

FORECAST

Fairmode meeting CT3

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AQ Forecast in Kosovo

AQ forecast objective:

- One of the main objective of the forecasting system is to provide citizens with adequate hourly air quality information and **health advice**. AQI is used commonly.
- The following questions are asked by users (local/regional authorities)

Does the model correctly forecast AQI level, especially for poor and higher AQI level?

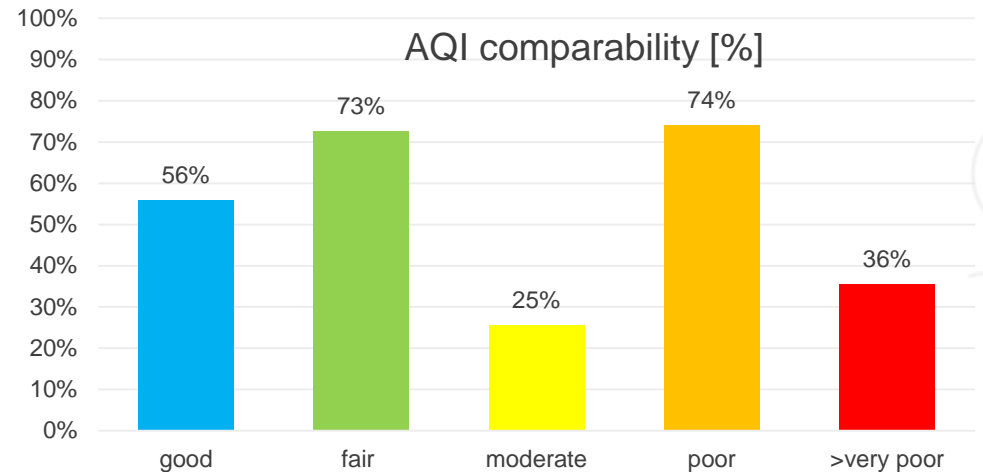
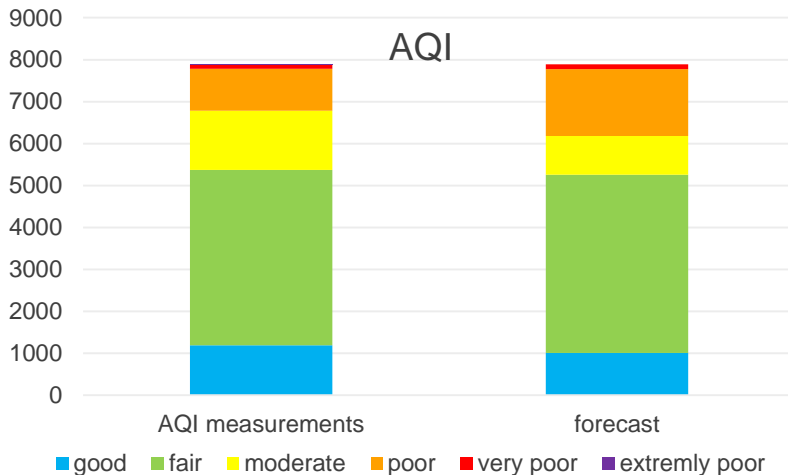
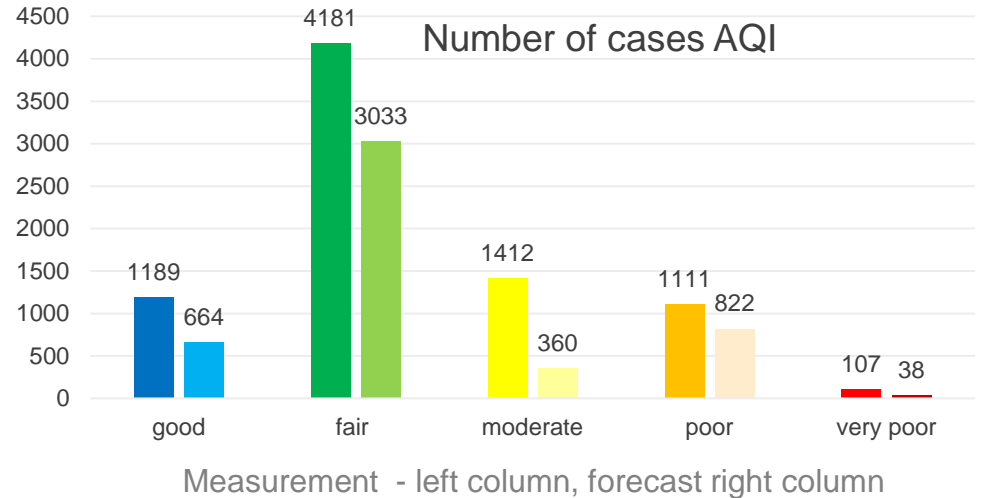
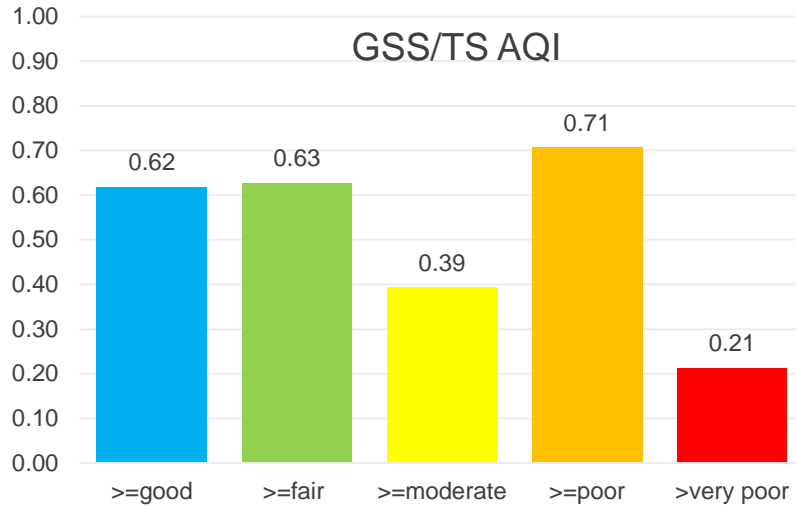
Are citizens warned of high pollution episodes?

