

Category	: International Rice Research Conference
Select Theme	: Climate change and environmental sustainability
Endorsement email	:
Keyword 1	: Adaptation to climate change
Keyword 2	: Climate smart agriculture
Keyword 3	: Soil, water, and air pollution
Title of Entry	: A new method to identify seasonal patterns and rainwater availability for rice production
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Select only one type of presentation	: 15 minute oral presentation
Abstract	<p>: Climate change is causing considerable weather uncertainty and shifting seasonal patterns present difficulty in determining the best time to start paddy cultivation according to the availability of rainwater. This paper describes a new method to identify seasonal patterns based on climate data gathered for more than 30 years from a local weather station in Indramayu, West Java, Indonesia. A polynomial equation was used to interpolate cumulative daily rainfall and potential evapotranspiration with resulting excellent conformity for all the years. By subtracting the rainfall rate from the evapotranspiration rate, we can distinguish reasonably effectively seasonal cycles including the start, end, length, and peak of the wet and dry seasons, and can determine rainwater availability in each season. By applying statistical analysis, we can identify seasonal patterns and estimate how much water will be available, whether a surplus or deficit for paddy or other annual crop cultivation. In the studied site, we find the optimistic scenario that dry season would start from day 161 after the first January (mid-May) with a rainwater deficit of 805 mm, and the wet season from day 322 (mid-November) with a rainwater surplus of 1299 mm. Thus, in all seasons, there would be about 494 mm extra rainwater that could be conserved and used to increase planting intensity about 0.9. This method is being adopted to better define the planting calendar in Indonesia.</p>

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