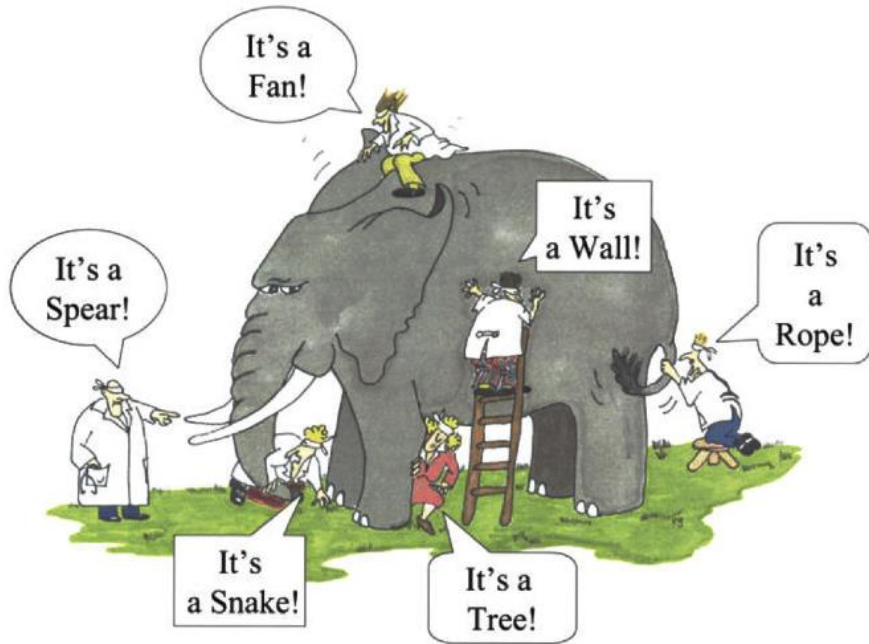
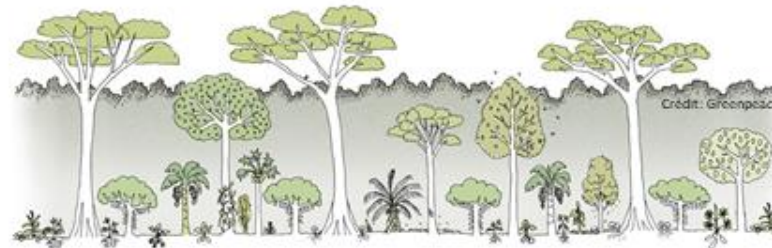


DAMIEN BEILLOUIN

UPR Hortsys, CAEC/CIRAD Lamentin



STATE OF THE ART OF META-ANALYSIS RESULTS FOCUSING ON THE EFFET OF AGROFORESTRY ON ECOSYSTEM SERVICES



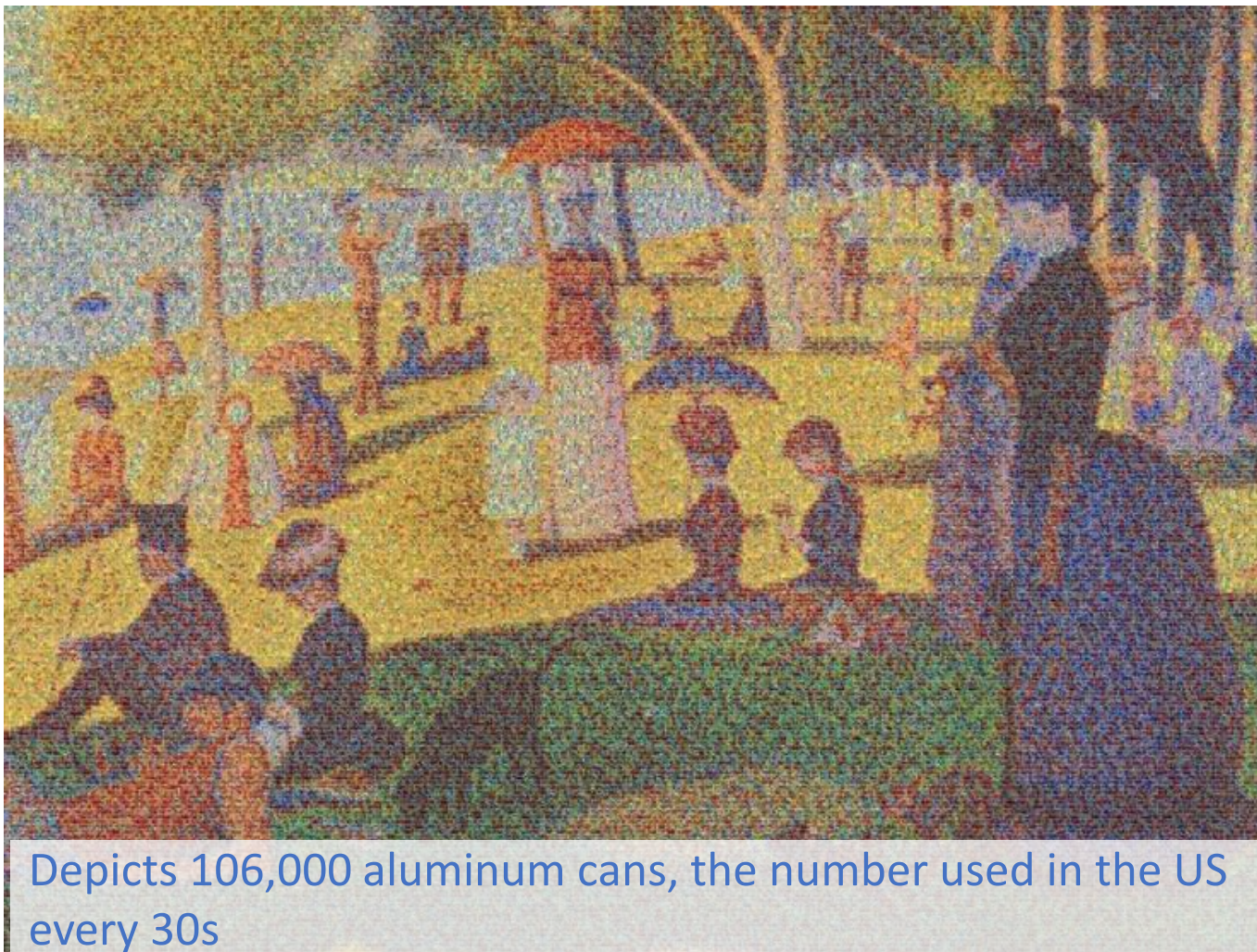


1. Why synthesise data?

Focus...



Step back!

