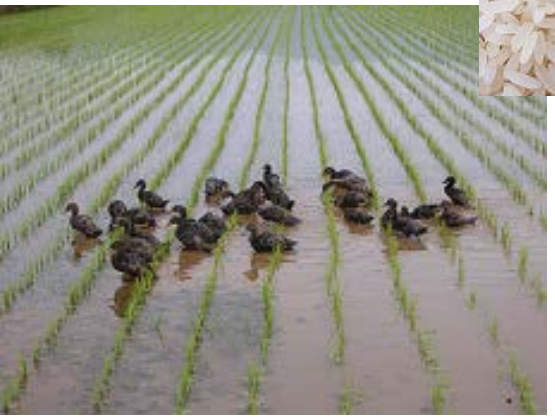
Integration scenario of rice markets in Asia
-a case of ASEAN rice market implication-



24 June 2019,
the workshop on China-Japan-Korea
Rural Vitalization Experiences
Gen FURUHASHI, PRIMAFF

Self-introduction

- Gen FURUHASHI, Chief researcher (& Senior economist),
  - Received my Ph.D. in Agronomics from the University of Tokyo in 2004.
  - Has worked in Policy Research Institute, Ministry of Agriculture, Forestry and Fisheries in Japan (PRIMAFF) as a chief researcher and a lead author of PRIMAFF agricultural projection, and I spent 7 years in PRIMAFF and 3 years at the Trade and Agriculture Directorate in the OECD Paris headquarters as an agricultural policy analyst and one of agricultural commodity chapter's authors.
  - My expertise is mainly research and study on the area of the global food supply and demand modelling, Asian agricultural outlook for the agricultural and livestock products and the global markets of agricultural commodities.
    - I has a lot of experience on the modeling of food supply and demand projections. I'm going to share one of Asian scenario analyses, that is based on the paper "Furuhashi and Gay (2017) "Market Implications of Integration of Asian Rice Markets", OECD publication series, Paris", in this workshop.

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On this presentation

- Before getting started on my presentation, I should say a bit preamble on it. My presentation has a different viewpoint from rural development experience because my study, model projection and scenarios analysis, covers wide-range and macro views on agricultural product, for instance, rice and so on.
  - Along the line of this workshop on China-Japan-Korea rural vitalization, my presentation might not directly relate to the session IV, however issues surrounding the session VI may somewhat require a macro-viewpoint among related countries in Asia. For reference, we might have to broadly see relation with trade among countries in Asia including ASEAN for the future using scenario analysis as one of my work in the OECD headquarters in Paris.
- Therefore, I try to show one of scenario analyses for macro-viewpoints as supplemental information for this workshop with surrounding policy environment including trade and its development.

Introduction

- ASEAN (The Southeast Asian countries which form the Association of Southeast Asian Nations) is the leading rice export region at 20.9 Mt total exports in 2015, and its total imports are 6.9 Mt in 2015. Rice trade is of growing importance for ASEAN countries.
  - In 2015, 23% of rice exports of Southeast Asian countries went to the regional countries, a share that has been relatively stable since the start of the new millennium, in 2000, whose share of its exports was 22%. The countries in ASEAN source a relatively larger share of their rice imports from the regional countries. In 2015, 84% of rice imports were sourced from the regional countries, a share that has gradually increased. Intra-imports are important and are a large share of total imports.
- This analysis, market integration scenarios in Southeast Asian rice markets, explores how the integration of rice markets in ASEAN countries influences rice import, export production, consumption and prices in those countries, as well as in the world.
- The impacts of rice market integration in ASEAN countries through a reduction in trade barriers among those countries are analysed over the medium term using the Aglink-Cosimo model (OECD, 2015).
- The analysis compares rice production, consumption and trade by the baseline projections to a situation where there is no market integration by scenario projections.

