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Practices and problems in seed sourcing for forest and landscape restoration: results from a global survey

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Forest and landscape restoration efforts worldwide require large amounts of tree seed and seedlings in planting, or natural dispersal and recruitment. Forest degradation and climate change pose challenges for selecting and acquiring tree seed that is genetically diverse and suited to both current and future growth conditions on restoration sites. A global survey was conducted among restoration practitioners in October 2015 to study: (i) from where and how restoration practitioners source tree seeds and seedlings, (ii) what problems they have in this process and (iii) how they think seed availability could be improved. A total of 140 respondents from more than 50 countries completed the survey. Types of restoration projects varied along two main gradients identified by Multiple Correspondence Analysis: (i) from locally implemented conservation-oriented, to large scale production-oriented projects, and (ii) from projects with intensive vs. limited effort in selecting and sourcing seed suited to project purposes. Perceived problems regarding availability and quality of seed were fairly common and widely dispersed across these different types of projects. The results indicate gaps between currently used seed sourcing strategies and those strategies restoration practitioners would prefer. Awareness of the importance of origin and genetic quality of seed for productivity and adaptive capacity appears low in many projects, including projects that specifically aim for timber production and climate change mitigation. Evident needs and recommendations are discussed for improving seed and seedlings supply to help meet global and national targets for forest and landscape restoration.

Key words: Tree seed supply, seed provenance, genetic diversity, climate change, Multiple Correspondence Analysis