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CORRESPONDENCE

Village modernization and reduced abundance of farmland birds: Why compensation for lost nesting sites may not be enough

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In their reply to Rosin et al. (2021), Hertzog et al. (2022), while generally agreeing that village modernization (VM) may be an overlooked driver of variation in farmland bird abundances, raise three issues of criticism: (1) an inappropriate space-for-time substitution was used for predicting declines, (2) the abundance of field nesting birds could be driven by a factor other than VM, and (3) our discussion of relevant EU programs for conservation measures targeted on rural buildings was too narrow.

First, we agree our results could be misinterpreted as a space-for-time substitution if readers only consult the abstract. Our study was conducted in the context of documented population declines of farmland birds (along a temporal gradient), but our results concern predicted declines or changes in bird numbers across a spatial gradient. It is important for readers to understand that our models do not explicitly predict population trends in relation to future scenarios of VM or agricultural intensification (AI). This was carefully explained in both the methods and results. As a concession we acknowledge that these statements can be easily overlooked and perhaps we should have used a term like "change" rather than "decline" to avoid such misinterpretation. We also acknowledge that in our discussion we speculate on possible future and past changes based on these results. But this is hardly a damning criticism since this is common practice when long ecological data series are not available (Damgaard, 2019; Picket, 1989), and the same problems of interpretation also beset longitudinal studies (including the orthodox view that our results are challenging).

Second, we discussed possible reasons why field nester abundances may be related to VM. We were careful to make the correlative nature of these results clear and to mention the risk of confounding variables. Furthermore, the orthogonal design of the study was to explicitly remove confounding regional effects of wealth on both AI and VM.

This was possible because the ownership of the "village" is largely independent of the surrounding agricultural land. It is worth reiterating that this study was designed and data collected to disentangle the simultaneous effects of VM and AI on bird abundances, rather than using some post hoc approach with data not specifically collected for purpose.

Finally, we agree that there are other avenues of financial support for addressing rural housing renovations. However, by viewing agrienvironmental schemes (AES) as not suitable instruments for our recommendations, misses an important point. VM relates not only to the increasing share of new and renovated homesteads, but also to the decreasing share of old farmsteads (via abandonment or conversion; Rosin et al., 2020). Old farmsteads are associated with high domestic biodiversity (from farming animals and residues; Rosin et al., 2016) and constitute an important food source for many farmland bird species. In this regard, CAP and AES play a key role to develop schemes targeted either on financial support for small diversified animal farming or for structures at the farm scale to benefit biodiversity (e.g., providing supplementary grain). Replacing nesting sites lost to modernization is an important consideration, but is likely insufficient on its own.

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