SOIL MOISTURE STUDIES IN THE PHILIPPINES USING AMSR-E/AMSR2

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Abstract: This study analyzes the seasonal and interannual variability of soil moisture data derived from AMSR-E for the period July 2002 to September 2011. Soil moisture values are correlated with rainfall derived from rain gauges of synoptic weather stations and TRMM's 3B42 data product. Soil moisture maps produced together with rainfall data were used to identify areas with characteristic soil moisture content vulnerable to climate related natural hazards such as flooding, landslide and drought. For ground validation, the soil moisture content data product from AMSR2, the follow-up mission on AMSR-E launched this May, was also analyzed. This is the first study that looks into the soil moisture of the entire country using accessible satellite data. It aims to embark on a more comprehensive and continuous record of soil moisture of the country that will be useful for crop and agricultural land monitoring and for the study, prediction, and mitigation of extreme weather-related disasters. Also, the output of this study that made use of data spanning for almost a decade can be a benchmark for future studies on soil moisture in the Philippines. And with the launch of AMSR2, the sustainability and continuity of soil moisture records in the country is ensured.

Keywords: soil moisture, AMSR-E, AMSR2, weather-related disasters, TRMM 3B42