
EDITORIAL

Preparing for *El Niño* - will Indonesia be ready?

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Indonesia endured its worst ever forest fires in 1997, when the *El Niño* effect, combined with extensive peat-development, caused more than 45.000km² of forests to dry out and burn (Hansen et al., 2013; Heil and Goldhammer, 2001). Together with extensive forest fires in Peninsular Malaysia and in the Malaysian state of Sarawak, it caused a large part of Southeast Asia to be engulfed in a thick layer of smoke. This resulted in tremendous costs to the society with an estimated 20 million people suffering respiratory illnesses in Indonesia alone (Brauer, 1997; Emmanuel and Lim, 1998; Heil and Goldhammer, 2001; WHO, 1998). The fires resulted in forest degradation and deforestation cost of US\$ 1.62-2.7 billion (Tacconi, 2003) and the associated cost of the smoke pollution was estimated at US\$ 799 million (Tacconi, 2003).

The *El Niño* effect, a weather phenomenon that arise with shifting temperature in the Pacific Ocean, alternately brings extreme droughts or wet seasons to the region in a cycle of approx. 7-9 years. Following this, 2014 should have been an *El Niño* year, but while dry it never became extreme. It did, however, send a stark reminder of what is to come, and the weather predictions already warns of an upcoming year with extreme low rainfall. In October 2014, NASA warned that a pattern of sea surface heights and temperatures have formed that resembled the way the Pacific looked in the spring of 1997 (Molina, 2014). That turned out to be the precursor of the most severe *El Niño* on record.

With the early warning system in place, combined with a vastly superior knowledge about the *El Niño* phenomenon, Indonesia, along with other countries in the region, should take precautionary steps to prevent another disastrous outcome of an *El Niño*. Compared to 1997, much more is at stake for the nation. The rapid economic development that has blessed the country in this millennium may take a serious hit. Compared to the 1997 landscape, there are hundreds of thousands more hectares of peat swamp that have been cleared and drained for palm oil development (Hansen et al., 2013; Heil and Goldhammer, 2001), and therefore, an extreme

drought has the potential to cause significantly more damage to the Indonesian economy, citizens' health and the environment than the 1997 event. With this in mind, will Indonesia be ready this time?

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