S. RAJARATNAM SCHOOL
OF INTERNATIONAL STUDIES
A Graduate School of Nanyang Technological University

ASEAN ECONOMIC COMMUNITY 2015: OPPORTUNITIES AND CHALLENGES FOR FOOD SECURITY

Framing the issues: Linking Elements of AEC to the food security ecosystem

Expert Group Meeting
3 June 2013

CENTRE FOR
NON-TRADITIONAL
SECURITY STUDIES

Context

AEC2015 vision encompasses:

- A dynamic, resilient, competitive and sustainable regional economy
- A thriving, healthy, equitable and harmonious regional community
- A globally connected, influential, important and engaged ASEAN

- At the 21th ASEAN Summit held in Phnom Penh, Cambodia, in 2012, ASEAN leaders declared that "*food security remains a major challenge for ASEAN and the world as a whole, at a time of high commodity prices and economic uncertainty*".

- Food security is fundamental to human security and sustainable development.

Objectives of Expert Group Meeting

- Determine which AEC aspects are most likely to impact on the food security ecosystem in ASEAN, recognizing the intra-ASEAN agriculture trade, for example the impact of non-tariff barriers on farmer's income and consumer's process; or improved trade facilitation for better agriculture trade flow; and

- Identify possible strategies that would facilitate a mapping of the drivers that affect food security, and a detailed assessment of the impact of AEC on food security ecosystem components.

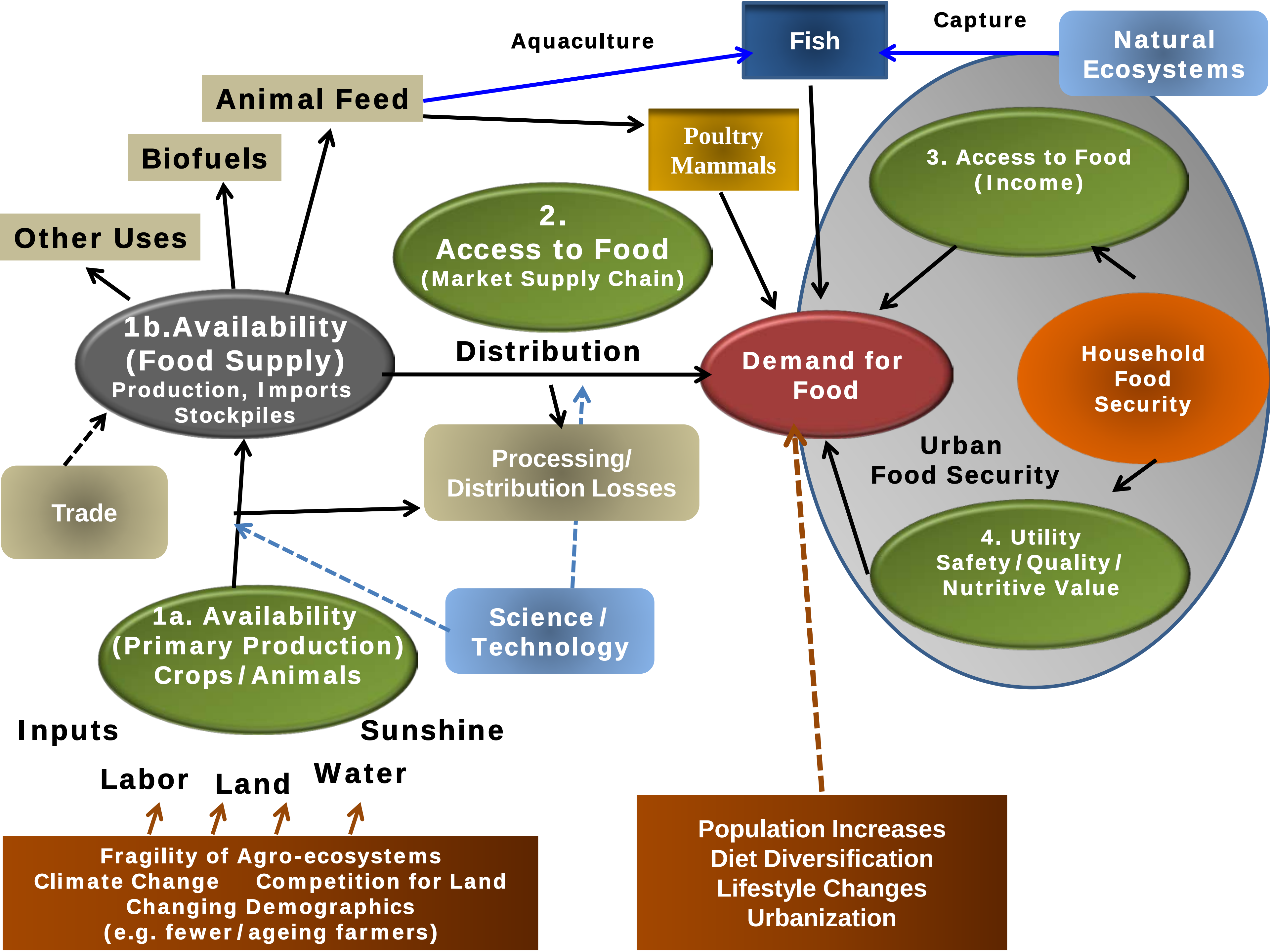
Framing the issues

1. The Food Security Ecosystem
2. Anticipated changes from implementing AEC2015
3. Challenges and opportunities in the region

1. The Food Security Ecosystem

The food security ecosystem is considered to include:

