



HAVE WE LEARNT THE LESSONS FROM THE 1997-98 EL NIÑO?

Dr. Michael H. Glantz

Senior Scientist

National Center for Atmospheric Research
Boulder, Colorado, USA

Problems in coping with the impacts of an El Niño event,¹ and possibly of other natural hazards as well, are centered on jurisdictional disputes among government agencies, forecast reliability, lack of education and training about the El Niño phenomenon, political and economic conditions (or crises) existing during the event, lack of resources to cope in a preventive or mitigative way, lack of donor sensitivity to local needs, poor communications, lag time between forecast and impacts and between impacts and responses, responses and reconstruction and so on.

The sad fact is that many of the lessons from the 1997-98 event are those that have been identified by other countries facing a wide range of types of natural hazards. What seems to be lacking are the actions to remove the weaknesses and to reinforce the strengths of society's responses to these hazards. It is time for governments to confront the known obstacles to needed changes in the way they respond to natural hazards. In this regard, social, economic and political solutions must be sought. A blind faith in or dependence on new technologies such as high-tech early warning systems is not enough. The questions that should now be addressed in open forum are questions such as: What are the solutions needed for a more effective response to El Niño-related societal and environmental impacts? And, perhaps more importantly, are many of those solutions known by governments, researchers and individuals but not applied?

While one can find acceptable reasons to excuse any of the inappropriate

responses taken by governments, industries or individuals to the 1997-98 El Niño, that should not be the case when it comes to the next El Niño events. Some of the lessons that ought to have already been learnt are²:

- El Niño is inseparable from broader issues of climate variability and change³. This underscores the importance of concerted efforts on the part of governments and non-governmental organisations to continue research into climate variability, to improve forecasting skills and to develop appropriate policies for mitigating the impact of climate extremes
- The mitigation of the negative impacts of El Niño and other extremes of climate variability will require ongoing international support from the UN Climate Agenda
- International commitment is critical to the development and operation of a Global Climate Observing System
- To be fully effective, impact assessment studies at the national and regional levels must be multidisciplinary
- Policies for the mitigation of the impacts of climate extremes must be integrated into sustainable development strategies
- Governments must ensure that the appropriate scientific and technical infrastructures are adequately supported, and secondly, they must ensure that information and prediction services are accessible to policy and decision makers for planning early warning and better management across a range of sectors, including disaster reduction
- Effective disaster reduction strategies are possible and stand a better chance of being sustained if they are multidisciplinary in nature, and integrated within

1. *El Niño can briefly be defined as the anomalous appearance of warm sea surface temperatures in the central and eastern equatorial Pacific Ocean from time to time. The southern oscillation refers to a seesaw-like pressure pattern in the western part of the tropical Pacific. El Niño originally refers to the appearance of warm water off the coast of Peru and Ecuador, where the upwelling of deep cold ocean water normally occurs. By the 1970s, it was realized that these two Pacific Ocean phenomena interact affecting climate processes around the globe*

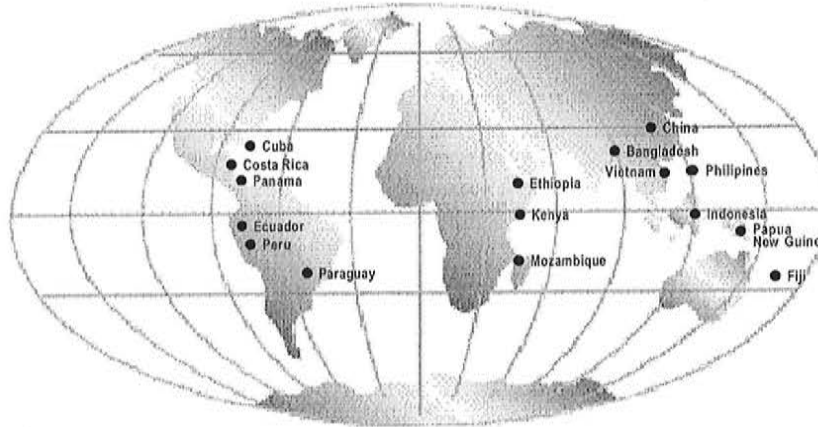
2. *Lessons Learned from the 1997-98 El Niño: Once burned, twice shy?, A UNEP/CAR/UNU/IWMO/ISDR Assessment, Public Affairs Section, United Nations University, October 2000. Available in PDF format at <http://www.esig.ucar.edu/untenFinal.pdf>*

