

## Reported Drought-Related Effects of El Niño for November 1997.

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The National Drought Mitigation Center is compiling a list of drought-related effects of the 1997-98 El Niño, as reported to us in news stories from around the world. Our first report “Reported Effects of the 1997-98 El Niño,” released in early November 1997, examined the effects of several climatic phenomena related to the current El Niño such as drought, floods, and hurricanes. Because of the great variety of impacts related to El Niño and the number of other researchers dealing with this topic, we have decided to focus more on the drought-related effects of El Niño in subsequent updates (although other related climatic hazards such as flooding may be discussed when they coincide with drought issues).

This report summarizes drought-related El Niño effects reported in stories from 1 November to 30 November 1997. It is important to remember that anomalous weather events happen continually. Because of the interdependence of global circulation patterns, it is often difficult to determine whether El Niño is a direct or indirect cause of certain events, or whether it is a factor at all. It is possible that media attention over the current El Niño has resulted in more effects being attributed to the phenomenon than can be scientifically justified. In addition, reported estimates of damages and other statistics will often vary as new data become available and depending on the methodology used to calculate values.

For more information, please visit the El Niño section of the National Drought Mitigation Center’s web site:

**<http://enso.unl.edu/ndmc/enigma/elnino.html>**

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Where?	Current Impacts	Potential Impacts
<b>Non-Specific Areas</b>	Governments urging farmers in drought-prone countries to diversify crops, plant drought-resistant varieties, start water conservation programs, and set up early warning systems to detect damages to agricultural production and its impact on food supply.	Impact on coffee will depend on drought in Asia and excess rainfall in Brazil; a Southern Hemisphere drought could boost livestock slaughtering and depress livestock and meat prices; increased risk of fire due increased flammability of dry vegetation; loss of food sources (nuts, honey, etc.) from fire damage to trees/forests.
<b>South America</b> Peru  Brazil  Ecuador  Amazon (Especially north-central and northeast of the Amazonian region, extending from northern Brazil up to Venezuela, Suriname and Guyana)	Drought in southern Peru; a \$150 IDB loan to Peru with a portion of that to be used for fighting drought; the World Bank and the IDB are preparing a \$500 million loan to Peru and Ecuador for El Niño activities. Manos: Worst drought in 25 years; fires and smoke; smoke from Amazon fires has reduced visibility, caused respiratory problems and closed airports at times; Black River is 8.6 meters lower than normal, as well as other rivers in the Amazonian and northeastern regions; power rationing because of a reduction in hydroelectricity; reduction in river transport capabilities. The World Bank and the IDB are preparing a \$500 million loan to Peru and Ecuador for El Niño activities. Drought and fires; drop in water levels along the Amazon River; dried up areas that are usually flooded; altered ecological conditions that increase fire hazard; millions of acres of burned forest; lagoons and ecosystems have become isolated because of dryness; recently hatched turtles are stranded and dying of dehydration and predation because of reduced river flows; predators are becoming concentrated into smaller areas around remaining water.	In the northwest region, rainfall from now through March, 1998, is expected to decline by 30% from the year before.
<b>Australia</b>	Fire and smoke; El Niño has delayed autumn rains adding to normal brush fires in New South Wales, Victoria and South Australia; smoke from southeast Asia reached Australia for the first time causing haze in Darwin before winds shifted (the trail of smoke was 300 miles long and 185 miles wide). Australia's war veterans launched a A\$1 million food-aid appeal for Papua New Guinea drought victims; Australian military aircraft have been helping local forces fly rice, flour and oil into remote villages.	

