



Food and Environmental Security: Case of Thailand



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What is environmental security?

“[T]he state of protection of vital interests of the individual, society [and the] natural environment from threats resulting from anthropogenic and natural impacts on the environment”

The Commonwealth of Independent States

“Environmental security is the proactive minimization of anthropogenic threats to the functional integrity of the biosphere and thus to its interdependent human component.”

Barnett (1997)

“[Environmental security is] a condition in which a nation or region, through sound governance, capable management, and sustainable utilization of its natural resources and environment, takes effective steps toward creating social, economic, and political stability, and ensuring the welfare of its population.”

Foundation for Environmental Security and Sustainability

Food Security

‘Food security, at the individual, household, national, regional and global levels [is achieved] when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.’

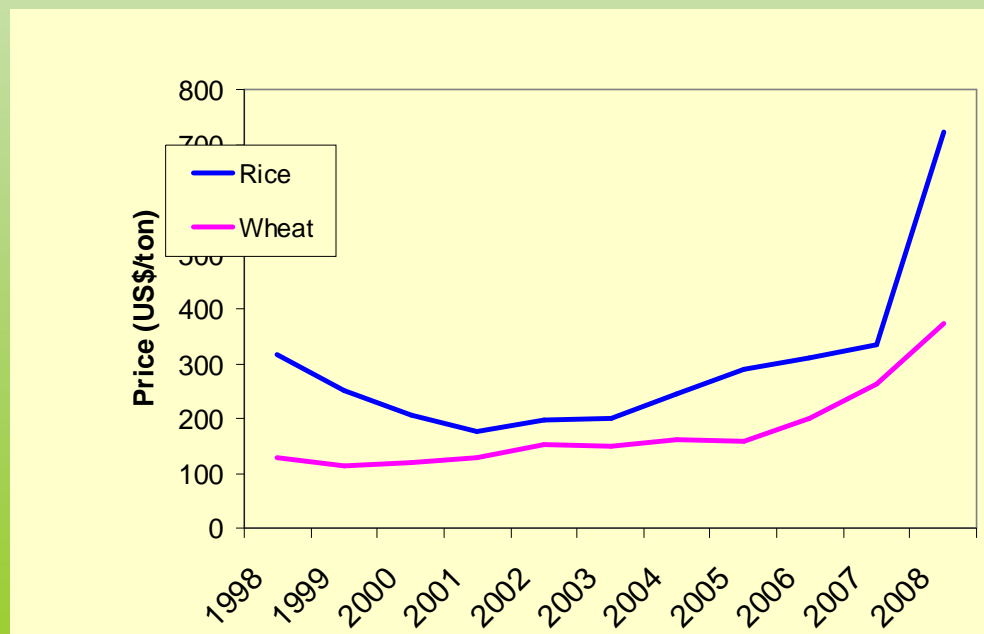
World Food Summit, 1996

World food situation



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International commodity prices 1998-2008 (FAOSTAT, 2008)



World food situation



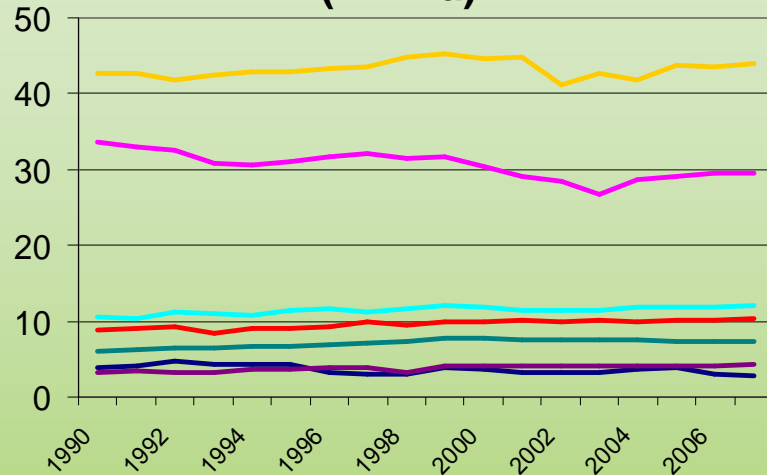
Since 2000, the world price of petroleum and wheat has increased significantly.. .