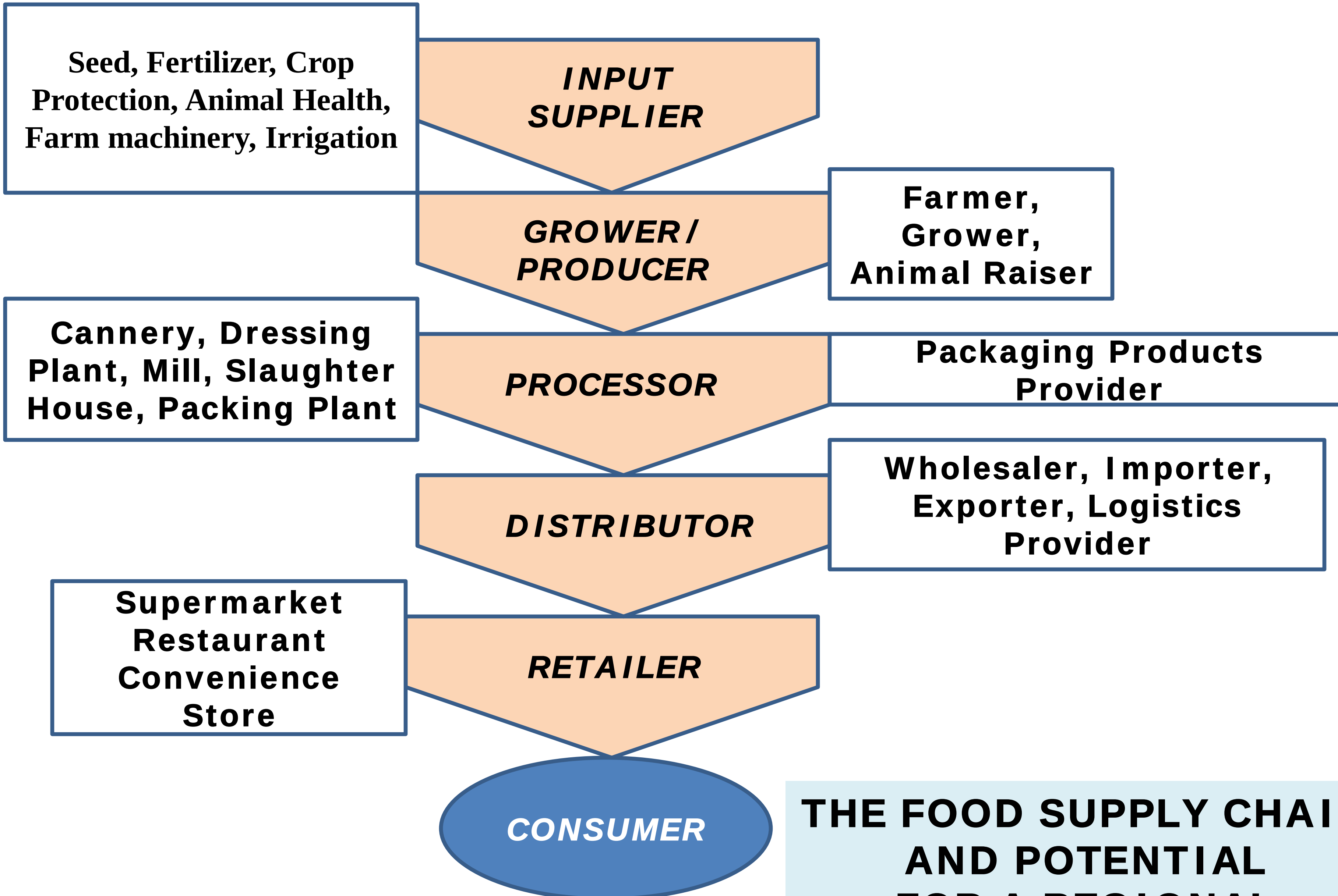
- food availability (agricultural production, imports via trade, reserves or stockpiles),
- physical access to food (supply chains and their associated logistics),
- economic access (food pricing and safety nets) and
- food utilization (nutrition and safety).


Aquaculture
Fish
Capture
Natural Ecosystems
Animal Feed
Biofuels
Poultry Mammals
Other Uses
3. Access to Food (Income)
2. Access to Food (Market Supply Chain)
1b.Availability (Food Supply) Production, Imports Stockpiles
Distribution
Demand for Food
Household Food Security
Urban Food Security
Processing/ Distribution Losses
Trade
4. Utility Safety / Quality / Nutritive Value
Science / Technology
1a. Availability (Primary Production) Crops / Animals
Inputs
Sunshine
Labor
Land
Water
Fragility of Agro-ecosystems
Climate Change
Competition for Land
Changing Demographics
(e.g. fewer / ageing farmers)
Population Increases
Diet Diversification
Lifestyle Changes
Urbanization

FOOD SECURITY

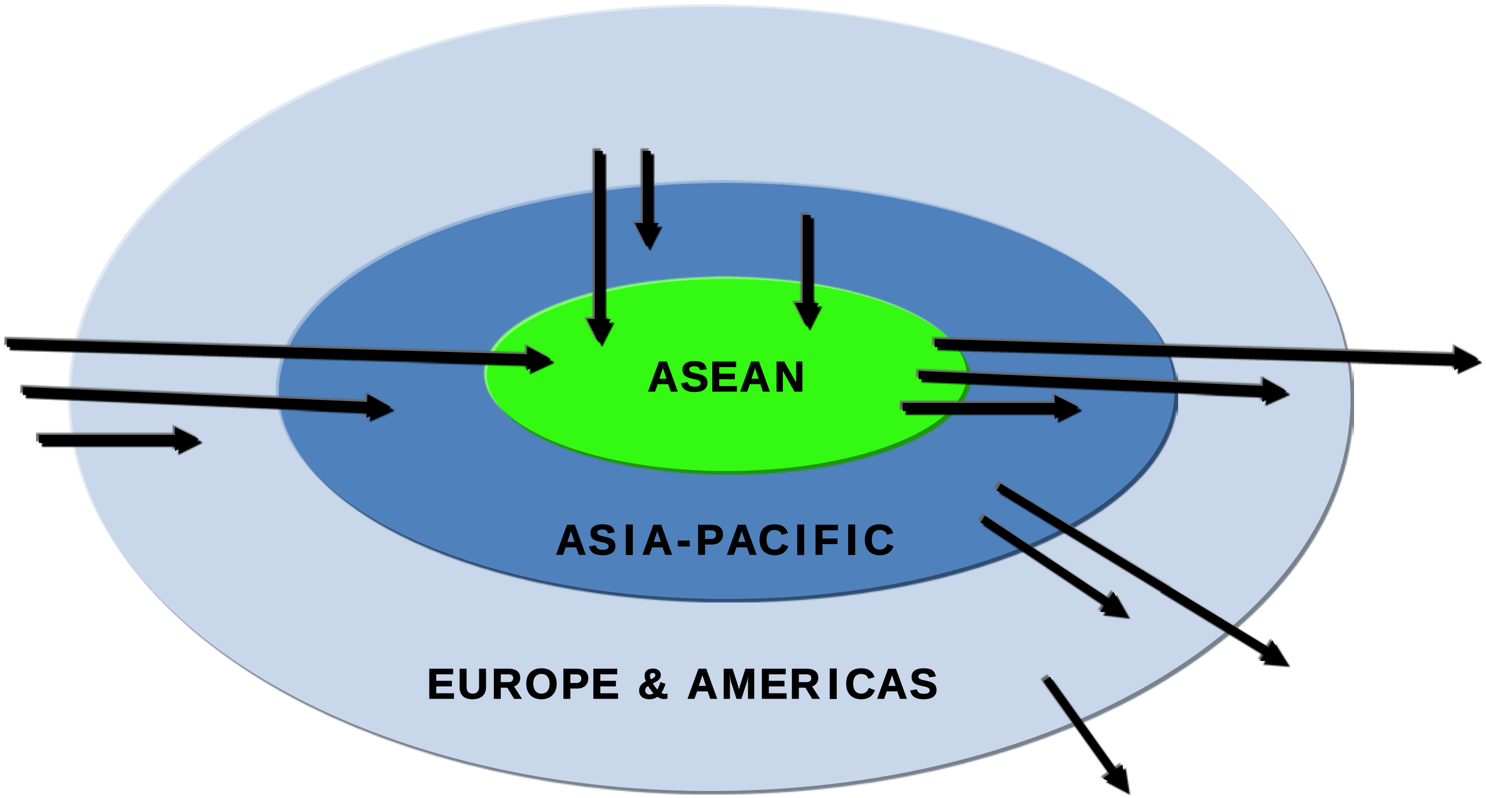
“exists when all people,
at all times,
have physical, social and economic access
to sufficient, safe and nutritious food
that meets their dietary needs and food preferences
for an active and healthy life.”

