

Reported Drought-Related Effects of El Niño for December 1997.

Introduction	1	Eastern Asia	4
Caribbean	2	Southern Asia	5
Central America	2	West Africa	5
South Amerca	2	Central Africa	6
Australia & New Zealand	3	Southern Africa	7-8
Southeast Asia	4		

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 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 December to 31 December 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>

or contact us directly:

**National Drought Mitigation Center
239 LW Chase Hall
Lincoln, NE 68583-0749
Phone: (402) 472-6707
E-mail: ndmc@enso.unl.edu**

Where?	Current Impacts	Potential Impacts
Caribbean	Drought, on average, has caused a 15 to 20% drop in crop yields (corn, rice and beans were especially effected); prolonged heat and late rains caused sugar cane crops to mature early.	
<p>Central America</p> <p>Panama</p> <p>Costa Rica</p>	Insufficient rainfall in most areas during the main planting season; drought affected agriculture, fisheries, livestock, and forestry and was followed by floods in areas; an appeal was made for \$9.4 million to feed 323,000 farmers in Nicaragua, Honduras, El Salvador, Guatemala, and Panama (more than 50% are women and children and reside in mountain areas), as a result of floods and drought.	Limit the draft of ships across the canal from February to July because of low water levels. Most serious drought in the Chorotega region of the Guanacaste province, other regions such as the Metropolitan area will also be affected; preventive measures will be taken to guarantee drinking water supplies.
<p>South America</p> <p>Columbia</p> <p>Venezuela</p> <p>Brazil</p>	<p>Malaria epidemics from an increase in temperature.</p> <p>Heat wave in the state of Rio Grande do Sul for the last few weeks killing four people and affecting thousands.</p>	A 37% increase in malaria the year after an El Niño (reduced immunity of drought-stressed people or mosquitoes recover faster than their predators).

<p>Australia</p>	<p>Drought and fires; 175 fires in New South Wales; 40 fires in Victoria; national parks near Sydney are closed because of fire danger; cutting firebreaks north of Sydney; fires destroyed 600,000 hectares of bush and crops in the past month, killed five people and thousands of domestic and wild animals; evacuated thousands of people; low dams and soil moisture; drought is affecting livestock and farm production.</p>	
<p>New Zealand</p>	<p>Half of normal rain in 80% of the country and some areas receiving only 10-20%; high fire danger with some large fires underway; wasps are thriving in the dry conditions; water rationing in some rural areas; sheep sales because of lack of feed; sheep price falling NZ\$2-\$3 a head; "slashed" milk supply forecasts; evaporation too excessive for irrigation to be effective; warm, dry winds may possibly be causing biological changes in people (mood swings, irritability, anxiety and depression); anecdotal evidence to suggest increased crime, suicide and accident rates due to El Niño winds.</p>	<p>Up to \$500 million in losses to farmers; top vintages in 1998 wines due to ideal growing conditions; reduced milk supplies.</p>

