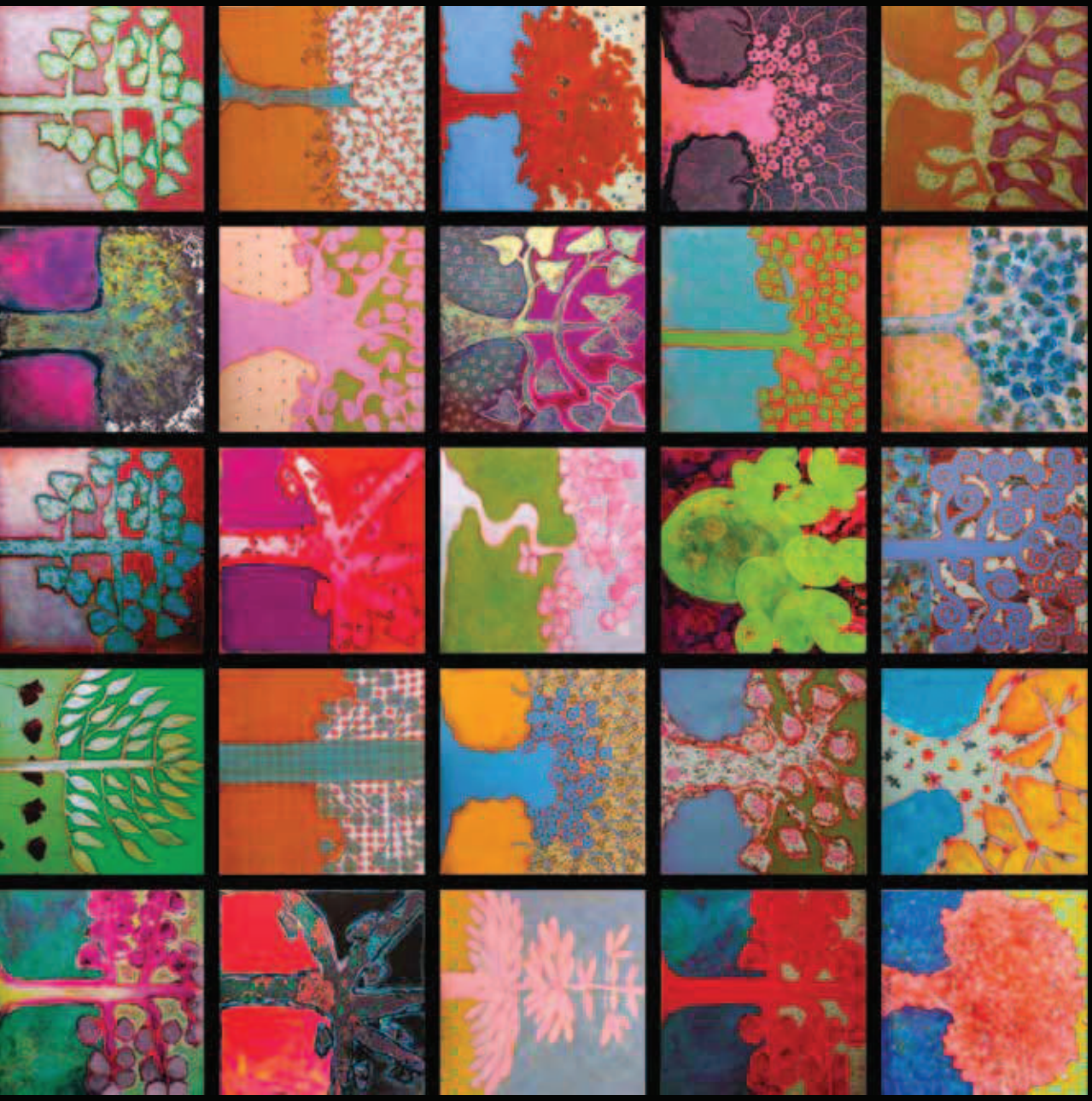




Book of Abstracts

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RESEARCH
PROGRAM ON
Forests, Trees and
Agroforestry

Landscape approaches to tackle climate change, and achieve sustainable development and food security

Aerial view of the landscape around Halimun Salak National Park, West Java, Indonesia. Photo by Kate Evans/CIFOR

What is FTA?