(Food and Agriculture Organization, U.N.)



THE FOOD SUPPLY CHAIN AND POTENTIAL FOR A REGIONAL APPROACH

Inter-relationships between Food Supply and Demand at regional and global levels



Global Food Supply Chain

Country	Major Ag Commodities Produced	World Ranking (2011)
Brunei	rice, vegetables, fruits; chickens, eggs	
Burma	rice, vegetables, beans, fruits, groundnuts, sugarcane	2- pigeon peas, beans; 3- mustard seed
Cambodia	rice, cassava, maize, vegetables, sugar cane	
Indonesia	rice, cassava (tapioca), sugar cane, palm oil, maize, coconuts, bananas, fruits, rubber	1- palm oil, cloves, cinnamon, coconuts; 2 – rubber, nutmeg; 3 – rice, coffee, cassava
Laos	rice, vegetables, sugar cane, maize, cassava, sweet potatoes	
Malaysia	palm oil, rice, chicken meat, rubber, sugar cane, coconuts	2 – palm oil; 3 - rubber
Philippines	sugarcane, rice, coconuts, bananas, maize, vegetables, fruits	2 – coconuts, pineapple; 3 - bananas
Singapore	eggs, vegetables	
Thailand	sugar cane, rice, cassava, maize, rubber, fruits	1 –rubber, pineapple; 2- eggs; 3 – palm oil
Vietnam	Rice, sugar cane, cassava vegetables, maize, pigmeat, fruits	1- cashew pepper; 2 - coffee; 3 –

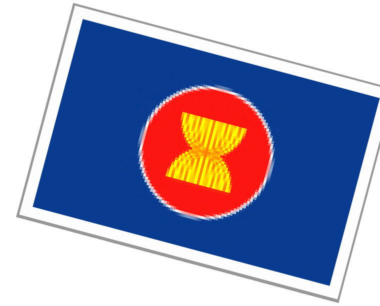
Source: FAOSTAT

ASEAN COUNTRIES
ARE GLOBAL FOOD PLAYERS
(2011)

Global Rank	1	2	3
Rice, paddy	China	India	**Indonesia**
Palm oil	**Indonesia**	**Malaysia**	**Thailand**
Coconuts	**Indonesia**	**Philippines**	India
Coffee, green	Brazil	**Vietnam**	**Indonesia**
Sugar crops	**Myanmar**	Bangladesh	**Indonesia**
Banana, fresh	India	China	**Philippines**
Pineapple	**Thailand**	Brazil	Costa Rica

Source: FAOSTAT

ASEAN COUNTRIES ARE GLOBAL FOOD PLAYERS (2011)



Global Rank	1	2	3
Cloves	**Indonesia**	Madagascar	Tanzania
Cinnamon	**Indonesia**	China	**Vietnam**
Pineapples	**Thailand**	Brazil	Costa Rica
Nutmeg	Guatemala	**Indonesia**	India
Mangoes, mangosteens, guavas	India	China	**Thailand**
Cashew	**Vietnam**	Nigeria	India
Cassava	Nigeria	Brazil	**Indonesia**

Source: FAOSTAT

Limited growth in intra-ASEAN trade

Table 1: ASEAN Exports of Priority Integration Sectors' Products		
	2003 (US$ billion)	2010 (US$ billion)
Agro-based	11.7 (2.6)	38.9 (3.6)
Rubber-based	6.8 (1.5)	25.7 (2.4)
Fisheries	6.8 (1.5)	13.6 (1.3)
Wood-based	10.1 (2.2)	11.0 (1.0)
Textiles and apparel	21.9 (4.8)	39.1 (3.7)
Electronics	194 (42.8)	195 (18.2)
Automotive	11.4 (2.5)	45.8 (4.3)
Total	263 (58.0)	369.4 (34.5)

Intra-ASEAN agriculture trade in 2010 only 7.3 per cent of total ASEAN exports

ASEAN: Agri-Food Trade Balances, 2011. US$B

Country	Exports	Imports	Surplus (Deficit)
Indonesia	48.1	22.4	25.7
Malaysia	38.9	21.1	17.8
Thailand	47.6	15.2	32.4
Vietnam	22.1	13.2	8.9
Cambodia	0.3	0.6	(0.3)
Laos	-	-	-
Myanmar	3.1	0.5	2.6
Brunei	0.01	0.5	(0.49)
Philippines	5.4	7.0	(1.6)
Singapore	10.1	13.8	(3.7)
ASEAN	176.1	95.2	80.9
WORLD	1659.5	1745.2	(85.7)

Source: World Trade Organization (WTO)

Top Agri-Food Players in ASEAN

Company	Sales Revenues $ M	Agri-food Sales % Share
1. Wilmar International (Singapore)	29,145	~100
2. CP Group (Thailand)	>18,000	50
3. Sime Darby (Malaysia)	10,250	40
4. Olam International (Singapore)	5,760	84
5. Felda Holdings Bhd (Malaysia)	5,000	~100
6. IOI Berhad (Malaysia)	4,400	95
7. Indofood (Indonesia)	4,060	100
8. San Miguel (Philippines)	3,800	90
9. Golden Agri Resources (Indonesia)	2,986	100
10. KLK (Malaysia)	2,245	100
11. Thai Union (Thailand)	2,069	100
12. RGM-Asian Agri (Singapore)	2,000	100
13. SMART (Indonesia)	1,660	100
14. Musim Mas (Indonesia)	1,500	100
15. Asia Pacific Breweries (Singapore)	1,410	100
16. Kulim Berhad (Malaysia)	1,190	95
17. Fraser & Neave HB (Malaysia)	1,080	100
18. Universal Robina Corp (Philippines)	1,020	100
19. Vinafood No. 2 (Vietnam)	>1,000	100
20. Astra Agro (Indonesia)	854	100

