

POLICY BRIEF

How to Prepare for El Niño



Indonesia could reduce the impact of a prolonged El Niño by easing food import restrictions and strengthening social protection and food security.

Introduction

El Niño refers to a periodic warming of the central and eastern equatorial Pacific Ocean. The movement of warm ocean water to the eastern Pacific Ocean affects temperatures and rainfall patterns. For Indonesia, the main consequence of El Niño is extended drought conditions.

The National Oceanic Atmospheric Administration (NOAA) in the United States reported that sea-surface temperature anomalies increased in June 2015 in the equatorial Pacific Ocean. In addition, NOAA predicted that sea-surface temperature anomalies would continue to increase and that there was an 80% chance that El Niño would last until mid-2016. There is also an increasing chance that this El Niño would be the strongest since the 1997–1998 event. The Indonesian Meteorology, Climatology and Geophysics Agency warned that the dry season could last longer this year than in previous years as a result of El Niño.

There are already signs that El Niño is adversely affecting the food situation. It is estimated that some 18 provinces will be adversely affected by El Niño, including some of the major food producers—West Java, Central Java, East Java, North Sumatra, and Nusa Tenggara Timur. Planting has already been delayed for the second rice crop in much of Java, and farmers nationwide are experiencing water

shortages.

The extended dry season is already contributing to forest fires in many parts of the country. Some 308 hotspots have been detected in Sumatra, with Riau being the most affected province, having some 122 hotspots. As of July 27, hot spots had also been detected in South Sumatra (59), Jambi (58), North Sumatra (25), West Sumatra (19), Bangka Belitung (9), and Lampung (5).

Analysis

Possible consequences

In previous years, El Niño has caused considerable damage to land and rice production. In 2006, a relatively weak El Niño damaged 73,045 hectares (ha) of land and caused a loss in rice production of 337,468 tons. In 1997-1998, there was a strong El Niño, which caused a loss of 714,512 tons in rice production (Table 1) and damaged 161,000 ha of land. Table 1 and Figures 1 and 2 illustrate the magnitude of the damage to land and rice production from El Niño in previous years.

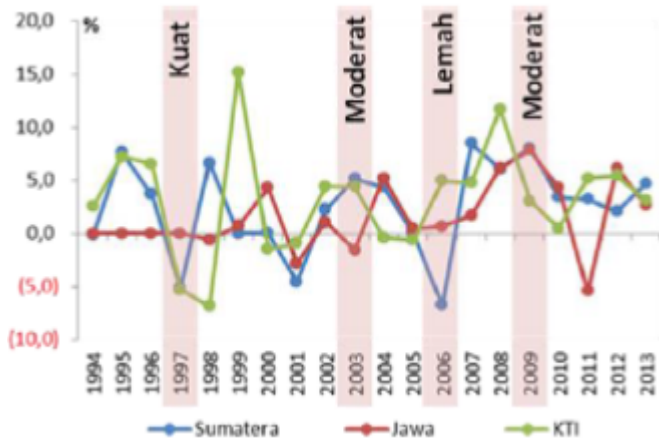
Table 1. Land and Production Damage Caused by El Niño

Year	Intensity of El Niño	Draught (ha)	Land damages (ha)	Loss of paddy production (ha)
1994	Moderate	544,442	161,000	700,028
1997	Strong	504,024	161,144	714,512
2003	Moderate	568,000	114,038	517,504
2006	Weak	338,261	73,045	337,468
2009	Moderate	150,000	35,000	174,965

Note: ha: hectares.

