
Optimising PA Events to Minimise Cancellations due to Inclement Weather

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14th January 2023



**Don't let your
perfect event
exist only on paper**

Reduce event cancellations

Plan your events around
local weather effectively!

46%

annual rainfall rate



>60%

rainfall rate in ...



<30%

rainfall rate in ...



<5 hours

leave the sunblock at home...

“No two months are identical”

- our team

rainfall
humidity
temperature
sunshine

**“TUG ON ANYTHING IN
NATURE AND YOU WILL FIND
IT CONNECTED TO
EVERYTHING ELSE”**

- *John Muir*

AVOID



Oct, Nov, Dec

wet, wetter, wettest

GUARD



Jan, Feb, Mar

*dry but
unpredictable*

ADAPT



Apr & May

*fair weather but
afternoon showers*

REJOICE

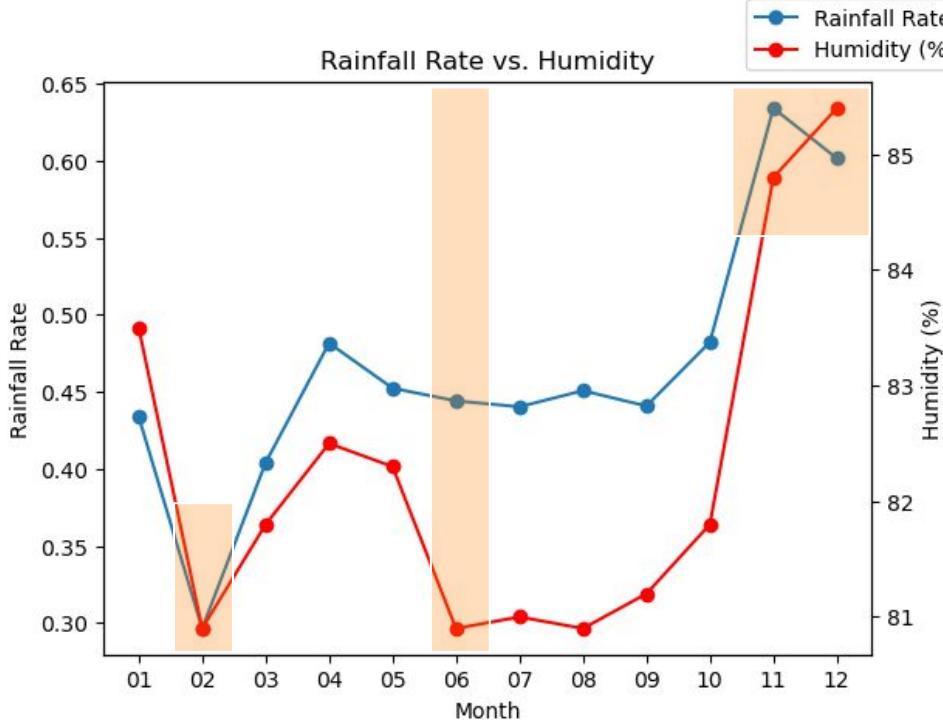


Jun, Jul, Aug, Sep

*sunblock, sunblock,
sunblock*

“AGAR-AGAR”

