop producers abroad. However, after 1988 with the liberalization of import of edible oils, palm oils produced in Malaysia (and later Indonesia) poured into Myanmar, which caused the stagnation in sown area for oil crops (Table 1). Note here that, however, the import of edible oils has had a relatively small share in total import in Myanmar<sup>3</sup>. However, the government, eager to promote import substitution, started to encourage oil crops production, mainly by introducing oil palms on the one hand<sup>4</sup>, and sunflowers, mustard, and other minor oil crops on the other. Farmers were forced to grow oil crops under such a policy environment.

Third, the four major cash crops; sugarcane, rubber, cotton and jute had continuously been processed mainly by the state own enterprises until very recently, when they were finally privatized. Farmers were forced to grow these crops and they had to procure the products to the state owned enterprises at well-

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<sup>3</sup>See Appendix Table A and Table B for the import data.

<sup>4</sup>A large-scale development of oil palm plantations by clearing forest was promoted by the government in the most southern part of Taninthayi Division. Several private companies, often construction companies, participated in the program since the late-1990s.

below market prices.

Fourth, by the initiative of farmers and private sectors the development of several cash crops for domestic market was observed, including vegetables and fruit, livestock products (especially eggs and meat such as pork, chicken and duck meat). Fish, shrimps, crabs and other marine products have also been produced and exported. The CP, a Thailand-based multinational agro-industry company, entered into Myanmar in the mid-1990s and has been engaged in the production of animal feed (mainly maize) and livestock under the contract farming system with Myanmar farmers. Maize production has been booming in recent years for supplying it to domestic livestock farms and export as well (mainly to China and Bangladesh).

## 1-2. Agrarian structure in Myanmar

The characteristics of the agrarian structure in Myanmar are explained now even briefly. First, the ownership of farmland is belonging to the state, although the old Act is now under examination in the parliament for revision. Farmers are, however, provided with the cultivation right of farmland, which can be inherited. But no land certificate is issued by the government, unlike Vietnam, so that farmers cannot get bank loans by providing farmland as collateral. Table 4 shows the number of farm households in Myanmar, with distribution of land in the late-1990s. Second, tenancy and mortgage of farmland is prohibited. As a result, a large number of landless labor households exist in rural Myanmar, estimated to be 30-40 per cent of total rural households on average<sup>5</sup>, and they are mainly engaged in agricultural wage labor (either as seasonal laborers or occasional laborers), given the extremely scarce off-farm job opportunities in rural areas.

**Table 4 Distribution of holding size of farm households, 1997/98**

	No. of holdings	Share of holdings (%)	Land area (acres)	Share of land area (%)	Average land holding (acre)
Under 5 acres	2,804,000	61.8	6,719,400	26.7	2.40
5-9	1,139,400	25.1	8,133,500	32.3	7.14
10-19	493,400	10.9	6,852,200	27.2	13.89
20-49	101,000	2.2	2,783,800	11.0	27.56
50-99	1,900	0.0	121,500	0.5	63.95
100 acres and over	1,100	0.0	599,200	2.4	544.73
Total	4,540,800	100.0	25,209,600	100.0	5.55

Source: Ministry of National Planning and Economic Development, 1998.

The landless rural households were created in the British colonial rule, especially in the World Great Depression from 1929 onwards when land was increasingly accumulated in the hand of a small number of large landowners, including Chettiers, a commercial and moneylending caste from South India, and the landless became either tenant farmers or agricultural laborers. After the independence a land reform program was implemented in Myanmar in the 1950s but the effect was limited; not only the limited amount of land was redistributed, but also most of the landless people were not benefited from the

<sup>5</sup>There is no statistical data, but based on my estimate, non-farm households (without cultivation right of farmland) account for 30-50 per cent of total rural households, and agricultural labor households (defined as the households which depend more than 50 per cent of their income on agricultural wages) account for 20-30 per cent of total (Fujita, 2010).

program, mainly because the government was afraid of the plausible decline of agricultural production, since the landless laborers did not own bullocks and other agricultural implements.

Hence, a large number of agricultural labor households continued to remain in rural Myanmar, but the gap in income and living standard between farm households and landless households was not very large in the socialist period, because firstly, agricultural prices were kept so low and most of the surplus production was procured by the government at cheap rates, and secondly, landless laborers were entitled to get ration rice. In other words, there was a re-distributional mechanism under the socialist regime<sup>6</sup>. However, such a ration system of agricultural products was abolished after 1988, except rice for the public servants. At the same time, the agricultural prices started to rise very rapidly, as already noted. Hence, the gap of living standard between farm households and landless rural households began to widen sharply. Note also that the gap between marginal & small farmers (without marketable surplus) and large farmers has been widened as well.

