

## WG1: Extreme Rainfall in Kampot Province (Cambodia)

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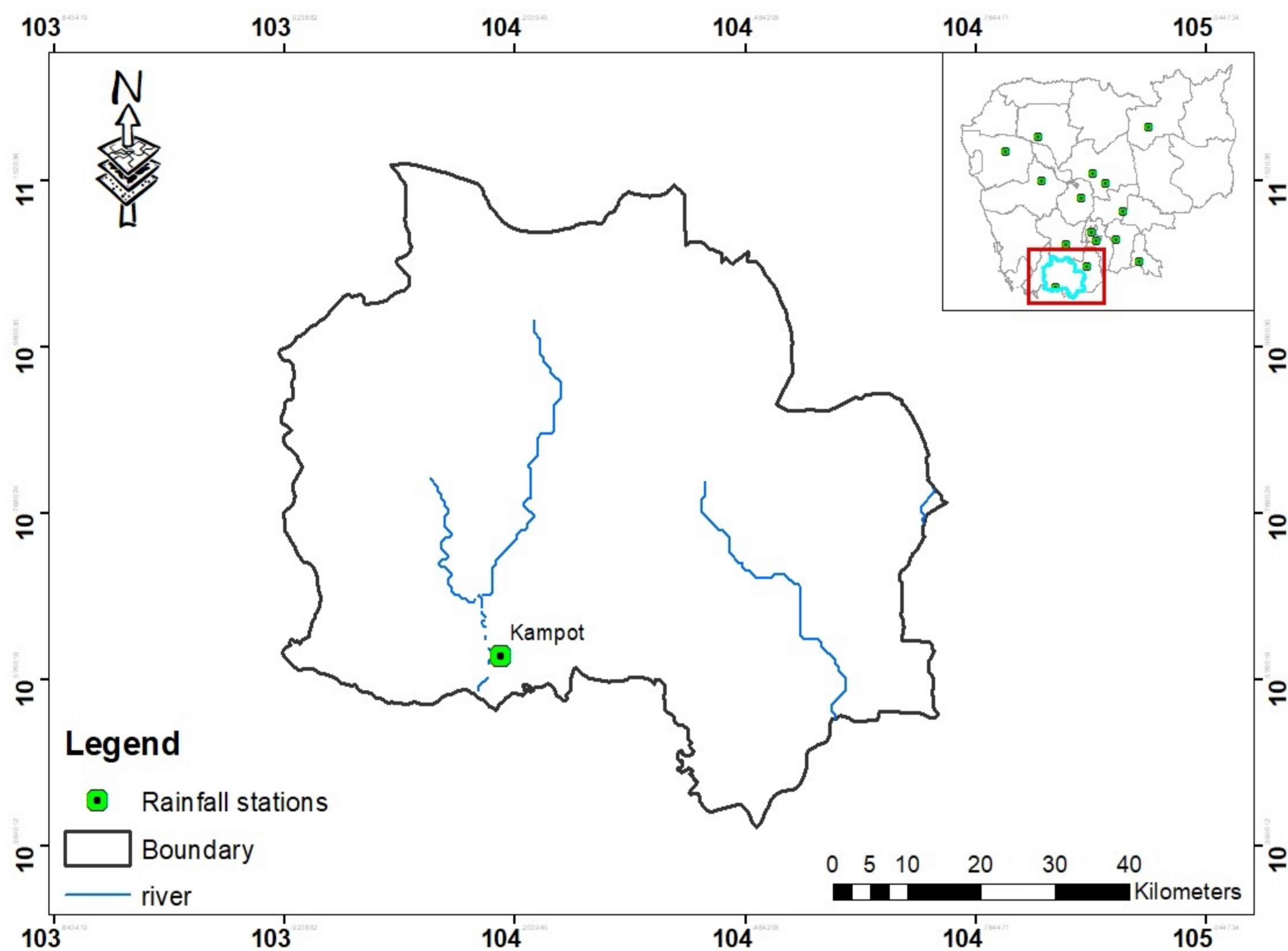
### INTRODUCTION

Nowadays, the topic of climate change and global warming have attracted the attention of all researcher regarding the future climate status of the world. Changes in extreme events, such as heavy precipitation, drought, and heat waves, have attracted a lot of attention because of their devastating consequences on society and the economy. This research focuses on the extreme change in precipitation using the RCLimDex model in Kampot province for the period 1991–2021.