- People in least developing countries who once ate two meals a day can now afford to eat only one.
- The poor switch to foods that have lower nutrition value

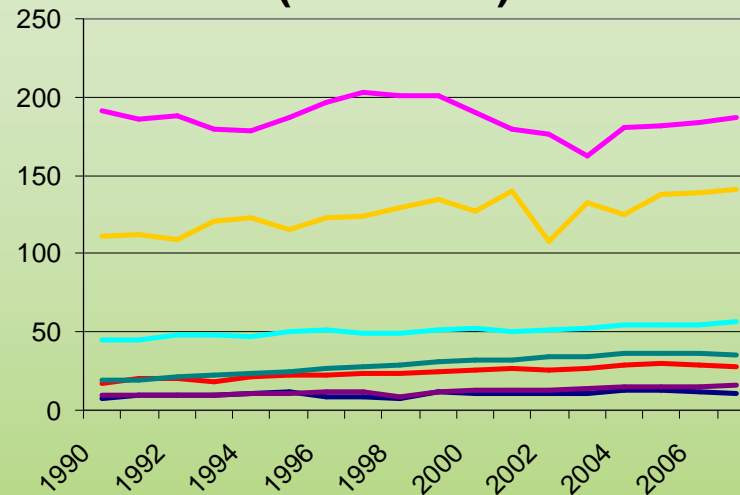
Food crisis is diminishing health, education, social stability, and governance, and affecting the progress towards the UN Millennium Development Goals (MediaGlobal, 2008)

World rice production

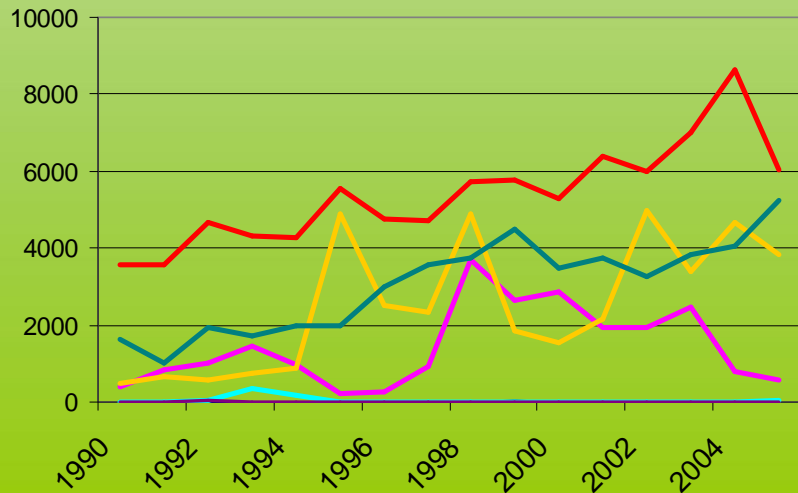
**Rice: Area harvested
(mil ha)**



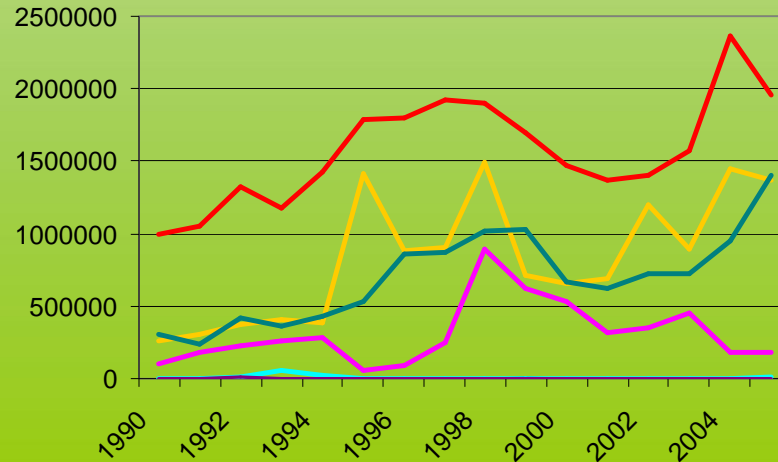
**Rice: Production quantity
(mil tones)**