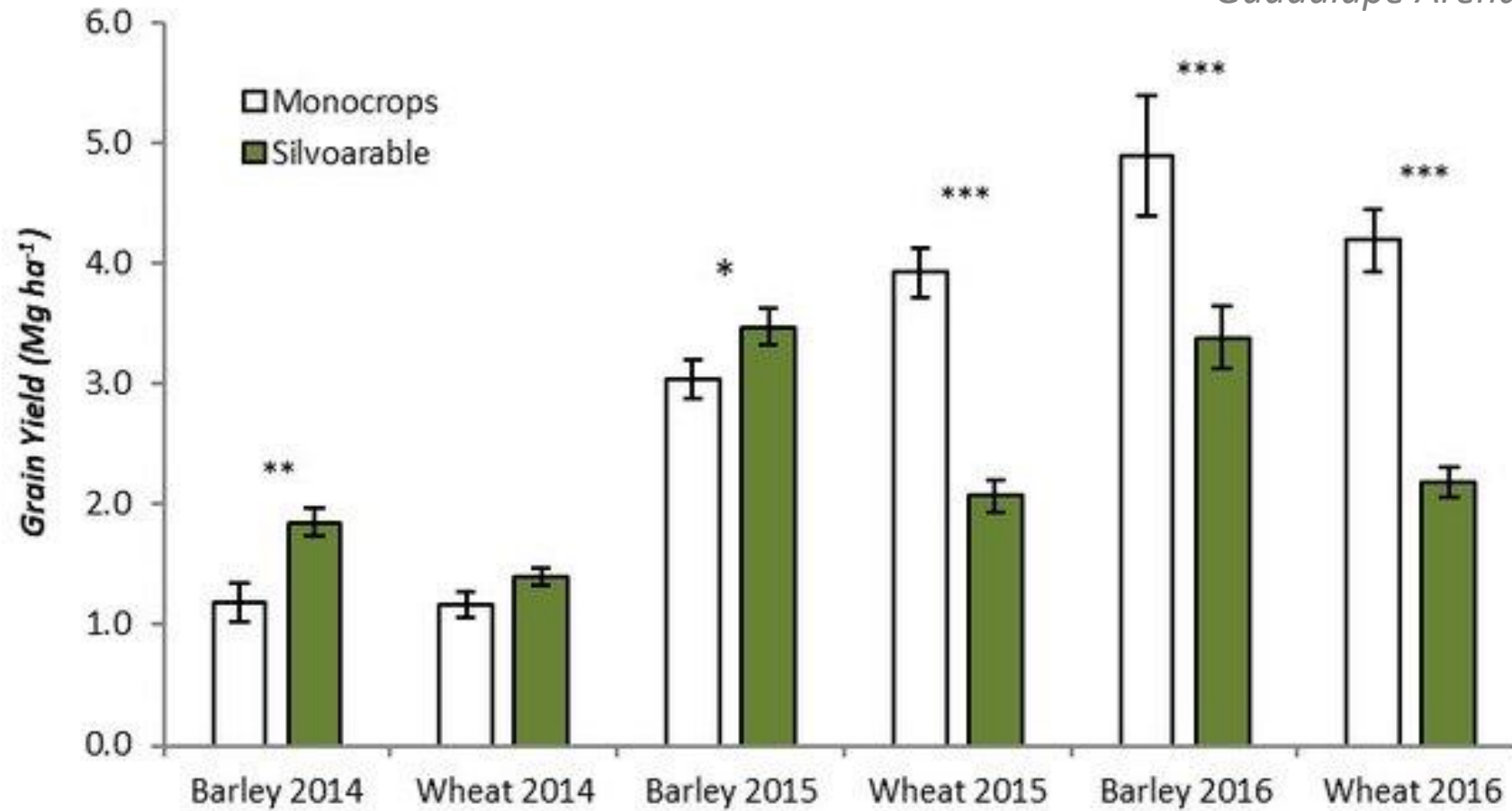


Depicts 106,000 aluminum cans, the number used in the US every 30s



A difficulty in generalising from experimental results

Guadalupe Arenas-Corraliza et al., 2018





2. State of the art of available data

A huge amount of data available:

20

Meta-analyses



125

Effect_sizes



1010

Primary studies

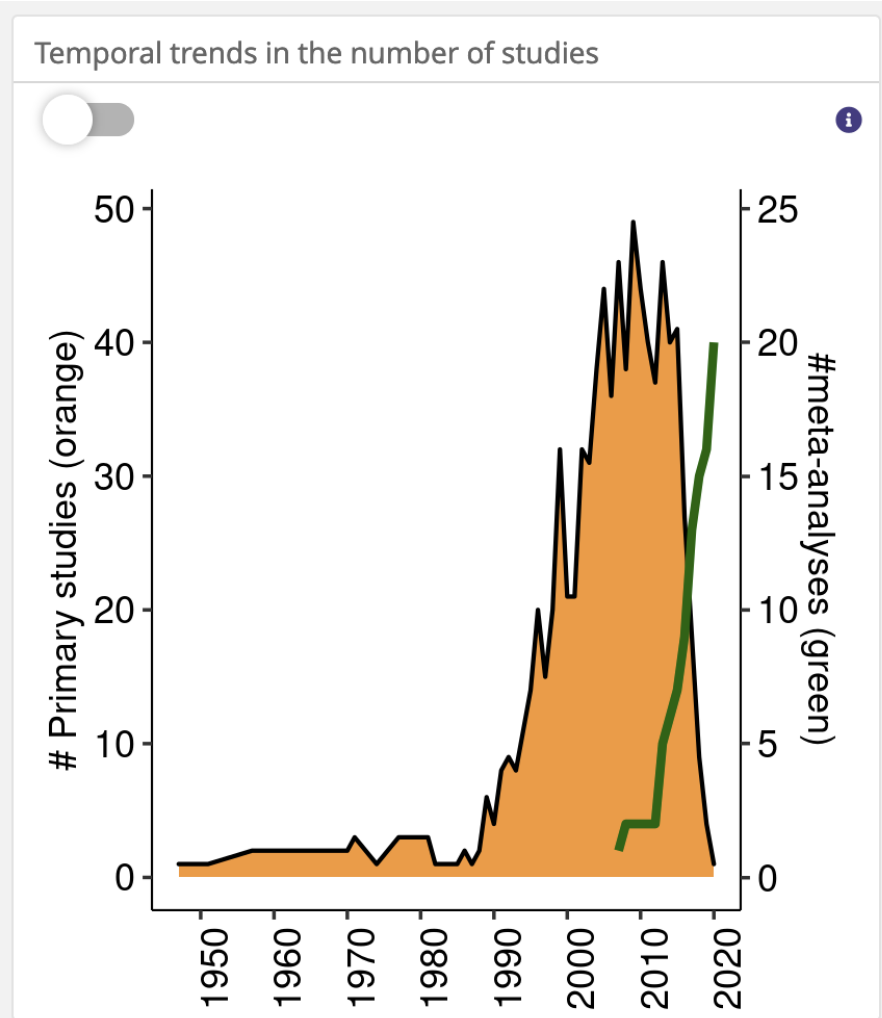


6994

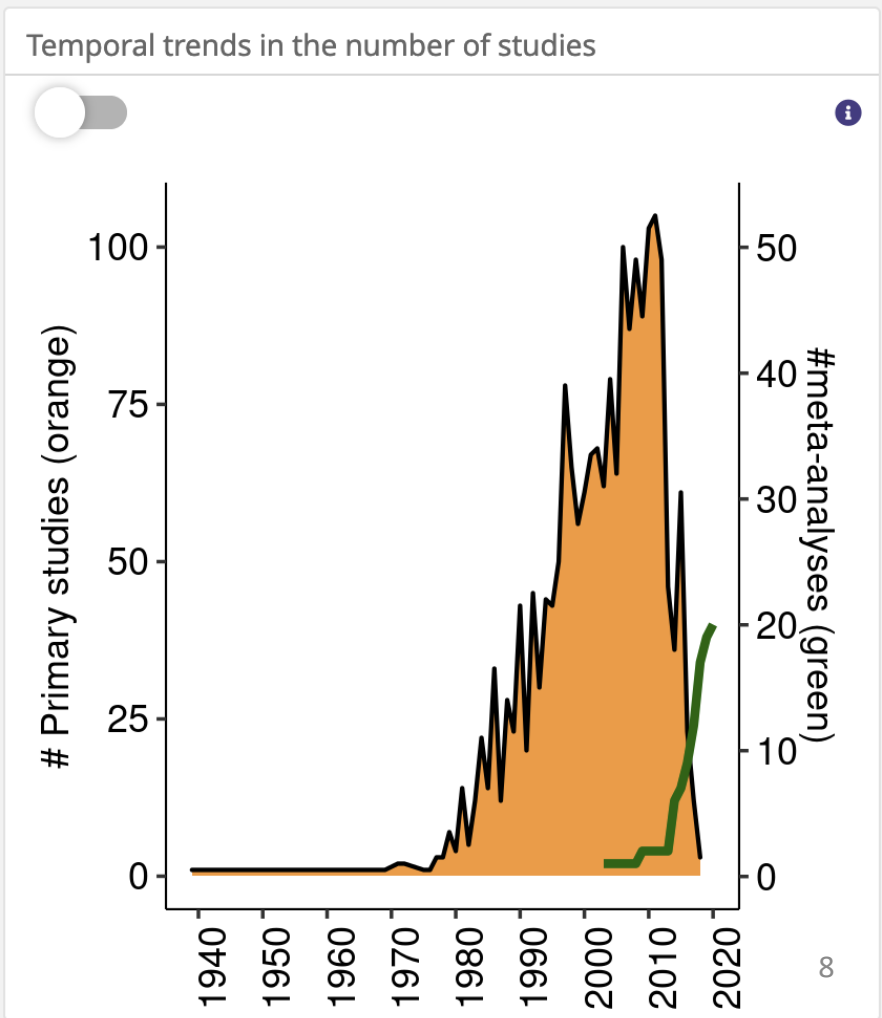
paired-data (experiments)