Another notable fact is that the real agricultural wage rate (especially in terms of rice wage) seems to be rapidly declined after 1988. According to Fujita (2010), the rice wage (volume of rice which can be purchased by daily wages) for male agricultural laborers, which had been about 9kg during the socialist period, decreased sharply to 4-5kg within several years after 1988<sup>7</sup>. In this process, the conversion from in-kind wage payment to cash payment occurred. The conversion from seasonal employment to occasional employment, and the shortening of the employment period for seasonal laborers was also observed. In sum, the relative (and in some sense, absolute) impoverishment of the landless laborers progressed in Myanmar since 1988<sup>8</sup>.

The widespread and serious poverty in rural Myanmar caused a large number of migrants to neighboring countries, including Thailand, Malaysia, Singapore, and the Middle East. It is estimated that at present more than 2 million Myanmar migrants are staying in Thailand, which is roughly 5-6 per cent of the total labor force of Myanmar. In Thailand most of the migrants are engaging in the so-called 3D (Dirty, Dangerous, and Demeaning) jobs, usually in the sectors such as agriculture, fisheries, processing of fisheries products, forestry, construction, and domestic work<sup>9</sup>.

Finally, let me explain the basic structure of rural credit market in Myanmar. In a word, there is a very weak credit market developed in rural Myanmar, where informal sources of credit with exorbitantly high interest rate are almost the sole credit sources. The sole institutional credit supplier to farmers is the Myanmar Agricultural Development Bank (MADB), but its role is very limited; it supplies basically only for rice production, with a very limited credit amount per acre. Rice farmers can only purchase a bag (50 kg) of chemical fertilizer with the loan. Therefore, farmers are usually facing an acute shortage of working capital, for hiring laborers and agricultural machineries (such as power tillers and pumps), and for

<sup>6</sup>However, the gap in terms of asset (residential houses and producer and consumer durables) holding was very large, although the gap in terms of income earnings was minimal.

<sup>7</sup>In contrast, the rice wage in Bangladesh increased from 1.5-2kg in the 1970s to 3kg in the 1980s, 4kg in the 1990s, and finally 5-6kg in the 2000s (Fujita, 2011).

<sup>8</sup>However, note that if we compare the food intake conditions of the rural poor in Myanmar with the counterpart in Bangladesh, the situation is much better in Myanmar than in Bangladesh, mainly because of the cheap food prices in Myanmar (Fujita, 2008).

<sup>9</sup>Regarding the livelihood and problems faced by Myanmar migrants in Ranong, see Fujita et al (2010).



purchasing inputs such as chemical fertilizers, insecticides, and diesel oils. They usually have to pay 5-10% per month interest rate to moneylenders and even to their relatives and friends. Farmers cannot rely on land mortgage market to get relatively cheap loans for a long period, since they are not allowed to mortgage-out land. The landless laborers are usually facing a much severer situation, in which they have no other way to borrow from their employers (farmers) as an advance of wages. They usually have to pay 15-20% per month interest rate (Okamoto, 2008).

## **2. Implications of the Recent Myanmar's Development to Regional Food Security**

### **2-1. Additional information on the recent developments**

Before discussing the implications of the recent Myanmar's developments to the regional food security, some additional information are delivered.

First, the rice procurement and rationing system in Myanmar was finally abolished in 2003. At the same time the salary of public servants (including soldiers) was raised<sup>10</sup>. The permission of private traders in participating in rice export was also announced in 2003, but due to the rice price hike in the domestic market at that time it was suspended soon after the announcement. In 2008 the government finally allowed rice export by private traders, with allocating export quota to individual exporters. And very recently the new 'democratic' government totally liberalized the rice export, when, however, it was already difficult for the exporters to find buyers even in the countries in sub-Saharan Africa. Another notable fact is that now Myanmar has a buffer stock of rice. Recently, the new 'democratic' government requested the private sector (Myanmar Rice Industry Association; MRIA) to purchase rice from farmers and maintain it as a buffer stock. The buffer stock of rice, according to the author's interview with the vice-president of MRIA in March 2011, is targeted at one million tons, although only 500 thousand tons were accumulated at the time of the interview<sup>11</sup>.

