NETSEED : a cross-disciplinary project to analyse how small farms contribute to global agrobiodiversity

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Abstract

Farms, where a large number of crops (species or landraces) is grown, are known to contribute a large part of the locally available diversity of both rare and common crops but the role of farms with low diversity remains little understood: do they grow only common varieties or do 'crop–poor' farmers also grow rare varieties? This question is pivotal in ongoing efforts to assess the local-scale contribution of small farms to global agrobiodiversity. During the NETSEED project, we developed new network-based approaches to characterize the distribution of local crop diversity (species and infra-species) at the village level and we validated these approaches using meta-datasets from 10 countries (50 datasets). Our results highlight the sources of heterogeneity in crop diversity at the village level. We often identify two or more groups of farms based on their different levels of diversity. In some datasets, 'crop–poor' farms significantly contribute to the local crop diversity. Generally, we find that the distribution of crop diversity is more heterogeneous at the species than at the infra-species level. This analysis reveals the absence of a general pattern of crop diversity distribution, suggesting strong dependence on local agroecological and socio-cultural contexts.

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These different patterns of crop diversity distribution reflect an heterogeneity in farmers' self-organized action in cultivating and maintaining local crop diversity, which ensures the adaptability of agroecosystems to global change.