

INTRODUCTION: AGRICULTURAL ECONOMICS



NONDH NUCHMORN



Agriculture?



What is Agriculture?

- ▶ **Agriculture is a meet between nature and human society**
- ▶ “Getting food and fibre to all people in the world in the right form at the right time is an extremely complex process”

(Cramer *et al.* 2001: 9)

Agriculture is necessary for human survival

- ▶ Domesticated by humans
- ▶ From Teosinte grass to corn → spreading from Mexico to Europe



Agriculture and Society

- ▶ Human $\longleftrightarrow$ Plant
- ▶ Agriculture $\rightarrow$ Settlement $\rightarrow$ Civilization
- ▶ Reduce risk from nutrition deficiency/ people have more time/ more reproduction/ demand for food increase
- ▶ Worshiping the god for natural richness $\rightarrow$ faith and religion

Agriculture and Society

- ▶ “Excess supply of food” → social hierarchy
- ▶ Controlling food= power, exchange for other assets, military
- ▶ Technology : irrigation
- ▶ International trade → transportation by sea →
Colonization

Agricultural Economy

- Source of food VS Source of income

Total number of economically active people in the world and the proportion active in farming in 2010

	<i>Countries in developing regions</i>	<i>Countries in developed regions</i>	<i>World</i>
Total labour force, millions of people	2,657	625	3,282
Proportion in farming, %	48.2	4.2	39.9
Numbers in farming, millions of people	1,282	26	1,308

Source: FAO 2011: Table A4 (accessed 27 September 2012).

Agriculture is necessary for human survival

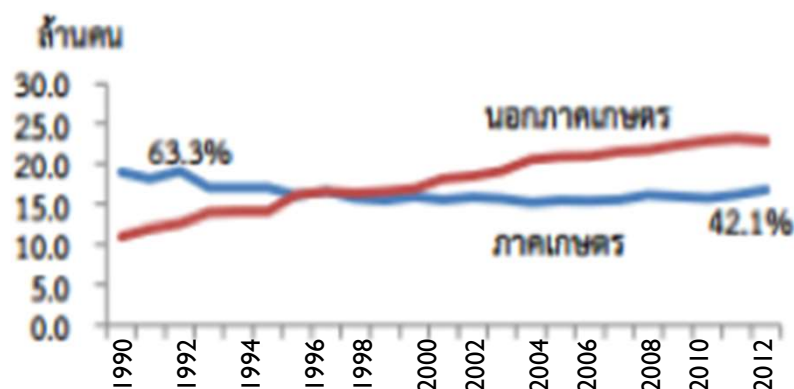
Number of people in world farming and as a proportion of all economically active people in the world in 1980, 1995 and 2010

	<i>1980</i>	<i>1995</i>	<i>2010</i>
Economically active persons in the world, millions	1,895	2,575	3,282
Economically active persons in world agriculture, millions	955	1,187	1,308
Economically active persons in world agriculture, %	50.4	46.1	39.9

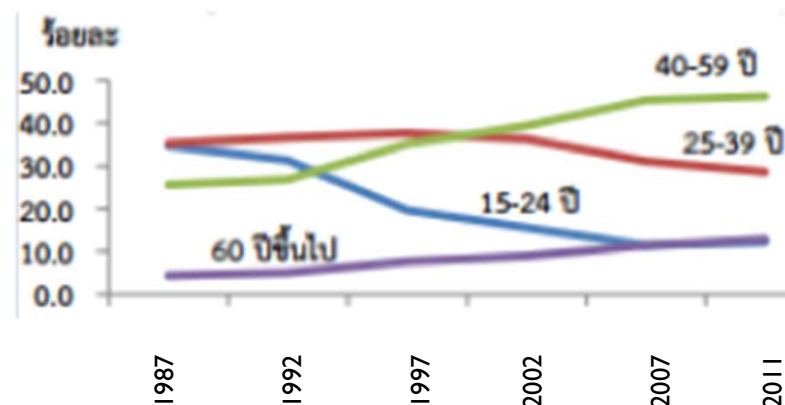
Source: FAO 2011: Table A4 (accessed 27 September 2012).

Agriculture is necessary for human survival

Number of employees by jobs



Employees in Agricultural sector by age



Economy and Population

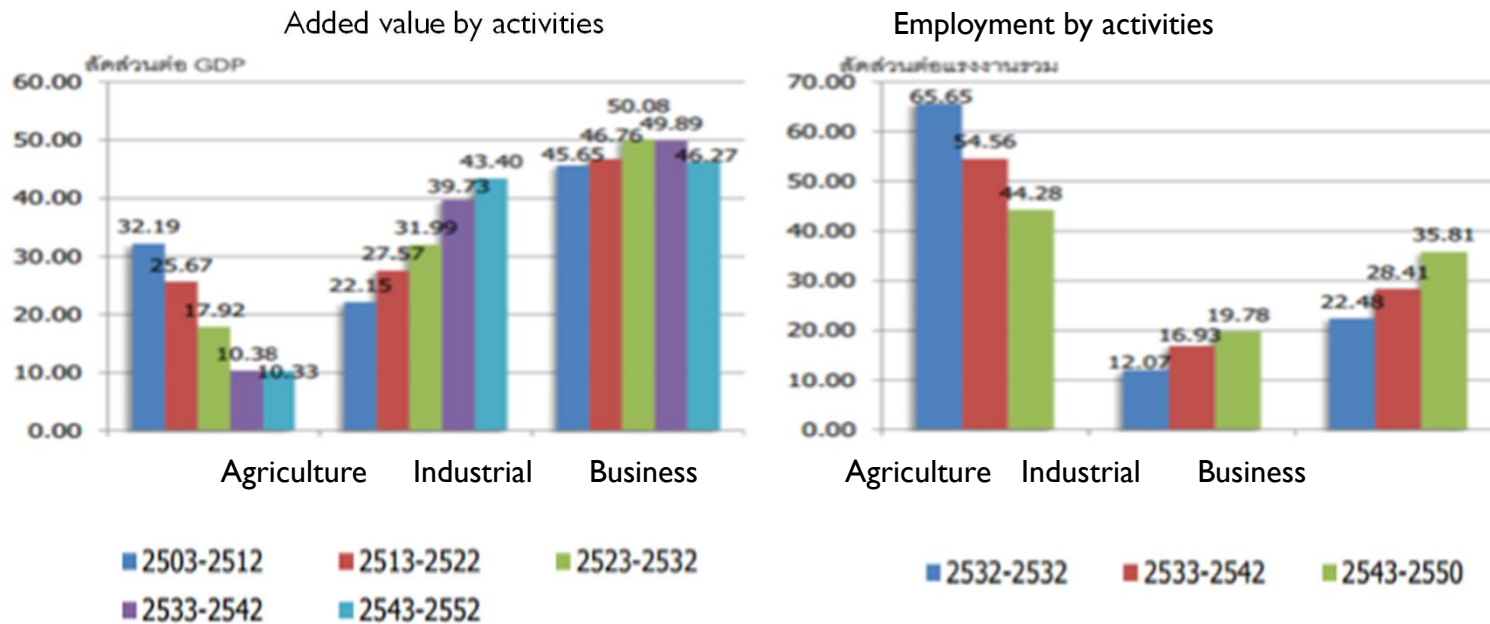
	2008	2009	2010	2011
Population (M persons) ¹	63.39	63.53	63.88	64.08
GDP real growth rate (%) ²	2.5	-2.3	7.8	0.1
Share of agriculture in total employment (%) ³	45.56	45.05	44.83 ^p	45.23 ^e

Source : ¹Department of Provincial Administration
²The Fiscal Policy Office
³Office of Agricultural Economics (OAE)

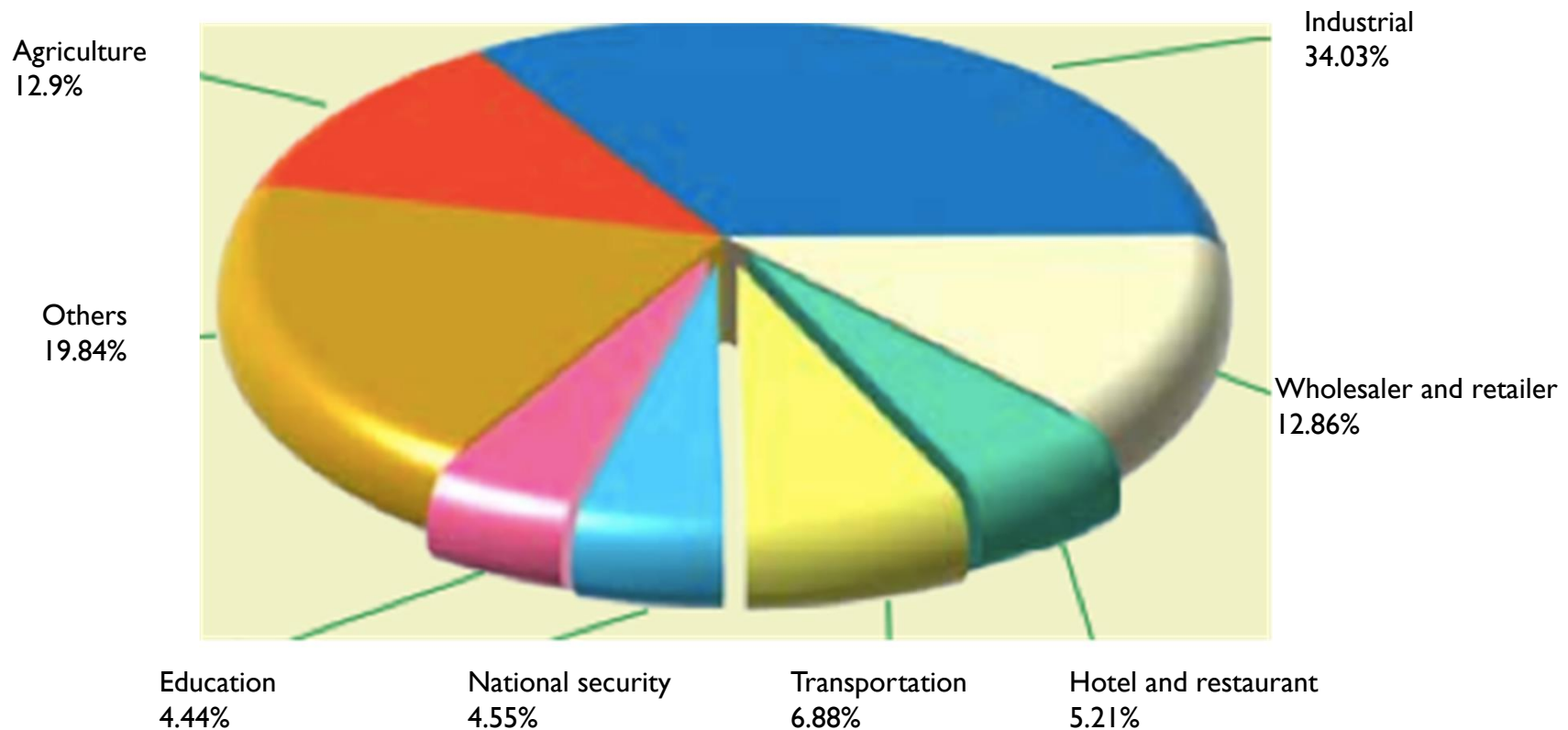
Remark: ^p = preliminary
^e = estimate

Agriculture is necessary for human survival

- Since 2523 B.E. , Agricultural sector has reduced its role in Thai economy but the most labor still in this sector



