



Tropentag, September 15-17, 2021, hybrid conference

“Towards shifting paradigms in agriculture
for a healthy and sustainable future”

Reconciling Agricultural Production with Biodiversity Conservation through Ecological Intensification and Diversification

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Abstract

More than seventy percent of the land surface is transformed by humans, and 1 million species of animals and plants are threatened with extinction. Intensification of agriculture is a major driver of this dramatic biodiversity decline. Modern-industrial agriculture has spurred considerable yield increases in the second half of the 20th century, however, the current agrichemical model of agriculture undermines itself and much else besides. Hence, a paradigm change in agriculture is urgently needed. Ways forward include the (re)diversification of agriculture from field, farm to landscape scales. In addition, ecological intensification, that is, the replacement of conventional intensification practices through ecological processes to increase crop production, has been proposed. Taking examples from Colombia, South Africa and Indonesia, I illustrate potentials of agricultural diversification and ecological intensification in modern-industrial farms to promote environmental and economic sustainability. While individual methods hold great potential to reduce negative impacts, combining multiple methods of ecological intensification and diversification can create truly regenerative agricultural systems that have great potential to sustainably enhance food production and biodiversity

Keywords: Paradigm shift