Second, one of the major reasons why the rice exporters in Myanmar faced difficulties in finding buyers of rice at present is the appreciation of the Myanmar currency, kyat (especially against US dollar) during the last several years. The market exchange rate of kyat against US dollar continued to depreciate rapidly until the mid-2000s, when 1 US dollar reached 1300 kyat at its peak in 2006 and 07, but started to appreciate thereafter, with around 800 kyat/dollar at present<sup>12</sup>, in spite of the high inflation experienced in Myanmar. If the gap in inflation rate between USA and Myanmar is considered, the kyat has appreciated about three times against US dollar during the last several years after 2007. The major reason seems to lie in the rapid increase of natural gas export from Myanmar (Table 5). A sort of 'Dutch disease' attacked the country. Such an appreciation of kyat in real terms had a huge impact on the whole economy, particularly export of pulses and ready-made garments. The export sectors in general have been suffering from it, either directly or indirectly through higher wage rate in terms of US dollar<sup>13</sup>.

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<sup>10</sup>Most of the ration rice had been, however, sold for animal feed due to its extremely low quality.

<sup>11</sup>All the cost of maintaining the buffer stock is borne by the private sector (MRIA), a strange phenomenon, but understandable in the context of Myanmar.

<sup>12</sup>Note that the kyat is officially pegged to SDR and thereby remained at about 6 kyat/dollar, although the official rate seems to be used only in a very limited occasions even in the government sector by now.

<sup>13</sup>The rise of wages in terms of US dollar, however, did not contribute to an improvement of living standard of

**Table 5 Value of Foreign Trade** (million kyat)

	Export															Import	Balance
	Total	Teak & Hardwood	%	Rice and Rice products	%	Pulses	%	Marine Products	%	Garment	%	Natural Gas	%	Others	%		
1985/86	2566.1	1046.0	40.8	763.0	29.7	238.0	9.3	94.0	3.7	6.0	0.2			419.1	16.3	4802.0	-2235.9
1990/91	2952.6	999.0	33.8	172.0	5.8	515.0	17.4	165.0	5.6	8.0	0.3			1093.6	37.0	5522.8	-2570.2
1992/93	3590.0	949.0	26.4	249.0	6.9	667.0	18.6	259.0	7.2	97.0	2.7			1369.0	38.1	5365.3	-1775.3
1993/94	4227.8	1241.0	29.4	268.0	6.3	724.0	17.1	368.0	8.7	220.0	5.2			1406.8	33.3	7923.3	-3695.5
1994/95	5405.2	1061.0	19.6	1166.0	21.6	799.0	14.8	617.0	11.4	343.0	6.3			1419.2	26.3	8332.3	-2927.1
1995/96	5032.7	1048.0	20.8	440.0	8.7	1358.0	27.0	615.0	12.2	300.0	6.0			1271.7	25.3	10301.6	-5268.9
1996/97	5487.7	985.0	17.9	126.0	2.3	1272.0	23.2	887.0	16.2	402.0	7.3			1815.7	33.1	11778.8	-6291.1
1997/98	6446.8	853.0	13.2	38.0	0.6	1403.0	21.8	945.0	14.7	436.0	6.8			2771.8	43.0	14366.1	-7919.3
1998/99	6755.8	789.0	11.7	167.0	2.5	1135.0	16.8	941.0	13.9	471.0	7.0	5.0	0.1	3247.8	48.1	16871.7	-10115.9
1999/00	8947.3	925.0	10.3	65.0	0.7	1179.0	13.2	807.0	9.0	2722.0	30.4	31.0	0.3	3218.3	36.0	16264.8	-7317.5
2000/01	12736.0	803.0	6.3	208.0	1.6	1658.0	13.0	934.0	7.3	3785.0	29.7	1110.0	8.7	4238.0	33.3	15073.1	-2337.1
2001/02	17130.7	1880.0	11.0	754.0	4.4	1898.0	11.1	861.0	5.0	2985.0	17.4	4247.0	24.8	4505.7	26.3	18377.7	-1247.0
2002/03	19955.1	1871.0	9.4	633.0	3.2	1760.0	8.8	1116.0	5.6	2976.0	14.9	5919.0	29.7	5680.1	28.5	14910.0	5045.1
2003/04	14119.2	2049.0	14.5	131.0	0.9	1731.0	12.3	966.0	6.8	1965.0	13.9	3478.0	24.6	3799.2	26.9	13397.5	721.7
2004/05	16697.3	2242.0	13.4	180.0	1.1	1283.0	7.7	1036.0	6.2	1238.0	7.4	5812.0	34.8	4906.3	29.4	11338.6	5358.7
2005/06	20646.6	2750.0	13.3	214.0	1.0	1876.0	9.1	1147.0	5.6	1586.0	7.7	6235.0	30.2	6838.6	33.1	11514.2	9132.4
2006/07	30026.1	2939.0	9.8	18.0	0.1	3498.0	11.6	1357.0	4.5	1602.0	5.3	11676.0	38.9	8936.1	29.8	16835.0	13191.1
2007/08	35296.8	2964.0	8.4	552.0	1.6	3463.0	9.8	1653.0	4.7	1555.0	4.4	13938.0	39.5	11171.8	31.7	18418.9	16877.9
2008/09	37027.8	2212.0	6.0	1112.0	3.0	4069.0	11.0	1503.0	4.1	1594.0	4.3	12996.0	35.1	13541.8	36.6	24873.8	12154.0