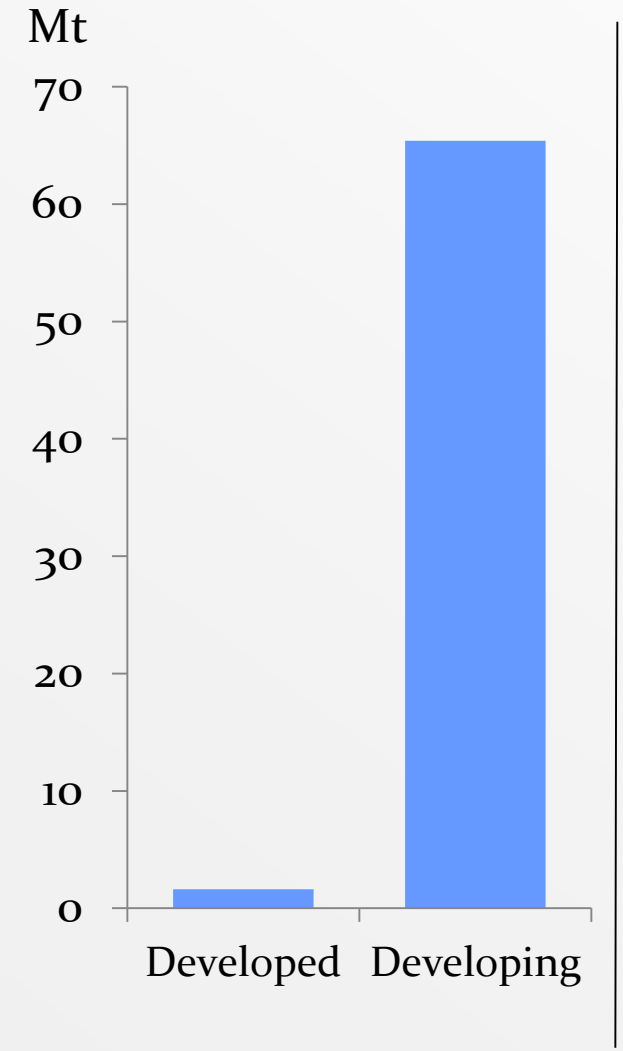
Background

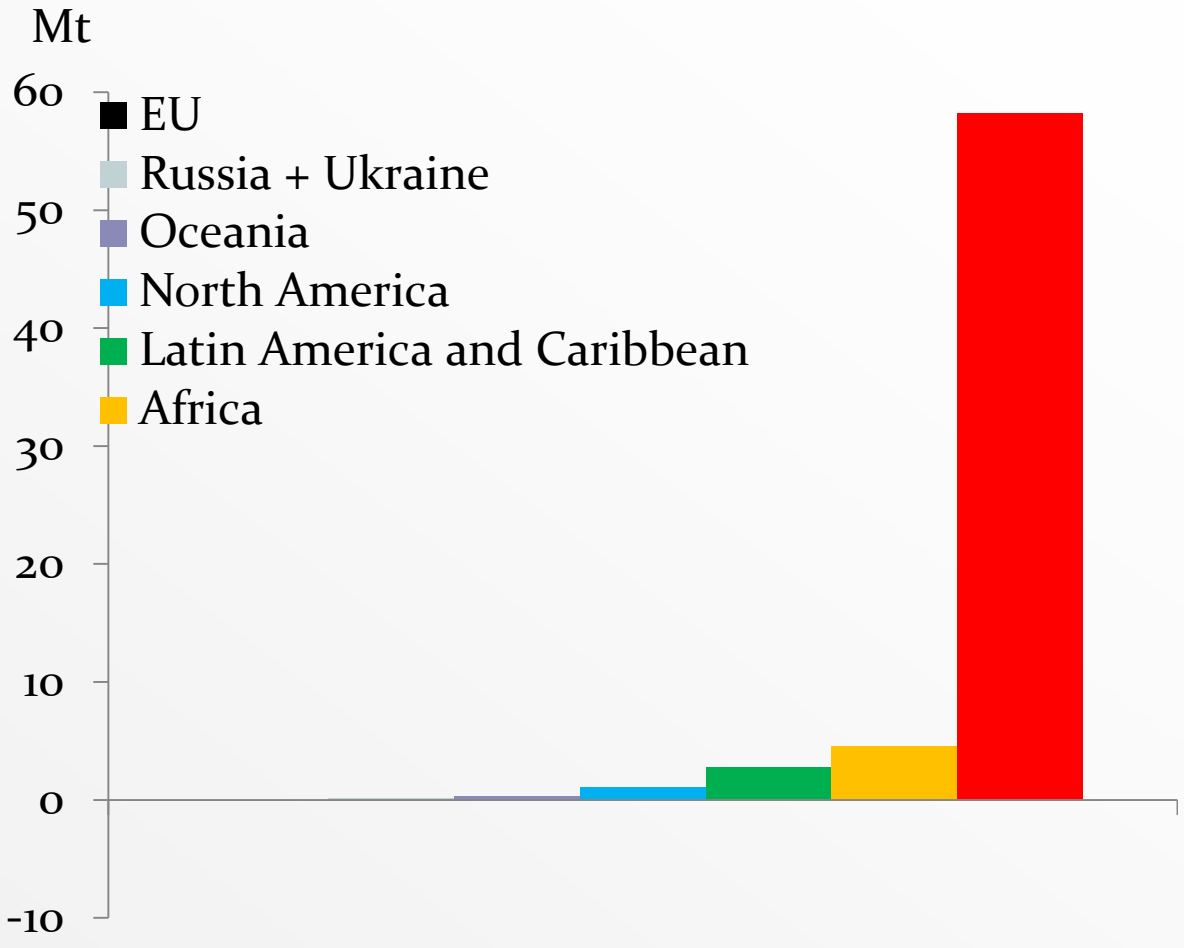
- The Southeast Asian countries which form the Association of Southeast Asian Nations (ASEAN) have a regional development plan that seeks to push ASEAN economies towards closer integration.
  - ASEAN is comprised of Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Viet Nam.
- The ASEAN Economic Community (AEC), which seeks to integrate regional markets as a goal, not only for agricultural markets but for the entire economy.
  - AEC had a regional integration goal by 2015, but processes for the goal still in progress.
- Although ASEAN has come a long way toward realising its goal, The challenges for its goal remaining suggests that it will be still some time before full integration is realised.

Policy Description

- Market integration policy
  - ASEAN countries have a regional development plan that seeks to push ASEAN economies towards closer integration. ASEAN members have the goal of regional economic integration by 2015, to be achieved by the ASEAN Economic Community (AEC), which seeks to integrate regional markets, not only for agricultural markets but for the entire economy (ASEAN, 2008).
  - However the AEC Blueprint 2025 has inherited the vision of the AEC Blueprint 2015 and add advanced integration which is aimed towards achieving the vision of having an AEC by 2025 (ASEAN, 2016).
  - Its substantial goals are likely in progress because the AEC Blueprint 2025 (ASEAN, 2016) has inherited most of previous visions of the AEC Blueprint 2015.
- Rice and food security related policy
  - food security is an important consideration in policy development in ASEAN countries, and rice is important for ASEAN countries and considering rice's role as the primary food grain. The net importers in Southeast Asia use trade restrictions to support self-sufficiency policies (OECD, 2015).
  - Those importing countries have import tariffs, tariff quotas, import bans and import licensing arrangements to control import flows. Rice imports in those countries are controlled by state owned enterprises or regulated monopolies which control the quantity of rice imports so as to avoid domestic shortages and manage domestic supply and prices.