Agriculture is a matter of economizing with resources



Proportion of GDP in 2012

ที่มา : สำนักงานคณะกรรมการพัฒนาการเศรษฐกิจและสังคมแห่งชาติ

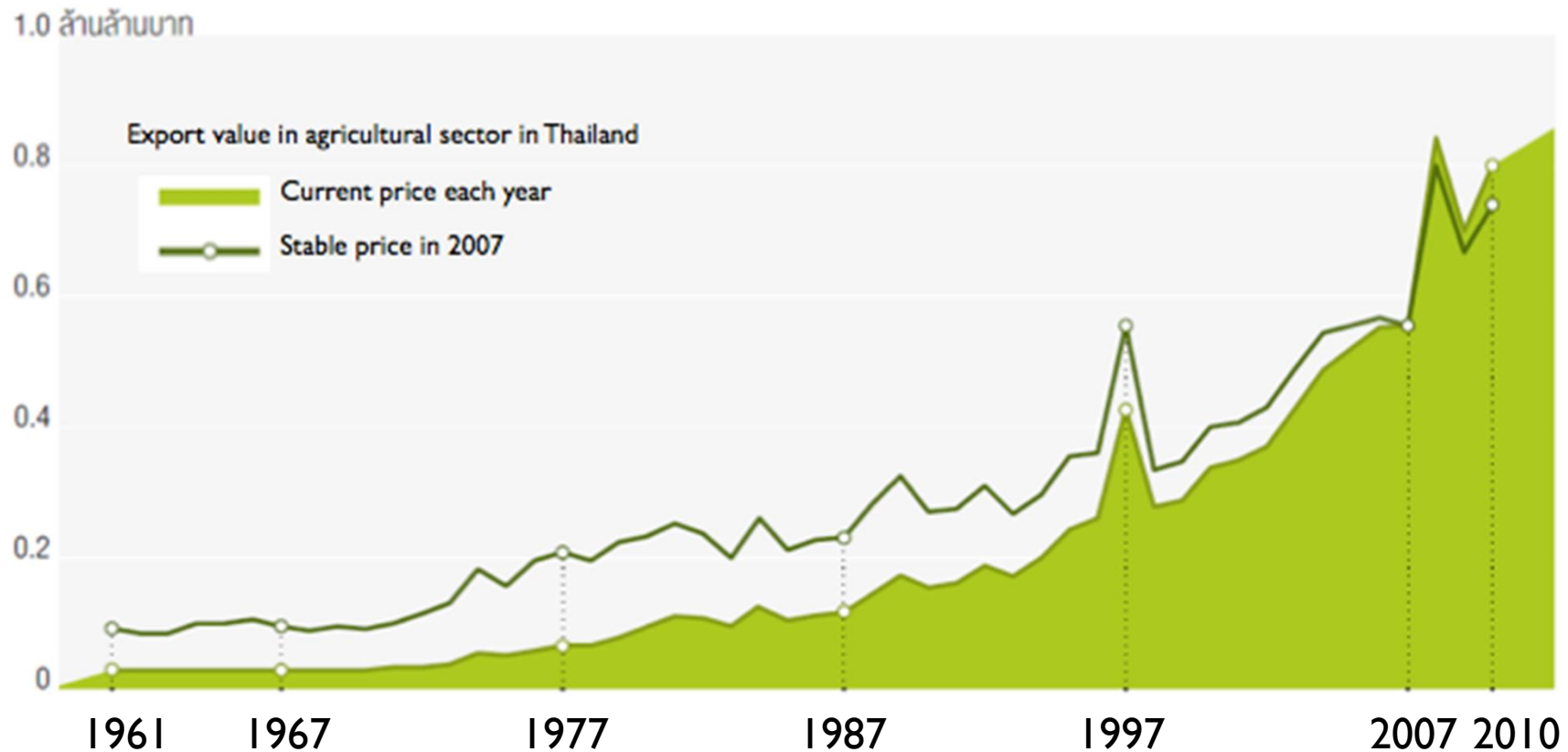
Agriculture is a matter of economizing with resources

- The 20 most valuable of agricultural product in 2553



ที่มา : เภยจวรรณ (2557)

Agriculture is a matter of economizing with resources



ที่มา : เบญจวรรณ (2557)

Agricultural food vs Non- food agriculture



Agriculture is about geographical determination



- ▶ **Agriculture is found on almost every continent**
 - ▶ Agriculture is characterized by geographical spread..
- ▶ **Agriculture is influenced by social and cultural factors..**
 - ▶ Some farm decisions are beyond economic rationality.
 - ▶ Traditional views → modern views

Agriculture is about geographical determination

▶ Farming system

- ▶ A farming system is defined as a population of individual farm systems that have broadly similar resource bases, enterprise patterns, household livelihoods and constraints, and for which similar development strategies and interventions would be appropriate.

Agriculture is about geographical determination

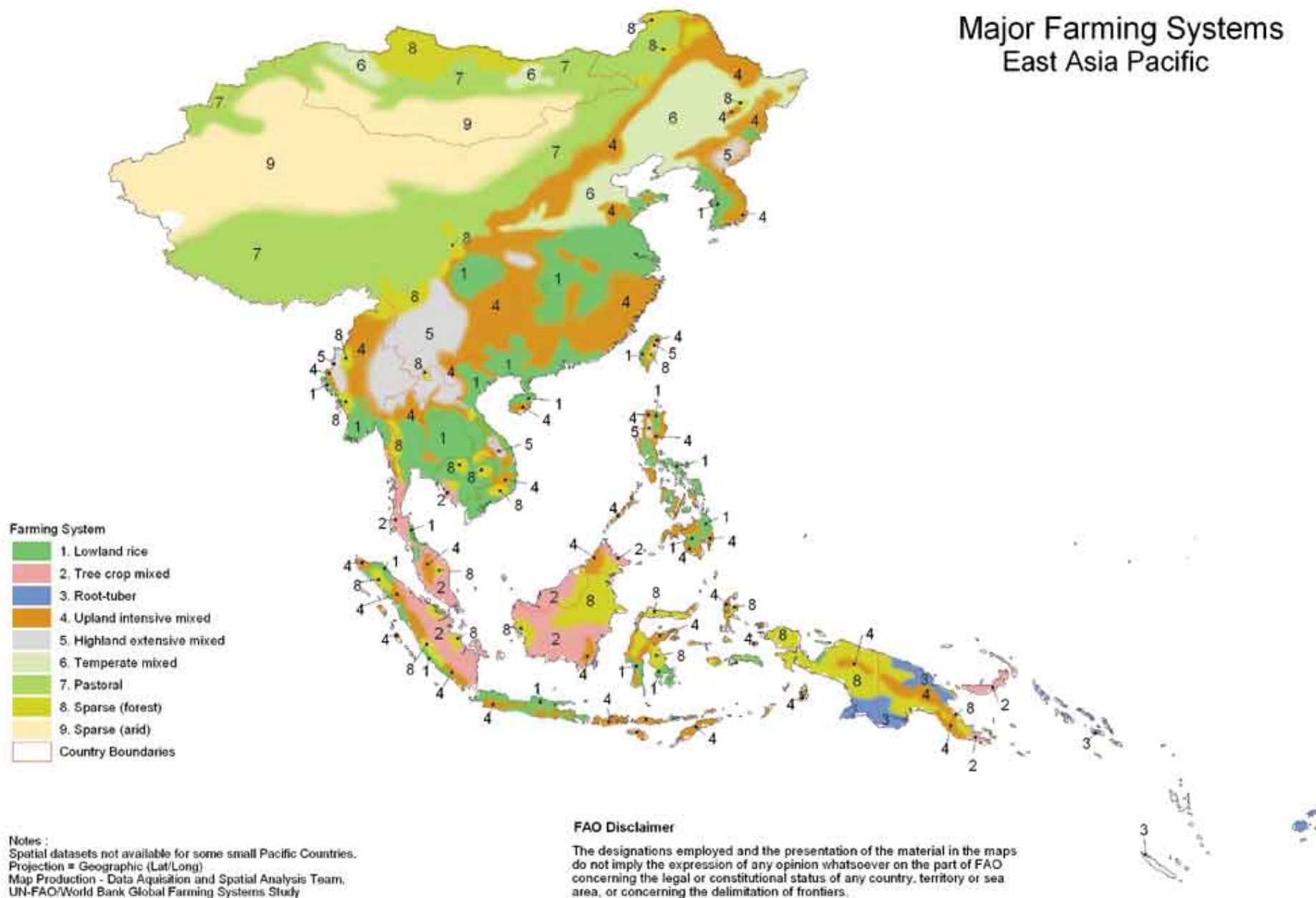
1 1 Types of farming system in Asia

Farming Systems	Land Area (% of region)	Agri. Population. (% of region)	Principal Livelihoods	Prevalence of Poverty
Lowland Rice	12	42	Rice, maize, pulses, sugarcane, oil seeds, vegetables, livestock, aquaculture, off-farm work	Moderate
Tree Crop Mixed	5	3	Rubber, oil palm, coconuts, coffee, tea, cocoa, spices, rice, livestock, off-farm work	Moderate
Root-Tuber	2	<1	Root crops (yam, taro, sweet potato), vegetables, fruits, livestock (pigs and cattle), off-farm work	Limited
Upland Intensive Mixed	19	27	Rice, pulses, maize, sugarcane, oil seeds, fruits, vegetables, livestock, off-farm work	Extensive
Highland Extensive Mixed	5	4	Upland rice, pulses, maize, oil seeds, fruits, forest products, livestock, off-farm work	Moderate

