

## 54th DIRECTING COUNCIL

### 67th SESSION OF THE WHO REGIONAL COMMITTEE FOR THE AMERICAS

Washington, D.C., USA, 28 September-2 October 2015

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*Provisional Agenda Item 4.12*

CD54/22

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Original: Spanish

### EL NIÑO 2015-2016 IN THE REGION OF THE AMERICAS

#### Background

1. El Niño is one of the most significant events affecting the countries of the Region, especially those of South America. During the 20th century, Ecuador, Peru, and other countries recorded three El Niño events of extraordinary characteristics that critically affected the economy and the productive and social sectors, and increased the burden of disease. In Ecuador, El Niño 1997-1998 affected seven million people (60% of the population of the country), seriously impacting more than 30,000.
2. El Niño, in varying degrees of magnitude, raises the surface temperature of the sea and air in the region, which increases the intensity of rain and the appearance of warm-water marine species.<sup>1</sup> El Niño causes worldwide changes, altering the climate in the Central Equatorial Pacific, and changing the atmospheric pressure in the Pacific, from Darwin (Australia) to Tahiti (central-eastern tropical Pacific). The impact of the anomalies in the atmosphere/ocean system of the Southern Hemisphere, along the equatorial band of the Pacific Ocean associated with El Niño, has repercussions on other regions of the world and affects their temperature and precipitation patterns.
3. The effects of El Niño are manifested in excessive precipitation in countries such as Chile, Ecuador, Paraguay, and Peru; and in precipitation deficits in others, such as Bolivia, Colombia, Mexico, Venezuela, and the countries of Central America. This is compounded by changes in cloud cover and corresponding solar radiation, causing temperature increases that affect the demand for water and electricity.
4. The negative economic impact of El Niño 1997-1998, in terms of damaged or destroyed infrastructure and services, was approximately US\$ 7.5 billion<sup>2</sup> in Bolivia,

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<sup>1</sup> *El fenómeno de El Niño en el Perú*. SENAMHI 2014.

<sup>2</sup> Unless otherwise indicated, all monetary figures in this document are expressed in United States dollars.

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Colombia, Ecuador, and Peru, 848 million (11%) of which corresponded to the housing, education, health, drinking water, and sanitation sectors, as can be seen in Table 1.

**Table 1. Estimated damages associated with El Niño, 1982-1983 and 1997-1998 (million dollars)**

Country	1982-1983	1997-1998
Bolivia	1,372	527
Colombia	n/a	564
Ecuador	1,051	2,882
Peru	3,283	3,500
<b>Total</b>	<b>5,706</b>	<b>7,473</b>

Source: Andean Development Corporation (2000)

[http://www.comunidadandina.org/predecan/atlasweb/chapters/el\\_nino\\_y\\_la\\_nina/2.html](http://www.comunidadandina.org/predecan/atlasweb/chapters/el_nino_y_la_nina/2.html)

5. There was a very significant negative impact on the productive sectors, due to lost income and lower living standards in large population groups, especially low-income groups and those most vulnerable, such as children, the elderly and women.<sup>3</sup> Lost income was related to the drop in productivity, with thousands of person-hours of work lost due to increases in, or the emergence of diseases such as dengue and malaria, among others.

6. An El Niño event lasts for over a year but its consequences are felt for several years. During its impact stage (November to May), it causes various small to large-scale emergencies in different parts of the countries, many of them repeating in the same place, because of the way El Niño manifests itself.

7. During and after the impact stage, access to health services, especially by the most vulnerable population, is limited by the physical collapse or inaccessibility of health facilities. Despite protective measures, physical infrastructure is affected and thousands of people lack health care when they need it most. During El Niño 1997-1998, 557 health facilities in Peru and 91 in Ecuador<sup>4</sup> were damaged and it took several months or years to completely repair or rebuild them.

8. Due to the deterioration in housing and environmental conditions, El Niño is mainly associated with an increase in vector- and water-borne diseases. For example, malaria in Ecuador increased from 14,633 cases in 1982 to over 78,599 in 1984, an increase of 440%.

<sup>3</sup> ECLAC. Economic and Social Effects of El Niño in Ecuador, 1997-1998. Its impact on the Andean economies.

<sup>4</sup> Pan American Health Organization. *Crónicas de desastres. El fenómeno de El Niño 1997-1998*. (In Spanish).

**El Niño 2015-2016**

9. The International Center for Research on El Niño (CIFEN) reports that, as of September 2015, El Niño is in a mature phase in the tropical Pacific; it is currently strong, is continuing to strengthen, and has been affecting the regional climate for several months. The consensus among global prediction models is that this phenomenon will reach its peak intensity between November 2015 and January 2016, and could continue into the early months of 2016. It is believed that this El Niño event could be one of the four strongest since 1950.