<p>Southeast Asia Philippines</p> <p>Indonesia</p> <p>Maluka regency</p> <p>Irian Jaya</p> <p>Papua New Guinea</p> <p>Malaysia</p> <p>Singapore</p>	<p>Drought; water rationing in Manila until June; reduced the flows from Angat Dam which is 22 meters below the “ideal” level; called for prayers for rain; calling for individual water conservation; government placed orders for 350,000 tons of rice.</p> <p>Rains in the western part with most of the archipelago parched; drought has damaged coffee crops; stressed sanitation systems have increased cholera cases; rains put out many fires except those burning underground; peat fires (one million hectares still burning) have released excessive carbon dioxide to the atmosphere; fires destroyed 185,000 ha of forest in Sumatra and Kalimantan and caused losses of \$22.4 million.</p> <p>81,840 people in at least 130 villages in seven subdistricts in SE Maluka threatened from drought since September (now forced to forage for yam and fruit from the forest), government has sent 11.25 tons of rice.</p> <p>Drought; 656 people have died from drought-related illnesses (447 in Jayawijay, 82 in Merauke, and 24 in Puncakjaya District; and 103 since October in Mimika); food shortages threaten 150,000 people; “wiped out” yam crops; wells have dried up, causing people to drink contaminated water (creating cholera risk); fires have destroyed plants used by villagers to make clothes; government has spent US\$46 million on drought relief; the government and others have distributed tons of rice, noodles, and blankets); crops such as sweet potatoes damaged.</p> <p>Worst drought in 50 years; thousands of square kilometers of grassland and rainforests have been burned.</p> <p>Drought destroyed most mid cocoa crop between October and December.</p> <p>In August and September, respiratory, skin, and eye ailments rose almost 14% caused mainly from smoke (i.e. conjunctivitis; asthma, bronchitis; and eczema).</p>	<p>Moderate to severe drought until April; water rationing until June.</p> <p>Crop production decline this year from 1.34 - 5.61% of last year’s totals (rice down 3.85% to 49.14 million tons; corn down 1.34% to 9.18 million tons; soybeans down 3.82% to 1.46 million tons; peanuts down 3.7% to 710,517 tons; green beans down 5.61% to 284,521 tons); release more carbon dioxide in next six months than entire contribution from cars and power stations in Western Europe; underground peat fires could last for months or year; promote self-sufficiency of rice through efforts to increase productivity of rice fields, promote the use of quality seeds, prevent spread of rice pests, and promote agricultural mechanization.</p>
<p>Eastern Asia China Liaoning Province</p>	<p>Harvested 13 million tons of grain this year despite a severe drought.</p>	

<p>Southern Asia Pakistan</p>	<p>Malaria epidemics related to increases in temperature from El Niño.</p>	
<p>West Africa Ghana Niger Magouzao Burkina Faso Senegal Mali and Mauritania Chad</p>	<p>Low inflow of water into the Volta River, so there will be water rationing for some sectors from January next year; Volta Lake at the end of the rainy season in November was 248.55 ft (third lowest elevation ever recorded); Akosombo Dam is lowest since 1983-84 drought.</p> <p>Drought; needs 152,000 tons of cereal to save the lives of 2 million people, mostly in northern desert regions; migrations of drought-affected people to other parts of the country and to Nigeria, Burkina Faso, Togo and Benin.</p> <p>Ponds are dry; 900 inhabitants received only 5% of needed cereal for 1997-98 from last season's harvest.</p> <p>Drought; cereal deficit of 156,000 tons; a \$4.4 million assistance appeal for nearly a million people affected by famine (to establish 1,000 cereal banks for most vulnerable people and for well construction and improvements by peasant farmers).</p> <p>Drought and migrations to Cote d'Ivoire.</p> <p>Drought.</p> <p>Drought.</p>	<p>Power rationing.</p> <p>Famine; children withdrawn from school to help their families secure food.</p>

<p>Central Africa</p> <p>Tanzania</p> <p>Uganda</p>	<p>Drought-prone regions are being told to consider using short season varieties of sorghum and millet (i.e. pearl and finger millet, including cowpeas, groundnut, and cassava) and early maturing maize varieties and to cull their animal stocks.</p> <p>Drought giving way to flooding at harvest time. Government reported three million people affected by erratic and poorly distributed rainfall that caused two harvests to fail (1.4 million of those in urgent need of food assistance); many farmers lost entire 1997 crop and used up all food reserves; many schools closed for last two months; decline in health and nutrition; increased stress and sickness from food shortage; a \$33 million dollar World Food Program project was launched when trucks hauled 300 tons of food to 212,000 people in Dodoma (will deliver 69,000 metric tons of maize and 7,000 tons of pulses to 48 districts over next six months); agencies are identifying affected groups as well as recommending, and confirming food distribution; 30 villagers were ill after eating frogs due to food shortages; banned food exports.</p> <p>Drought and floods have cut coffee exports at the start of the 1997-98 (Oct/Sept) year.</p>	<p>Danger of livestock epidemics (i.e. tick-borne and bacterial diseases like anthrax and “black leg”) increased because of lack of water for “dipping” livestock and reduced immunity due to reduced nutrition.</p> <p>1997-98 decline of 6.25% in coffee exports to 4.0 million 60-kg bags from 4.25 million kg bags in 1996/97; if rains continue, projections could be even lower.</p>
--	---	--