The higher the humidity, the higher the rainfall rate



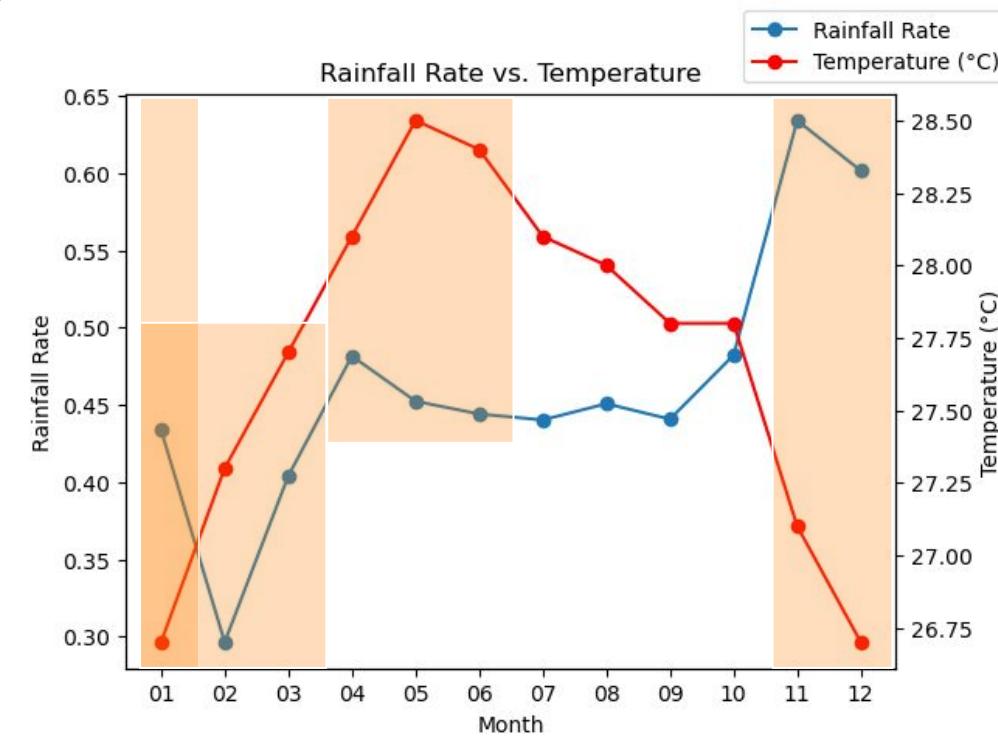
>86%

half of the time, Nov & Dec

<82%

a quarter of the time,
Feb & Jun

The higher the temperature, the lower the rainfall rate



coldest months

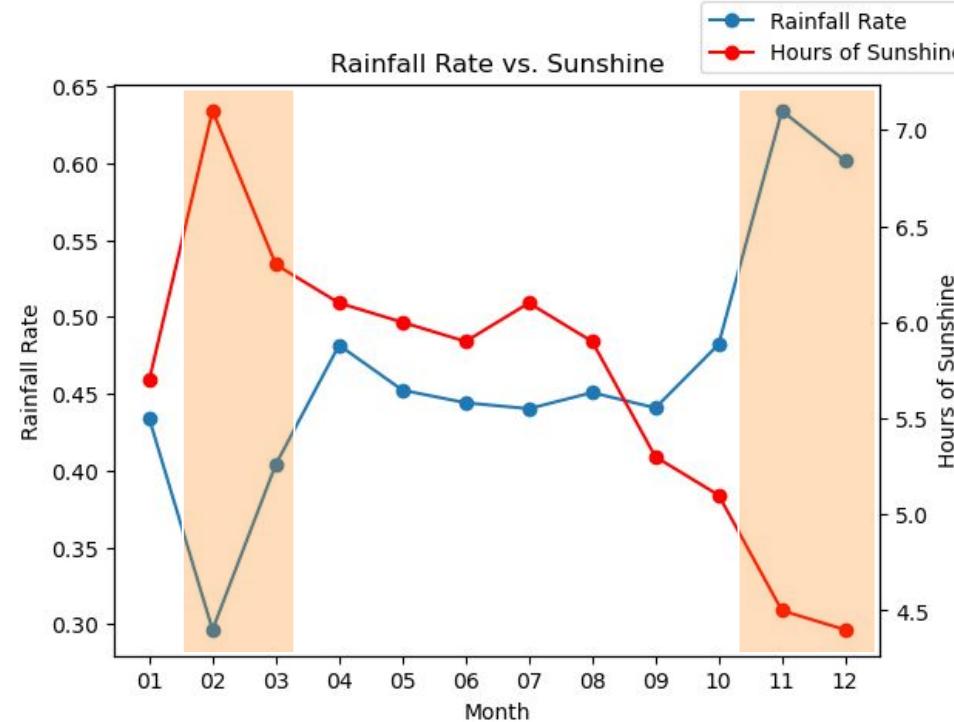
Nov, Dec...and Jan

hottest months

Apr, May & Jun

(not the driest months)

