Review of: "Assessment of soil erosion in the Cesar watershed, an initial step toward the restoration of the Cesar River"

María Guadalupe Ares[1]

1 Instituto de Hidrología de Llanuras

Potential competing interests: No potential competing interests to declare.

This article analyses soil erosion in the Cesar watershed. The Cesar River is a tributary of the Magdalena River, which constitutes a fluvial system with the largest sediment production in South America. In this sense, the authors study the erosion rates in the Cesar watershed to contribute to the restoration of the Cesar River. The work is an important tool for understanding the erosion process in this watershed to propose management practices to control sediment exports.

The work is well organized and well written. In my opinion, some aspects should be more deeply explained, completed, or revised to improve the total understanding of the work by the readers. Here are my suggestions and questions:

-Sediment yield observation stations could be incorporated into Figure 1.

-The correct abbreviation of hectares is “ha” instead of “h”. Please revise all the cases mentioned.

-It is not clear why the authors used 24 realizations for the calculation of the LS factor. Cites corresponding to the factor calculation are missing in the references section

-It is not clear to me how the authors obtained the C factor. They mention the use of C values obtained by other authors, but did they classify land use maps? Did they consider land use maps or soil classification maps to obtain the C factor? They mention the use of soil classification maps, besides land use maps, to obtain this variable.

- How did the authors obtain 144 erosion rates, and which combinations did they use to achieve those estimates? Did the authors obtain soil erosion maps?

-In what way do the best simulations performed accurately represent the sediment exports in the watershed? Which values’ factors (or ranges) do these cases comprise?

-The authors mention an increase in erosion rates in the last two periods studied: could they explain this statement with data obtained from maps? For example, changes in water erosion classes’ area.

-Which simulation corresponds to Figure 2 cases? 135-SDR?

- The first sentence in the first paragraph of page 9 mentions: “In total, 8% of the watershed area has a low rate of erosion, while 2,30% has a moderate rate of erosion.” Which period do the authors refer to?

-I think the Area axis in Figure 3 should include values because it is confusing to understand area values just from the numbers in the circles of the figure. The scale is somewhat confusing.

-Which land use predominates in mountainous areas? Are soil conservation practices implemented there?

-No discussion about “natural” erosion processes is made in the Results and discussion section, although the authors warn about their importance in the Conclusion section. Figure 2 shows that an important area of the watershed is affected by this erosion. Which land use and LS factor predominate there? Perhaps the authors should explain it in the results section.