And much more data will be published :

Agroforestry:

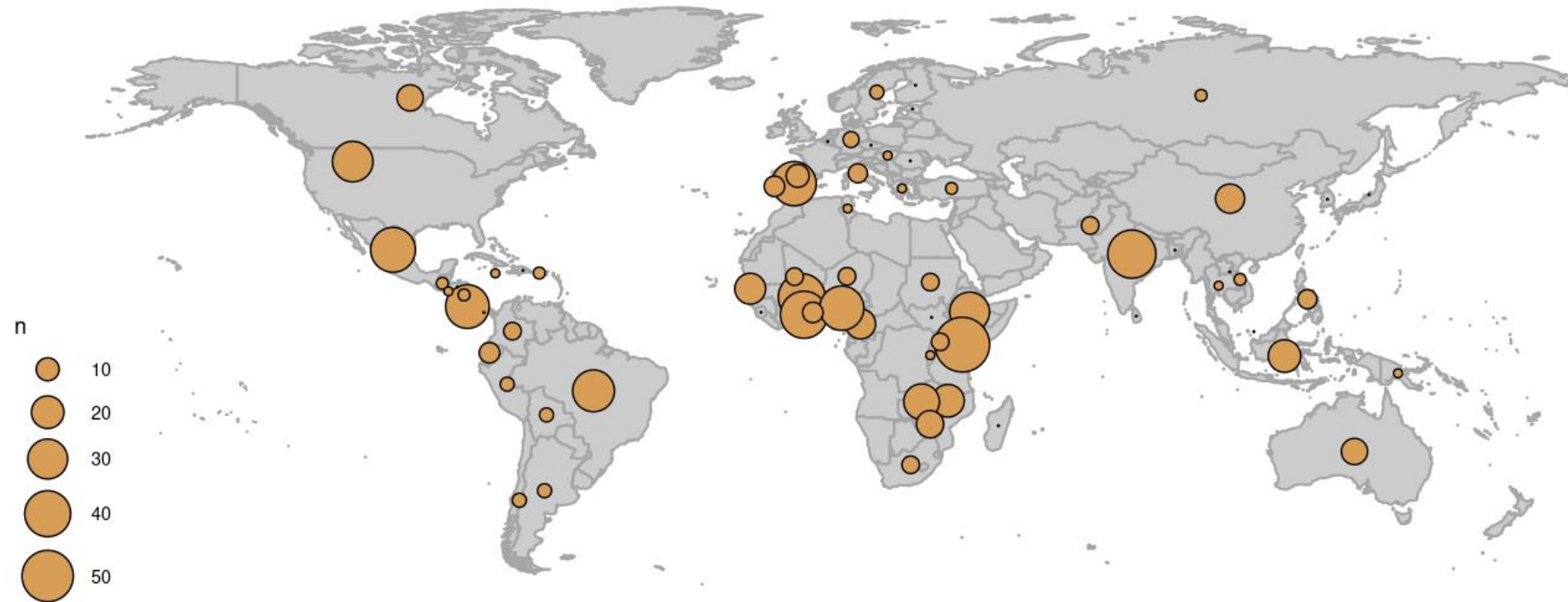


Crop rotation:



But a very uneven distribution of data :

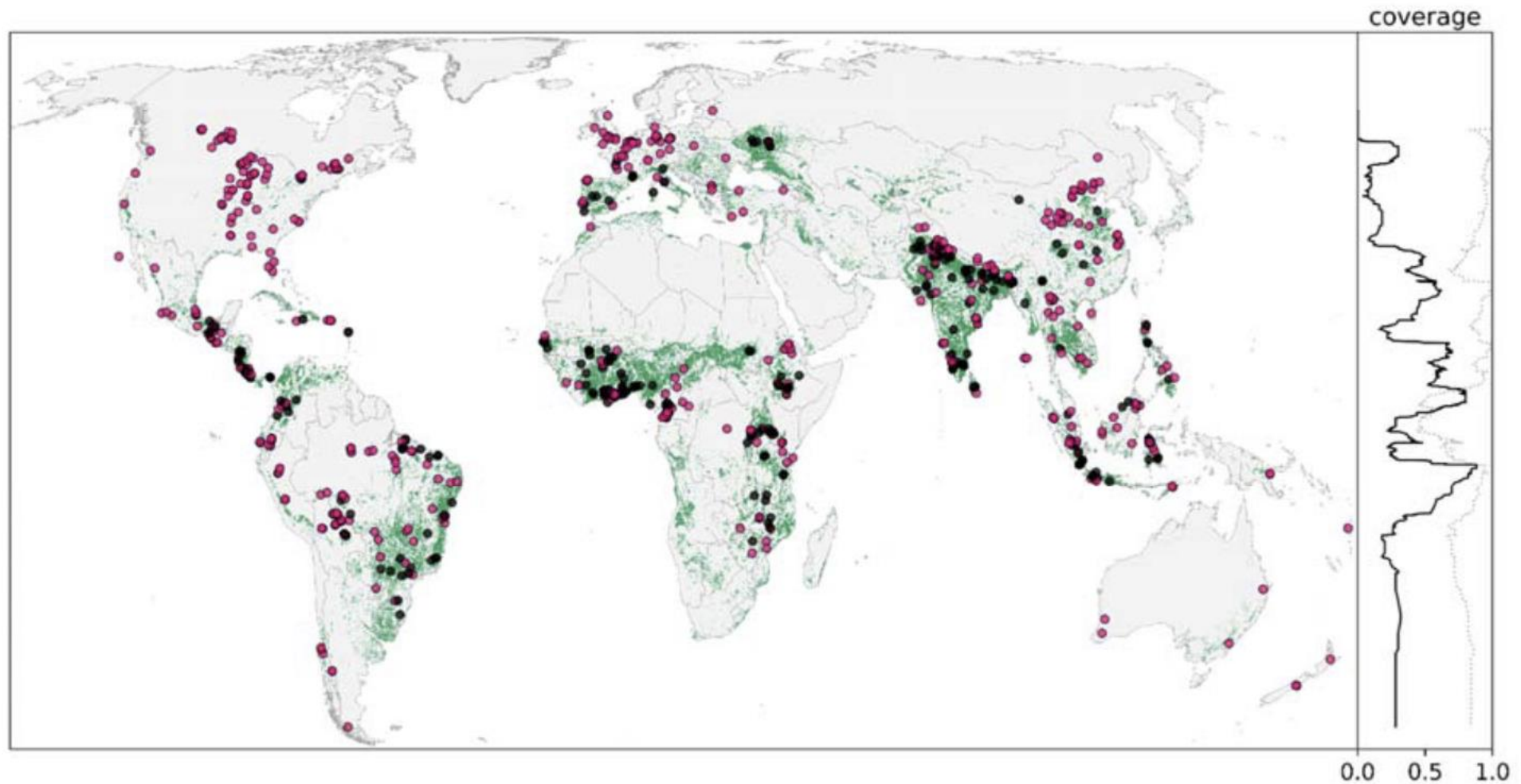
All types of Agroforestry considered together:



