

Impact of Rising Energy Costs on the Food System in Indonesia



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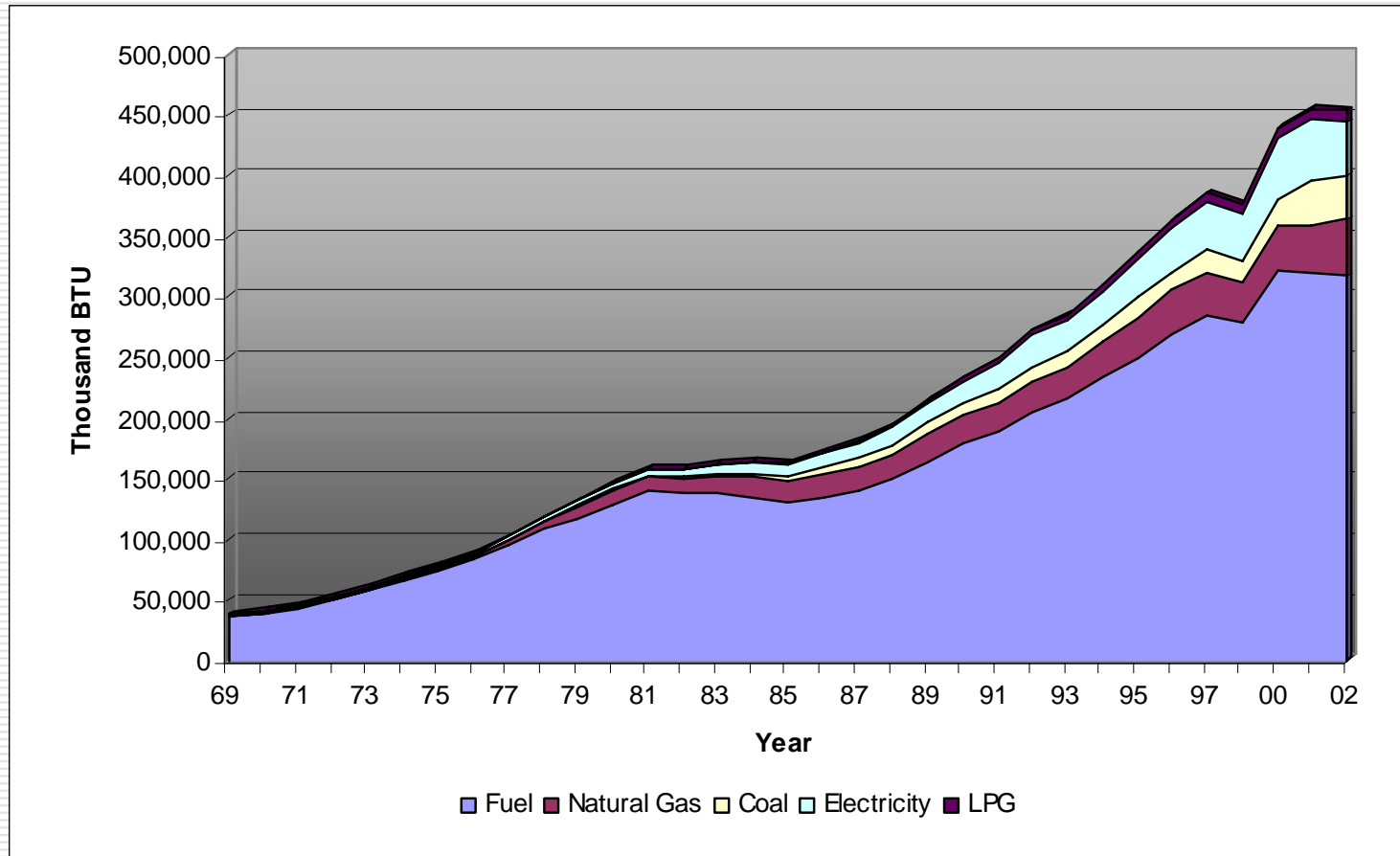
The Pacific Food System Outlook "10th Annual Forecasters Meeting".
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High Dependency of Economic Development on Fossil Energy



- ❑ With abundant sources of oil deposits, Indonesia has enjoyed cheap energy resources and foreign exchanges at the same time;
- ❑ Indonesian economic development has been heavily dependent on non-renewable fossil energy sources compared to other energy sources;
- ❑ Other alternative energy sources, such as coal and natural gas, have been used but very little and not been seriously developed because of the under price of fossil energy sources.

