Plants: Crop diversity pre-breeding technologies as agrarian care co-opted?

Graddy-Lovelace, Garrett (2020.0)

ABSTRACT ORIGINAL

Within the realm of international agricultural biodiversity conservation, there has been a surge of funding for “pre-breeding” of plant genetic resources for food and agriculture. Molecular high-throughput analysis, among other techniques, attempts to discern, document, and digitise the genomic traits of farmer/landrace varieties and crop wild relatives stored in gene banks to render them legible fodder for professional breeding. But pre-breeding necessitates thorough phenotypic evaluation and characterisation to understand the physiological attributes, heritable traits, and responses of a plant through its life cycle, under various growing and climactic conditions. This paper explores the irony that a range of surveillance technologies have been developed and deployed to mimic the agrarian work and skills of observing plants and attending to how they are faring, what they like and do not like over many seasons and contexts. These calls and technologies acknowledge the need for heedful attention to crops, even as they further displace actual farmers and their longstanding modes of selecting and saving open-pollinated seeds each harvest. Here, attending to crops entails remembering and communicating collectively gathered information of and from the plant. Such agrarian expertise of caring for plants has been systematically devalued and de-intellectualised, with gendered implications. Drawing on feminist geographies and political ecology, a landscape of care framework discloses the matrix of human and beyond-human care at work in cultivating agricultural biodiversity. Rather than ushering in a new valuation of this expertise, new pre-breeding technologies and trainings continue to ignore on-farm, plant-based care work and the farmers who do it. Calling out this contradiction could help re-centre such agrarian care skills as the crux to effective agricultural biodiversity utilisation. The proliferation of pre-breeding technologies could signify the co-optation of agrarian care skills or the opportunity to re-centre and revalue them. The information, practices and views in this article are those of the author(s) and do not necessarily reflect the opinion of the Royal Geographical Society (with IBG).