Agriculture is ruled by weather, seasons, and biological rhythm

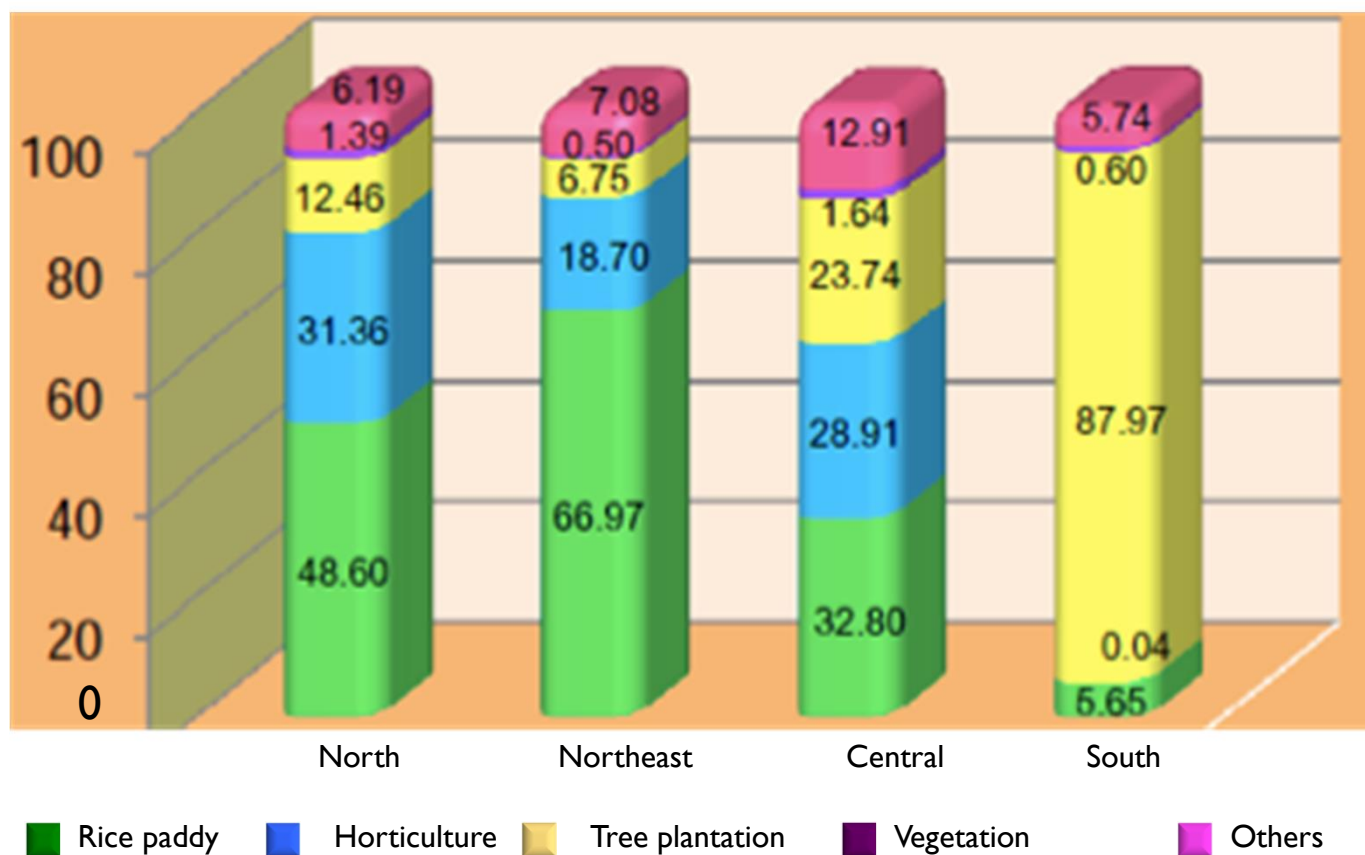
Farming Systems	Land Area (% of region)	Agri. Population n. (% of region)	Principal Livelihoods	Prevalence of Poverty
Temperate Mixed	6	14	Wheat, maize, pulses, oil crops, livestock, off-farm work	Moderate
Pastoral	20	4	Livestock with irrigated crops in local suitable areas	Extensive, especially drought induced
Sparse (Forest)	10	1	Hunting, gathering, off-farm work	Moderate
Sparse (Arid)	20	2	Local grazing where water available, off-farm work	Extensive
Coastal Artisanal Fishing	1	2	Fishing, coconut, mixed cropping, off-farm work	Moderate
Urban Based	<1	1	Horticulture, dairy, poultry, other work	Limited

Major Farming Systems East Asia Pacific

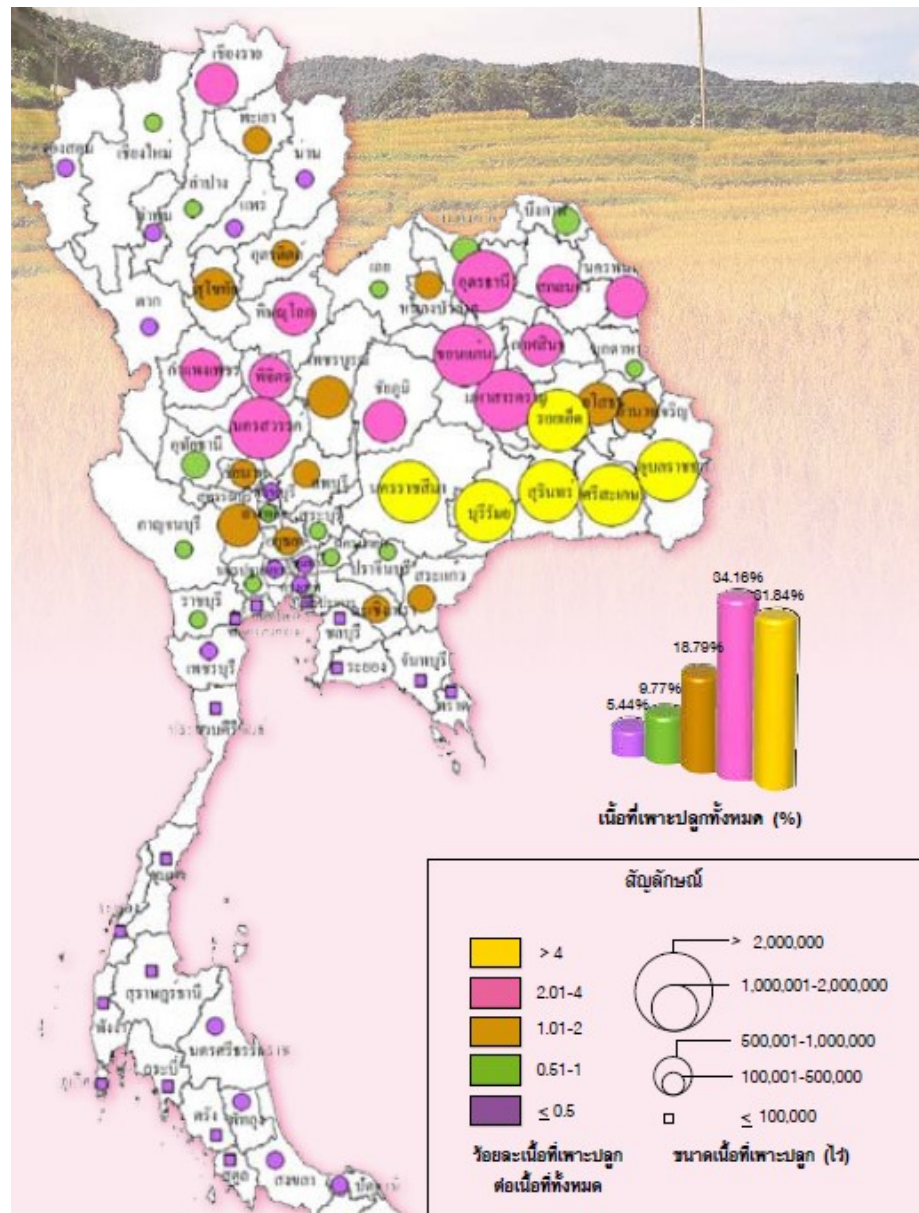


Agriculture is about geographical determination

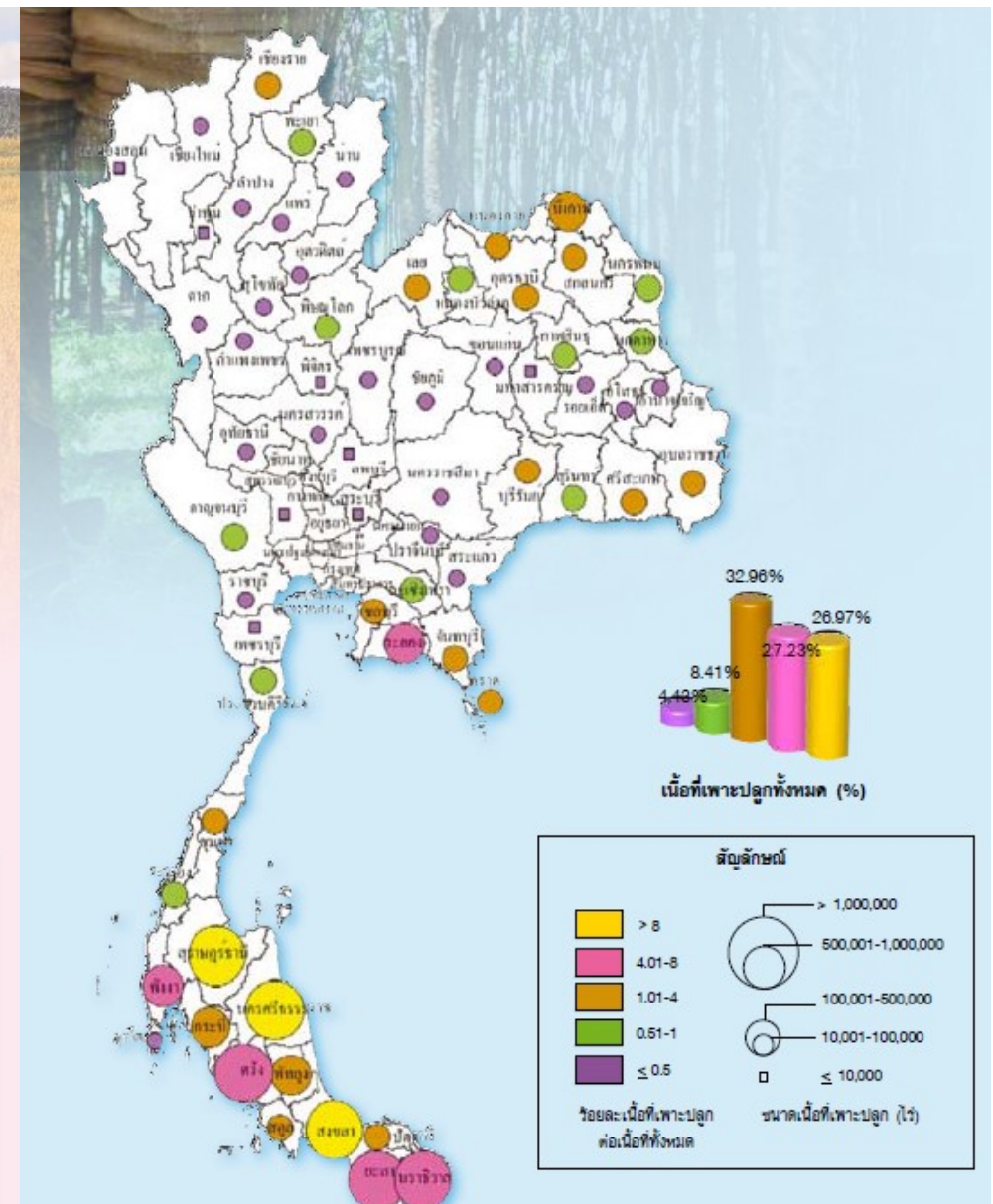
Proportion of area utilize for agricultural sector in 2011



