

# Assessment of Global Satellite Mapping of Precipitation Data for Rainfall Measurement in Bangladesh

**M. Rafiuddin\* , Nasreen Akter**

Department of Physics, Bangladesh University of Engineering & Technology, Bangladesh

**Toru Terao**

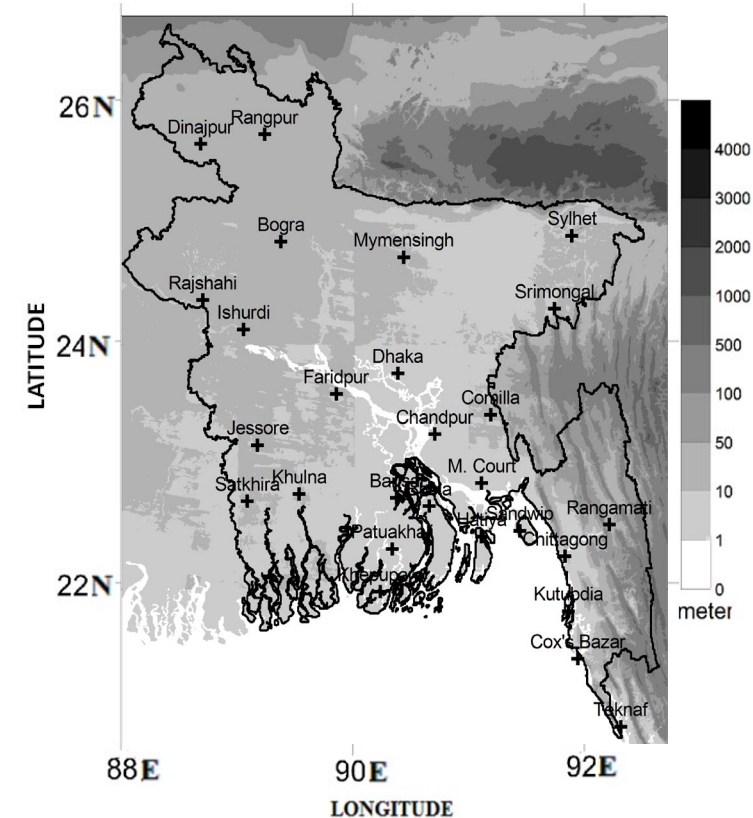
Faculty of Education, Kagawa University, Kagawa 760-8522, Japan

- The spatiotemporal variability of rainfall is very high, which significantly affects agricultural activities and other water-based enterprises in Bangladesh.
- Bangladesh Meteorological Department (BMD) relies on the insufficient number of rain gauge stations to represent rainfall across the country. This study aims to evaluate the GSMaP data with BMD observed rainfall.

**Data:** GSMaP rainfall (versions 7 & 8) and BMD daily rainfall at 35 stations

**Study period:** 2015-2022

This study compares the country's average **daily, monthly, seasonal, yearly**, and BMD operationally used five threshold rainfall with GSMaP rainfall data.



**Figure 1.** Study area and BMD observational sites over Bangladesh are shown with a plus mark.

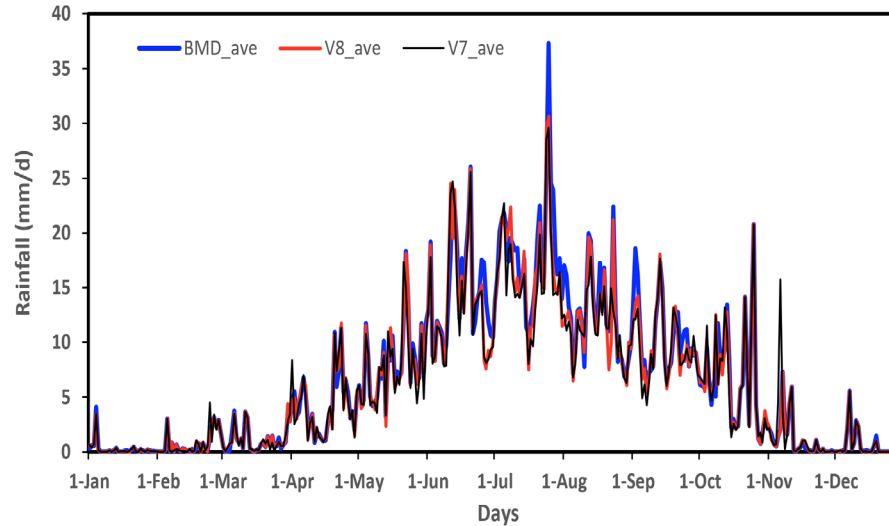


Figure 2. Daily variation of BMD observed, GSMaP V8 and V7 rainfall during 2015-2022.