Source: CSO, 2010.

Third, the inflow of foreign direct investment (FDI) to Myanmar drastically reduced since 1997, when the Asian currency crisis and economic recessions happened, and also after the economic sanctions imposed by the West in 2003 (Table 6 and Table 7 show the cumulative permission-basis FDI as of March 31, 2009). However, notable is the fact after the mid-2000s the presence of China in FDI to Myanmar has been rapidly increasing; the share of China increased from 0.6% in 2003 to 2.5% in 2004, 1.3% in 2005, 3.3% in 2006, 3.3% in 2007, 8.9% in 2008, 8.7% in 2009, and 27.3% in 2010. The FDI from China has been mainly invested in resource development projects (such as gas and oils, jewelry, etc.) and hydrologic power plant projects.

Fourth, although the two-digit economic growth rates in Myanmar after the late-1990s published by

**Table 6 FDI cumulative total as of March 31, 2009**

	No. of Enterprises	Total Investment	Local (million kyat)	Foreign	
				million kyat	million US\$
Agriculture	4	231.8	25.7	206.1	34.4
Fishery	25	2422.7	398.1	2024.6	324.4
Mining	60	8660.2	190.3	8470	1395.9
Oil and Gas	88	20407.9	-	20408	3357.5
Manufacturing	154	11369.7	1542.7	9827.1	1628.9
Power	2	37867.3	-	37867.3	6311.2
Transport	16	1820.7	2	1818.7	313.3
Hotel and Tourism	44	7236.3	832.6	6403.7	1049.6
Real Estate Development	19	6362.9	36.2	6326.7	1056.5
Industrial Estate	3	1927.1	768.5	1158.7	193.1
Construction	2	3660.6	3434	226.6	37.8
Others	6	181.0	38.8	142.1	23.7
Total	423	102148.2	7268.9	94879.6	15726.3

Source: CSO, 2010.

the laborers.

**Table 7 FDI cumulative total as of March 31, 2009**

	No. of Enterprises	Total Investment (million US\$)
Thailand	59	7406.8
UK	50	1861.0
Singapore	72	1553.2
China	28	1331.4
Malaysia	33	660.7
Hong Kong	31	504.2
France	2	469.0
USA	15	243.6
Indonesia	12	241.5
Korea	37	239.3
Netherland	5	238.8
Japan	23	216.8
India	5	189.0
Philippines	2	146.7
Russia	2	94.0
Australia	14	82.1
Austria	2	72.5
Others	31	175.4
Total	423	15726

Source: CSO, 2010.

the government are apparently overestimated<sup>14</sup>, Myanmar seems to have attained a moderate (4-8%) growth, except for 2003 when a serious economic recession was experienced mainly by the bank run, and the growth seems to be accelerated after the mid-2000s, led by export of natural gas and accompanied by the development of non-agricultural sectors. An estimate shows that the income of Myanmar nearly doubled during the last 10 years or so since the late-1990s.

Fifth, export liberalization was announced in some agricultural products, such as groundnut oil and sesame<sup>15</sup>. The monopoly of the Union of Myanmar Economic Holdings Ltd. (a company established by military and their families) on palm oil imports was recently lifted and private sectors are now allowed to import palm oils<sup>16</sup>.

Sixth, land reform measures are now under deliberation in the parliament. Although exact information is not available, the ongoing discussions seem to include on 1) transfer of land ownership from the state to individual farmers, 2) permission of land tenancy and mortgage, 3) how to utilize the cultivable waste land, etc.