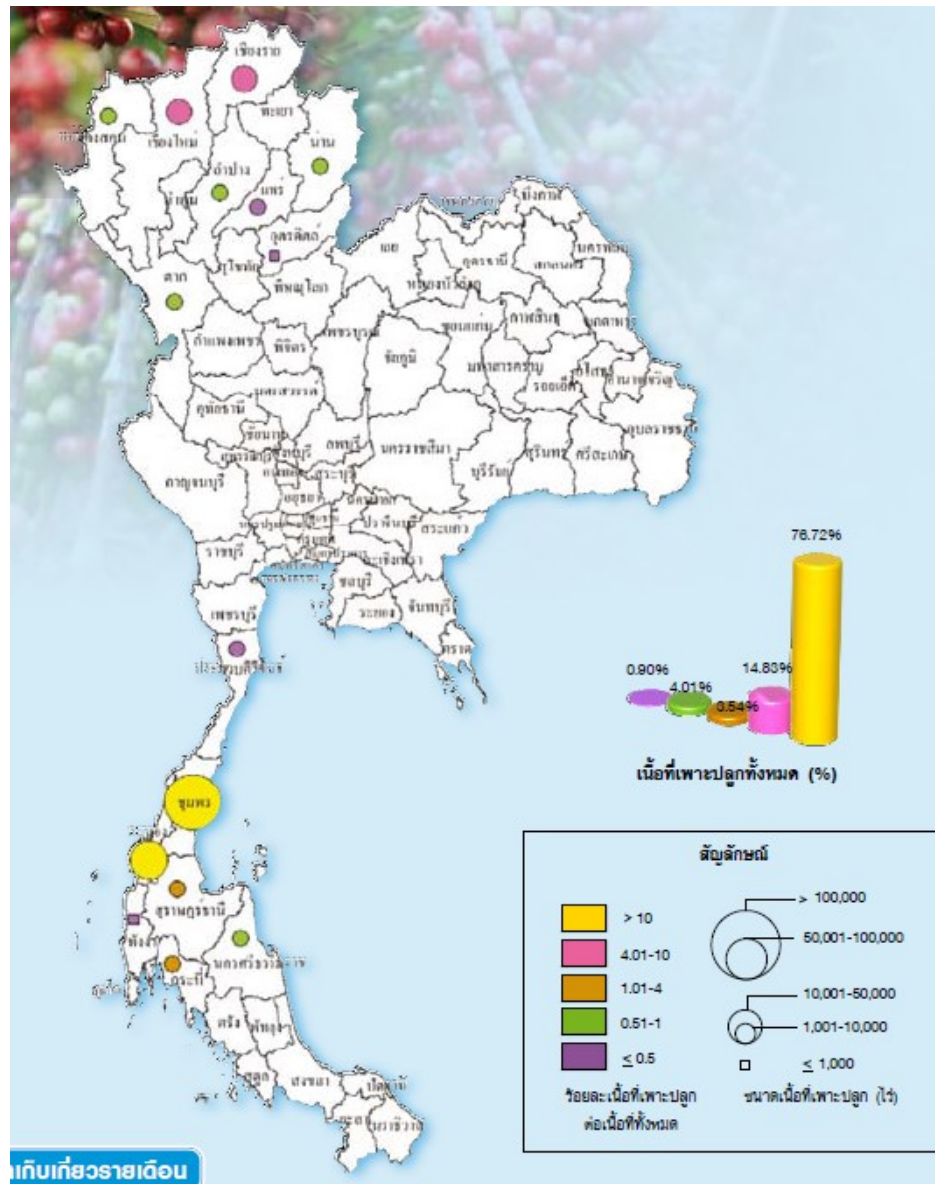
Rice plantation in Thailand



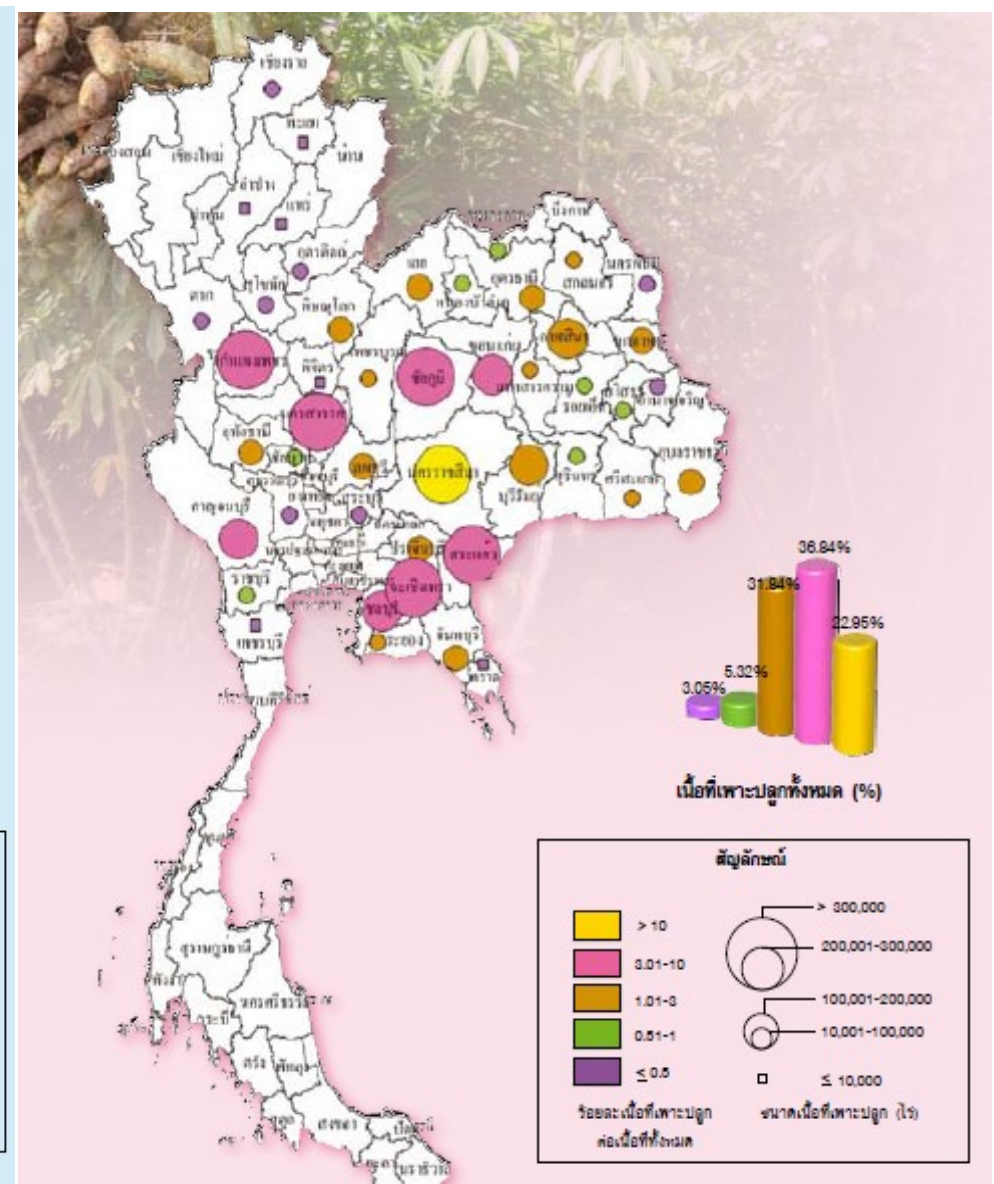
Rubber plantation in Thailand



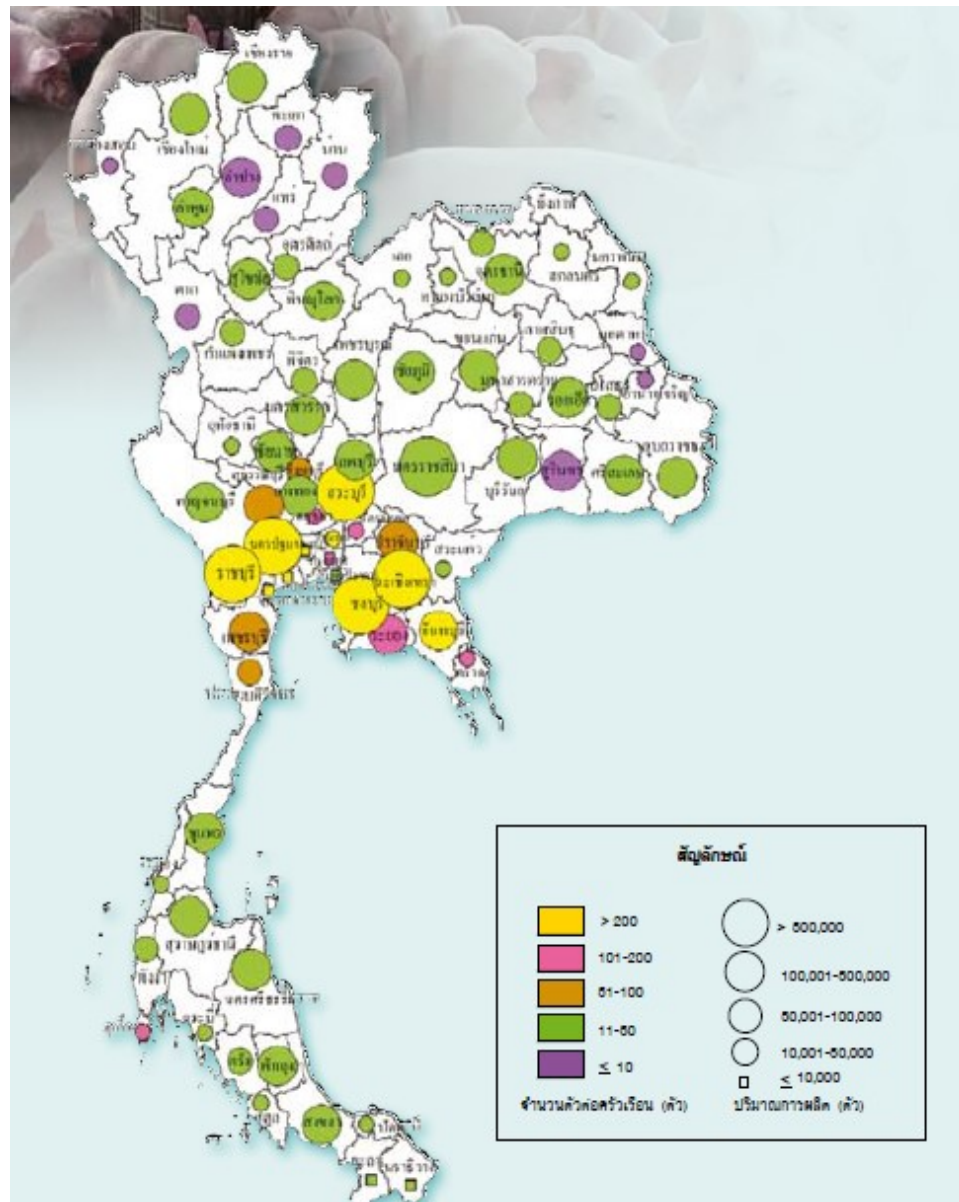
Coffee plantation in Thailand



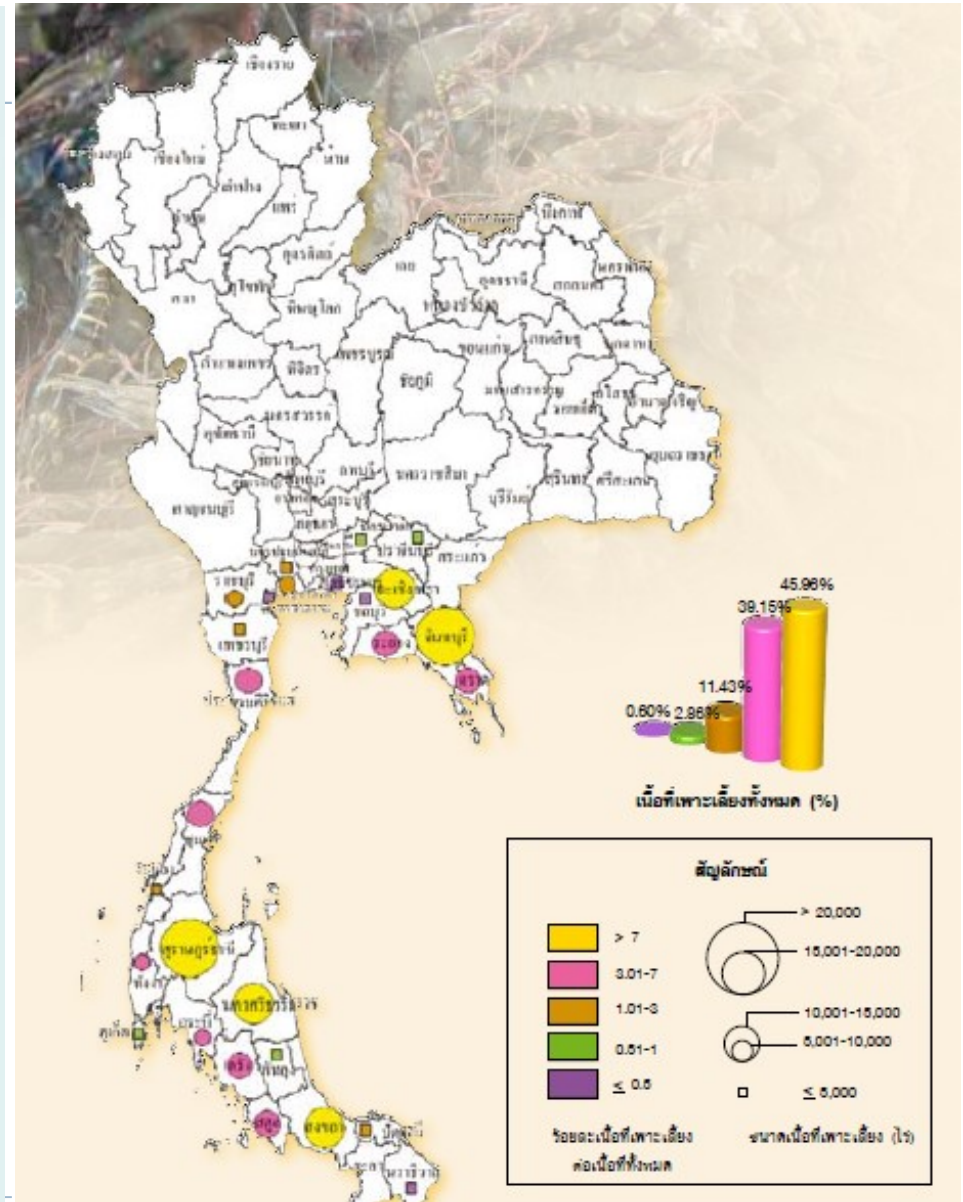
