Comments about *Introduction*:

1. The introduction lacks enough paper review. For example, Georgescu et al. (2013) also use WRF to simulate the LULCC over South America.
2. The impacts of LULCCs have been widely studied in WRF. For example, Lee et al. (2012) had a similar experiment design, study region, and results. Therefore, the authors should emphasize their novelty and new insights compared with previous studies.
3. Because the results are all derived from WRF-Noah, the author should introduce how WRF-Noah simulates land-use changes and discuss its limitations. For example, which processes can be resolved, and which cannot.

Comments about *Data, model, and experiments:*

1. Ln 130, the authors should explain why this change is unreasonable instead of simply providing two references without elaboration.
2. Ln 133, for a 1-year WRF simulation or longer simulations, nudging is often needed to constrain the simulation; however, the authors didn't discuss their choice of nudging.
3. Ln 133, to initialize the land processes, at least six months of spin-up is needed, and the soil system usually takes longer (Jerez et al. 2019). It seems the authors did not use any spin-up periods.
4. Ln 150, the simulation period (less than two years) is not long enough to sample the impacts of modes of variability such as MJO, thus preventing this work from getting more robust conclusions.
5. Ln 171, more widely used datasets such as ERA5 (precipitation, temperature, and soil moisture) and GLDAS (soil moisture) are worth using in evaluation.

Comments about *Experiments' results:*

1. Ln 246, how does WRF-Noah adjust LAI and stomatal resistance responding to LULCCs?
2. Ln 260, it's true that the warming in the north and cooling in the south accord with the radiation changes. However, further explanations and evidence are needed to illustrate how regional LULCCs impact radiation changes, thus altering the temperature fields.
3. Ln 267 and Ln 308, what processes and mechanisms determine the decreased precipitation to LULCCs?
4. Ln 270 and Ln 274, the author should elaborate on the explicit processes governing the decreases in runoff and soil moisture in WRF-Noah.
5. Ln 294 and Ln 334, I wonder if the WRF-Noah can simulate the diminished shading associated with decreased LAI. If so, corresponding equations or mechanisms need to be provided.

6. Ln 297, considering the regional average signals are limited, how could you conclude that the temperature change extremes (0.6 degreeC here) is not a result of model uncertainties?
7. Ln 301 and Ln 315, the land grids in WRF-Noah are isolated and thus cannot impact surrounding grids. Explicit mechanisms are needed to confirm that WRF-Noah can resolve the remote effects of LULCC.
8. Ln 341, MSE is not only determined by local processes but also by large-scale circulations; thus, the changes in MSE cannot be solely explained by LULCCs.
9. Ln 348, changes in CAPE should be illustrated in your simulations to draw the conclusion here.
10. The main text or the supplement should provide mechanisms in WRF-Noah governing the processes in the land-atmosphere feedback pathway illustrated in Fig. 14. For example, temperature changes seem to result from changes in radiation budget instead of the driver of radiation changes.

Comments about *Discussion and conclusions:*

1. Corresponding content should be modified and adjusted based on the comments above.
2. Some conclusions should be examined (e.g., the remote effect and the mechanisms of decreasing precipitation). The author needs to address whether WRF-Noah can resolve these processes.

Technical Comments:

1. The color bars in Fig. 5 to Fig. 12 should be adjusted for more scales. For example, only seven color scales in Fig. 6 make it hard to distinguish the changes. In Fig. 12, lots of areas are saturated.

Reference

Georgescu, M., Lobell, D. B., Field, C. B., & Mahalov, A. (2013). Simulated hydroclimatic impacts of projected Brazilian sugarcane expansion. Geophysical Research Letters, 40(5), 972-977.

Lee, S. J., & Berbery, E. H. (2012). Land cover change effects on the climate of the La Plata Basin. *Journal of Hydrometeorology*, *13*(1), 84-102.

Jerez, S., López-Romero, J. M., Turco, M., Lorente-Plazas, R., Gómez-Navarro, J. J., Jiménez-Guerrero, P., & Montávez, J. P. (2020). On the spin-up period in WRF simulations over Europe: Trade-offs between length and seasonality. Journal of Advances in Modeling Earth Systems, 12(4), e2019MS001945.

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