

SCOR WORKING GROUP 55  
PREDICTION OF EL NIÑO

Report from organizational meeting

6-7 December 1976

In late 1976 the SCOR Executive established this new Working Group with the following terms of reference:

“To examine possible prediction scheme and indices for El Niño and to recommend the research needed to define the processes that should be taken into account in such forecasting procedures.”

An organizational meeting of the members was held in San Francisco, 6-7 December 1976. The members of the group are Dr M. Kanamitsu, Tokyo, Dr P. Lagos, Lima, Dr J. Namias, La Jolla, Dr J. O'Brien, Tallahassee, Dr R. Parra, Cartagena and Dr K. Wyrki, Honolulu. Drs Lagos, Namias, O'Brien and Wyrki attended this first meeting. Dr W. Patzert, La Jolla, attended as an observer. Dr J. Namias was chosen by SCOR to be interim Chairman. The SCOR Executive has not chosen the Working Group Chairman. The Working Group plans its first formal meeting in summer 1977.

In order to address its terms of reference, Working Group 55 will investigate and encourage a broad base of research and data collection related to the problem. Some members of the Working Group believe that a concise and useful definition of 'El Niño' is required if prediction is to be useful. In other words, we must define the requirements for prediction schemes by first defining El Niño. The Working Group recognises the importance of regional studies like ERFEN (Estudio Regional del Fenomeno El Niño), and process experiments like CUEA JOINT II (Coastal Upwelling Ecosystems Analysis Programme).

However, El Niño is clearly a large-scale phenomena and the monitoring data required for any prediction model must be obtained in the atmosphere and in the ocean over the equatorial Pacific, and perhaps elsewhere.

It is apparent that present ideas, indices and prediction schemes are severely limited by the lack of adequate data to test usefulness, skill or suggest refinement of existing hypotheses. The Working Group will encourage scientific investigations of El Niño.

Carefully posed hypotheses must be developed and then tested if the proper design of appropriate monitoring programmes and subsequent prediction programmes are to be developed.

Since El Niño (still undefined) is not a periodic phenomena and its time and space scales are large, Working Group 55 envisages that research programmes will require many years of execution if success is to be achieved.

Working Group 55 recognises that the development of useful prediction schemes requires the collective input of both skilled meteorologists and oceanographers. Previous El Niño investigation have concentrated on either atmospheric mechanisms which might lead to anomalies or oceanographic descriptions of anomalies. El Niño is a large-scale

atmospheric and oceanographic climate fluctuation and it is to be expected that investigations by both disciplines will be desired. These investigations will be broad. They must include large-scale atmospheric and oceanic descriptions, long term time-series of carefully selected variables in the ocean and atmosphere and development of coupled air-sea numerical models. Use of modern satellite-derived data will certainly be very useful in the investigations.

SCOR Working Group 55 will establish intellectual contacts with other SCOR Working Groups in order to foster scientific inquiry on El Niño.

SCOR Working Group 49 on Mathematical Modelling of Oceanic Processes will be asked to recommend specific research related to equatorial modelling. SCOR Working Group 56 on Equatorial Upwelling will be asked to recommend field programmes which could gather necessary data on El Niño phenomena. SCOR Working Group 47, GARP/FGGE, will be requested to designate El Niño studies as a prime candidate for large-amplitude climatic investigations.

The Working Group will consider encouraging GARP, the equatorial theoretical panel of Working Group 49, the NORPAX investigations, the ERFEN project and other interested scientific groups to concentrate on studies related to El Niño. The Working Group will consider recommending the formation of a scientific centre for intensive investigations of El Niño. These and other scientific concerns will be considered in the next year. SCOR Working Group 55 will also consider recommending that studies be done of the socio-economical consequences of El Niño.