<p><b>Southeast Asia</b> Papua New Guinea</p>	<p>Worst drought since 1975 and probably most severe since the 1940s; Australian military aircraft have been helping local forces fly rice, flour and oil into remote villages; 500,000 affected and 100,000 people were in a life threatening situation; food shortages.</p>	<p>Drought until next January and possibly next March; loss of up to 50% of the nation's coffee crop.</p>
<p>Indonesia</p>	<p>Drought; rains are months late; exacerbated bush and forest fires in islands of Sumatra and Kalimantan sending smoke over SE Asia; fires ignited underground peat and coal deposits; damage to coffee, cocoa, and palm oil production; as of mid-October, 121,626 hectares of plantation and 96,693 hectares of forest lost to fires; 2.7 million hectares of oil palm plantations damaged by drought, fire, and smoke; crude oil palm dropped 12% this year (from the predicted 5.9 million tons); killed crops such as sweet potatoes; haze is hampering relief efforts.</p>	<p>Drought, especially in Southern Sumatra and Kalimantan, Borneo, Java and eastern parts of the country; 300,000 hectares of rice fields affected; import 300,000 tons of corn in the last quarter of this year to offset drought losses; social unrest from food shortages; baked soil and vegetation losses from drought will cause increased flooding when rains return; crude palm oil production could drop between 15-20% for a loss of 1.4 billion rupiah (424,000 US dollars) from a 1998 expected 6 million tons.</p>
<p>Irian Jaya</p>	<p>Hundreds of mountain tribal people dying of disease and starvation in the far East; Friday prayers for rain are common; government tankers are distributing water; people don't wash as much; sale of animals to buy water; malnutrition has made people more susceptible to disease; Tonnes of rice and noodles have been dispatched to Jayawijaya where 90,000 people lack food and 90% of the children are malnourished; 528 deaths from drought-related illnesses (i.e. diarrhea, malaria, and malnutrition) in Jayawijaya, Merauke, and Puncak regencies. At least 40 deaths since October in Mimiki regency.</p>	<p>Thousands of child deaths from malnutrition in Jayawijaya regency; (from Timiki) local people would be at risk from crop failure for up to six months, even though light scattered rains have started to fall in the province, which borders Papua New Guinea.</p>
<p>Singapore</p>	<p>Smoke from Indonesia; wells and rivers on the Island Pulau Ubin have dried up; the Singapore Navy is hauling water for the island's 58 residents.</p>	<p>Haze at times; with increase rainfall and a gradual change in wind direction, the haze condition is expected to improve.</p>

<p><b>Southeast Asia (cont.)</b> Philippines</p>	<p>Severe drought in the Philippines and 39 provinces (nearly half the country) from a delayed rainy season and weak monsoon activity; 40% rainfall over the last three months in Luzon, Mindoro, Marinduque, Romblon, Panay, Negros, Samar and parts of Mindanao; below rainfall since May in the north affecting rice and corn growing areas; the government allocated 2.2 billion pesos (about 65 million US\$) to build 9,000 wells and 20,000 small reservoirs and repair irrigation canals, so far; Angat reservoir is 18-20 meters below normal so in Manila water supply use will be reduced until next July; urging local governments to enact ordinances and monitoring to stop water use for non-essential purposes, to force industries to develop separate water sources from communal sources, and to undertake a water conservation and El Niño public information campaign; set aside thermoelectric equipment for use in power shortages; cloud-seeding to induce artificial rains; planning forums have been held.</p>	<p>Moderate to severe drought over the next five months; Manila may face increased water rationing (to two to three hours per day and at the worst, taps will only flow every other day); import corn and rice early next year to prevent and food shortage from drought; corn output in 1997-98 will drop to 3.92 million tons (from 4.22 million tons the previous marketing year).</p>
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<p><b>Eastern Asia</b> China</p> <p>Hebei province</p> <p>Northern China</p> <p>Henan province</p> <p>Shangdong province</p> <p>Jiangsu, Anhui, and Hubei provinces Shanxi province</p> <p>North Korea</p>	<p>Drought this spring, summer and autumn, posing a threat to the planting and management of winter wheat; 10 million ha across China affected by drought; mass campaign to save young crops; some fruit trees affected by drought, but offset by an expansion of orchards.</p> <p>Worst drought since 1949; hot and dry weather has hampered farming over the last five months; provincial government allotted 18 million yuan for fertilizer, diesel oil, and seed; more than 10,000 agronomists have been sent to assist farmers; replanted much wheat.</p> <p>Worst drought since 1972; no widespread rain since mid-September; 7.3 million ha affected by drought.</p> <p>3.4 million ha of wheat needs water; replanted a lot of wheat.</p> <p>4.6 million ha of land is parched and nearly ruined; replanted a lot of wheat.</p> <p>Organized to fight drought and improve field management.</p> <p>Urging power and water conservancy departments to use all water facilities for irrigation.</p> <p>Previous drought, flood and hurricane effects leading to ongoing malnutrition and disease even though aid has helped the situation; death and widespread malnutrition; Red Cross is training medical personnel; food and supplies distribution.</p>	<p>Chronic malnutrition increasing vulnerability to disease; this month's harvest insufficient to alleviate food shortage.</p>
<p><b>Middle East</b> Cyprus</p>	<p>Rainfall is 70% of normal this year; grain production down 4/5 this year; barley down from 150,000-160,000 tons to 31,000 tons; importing grain to offset losses.</p>	
<p><b>North and West Africa</b> Sahel (Burkina Faso, Cape Verde, Chad, Gambia, Guinea Bissau, Mali, Mauritania, Niger and Senegal) Niger Cape Verde</p> <p>Gambia Senegal</p>	<p>Farm and public cereal stocks have nearly run out; appealed to donors for increased grain imports and food aid to offset losses by partial drought; this year's rainfall interrupted from 10-40 days in places.</p> <p>Drought; cereal deficit.</p> <p>Grain plunged by 84 percent this year.</p>	<p>Drought threat to the production of millet, sorghum, beans and other staple foods, along with export cash crops such as groundnuts; a deficit of 737,000 tons of cereals.</p> <p>1997/98 cereal deficit of 33,200 tons (1/3 of annual consumption).</p> <p>1997/98 cereal deficit of 20%.</p> <p>1997/98 cereal deficit of 18% (40% of the regions total grain gap at 316,300 tons).</p>