The CGIAR Research Program on Forests, Trees and Agroforestry (FTA) is the world's largest research for development program to enhance the role of forests, trees and agroforestry in sustainable development and food security and to address climate change. CIFOR leads FTA in partnership with Bioversity International, CATIE, CIRAD, INBAR, Tropenbos International and the World Agroforestry Centre. FTA's research contributes to 14 of the SDGs.

What do we work on?

- Tree genetic resources
- Forests, trees and agroforestry for smallholder livelihoods
- Sustainable value chains and investments
- Landscape dynamics, productivity and resilience
- Climate change adaptation and mitigation
- Gender, evaluation and impact assessment



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Yield safe: wheat and pasture production under Pinus Radiata

Mosquera-Losada M. R.¹ (mrosa.mosquera.losada@usc.es), Pérez-López C.²,
Ferreiro-Domínguez N.¹

¹Crop Production and Project Engineering, University of Santiago de Compostela, Lugo, Galicia, Spain;

²Agroforestry Engineering, University of Santiago de Compostela, Lugo, Galicia, Spain

Agroforestry are sustainable land management systems able to increase the production considering both the woody and herbaceous component. The Woody component economic return is usually produced when the stand is thinned and in the final harvest. However, the herbaceous production is usually negatively affected by the shade, but it also depends of the type of understory that it is grown. Yield SAFE is a biophysical model that allow to compare different crop production under different tree management options. The aim of this paper was to compare the herbaceous production of wheat and grassland in a tree less situation and a silvopasture system with low tree density (600 trees ha⁻¹) developing four different scenarios. Wheat and grassland were sown at the beginning. Under treeless situation (Figure 1), wheat produces more than grasslands, but in extreme years with a high level of drought the production of pasture is reduced in a lower degree or even not reduced. When the herbaceous component grows up under the tree, wheat diminishes more its productivity than grasslands. As a mean pasture under tree is able to maintain the 20% of the full sunlight situation grassland production, while the wheat is below 5%. We can conclude that having grassland as part of the understory of a pinus radiata silvopastoral systems, farmers are able to have more forage than having wheat. Moreover, the resilience of pasture availability is higher when grassland is used in silvopastoral systems.

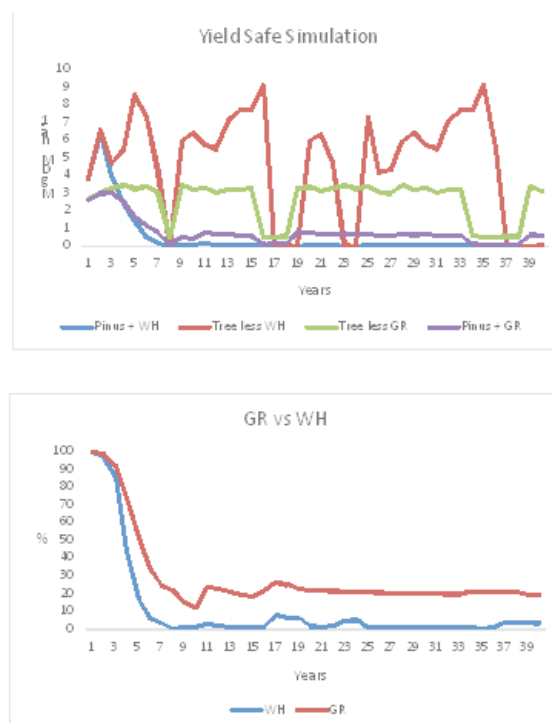


Figure 1. Yield safe understory production (DM and %) simulation in four scenarios.
WH: Wheat; GR: Grassland

Keywords: agroforestry, silvoarable, silvopasture, Monterrey pine.