The higher the number of hours of sunshine, the lower the rainfall rate



<4 hours

rainfall rates > 57%

> half of the time, Nov & Dec

>=7.5 hours

> half of the time, Feb

a quarter of the time, Mar

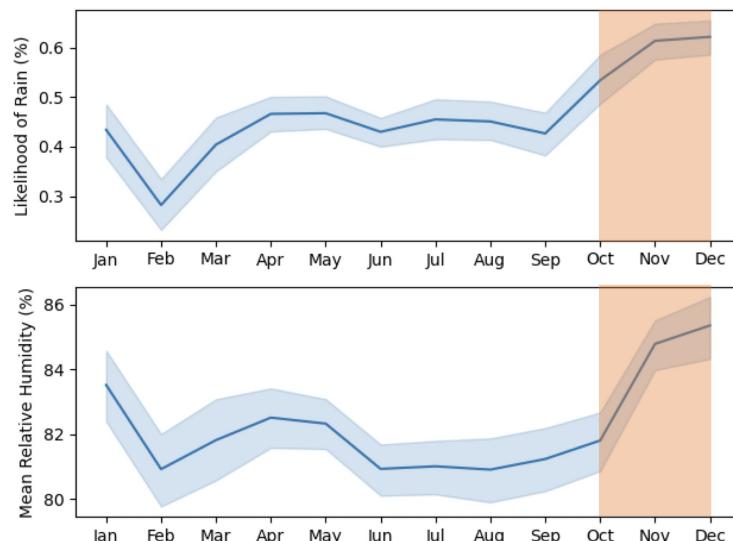
recommendations

by month set

Oct-Dec: **Avoid** outdoor activities

Plan for indoor activities which are less strenuous in open air setting

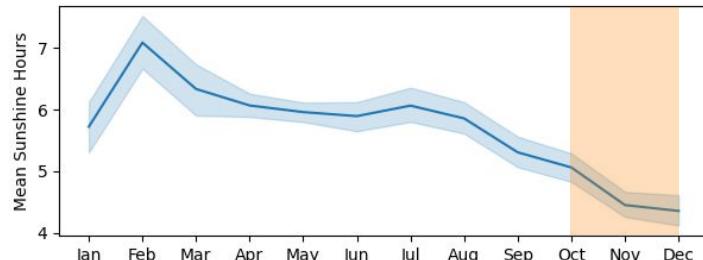
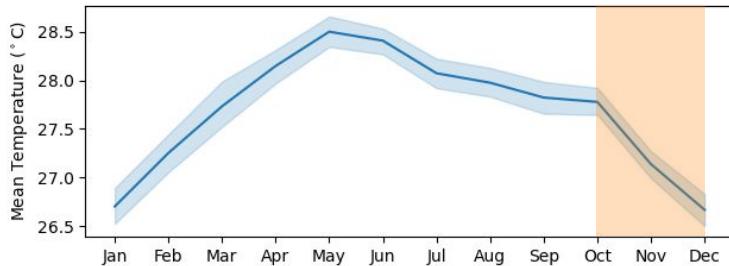
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2. We can also expect **above average relative humidity levels**, hence activities should be less strenuous



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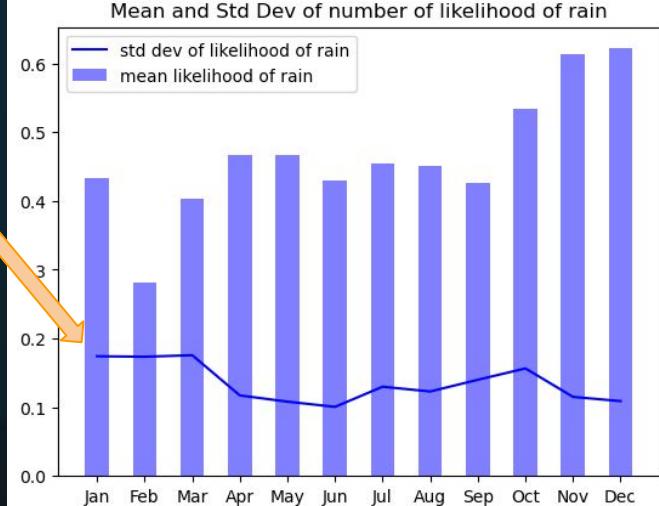
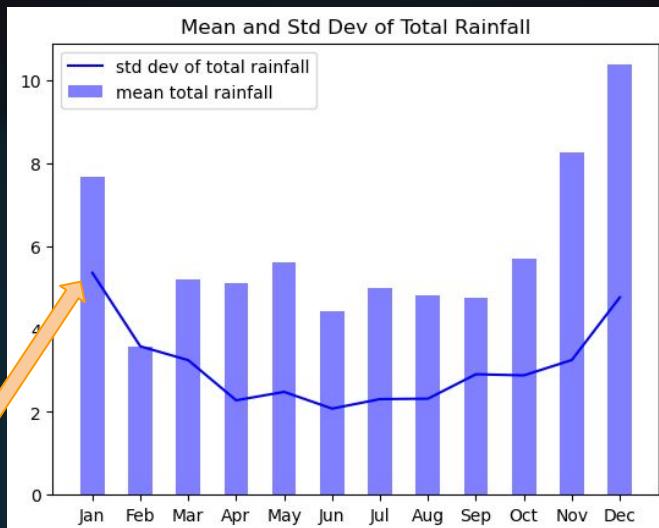
3. The **lower temperatures** and **less sunshine hours** make it ideal for open air events under shelter (e.g. roadshows/workshops)



