

Interactive comment on “Spatial indicators for desertification in south-east Vietnam” by Le Thi Thu Hien et al.

Le Thi Thu Hien et al.

anne.gobin@vito.be

Received and published: 7 September 2019

Reply to Reviewer 1: We thank Reviewer 1 for his comments and suggestions. Below we document how we have changed our manuscript accordingly.

- page 5 top: provide a reference for the applied Penman Montheith approach A reference to Allen et al. (1998) has been added.
- page 5 top: I doubt that the climatic AI indicator alone does indicate desertification rather than the "risk of desertification", as used also for the other single indicators. Please modify it. Absolutely correct and we have changed this accordingly.
- page 5 ff: The scoring system of indicators remains unclear: explain for all individual indicators on which basis the scoring was defined. Is it artificial/subjective classification

[Printer-friendly version](#)

[Discussion paper](#)



or was it calibrated? if yes, how it was done? is it based on other studies (provide references)? The scoring of the quality indicators was based on a multi-factorial approach combining the multi-component GIS framework for desertification risk assessment by Santini et al. (2010) and the Environmentally Sensitive Areas (ESA) approach by Kosmas et al. (2006) and Basso et al. (2000).

- page 7: provide more information of applied climate scenarios: e.g. RCP type, mean temperature change, time slice.... We added a paragraph on the climate scenario that we used: "During the period 1958-2007, the average temperature increased by 0.5–0.7°C. Vietnam's official scenarios for climate change (MONRE, 2009) fit these current trends. The medium emission scenarios corresponds to an increase in temperature of 1°C by 2050 and 2.4°C by 2100 with respect to the 1980-1999 baseline period. Rainfall in the middle of the rainy season would increase 10-15% with respect to the 1980-1999 baseline period in the South Central. On a year basis, rainfall is projected to increase with 1.7% by 2050 and 3.2% by 2100. This climate scenario corresponds to RCP4.5 with a radiative forcing of 4.5 W/m² and 650 ppm CO₂ equivalent in 2100."

- page 8 top: which type of reference evapotranspiration? (provide reference, e.g. is it FAO grass reference?) The Penman-Monteith evapotranspiration (Allen et al., 1998) was used. This has now been documented and referenced to in the manuscript.

- Figure 2 and 4: is the ESAI and ESA the same as the RI (see page 7 top) ? This is unclear. Please explain the difference or harmonize the terms, otherwise it remains confusing. We agree. We have harmonized the manuscript and used ESAI throughout the document to denote the Environmentally Sensitive Area Indicator.

- Discussion: Please add a short description of uncertainties and limitations of the study and research needs /gaps. We added a short description in the discussion section, marked in yellow.

Please also note the supplement to this comment:

[Printer-friendly version](#)[Discussion paper](#)

<https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2019-146/nhess-2019-146-AC1-supplement.pdf>

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2019-146>, 2019.

NHESSD

[Interactive
comment](#)

[Printer-friendly version](#)

[Discussion paper](#)