Seventh, the budget of Myanmar government, especially expenditure, is becoming much more transparent and accountable to the parliament. For instance, Myanmar government has been spending a lot of expenditure for construction of large-scale dams and gravity irrigation systems since 1988. It seems that so far the government has been spent 'excessively' in construction of dams and large irrigation systems, while ignoring the much needed sectors such as electricity, education, and health. Moreover, it was not always welcomed from the farmers who, at a glance, can benefit from the project, because after the project is

<sup>14</sup>The growth rates published by the Myanmar government were; 10.9% in 1999, 13.7% in 2000, 10.5% in 2001, 12.0% in 2002, 13.8% in 2003, 13.6% in 2004, 13.6% in 2005, 12.7% in 2006, etc.

<sup>15</sup>There are four kinds of sesame, and two of them were already liberalized for export before. The remaining two were additionally liberalized recently.

<sup>16</sup>As a result, the retail price of palm oil declined, according to the author's interview with staffs of the Republic of the Union of Myanmar Federation of Chambers of Commerce and Industry (UMFCCI) in October 2011.

completed they have to grow summer paddy regardless of its profitability vis-à-vis alternative crops such as pulses. The notable fact is that such an ‘unbalanced’ budget is now criticized in the parliament, and the Ministers have to try to refute it in front of the parliament members, which had never happened for long in Myanmar.

## **2-2. Implications to the regional food security**

### **2-2-1. Immediate major challenges**

I would discuss two issues as the immediate major challenges that Myanmar is facing; one is the unification of exchange rate, and the other is the lift of economic sanctions from the West.

As already noted, Myanmar government is still adopting a double (or even multiple) exchange rate system, in which the official rate is about 6 kyat/US dollar whereas the market rate is now around 800 kyat/dollar. In theory, if some state-owned enterprises can get foreign exchanges at the official exchange rate, they are highly subsidized. And actually in the past at least, it seems such things happened in a wider scale. Another problem lied in the government statistics. For instance, foreign trade transactions have been recorded in kyat terms by using the official exchange rate, which resulted in a substantial underestimation of the role of foreign trade in the economy. It seems that the new ‘democratic’ government has a willingness to unify the exchange rates as soon as possible, but they need technical assistance (and may need some financial assistance as well, so as to prevent speculations in the process of unification).

The other immediate major challenge for Myanmar government is to further promote political reforms (including establishment of an appropriate relation with ethnic minorities) so that the Western countries would finally lift the economic sanctions imposed on Myanmar at present.

### **2-2-2. Expected changes after overcoming the challenges**

If the two challenges are overcome by the Myanmar government, some drastic changes can be expected. One is reopen of ODA from abroad, especially from the OECD countries. The other is the accelerated foreign trade and foreign direct investment (FDI), although a series of appropriate deregulations by the government is indispensable in this regard.

Reopen of ODA is expected to direct to 1) infrastructure development, 2) social sectors (education, health, drinking water, sanitation, etc.), and 3) poverty alleviation through microfinance and vocational training, etc. The accelerated inflow of FDI is expected to be invested more in labor-intensive manufacturing sectors such as garment industries, because the labor wage (in terms of US dollar) in Myanmar is still lower than the neighboring countries in spite of the appreciation of kyat during the last several years. However, so far the FDI to Myanmar has been invested mainly to the resource sectors such as power, oil and gas, and mining. The manufacturing sector has attracted relatively small share of the total (Table 6). Some endeavors, mainly in infrastructural development, are necessary for the Myanmar government to encourage more FDI to the manufacturing sector. If we look at Table 4 again, it is noticed that in recent years the export sector in Myanmar is also strongly concentrated in the resource sectors; i.e. natural gas and timbers (teak and hardwood). Thailand is the major importer of natural gas, whereas India, Thailand,

Singapore, Hong Kong and recently China and Vietnam are the major importers of timbers. How to escape from such a resource-based economic structure is a big challenge for Myanmar in the medium- and long-run<sup>17</sup>.

It is because of that the expected amount of natural gas in Myanmar seems to be relatively small, especially compared to Indonesia. The ‘Dutch disease’ Myanmar is presently facing may not be continued for a long period. In this sense, the development of labor-intensive manufacturing sector would be much needed for Myanmar to develop, especially for the sake of poverty alleviation through labor absorption. Another development potential Myanmar seems to have is the agro-based industries, especially food (including marine products) processing, by utilizing the rich agricultural base.