3. *The 1997-98 El Niño Event: A Scientific and Technical Retrospective, World Meteorological Organization, 1999*



Guest editor:
Jorge Falla
jorgefalla@yahoo.com

COUNTRIES THAT PARTICIPATED IN THE EL NIÑO SURVEY 1997- 1998



broader policy concepts pertaining to a society's economic growth and social development

A 'culture of prevention' becomes even more important when applied to the consequences of recurrent phenomena, such as El Niño events, that can have both varied and severe social and economic consequences

It is necessary to appreciate that societal conditions of potential vulnerability are dynamic, affected as they are by changes over time in demography, land use, infrastructure development (or deterioration), etc.

Many adjustments are likely to be required in the ways societies operate to make El Niño earliest warnings more effective. Such societal changes may include, for example, a change of bank credit policies, a strengthening of infrastructure for transportation, communication and health, or identifying the currently at-risk populations, regions and socio-economic sectors. Also environmental degradation must be taken into account in such assessments because existing degradation can magnify the adverse impacts of El Niño in different locations.

Not unlike other sectors of society, in the case of public health, many factors interplay to make an existing bad situation much worse in the event of an El Niño, e.g. existing poverty, an economic 'meltdown' (as was the case in Asia in the late 1990s), inadequate public health facilities, and even the International Monetary Fund's restructuring policies (as was the case during the 1991-92 El Niño in Zimbabwe and Peru).

Within this framework, Forecasting By Analogy (FBA) is a useful predictive tool. FBA refers to the process of

assessing the impacts on society of recent climate-related anomalies (droughts, floods) and assuming that, in the absence of any major societal changes, similar anomalies in the near future are likely to have similar impacts. Such analogies can help to identify strengths and weaknesses in today's societal responses to recent droughts, floods, fires, frosts or cyclones. While there is no certainty about the similarity of future impacts to those of the recent past, a historical retrospective does provide a glimpse of possibilities for which society might prepare.

For example, since the early 1970s, many researchers have focused on the impacts of El Niño on Peruvian fisheries but few, if any, had given any thought to its devastating impacts on Peru's textile industry. As another example, El Niño has always had a negative effect on the Peruvian mining industry. As a result of floods and landslides, roads and bridges are destroyed, which in turn mean, mineral concentrates cannot leave the mines and reach their port of destination, nor can vital supplies (fuel, food, chemicals) reach the mines. Power shortages could also ensue, drought in the highlands reduces water supplies since a sizeable proportion of the Peruvian energy mix comes from hydropower plants. Few, if any studies, have looked at El Niño's impacts on the mining and energy industries.

In the case of Perú, the ENSO (El Niño – Southern Oscillation)⁴ cycle must be considered by policy makers as a recurrent event in national planning (civil defense, urban zoning, construction codes) rather than as an anomalous and temporary condition. Government policy makers must realize that climate affects their policies in good and bad ways. They must realize that

El Niño information can be used not only for disaster early warning but also for enhancing the prospects of sustainable development over the long term. Hence, government authorities need to – no, must – encourage the study of climate-society-environment interactions. Only then will known solutions to environmental problems be properly applied.

4. The basin-wide phenomenon is referred to as ENSO (El Niño – Southern Oscillation). ENSO has both a warm and a cold phase. The cold phase is referred to as La Niña, El Niño is the warm phase