

**T**he export- and investment-led recovery was a good sign in 2000. Non-oil and gas exports have grown strongly since the beginning of 2000, recording a 22.2 percent year-on-year increase in dollar terms in the third quarter. The sharp drop in the value of the rupiah is the likely reason for the increase in exports; in addition, labor-intensive products such as textiles, electronics-related items, and primary goods appear to be doing well.

The value of the rupiah, however, has slowly depreciated against the dollar in the first quarter of 2001, and in April 2001 US\$1 was equal to Rp. 11,800. Politics remains the main risk factor responsible for the sharp decrease in the value of the rupiah during April 2001. In the year 2000 the value of the rupiah was maintained at a level below Rp.10,000. The inflation rate, which was originally estimated at 3 percent a year, is now expected to reach 9 percent in 2001. This is caused by higher import prices, the weaker currency, and fuel price increases.

Economic growth is expected to be strong. Because the Indonesian economy is less advanced in its adoption of information technology than its neighbors and because it is less dependent on the US economy than many other economies means that it has been relatively unaffected by recent developments. Real GDP grew by 5.2 percent year-on-year in the fourth quarter of 2000; consumer spending is likely to slow in the first half of 2001 but is expected to pick up again to 5 percent in the second half of 2001.

### Food Prices and Consumption

The price of commodities, including food, increased during March 2001. Central Bureau of Statistics data indicated a CPI increase of 224 to 226, or inflation of about 0.9 percent. The year-on-year inflation rate (March 2001 to March 2000) was 10.6 percent. Through various poverty-alleviation programs, the number of those in poverty declined from 37.5 million (18 percent of the total population) in August 1999 to 32.8 million (16 percent) in February 2000. In addition to the population below the poverty line, a critical situation is faced by about 50 million people, who are very susceptible to changes in food prices.

Food consumption in 2001 is expected to increase as a result of the improvement in real incomes and the improvement of the economy in general. The government policy to increase the salary of government officials and to improve the regional minimum wage is expected to provide positive impacts on food consumption. The tolerable range of interest rates is expected to reduce constraints on credit, which in turn is expected to induce additional activity in household consumption. It is estimated that household consumption in the year 2001 will grow by 2 - 4 percent. In the year 2002 a long drought may hit Indonesia and, if not adequately prepared for, will result in crop failures and threaten food security

### Food Processing and Marketing

Indonesia has a wide range of food processing techniques in various parts of the country, from a simple transformation of the product without change to its structure or texture to complex processing that does change the structure and texture of the product. There are two issues related to the processing of agricultural products.

The location and capacity of food processing do not take account of the availability of raw materials in terms of quantity, quality, or continuity of supply. Further problems include inefficiency in product processing and the failure to meet commitments to buyers because of inadequate supply.

Processing technologies often do not meet international standards (ISO series); in addition, product packaging is often not attractive to either domestic or foreign consumers. Several factors contribute to the low marketing efficiency of food products: the poor bargaining position of small-scale industries; the relatively large post-harvest losses for agricultural products; poor infrastructure; lack of promotional activities; weak capacity in information technology, and depreciation of the rupiah against the dollar.

### Agricultural Production and Trade

In general, food production was relatively stable in 2000. Rice production (dried unhusked) reached an estimated 51.1 million tons, only slightly above the 1999 level of 50.9 million tons. Soybean production decreased from 1.4 million tons in 1999 to 1.0 million tons in 2000. Corn production decreased from 10.2 million tons in 1999 to 9.3 million tons in 2000. In contrast, peanut production increased from 0.6 million tons in 1999 to 0.7 million tons in 2000. For the year 2001, the projected production of these four commodities—rice, soybeans, corn, and peanuts—is 50.1 million tons, 9.1 million tons, 1.1 million tons, and 0.7 million tons, respectively. In the year 2002, the production of these four commodities is expected to decline owing to the effect of El Niño, which is forecast to hit Indonesia sometime in 2001.

Total production of meat (not including poultry) in 2000 was 630,000 tons, a significant increase from 1999, which was 580,000 tons. The expected production for 2001 is 658,000 tons.