Source: Rolando Dy, 2009

PRODUCTION AND IMPORTS OF FOUR KEY FOOD COMMODITIES INTO **ASIA**

Crop	Item Million MT	06/07	07/08	08/09	09/10	10/11	11/12	12/13
WHEAT	Global Production	596	612	682	684	652	696	655
	Asia Imports (% of Global Exports)	**35** (30)	**31** (27)	**34** (24)	**35** (26)	**38** (28)	**40** **(26)**	**39** (27)
RICE (milled)	Global Production	421	434	448	440	449	466	468
	Asia Imports (% of Global Exports)	10 (31)	8.5 (29	6.9 (24)	8.6 (28)	11 (30)	11 **(27)**	10 (26)
CORN	Global Production	714	795	799	812	832	883	856
	Asia Imports (% of Global Exports)	34 (37)	35 (36)	34 (40)	37 (39)	37 (40)	40 **(38)**	37 (38)
SOYBEAN	Global Production	237	221	212	261	264	240	270
	Asia Imports (% of Global Exports)	39 (56)	48 (61)	51 (66)	61 (65)	65 (71)	71 **(78)**	73 (75)

Source: USDA FAS

IMPORTS OF FOUR KEY FOOD COMMODITIES 2011/2012 TY INTO ASEAN

REGION	WHEAT		RICE		CORN		SOYBEAN	
	MT	%*	MT	%	MT	%	MT	%
E. Asia	16,865	**42.0**	4,125	**43.0**	32,339	**82.1**	65,449	**92.0**
S. Asia	5,402	**13.4**	790	**8.2**	0	**0**	0	**0**
SE. Asia	17,863	**44.5**	5,410	**56.2**	7,064	**17.9**	5681	**8.0**
Asia	40,130		9614		39,403		71130	
World	150,566		36,396		106,266		93,055	

** Percent of Asia total*

Source: USDA FAS

IMPORTS OF FOUR KEY FOOD COMMODITIES 2011/2012 TY INTO AMCs

ASEAN member	WHEAT		RICE		CORN		SOYBEAN	
	MT	%*	MT	%	MT	%	MT	%
Indonesia	6,457	**36.1**	1,700	**31.4**	1,700	**24.1**	1,900	**33.4**
Malaysia	-	-	1,085	**20.0**	3,200	**45.3**	570	**10.0**
Philippines	4,020	**22.5**	1,500	**27.7**	-	-	60	**1.1**
Thailand	2,578	**14.4**	600	**11.0**	-	-	1,906	**33.6**
Vietnam	2,600	**14.6**	-	-	1,500	**21.2**	1,225	**21.6**

** Percent of ASEAN total*

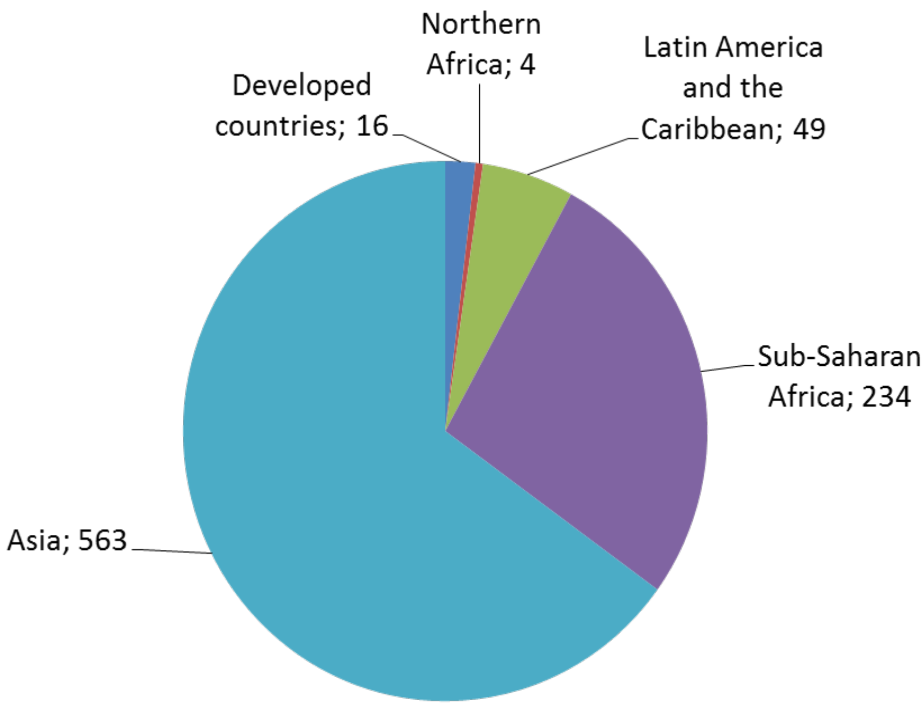
Source: USDA FAS

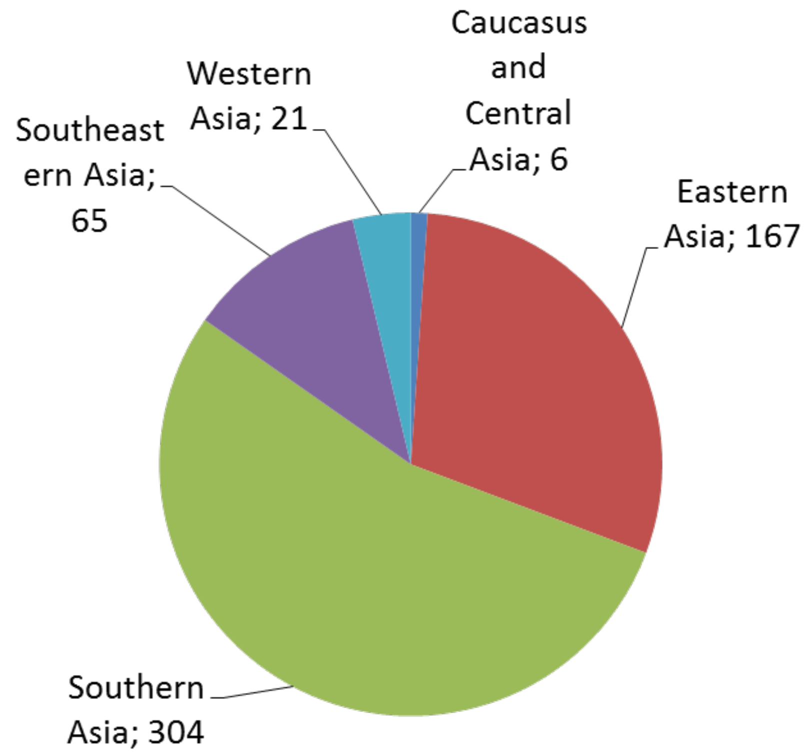
Regional Programmes

- ASEAN
  - ASEAN Integrated Food Security (AIFS) Framework
  - Strategic Plan of Action on Food Security in the ASEAN Region (SPA-FS)
  - ASEAN Plus Three Emergency Rice Reserve (APTERR)
  - ASEAN Food Security Information System (AFSIS)

