SRI LANKA

Understanding Connections between Climate, Extreme Weather, Air Quality, and Health with a Glance at Sri Lanka

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IPCC (Intergovernmental Panel on Climate Change) assessment reports indicate that extreme weather events are likely to become more frequent and more intense with changing climate (IPCC Fifth Assessment Report, 2013). Air pollution is exacerbating the situation, causing more severe health issues (WHO, 2016). This Review investigates the health impacts and potential synergies between extreme weather events and air pollution, summarizing some prominent studies published during 2014 to 2017 period. Numerous studies have examined the impact of extreme weather conditions on health, based on air quality and indicate the substantial evidence on air pollution-related health effects during the occasions with various weather extremes.

The annual concentrations of, PM_{10} at Colombo city area exceeded both permissible levels for Sri Lanka and World Health Organization (WHO) signifying the increased health risk associated with poor air quality. More recent measurements also indicate this consistent exceeding of WHO limit.

The extreme warm day percentages showed positive anomaly for all 8 stations during last few decades indicating changed climate and hence weather in Sri Lanka. This basic analysis on extreme warm days and particulate matter variation reflects, some sign of favored background in Sri Lanka for combined effects of heat related weather extremes and poor air quality. Such possibility can cause adverse health issues and can be worsened in future with changing climate according to the evidences seen in other countries as per the literature study.

The study should develop to uncover hidden interactions between pollutants and weather extremes considering health consequences. Air quality measurements in Sri Lanka is not adequate to cover whole country and continuous data are not available for long measuring periods. As a solution for this deficiency in air quality data, the research aims to retrieve satellite-based

air quality data such as aerosol optical depth (AOD) in future steps. Such efforts will improve the extreme weather mitigation systems regulating the human health burden. Moreover, weather forecasts can tailor giving extra warnings to specific vulnerable populations.