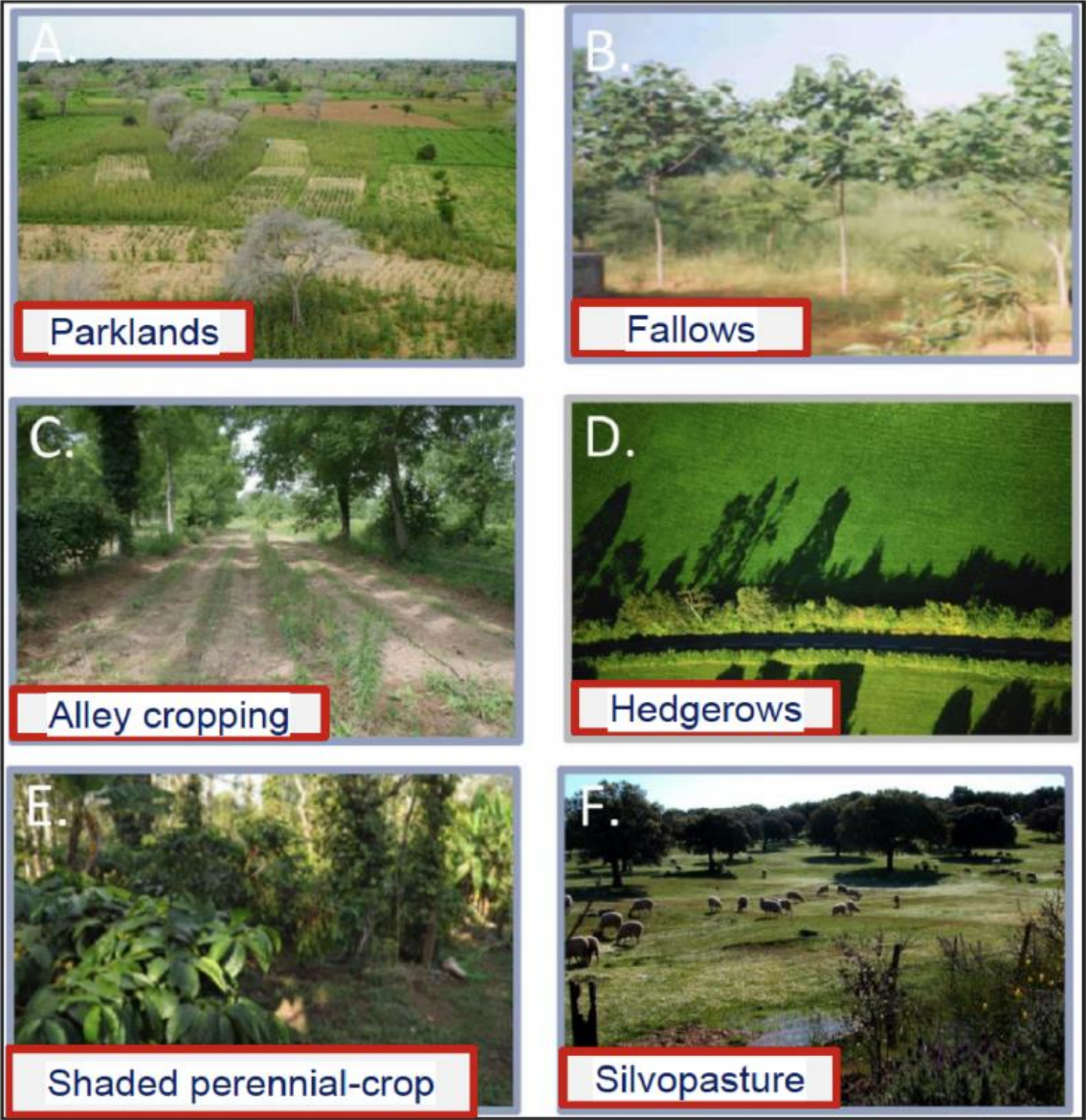
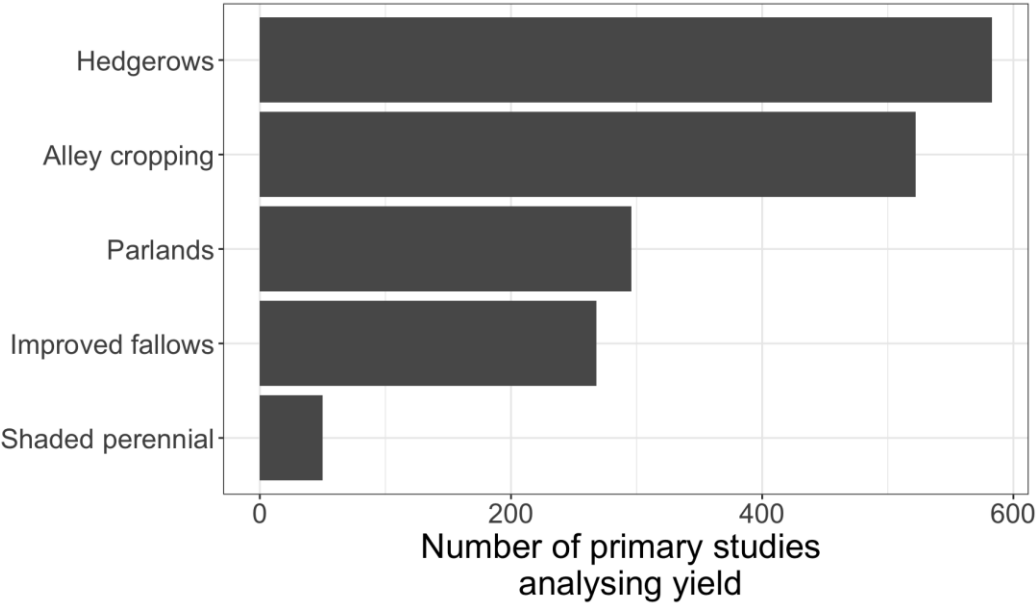
But a very uneven distribution of data :

All typ

B.

