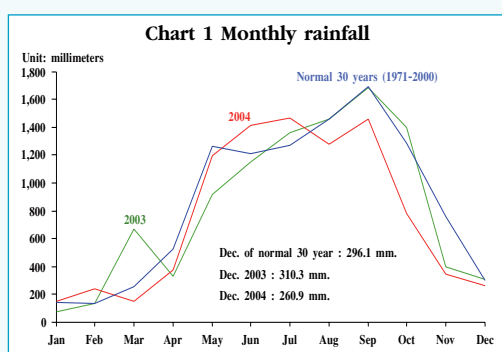
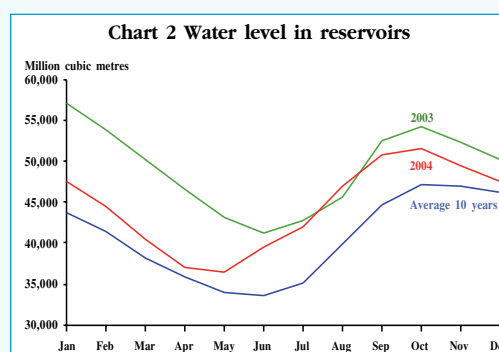


Impact of drought on the Thai economy in 2004

The low level of rainfall together with the short rainy season in 2004 caused a drought in several areas of Thailand. The affected areas include the northern (17 provinces), northeastern (19 provinces), central (11 provinces), and eastern (8 provinces) regions, totalling 12.6 million rai, or approximately 9.6 per cent of the agricultural area in Thailand. Since August 2004, the level of rainfall (approximately 1,281 millimeters) has been less than that of the same period in the previous year and the 30-year average level. Although the water level of the reservoirs has not declined much, the drought has affected the agricultural area that relies on natural rainfall, which is the majority of the country's agricultural area. (Out of the total agricultural area of 132 million rai, the majority rely on natural rainfall, while the remaining 29.5 million rai, or 22.3 per cent of total planting area, are irrigated-farm areas.) Thus, the drought will have an impact on major crop production, mainly first crop paddy, sugarcane, cassava, and corn, as well as other aspects of the economy as follows:



Remark: Rainfall of December 2004 is estimated
Source: The Meteorological Department



Remark: Water level in December 2004 is estimated
Source: Royal Irrigation Department

1. Impact on major crop production

From the 12.6 million rai of the drought-affected agricultural area, the loss in crops is expected to be around 9.9 million rai. As a result, the Office of Agricultural Economics has revised down their December 2004 projection of the major crop production index for crop year 2004/2005 by 1.8 per cent from its projection in October 2004, following lower production of first crop paddy, sugar cane, cassava and corn. The loss in value of these 4 major crops is approximately 13 billion baht, where most of the loss is expected to be in 2004 Q4.

Table 1 Loss Assessment of Crop Production in 2004

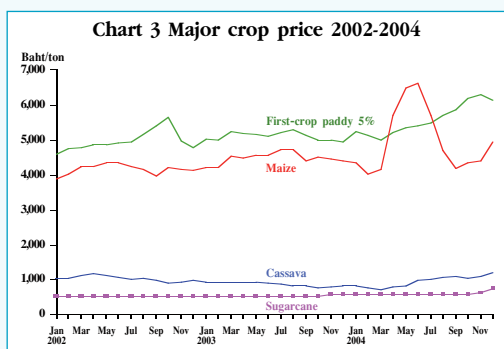
Crops	Production Projection (million tonnes)		Loss in 2004 (Million tonnes)	Price* (Baht per ton)	Loss Amount in 2004 (Million baht)
	As of October 2004	As of December 2004			
First crop paddy	19.07	16.96	2.11	5,185	10,940
Sugarcane	12.5	10.65	1.85	580	1,073
Cassava	6.89	6.51	0.38	870	331
Corn	4.12	3.98	0.14	4,963	695
Major crop production index (1988)	190.0	186.5	$\Delta\% = -1.8$		-
Total					13,039

Source: The Office of Agricultural Economics

The Sugarcane Planters Institution, according to the Cane and Sugar Act B.E. 2547 (1984)

The Thai Tapioca Trade Association

Note: *Average price of crop year 2003/2004 during the harvest season for each type of crop, and using the first crop paddy price (5%)



Source: Ministry of Agricultural and Cooperatives

2003 to 14.9 percent per annum in 2004. Significant increases in crop prices have mitigated the negative impact of the drought on farm income. As a result, purchasing power of farmers decelerated marginally compared

2. Impact on crop prices

Despite the negative supply shock from the drought, world demand for agricultural products has remained strong, causing major crop prices to increase, including those of rice, sugar cane, corn, and cassava. Notably, the major crop price index in 2004 Q4 grew year-on-year by 13.5 per cent, as a result, crop prices grew by 16.4 per cent in 2004, the same as that in the previous year.

3. Impact on farm income

Farm income from major crops decelerated from a growth rate of 28.5 per cent per annum in

Table 2 Farm Income from Major Crops

Per cent	2003	2004				
		Q1	Q2	Q3	Q4 ^{P/}	Year ^{P/}
Farm income	28.5	21.8	19.3	11.0	8.7	14.9
Crop production	10.4	3.1	-3.3	-0.1	-4.2	-1.3
Crop prices	16.4	18.1	23.4	11.1	13.5	16.4

Source: BOT estimates

^{P/}Preliminary data

**Table 3 Impact of Drought on GDP
Using I-O Table (1998)**

Unit: million baht

Crops	Loss Amount In 2004	Impact on GDP		
		Direct	Indirect	Total
First crop paddy	10,940	8,530	1,443	9,973
Sugarcane	1,073	714	244	958
Cassava	331	217	62	279
Corn	695	466	187	653
Total	13,039	9,927	1,936	11,863
Per cent of GDP				0.18

Source: BOT estimates

In summary, the negative impact of the drought on GDP in 2004 was not extensive due to the rise in crop prices, which partly compensated for the production loss and resulted in a significant rise in farm income. However, the impact of the drought on both crop production and prices may prolong until early 2005, and therefore the MPC deemed it necessary to monitor such development closely.

to the same period the previous year and is therefore in line with the forecast of slower private consumption growth in 2004.

4. Impact on the Thai economy

From the economic relationship between the major crops production index^{1/} and GDP of the agricultural sector, together with the information of major crops' linkages with other sectors as extracted from the Input-Output Table of 1998, it was found that the production loss of 13 billion baht in 2004 from the drought had a minimal impact on GDP. Specifically, GDP growth in 2004 was expected to decline by 0.1 per cent from the previous forecast with a total loss of 13 billion baht, or 0.18 per cent of GDP in 2004.

^{1/} The relationship between the MCPI (Major Crop Production Index) and GDP:

$$\text{LOG(GDP)} = 0.68 \cdot \text{LOG(MCPI)} + 7.61$$

(18.29) (41.03)

$$R^2 = 0.88$$