Jan–Mar: Guard against volatile weather

Plan for outdoor activities with
perfect conditions on dry days

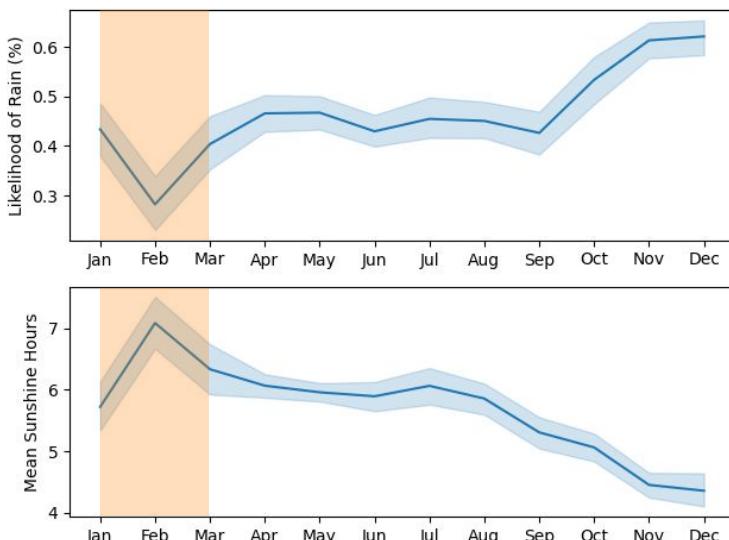
High Standard Deviation in January implying higher volatility in weather patterns



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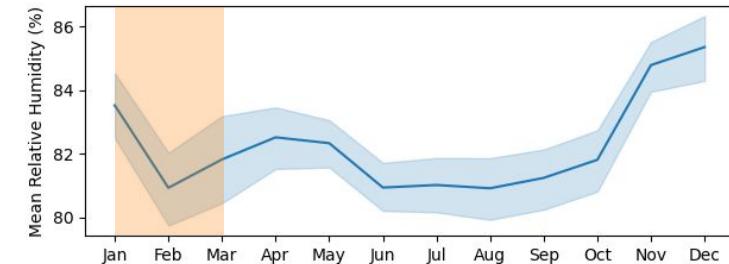
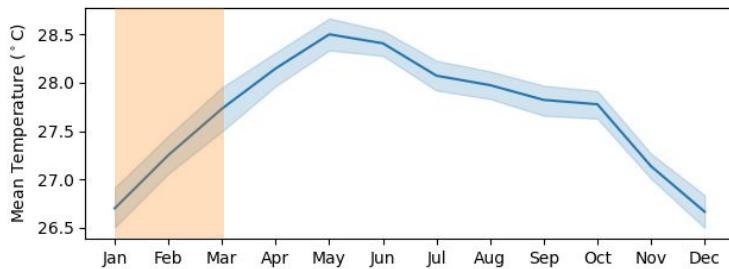
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2. However, wet weather plans are encouraged as weather patterns are still volatile post-monsoon