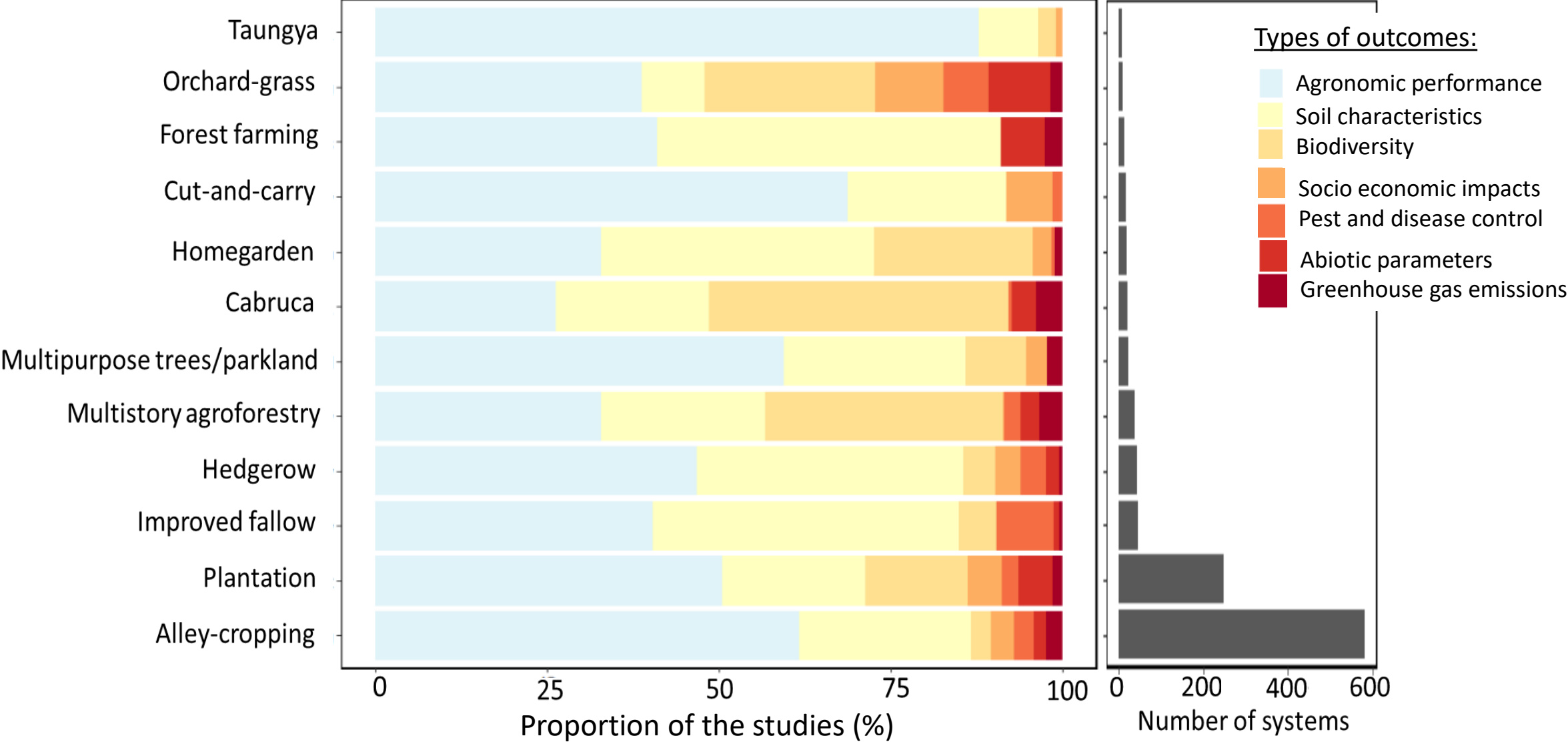



What types of agroforestry?



What types variables are analysed?

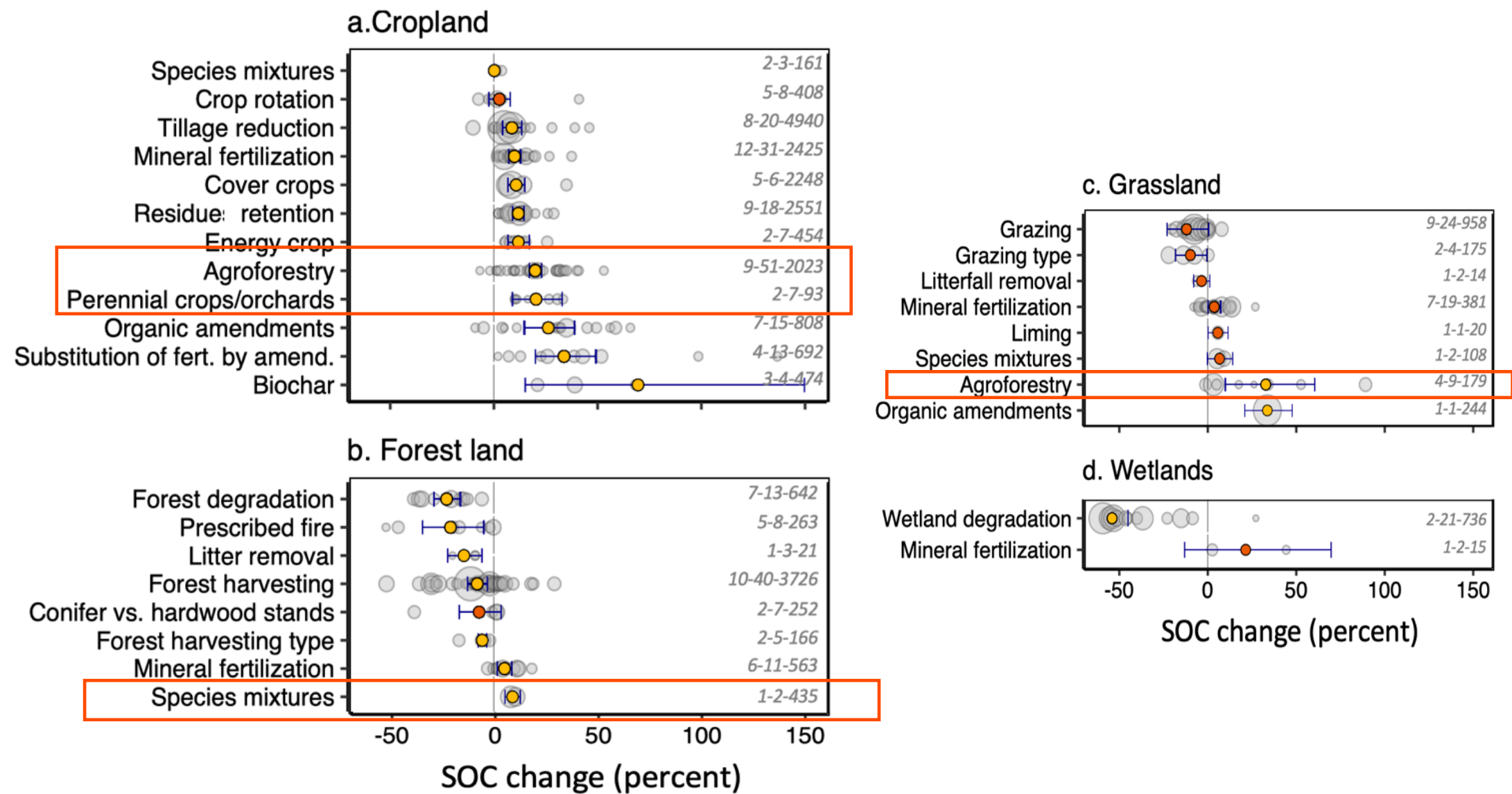
Focus on Agroforestry including horticultural crops:



