CC1 –

Authors' aim is to establish a daily system, but the time scales of your input variables are monthly,16 days, 8-days and the like. I think it has great uncertainties that you resample monthly and 16-days scales into daily scale. Here, my suggest is that only use precipitation as the input, there are many daily precipitation data, and you can avoid the monthly scale. Also, the spatial resolutions of data authors used are very different, I think you can clarify how to resolve this problem, because your small study area.

Line 110, this paragraph, I think author should modify it into a flow chart, because you aim is to establish a drought monitoring system. It will be more clear for potential readers. Actually, soil moisture is an efficient indicator for vegetation drought, but in this manuscript "2) soil moisture shortage is evaluated by the soil moisture anomaly (SMA), 3) vegetation drying is identified with a land surface temperature anomaly (LSTA)", I think it is unreasonable. And, my suggestion is use soil moisture and root-zone soil moisture as the vegetation water stress, LST anomalies as the heat stress and NDVI anomalies as the vegetation conditions.

Answer: we thank the reviewer for this question, which helps us to clarify this point that has been also raised by other reviewers. The anomalies are computed using the daily data (when available according to satellite acquisition time) and normalized according to the long-term mean daily values. The only index computed at monthly scale is the SPI-1 which, by its own definition, is related to 1 month anomaly.

Regarding the temporal scales of operation of the irrigation systems, these are different from North to South Italy, mainly due to the irrigation management schedule (weekly and up to daily, respectively). In the Chiese area, a priori fixed-schedule is defined before the start of the irrigation season with turns every 7.5 days from April to September. On the other hand, in the Capitanata area, irrigation is provided on demand so that irrigation volumes are regulated on a daily scale variation. The ADMOS index is updated daily, so that the time scale evolution is consistent with water management.

Regarding the methodology section, this will be rephrased to better explain all the steps in the analysis, also with the aid of a flow chart. The ADMOS indicator is computed assigning specific values reported in Fig.A, according to increasing drought conditions. The procedure is divided into four subsequent steps: 1) precipitation deficit, 2) soil moisture anomaly, 3) land surface temperature anomaly and 4) vegetation index anomaly. We believe the use of different data sources of different origin to be a major strength of this work. In fact, many studies on drought analyze the indicators using a single source of data, but as noted, the uncertainty of satellite information can be significant. Therefore, the possibility for the indicators to have an ample data pool, drawing from multiple data sources, strengthens the methodology developed in this work. Finally, we removed the "surplus of water" conditions (when SPI-1 was positive) in order to avoid confusion, as it did not took part in the calculation of the cumulated ADMOS.

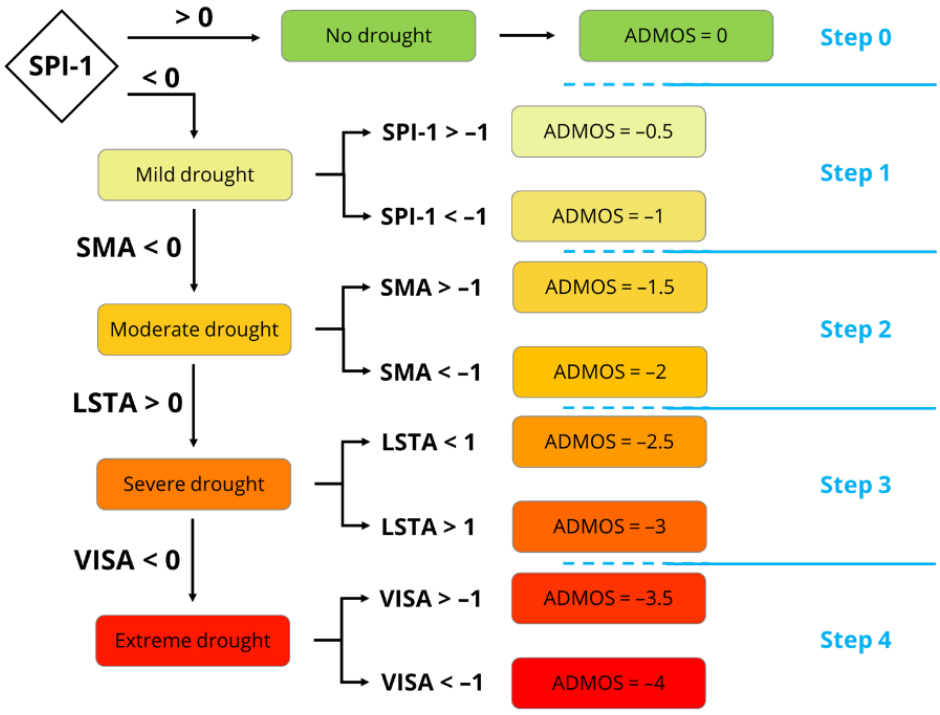

Fig.A Improved version of Fig.1 from the manuscript, detailing the ADMOS workflow/flowchart