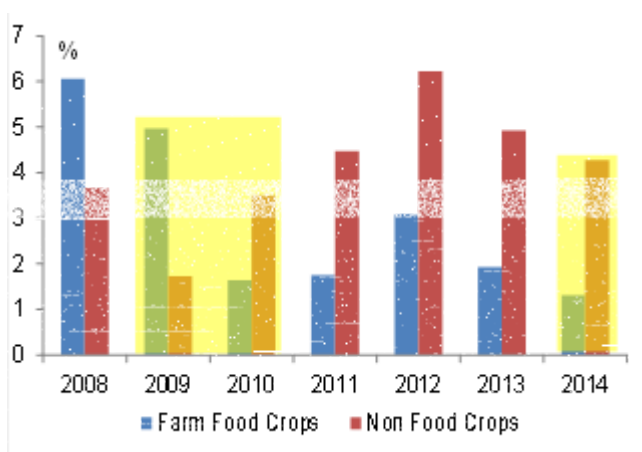
Source: Bank Indonesia's Laporan Nusantara, May 2014

Figure 1. El Niño and Growth of Rice Production in 1997, 2003, 2006, and 2009



Note: Intensity of El Niño: Kuat: strong, Moderat: moderate, Lemah: Weak. KTI: Eastern Indonesia. Source: Bank Indonesia's Laporan Nusantara, May 2014 and CEIC Data Company

Figure 2. El Niño and the Growth of Food and Nonfood Crops Sectors in 2009-2010, and 2014



Source: Bank Indonesia's Laporan Nusantara, May 2014 and CEIC Data Company

Production of other agricultural commodities is also vulnerable to the effects of El Niño. The Ministry of Agriculture estimated that crude palm oil production fell by 10% because of the El Niño in 2014. The United Nations Development Programme (UNDP) reported that El Niño in Indonesia has pushed the poor farmers to become poorer as it increased their production cost and debt, and at the same time, contributed to a rising severity of health problems in some regions in Indonesia.

Just how severe this latest El Niño will be remains to be seen. El Niño events have been predicted in previous years but have not materialized. On the other hand, the risks from El Niño should not be underestimated since the world's leading meteorological agencies have predicted a high probability that El Niño conditions will intensify and could last through mid-2016.

Insights

Extended drought conditions resulting from El Niño could have the following implications:

- **Output.** Production of the main foodstuffs and cash crops would fall.
- **Inflation.** A shortfall in domestic food production could cause prices to spike given that demand for basic foodstuffs is price inelastic. This could have adverse effects on inflation because food accounts for an estimated 38% of the consumer price index basket.
- **Poverty.** Failing crop production could force many farm families into extreme poverty. Average annual incomes from rice production were reported at Rp6 million to Rp10 million per family in Java in ADB-assisted irrigation project areas in 2014. During relatively good production conditions in 2014, average daily incomes from rice production on a per capita basis were between \$0.40 and \$0.60 per day. This implies that returns on rice production are already very low. While Indonesia's poverty levels have declined to 11% in 2014 from 16.8% in 2004, the income of 27% of the population is only marginally higher than the poverty line. These 65 million people could slide back into poverty if food prices surge or if farm incomes suddenly decline.
- **Exports.** Extreme drought conditions may adversely affect exports of palm oil, coffee, cocoa, tea, rubber and coconut. In some cases, a lag in effects may be felt. This may result in export declines in 2016 and 2017 rather than in 2015.
- **Political reluctance versus political stability.** The government is aiming for Indonesia to be food resilient in the production of basic foodstuffs, and rice self-sufficient within 3 years. With strong political pressure to be self-reliant, there may be reluctance on the part of the authorities to acknowledge the growing seriousness of the food situation. The Central Statistics Bureau, for example, had forecast in July 2015 that rice production would increase by 6.6% to 75.5 million metric tons in 2015 from 70.9 million metric tons in 2014. On the other hand, shortages of basic foodstuffs and sudden surges in food prices can damage political stability, especially if low-income urban households can no longer afford to buy essential foodstuffs.

The macroeconomic impacts of an extended El Niño would be felt primarily in the form of higher inflation, increased pressure on the balance of payments, and lower agricultural growth. In the near term, scope for monetary and fiscal tightening to reign in inflationary pressures is limited. Higher domestic inflation could, in turn, contribute to further weakening of the rupiah and could trigger catchup wage accords. Therefore, even from a macroeconomic point of view, a supply-side policy response would be much more effective.

Policy Options

Ease food import restrictions

In the near term, the most appropriate response would be to reduce restrictions on food imports and to build stocks in anticipation of a difficult second half of 2015 and a possibly difficult first half of 2016. Easing restrictions on food trade would allow both the government and the private sector to build precautionary stocks in anticipation of a possible extended drought while the food prices in the world market are still reasonably low.