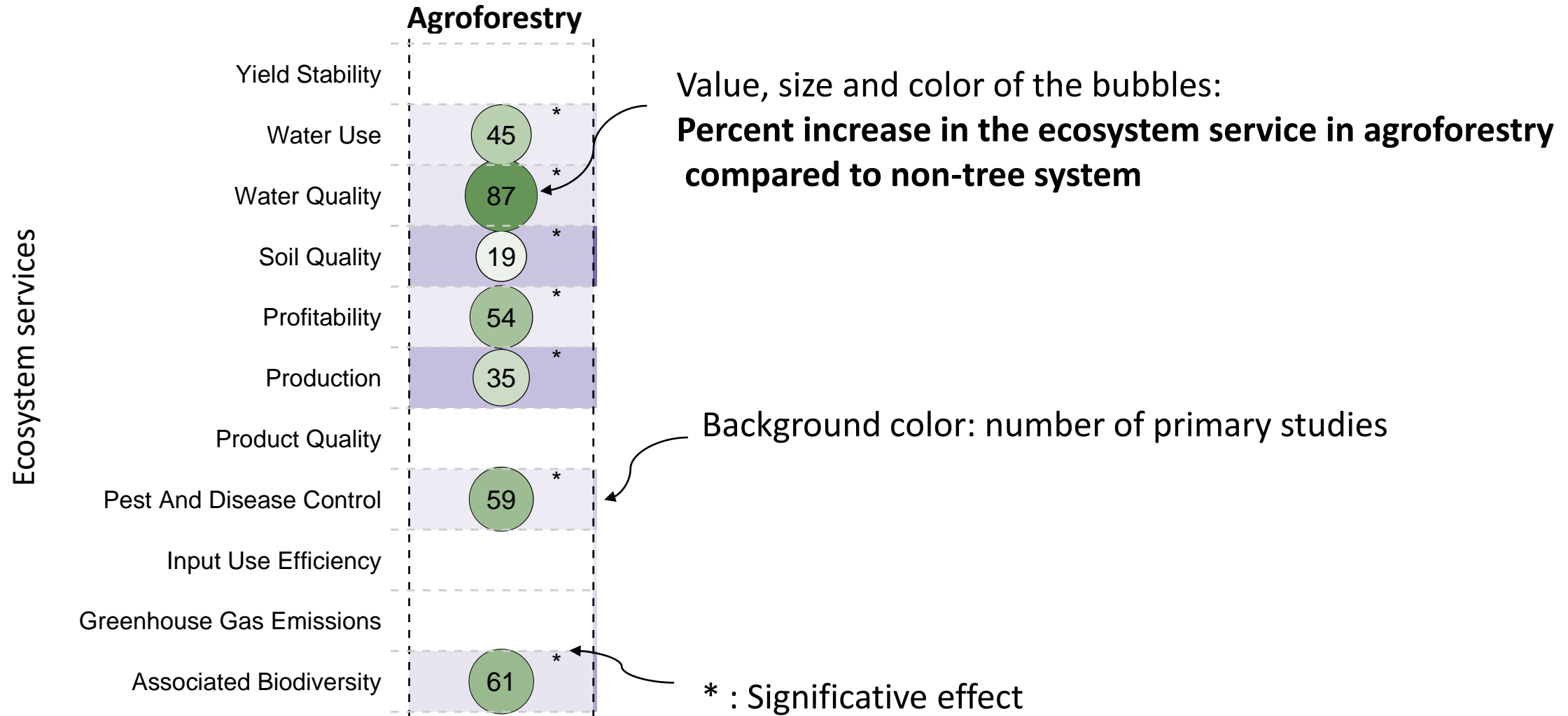


3. Is agroforestry an effective way to diversify cropping systems to improve biodiversity and ecosystem services?

Agroforestry: an effective strategy for storing soil carbon ?

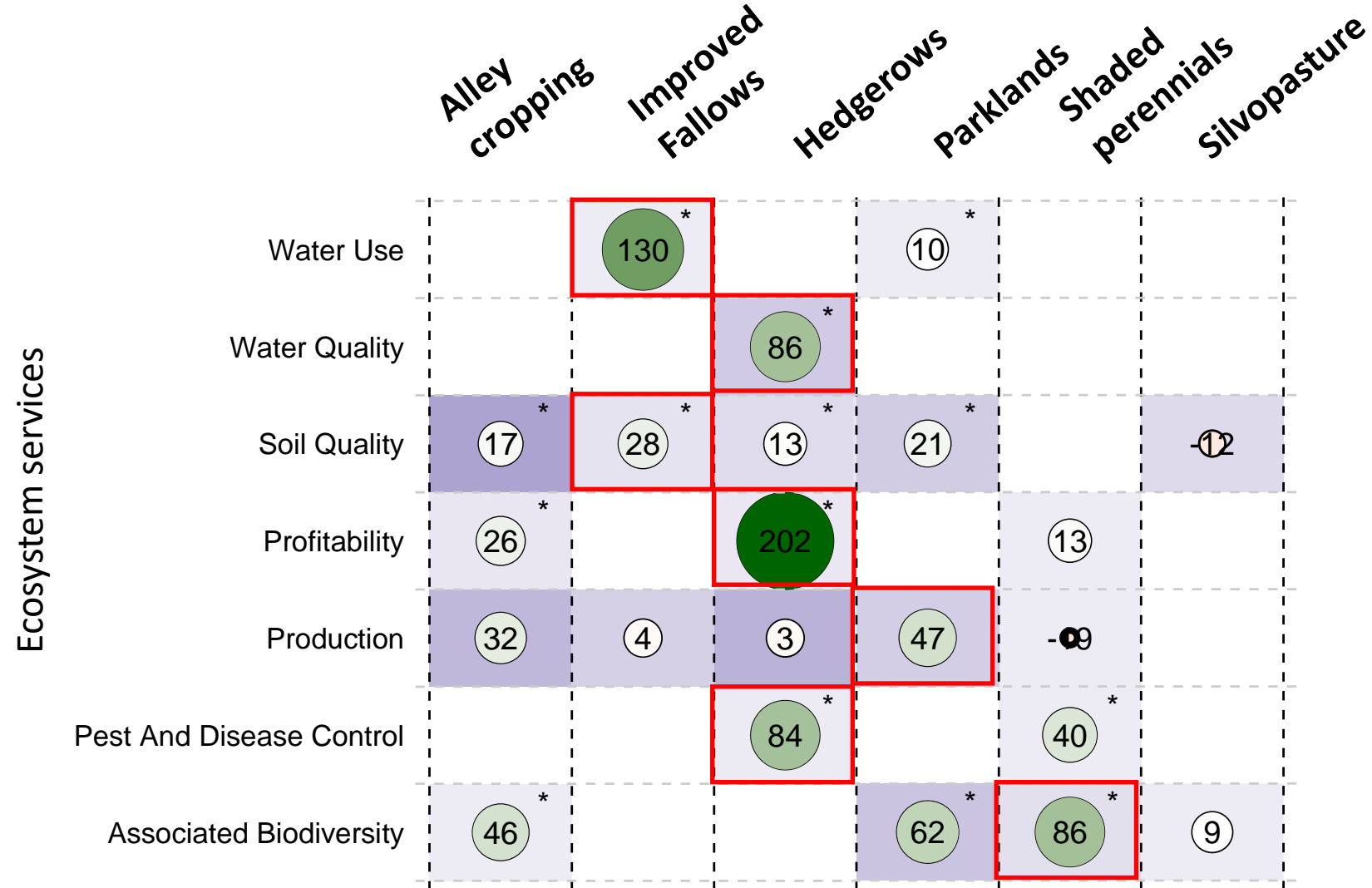


Agroforestry: an effective strategy?



-> Agroforestry: a promising solution to improve ecosystem services

Agroforestry: which type?