Indonesia Total Energy Sources



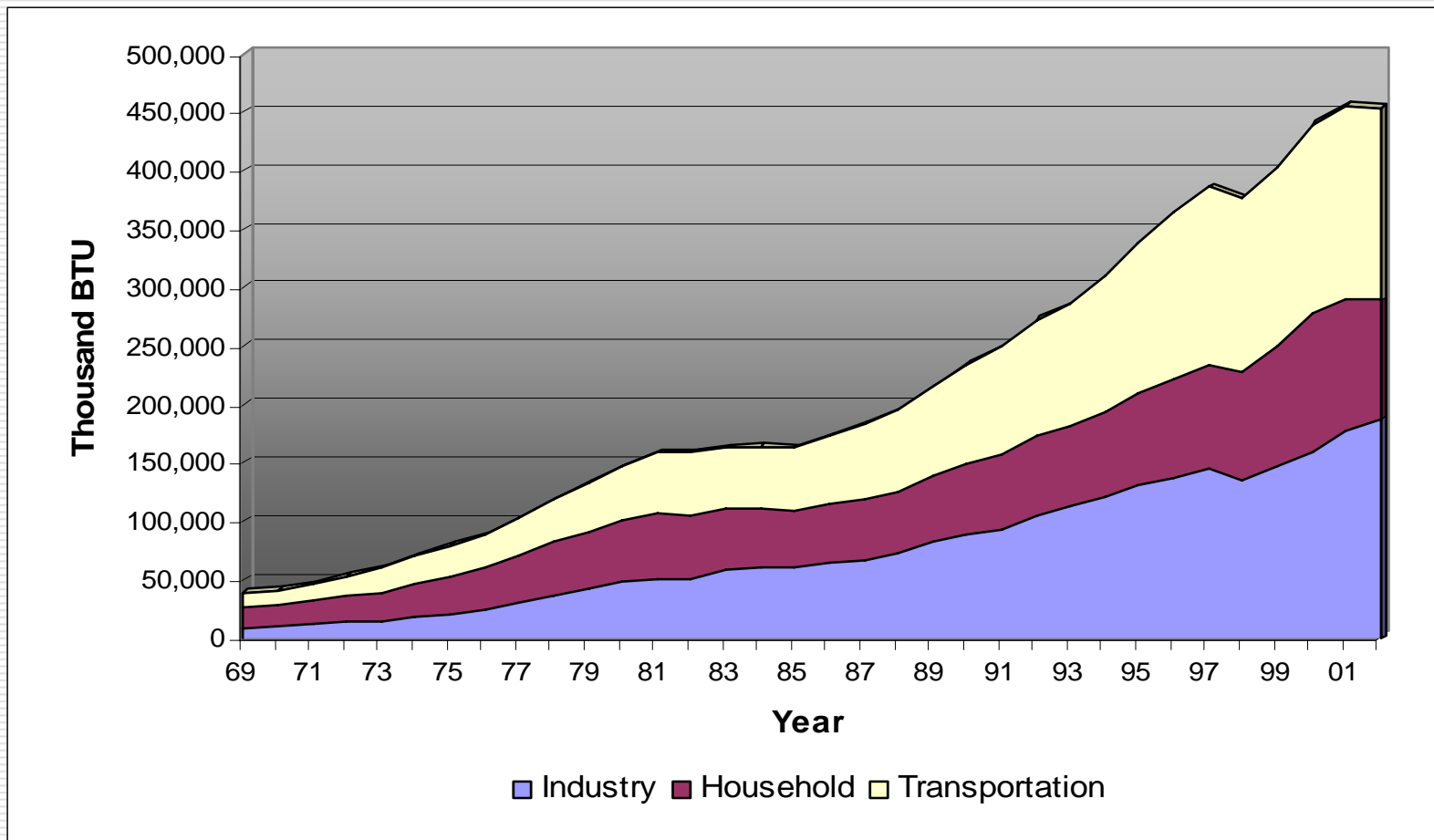
Source: BPS



Fossil Energy Usage

- ❑ In 1970s mostly use for household and transportation;
- ❑ In 2000s, the Industry use 40% of the fossil energy and transportation use 36%;
- ❑ With the under value of fossil energy sources, Indonesian has been use the energy inefficiently;
- ❑ Elasticity of energy use and economic development growth is quite high, is around 1,04-1,35; The elasticity for developed countries is around 0,55-0,65;
- ❑ Subsidy of fossil energy for years has create waste and inefficient use of energy; small incentive for energy saving behaviour.