### METHODOLOGY

#### Study Area

Kampot Province is on the south-west coast of Cambodia, on the Gulf of Thailand. Kampot town, the province's capital, is located on the Kampot River, just a short way south-east of Bokor Mountain National Park. Kampot Province also encircles Kep Province, a tiny, recently created province with a few sandy beaches that serves as the beach destination for the region.



#### Software/ Programme

The extreme rainfall indices were calculating using Rclimdex for the daily rainfall data in Kampot. The Rclimdex has been developed by Zhang and Yang (2004).

### Reference

1. Chu, P.-S.; Chen, D.-J.; Lin, P.-L. Trends in precipitation extremes during the typhoon season in Taiwan over the last 60 years. *Atmos. Sci. Lett.* 2013, 15. [CrossRef]
2. B. Xuebin Zhang et al., "RCLimDex (1.0) User Manual," 2004.

### Software Tools



### RESULTS

#### I. Extreme rainfall indices

Depending on the rainfall values of the station and by using RCLimDex, the annual time series of ten extreme rainfall indices in the study region are shown in Figure below. In Figure 1 and 2, showed a positive of slope with a rate of 0.1931 and 0.1875 day per year. R95p and R99p indicated a downward trend with a change rate of -2.7652 and -0.8604 mm per year, respectively. The values of RX1day and Rx5day were similar, and the rate of negative trend -0.359 and -0.3774 mm per year. In Fig.7, simple daily intensity index (SDII) showed a negative trend -0.1105 mm per day per year. A significant increase trend was distinguished for PRCPTOT with a rate change of 3.3338 mm per year, Figure8. The number of heavy precipitation days (R10, R20, and R25) only showed changes in a small part of region. Figure 10 and 11 illustrated a upward trend 0.1153 and 0.0048 mm per day, but Fig.9 showed a decrease trend with a rate of change of -0.0085 mm per day .