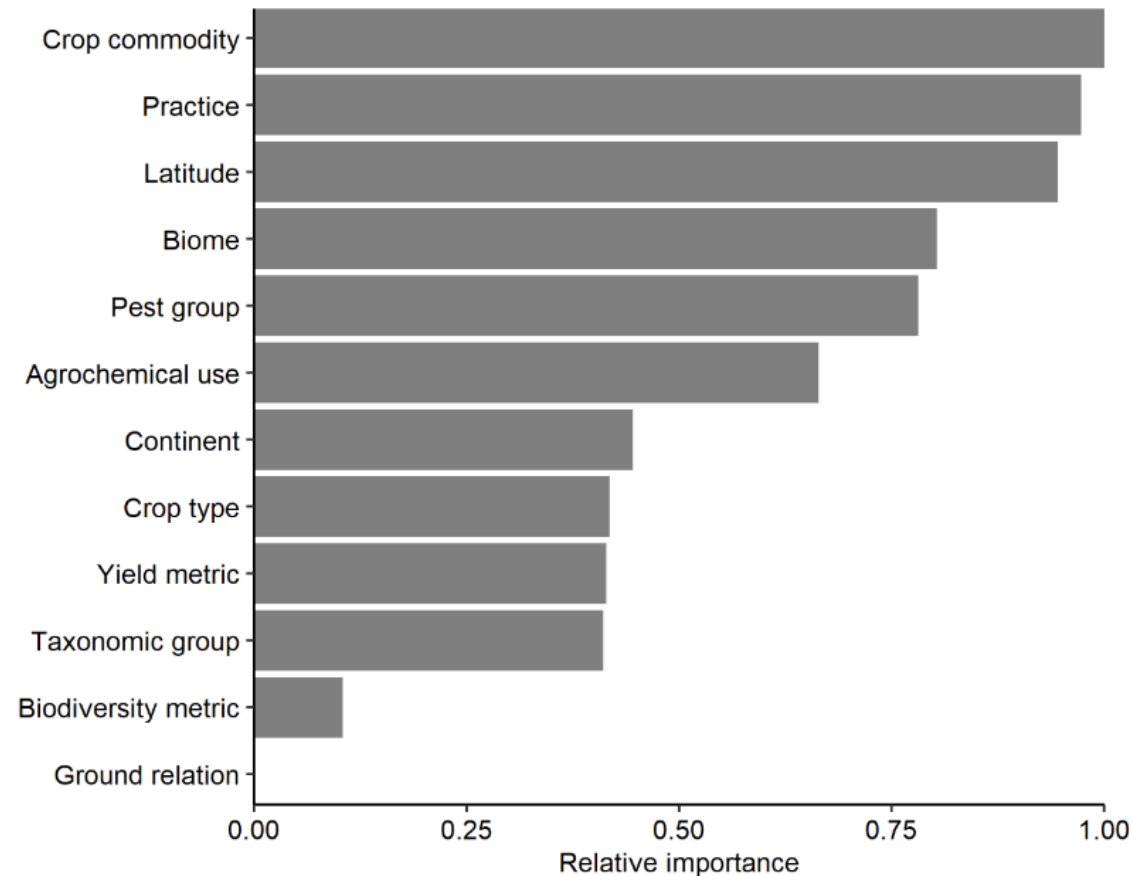


-> Agroforestry system to be adapted locally

What factors affect the performance of agroforestry systems?

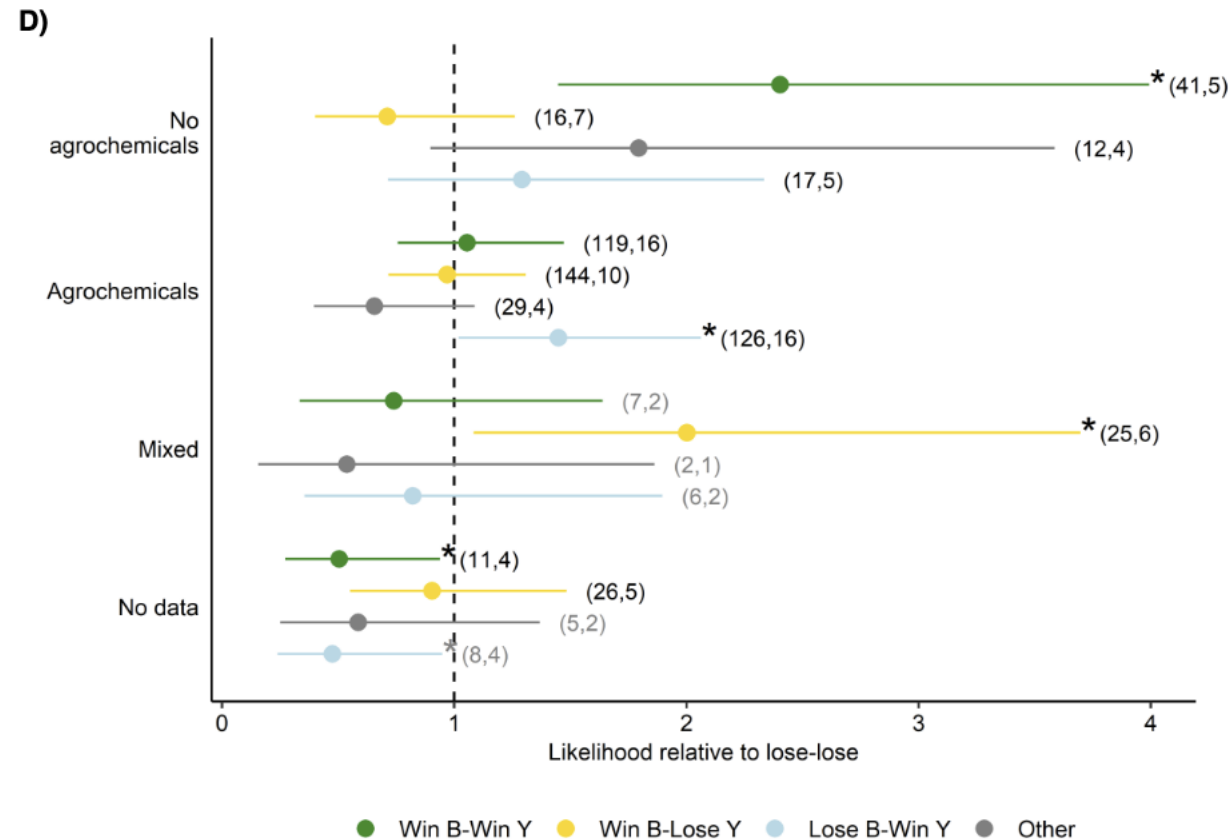
Database of Jones et al, on crop diversification:

Under what conditions do diversification practices (of all kinds) allow a simultaneous gain in yield and biodiversity?



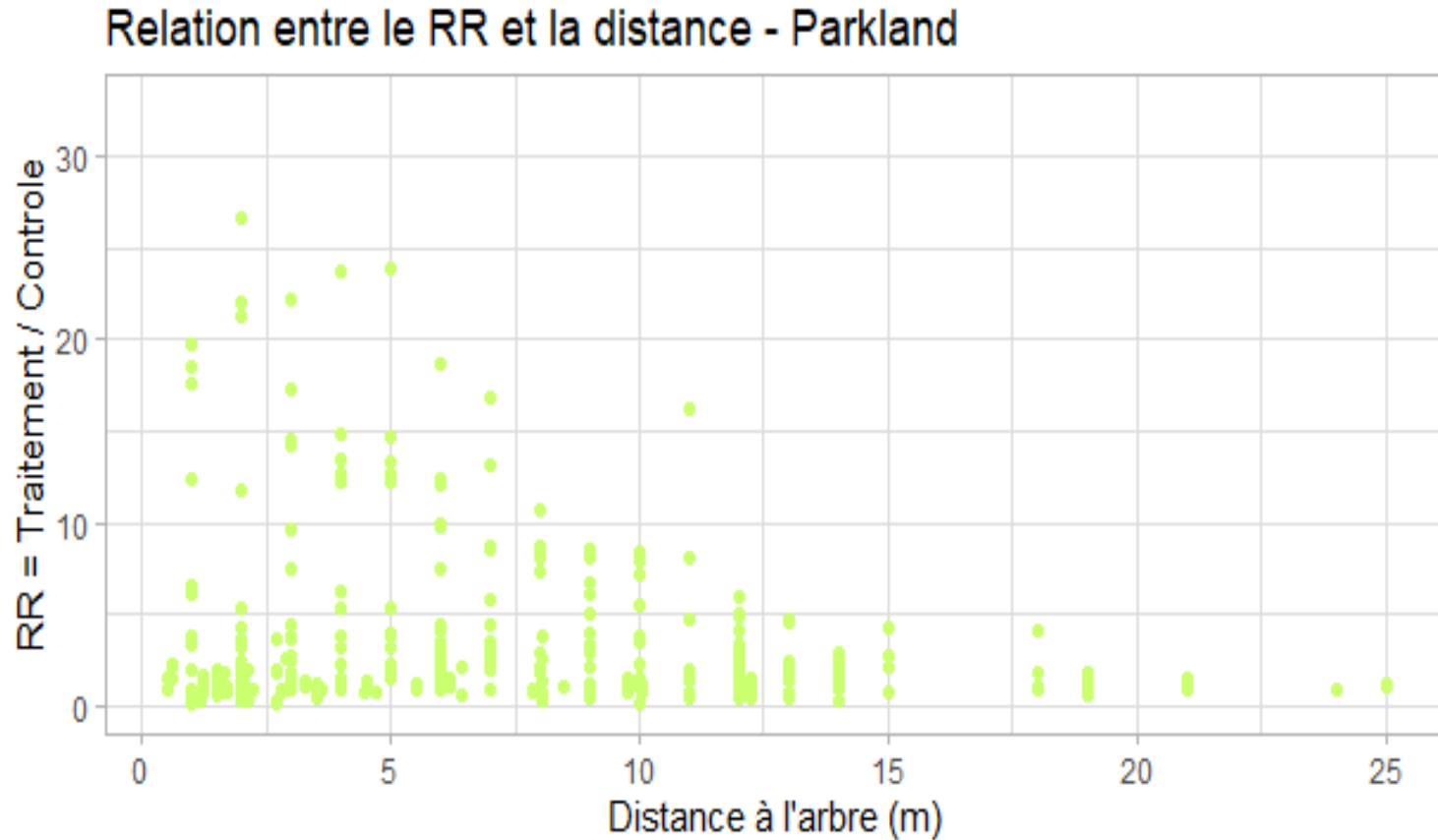
What factors affect the performance of agroforestry systems?