### 2-2-3. Current situation on the export of major agricultural products

#### 1) Rice export

Myanmar has been remaining a ‘marginal’ exporter of rice, with a large fluctuation year by year and thereby without stable outlet market (Table 8). As already noted, furthermore, the appreciation of kyat during the last several years caused a narrowed gap between international and domestic rice prices. Recently, the rice exporters in Myanmar have to compete with Indian exporters, in the market of Bangladesh and sub-Saharan Africa in particular. Rice production in India, especially in Punjab, is highly subsidized in the prices of chemical fertilizers and irrigation water<sup>18</sup>. India has also an advantage in

	Indonesia	Philippines	Malaysia	Singapore	Bangladesh	Sri Lanka	China	Vietnam	Middle East	Africa	Others	Total
1985/86			40		29	40	73	131		210	81	604
1990/91			10	5		56			3	40	20	134
1992/93						65			6	114	14	199
1993/94		2				35			3	174	47	261
1994/95	613				33	59				276	60	1041
1995/96	169	92			20		18			23	32	354
1996/97	12	23								25	33	93
1997/98					12	11					5	28
1998/99	52				11					31	26	120
1999/00	12				17						26	55
2000/01	33		7	6	174					25	6	251
2001/02	201	11	48	94	47		1		367		170	939
2002/03	203		58	40	29			12	350		101	793
2003/04	18		27	32	39			1	33		18	168
2004/05	1		3	24	39				66		49	182
2005/06	1		31	17	12				90	9	20	180
2006/07				3					12		0	15
2007/08				55	193				44	58	8	358
2008/09			17	24	202	8	4		12	377	22	666

Source: CSO, 2010.

transportation cost to sub-Saharan countries. On the other hand, Thailand and Vietnam have advantages in the big and stable market in Southeast Asia such as Indonesia, Philippines, and Malaysia. It may not be very easy for Myanmar to increase rice export under such an environment. In the quality rice market such

<sup>17</sup>Note that the shrink of the garment sector since the early-2000s observed in Table 4 is mainly attributed to the economic sanctions imposed by the West.

<sup>18</sup>Electricity for lifting groundwater by tube-wells is free in Punjab and Tamil Nadu. Even in other states, electricity is charged with a ‘flat rate’ system, which contributes to reduce the water price.

as the Middle East, the market is already occupied by basmati rice from India and jasmine rice from Thailand, although Myanmar can also produce quality rice known as Powsan<sup>19</sup>. The demand for quality rice such as Powsan is rapidly increasing in Myanmar in recent years<sup>20</sup>.

## 2) Maize production and export

Maize cultivation has rapidly increased during the last 10 years or so, particularly in Shan state, both in its northern and southern parts. Maize is used for animal feed (mainly chicken) by domestic livestock farmers, but also exported to China (mainly for pig raising in Yunnan Province) and Bangladesh. Yunnan Province of China is importing maize from Lao PDR as well, because Yunnan Province has rapidly lost comparative advantage in maize production due to the recent accelerated wage hike. The CP, Thailand-based multi-national enterprise, is making farmers in Shan state to multiply certified seed for sales. The hybrid variety of CP888 is widely diffused in the area, besides the hybrid varieties of Yezinseries developed by the Myanmar government. Maize cultivation is also spread in Ayeyarwady delta.

## 3) Sesame

Sesame is mainly cultivated in the dry zone, where the annual rainfall is only 600-800 mm. Sesame is known in Myanmar as a 'gamble crop', because it is easily damaged by excess rainfall in the harvesting season. Sesame oil is expensive for Myanmar people, so that substantial amount of the products seems to be exported mainly to China and Japan.

## 4) Marine products and processing

Myanmar is basically highly blessed with marine resource, with a long coastal line and many islands. Much of the precious marine resources, however, is sold to Thai fishing boats through Siam Jonathan company established in 2002. The company is mediating monopolistically between the Myanmar government and Thai fishing boat owners. The head office of the company is located in Ranong. The license fees are determined according to the weight of the boat and the area of fishing (classified into offshore of Taninthayi, Ayeyarwady, and Rakhine). The duration of fishing is fixed, depending up on the area of fishing. For instance, in the case of a fishing boat of less than 80 tons, if it is engaged in fishing at the offshore of Rakhine it has to pay 11600 US dollars, whereas 8700 US dollars at the offshore of Ayeyarwady. The Siam Jonathan company gets a commission of 50000 baht (=1700 US dollars) per license from the boat owners<sup>21</sup>. The total number of license issued is 100-200 in a year. Therefore, if the Myanmar government has willingness (and a capacity) to utilize the marine resources, instead of selling them to Thailand, it seems that there is an enough room. Note that almost all the young male laborers working in the Thai fishing boats are Myanmar migrants. The situation is the same in the case of the female laborers working in the marine products processing factories located in Ranong and nearby in Thailand.