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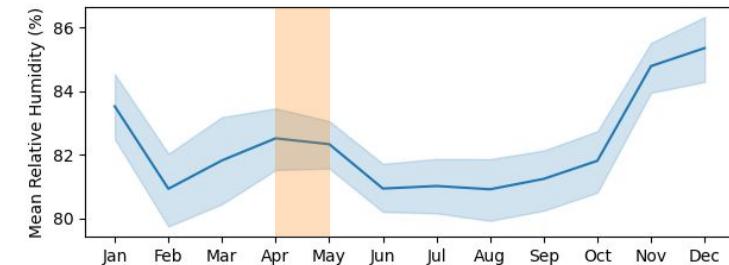
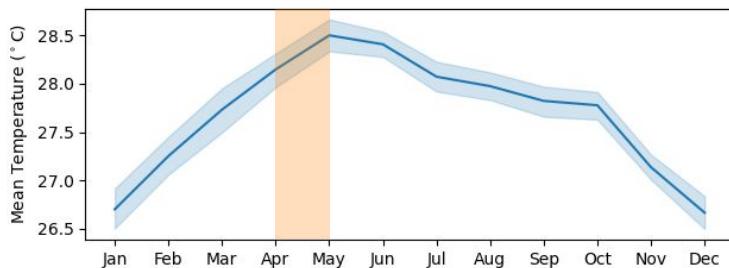
3. Lower temperatures and relative humidity levels also allow for more strenuous activities such as nature hike, heritage tours, etc



Apr-May: Adapt activities to hot and humid weather

Plan for a variety of casual activities and be prepared for wet weather

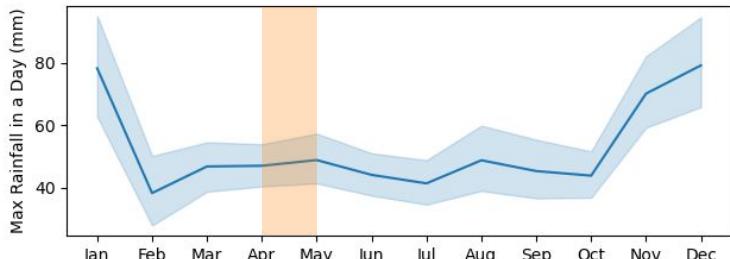
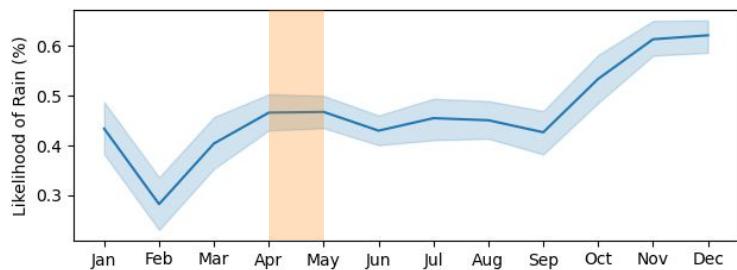
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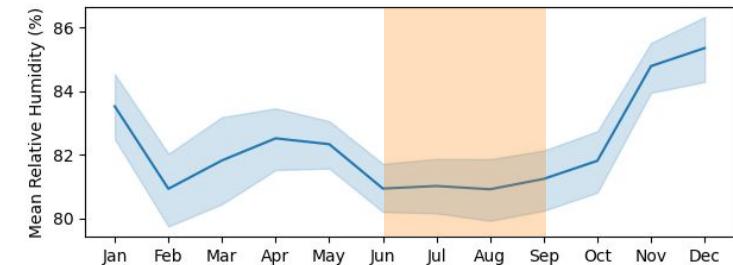
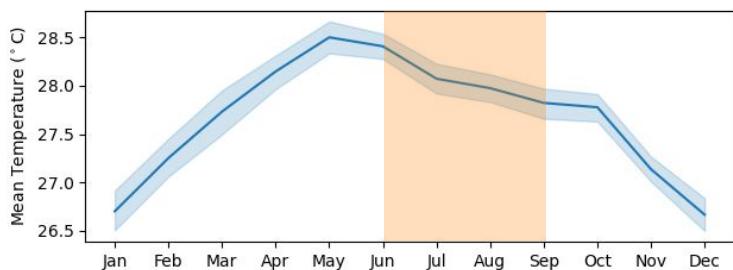
3. While there is less than 50% chance of rain historically and rainfall not expected to be heavy, wet weather plans still recommended
4. Plan for indoor activities in the afternoon when rainfall is expected and can be prolonged