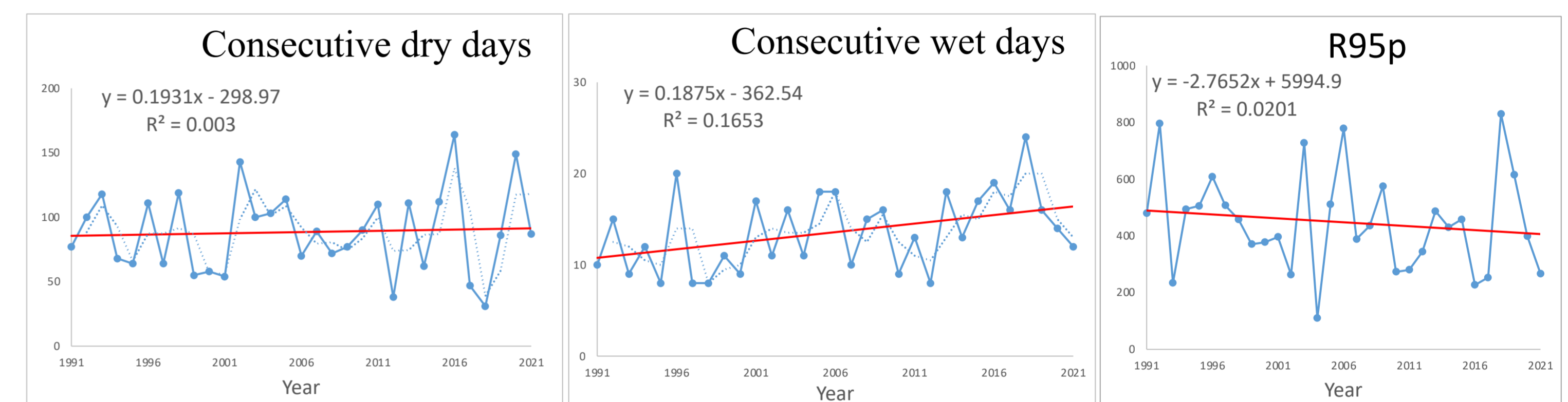


Fig.1. CDD

Fig.2. CWD

Fig.3. R95p

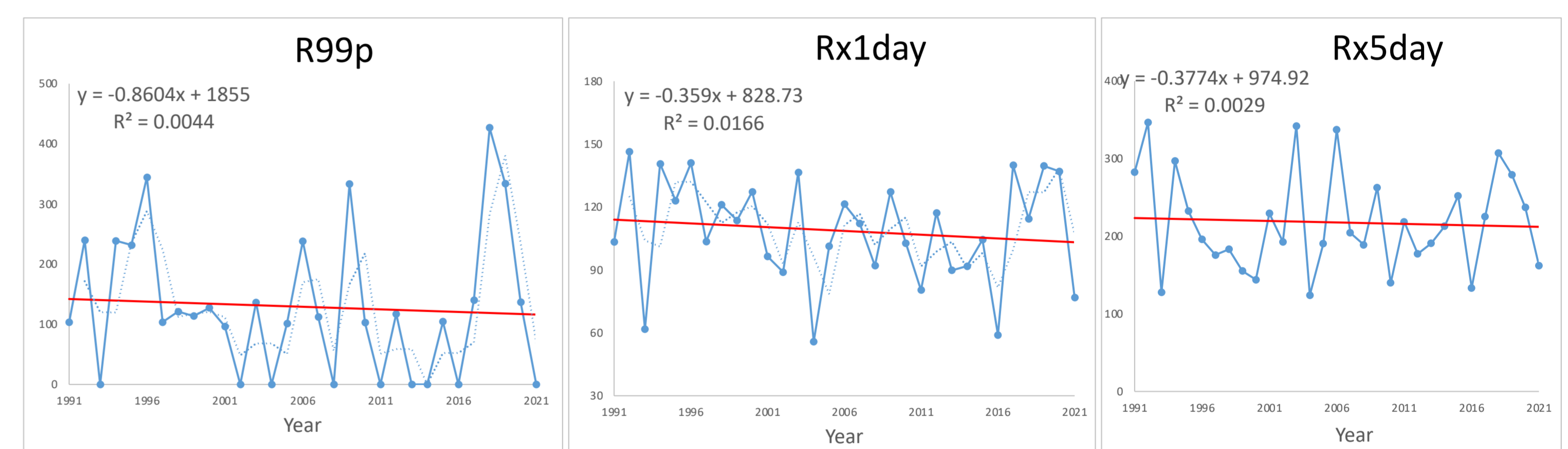


Fig.4. R99p

Fig.5. Rx 1 day

Fig.6. Rx5day

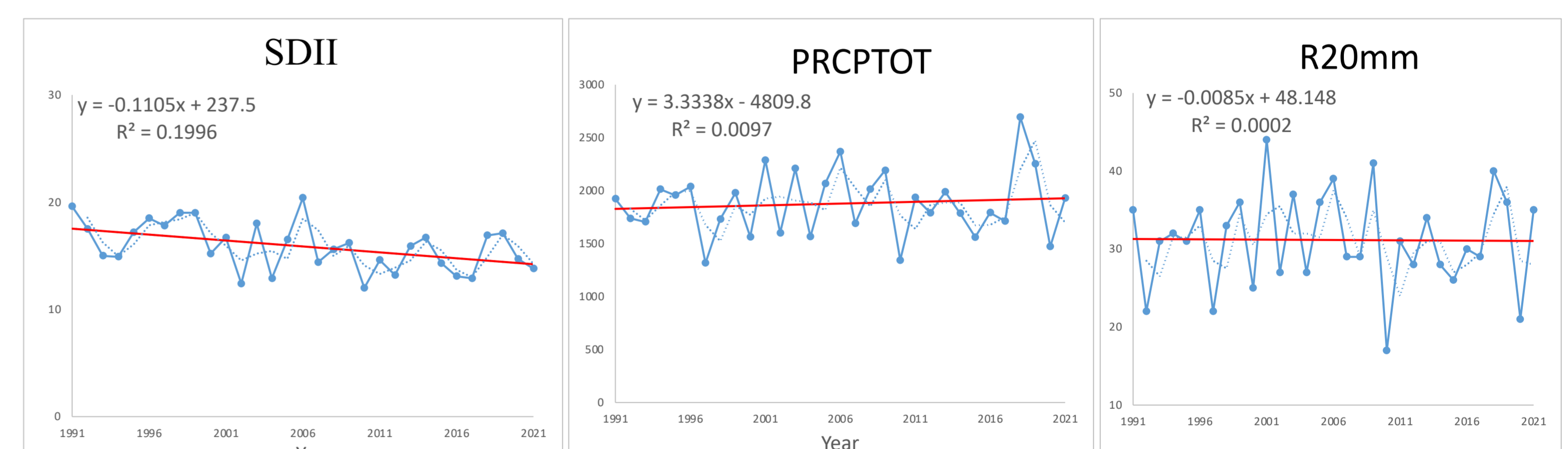


Fig.7. SDII

Fig.8. PRCPTOT

Fig.9. R20mm

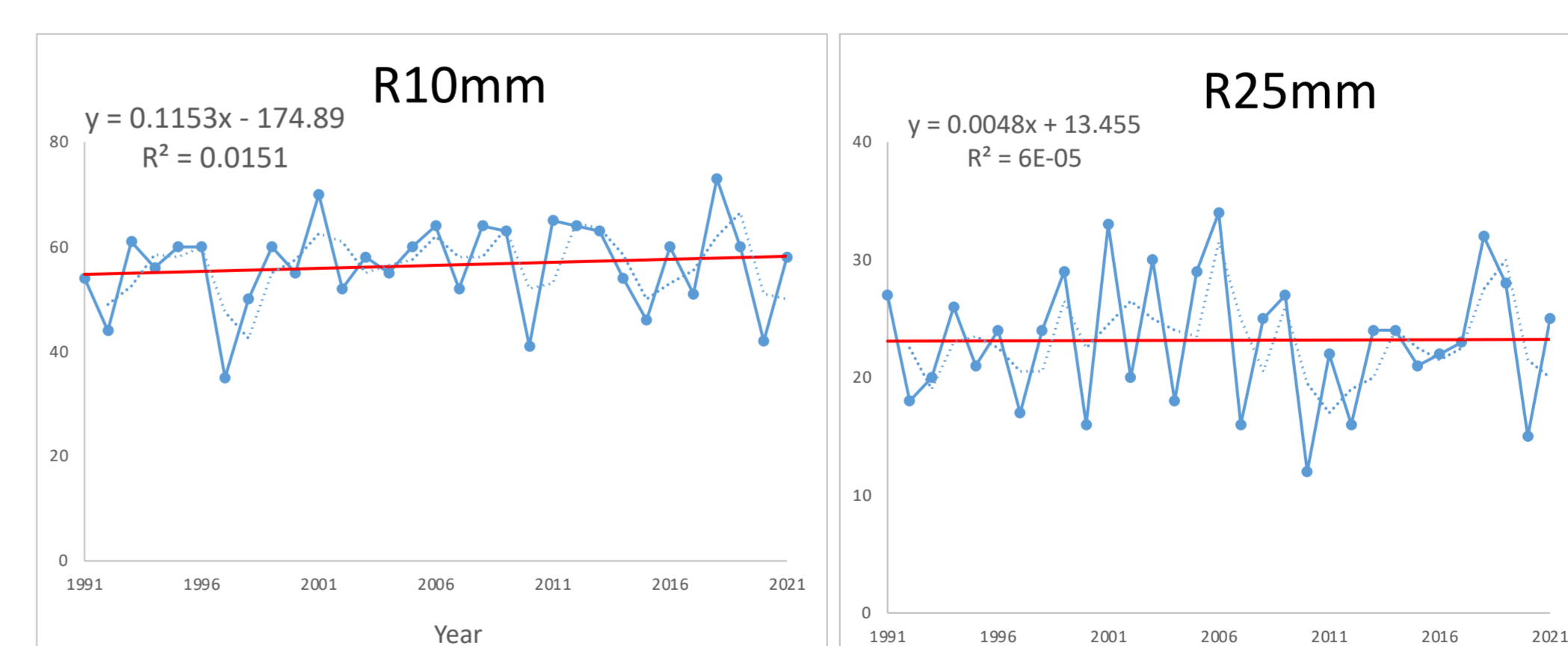


Fig.10. R10mm

Fig.11. R25mm

### CONCLUSION

In this study, we used daily rainfall data from station in Kampot to examine the extreme rainfall indices using RCLimDex packages.

- Results of rainfall days revealed higher values of annual total wet precipitation (PRCPTOT) in Kampot station. Positive values of other indices CDD, CWD, R10, and R25 appeared mostly in the study area.