Fuel Energy Usage



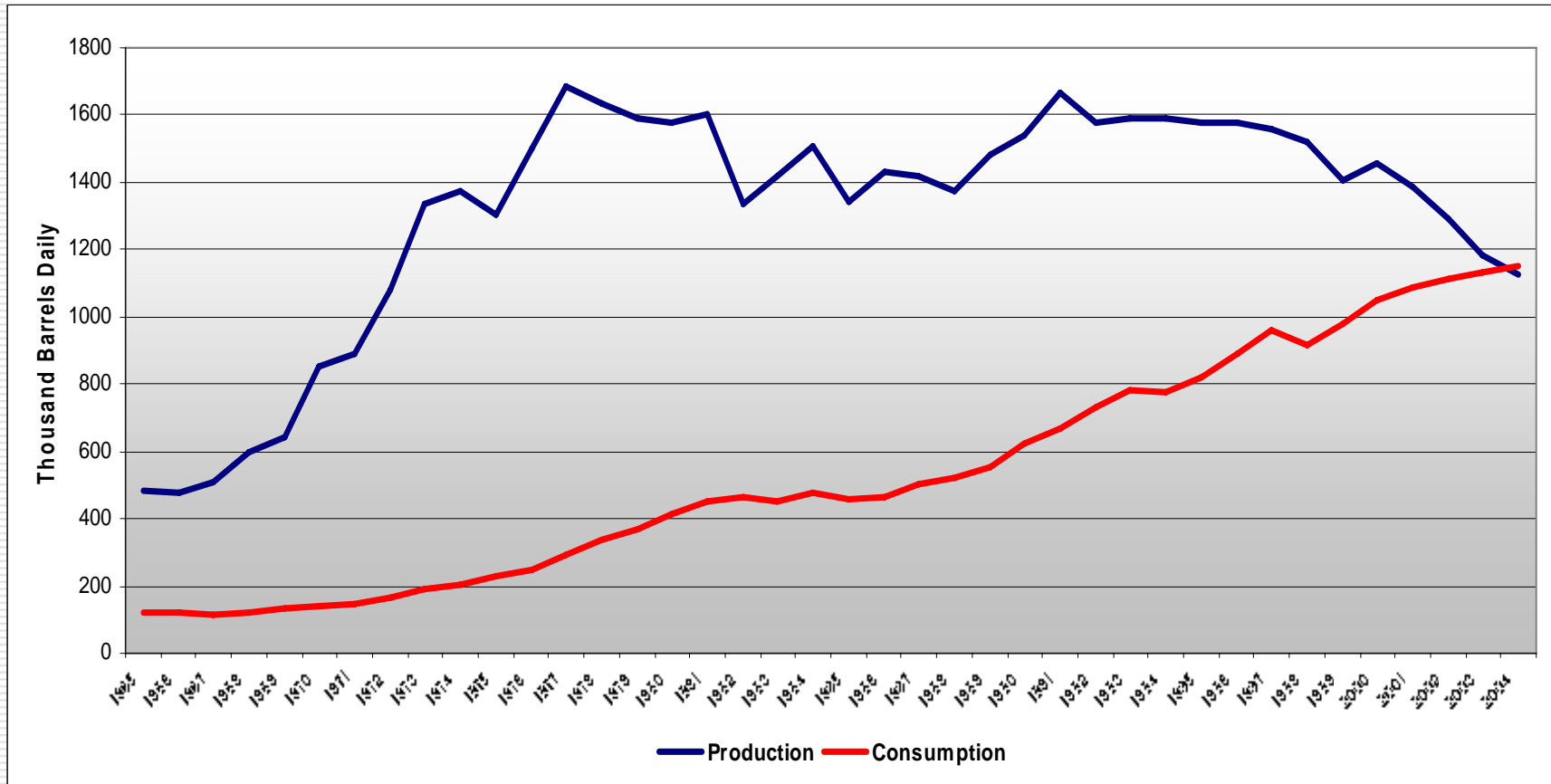
Source: BPS

Fossil Energy Consumption and Import



- For the last 5 years, experienced natural decline on national oil production; On the other hand consumption has been growing very rapidly because of population increase, transportation and industrial development
- Import of oil increase significantly, from 106.9 million barrel in 2002 to 116.2 million barrel in 2003, and 154,4 million barrel in 2004.
- From the type of fuel imported, diesel fuel (ADO) is the highest import annually. In 2002, diesel fuel import was 60.6 million barrel or 56.7% of the total import; It became 61.1 million barrel in 2003 and 77.6 million barrel in 2004.