### 3. Discussions on the Impacts of Myanmar's Developments to the Regional Food Security

Although Myanmar agriculture and alleged sectors has a big potential to develop, it seems that it takes at

<sup>19</sup>Powsan is close to jasmine rice (*kaohonmari*) in Thailand, but it is short grain, not long one.

<sup>20</sup>The demand for basmati rice in India is also rapidly increasing in recent years. In West Bengal, for example, basmati rice came to be consumed by the middle class people since several years ago, and the breeding target is now going to shift to basmati and similar type of varieties.

<sup>21</sup>The commission was reduced to 35000 baht since 2009, because of the reduced fish resources in the sea.

least some time to realize it. First is the very weak credit supply system in rural Myanmar, which should be strengthened quite substantially. Second is the relatively backward and outdated agricultural technology, which needs to be upgraded. Third is the backwardness in human resource development in general. Fourth is how to overcome the ‘rice trauma’ so far the Myanmar government has been trapped in.

I would like to conclude this brief paper, by elaborating the last issue of the ‘rice trauma’. In the socialist period during 1962-88, Myanmar experienced a large-scale social unrest and turmoil three times; i.e. in 1967, 1974 and 1988. And it was not accidental that the rice price surged sharply in these three years. The social unrest and turmoil was triggered by the rice price hike, and seriously endangered the social regime led by the military. The Myanmar government seems to have trapped with this trauma up to the present. This explains why the government has long been stuck to (and still now stick to) increased rice production. Unfortunately for the Myanmar farmers, they have been forced it physically by way of the ‘planned cropping’, without economic incentives. Very recently the government finally liberalized rice export totally, but it does not seem harmful, because the gap between domestic and international rice price is now happened to be minimal. If the gap widened in the future, Myanmar can face another social unrest due to the price hike of rice in domestic market. As noted before, Myanmar has recently initiated to keep some buffer stock of rice, but it may not be enough. We should remind here that even Thailand, the major rice-exporting country after the World War II, had to keep domestic rice price around 40 per cent lower than the export price, mainly by way of maintaining the rice premium system<sup>22</sup>. It was only after the mid-1980s (when Thailand started ‘genuine’ industrialization based on a large inflow of FDI from Japan, Korea and others) when Thailand finally abandoned the rice premium system and thereby the gap between international and domestic rice price narrowed within 10 per cent or so (Choeun, et al, 2004). We can easily imagine how the problem is sensitive, if we consider the widespread and serious poverty in rural Myanmar, especially among the agricultural laborers, which lacked in Thailand. Note also that Myanmar has a large ‘cultivable waste land’, nearly half of the net sown area presently, but we cannot be very optimistic in the possibility to reclaim the land for settling the landless<sup>23</sup>.

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<sup>22</sup>The rice premium system is a kind of flouting export tax system, through which domestic rice price can be prevented to rise beyond the certain price.

<sup>23</sup>There is information that the Myanmar government tried to utilize a part of such waste land before, by making landless labor households to settle, but the project was totally failed, and the landless people returned to their original villages.