Egg and milk production increased from 640,000 tons and 435,000 tons in 1999 to 696,000 tons and 497,000 tons, respectively, in 2000. In 2001 the production of meat, eggs, and milk is projected at 658,000 tons, 761,000 tons, and 531,000 tons, respectively. Soybean imports increased sharply, from US\$65.5 million in 1998 to US\$195 million in 1999. The import volume of soybeans in 2000 was much higher because of the sharp decrease of domestic production. The import volume of corn was also increased, from US\$4.4 million in 1998 to US\$71.5 million in 1999, while the export volume of corn decreased from US\$61.5 million in 1998 to only US\$8.5 million in

1999. Wheat imports decreased from US\$630.2 million in 1998 to US\$404 million in 1999.

### Food and Agricultural Policy

Because rice is considered a strategic food commodity, significant attention is paid to rice production. Sizeable growth in the past was achieved thanks to government policies including investment in irrigation and research, extension programs for new technologies, and favorable input and output pricing policies. The irrigation investment program has included construction of new systems, rehabilitation of existing systems, and development of tertiary distribution systems within existing irrigation schemes.

The combination of research, investment, and pricing policies has led to a rapid growth in the use of modern seed varieties and fertilizer and has shown impressive gains in rice yields per hectare.

Since 1997 there has been a considerable slowdown in the rate of growth in rice yields. The slowdown in the rate of yield growth is due to near saturation in the use of modern varieties and intensified production programs, the declining marginal productivity of fertilizer, a less favorable price environment, and a reduction in irrigation investment and in the completion of new and rehabilitated areas.

The possibility of increasing production in the near future is constrained by the lack of innovation in production technology and slow progress in completing ongoing activities in rehabilitation and land development.

The prospects for corn production are better, however, owing to the fact that government intervention has decreased and because of the widespread adoption of hybrid varieties by the private sector. The low productivity levels of soybeans and other legumes mean that domestic production is inadequate to meet continually increasing demand. This situation will continue in the future absent a technological breakthrough.

### Water Resources

While Indonesia's development focus has gradually shifted toward the outer islands, the greatest concentration of development remains on the island of Java because of its greater population density and water resources endowment. Consequently, demand for water on Java (where the population is increasing faster in urban than in rural areas) exceeds demand on the sparsely populated outer islands (where water use is closely related to the size of the irrigated area). The total water use in Java by 2000 was around 89 billion cubic meters, about 60 percent of the total projected water use in Indonesia, or 733 cubic meters per capita per year, which was slightly lower than the estimated per capita water use in Indonesia.

Rapid increases in urban population have meant increased demand for domestic water use. Urbanization and industrial growth both further accelerate urban water demands; economic growth as reflected in regional gross domestic product (GDP) per capita is hence closely

related to domestic water use ("domestic" water use includes consumption by industry). Jakarta, with its higher GDP per capita, has the highest domestic water use. The projections show a sharp upward trend for Jakarta in future domestic water use.

At present, irrigation accounts for more than 80 percent of the total water use in Indonesia. Irrigation systems cover about 4.9 million hectares, of which the government manages about 3.8 million hectares, and local communities manage the rest. Of the total 6,700 government irrigation systems, about 80 percent are small scale (that is, they cover less than 500 hectares). While Java still accounts for about 60 percent of the country's irrigated areas, irrigation on the outer islands has expanded continuously, albeit at a slower-than-expected rate.

In Java, by contrast, the area under irrigation has actually declined over the last decade: room for expanding irrigated rice area has virtually disappeared, and irrigated rice fields have been converted to other uses. Recent surveys suggest that a substantial portion of the converted area has come from highly productive irrigated area. In 1998 the estimated rate of conversion was about 38,000 hectares annually.

Two patterns of conversion can be discerned: a) contiguous blocks of converted area surrounding concentrations of development, including settlements, industries, and roads; or b) more fragmented blocks of converted area, more likely to have been converted as a result of degradation of the rice lands and declining income opportunities.

Elsewhere in the agricultural sector, development of brackish water ponds for shrimp should continue through either conversion of irrigated lands along coastal areas or new development, with the greatest potential for expansion in the outer islands. This source of water demand is still relatively small despite substantial increases in East Java. Aquaculture in Java required about 1 billion cubic meters of water, or about 2 percent of agricultural needs. Still, demand for this high-value water use will increase in the future, and justifies an allocation untainted by the pesticides and fertilizers present in irrigation and drainage water.

Stream flows provide a total estimated capacity of 646 billion cubic meters (assuming that 25 percent of yearly flow can be used), but groundwater—which provides almost 65 percent of the nation's industrial water requirements (from shallow and deep aquifers) and is the primary source of domestic water supply for about 90 percent of the rural population (from shallow aquifers)—will be critical for Indonesia's future water resources development. Currently groundwater (deep aquifer) irrigates about 28,000 hectares—only about 17 percent of proven deep aquifer potential. In addition, farming communities have used shallow aquifers for pump irrigation, used in tandem with existing run-of-the-river diversion irrigation systems, primarily to supplement dry-season irrigation for secondary crops. Pumps irrigate close to 120,000 hectares in Java, mostly (about 63 percent) in East Java.