  - ASEAN Multi-sectoral Framework on Climate Change: Agriculture and Forestry towards Food Security (AFCC)
  - ASEAN+3 Comprehensive Strategy on Food Security and Bioenergy Development (APTCS-FSBD) Framework
  - Strategic Plan of Action on Food and Energy Security (SPA-FES)

Current Reality: Where do the Hungry Live? (2010-2012)



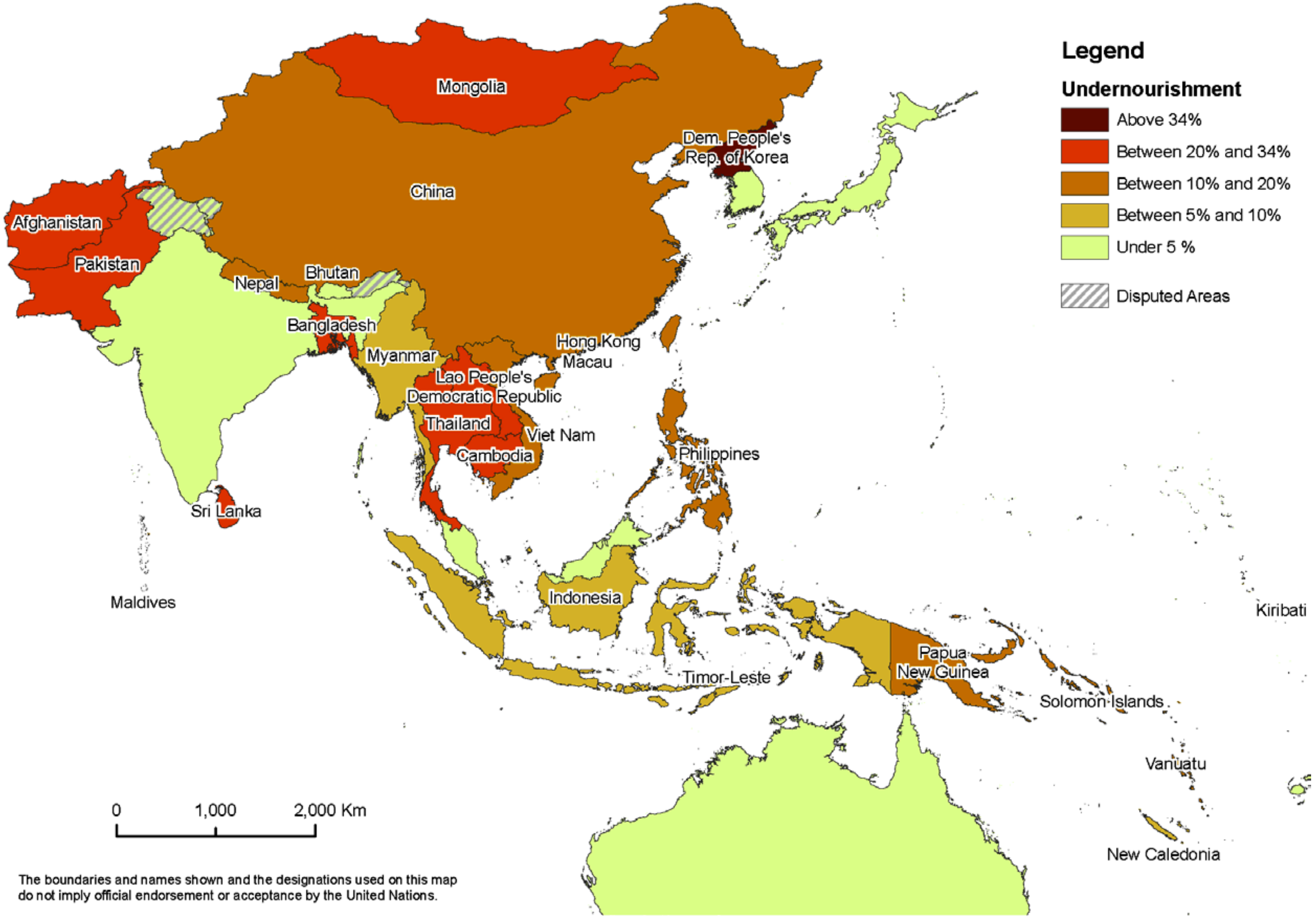


Total (world) = 868 million

Total (Asia) = 563 million

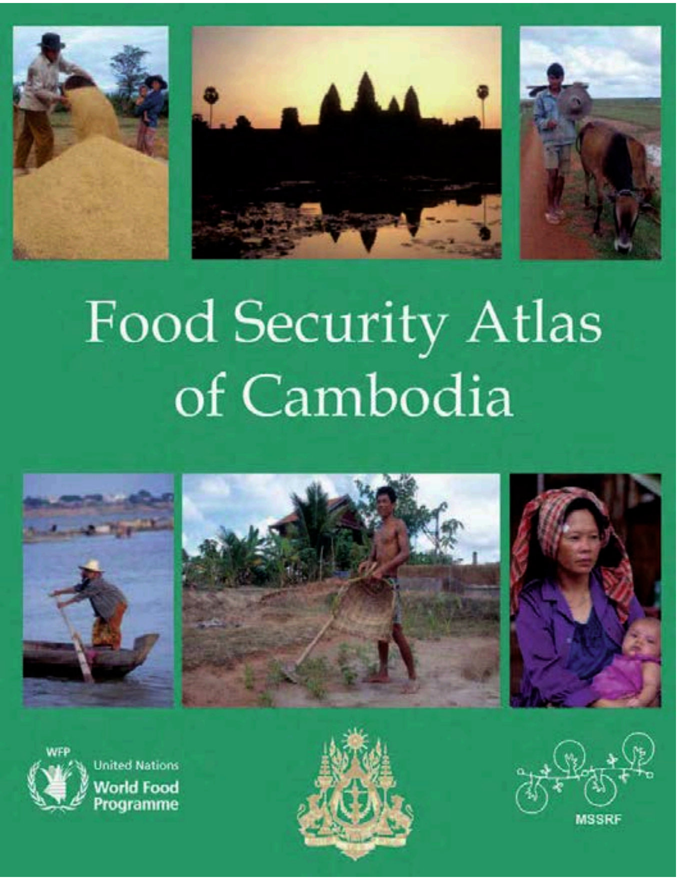
Source: The State of Food Insecurity in the World, FAO (2012).

