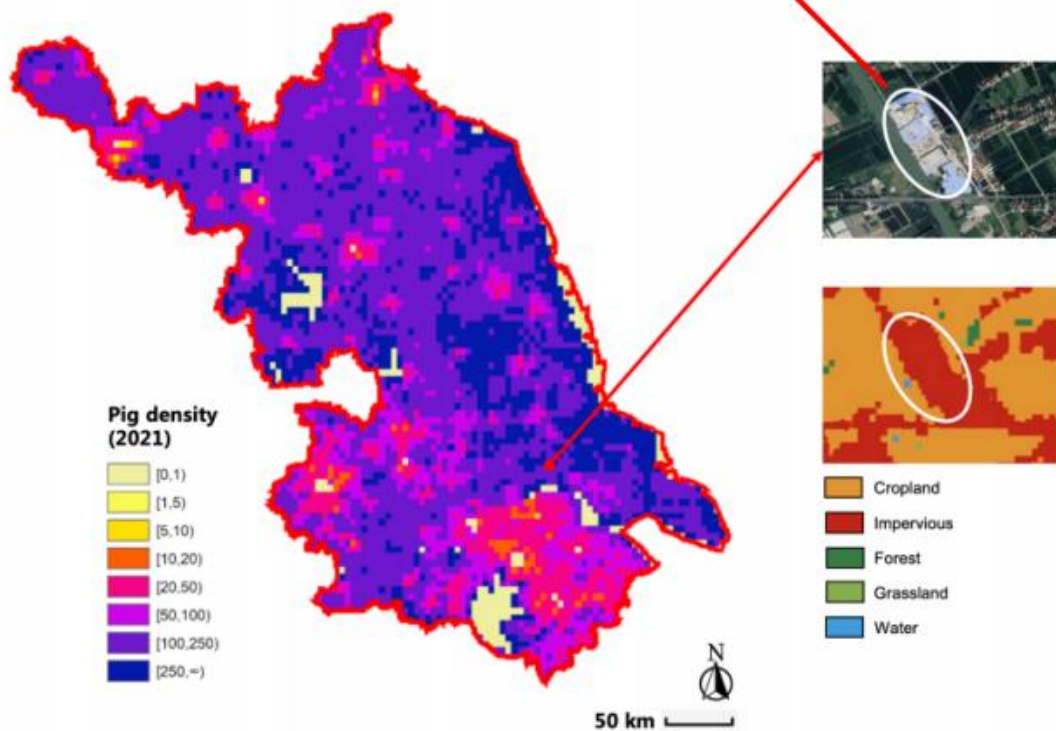


The authors made some additions and explanations to the manuscript, but still failed to effectively address several key issues present in the manuscript and raised some new concerns regarding data quality. Specifically:

1. As the authors pointed out, one of the key steps of this work was that they generated municipal-level livestock data based on GLW4's grid data and FAOSTAT's national-scale livestock data, and then used it for modeling (Lines 117–119). This approach introduces significant spatial uncertainty: GLW4 only represents the global livestock distribution pattern in 2015, yet the study spans 1961–2021—a period marked by substantial shifts in livestock geography, such as China's livestock industry migrating notably northward between 1978 and 2014 (<https://doi.org/10.1016/j.agrformet.2019.03.022>). Consequently, relying on static 2015 data inherently fails to account for these dynamic spatial variations, conflicting with the study's aim to analyze temporal trends. This limitation is corroborated by Figure 6, where validating GLW4 (2015), GLW3 (2010), and GLW2 (2005) against the results reveals progressively declining correlation coefficients ($r = 0.84 \rightarrow 0.78 \rightarrow 0.73$), indicating a ~15% decrease in r-values over a decade—a clear signal of spatial reconfiguration that undermines extrapolating 2015 patterns to earlier decades, especially given the 60-year study span. Additionally, how does the author prove the reliability of its earlier data such as those from the 1960s?

2. Another key step of this work is that authors categorize animals into “grazing livestock” (e.g., buffalo, cattle, goats, horses, sheep) and “captive livestock” (e.g., chickens, ducks, pigs), and assume grazing species inhabit grasslands while captive species are confined to impervious surfaces (Lines 83–85). This simplification is problematic, as intensively raised livestock (e.g., pigs) frequently occupy peri-urban or rural agricultural lands rather than impermeable surfaces alone (<https://doi.org/10.1016/j.oneear.2023.08.012>). In the reply letter, the authors cited Jiangsu pig farms to validate this classification, but subsequent checks revealed the mapped “impermeable surfaces” correspond to industrial calcium production facilities (name: 晶诚钙业 Jingcheng Calcium Industry [晶诚钙业 - 百度地图](#)) rather than pig farms. Given the global prevalence of industrial sites, such misclassifications risk severely compromising data product accuracy.



晶 诚 钙 业 - 百 度 地 图

https://map.baidu.com/search/%E6%99%B6%E8%AF%9A%E9%92%99%E4%B8%9A/@13417359.099172773,3763315.68835945,16.9z/maptype%3DB_EARTH_MAP?querytype=s&da_src=s&hareurl&wd=%E6%99%B6%E8%AF%9A%E9%92%99%E4%B8%9A&c=161&src=0&wd2=%E5%8D%97%E9%80%9A%E5%B8%82%E5%A6%82%E7%9A%8B%E5%B8%82&pn=0&sug

=1&l=18&b=(13417146.36149944,3762923.365705509;13418388.162467439,3763545.1138780094)&from=webmap&biz_forward=%7B%22scaler%22:1,%22styles%22:%22sl%22%7D&sug_forward=bc0a6b6001c7677833169be2&device_ratio=1