**Rice milled: Exports values
(mil US\$)**



**Rice milled: Export quantity
(tones)**



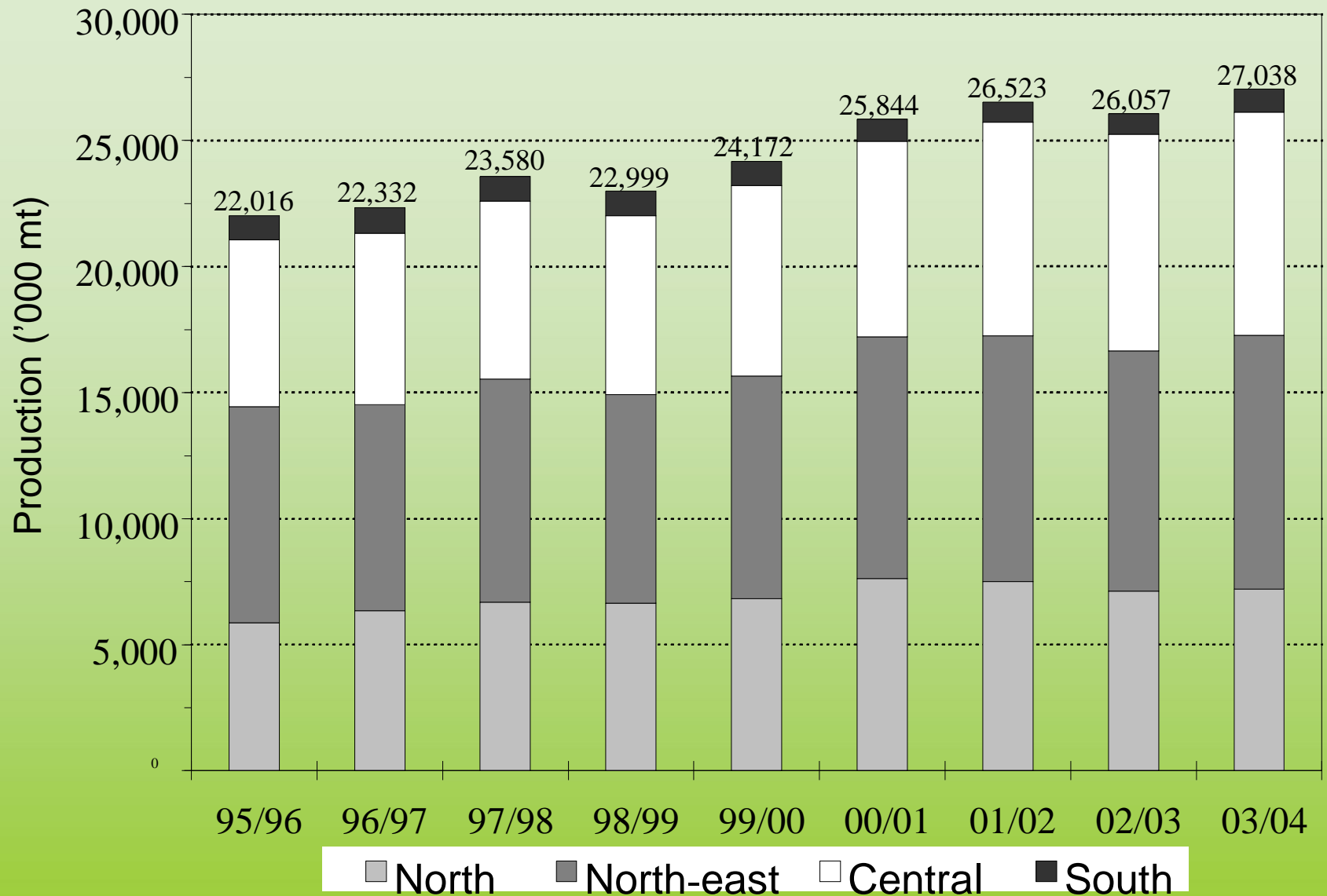
- Brazil
- China
- India
- Indonesia
- Philippines
- Thailand
- Viet Nam

Thailand



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- Produces sufficient to meet its own needs
- A net exporter of food
- The world's largest exporter of rice, canned pineapple, pineapple juice and concentrates, and frozen shrimp
- One of the world's leading producers of sugar cane, cassava, longan, durain, mangosteen and longkong
- A major contributor to world food security
- The rice sector accounts for about 23 % of the agricultural sector's contribution to GDP (2005)



Source: *Agricultural Statistics of Thailand* various years, Office of Agricultural Economics.