Prevalence of Undernourished (MDG indicator)



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Food Security Atlas – SE Asia



Chronic symptoms: Nutrition Insecurity – An added dimension

Link between nutritional insecurity and learning abilities

- 2008 Survey -- One-third of Filipino children stunted by lack of food and malnutrition due to poverty

Eva Goyena 2011. Food and Nutrition Institute, DOST, Philippines

Acute malnutrition stood at 25.6% in 2008 among school children in the Philippines, up from 22.8% in 2005

AFP Report – 4 Feb 2011

Current approach to food security

- Focus on increasing crop yields (delegation to agriculture departments)
- Ignores new complexities in food security – multiple dimensions
- Not enough pro-active planning to recognize impending “drivers”
- Lack of comprehensive approach
- Contradictions
  - Most ASEAN countries not food secure (according to Rice Bowl Index)
  - Many vulnerabilities and food insecurities exist (WFP maps, etc.)

2. Anticipated changes from implementing AEC2015

"FOUR PILLARS" (ERIA):

- Single market and production base
  - Free flow of goods, services, investment & skilled labour; Freer flow of capital
- Highly competitive economic region
  - Improved connectivity in transport, infrastructure, ICT, IPR, taxation, competition policy
- Region of Equitable economic development
  - SME, ASEAN integration
- Region fully integrated into global economy

Some likely change with AEC2015 which affect FS

- A more integrated, regional, agricultural products market
- Harmonised production base of agricultural goods and manufactured foods
- “Meta-national” concept in food supply chains
- Single trade block when dealing with extra-ASEAN exporters and importers
- Harmonised food production, processing and quality standards

Single integrated market and production base

- “Meta-national” concept in food supply chains: instead of 10 separate FSCs, consider single one based on commodity and not country
- Harmonised food production, processing and quality standards: Equivalency and transportability of foods across countries with same quality and acceptability

Competitive trade block when dealing with extra-ASEAN exporters and importers

- Global supplier of key commodities – coordinate better trade outflows
- Globally important importer of key commodities – coordinate supply stability and price setting

A thriving, healthy, equitable and harmonious regional community

Policy initiatives to increase economic access to food

- Reduced taxes, customs duties
- Food assistance, distribution
- Food price subsidies
- Imposition of safety nets
- Conditional cash transfers
- Price controls
- Release of stocks

Source: APEC PSU -- "Food Security Policies in APEC" 2012

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RSIS COMMENTARIES

No. 026/2012 dated 16 February 2012

The Rio+20 Summit and ASEAN: Towards a Green Economy

By Paul P.S. Teng

- We need to value the environment when developing targets for economic growth and development
- "Ecological economics" only possible at **regional level** to avoid further degradation of ASEAN's natural resources
- Value ecological services: e.g. coral reefs, mangroves, marine protected areas, all of which serve a purpose for future food security

Going forward, Specific Policy Initiatives on……..

- Ensuring food security and social protection
- Investing in R & D for food production (agriculture, aquaculture)
- Incorporating health and nutrition into food security strategies
- Acknowledging the urban dimensions of food security: URBAN FARMING
- A harmonised food security ecosystem: cutting across boundaries

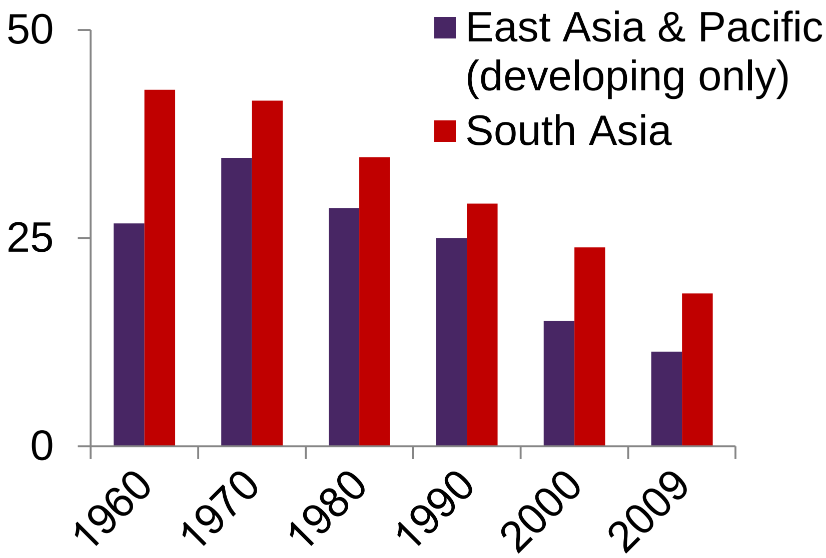
3. Challenges and opportunities in the region

Food Demand Changes in Asia – A rising “middle class”

- Reduced per capita consumption of rice
- Increased consumption per capita of wheat and wheat-based products
- Increased diversity in the food groups consumed
- Rise in high proteins and energy dense diets
- Increased consumption of temperate zone products
- Rising popularity of convenience food and beverages
- Westernization of diets

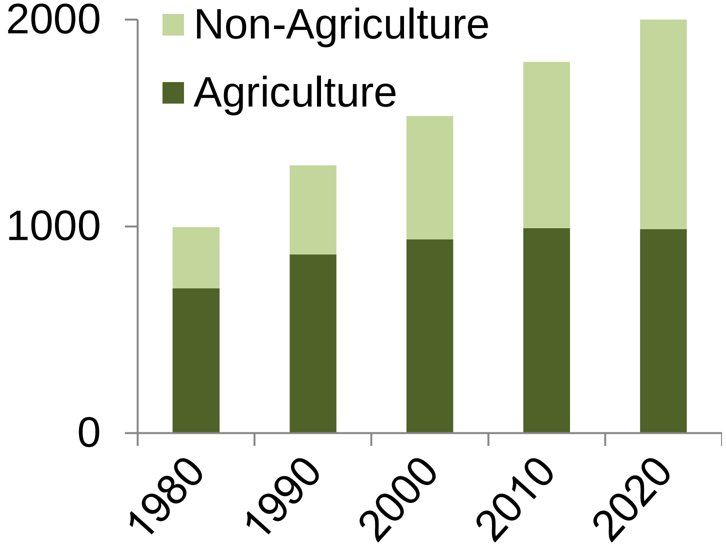
Source: Pingali, FAO 2004

Agricultural GDP as share of total GDP, %



Source: World Bank 2011

Number of economically active people in developing South and East Asia (millions)



