Food and Environment under Economic Development and Globalization

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Grading Policy

Term paper

Students are required to submit a paper to the Foreign Students Division Office. The detail will be noticed in the final lecture.

Attendance

Attendance will also be evaluated.

Themes

1. Globalization in our daily life - Introduction to the lectures –

2. Agricultural changes in Asian Tropics under the globalization and economic development (1) - Changes in land use and agriculture in montane mainland Southeast Asia –

3. Agricultural changes in Asian Tropics under the globalization and economic development (2) - Changes in land use and agriculture in lowland Mainland Southeast Asia –

4. Organic Farming and Sustainable Agriculture

5. Forest Conservation and Local Communities in Southeast Asia

6. National Forest Management in Japan

7. Vulnerability of aquatic environments to degradation and trials for restoration of coastal environments

8. Land Degradation and World Food Production

9. Introduced predators destroy native ecosystems

10. Rehabilitation of degraded tropical forest through the local community

11. Mangrove plant and its life

12. Roles of Agricultural Cooperatives and the Fair Trade under the Economic Globalization

An example of globalization

Vegetable cultivation at Kundasang, Sabah, Malaysia.

- Who owns the gardens?
- Who grows the vegetable?
- How do they grow?
- Who provides the seed?
- Who eats the vegetable?

http://www.abcmalaysia.com/maps/sabah_map.htm

http://www.lib.utexas.edu/maps/middle_east_and_asia/southeastasia_ref01.pdf

キナバル山(4095m)
http://www.ecology.kyoto-u.ac.jp/~kitayama/seminar3/slide4.JPG

genuine
TAKII SEED
HYBRID CABBAGE
GIANTY
LOT. 88LT
NET : 20 ML.
THIRAM - TREATED
THE PICTURE IS AN INDICATION OF TYPE ONLY

Answers to the questions

Vegetable cultivation at Kundasang, Sabah,Malaysia.

- Chinese (and local people) own the gardens.
- Workers from Sulawesi and Timor grow the vegetable.
- Slash and burn. Applying pesticides and chemical fertilizers.
- A Japanese company provides the seed.
- People in Sabah, Singapore and Shanghai eat the vegetable.

What shall we do as consumers?

Buy the vegetable?
or
do not buy the vegetable?

Palm: Arecaceae (Palmae)

Monocotyledon.

Distributed in tropical and sub-tropical region.

200 genera, 2600 species.

Woody stem, seed covered with shell.

Economically important monocotyledon

next to Gramineae.

Coconut palm
(http://www1.plala.or.jp/maui/multi/coco.htm)

Oil palm (http://www.seiryo.ac.jp/iaia-japan/news/news5-2/d00002.html)

Photo: K.Kitayama

http://chemical.kao.co.jp/TechnicalInformation/ChemicalPlaza/palm/palmph6.jpg

Sago palm (photos:T.Miyauchi)

Sugar palm (photos: T. Miyauchi)

Collecting sap

Condensing sap

Utilization of main palms in Asia-Pacific Region.

Species	Domestic use		Commerecial use
	Food	Raw material	
Coconut palm (*Cocos nucifera*)	Nut (drink, coconut milk, coconut oil) Sap (drink, palm wine, vinegar)	Shell (bowl, charcoal) Pulp (rope,fuel) Leaf (roof, mat, broom)	Copra (Coconut oil) Shell (activated charcoal)
Oil palm (*Elaeis guineensis*)			Palm oil
Sugar palm (*Arenga pinnata*)	Sap (palm wine, sugar)	Leaf (handicraft)	Sugar
Nypa palm (*Nypa fruticans*)	Sap (palm wine)	Leaf (roof)	
Sago palm (*Metroxylon sagu*)	Starch (collected from the pith)	Leaf (floor, wall, roof)	Starch
Rattan (*Calamus spp.*)		Cane (handicraft, house building)	Furniture