Cassava plantation in Thailand



Pig Production in Thailand



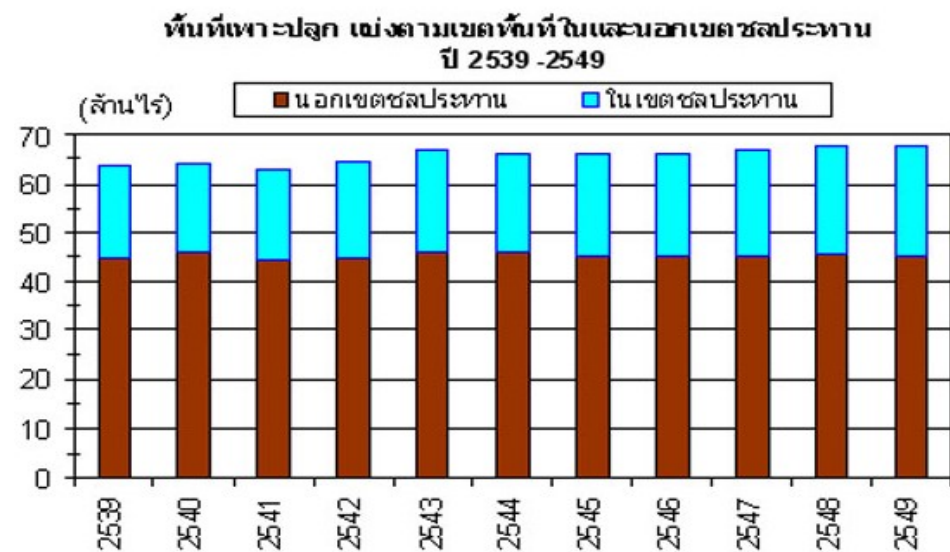
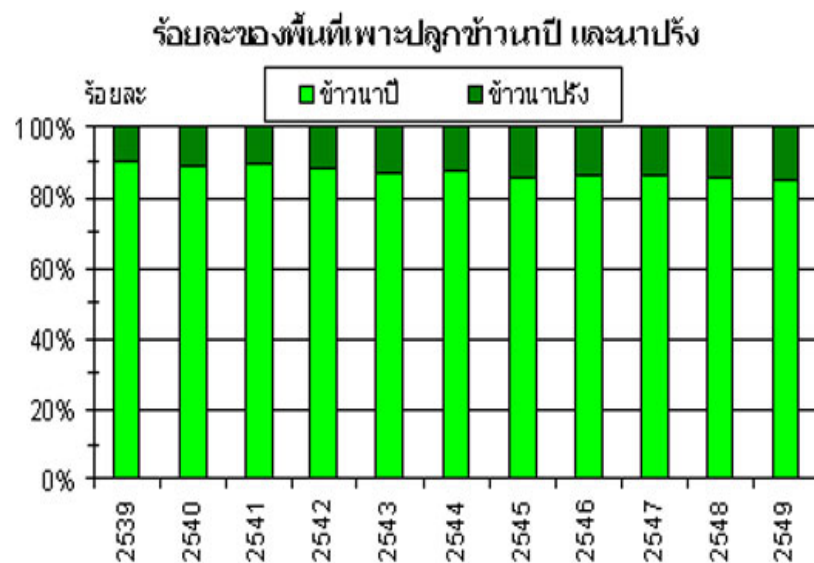
Shrimp production in Thailand



[illegible]

Agriculture is about season..