Jun–Sep: Rejoice with all kinds of outdoor activities

Plan for a good range activities and finetune with more accurate forecast

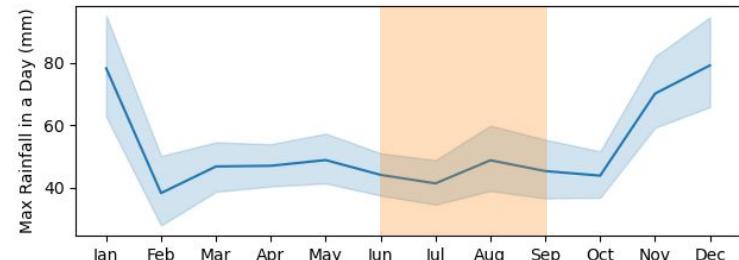
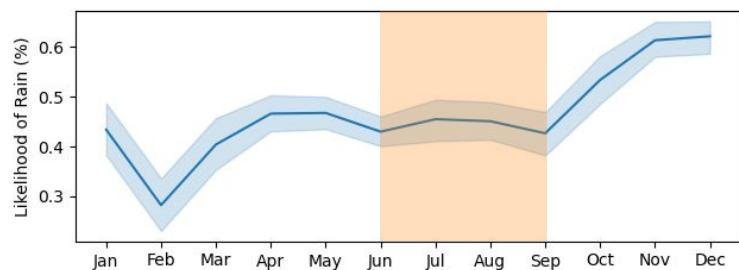
1. This is the ideal period for strenuous activities (e.g. hiking, beach clean-up), as **relative humidity is lower with moderate mean temperatures**, such that participants will not feel too uncomfortable after such activities
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AGAR-AGAR principle
provides a useful baseline for
planning outdoor activities



**This is the first step
towards more data-driven
event planning**

To be even more prepared in outdoor event planning, we have to move beyond **AGAR-AGAR**. You can consider

1. **Supplementing** our wet weather plans with more accurate forecasts closer to the date
2. **Conducting** more in-depth analysis of with more granular data (e.g., intraday weather patterns) or additional information (e.g., monsoon seasons)
3. **Setting up** a predictive model to provide more timely planning guidance

Q&A

ANNEX

Why are the correlations this way?

humidity

amount of water vapour in the air

hot days

more evaporation
→ less humid

+ humidity

more humid →
more water vapour
→ condensation →
cloudier → rain

humid days

more likely to rain

low humidity

lower rainfall rates

+ temperature

more cloud cover
→ sunlight gets blocked → can lower temperatures

Understanding Singapore's weather

1. Monsoon Rain-belt

- 'Actual' Northeast Monsoon period: Dec to Mar
- Progressive movement of monsoon rain-belt causes rainy season to start in Oct and peak in Dec
- Rain-belt moves away but winds are still strong → subtropical high pressure belt is 'blown' to us, creating a dry season starting from Feb
- Jan is the in-between period, so it tends to be a little volatile

Understanding Singapore's weather

2. Sumatra Squalls

- Tends to be during the Southwest Monsoon period, because of the wind direction needed
- Rain during this period is usually a bit more 'targeted':
 - Time of day: predawn, morning
 - Duration: 1 to 2 hours
 - Type of rainfall: stormy, might be very windy too

Understanding Singapore's weather

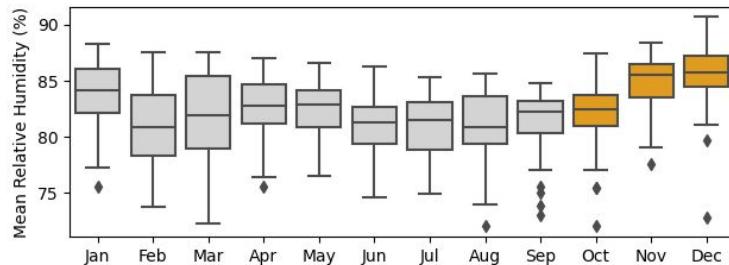
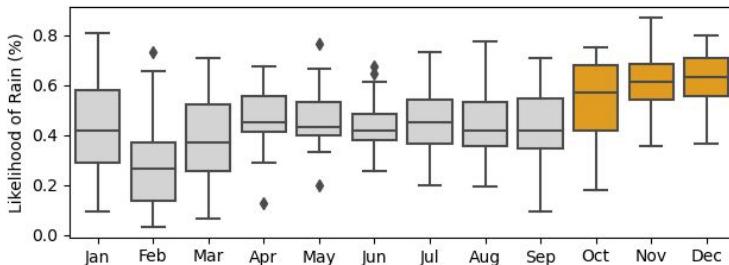
3. Sea Breezes