Fuel Energy Consumption Deficit in 2004



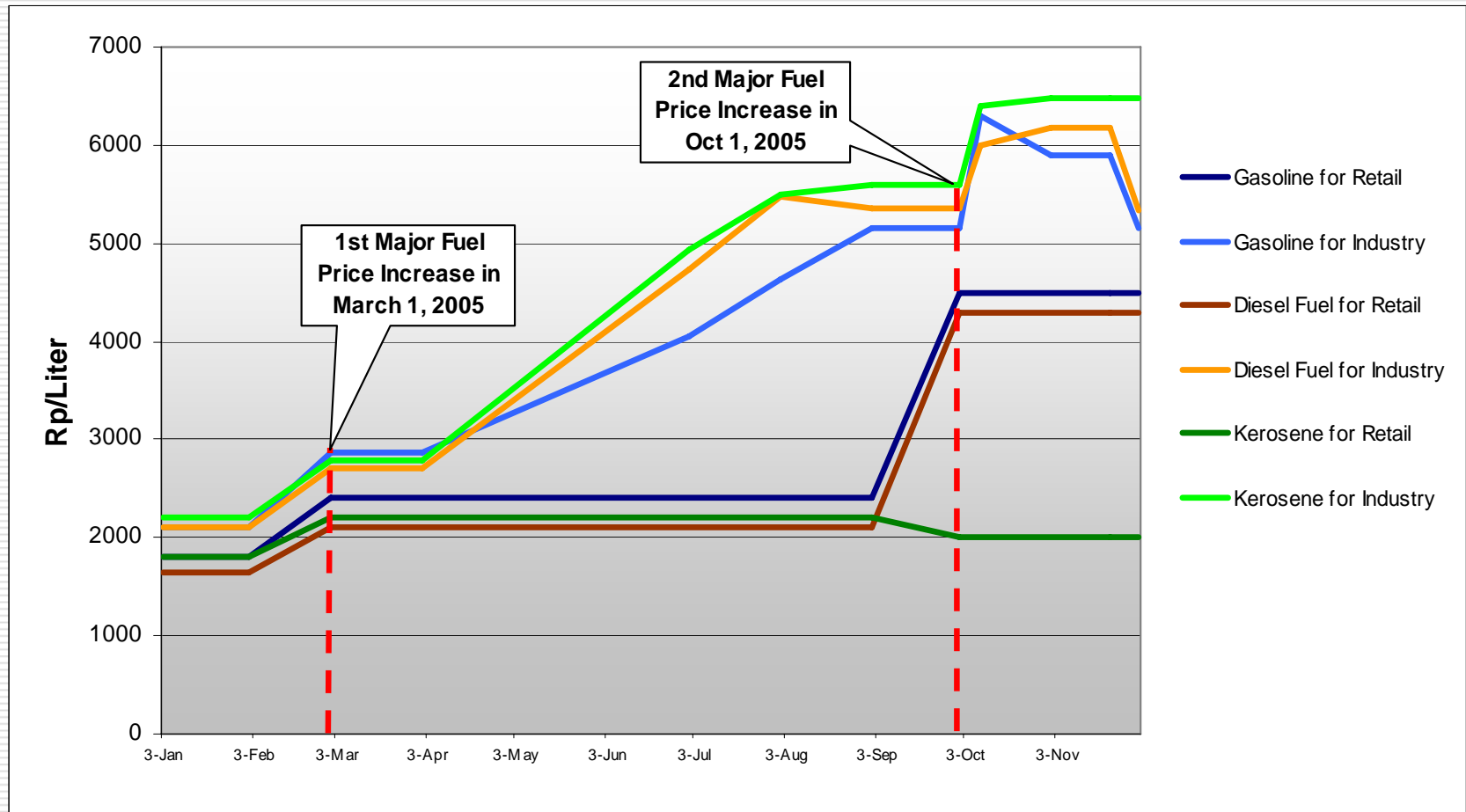
Source: www.bp.com

Less Subsidy and Local Fuel Prices Increase



- High burden of import and subsidy cost because the increase of international price which go as high as US\$ 70 per barrel in August 2005, the government reduces subsidy at different level for different fuel type in different time;
- The major retail price increase was taken in two consecutive times, 1 March and 1 October 2005;
- Fuel for the industry was increased and corrected several times, adjusting to the international market price.

