



# Biofuel Policies in Asia

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FAO Expert Meetings 5 and 6, 18 February 2008, Rome, Italy

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# Biofuel Production and Raw Materials in Asia



	<i>Bioethanol</i>		<i>Biodiesel</i>	
	<i>Annual Production (Thousand KL)</i>	<i>Current raw materials</i>	<i>Annual Production (Thousand KL)</i>	<i>Current raw materials</i>
China	1,292	Corn, Wheat	76	Vegetable oils
Malaysia	-	-	200	Palm oil
India	1,100	Sugarcane molasses	38	Vegetable oils
Japan	0.03	Sugarcane molasses, Wheat unsuitable for food consumption and others	3	Used vegetable Oil
Thailand	309	Sugarcane molasses, Cassava	76	Palm oil
Indonesia	-	-	3.5	Palm oil, Jatropha curcas

Source: Chinese ethanol production data were derived from Law Concerning Testing for the extensive Use of Ethanol Blended Gasoline for Automobiles and the Regulations Concerning the Conduct of Testing for the Extensive Use of Ethanol Blended Gasoline for Automobiles, Japanese biofuel production data were derived from Executive Committee on Biomass Nippon Strategy (2006), Indian and Thailand's biofuel data were derived from F.O.Licht (2007) and other production data were derived from PECC(2007).

Note: Chinese, Indian and Thailand's ethanol production data is 2005, other biofuel data is 2006.

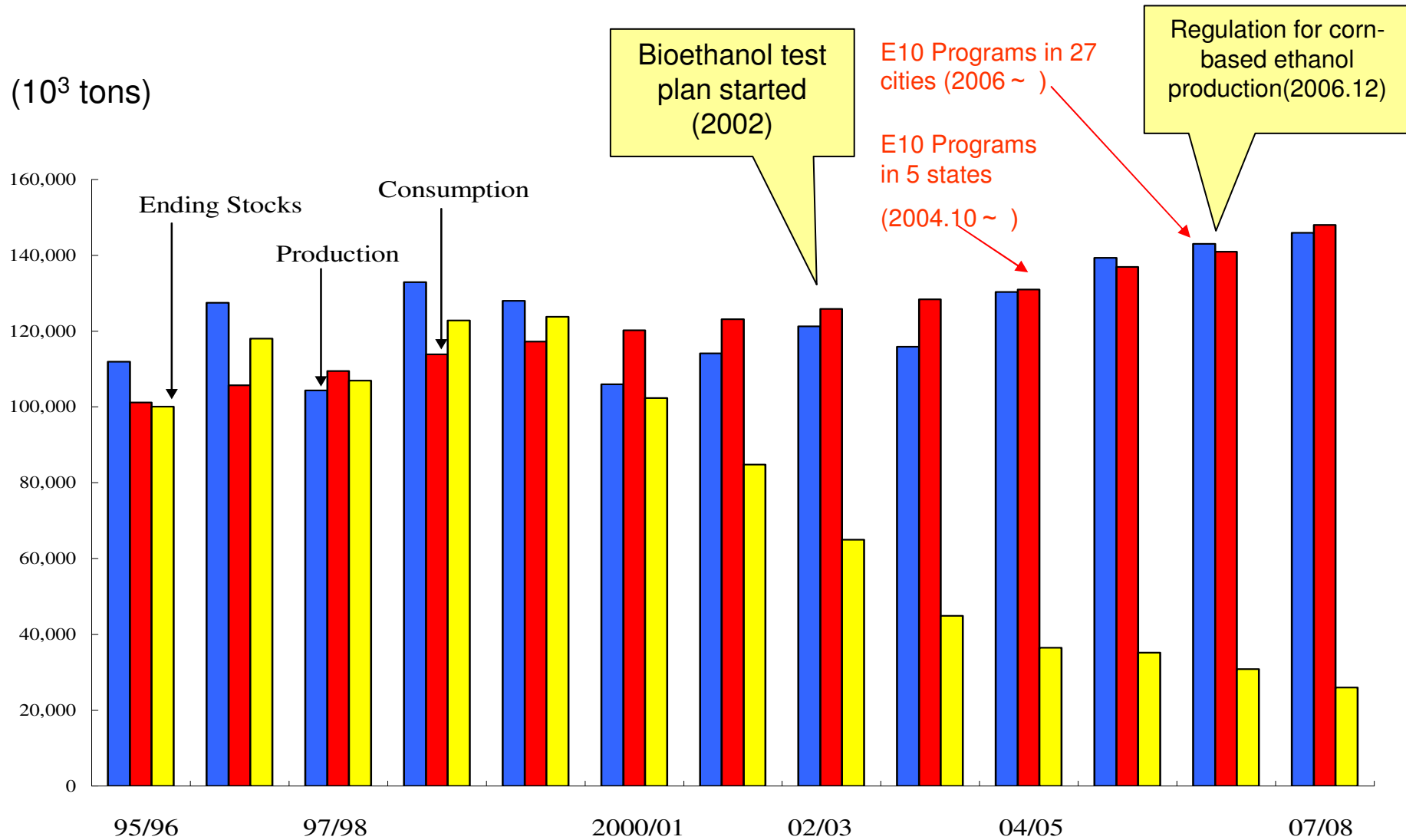
## The Chinese Bioethanol Program (1)



- In order to deal with energy security and air pollution problems, the Chinese government is promoting the National bioethanol program
- In 2004, the government introduced the compulsory use of a 10% ethanol blended in gasoline (E10) in provinces of Helongjiang, Jilin, Liaoning, Henan, and Anhui
- The government expands the E10 program to 27 cities in the provinces of Shandong, Jiangsu, Hebei, and Hubei in 2006
- The bioethanol production was approximately 1.0 million MT in 2005
- 80 % of bioethanol is made from corn in China



## Chinese corn production, consumption and ending stocks



Source: FAS, USDA, "PS&D"(2008).