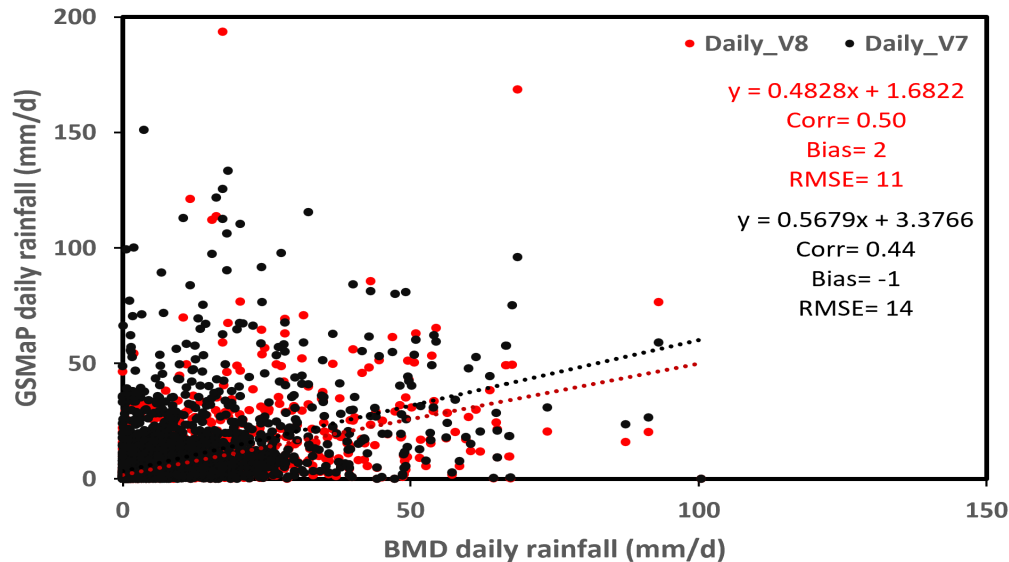


Figure 3. Scatter plot of **daily** average rainfall between GSMaP V8, V7, and BMD rain gauge during 2015-2022.