Fuel Price Increase in 2005 (Gasoline, Diesel Fuel, and Kerosene)



Source: www.pertamina.com

Fuel Price Increase in 2005



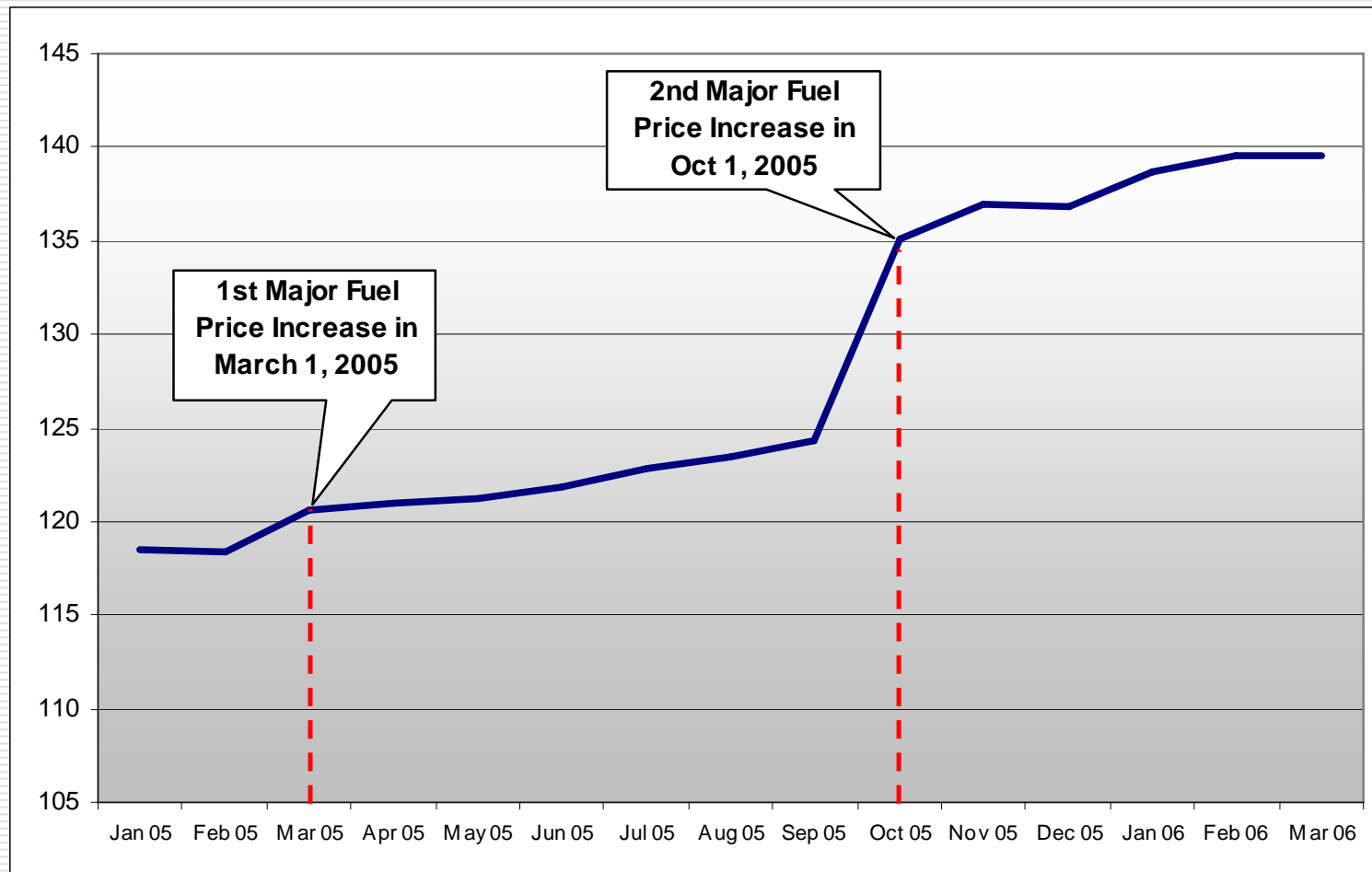
Fuel Type	Market	2004	1-Mar-05		1-Oct-05	
			Rp/Lt	Increase	Rp/Lt	Increase
Gasoline	Retail	1,810	2,400	33%	4,500	88%
	Industry	2,100	2,870	37%	5,160	80%
Diesel Fuel	Retail	1,650	2,100	27%	4,300	105%
	Industry	2,100	2,700	29%	5,350	98%
Karosene	Retail	1,800	2,200	22%	2,000	-9%
	Industry	2,200	2,790	27%	5,600	101%