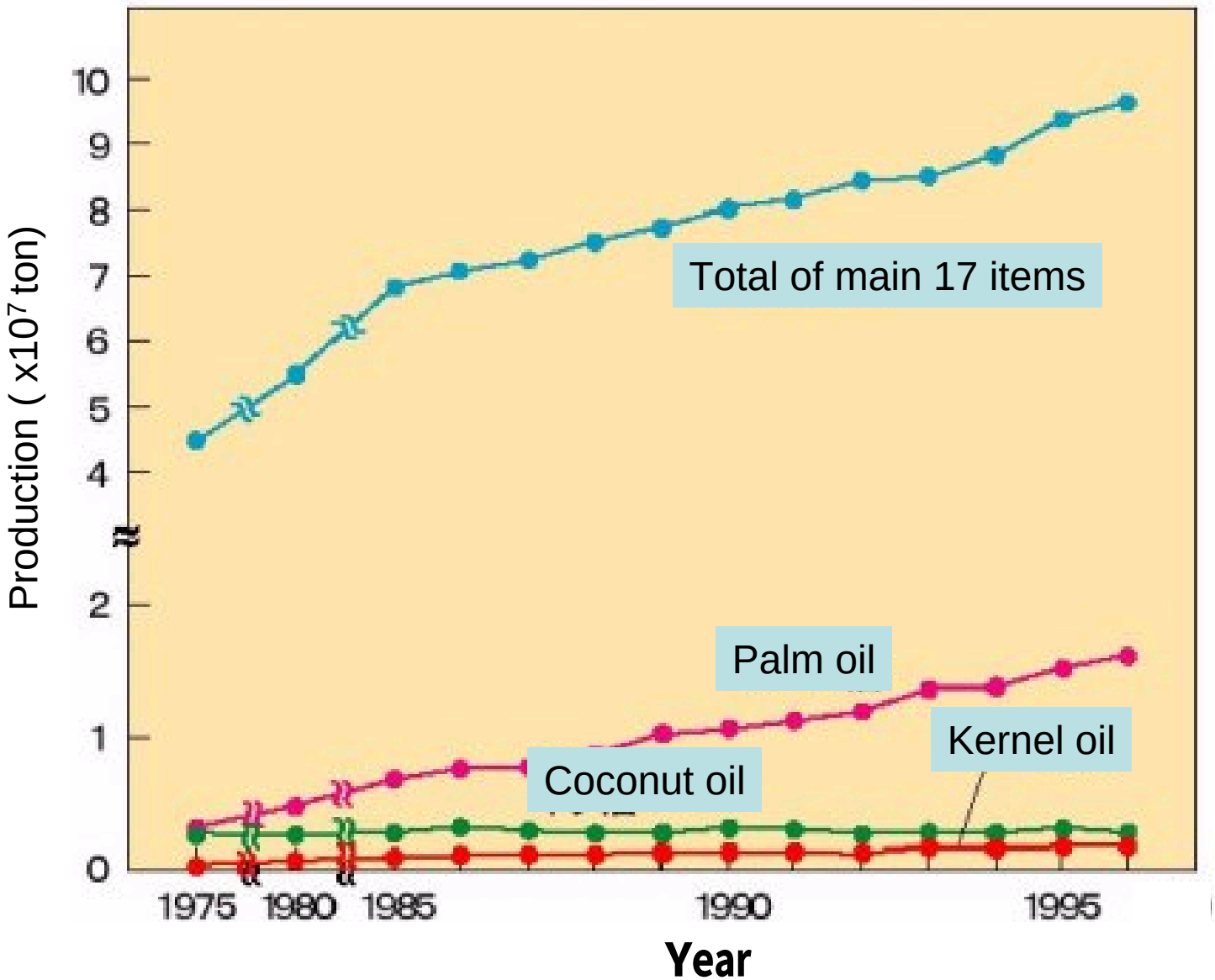
Modified from Tsurumi and Miyauchi (1999).

Oil produced from oil palm

Palm oil: collected from fruit.
Kernel oil : collected from seed.

http://chemical.kao.co.jp/TechnicalInformation/ChemicalPlaza/palm/palmph6.jpg

Production of oil and fats in the world



(http://chemical.kao.co.jp/TechnicalInformation/ChemicalPlaza/palm/Default.htm)

Use of palm oil

Food material:
instant noodle, fried confectionery, margarine(fat spread), chocolate, ice cream, cake, and so on.

Non-food material:
fatty acids, glycerin, surface-active agents
→ soap, detergents

Comparison of soap and synthetic detergent

Soap:
non-petrolium products, less impact on environment
easily decomposed.

Synthetic detergent:
petrolium-products, cause of eutrophication,
hard to be decomposed.

Soap has been accepted to be eco-friendly.

Example: coconut detergent

http://www.yashinomi.co.jp/seihin/img_3/image.jpg

Selling points:
100% coconut
No flavoring and coloring agents
Easily decomposed

Eco-friendly for consumers

Oil palm plantation (Photo: K.Kitayama)

Oil palm plantation (Photo: K.Kitayama)

Why are large scale plantations established?

1. Need of immediate processing after harvesting.
   Fruits have to be processed within 24 hours to prevent the reaction of the enzyme decomposing palm oil.

2. To increase the operating rate of the facility.
   It is convenient to collect fruits.

Positive and negative aspects of oil palm

- Positive
  Employment for local people
  Eco-friendly for consumers
  ?
- Negative
  Decrease of tropical forest
  Health problem of workers
  ?