Global current rice production by region





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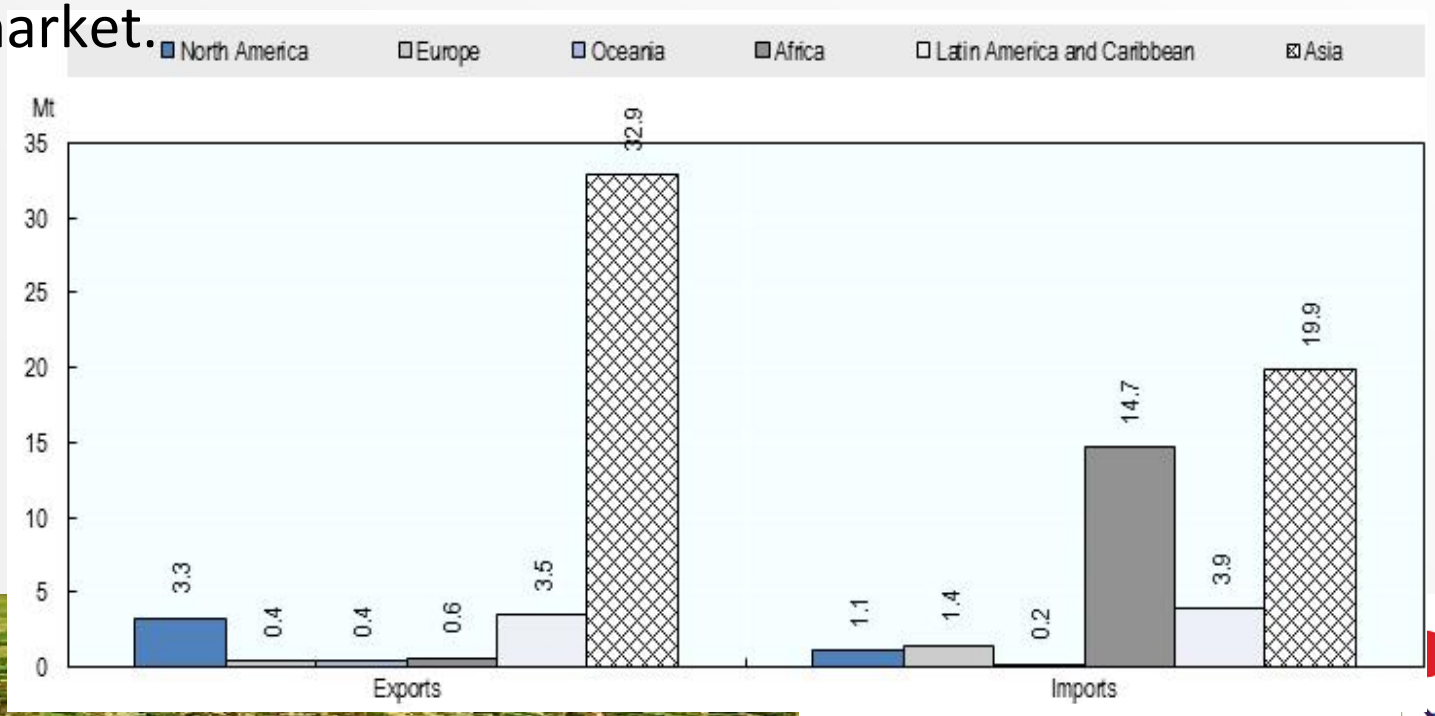
Global rice imports and exports by region in 2014

- The volume of the global rice trade market was 41.1 million ton (Mt) in 2014. The export volume from Asia reached 32.9 Mt, accounting for 80% of this total. On the other hand, the Asian region imported 19.9 Mt from the global market, representing 48.3% of total import volume in the global market.



Source: OECD-FAO agricultural database

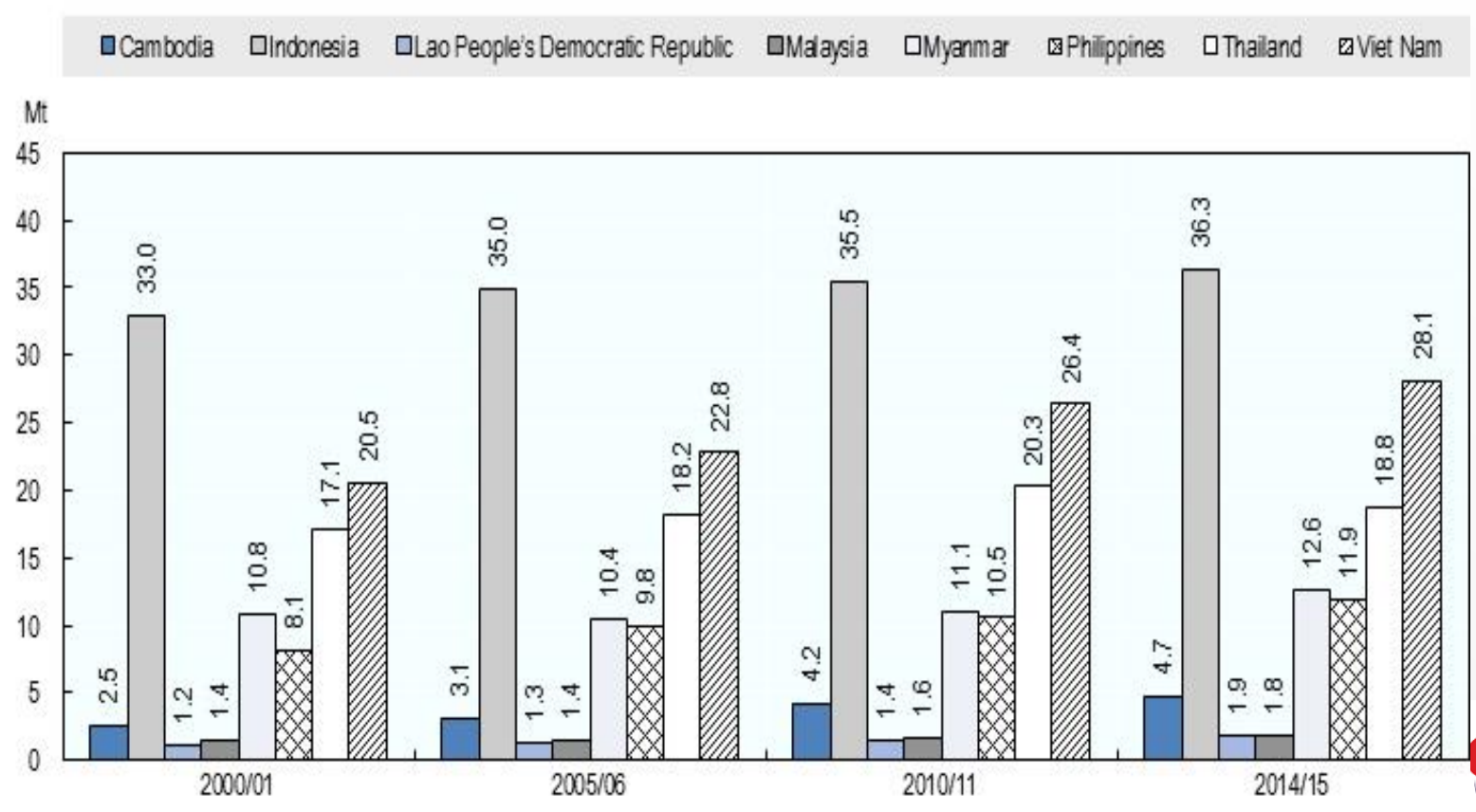
Intra- and extra-trade in ASEAN courtiers