- Temperature difference between land and sea is needed
 - Tends to be during hot afternoons
- Wind can't be too strong
 - Inter-monsoon periods
- Can rain for fairly extended periods (afternoon till evening)

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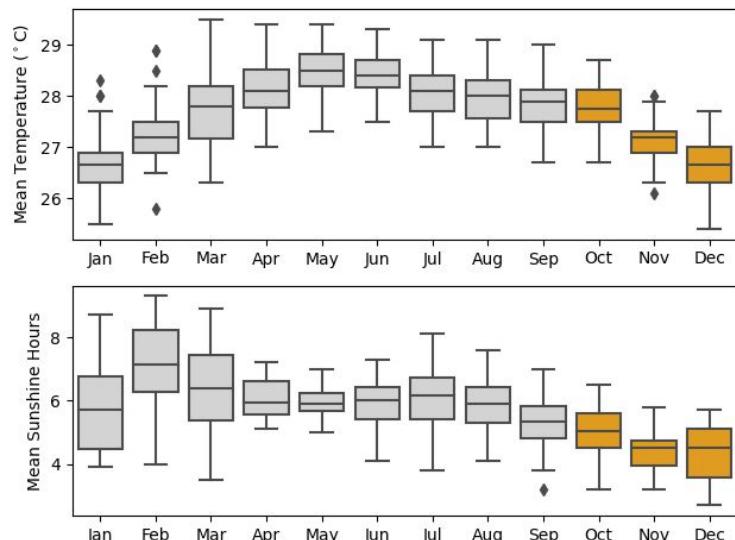
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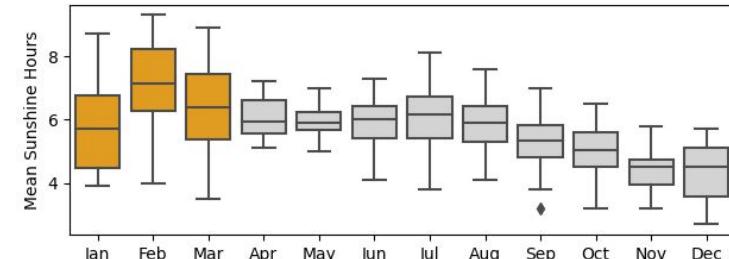
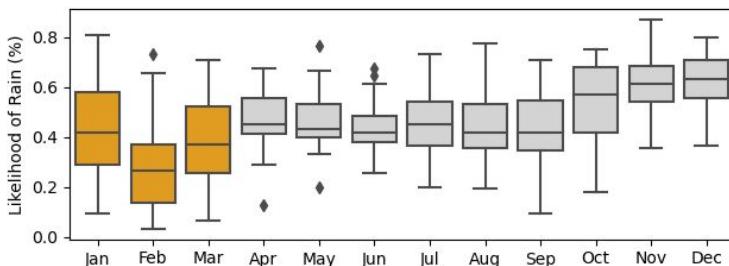