Source: FAO 2011

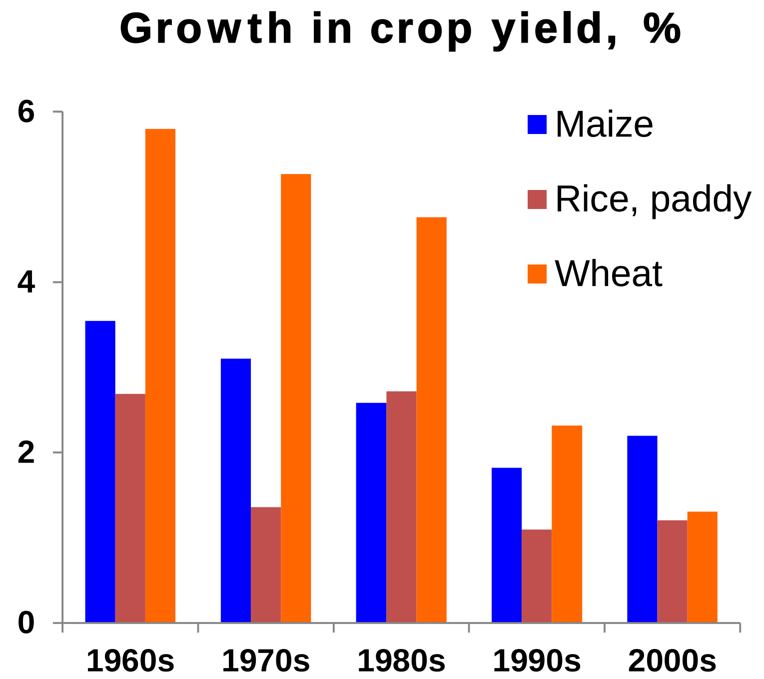
<u>STEADY DECLINE</u> in agricultural GDP and proportion of economically active people employed in agriculture

Source: Shenggen Fan, 2011

- Global aggregate yield growth of grains and oilseeds:

1970-1990	2 % p.a.
1990-2007	1.1 % p.a.
2007-2017	<1% p.a.

- Yield growth of maize, rice and wheat in Asia has either modestly increased or been on the decline.



Source: FAO 2011

Stress Factors on the natural resource base

Soil

- Degradation (Erosion, Salinization, etc.)

Water

- Pollution by industrial and agricultural effluents

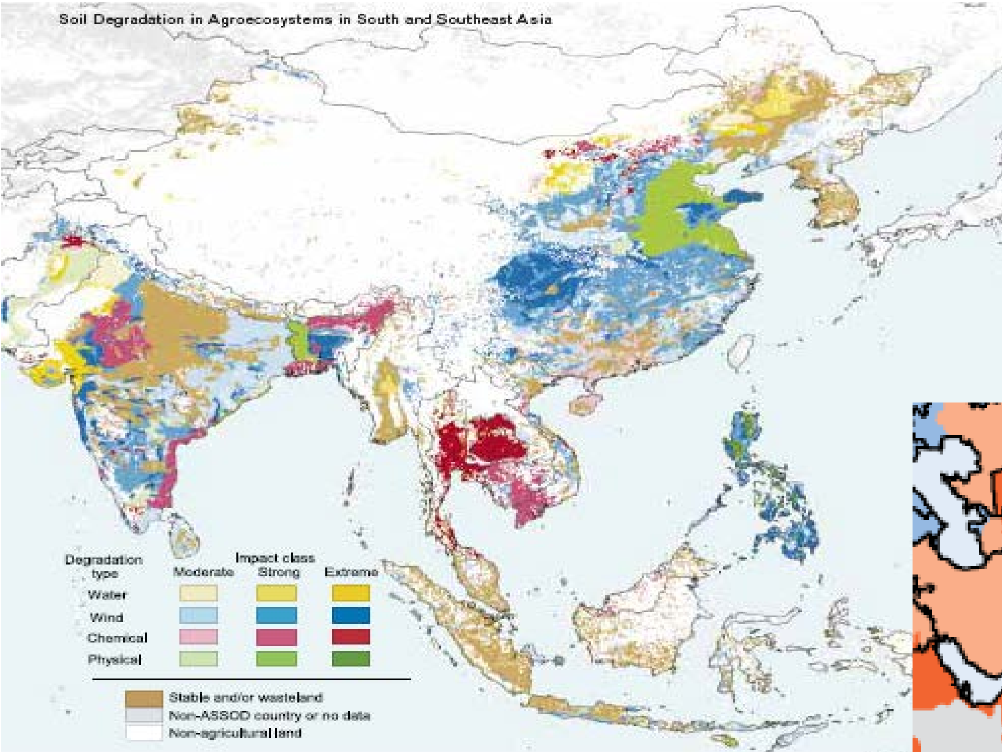
Air

- Pollution by natural and anthropogenic sources

Global Climate Change (GCC)

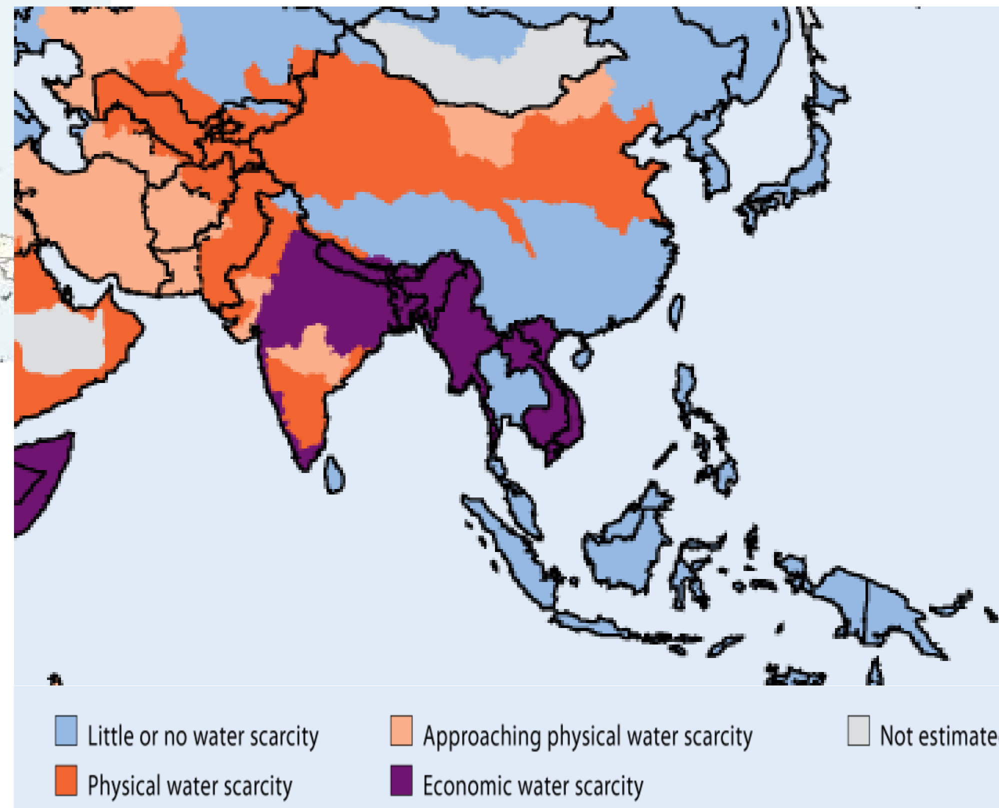
- Temperature (global warming)
- Light (global dimming)