- In 2015, 27% of rice exports of Southeast Asian countries went to the regional countries, a share that has been relatively stable since the start of the new millennium.
- In 2015, 84% of rice imports were sourced from the regional countries, a share that has gradually increased.

		Imports			Exports		
		2005	2010	2015	2005	2010	2015
Indonesia	Intra	445	986	912	0	0	0
	Extra	5	14	388	42	0	0
Malaysia	Intra	543	805	873	3	0	60
	Extra	38	127	277	0	0	0
Philippines	Intra	1,766	999	2,056	0	0	0
	Extra	116	101	44	0	0	1
Thailand	Intra	78	248	234	939	1,272	2,259
	Extra	20	81	62	6,466	10,178	7,341
Viet Nam	Intra	22	93	237	2,443	2,660	3,196
	Extra	213	555	263	2,812	4,426	5,266
Least Developed Asian Countries	Intra	680	839	1,506	150	37	304
	Extra	100	93	35	407	1,867	2,512
Southeast Asia	**Intra**	3,535	3,970	5,818	3,535	3,970	5,818
	Extra	491	971	1,069	9,727	16,471	15,121
World		28,404	32,376	44,295	29,720	34,449	44,410

Rice production in Southeast Asian countries

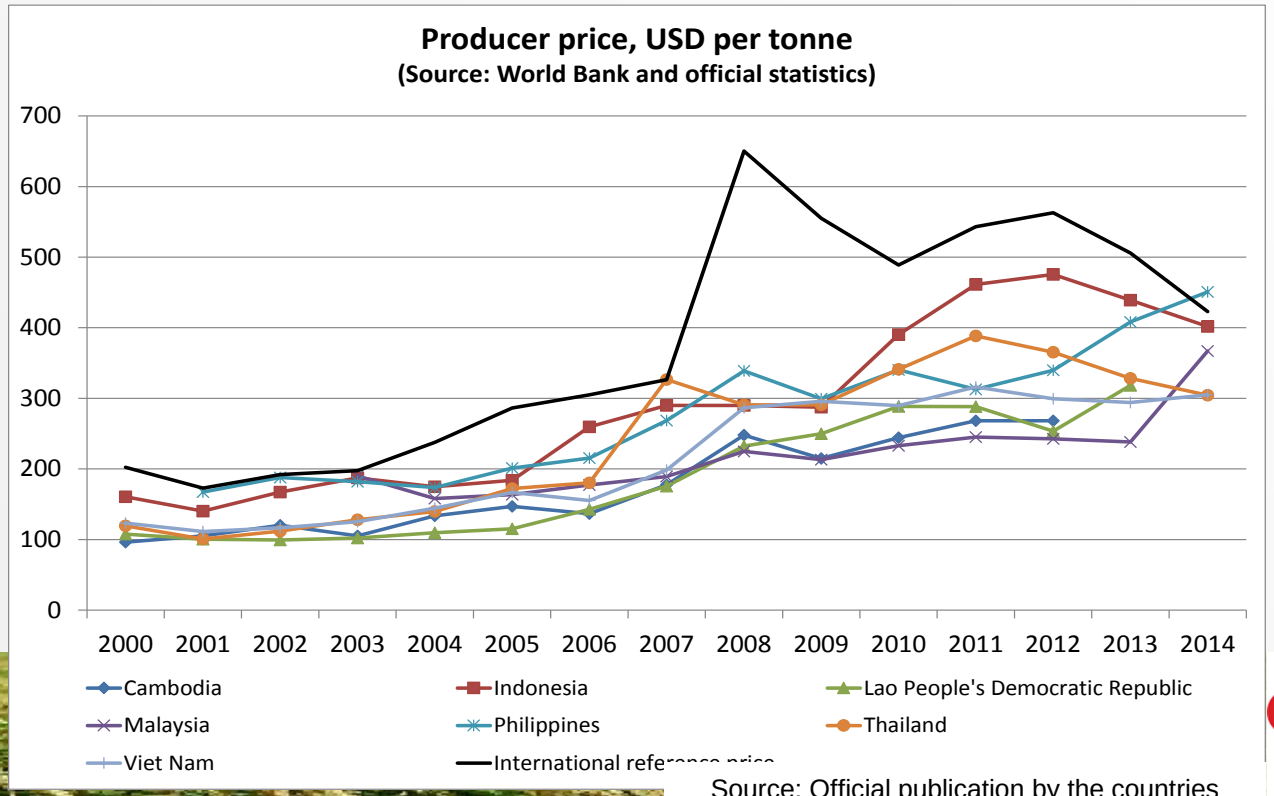
- Rice production in Southeast Asian countries
- There are differences among of Southeast Asian countries of production.