## Chinese Bioethanol Program (2)

- Chinese government wants to regulate corn-based ethanol production
- Chinese government wants to diversify the sources of bioethanol production, especially to cassava
- Technological innovation is required for developing cassava-based bioethanol production

# Bioethanol Program in Japan



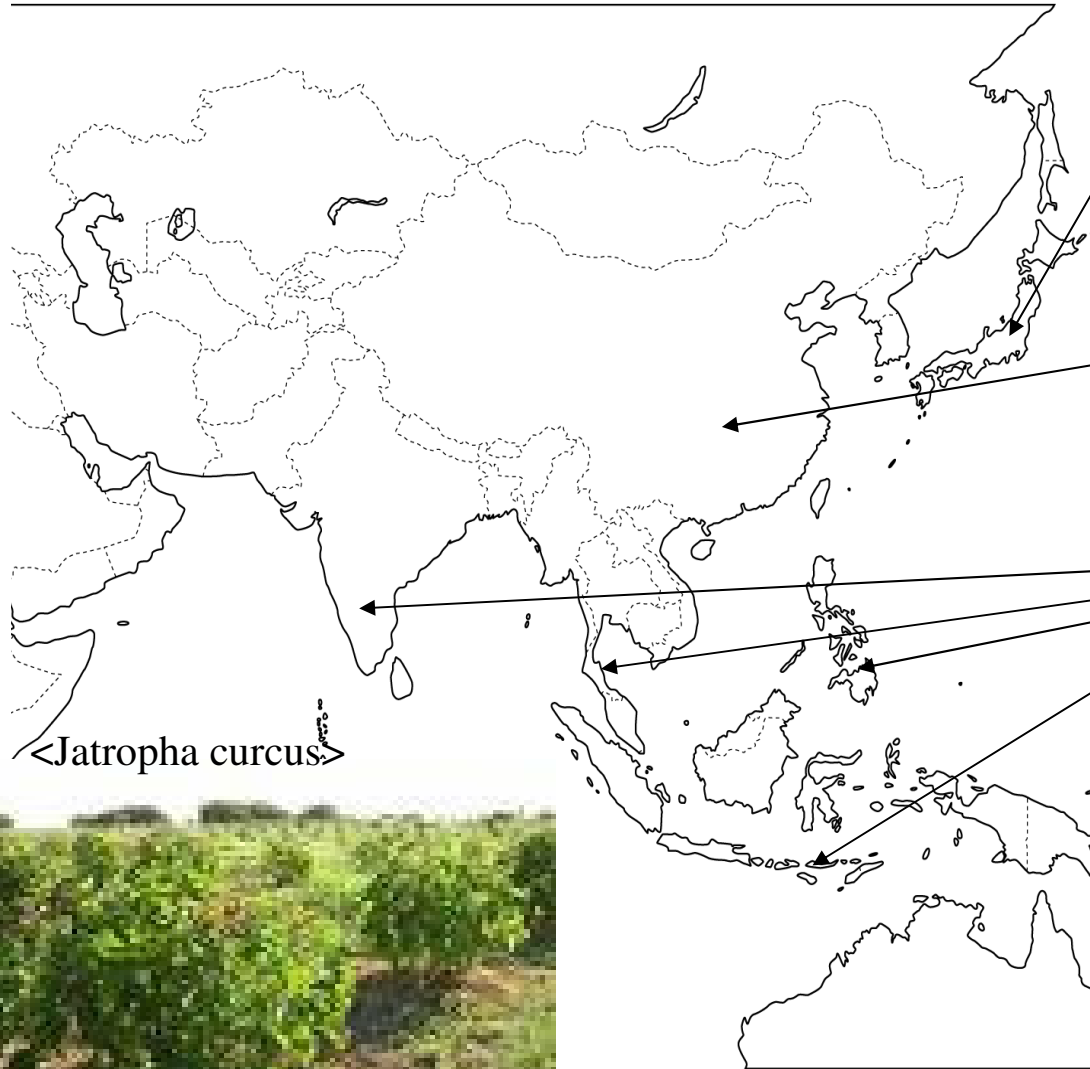
- Japanese government will promote the use of rice straw and wooden biomass for bioethanol production, which will not compete with food consumption
- Securing raw materials for bioethanol, reduction of production cost are needed to expand bioethanol utilization and production in Japan
- Further technical innovation is the key factor to promote domestic bioethanol production from rice straw and wooden biomass (*Second generation biofuels*)



## Biofuel programs in India, Thailand and other countries

- Molasses is the raw material for bioethanol production in India
- The raw materials for bioethanol production are cassava and molasses in Thailand
- Securing raw materials for bioethanol is a crucial problem in India and Thailand
- High palm oil price is the obstacle to expand biodiesel production in Malaysia and Indonesia
- The governments of the Philippines, South Korea, and other countries are promoting their biofuels programs from various agricultural sources

# Biofuel production which does not depend on food resources in Asia



Japan (Bioethnaol from rice straw and wooden biomass)



China (Bioethanol from straws and others)

*Indonesia, Thailand, India and other countries (Biodiesel from Jatropha curcas)*





# Concluding Remarks



- The governments in Asian countries are promoting biofuel programs to deal with energy security and environmental problems as well as to increase farm income
- Various sources are being used as raw materials of biofuels
- Increasing biofuel production would reduce the availability of food and feed
- **The governments in Asian countries are working for biofuel programs that will not adversely affect food availability**
- **International frameworks to develop *second generation biofuels* are needed to promote each country's own programs**

**Thank you for your attention !!**

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