10. El Niño directly impacts the infrastructure of health facilities and its effects stem from deficiencies and errors in the planning, design, and construction of these facilities, and the lack of programs for mitigating the potential impact of disasters. Other contributing factors include the location and characteristics of the sites selected for construction, geological and climatic conditions, building materials, water supply and electrical services, and geographical access. Damage to facilities significantly limits health care and can interrupt public health programs and interventions for the communities.

11. Interruptions in the electric power supply can affect continuity of health care services and the normal operation of the cold chain of vaccines, drugs, and other supplies. This is compounded by interruptions in communication channels caused by damages to road infrastructure, leaving large populations isolated and possibly interrupting the medical supply chain to rural and very remote areas. This would put at risk the continuity of emergency care, as well as programs for maternal and child health, mental health, noncommunicable diseases, and others.

12. Furthermore, the very intense rains characteristic of El Niño would cause flooding, overflowing rivers, *huaycos* (or *llocllas* in the Quechua language: highly destructive flows of mud and stone) and landslides, altering the environment and tending to increase disease vectors as well as problems in drinking water supply and excreta disposal. This, in turn, would change the behavior of certain diseases such as malaria, dengue, cholera, rabies, plague, leptospirosis, acute diarrheal diseases, acute respiratory infections, equine encephalitis, and skin diseases.<sup>5</sup> An increase in cases of acute diarrheal diseases and acute respiratory infections, malaria, dengue, chikungunya, and leptospirosis would result in excessive demand for health care, especially at the first levels of care, which, compounded by the limited continuity of operations, could lead to a functional collapse of health services.

13. Earlier El Niño events show that one major risk factor is a shortage of drinking water caused by the collapse of potable water systems, leading to an increase in human consumption of unsafe water. An increase in acute diarrheal diseases would be linked to higher air temperatures and limited access to safe water resulting from the collapse of

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<sup>5</sup> PAHO/WHO, El Niño and its Impact on Health, Document CE122/10, 4 May 1998.

drinking water and sewerage systems. All this is compounded by the risks derived from the rationing of public drinking water and the need for household storage, much of it in uncovered and inadequate containers that become breeding sites for disease vectors, in addition to inappropriate food handling.<sup>6</sup>

14. Acute diarrheal diseases would increase, especially due to higher air temperatures and a shortage of available drinking water and sanitation; and there is a further risk that some shelters for victims would not meet proper health standards. Coupled with improper food handling in emergency dining halls, this would facilitate the proliferation of diseases such as cholera, typhoid fever, and salmonellosis, among others.

15. Skin diseases are common in this type of events, mainly among children. The most frequent cases involve infections, excoriations or superficial wounds, allergic dermatitis, pyodermitis, and fungal diseases, among others. Ocular diseases would result from contaminated dust, after flooded areas dry up, causing cases of conjunctivitis. This would be exacerbated by the removal of rubble, polluting the air with dust particles from mud mixed with wastewater.

16. In light of the floods caused by El Niño 1997-1998, it is known that numerous pools form, creating mosquito breeding sites; new outbreaks of dengue and chikungunya fever could therefore be expected in some countries. Another consequence of the intense rains is the appearance of pests such as rodents, especially on crop land, making it important to strengthen preventive measures against plague and leptospirosis, especially in the post-El Niño stage.

17. Table 2 summarizes the risk of the occurrence of diseases, many of them endemic in the countries potentially affected by El Niño.

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<sup>6</sup> *Memorias del Fenómeno de El Niño 1997-1998, Retos y Propuestas para la Región Andina*. Corporación Andina de Fomento, 2000. (In Spanish).

**Table 2. Potential epidemic risk due to the effects of El Niño**

<b>Event</b>	<b>Disease</b>	<b>Probable Sources of Contamination Determinants of Risk/Risk Factors</b>	<b>Risk Potential</b>
<b>Floods</b>	Acute respiratory infections (ARIs)	Overcrowding. Exposure to cold for lack of shelter. Dampness.	++++
	Food poisoning	Mass feeding (common meals) and inadequate refrigeration/cooking. Distribution of donated food without bromatological control.	++++
	Cholera	Higher air temperature. Contamination of water/food. Overcrowding. Collapse of water systems and sewerage. Recent endemic and epidemic cases.	+++
	Viral hepatitis A	Contamination of water/food. Poor sanitation.	+++
	Salmonellosis, Shigellosis	Overcrowding, living in shelters. Contamination of mass feeding (common meals). Poor sanitation.	+++
	Skin infections	Polluted water for personal hygiene. Overcrowding.	+++
	Malaria, dengue, chikungunya	Presence of mosquito breeding sites. Increase in temperature.	+++
	Leptospirosis	Water and food contamination. Stagnant water.	+++
	Eye infections and conjunctivitis	Poor hygiene. Contact with polluted water. Overcrowding of people at risk.	+++
	Rabies	Destruction of dwellings by rains, increasing the number of stray dogs.	+
	Pests	Lack of protection against intrusion of rodents infected with fleas. Overcrowding.	++
	Tetanus	External injuries, walking barefoot in muddy or flooded areas.	++
<b>Droughts</b>	ARI, allergic problems	Overcrowding. Dryness of respiratory mucous membrane.	+++
	Skin infections	Lack of water for personal hygiene. Overcrowding.	+++
	Foodborne diseases	Mass feeding (common meals) and inadequate refrigeration/cooking. Distribution of donated food without bromatological control.	++