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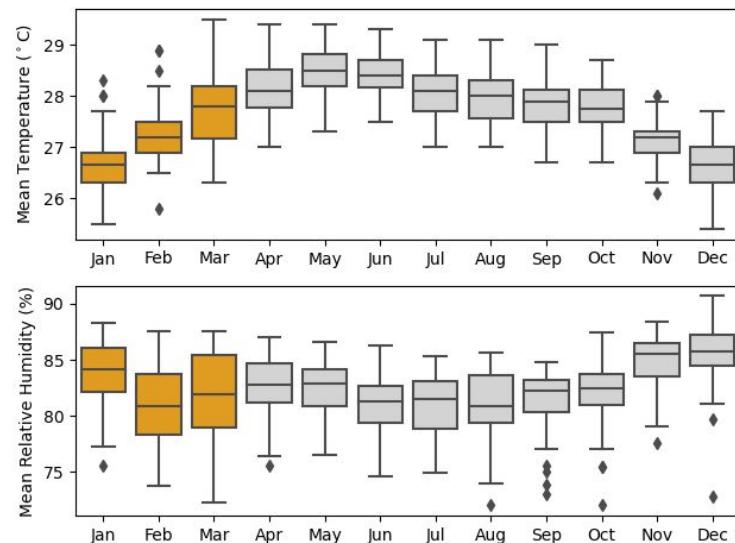
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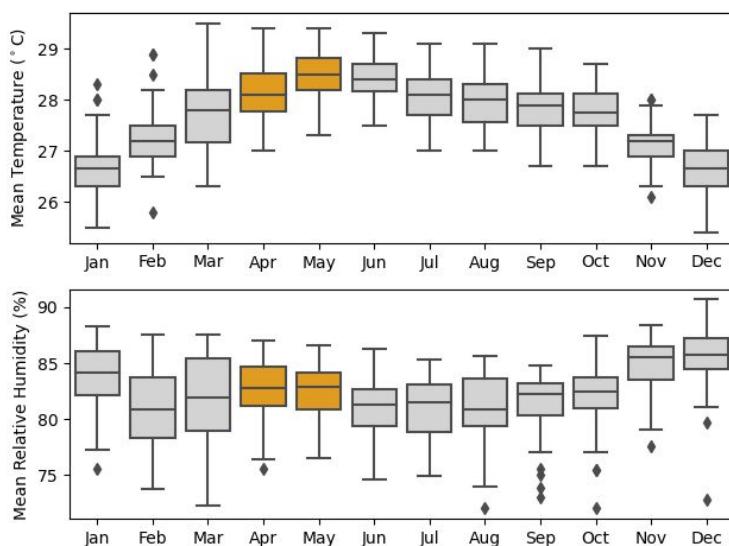
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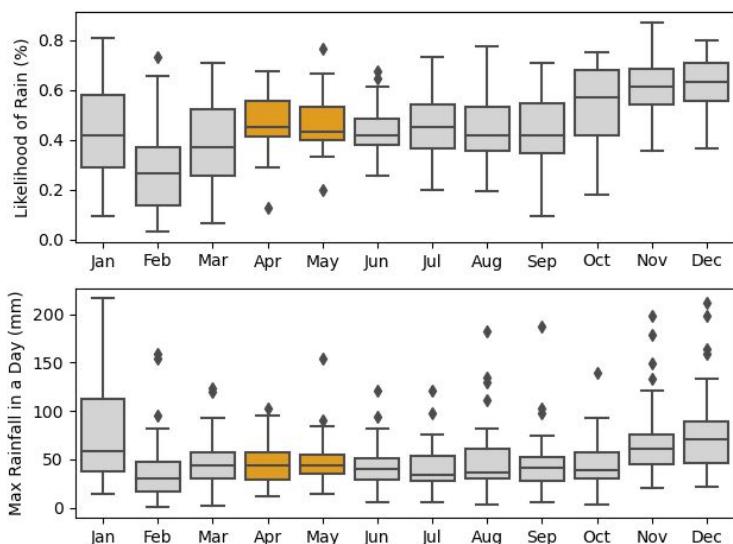
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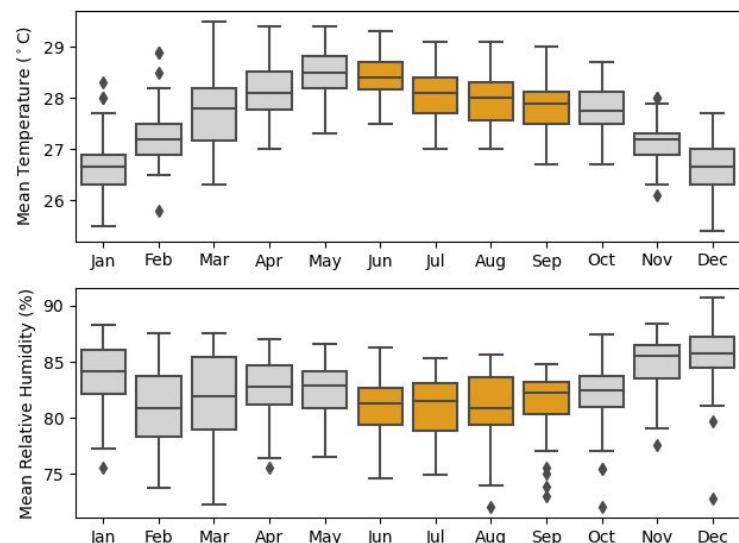
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