Impact of Fuel Prices Increase

- ❑ Fuel price increase, impact highly and widely to all market prices, measured in CPI, including food prices;
- ❑ Food price contributes significantly to the general inflation level;
- ❑ Impact on the food system, going from different ways, to the input prices, the output prices, processing, retailing, etc.

Impact of Fuel Price Increase in the Consumer Price Index (CPI)



Source: www.bps.com



Impact on the Food System

- ❑ Impact the highest on energy cost for food transportation: (1) large country with large population but only few islands can produce food commercially, (2) poor good road infrastructure, (3) lack of efficient mode of transportation;
- ❑ Impact on food crop production from the use of modern inputs (fertilizer and other chemicals), and tractors. The use of fertilizer has been declining (substituted by organic fert.). Mechanization only limited on intensive wet rice land;
- ❑ Local cuisine requires a lot of cooking and preparation that use energy; prepared by households, restaurants, and small food vendors;

Indonesia Food System Energy Use



Use	Total Energy Use (Percent)
Agricultural Production	18.0 %
Transport	26.0 %
Processing	15.0 %
Packaging	5.0 %
Food Retail	7.0 %
Restaurants/Caterers/Food Vendor	16.0 %
Home Refrigeration/Preparation	13.0 %
Total	100 %

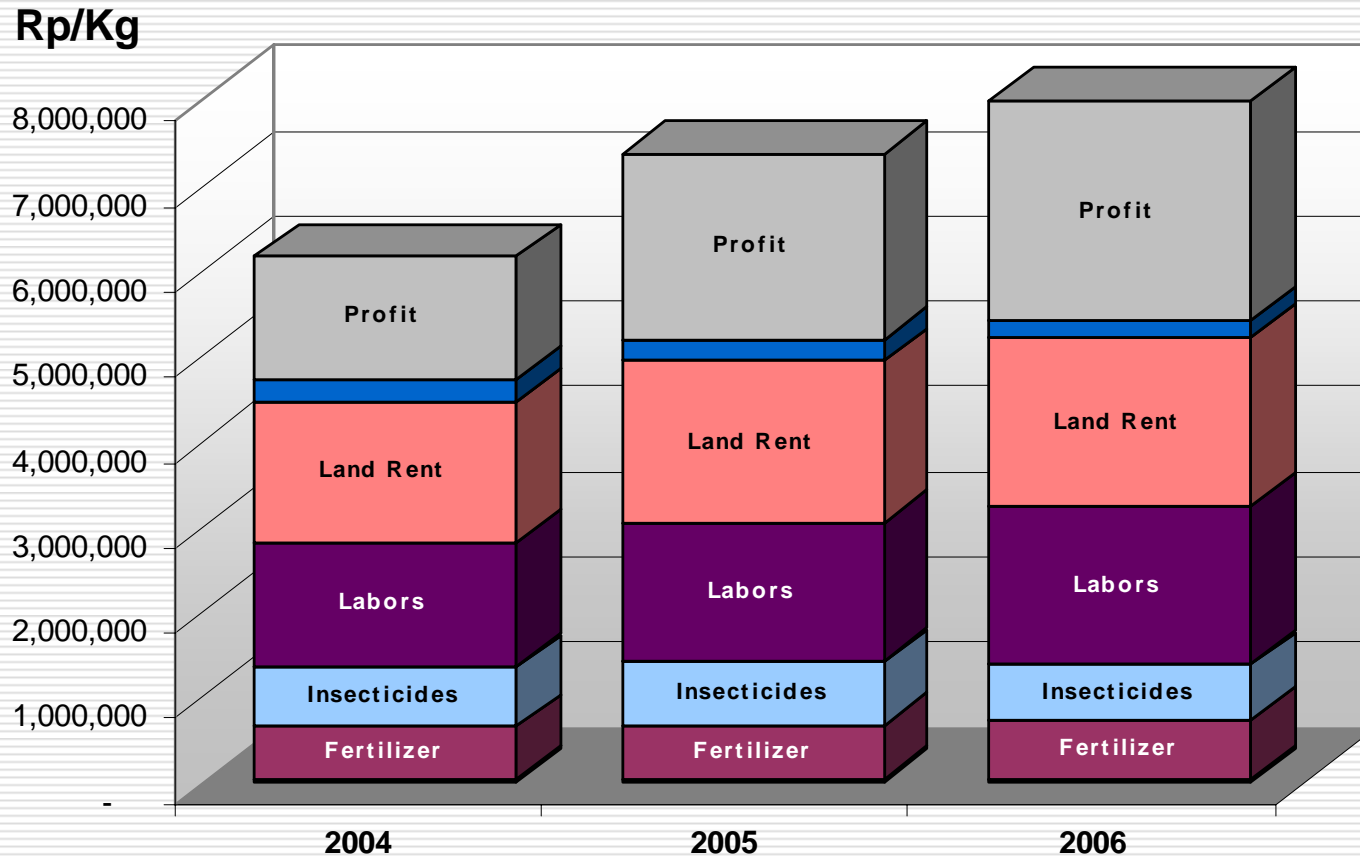
Source: estimated from various sources



The Food Politics

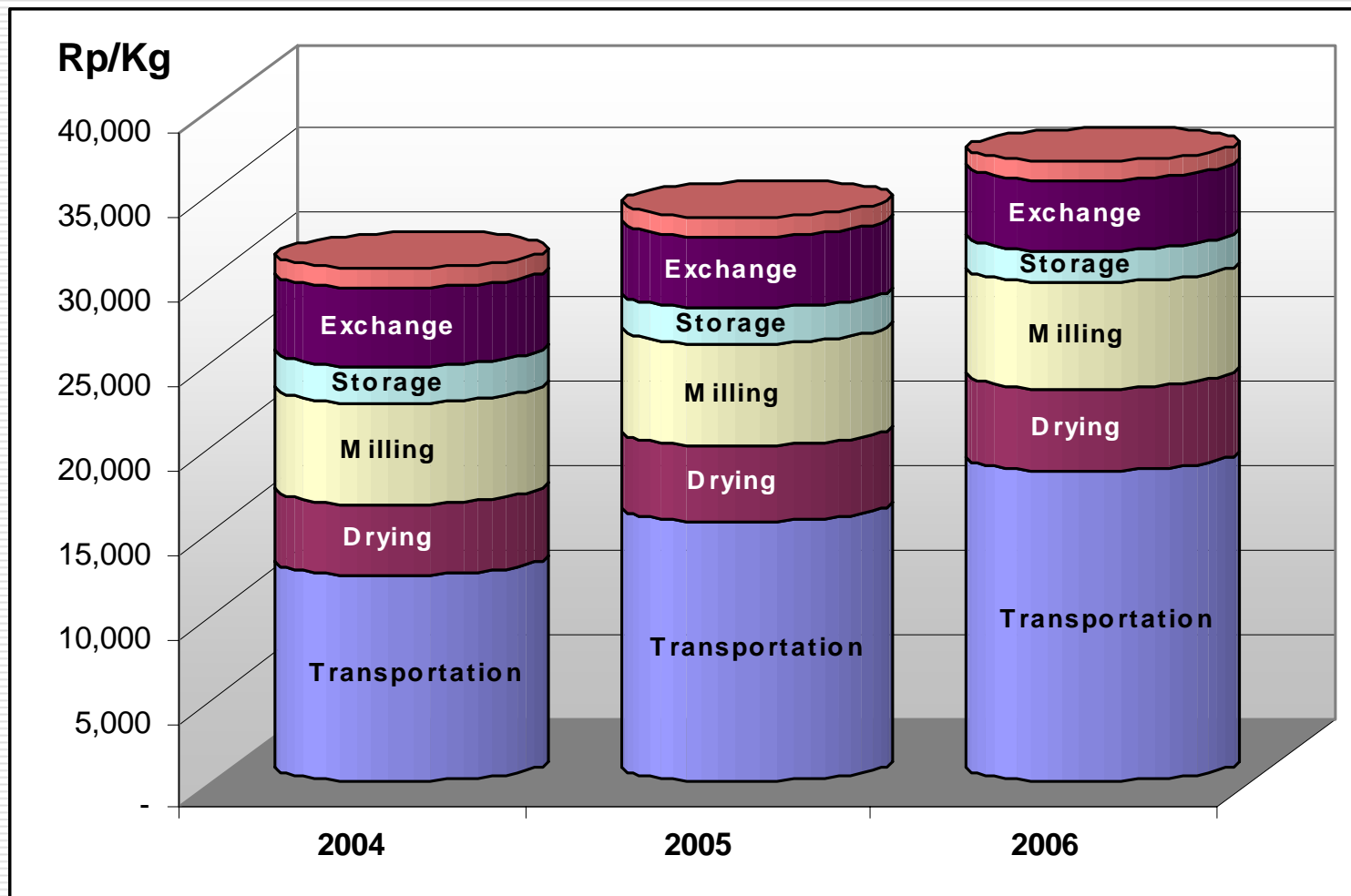
- During the increase of food price, the politic debated about avoiding rice import to give farmers a welfare increase;
- The government returned and rejected imported price;
- Price of rice has been gone up the highest in the last 15 years.