Source: USDA PS&D

Producer prices in ASAEN countries

- In comparison with the world reference rice price (Thai export price of milled rice, 100% B, fob Bangkok), some counties' producer prices in ASEAN region have the rising trend due to certain buffer policies even though the reference price was recently going down in the recent years.



Source: Official publication by the countries

Methodology for the scenarios

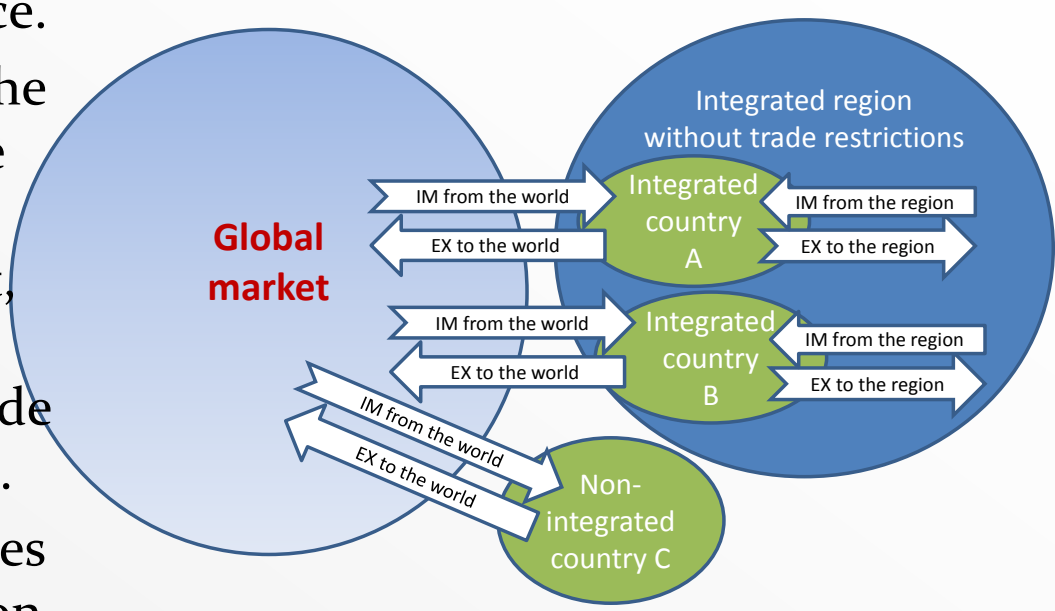
- This scenario analysis sought to assess the impact of rice market integration within Southeast Asian countries using the Aglink-Cosimo model.
- This scenario assesses the effects of the removal of trade restrictions among countries in the region by simulating while maintaining the same trade restrictions with countries outside the region.
- An approach for the rice market integration scenario involves creating an integrated region with less or no trade restrictions in ASEAN region. Meanwhile, the approach cannot trace bilateral export and import between countries in the integrated region because the model is based on a partial equilibrium model. However, this approach is versatile enough to capture the impacts of integration within Southeast Asian countries by creating trade paths with the integrated region and the global market.
- This approach also allows for the further modelling of the integration of domestic prices between the selected countries in Southeast Asia, reflecting the removal of informal barriers to trade.
  - Proportions of intra- and extra-regional trade are obtained from UN Comtrade for historic data, and assumed that the proportion remains constant for the projection period. This proportion is applied to Aglink-Cosimo data to calculate total intra- and extra-trade values for the Southeast Asian region.

The Aglink-Cosimo Model

- The Aglink-Cosimo Model (OECD-FAO),
  - The Aglink-Cosimo modelling system is a comprehensive partial equilibrium model of supply and demand relationships for major agricultural commodities, and used to generate the baseline projections for the next 10 years and for many of the countries in the OECD-FAO Agricultural Outlook. This makes the model a powerful tool for analysis of domestic and trade policies through the comparison of scenarios of alternative policy settings against the benchmark of baseline projections.
  - (http://www.agri-outlook.org/about/)
- This joint OECD-FAO model would be used for annual outlook publication in July
- 10-year projection
- Major temperate commodities, Grains, oilseeds, meat, dairy, fish, sugar, biofuels as homogeneous products
- Global coverage
- Model based projection validated through global expert consensus

Modelling for rice market integration

- This figure presents briefly the approach for the rice market integration in ASEAN, for instance.
- "Country A" and "Country B" in the integrated rice market have trade paths with both the integrated region and the global rice market, but not between each other, whereas "Country C" only has trade paths with the global rice market.
- The added integrated region serves to clear the trade within the region.
- It has an own market price but does not trade with the rest of the world.



Scenarios

- The analysis explores the baseline projections and two different scenarios for removal of trade restrictions within Asian rice markets.
  - **In the baseline scenario**, trade equations within ASEAN region are expressed by the standard Aglink-Cosimo specifications and implicit restrictions which are estimated by historical data based on trade barriers in the OECD PSE (OECD 2016).
  - The first scenario implements all formal tariffs within the Southeast Asian region are removed based on the baseline scenario in the model. (**Zero tariff scenario**)
  - The second scenario implements the approach for the integration of Asian rice markets to increase integration of ASEAN rice markets and reduce the differentials between producer prices and border prices. (**Increased integration scenario**)

Zero tariff scenario (for reference)

- Within the zero tariff scenario all formal tariffs applying to trade within ASEAN countries are removed based on the baseline scenario
- meaning a scenario without official trade tariffs levels as trade borders in the region is implemented with remaining implicit differentials between producer prices and border prices.

