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Interactive comment on "Crops' sensitivity and adaptive capacity to drought occurrence" *by* Catarina Alonso et al.

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We would like to thank Referee1 for his/her careful review and constructive feedback and suggestions. We truly believe that the changes suggested by Referee #1 will enhance the quality of the manuscript. A point-by-point response is presented below.

Referee #1: L41 .- Please provide more references that support this statement.

AR: Four new references were added as follows:

L-41: "several authors agree that it is better suited to the analysis of the impacts of the increased temperature trends on drought severity than SPI (Vicente-Serrano et al.,

2010a, 2012, 2014; Blauhut et al., 2016; Páscoa et al., 2017) ."

Two of the included references were also added to the reference list:

- Blauhut, V., Stahl, K., Stagge, J.H., Tallaksen, L.M., De Stefano, L., Vogt J.: Estimating drought risk across Europe from reported drought impacts, drought indices, and vulnerability factors, Hydrol. Earth Syst. Sci., 20 (7), 2779-2800, 2016.

- Vicente-Serrano, S.M., Begueria, S., Lorenzo-Lacruz, J., Camarero, J.J., Lopez-Moreno, J.I., ,Azorin-Molina, C., Revuelto, J., Moran-Tejeda, E., Sanchez-Lorenzo A.: Performance of drought indices for ecological, agricultural, and hydrological applications, Earth Interact., 16 , 10, 10.1175/2012ei000434.1, 2012.

Referee #1: L51. – Please re-write 'indexes' as 'indices'.

AR: Changed accordingly. L-53: "drought indicators, drought indices and satellite-derived indices, which account for different time-scales of drought occurrence"

Referee #1: Please clarify in section 2 the exact period of time the analysis covers. Authors mention in L-134 that the work covers the period 1981-2019 however agricultural data is only available from 1986-2015. Probably I am missing something but from my point of view it is not too clear.

AR: Available SPEI data cover the period 1901-2016 (L-121), while VHI data covers the period 1981-2019 (L-136). In the case of these two variables, the period analyzed in the present study was 1981-2016 (L-181, L-196). For the remaining variables, only

the available data period was used.

Referee #1: L182.- Please delete the repeated sentence: ' The thresholds used to: : :'.

AR: It was deleted.

Referee #1: L184. – Are authors then using the 4km resolution as the unique one? In addition, regarding the groundwater model (L153), Is it a gridded model generated from the WTD and the other variables (climate, terrain, sea level)? In that case, Did authors use the same spatial resolution (4km)?

AR: The reviewer is correct. Different resolutions were used for each variable:

SPEI: L-121, "spatial resolution of 0.5o"

VHI: L-135, "4 km of spatial resolution"

Agriculture datasets: L-152, "Territorial Units for Statistics (NUTs II)"

Aridity Index (AI): L-140, "9 km of resolution"

Water Table Depth (WTD): L-159, 30arc-second

Afterwards, and in order to allow data manipulation, all the datasets were resampled without interpolation to the VHI resolution.

Referee #1: L261: Please re-write 'Xmax is the minimum value of: : :' as 'Xmax is the maximum value of: : :'

AR: It was corrected.

L-264: "were X is the indicator, i is the pixel number, X_{min} is the minimum value of the indicator and X_{max} is the maximum value of the indicator."

Referee #1: L301.- Please re-write 'Fig 4' as 'Figure 4'

AR: Changed accordingly.

L-304: "of the explained variance (Figure 4)."

Referee #1: A suggestion for some of the figures: Please clarify the units of the scales.

AR: In order to accommodate the reviewer comment but without adding more information to the figures a new column was added to table 1 which includes information on the units of each variable used.

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