In-season rice field farming vs. Off-season rice farming



ที่มา: สำนักงานเศรษฐกิจการเกษตร, 2550

Agriculture is about seasons

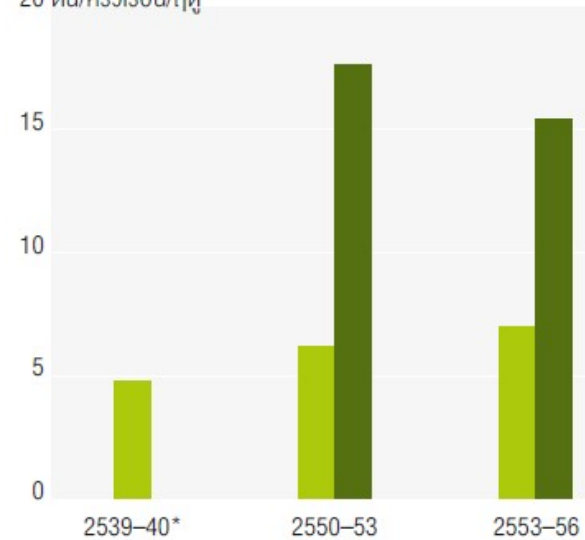
ผลผลิตข้าวเปลือกต่อครัวเรือน
ทำนาในฤดูนาปี และนาปรัง
เปรียบเทียบระหว่างปีการทำนา
และผลผลิตฤดูนาปี
เปรียบเทียบระหว่างภูมิภาค

■ นาปี
■ นาปรัง

หมายเหตุ: * ปี 2539/40 ไม่มีข้อมูลผลผลิตนาปรัง
ที่มา: จำนวนและราคาจากข้อมูลของ
สศก. (2541, 2556ค)

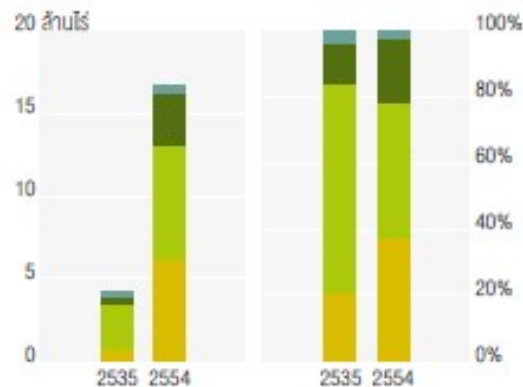
ระหว่างปีการทำนา

20 ตัน/ครัวเรือน/ฤดู

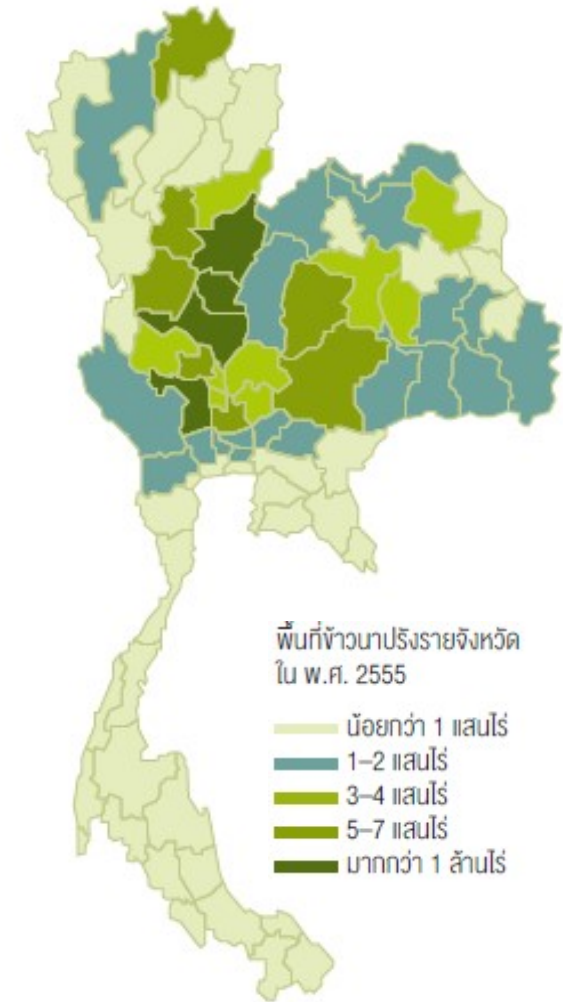
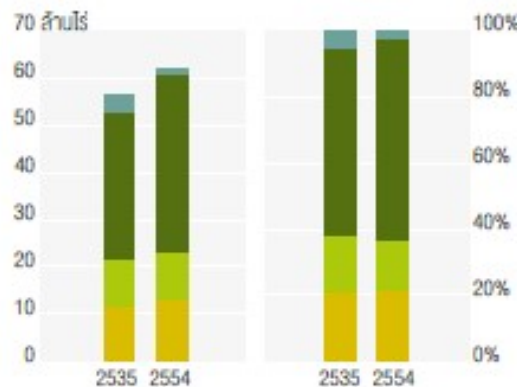


Changing in agricultural plantation

ก. นาปรัง



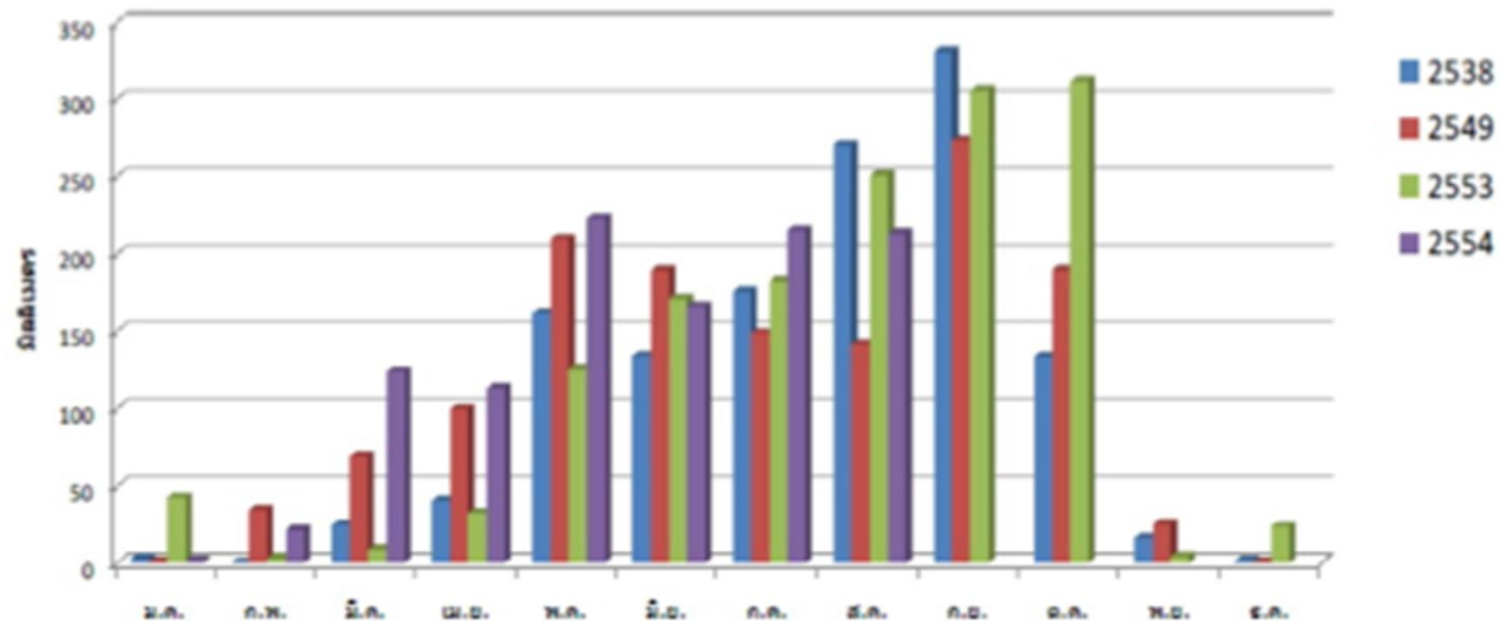
ข. นาปี



■ ภาคใต้
■ ภาคตะวันออกเฉียงเหนือ
■ ภาคกลาง
■ ภาคเหนือ

Agriculture has correlation with seasons.

Amount of rain per month
Central region



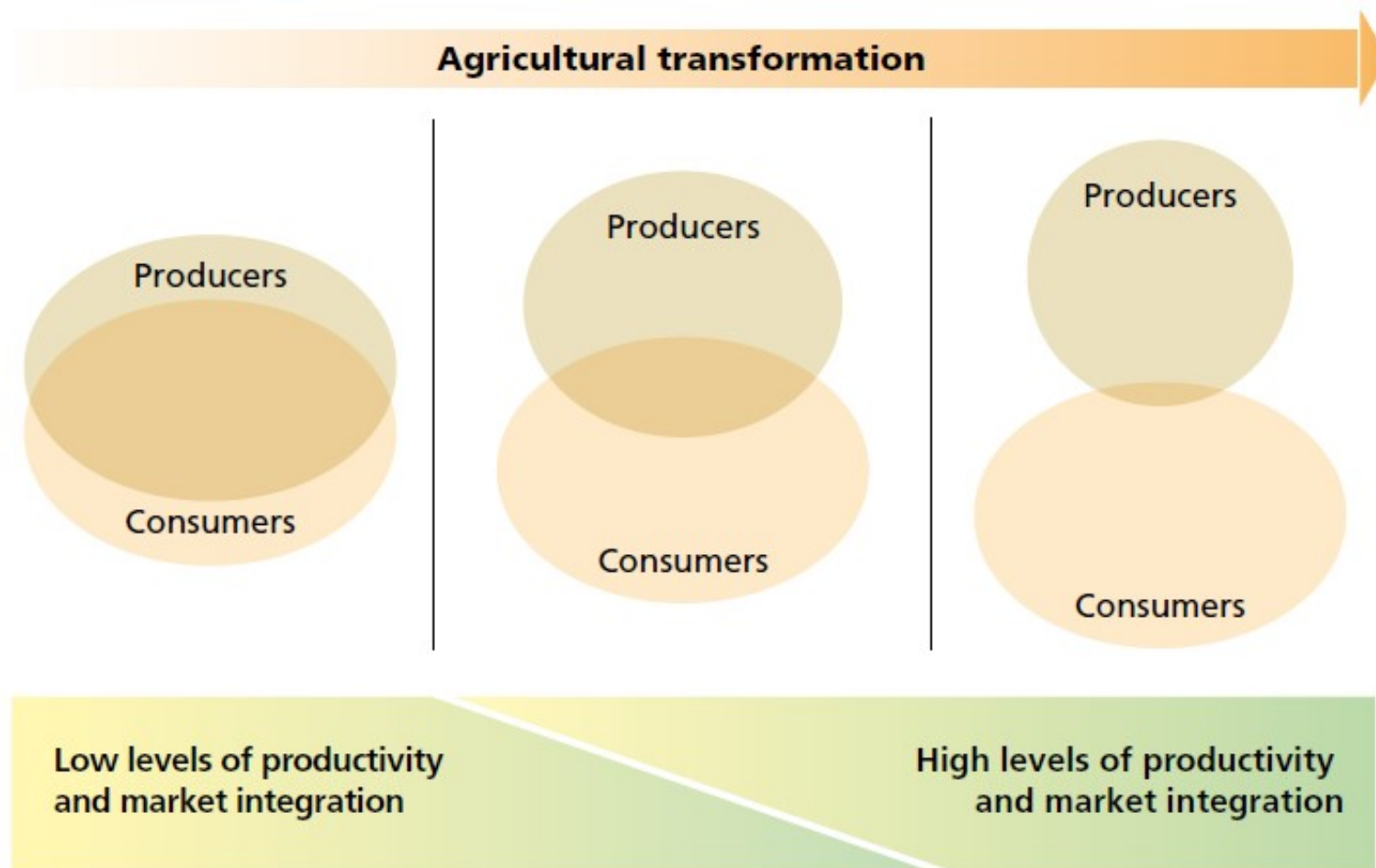
Agricultural transformation

- Subsistence Farming
 - Farming crops that are intended to be consumed by the producers
 - Produce only to bear necessity to continue to exist (minimal levels of food and other essentials)
 - But still need to purchase additional food
 - In reality, based on different sources of income, where the smallholding provides the basis for food supplies and generate some cashes from occasional sales

Agricultural transformation

- Market-oriented Farming
 - Production for sale against payment in cash
 - More revenues → Ability in farm development (to continue/ increase farm production/ make investment)
 - increased farmer's “freedom of action” (wider range of choices and decisions)

Agricultural transformation



Role of market and distribution of modern good

Modern and traditional retail outlet shares of fresh fruit and vegetable market and packaged food market in selected countries



Note: Packaged foods include breakfast foods as well as preserved, canned, frozen and other ready-to-consume items. Countries are presented in ascending order of GDP per capita according to World Bank (2008) figures.