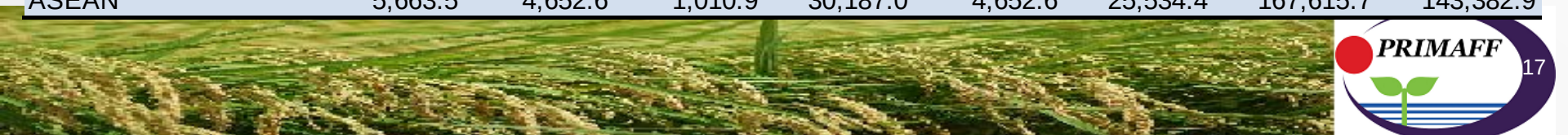
	WTO import tariff (%)	
Indonesia	0.0	(450 rupiah/kg)
Malaysia	39.9	
Philippines	49.2	
Thailand	52.0	
Viet Nam	23.7	
Least Developed Asian Countries	5.0	

» Data for current trade tariffs levels are obtained from the OECD/FAO (2016), and current levels estimated from and referred to the WTO registered and detailed within the table. Import tariffs within the region range from 52% to nil. For reference, Indonesia's specific duty corresponds to an ad valorem tariff rate of 16.9% at the 2016 import price.

Baseline results in 2025

- During the baseline projection, the reference price in nominal terms are likely to recover slowly, sustained by growing purchases from countries in Africa, Asia and the Near East, to reach USD 416/t by 2025 from USD 395/t in 2015. Most of countries' prices in the rice markets, not only importing countries but exporting countries, have similar price trend in the projection period to 2025.
  - From next, the scenarios are compered with this baseline results.

	Import			Export				
(1,000 t)	Total imports	Intra-Imports	Extra-imports	Total exports	Intra-exports	Extra-exports	Production	Consumption
Indonesia	555.9	438.4	117.5	0.6	0.1	0.5	53,167.0	53,593.1
Malaysia	1,276.8	1,052.6	224.2	57.7	55.5	2.1	1,984.7	3,200.2
Philippines	2,251.4	2,130.3	121.2	1.0	0.6	0.4	13,670.6	15,872.1
Thailand	324.4	269.8	54.6	10,963.4	1,490.6	9,472.9	24,795.7	14,551.3
Viet Nam	602.5	190.5	412.0	12,261.7	2,675.5	9,586.2	34,905.8	23,287.4
Least Developed Asian Countries	652.4	571.1	81.4	6,902.7	430.3	6,472.4	39,091.9	32,878.7
ASEAN	5,663.5	4,652.6	1,010.9	30,187.0	4,652.6	25,534.4	167,615.7	143,382.9



Zero tariff scenario results in 2025

- As trade conditions on aggregate become more favourable within the region in comparison with the baseline
- Most of countries in ASEAN region increase intra-trade and fall extra-trade.

[Differences between the baseline and the zero scenario]

(%) Relative difference	Import			Export			Production	Consumption	Producer Price
	Total imports	Intra-Imports	Extra-imports	Total exports	Intra-exports	Extra-exports			
Indonesia	16%	21%	-5%	2%	4%	1%	0%	0%	-1%
Malaysia	12%	32%	-81%	36%	35%	87%	-3%	2%	-20%
Philippines	50%	58%	-85%	64%	70%	55%	-3%	4%	-23%
Thailand	89%	107%	4%	4%	47%	-3%	0%	0%	2%
Viet Nam	26%	74%	4%	3%	41%	-8%	0%	0%	2%
Least Developed Asian Countries	-6%	-7%	1%	2%	51%	-1%	0%	0%	1%
ASEAN	31%	44%	-27%	3%	44%	-4%	0%	0%	-

(1,000t) Absolute difference	Import			Export			Production	Consumption
	Total imports	Intra-Imports	Extra-imports	Total exports	Intra-exports	Extra-exports		
Indonesia	87.6	93.5	-6.0	0.0	0.0	0.0	-47.2	41.9
Malaysia	152.3	333.6	-181.3	21.0	19.2	1.8	-64.0	67.2
Philippines	1,122.2	1,225.7	-103.5	0.6	0.4	0.2	-441.5	678.2
Thailand	290.1	288.2	1.9	384.5	706.0	-321.5	52.0	-42.6
Viet Nam	156.1	140.2	15.9	376.2	1,098.3	-722.1	109.5	-110.5
Least Developed Asian Countries	-36.9	-37.7	0.8	158.1	219.7	-61.6	111.1	-83.5
ASEAN	1,771.4	2,043.6	-272.2	940.4	2,043.6	-1,103.1	-280.2	550.7

Increased integration scenario results in 2025

- Within this scenario the informal trade barriers in the region, this makes trade conditions within the region more favourable on aggregate in comparison to the zero tariff scenario. Most of countries in ASEAN region in this scenario increase intra-trade and fall extra-trade as well.

[Differences between the baseline and the integration scenario]

(%) Relative difference	Import			Export			Production	Consumption	Producer Price
	Total imports	Intra-Imports	Extra-imports	Total exports	Intra-exports	Extra-exports			
Indonesia	1082%	1393%	-77%	28%	0%	34%	-5%	6%	-39%
Malaysia	14%	37%	-93%	6%	0%	176%	-4%	3%	-26%
Philippines	114%	126%	-99%	77%	0%	194%	-7%	10%	-45%
Thailand	0%	0%	1%	4%	35%	-1%	1%	-1%	9%
Viet Nam	11%	0%	16%	10%	140%	-26%	2%	-3%	13%
Least Developed Asian Countries	8%	0%	64%	33%	1140%	-40%	3%	-3%	17%
ASEAN	157%	197%	-30%	13%	197%	-20%	-1%	2%	-

