

Impact of El Niño on Crops in Southeast Asia

El Niño is Spanish for “The Little Boy” or “Christ Child”, and is the name given by Peruvian fishermen in the 1600s to a particular weather pattern that occurred around Christmas for some years. They observed that El Niño was associated with greatly reduced fish catches, caused—we now know—when trade winds that circulate over waters in the tropical Pacific weaken and sea surface temperatures rise. The effect extends beyond the Peruvian ocean—it is associated with heavy rains and floods in some parts of South America while leaving others in drought. It is also associated with scorching weather in Asia and even East Africa.

El Niño is responsible for an array of natural disasters in different parts of the world, from droughts to flooding. From 1990-2013, El Niño and La Niña (its converse) occurred seven times in Indonesia, once every 3 to 4 years. Many in Southeast Asia will remember the last strong El Niño in 1997-98. This was a one-in-50 year event. The dry weather caused massive food shortages. A severe lack of rain and higher-than-normal temperatures caused some farmers to leave their fields unplanted. International weather forecasting organizations have recently issued alerts regarding the development of an El Niño this year. Eight Southeast Asian countries are grouped together in this warning: Indonesia, Thailand, Vietnam, Burma, Philippines, Cambodia, Laos and Malaysia. Rice and oil palm are reported to be the most at risk.

Rice is Asia's staple food, and requires rain for planting. Total area in 2015/16 is estimated by USDA at 47 million hectares in Southeast Asia, of which approximately 45% or 21 million hectares are irrigated. Rain fed rice is highly dependent on timely rainfall. Drought is the most important limiting factor influencing annual production potential, and is usually associated with an erratic or intermittent rainfall pattern which leaves crops dry for critical periods. The rice varieties grown in Southeast Asia are highly sensitive to drought stress, with the greatest losses occurring when the crops are in flowering or reproductive growth stages.

Palm oil is one of the most traded commodities in Southeast Asia, as well as the world's most widely consumed edible oil. The visible effect of drought on oil palm is perhaps less dramatic than its effect on rice—but no less serious because of substantial yield depression over the following season. The bunch development is affected by moisture deficit. Sufficient rainfall is also vital to the ripening of the fruits. The drought that is anticipated with the return of El Niño this year are expected to substantially hit oil palm production. In 1997-1998, palm oil futures climbed as much as 1.6% in Kuala Lumpur because of the predicted yield impacts of El Niño in Indonesia and Malaysia, which account for

86% of world suppliers. Indonesian production dropped 7.1% and Malaysian output fell 5.5% at the time of the last strong El Niño.

Like climate change, El Niño events are hard to predict exactly, and their effects can vary. For example, an El Niño event was predicted for 2014 but the conditions failed to fully materialize.