Sources: Euromonitor, 2012 and 2011b; and Gorton, Sauer and Supatpongkul, 2011.



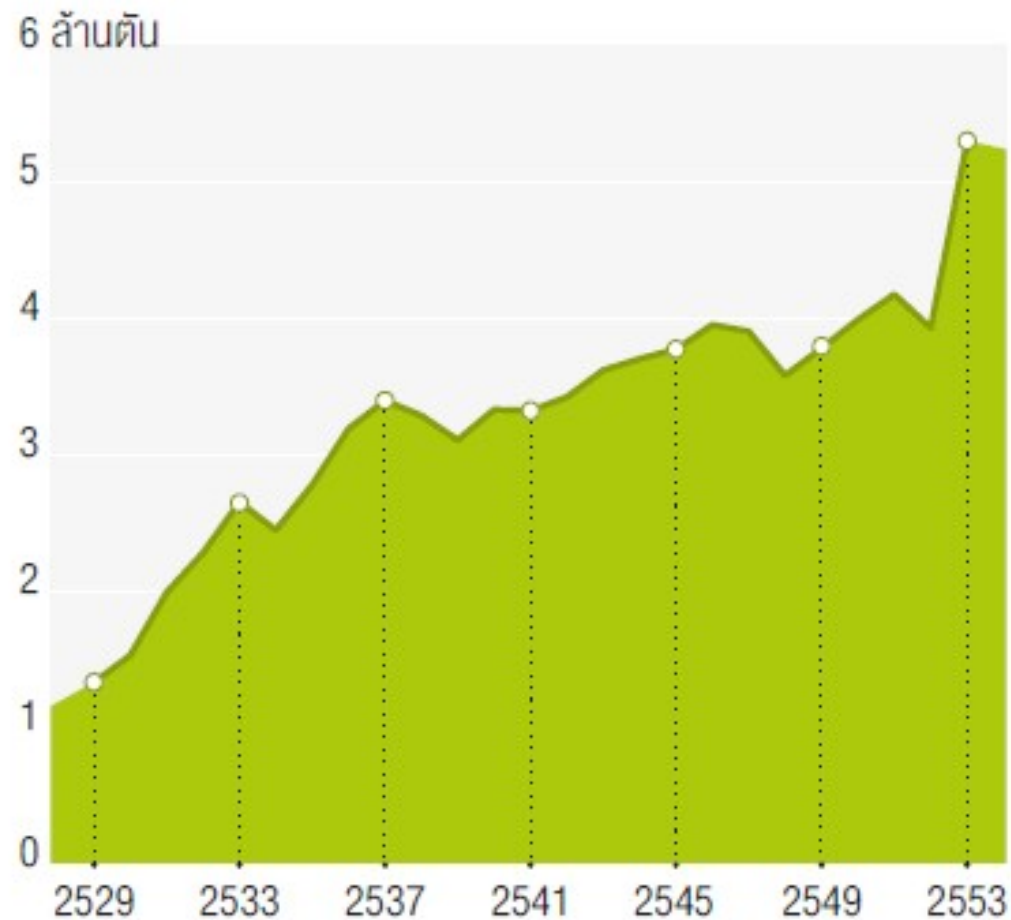
Agriculture is about externalities..

➤ **Agriculture could create externalities..**

As we need more food, production has to take into account of problems such as climate change, environmental impact, and sustainable use of limited resources..

Agriculture is about externalities..

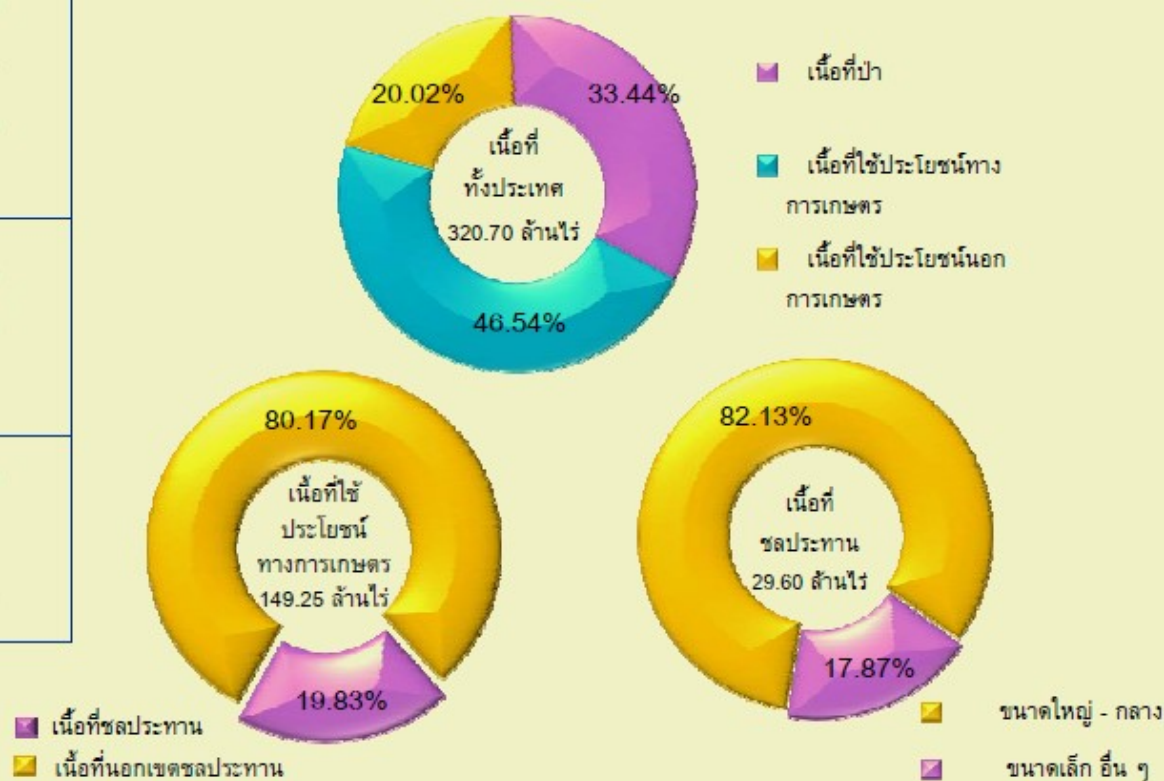
**Chemical usage in
agriculture between
1986–2010**



Agriculture is about externalities..

Land usage

1.1 เนื้อที่ทั่วประเทศ (ล้านไร่)	320.70
1) เนื้อที่ป่า ^{1/}	107.24
2) เนื้อที่ใช้ประโยชน์ทางการเกษตร	149.25
3) เนื้อที่ใช้ประโยชน์นอกการเกษตร	64.21
1.2 เนื้อที่ใช้ประโยชน์ทางการเกษตร (ล้านไร่)	149.25
1) เนื้อที่ชลประทาน ^{2/}	29.60
2) เนื้อที่นอกเขตชลประทาน	119.65
1.3 เนื้อที่ชลประทาน (ล้านไร่) ^{2/}	29.60
1) ขนาดใหญ่ - กลาง	24.31
2) ขนาดเล็ก อื่น ๆ	5.29