(1,000t) Absolute difference	Import			Export			Production	Consumption
	Total imports	Intra-Imports	Extra-imports	Total exports	Intra-exports	Extra-exports		
Indonesia	6,015.3	6,106.1	-90.8	0.2	0.0	0.2	-2,769.4	3,244.9
Malaysia	179.2	388.2	-209.0	3.7	0.0	3.7	-85.5	90.0
Philippines	2,561.5	2,681.6	-120.1	0.8	0.0	0.8	-978.9	1,577.4
Thailand	0.3	0.0	0.3	460.7	514.5	-53.8	255.4	-207.3
Viet Nam	65.4	0.0	65.4	1,233.5	3,756.5	-2,523.0	580.6	-587.6
Least Developed Asian Countries	52.4	0.0	52.4	2,288.2	4,904.9	-2,616.8	1,316.4	-918.9
ASEAN	8,874.1	9,175.9	-301.8	3,987.1	9,175.9	-5,188.9	-1,681.4	3,198.4

Price differences in 2025

- In comparison with the baseline scenario, major importing countries in ASEAN region in the increased integration scenario reduce the percentage of difference between producer and import prices in 2025.
- Some countries in the zero tariff scenario also reduce the same percentage of difference in 2025, however importing countries are halfway to come close to import price levels.

Relative Difference (producer price and import price in 2025)

	Integration scenario	Zero tariff scenario	Baseline
Indonesia	7%	80%	95%
Malaysia	0%	11%	50%
Philippines	5%	51%	112%
Thailand	-2%	-5%	0%
Viet Nam	-6%	-13%	-8%
Least Developed Asian Countries	-5%	-15%	-10%

Note: negative values mean producer prices are below import prices.

Conclusions

- Whilst impacts of removing import tariffs and implicit barriers among ASEAN countries are large
  - The impacts of removing informal trade barriers can especially be larger than official zero tariff impacts according to simulation results of "the zero tariff scenario vs the increased integration scenario".
  - The increased integration obviously stimulates rice trade within ASEAN countries
- Removing implicit barriers as the increased integration scenario have larger impacts than the zero tariff scenario to reduce the price differences and production in major importing countries, and increase intra-trade prices by 11%

Conclusions (continued)

- Any reduction in trade barriers is a reduction of importing countries' self-sufficiency with production decreasing
  - Trade openness and self-sufficiency policies are counterproductive.
  - As shown by the increased integration scenario, Indonesia and the Philippines reduce around 5% of production and increase substantially imports.

PRIMAFF food supply and demand projection

- **[On the other hand, in PRIMAFF, JAPAN]**
- Japan, as a net agricultural products and food importer, has greatly depended on the global markets of food and agricultural products.
- Projections of world food supply and demand through an simulation analysis based on multi-commodities and multi-countries and regions with econometric methods are significant for policy implication designed to ensure Japan's food security.
- PRIMAFF (The Policy Research Institute of the Ministry of Agriculture, Forestry and Fisheries) has worked on improving and updating world food supply and demand projections for the global food markets every year since 2008. The institute has developed a model called the world food supply and demand model that can simulate demand and supply projections for the next decade. The latest projection, released in March 2019, is entitled "**World food supply and demand projections to 2028**" which was estimated from the year of 2016 as the base year to the next decade. The report provides an overview of the projection. For more information on the projection, see the publicly released material available at "http://www.maff.go.jp/primaff/e/publications/review/attach/pdf/180529_pr83e_02.pdf ".

We invite you to visit our PRIMAFF website,

http://www.maff.go.jp/primaff/e/index.html

PRIMAFF World Food Supply and Demand Projections

http://www.maff.go.jp/primaff/e/publications/review/attach/pdf/180529_pr83e_02.pdf

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(For reference) Absolute price projections in local currency by scenario

	Import Price, 2025		Producer Price, 2025	
	Integrated market	Baseline	Integrated market	Baseline
Indonesia	4,420,612	2,557,890	4,502,638	5,247,000
Malaysia	1,616	1,483	1,350	1,668
Philippines	16,807	14,182	17,910	28,413
Thailand	20,709	14,210	15,312	12,434
Viet Nam	14,277,975	8,541,934	7,085,783	5,102,768
Asian Least Developed Countries	542	395	421	365

<- [Increased integration scenario in 2025]

[Zero tariff scenario in 2025] ->

	Import Price, 2025		Producer Price, 2025	
	Zero tariff	Baseline	Zero tariff	Baseline
Indonesia	3,628,479	2,557,890	6,504,905	5,247,000
Malaysia	1,326	1,483	1,126	1,668
Philippines	13,795	14,182	20,944	28,413
Thailand	16,998	14,210	13,860	12,434
Viet Nam	11,719,493	8,541,934	6,347,214	5,102,768
Asian Least Developed Countries	445	395	390	365

Targeted countries in the scenarios

- The scenarios assesses a rice market integration between Indonesia, Malaysia, the Philippines, Thailand, Vietnam and the group of least developed Asian countries as a group for ASEAN.
  - The Aglink-Cosimo covers ASEAN countries; Indonesia, Malaysia, the Philippines, Thailand and Vietnam, are built in the model as single country.
  - Myanmar, Cambodia and Lao PDR are aggregated in the group of least developed Asian countries, which includes also Yemen, Afghanistan, Timor-Leste, Maldives, Nepal and Bhutan.
  - The group of least developed countries of Asia would be partly integrated into the region but the degree of integration needs to be evaluated.
- Combined rice production of aggregate those least developed Asian countries, Afghanistan, Bhutan, Cambodia, Lao PDR, Maldives, Myanmar, Nepal, Timor-Leste and Yemen was 32.5 Mt in 2010 from according to FAOSTAT, however and its production share of Myanmar, Cambodia and Lao PDR was accounted for 90.1% of the total, and then its share of Afghanistan, Nepal and Timor-Leste was 9.9%. Data for Bhutan, Yemen, and Maldives are unavailable and assumed negligible.