Impact on Rice Farming Inputs and Farmer's Profitability



Source: estimated from Hanny S (2005)

Impact on Rice Marketing Costs



Source: estimated from CAPAS-DAI (2004)

Policy Respond



- ❑ The president released a decree No. 5/2006 on national energy policy to develop alternative energy sources, emphasis on coal and natural gas and mention about bio fuel;
- ❑ The president instruction No. 1/2006 dated Jan 25, 2006 about supporting the availability and development of bio fuel as an alternative energy;
- ❑ According to the Agency for Technology Development and Application (BPPT), there are 60 agricultural commodities potentially can be develop to become alternative bio-energy sources. Among them are:
 - Biodiesel (substitute of Diesel Fuel): Palm oil, coconut, Jatropha curcas, and Cotton
 - Bioethanol (substitute of Gasoline): Sugarcane, Corn, Manihot esculenta, Sweet potato, and Sago;
- ❑ Indonesia is the 2nd largest CPO producers, and has large area potential for second crops.

The Planning



The Blueprint of National Energy Management document targeted:

- biodiesel production of 0.72 million kiloliter in 2010 to replace 2% of diesel fuel consumption which requires 200 thousand hectar of palm plantation
- Requires 25 processing unit with a capacity of 30 thousand ton per year with 1.32 billion IDR investment
- producing 4.7 million kiloliter in 2025 to replace 5% of diesel fuel consumption which requires 1.34 million hectar of palm plantation and 45 processing unit with a capacity of 100 thousand ton per year with an investment of 9 billion IDR.

The Private Respond



- At present, there are 6 large bioethanol producers in Indonesia with 174 thousand kiloliter total of production in 2002; Still heavily focus in supporting an industry and export market;
- According to the Agency for Investment Coordinator (BKPM), last year there were 11 investors ready to build bioethanol and biodiesel with a capacity of 50-150 thousand kiloliter per year;
- PT Bakrie Sumatra Plantation Tbk (BSP), in association with PT Rekayasa Industri (Rekin), will soon build a bio-diesel plant with a capacity of 60,000 to 100,000 tons a year at a cost of US\$25 million.

Conclusion



- ❑ Because of the cheap fossil fuel energy policy that supported the National Economic Development, there has been lack of effort to conserve energy and policy to diversify energy sources in Indonesia has been unsuccessful;
- ❑ High burden of subsidy and reliance on fuel import has force the government to reduce subsidy and bring the price closer to the market price;
- ❑ Impact on the food provision has not been appear to be significant. The food price increase even faster because of the increase in fuel price, increase the farmer (producers) income. The concern is more concentrated on the poor;
- ❑ The government slowly responded with stronger policy on developing an alternative energy. The private sector has also responded positively.