Land & Water Constraints



Soil degradation

Source: ISRIC



Areas of water scarcity

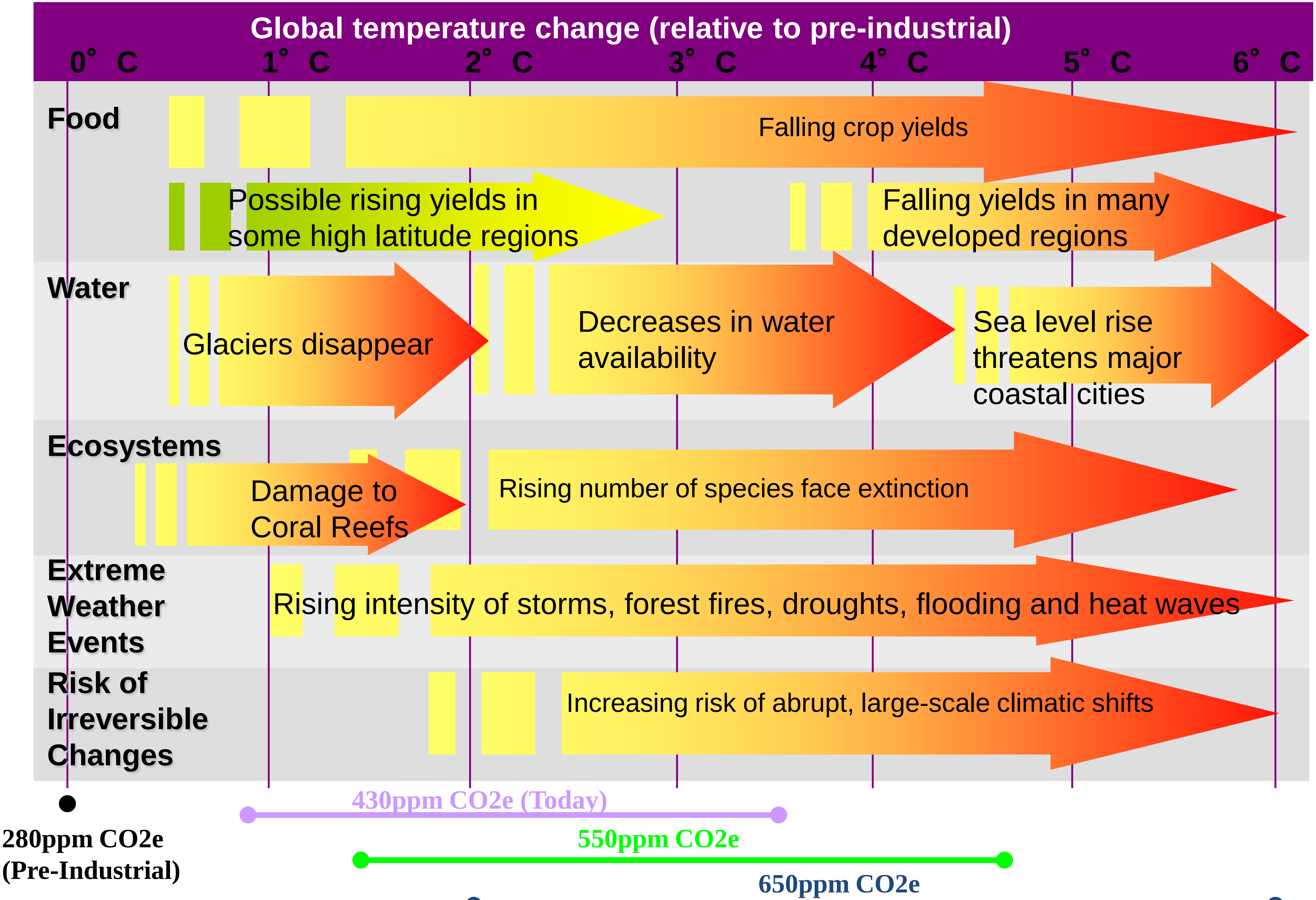
Source: IWMI

	Arable Land (1000Ha) (2011)
Brunei Darussalam	3
Cambodia	4000
Indonesia	23500
Lao PDR	1400
Malaysia	1800
Myanmar	10786
The Philippines	5400
Singapore	0.63
Thailand	15760
Viet Nam	6500
Total	**69149.63**
Arable Land/Total Land	**15.59%**

(Source: FAOSTAT)

Current loss of arable land due to other competing uses and degradation

Complex impacts of Climate Change on food availability



Source: ADB, the Stern Review ; V.Anbumozhi, ADBI. 2012

Climate change impact on crop yields, 2050

ASIA	
Crop	**Change in Production (%)**
Rice	
Irrigated	**-10.47**
Rainfed	**0.66**
Maize	
Irrigated	**-5.54**
Rainfed	**1.71**
Wheat	
Irrigated	**-13.50**
Rainfed	**-1.91**
Soybeans	
Irrigated	**-6.73**
Rainfed	**8.58**

Source: IFPRI 2011 (preliminary)

Rapid transformation of Supply Chains

- Emergence of supermarkets and large wholesalers/processors in the last two decades
- Rapid transformation of wholesale, logistics, processing, food retail – fastest in the world, in history
- Based mainly on massive investments by private sector (domestic and foreign)
- Higher quality and safety standards
- 50-57% of food cost from post farmgate expenses in supply chain

Potential Impact: Lower food prices for urban consumers BUT lower market participation among poorer small farmers

Source: Thomas Reardon, 2011

Why should ASEAN be concerned?

Sustaining a food production capacity
Sustainable agriculture
Food Security as the *raison d'être* for sustainable agriculture

- Food Security depends on a productive natural resource base (environment) to sustain productivity: valuing ecological services
- Food Security depends on a productive workforce of farmers who can derive their livelihoods from farming
- Food Security depends on there being surplus production over consumption, i.e. exportable volumes at affordable prices

Multi-sector, integrated approaches to food security

FOOD SECURITY: Multiple Dimensions

Agriculture

Water Supply

Health & Nutrition

Trade

Energy

Transport

Finance

Education

Land use

Environment

Social development

Economic development

National security

Migration

Labour & Employment

Political stability

Public works

Thank You