The model equations

- Imports: $\log(IMr,c,t)=\alpha+\beta*\log(PPr,c,t/(IMPr,c,t*(1+TAVIr,c,t/100)))+\log(R)$
- Exports: $\log(EXr,c,t)=\alpha+\beta*\log(PPr,c,t/(EXPr,c,t*(1+TAVEr,c,t/100)))+\log(R)$
  - IM = imports, EX = exports, PP = producer price in domestic currency, IMP = import price in domestic currency, EXP = export price in domestic currency, TAVI = import tariff in ad valorem equivalent (in %), TAVE = export tax in ad valorem equivalent (in %)
- Production: $QPr,c(crop),t= AHr,c(crop),t*YLDr,c(crop),t$
  - QP = quantity produced, AH = area harvested, YLD = yield
- Yield: $log(YLDr,c,t)=\alpha+\beta1*\log((PPr,c,(t-1)+EPYr,c,(t-1))/(\gamma c*CPCIr,c,(t-1)+(1-\gamma c)*CPCIr,c,t))+\beta2*TRD+\log(R)$
  - PP = producer price in domestic currency, EPY = policy variable (in domestic currency per ton), CPCI = cost of production index (2008 = 1)

The model equations (cont.)

- Harvested area: $log(AHr,c,t)=\alpha+\beta1*\log(AHr,c,(t-1))+\Sigma\beta c1*\log((RHr,c,(t-1)+EPAr,c,(t-1))/(\gamma c*CPCIr,c,(t-1)+(1-\gamma c)*CPCIr,c,t))c1(crop)+\beta 2*TRD+\log(R)$
  - RH = market returns per hectare, EPA = policy variable affecting area (in domestic currency per hectare), CPCI = cost of production index (2008 = 1)
- Consumption: $QCr,c,t=FOr,c,t+FEr,c,t+BFr,c,t+OUr,c,t$
  - QC = domestic disappearance, FE = feed use, FO = human consumption, BF = use as feed stock for the production of biofuels or use as biofuels, OU = other use (e.g. industrial use, seed, losses)
- Food use: $\log(FOr,c,t)=\alpha+\Sigma\beta c1*\log(CPr,c1,t/CPIr,t)\ c1(food)+\beta 1*\log(GDPIr,t/(POPr,t/POPr,2005))+\log(POPr,t)+\beta2*TRD+\log(R)$
  - FO = human consumption, CP = consumer price in domestic currency, CPI = consumer price index (2010 =1), GDPI = gross domestic product index (2010 =1), TRD = trend, POP = population

The model equations (cont.)

- Feed use: $\log(FEr,c(feed),t)=\alpha+\beta1*\log(QPr,SH,t)+\beta2*\log(QPr,BV,t)+\beta3*\log(QPr,MK,t)+\beta4*\log(FEr,FHA,t)+(1-\beta1-\beta2-\beta3-\beta4)*\log(FEr,NR,t)+\Sigma\beta c1c1(feed)*\log(PPr,c1,t/GDPDr,t)+\beta5*\log(PPr,c,t/GDPDr,t)+\beta6*TRD+\log(R)$
  - FE = feed use, QPSH = sheep and goat meat produced, QPBV = beef and veal produced, QPMK = milk produced, FEFHA = feed used for fish and aquaculture (link to fish module), FENR = feed used for non-ruminants, PP = producer price in domestic currency
- Other use: $\log(OUr,c,t)=\alpha+\beta1*\log(PPr,c,tCPIr,t)+\beta2*\log(GDPIr,t)+\beta3*TRD+\log(R)$
  - OU = other use, PP = producer price in domestic currency, CPI = consumer price index, GDPI = gross domestic product index (2010=1)
- Stocks: $\log(STr,c,t)=\alpha+\beta1*\log(QPr,c,t+STr,c,(t-1))+\beta2*\log(QCr,c,t)+\beta3*(3*PPr,c,t/(PPr,c,(t-1)+PPr,c,(t-2)+PPr,c,(t-3)))+\beta4*TRD+\log(R)$
  - ST = year-end stocks, PP = producer price in domestic currency, QP = production quantity, QC = domestic disappearance, TRD = trend

Commodity coverage

Grains	Oilseeds	Vegetable Oils	High Protein Meals	Dairy Products	Sweetners	Meat and Livestock	Biofuels
Wheat	Soybean	Soybean Oil	Soyabean Meal	Skim Milk Powder	Sugar	Beef and Veal	Ethanol
Barley	Rapeseed	Rapeseed Oil	Rapeseed Meal	Whole Milk Powder	Raw Sugar	Pigmeat	Biodiesel
Maize	Sunflower	Sunflower Oil	Sunflower Meal	Butter	White Sugar	Poultry Meat	
Oats	Peanuts	Peanut Oil	Peanut Meal	Cheese	High Fructose Corn Syrup	Sheep Meat	
Sorghum	Cottonseed	Cotton Oil	Cotton Meal	Fresh Dairy Products	Molasses	Eggs	
Rye	Copra	Coconut Oil	Coconut Meal	Casein			
Other Grains	Palm Kernel	Palm Kernel Oil	Palm Kernel Meal	Whey Powder			
Rice		Palm Oil	Meat and Bone Meal	Other Dairy Products			
				Milk			

Country and region coverage

- OECD Country Responsibilities:

OECD Countries	Non-OECD Countries
Australia	Argentina
Canada	Brazil
European Union	China
Japan	Russian Federation
South Korea	
Mexico	
New Zealand	
Norway	
Switzerland	
United States of America	

- FAO Country Responsibilities:

OECD Countries	Non-OECD Countries		
Chile	Algeria	Kazakhstan	Sudan
Israel	Bangladesh	Malaysia	Thailand
Turkey	Colombia	Mozambique	Ukraine
	Egypt	Nigeria	United Republic of Tanzania
	Ethiopia	Pakistan	Uruguay
	Ghana	Paraguay	Viet Nam
	Haiti	Peru	Zambia
	India	Phillippines	
	Indonesia	Saudi Arabia	
	Iran (Islamic Republic of)	South Africa	

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