Note: Total annual production is at the top of each column.

Figure 4.1 Rice production by region, Thailand, crop years 1995/96-2003/04

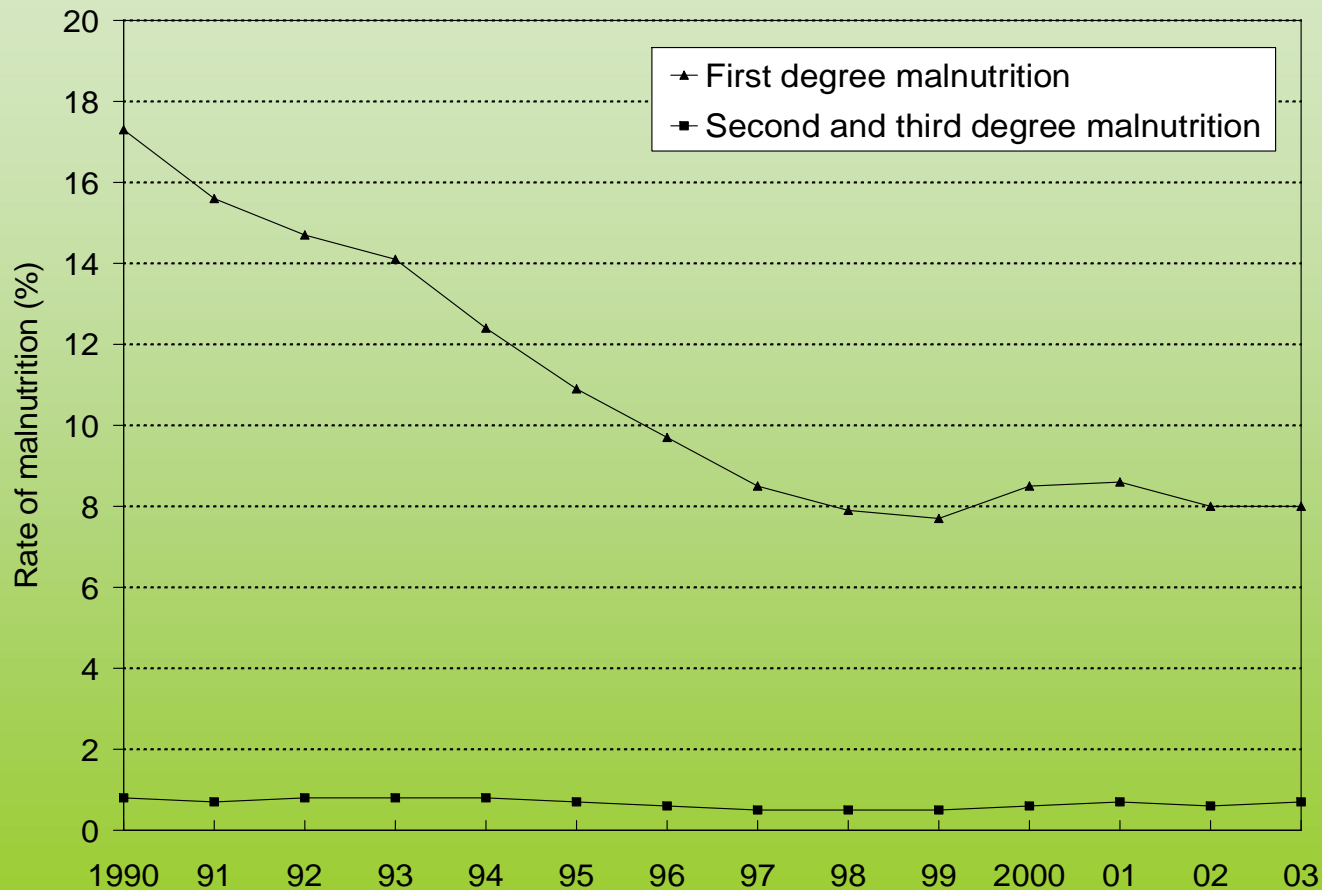
Sub-national level



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- Southern region must import rice from other regions and pay higher price
- Food is unequally distributed among communities, households and individuals

Prevalence of protein and energy malnutrition among children aged five years or less, Thailand, 1990-2003



Sub-national level



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- Children aged under 5 years in Thailand's northern and northeastern regions are more likely to be malnourished than those in other regions.
- The malnutrition rate among young children in northern hilltribe communities is eight times greater than that in Bangkok.