AQI Issues – exercise

- What AQI methodology to choose – the European one?
- How should we investigate the AQI indicator?
 - Separately for each pollutant?
 - Include all measured/forecasted pollutants and in accordance with the EU AQI methodology?
- Should the AQI indicator be corelated with time?
- Should we focus only on the higher levels of AQI - problematic to humans' health?
- Do we calculate the AQI if data is missing for any of the leading pollutants?

AQI Issues – exercise

Which AQI indicator is the best ?



AQI Ideas – exercise

AQI : [0,5]

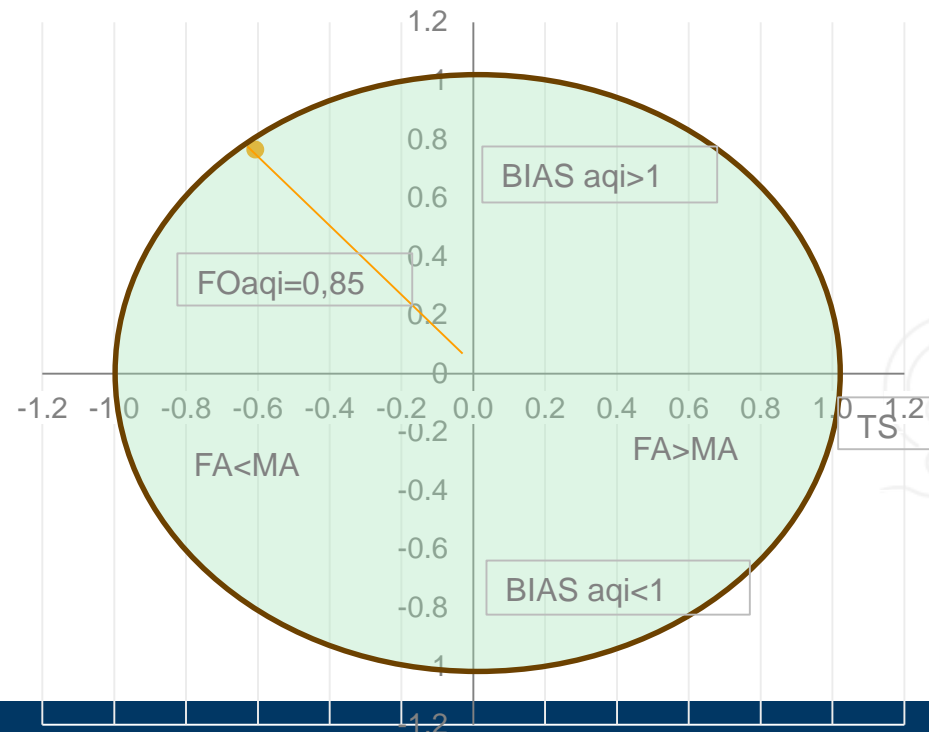
Threat Score for AQI >moderate level (2)

