



## El Nino and Indonesia



**NOTE:** this Fact Sheet was originally written in November 1997, when major fires in the forests of Indonesia were blamed on the El Nino effect.

Smog in southeast Asia has been much in the news recently, as has El Niño, and what does it have to do with the smog?

The El Niño effect occurs every two to seven years, and is caused when the strong westward blowing trade winds drop, and warm water moves back eastward across the Pacific Ocean. The Peruvians named the phenomenon "El Niño" - the Christ child, because it tends to begin around Christmas.

Damage caused by El Niño is normally quite extensive. It causes drought and bush fires in Australia and southeast Asia, flooding in Peru and Ecuador, drought in southern Africa, heavy rains in areas around the Gulf of Mexico and devastation of fish stocks off South America.

Human error coupled with El Niño has led to the environmental disaster in Indonesia and other southeast Asian countries. Logging companies in Indonesia have been clearing areas of forest by deliberately setting fire to them. Normally, regular rainfall would dampen down the flames and prevent the spread of fires. El Niño has stopped the rains from reaching Indonesia, so the fires have burned completely out of control, and are still burning now. The huge clouds of smoke have caused unprecedented levels of smog, and made the air in certain areas of southeast Asia extremely dangerous to breathe.

The effects on animals living in the rainforest have been terrible. Thousands of animals have died, and baby orang-utans have recently been discovered alive, but badly burned after their parents abandoned them to escape the flames. They are now being cared for, but their recovery and reintroduction into the wild is likely to be a slow process.

At the height of the smog, levels of airborne pollution have gone off the scale in many Indonesian cities. The 24 hour Pollution Standards Index (PSI) works on a scale of 0 - 400, with a level above 400 being life-threatening to ill and elderly people. PSI Levels of over 500 have been recorded, estimated to be equivalent to smoking two packets of cigarettes per day. There could be long-term health risks as a result of the pollution, including cancer, which will not be properly known about for 20 to 30 years.

People were advised not to go outdoors in the smog unless wearing the appropriate protective masks. In Malaysia, it was a legal requirement for people working outdoors in PSI levels of 300 or above to be supplied with respirators by their employers. When the PSI level rose to more than 400, it was illegal for anyone but emergency workers to be working outdoors.

The inhabitants of some cities did not see the sun for days, as the clouds of smoke were too dense. Ships collided on two occasions in the Strait of Malacca, with the collision between an oil tanker and a cargo vessel on 26th September leaving 29 crewmen missing, presumed drowned.

A Garuda Airways Airbus A300-B4 crashed in the smog, also on 26th September 1997. All 234 people on board were killed. It now seems that an air traffic control error was the cause of the crash, but the low visibility due to smog at the time of the accident led to the pilot not being able to see that he was being directed into the side of a mountain. As a result of this crash, and the continuing poor visibility, thirteen airports in Sumatra and Kalimantan were closed, and only re-opened on 19th November 1997.

The rains are now falling on Indonesia, and have put out many of the fires and improved the air quality. It will be some time however before all of the surface fires are out, and the peat which is burning underground will probably continue to burn for several years, causing millions of tonnes of carbon dioxide to be released into the atmosphere, contributing significantly to global warming.

El Niño's effects are far from over. Southern Africa is expected to suffer extreme drought later this year. Over half of the region's 140 million inhabitants rely on agriculture for their food, and up to 27 million of these people live in high-risk areas, according to the UN's World Food Programme (WFP).

The countries most at risk are South Africa, Lesotho, Swaziland, Zimbabwe, Malawi, Mozambique, Zambia and Botswana. The region's worst drought so far this century occurred in 1991-1992, when 11 million tons of food were shipped to Africa at a cost of over \$4 billion, 1.6 million tons of which was food aid. It is hoped that this scale of disaster will not be seen in 1997-1998, particularly as this time El Niño has given forecasters plenty of advance warning. However, it is predicted that feeding just 5 million people during late 1997 and throughout 1998 would require 600,000 tons of food at a cost of some \$200 million.

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