<b>Southern Africa</b>	Agencies promoting farmers to switch from corn crops to drought-resistant and short-season crops like cassava and sorghum.	
Botswana	Advised culling cattle; advised farmers to use early rains by planting fast-maturing crops like millet, sunflower, or short-season sorghum.	
South Africa	Following dry weather in September, rainfall has been abundant and widespread since mid-October, providing conditions for farmers to prepare land and start planting in some areas, though farmers are preparing for a potential drought and have been advised to plant only in the moisture-rich soils.	Drought; food shortages; increased storage of grain by farmers for subsistence stock.
Mpumalanga	Planning to haul water to rural areas, set up clinics to deal with disease outbreaks, educate the public on sanitation, and advise agricultural producers (i.e. use of drought resistant crops and scaling down cattle numbers).	Drought; cholera; more contingency planning.
Zambia	Imported 70,000 tons of maize and will import 100,000 tons more to stock national reserves; in Lusaka, water rationing, reduced pumping from public water boreholes, changed pumping times and supplemented supply with water from the Kafue River; farmers advised to plant at different dates using several varieties of short-season maize; promoting water conservation.	Drought; in Lusaka, twenty percent reduction in public water supply and public information campaigns on water conservation; ban on the use of hoses for domestic water use; intensify leakage control; reduced honey quality.
Zimbabwe	Farmers have been advised to plant early and use drought-resistant seeds.	Drought; 400,000 whose food stocks have dwindled will need food aid this year under the government's drought relief program.
Mozambique	Government promoting drought awareness and the need to prepare contingency plans.	
Namibia	Government established an inter-ministerial committee to assess potential drought effects.	
Malawi	Little rain over the country; government has initiated drought contingency plans, is encouraging the planting of drought-resistant crops (i.e. cassava, sweet potatoes, millet, and sorghum), and promoting water conservation.	
Lesotho	Following dry conditions in September and October, light rains in late October improved conditions for land preparation and planting of the 1997/98 cereal crops; government has urged farmers to prepare for drought and plant drought-resistant crops and use hybrid seeds.	Harvest expectations for winter wheat, now in the maturing stage, have dropped as a result of low rainfall in September.

<b>Southern Africa (cont.)</b> Madagascar	Drought and locusts caused a loss of most of the maize crop and reductions in other crops like cassava and sweet potatoes in the southern coastal zone (though losses were mostly offset by good production in other areas); food supply is “precarious” in the southern coastal zone; recommended that urgent food assistance through food-for-work be given to about 472 people in the area for at least 3 months; rainfall in October and early November were favorable for transplanting the main season rice crop.	
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