General

Extreme heat: El-Nino wreaking havoc

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Of late, the environmental condition in the country has become worrisome as a result of the prevailing extreme high temperature, during a season of dry weather when the count of average monthly rainfall has dipped below the normal level.

The Air Quality Index in a number of districts, like Rompin, Balok, Shah Alam, Putrajaya, Bukit Rambai and Malacca City, has risen to the levels of “Orange: Unhealthy for Sensitive Groups”.

According to a Universiti Malaysia Pahang (UMP) lecturer from the Faculty of Civil Engineering & Earth Resources (FKASA), Dr. Nadrah Aqilah Tukimat, the extreme heat issue in Malaysia is nothing new, but a regular occurrence towards the end of the annual Northeast Monsoon season, falling during the months of February and March.

Notwithstanding, she said the recent drastic increase in temperature up to 38 degrees Celcius and for a prolonged period is rather worrisome. She further questioned whether this could have been the aftermath of the extreme El-Nino weather pattern of 2015-2016.

“If we refer to the trends recorded and compiled under the Oceanic Nino Index (ONI) from 1950 to 2019, there were three occurrences of extreme El-Nino – namely, from 1982 to 1983 (+2.2); 1997 to 1998 (+2.4); and 2015 to 2016 (+2.6) – with a marked pattern of a repeat cycle between 10 and 15 years,” Dr. Nadrah highlighted during an interview aired on UMP TV.

She stressed that the surface temperature in the Pacific Ocean during an El-Nino weather pattern has also shown a dramatic increase over the years, and if nothing is done, future El-Nino could be more extreme and would cause adverse effects than the one recorded for 2015-2016.

She further explained that, for every extreme El-Nino weather pattern, it will be trailed by two consecutive formation of La-Nina; after which, a series of two moderate El-Nino cycles will follow suit – four years after the first extreme El-Nino.

Based on such trend, Dr. Nadrah said the high temperature experienced in Malaysia this year could be the aftermath of the extreme El-Nino weather pattern of 2015 and 2016 – and this could signify the formation stage of the moderate El-Nino cycle mentioned earlier.

“The NINO 3.4 record showed that high temperature weather condition had actually begun to form back in June 2018, and perpetuated for more than six months to March 2019, with readings of below +1.2 (moderate),” she said.

“Nevertheless, the expected parallel increase in surface temperature in the Pacific Ocean (SST) was not consistent, and in fact, had bucked the trend by weakening up to March 2019. Last month, we saw the formation of cold temperature weather pattern on the east side of the Pacific Ocean, and if this persists, it can actually balance out the high surface temperature in the said ocean,” she added.

Dr. Nadrah further explained that the transition of monsoon seasons beginning in April will see a downfall in high temperature weather pattern.

“The National Oceanic and Atmospheric Administration (NOAA) is anticipating the probability of another extreme El-Nino to fall by 60 percent, causing a weak El-Nino to form, instead,” she said.

The frequency in El-Nino formation, she added, could also and probably be associated with the increase in global high temperature (GAT) and the presence of greenhouse effects – which, accordingly, would stimulate the increase in surface temperature in the Pacific Ocean and accelerate the subsequent formation of El-Nino.

She highlighted that NOAA has confirmed a 25 percent increase in the level of carbon dioxide, as a result of human-driven pollution, which has caused an even more extreme El-Nino weather pattern in 2016.

Using the SDSM-AR5 statistical methodology research, studies conducted by Dr. Nadrah predicted that the volatile weather patterns could have an adverse effect on water resources for the long term, while the increase in maximum temperature in areas of Kuantan and Temerloh may touch 35 degrees Celcius with a probability of SPI reading falling to -2.2 (extreme dry) in the coming years.

“This high temperature weather pattern, occurring from February to July also brings low quantity of rainfall, sometimes below 100mm/month in certain months. This kind of data input is important in monitoring the sustainability of water resources for the long run.

“On that note, she advised higher water consumption during heaty seasons and avoid unnecessary exposure to the extreme weather conditions.

“We can’t prevent a natural disaster, but we can prevent a disaster within the disaster,” Dr Nadrah exclaimed at the conclusion of the interview.

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