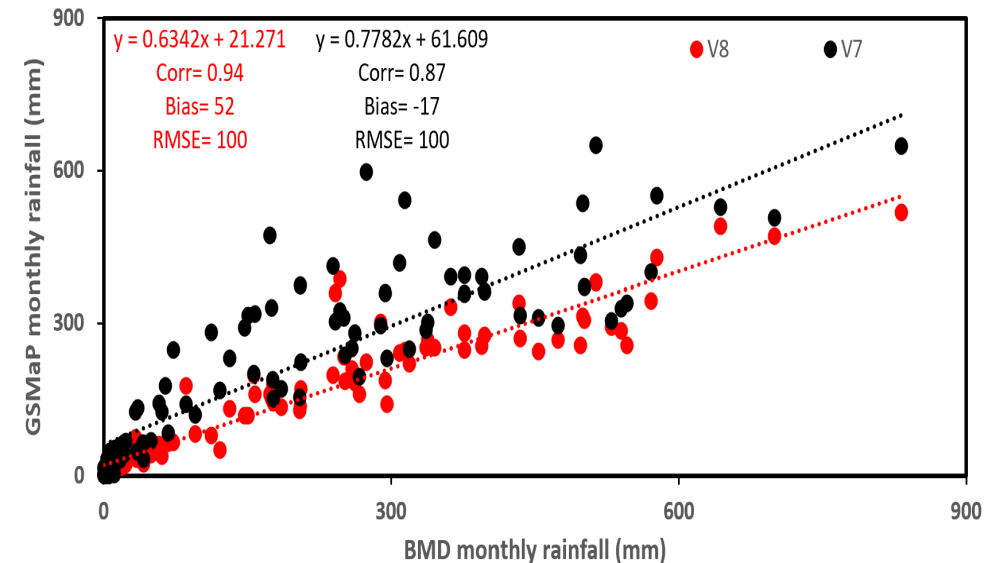
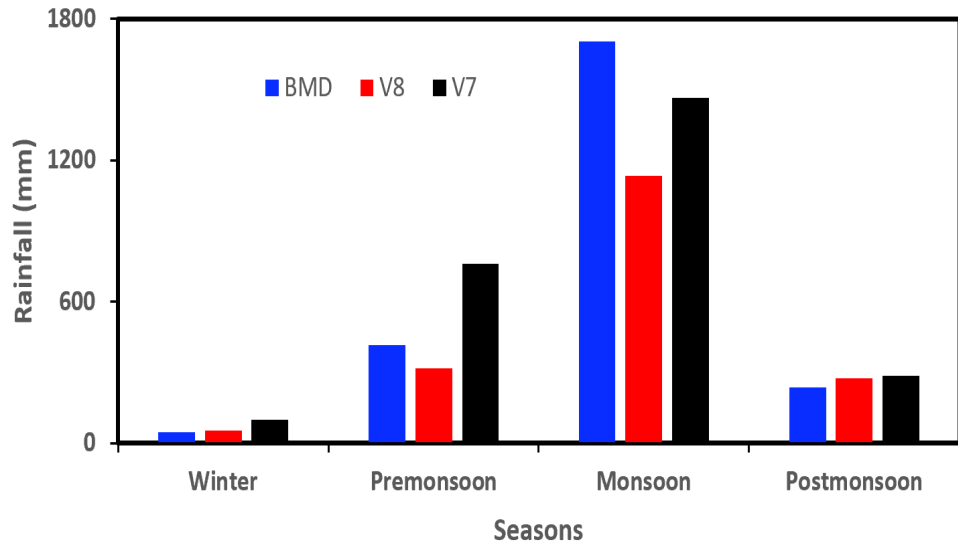
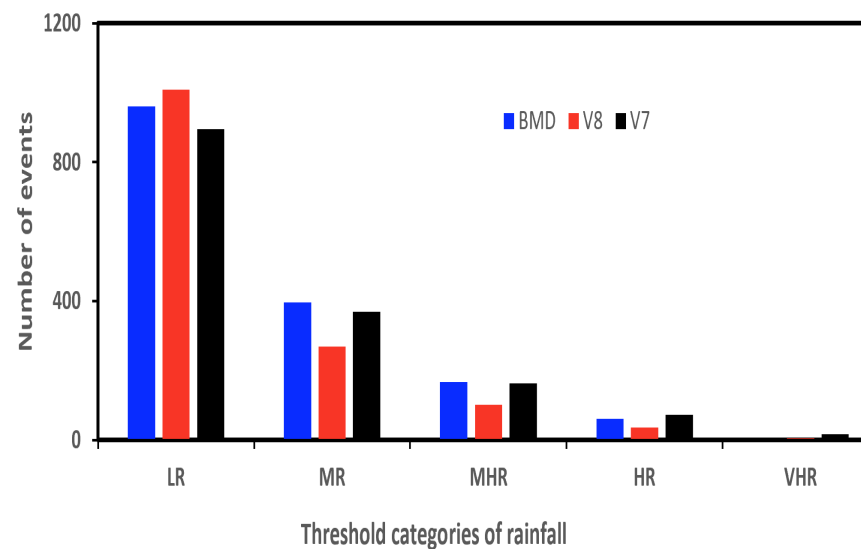


Figure 4. Scatter plot of **monthly** rainfall between GSMaP V8, V7 and BMD rain gauge during 2015-2022.

# Results and Discussion



**Figure 5.** Comparison of **seasonal** rainfall of GSMaP V8, V7, and BMD rain gauge during 2015-2022.



**Figure 6.** Different **threshold rainfall events** measured by GSMaP V8, V7 and BMD rain gauge during 2015-2022.

$01 \text{ mm} \leq \text{LR} \leq 10 \text{ mm}$   
 $10 \text{ mm} < \text{MR} \leq 22 \text{ mm}$   
 $22 \text{ mm} < \text{MHR} \leq 43 \text{ mm}$   
 $43 \text{ mm} < \text{HR} \leq 88 \text{ mm}$   
 $\text{VHR} > 88 \text{ mm}$

	GSMaP V8	GSMaP V7
<b>Daily Correlation</b>	<b>0.50</b>	<b>0.44</b>
<b>Monthly Correlation</b>	<b>0.94</b>	<b>0.87</b>
<b>Seasonal rainfall measurement</b>	<b>Good for Winter, Premonsoon, and Postmonsoon</b>	<b>Good for Monsoon</b>

# Thank you!!!!

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