Database of Jones et al, on crop diversification: Under what conditions do diversification practices (of all kinds) allow a simultaneous gain in yield and biodiversity?



What factors affect the performance of agroforestry systems?

Database of Beillouin et al, on crop diversification:



Some available databases:

Building a global carbon database to characterize agroforestry as a natural climate solution

Cook-Patton, Susan¹; Biswas, Tanushree¹; Cardinael, Rémi²; Culbertson, Katherine³; DeStefano, Andrea⁴; Garcia, Edenise⁵; Jacobson, Michael⁶; Neupane, Kripa⁶; Rosenstock, Todd⁷; Sprenkle-Hyppolite, Starry⁸; Suber, Marta⁹; Surdoval, Alison¹; Terasaki Hart, Drew¹; Thapa, Bhuwan¹⁰; Valverde, Yesenia³; Wood, Stephen¹; Yeo, Sam¹; Zarate, Alina³

¹ The Nature Conservancy, United States

² CIRAD, UPR AIDA, Harare, Zimbabwe

³ University of California Berkley, United States

⁴ BREC, United States

⁵ The Nature Conservancy, Brazil

⁶ Penn State, United States

⁷ Alliance of Bioversity-CIAT, France

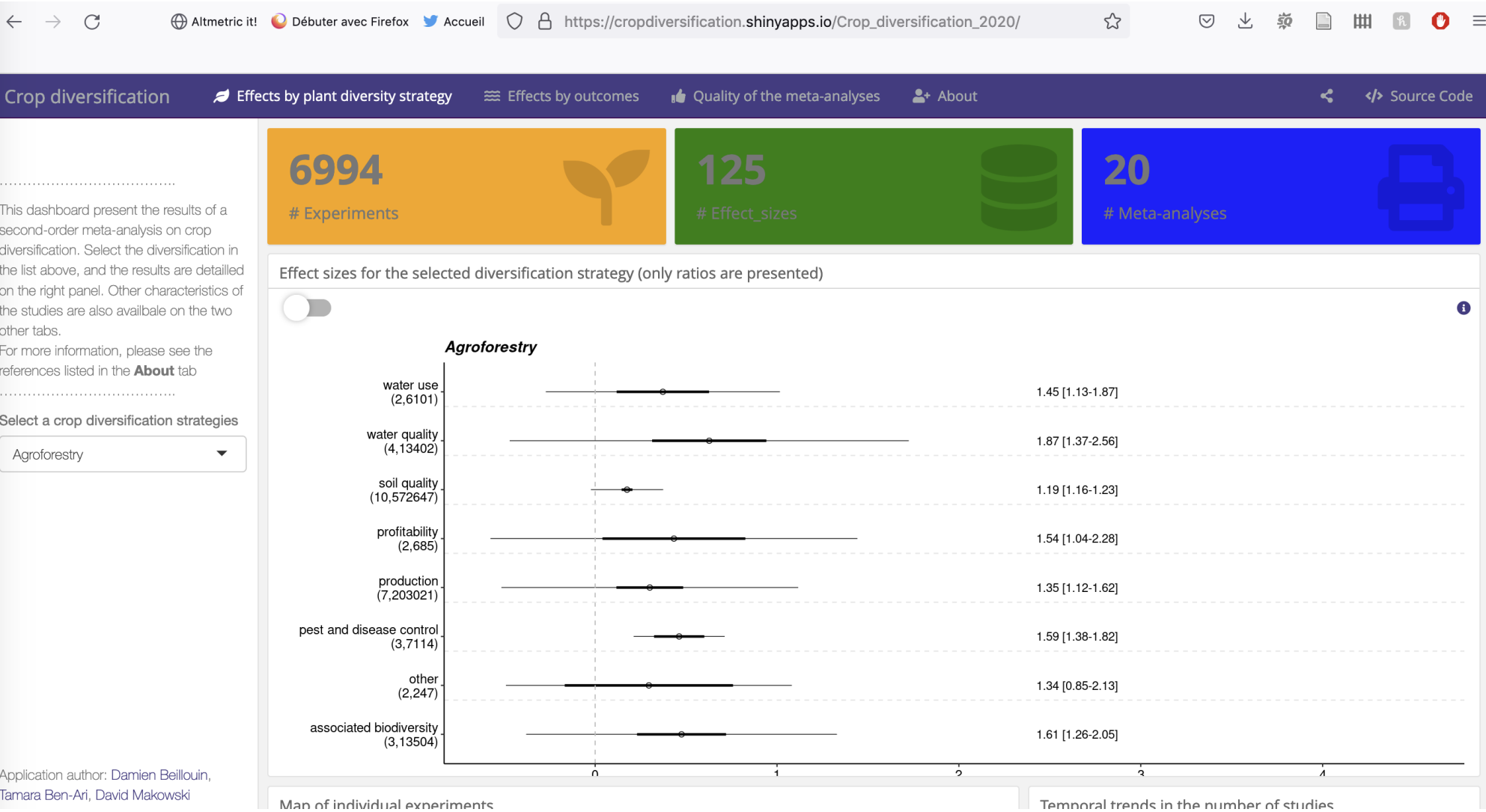
⁸ Conservation International, United States

⁹ World Agroforestry, Peru

¹⁰ University of Missouri, United States

susan.cook-patton@tnc.org

Some available databases:



Some available databases:

← → ↻

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https://era.ccafs.cgiar.org/query/app/?country=*&practice=Agronomy%3BAg

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ERA

Explore Analyze Decide About Data Entry

ERA is a dynamic dataset and web portal. Thus, we often add new data. Currently we are updating the dataset by screening an additional 1,628 articles published between 2013-2018. Future updates may include data found with new keywords or on new technologies and new outcomes. Please do not hesitate to contact us with any questions about the status of what is available on-line: icraf-era@cgiar.org

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Discover the papers that are in the database.

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Practice

Agronomy;Agrofoi

Outcome

Mitigation: Emissi

Product

Show All

All Publications

Citation	Countries	Agricultural Practices	Outcomes	Agricul Produc
Chikowo, R., Mapfumo, P., Nyamugafata, P., & Giller, K. E. (2004). Mineral N dynamics, leaching and nitrous oxide losses under maize following two-year improved fallows on a sandy loam soil in Zimbabwe. Plant and Soil, 259(1-2), 315-330. doi: 10.1023/B:PLSO.0000020977.28048.f	Zimbabwe	Agroforestry Fallow Agroforestry Fallow (N fixing) Agroforestry Pruning Tree Prunings Applied (N fixing) Agronomy Continuous Cropping Agronomy;Agroforestry Monoculture (Spatial) Agronomy;Agroforestry Natural or Bare Fallow Crop Residue Incorporation Crop Residue Incorporation (Unspecified) Crop Rotation Rotation (N fixing & Non N fixing) Inorganic Fertilizer Inorganic P Inputs Reduced Tillage No or Zero Tillage	Mitigation: Emissions Resilience: Physical	Agrofor Residue Cowpea Maize