Preliminary estimates of sustainable groundwater availability in 26 provinces is 485 billion cubic meters per year, but 67 percent of this is in the sparsely populated areas of Irian Jaya and Kalimantan. Java, with 60 percent of the nation's population, is estimated to have only 27 billion cubic meters per year, sufficient

to meet only about 20 percent of the estimated demand in the year 2001.

Indonesia's most likely primary water resources problem in the future is straightforward: water demand is projected to exceed water supply, with the gap being largest in Java. On the water supply side,

degradation of upstream catchment areas has influenced water supply patterns, speeding the flow of a large portion of surface run-off to the sea (so that it is not used properly), and causing more fluctuating stream flows. In addition, sedimentation rates for reservoirs, irrigation canals, and river mouths have increased.

## INDONESIA

	Units	1997	1998	1999	2000	2001 <sup>E</sup>	2002 <sup>F</sup>
<b>FOOD CONSUMPTION PATTERNS</b> <sup>a</sup>							
Per capita caloric intake	Cal/day	2,031	2,042	1,849	na	na	na
From animal products	Cal/day	346	354	80	na	na	na
From vegetable products	Cal/day	1,685	1,688	1,769	na	na	na
<b>INCOME AND FOOD PRICES</b> <sup>b</sup>							
Per capita income	US\$/capita	1,030	487	693	912	998	na
% of disposable income spent on food	%	32.8	24.6	62.9	na	na	na
Food price index	1996=100	na	263.2	249.5	246.2	na	na
General price index (CPI)	1996=100	na	198.6	202.5	205.5	na	na
<b>POPULATION</b> <sup>c</sup>							
Total population	Million	202.0	204.0	na	na	na	na
Urban	Million	77.0	80.0	na	na	na	na
Nonurban	Million	125.0	124.0	na	na	na	na
Female labor force participation	%	31.0	32.5	39.8	39.9	na	na
<b>LIFE EXPECTANCY</b> <sup>c</sup>							
Males	Years	62.3	62.6	na	na	na	na
Females	Years	66.1	66.5	na	na	na	na
<b>FOOD INFRASTRUCTURE</b>							
<b>Trade capacity</b> <sup>b</sup>							
Grain exports	1,000 Tons	7.1	20.2	na	na	na	na
Grain imports	1,000 Tons	1.9	na	na	na	na	na
Total food and agricultural trade	Million US\$	3,973	4,821	na	na	na	na
Total food and agricultural exports	Million US\$	3,133	3,654	1,573	na	na	na
Perishable products	Million US\$	71	58	na	na	na	na
Fishery exports	Million US\$	381	358	1,329	na	na	na
Total food and agricultural imports	Million US\$	843	1,167	na	na	na	na
Perishable products	Million US\$	411	218	na	na	na	na
Fishery imports	Million US\$	165	182	na	na	na	na
Port capacity <sup>d</sup>	1,000 Tons	9,715	75	6,771	na	na	na
Road access	Kms	341	na	347	na	na	na
Telecommunications <sup>d</sup>	1,000 Subscribers	na	4,736	na	na	na	na
Power generation	Gigawatts	77,065	na	na	na	na	na
Percent of population with refrigerators	%	na	13.3	na	na	na	na
<b>FOREIGN INVESTMENT IN THE FOOD SECTOR</b> <sup>e</sup>							
Inward FDI in the food sector, total	Million US\$	24,857	na	na	na	na	na
<b>ROLE OF AGRICULTURE AND TRADE IN THE ECONOMY</b>							
Agriculture as a share of GDP	%	16.0	18.8	19.4	19.3	19.1	na
<b>MACROECONOMICS INDICATORS</b> <sup>b</sup>							
GDP growth	%	4.6	-132.0	0.2	3.8	4.0-5.0	na
Interest rate	%	25.0	50.0	14.2	12.1	10.3	na
Exchange rate	Rupiah/US\$	3,000	10,299	7,699	7,000	6,500-7,500	na

na = not available E = estimate F = forecast

### Sources:

- a. National Socio-Economic Survey. Central Bureau of Statistics.  
b. Economic Indicators, March 1999. Central Bureau of Statistics.  
c. Data Collection of Population and Family Planning. Ministry for Population/NFPCB.  
d. Central Bureau of Statistics.  
e. The World Bank.