<p>Southern Africa</p> <p>South Africa</p> <p>Lesotho</p>	<p>Hot and dry weather at the start of the planting season; maize prices up 10% over drought fears; below average rainfall over the central and eastern Free State had hampered farmer's planting of white maize; the country's white maize planting is 25-30% complete (from a 70% normal), although some of the lack of planting is from fear of drought.</p> <p>High temps and below average rainfall (precipitation was below normal for all of November, especially in the south); drought has restricted plowing and crop planting in the lowlands; winter wheat growing has not reached the grain filling stages and is short and dwarfish, resulting in low production; river flows are low and ground water has lowered causing some wells to dry up; heat and overgrazing is hurting range conditions; government asked that urban and rural needs surveys and drought reports be compiled; the government is planning increased drought training, coordination and public education; a National Drought Relief Plan is pending; the sale of wheat flour has been liberalized, while the restrictions on bread and wheat products still hold; subsidies for Japanese fertilizer has been maintained; the government has distributed tractors in all districts for use by farmers in preparing the 1997/98 summer crops.</p>	<p>Even though steady localized rains are occurring, predictions are for the worst drought in 15 years at the beginning of next year, although, expected dry weather over southern Africa this summer may shift westwards (December, January and February will be the danger period); drought could affect 27 million people across southern Africa (emergency aid to these population would require 600,000 tons of food aid at a cost of \$200 million).</p> <p>Normal rain over December falling to below normal in January through March; maize production could be 35%-50% below normal (mainly Gauteng, Northern and Mpumulanga provinces); a 50% reduction in current season maize could reduce foreign exchange by over a billion rand; white maize futures could rival import costs at 1,050-1,150 rand a ton; El Niño to fade after April and will not reduce next summer's rainfall; increase flow of refugees to South Africa burdening social welfare systems and fueling crime.</p>
--	---	---

<p>Southern Africa (cont.) Malawi</p>	<p>Still publicizing need to plant early maturing maize varieties and drought tolerant crops; few farmers have heeded the advice to plant early; planning drought safety nets through Food for Work and targeted relief distributions (through Mother and Child Health Clinics); donors are encouraging further liberalization of the maize price band; established a rationing system for selling maize; government is readying contracts for the purchase of 33,000 tons of maize.</p>	<p>Less of the southern region may be impacted than originally believed.</p>
<p>Mozambique</p>	<p>Early rains in the southern part of the country, while some districts in Gaza and Inhambane provinces (traditionally drought-prone) are vulnerable; to alleviate drought losses, the government has proposed to support imports for traders and create a physical reserve of 100,000 tons (all country stocks would be considered as reserves) of maize to prepare for drought; government is securing funds and meeting with businesses and traders to prepare for drought.</p>	
<p>Zimbabwe</p>	<p>In most areas, below normal rains in November have since been alleviated by normal or above normal rainfall; planting is occurring in some areas and tilling in most others; even though the country has adequate water supplies, farmers have been encouraged to plant short-season varieties of maize and drought tolerant crops like sorghum, millet and sweet potatoes; some farmers are using less fertilizer for fear of drought; measures have been taken to protect national park wildlife from drought; grain reserves and funds have been appropriated; government is promoting “massive” drought awareness campaigns.</p>	<p>Commercial farmers are predicting decreased output of various products, including maize, however the export availability of grain for the next year is expected to be minimal.</p>