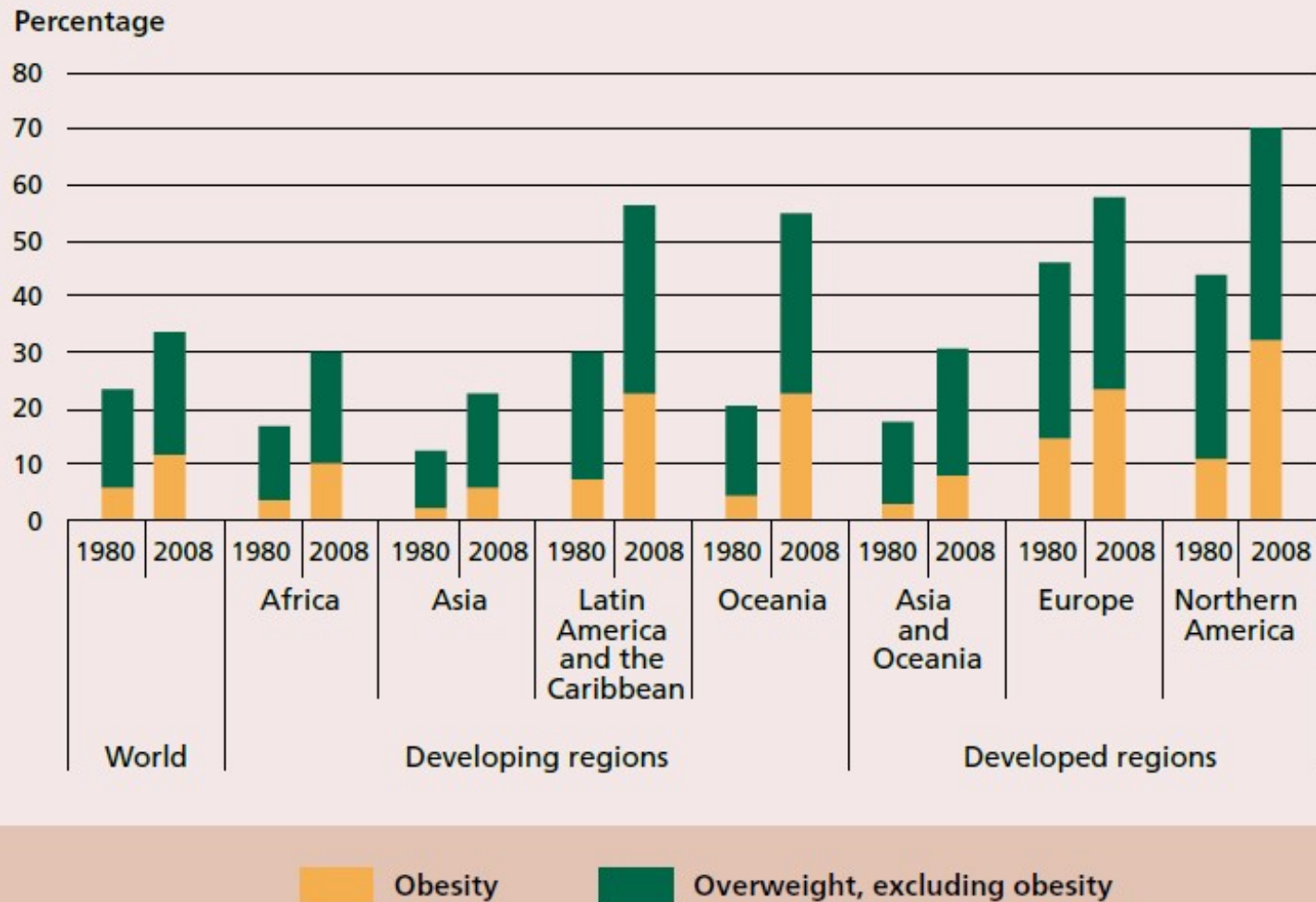


Agriculture and Food Security

- ▶ There are a positive correlation between food demands and supplies
- ▶ But it might not be proportional to the distribution of the world population..
- ▶ “With a child dying every six seconds because of undernourishment-related problems, hunger remains the world’s largest tragedy and scandal.”

(Jacques Diouf, FAO Director General, 2010)

Prevalence of overweight and obesity among adults, by region



FAO (2013)

Fighting Hunger Worldwide

The cost of hunger to developing nations is an estimated US\$450 billion per year.

It takes only 25 US cents for WFP to give a hungry schoolchild a cup of food with all the nutrition needed for the day.

The number of undernourished people worldwide is just under 1 billion – equivalent to the population of North America and Europe combined.

Hunger Map 2011

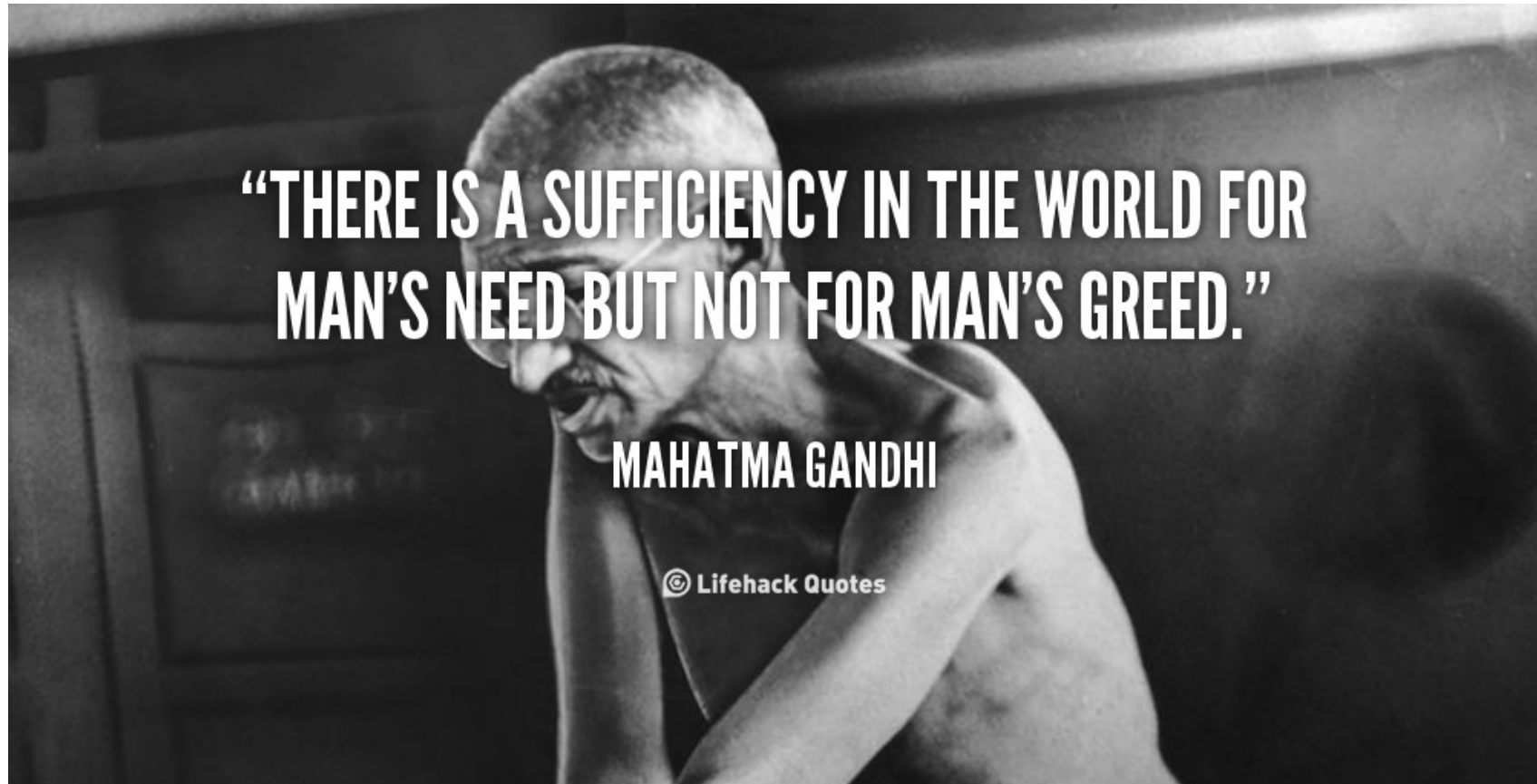


World Food Programme

Category	1	2	3	4	5	
Undernourished	<5%	5-9%	10-19%	20-34%	≥35%	Incomplete data
Description	Extremely low	Very low	Moderately low	Moderately high	Very high	

Sources: *The State of Food Insecurity in the World 2010*, Food and Agriculture Organization of the United Nations.
2011 World Food Programme
 The designations employed and the presentation of material in this map do not imply the expression of any opinion whatsoever of WFP concerning the legal or constitutional status of any country, territory or sea area, or concerning the delimitation of frontiers.
 The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

Agree or not ?



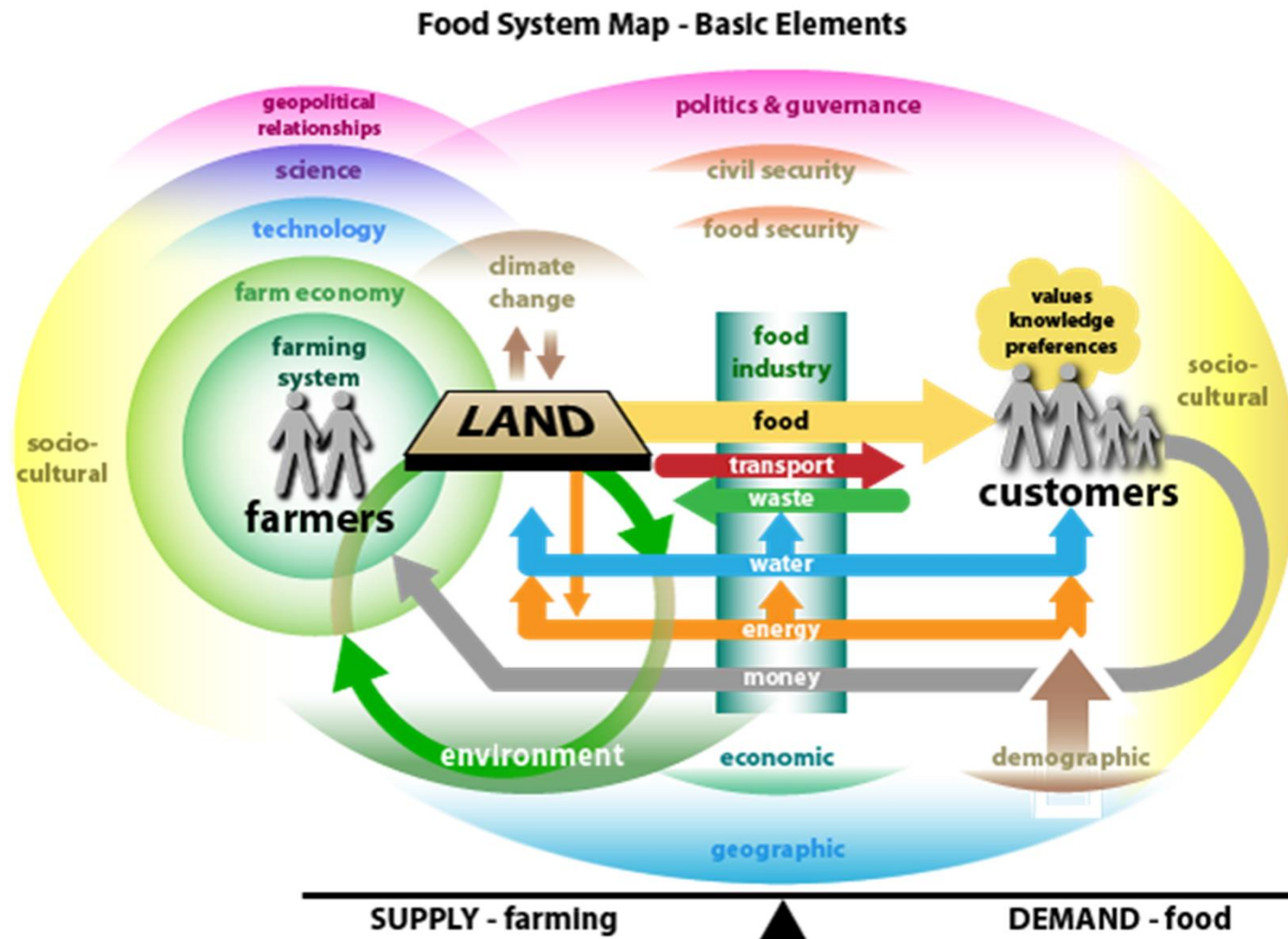
Agriculture is necessary for human survival

25 million people could be fed if we reduced food waste by 15 percent



- What is structural problem ?
- Does food supply chain fully utilized the resource ?

Conclusion : Agricultural economy is complicated and involves many aspects.



The Global Food System

Food System Map
Version 1.2 March, 2009