18. In addition to the health problems mentioned above, cases of ophidism would occur, especially in parts of Ecuador and Peru, as well as psychosocial problems in affected communities, with the greatest impact on the most vulnerable groups.

19. The preparation for, response to, and recovery from El Niño present great challenges for the countries of the Region, requiring the sharing of experiences and information in order to strengthen the protection of infrastructure, capacity-building, and the adoption of measures to guarantee the continuity of services that ensure people's

access to health services, especially during the highest-impact phase of the event. It is important to consider mobilizing resources among the countries that will be affected, facilitating the entry of international medical teams, and organizing joint activities in border areas.

20. The following lines of work will be implemented as part of interventions by the ministries of health in coordination with civil protection and defense systems, and with public and private health organizations at the different levels of government:

- a) *Strengthening human resource capacities* for coordination, risk assessment, information management, emergency management, the prevention and control of diseases and environmental risks, and community education.
- b) *Promotion of healthy practices with community participation* based on raising public and community awareness of basic hygiene and prevention measures in order to prevent the spread of prevalent diseases, prioritizing vulnerable populations and those living in shelters. It is considered important to strengthen the work of community organizations and the participation of local authorities from other sectors, including housing and water and sanitation.
- c) *Epidemiological surveillance* by strengthening situation rooms, managing and reporting information on tracer diseases in order to prevent outbreaks and epidemics, active case-finding and sample collection in cases of fever, and strengthening the operation of public health laboratories.
- d) *Disease control* through interventions to reduce the presence of vectors and rodents, increased vaccination coverage as appropriate, and access to early diagnosis and timely treatment of diseases related to El Niño.
- e) *Information management* by strengthening the capacity to collect and analyze information through the emergency operations centers and through the monitoring mechanisms of civil protection and defense systems at the departmental and local levels. It is essential to have a communications network that facilitates continuous, real-time contact between health facilities and the different levels of government.
- f) *Environmental health* with a view to strengthening capacities for quality control of drinking water, excreta management, solid waste management in communities and health facilities, vector monitoring and control, and the monitoring of food safety and health conditions in shelters and in areas surrounding health facilities in order to prevent the spread of disease.
- g) *Continuity of services* through the purchase and distribution of drugs and medical equipment that guarantee care even when there is very high demand for services, the management of human resources for health, provision of back-up supplies (water tanks, electric generators) to keep services operating, and strategies to quickly rebuild damaged infrastructure, such as the use of temporary units or field hospitals as a contingency measure. It is essential to keep programs operating in

- the areas of maternal and child health, noncommunicable diseases, and mental health, among others, in addition to public health interventions.
- h) *Protection of infrastructure* by strengthening and outfitting priority health facilities to ensure that those located in areas likely to suffer the effects of El Niño continue to serve the population's needs. This includes preventive and corrective maintenance of infrastructure and medical equipment, including activities such as waterproofing roofs, installing drains, gutters, and ditches, and building containment walls.
  - i) *Emergency response* by organizing teams or brigades for medical care and mental health. The victim referral and evacuation system will be strengthened, and resources will be increased to control possible outbreaks or epidemics of various diseases.

**Action by the Directing Council**

21. The Directing Council is requested to review the information presented in this document and study the possibility of approving the proposed resolution found in Annex A.

Annexes

## 54th DIRECTING COUNCIL

### 67th SESSION OF THE WHO REGIONAL COMMITTEE FOR THE AMERICAS

Washington, D.C., USA, 28 September–2 October 2015

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CD54/22  
Annex A  
Original: Spanish

#### ***PROPOSED RESOLUTION***

#### **EL NIÑO 2015-2016 IN THE REGION OF THE AMERICAS**

#### ***THE 54th DIRECTING COUNCIL,***

(PP1) Having considered *El Niño 2015-2016 in the Region of the Americas* (Document CD54/22);

(PP2) Considering Resolution CSP25.R5 [1998], *El Niño and its Impact on Health*;

(PP3) Considering that, despite the efforts made by the countries of the Region to confront disasters, the health sector continues to be vulnerable to the impact of El Niño events;