Now is a relatively good time to build precautionary stocks for rice. The global price for Thai 5% broken rice has fallen from \$552 per ton in May 2013 to \$370 per ton in June 2015. In US dollar terms, rice prices have fallen 16% between June 2014 and June 2015.

Only 95,000 tons of premium rice were imported in the first half of 2015, and Indonesia's Bureau of Logistics (BULOG) had yet to import medium quality rice as of August 2015.

Under Presidential Instruction (Inpres) no 5/2015 issued in March 2015, rice is to be imported only if domestic production is not sufficient to meet domestic demand and the government's reserve, and/or to maintain the stability of domestic rice prices. Rice imports are to be conducted by BULOG, taking into consideration the views of other ministries (trade, agriculture, and coordinating economic affair ministries).

In this situation, relaxing the provisions of Inpres 5/2015 should be considered to allow private trade, and to allow BULOG to build precautionary stocks in anticipation of adverse El Niño effects.

Consideration should be given to relaxing trade restrictions on other agricultural commodities to ease inflationary pressures should domestic supply be adversely affected by El Niño. Imports of horticulture products, live cattle and beef are restricted by licenses that are provided by the trade ministry based on technical recommendations of the agriculture ministry. Higher tariffs have been imposed in July 2015 on coffee, tea, and sausage (20%); processed meat (30%); fish products (15%-20%); products from sugar without cocoa (15%-20%); bread, cakes and biscuits (20%), and vegetable products (20%).

Increase social protection for the poor and vulnerable

There may also be a need to strengthen social protection measures to assist families whose livelihoods have been adversely affected by El Niño. Government could consider lowering the price of subsidized rice distributed under the Raskin program to ensure that low-income families can afford a certain minimum amount of rice, and increasing cash transfers to adversely affected rural households.

Strengthen food purchasing power

El Niño is bound to serve as a reminder to the government that more attention should be accorded to food security. Food security, as defined by the UN Food and Agriculture Organisation and the World Health Organisation, should be understood as ensuring that all people have sufficient food for a healthy life. While Indonesia should use its natural resources to the fullest degree, the main focus should be on improving household food purchasing power by boosting rural productivity, and ensuring that poor and vulnerable households have sufficient incomes to be able to afford nutritious food. There is a need to increase incomes and nutritional awareness to buy nutritious foods. Greater home production of vegetables, livestock, and fisheries could help to contribute to both higher incomes and improved nutrition.

Resources

ADB. 2015. [Preparing for El Niño: Policy Options](#) *ADB Papers on Indonesia series*. Mandaluyong, Philippines.

World Health Organization. [Health Preparedness for El Nino Event 2015-2016](#)

Related links

Bank Indonesia. [Laporan Nusantara](#)

[Indonesian Meteorology, Climatology and Geophysics Agency](#) (in English)

Meet the experts

[Steven Tabor](#)

Country Director for Indonesia, Asian Development Bank

Steven Tabor holds a doctoral degree in Economics from the Free University in Amsterdam, Netherlands; a master's degree in Agricultural Economics and Southeast Asian Studies, and a bachelor's degree in Agricultural Economics, both from Cornell University in New York, United States. Prior to joining ADB, he served governments in many countries of Asia, Africa, and Latin America on a variety of economic policy topics.



[Edimon Ginting](#)

Director, Asian Development Bank

Edimon Ginting served as deputy country director for Indonesia before being appointed as director of the economic analysis and operational support division of the Economic Research and Regional Cooperation Department in 2016. He holds a doctoral degree in Economics from Monash University, Australia; a master's degree in Economics from Thammasat University, Thailand; and a bachelor's degree in Economics and Development Studies from Gadjahmada University, Indonesia. He has over 17 years of experience in macroeconomics, finance sector, and international trade.


Follow Edimon Ginting on





Priasto Aji

Senior Economics Officer, Indonesia Resident Mission, Asian Development Bank

Follow Priasto Aji on 

Last updated: August 2015