Forecast Objective = TS (2) Persistent Model/ TS (2) Forecast <1

$$\text{BIAS aqi} = (\overline{AQI_f} - \overline{AQI_o})$$

$\overline{AQI_o}$ – mean AQI from observation

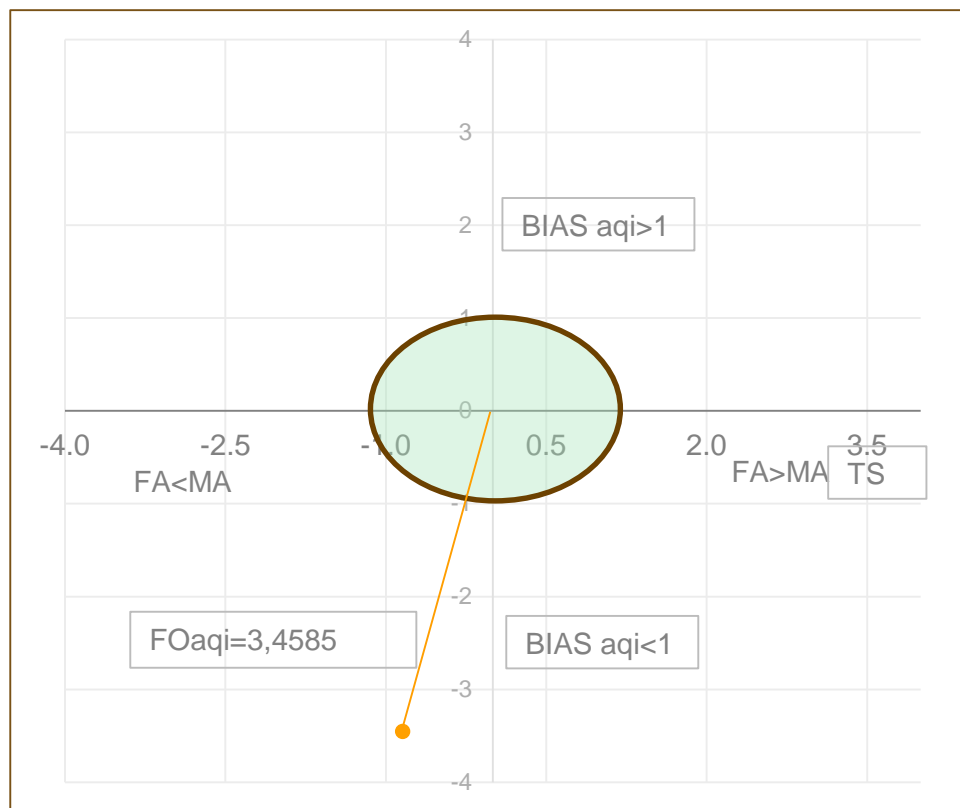
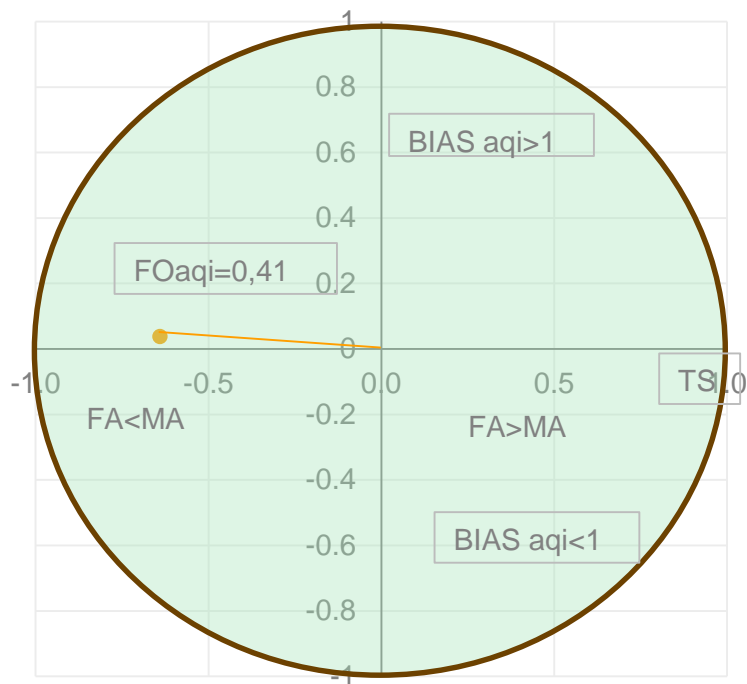
$\overline{AQI_f}$ – mean AQI from forecast



AQI Ideas – exercise

Winter (AQI dominated by PM2.5/PM10)

Winter (AQI dominated by ozone/NO₂)



CONCLUSIONS

- How to answer to the question: **Are citizens properly warned against high pollution episodes?**
- Indicators use in the project based on hourly AQI:
 - How to connect number of AQI level with timing in DeltaTool?
- GSS / Threat Score using AQI (>moderate or poor AQI level) - is a simple indicator which may be used. However, there is no threshold established
- Can we use the concept of Persistent Model?
 -
- European AQI – which level should be considered:
 - Moderate – first health effects for sensitive groups, the AQI for this level is very sensitive due to very narrow concentration range for this level
 - poor level of AQI?





Thank you for your attention

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