(PP4) Recognizing the importance of measures that have been adopted by several countries to strengthen systems for epidemiological and environmental surveillance, risk management, monitoring of the nutrition and food safety situation, and control of communicable diseases;

(PP5) Recognizing the need to prepare communities to address the psychosocial problems resulting from El Niño events and the need to establish safe practices for disease prevention;

(PP6) Convinced that damage to the sector's infrastructure—health facilities, water and sewer systems, and other vital conduits—can be minimized in the event of future catastrophic events and that, as a result, the Member States should make greater efforts to ensure people's access to health services, safe water, and basic sanitation;

(PP7) Recalling the resolutions of the Directing Council, which conferred on PAHO the mandate to promote technical cooperation for health-related disaster

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preparedness and, specifically, to continue cooperation aimed at the sector's preparedness to confront disasters caused by El Niño,

***RESOLVES:***

(OP)1. To invite the Member States to review and update their plans for preparedness, response, and recovery in light of extreme water events such as El Niño.

(OP)2. To urge the Member States that have formulated mitigation and preparedness programs prior to the disasters caused by El Niño to strengthen these programs, maintaining a comprehensive watch for all kinds of risks and focusing on ensuring the continuity of health care.

(OP)3. To urge the Member States that have not yet done so to:

- a) strengthen, as part of their safe hospital programs, the protection of health facilities against intense rains and flooding; and encourage the relevant sectors to adopt measures to mitigate risks in water and sewer systems and other vital conduits;
- b) strengthen their emergency preparedness programs, emphasizing a multidisciplinary approach from the standpoint of epidemiological surveillance, disease control, environmental quality, environmental health, and vector control, as well as disaster preparedness in hospitals and communities;
- c) establish mechanisms to coordinate health-related humanitarian assistance within the framework of the action plan approved by the countries, which facilitates coordination between national authorities and international cooperation agencies to respond to the effects of El Niño;
- d) promote a socioeconomic assessment of the damage caused by El Niño in the health and water and sanitation sectors, and support data collection and medium- and long-term research projects in order to establish with greater certainty the effects of El Niño on human health.

(OP)4. To request the Director to:

- a) strengthen technical cooperation with the Member States in the formulation of policies and programs to prevent and mitigate the damage caused by disasters, focusing on health structures and public health problems;
- b) identify possible sources of financing for comprehensive risk management in response to El Niño, emphasizing the funds available for risk reduction and preparedness;
- c) ask that the members of the Regional Response Team be available for immediate mobilization if a country requests this;

- d) promote efforts at the regional and national levels to safeguard institutional memory regarding El Niño, as well as epidemiological surveillance and research that can lead to a better understanding of the impact of the phenomenon;
- e) promote the exchange among countries of technical information on preparedness and response, with a view to improving the coordination of interventions with a regional vision for confronting El Niño.

## Report on the Financial and Administrative Implications of the Proposed Resolution for PASB

<p><b>1. Agenda item:</b> 4.12 - El Niño 2015-2016 in the Region of the Americas</p>
<p><b>2. Linkage to Program and Budget 2014-2015:</b></p> <p>a) <b>Categories:</b> Category 5: Preparedness, surveillance, and response</p> <p>b) <b>Program areas and outcomes:</b></p> <p>5.3 Emergency Risk and Crisis Management OCM 5.3: Countries have an all-hazards health emergency risk management program for a disaster-resilient health sector, with emphasis on vulnerable populations.</p> <p>5.5 Outbreak and crisis response RIT 5.5: All countries adequately respond to threats and emergencies with public health consequences.</p>
<p><b>3. Financial implications:</b></p> <p>a) <b>Total estimated cost for implementation over the lifecycle of the resolution (estimated to the nearest US\$ 10,000, including staff and activities):</b> US\$ 650,000: \$150,000 in 2015, and \$500,000 in the two following years.</p> <p>b) <b>Estimated cost for the 2016-2017 biennium (including staff and activities):</b> \$500,000.</p> <p>c) <b>Of the estimated cost noted in b), what can be subsumed under existing programmed activities?</b> 50% of the cost estimated in section b) could be covered by currently programmed activities.</p>
<p><b>4. Administrative implications:</b></p> <p>a) <b>Indicate the levels of the Organization at which the work will be undertaken:</b> At regional, subregional, and national levels.</p> <p>b) <b>Additional staffing requirements (indicate additional required staff full-time equivalents, noting necessary skills profile):</b> Although additional personnel will not be needed to implement this resolution, it is estimated that 5% of a regional P4, 5% of three subregional P4s, and 10% of five national P2s will be devoted to monitoring and supporting the countries in the implementation of this resolution.</p> <p>c) <b>Time frames (indicate broad time frames for the implementation and evaluation):</b> 2015-2017</p>