

Agroecosystem management in the 21st century: It is time for a paradigm shift

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Abstract

The success of modern agricultural and forestry production can largely be attributed to monoculture systems using a few select species and heavy chemical inputs. This drive for maximizing yield and profit has caused serious environmental problems such as land- and water degradation and increased land-clearing. Modern agriculture is thus threatening its own foundations: land, water, forests, and biodiversity. During the past thirty years, however, the positive benefits of integrated land-use systems such as agroforestry to the producer and the environment have gradually been recognized. Combining trees and crops in spatial or temporal arrangements has shown to improve food and nutritional security and mitigate environmental degradation, offering a sustainable alternative to monoculture production. By providing supportive and complementary roles with a flexible approach, agroforestry offers specific social and environmental benefits across a range of landscapes and economies. It is time for us to eschew the artificial dichotomy between agriculture and forestry, embrace the values and benefits offered by time-tested traditional land-use systems such as agroforestry, infuse scientific investments for their development, and encourage their incorporation into agricultural development paradigms.

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