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## Future Scenarios of Land Use and Land Cover Change

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The rate and magnitude of global environmental changes are accelerating, with profound consequences for land systems. These changes underpin interconnected climate and biodiversity crises that international negotiations and treaties are struggling to navigate—an increasingly frustrating situation. Land use is one domain where humanity has significant agency: we can determine what land is used for, and in doing so, we can influence climate and equity outcomes and biodiversity integrity, and preserve biocultural heritage, health, and well-being.

Land use choices have far-reaching implications. Reforesting former cropland can store carbon, safeguard biodiversity—from an individual endangered species to entire ecosystems—and maintain ecosystem functioning. Similarly, expanding urban areas into agricultural land can undermine food production. Conservation initiatives often focus on ecological restoration or preventing harmful land use transitions, such as agricultural conversion of forests, which reduce habitat quality and connectivity. These land use choices determine whether we exacerbate or work to get ahead of the challenges that face the planet today. However, there is a compelling need to develop new ways of envisioning possible futures to understand and adapt to these challenges and develop pathways to reach sustainable futures. Yet, land use choices are rarely binary.



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