**Appendix Table A Import of Myanmar by commodity**

	Food	Beverages and tobacco	Crude materials, inedible except fuels	Mineral fuels, lubricants and related materials	Animal and vegetable oils and fats	Chemicals	Manufactured goods classified by materials	Machinery and transport equipment	Miscellaneous manufactured articles	Miscellaneous transactions and commodities	Total
1985/86	63.3	2.6	23.3	99.8	77.6	483.7	1193.6	2452.5	402.0	3.7	4802.0
1990/91	104.8	10.3	29.4	239.4	433.7	311.8	673.8	2045.5	205.6	1468.5	5522.8
1992/93	145.4	16.2	18.6	85.8	397.5	614.7	861.4	1578.7	163.9	1483.2	5365.3
1993/94	164.2	36.2	25.8	328.1	529.2	1053.1	1353.8	2573.9	313.8	1545.3	7923.3
1994/95	463.1	34.4	50.0	283.7	805.1	606.7	1456.8	2653.3	356.1	1623.2	8332.3
1995/96	355.7	77.2	46.7	214.6	1194.1	1996.0	1615.3	3000.1	247.9	1553.9	10301.6
1996/97	268.4	133.1	250.7	511.5	401.4	1103.9	3025.0	3862.3	401.8	1820.7	11778.8
1997/98	411.2	246.6	47.6	675.9	805.4	1653.9	3436.2	4800.2	731.5	1557.7	14366.1
1998/99	452.6	82.4	64.3	941.3	698.2	1671.9	4435.6	6347.8	573.8	1612.8	16871.7
1999/00	620.2	105.9	319.9	1653.7	488.2	1870.7	4124.9	4867.7	643.0	1570.7	16264.8
2000/01	586.0	112.2	247.6	1145.0	411.8	1923.5	4401.3	3754.1	1000.1	1491.4	15073.1
2001/02	838.0	191.0	59.0	3839.2	253.0	1786.8	4548.1	5110.1	725.7	1026.7	18377.7
2002/03	684.1	159.0	81.7	2104.6	271.9	1760.1	4090.7	3557.8	557.2	1643.1	14910.0
2003/04	339.4	110.0	57.3	1952.7	445.0	1412.5	3419.9	3435.1	409.0	1816.7	13397.6
2004/05	358.2	127.3	56.4	1408.5	463.0	1099.1	2650.8	3000.4	319.5	1855.4	11338.6
2005/06	522.0	119.1	37.2	1632.7	453.3	1275.9	2979.5	2409.1	271.7	1813.7	11514.2
2006/07	506.4	110.9	178.7	4053.9	477.3	1807.1	3293.4	3416.8	311.1	2679.3	16835.0
2007/08	614.2	76.4	82.4	2183.8	1131.7	2023.0	3573.9	4988.7	413.1	3331.9	18418.9
2008/09	617.7	87.3	117.0	3356.6	1617.8	2065.9	4111.7	8158.8	480.2	4260.8	24873.8

Source: CSO, 2010.

**Appendix Table B Import of Myanmar by country**

	Singapore	Thailand	Malaysia	China	Japan	Korea	Indonesia	Hong Kong	India	USA	Others	Total
1985/86	439.7	23.1	52.9	176.7	2091.7	84.3	24.0	61.1	5.1	72.2	1771.2	4802.0
1990/91	532.4	554.8	383.5	1205.4	902.9	199.2	17.2	32.2	37.2	678.2	979.8	5522.8
1992/93	575.8	695.6	329.4	946.0	1536.1	175.8	117.0	40.1	123.8	224.3	601.4	5365.3
1993/94	820.3	865.4	567.3	1261.4	2020.2	292.5	321.6	134.9	281.4	282.8	1075.5	7923.3
1994/95	1215.7	830.2	781.9	1019.4	1962.7	395.2	320.0	253.0	308.7	102.2	1143.3	8332.3
1995/96	1819.7	1318.8	615.9	1433.8	2505.8	402.6	350.3	169.4	344.9	360.1	980.3	10301.6
1996/97	2791.5	1191.7	690.1	1116.3	2465.0	438.8	319.8	319.2	602.7	909.3	934.4	11778.8
1997/98	4440.4	1325.4	995.8	1524.4	2181.4	787.3	677.3	374.5	645.7	334.8	1079.1	14366.1
1998/99	5187.7	2064.9	1203.8	1744.3	2158.2	876.0	1264.9	562.8	434.4	216.2	1158.5	16871.7
1999/00	4559.0	2163.3	1211.0	1568.2	1808.2	1488.1	654.9	561.1	455.3	576.3	1219.4	16264.8
2000/01	3646.4	1970.7	794.0	1855.2	1317.4	1874.0	534.3	838.4	540.2	153.4	1549.1	15073.1
2001/02	3918.0	1798.0	2434.1	2068.1	2390.4	2261.1	575.2	512.5	552.9	222.5	1644.9	18377.7
2002/03	4134.2	1502.5	1887.3	2350.0	1391.7	898.4	415.9	407.7	692.5	142.5	1087.3	14910.0
2003/04	4048.0	1143.3	891.6	2816.7	1579.3	660.0	351.9	222.6	652.4	141.7	831.5	13339.6
2004/05	3471.5	1054.2	666.1	2819.0	920.4	514.6	288.7	129.5	480.1	165.7	828.8	11338.6
2005/06	3240.2	1376.2	810.8	2716.0	610.7	498.6	336.1	119.0	465.2	478.4	863.0	11514.2
2006/07	5928.0	1749.4	634.5	4185.8	896.3	486.9	539.8	135.0	916.5	248.1	1114.7	16835.0
2007/08	4489.8	2110.7	635.8	5472.5	1335.0	590.8	1244.9	116.0	849.7	121.6	1452.1	18418.9
2008/09	5712.7	2150.7	1972.1	6578.1	908.4	1027.3	1139.5	177.7	796.8	450.1	3960.4	24873.8

Source: CSO, 2010.



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