Climatological Analysis of Daily rainfall amounts over Addis Ababa

Project No. 5
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Outline

- Background
- Daily rainfall averages and dispersion
- Graphical representations of rainfall climatology
- Monthly and annual rainfall patterns
- Conclusion
Rainfall is uni-modal as reflected in climatological graph.

Summer is a rainy season.
No evident trend in the median, as there are extreme values.
From the scatter plot:

**Mean**: rainfall is between 5-7 mm apart from 1987 (dry) and 1996 (wet)

No distinct trend pattern.
**Variance:** Variability is high the last decade, rainfall is more variable.
For 1984 the variability was highest.
The mean daily rainfall time series shows 1984 and 1996 became highly variable.
June mean, median and variance of daily rainfall over Addis Ababa

High variance for 1984 and 1996
July mean, median and variance of daily rainfall over Addis Ababa

High rainfall for 1984, high variance in 2001
The mean daily rainfall show high fluctuation (high intra-annual variability)
September mean, median, variance of daily rainfall over Addis Ababa

Highly variable, low rainfall
Daily rainfall mainly concentrates within 0-5 mm, which indicates the daily rainfall is highly skewed.
Weak rainfall trend is evident

Lowest rainfall in 1987

Highest rainfall 1996
CDF indicates:

90% of daily rainfall concentrates below 12, 19, 17 and 14 mm for Jun, Jul, Aug and Sep respectively
Similar rainfall pattern (as shown in the above CDF) are also echoed in the histogram.
Conclusion

- R-Software is very useful in analysing rainfall climatology.
- From the climate user’s point of view
  - July and August have more dependable rainfall, which can be useful for agriculture and water resource management.
  - Such climatological summary can be used as input for planning purposes.
THANK YOU!