Sub-national level



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- Shifting from production for household consumption to large scale commercial consumption -> localized household food insecurity
- Urban poor are more impacted than rural poor

Household Food Insecurity



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Urban poor:

- Low wages

Rural poor:

- Indebtedness (due to high priced inputs)
- Landlessness
- Shift from household consumption crops to more highly-priced cash crops

Factors determining agricultural/food security



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- Water accessibility, water security
- Production technologies (biotechnology)
- Chemical fertilizers and pesticides or organic production
- Soil productivity (erosion, degradation)
- Landlessness, land-use changes (urbanization, industrialization, forest loss of 1 mil ha within 40 yrs,)

Factors determining agricultural/food security



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- World market, market liberalization (ASEAN-China FTA, Australia, Japan, New Zealand)
- Climate change/variation (Flood, drought, season variability)
- Biofuel production
- Farmer security

Climate Change & Food Security

Possible impacts of climate change on food security

- More intense and more frequent natural disasters e.g. flooding and drought
- Land degradation and soil erosion
- Changes in water availability
- Damage to crops
- Biodiversity loss

Adaptation strategies

- Introduce drought/flood-tolerant rice varieties
- Develop local food banks for people
- Improve local food preservation

Current and future strategic plan



Thailand's 10th National Development Plan (2007-2011):

- green and happiness (people-centered) society
- sufficient economy
- natural resource and environment conservation
- Increase the ratio of domestic economy/external sector to 75% from 71.3 % in 2001-2005

Thailand's rice policy: To raise rice production to meet increasing domestic consumption and to maintain an exportable supply

Thailand's rice strategies, 2007-2011



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- Increase productivity with high quality rice varieties, promote efficient water use, improve fertilizer and post-harvest management
- Promote non-GMO rice varieties
- Support R&D in value-added rice products
- Introduce zoning for rice cultivation areas (rainfall and soil properties)

Thailand's rice strategies, 2007-2011



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- Increase marketing services and facilities (upgrading and standardization)
- Upgrade logistical management practices (transportation, warehouse, etc.)
- Expand channels in international markets
- Create rice banks to support farmers
- Develop rice insurance instrument (JBIC)

***“Money and gold are illusion;
rice and fish are real.”***

A Thai economist

THANK YOU



Thailand's rice strategies



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[Redacted]
Create information centers

Develop

Farmer security

- Crop insurance: protect farmer against the loss of their crops due to natural disasters or declined prices of agricultural commodities.
- Market acceptance: high quality agri products is becoming more competitive food supply environment
- Guaranteed market: government offers guaranteed markets to farmers to increase security until markets are more developed.

Insufficient income → farmers are forced to choose between adequate consumption in the short run or investment to protect resources.

Coping strategies for food crisis (1)



- Reorganize the existing body of agri knowledge and self-efficient mechanism
- Promote the utilization of biodiversity to foster and stimulate the grass root economy
- Raise the capacity to apply and create the innovation based on Thai biodiversity e.g. organic farming, herbal health food, upgrade the safety standard for food
- Increase investment in rural infrastructure to improve farmer's living standard

Coping strategies for food crisis (2)



- Increase investment in market institutions to enhance management efficiency and reduce agri input access constraints
- Promote agri technology in facilitating a stronger production response to the rise in prices.
- Expand social protection measures and focus on early childhood production
- Eliminate trade barriers that set aside agri resources to spread opportunity fairly in international markets

Food Security in Thailand

Government policy recognizes the four aspects of food security:

availability

accessibility

affordability

efficient use

In practice, only ensure the **availability** of rice, mainly by stabilizing domestic price

Food security



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- Agricultural area
(land use change)
 - Agricultural productivity
 - Agricultural quality
 - Farmer security
 - International market
- Food price
 - Climate change,
variability