



INITIATIVE ON  
Agroecology

# **Holistic Localized Performance Assessment (HOLPA)**

**tool for collecting evidence on the  
impact of agroecology**

17 December 2024

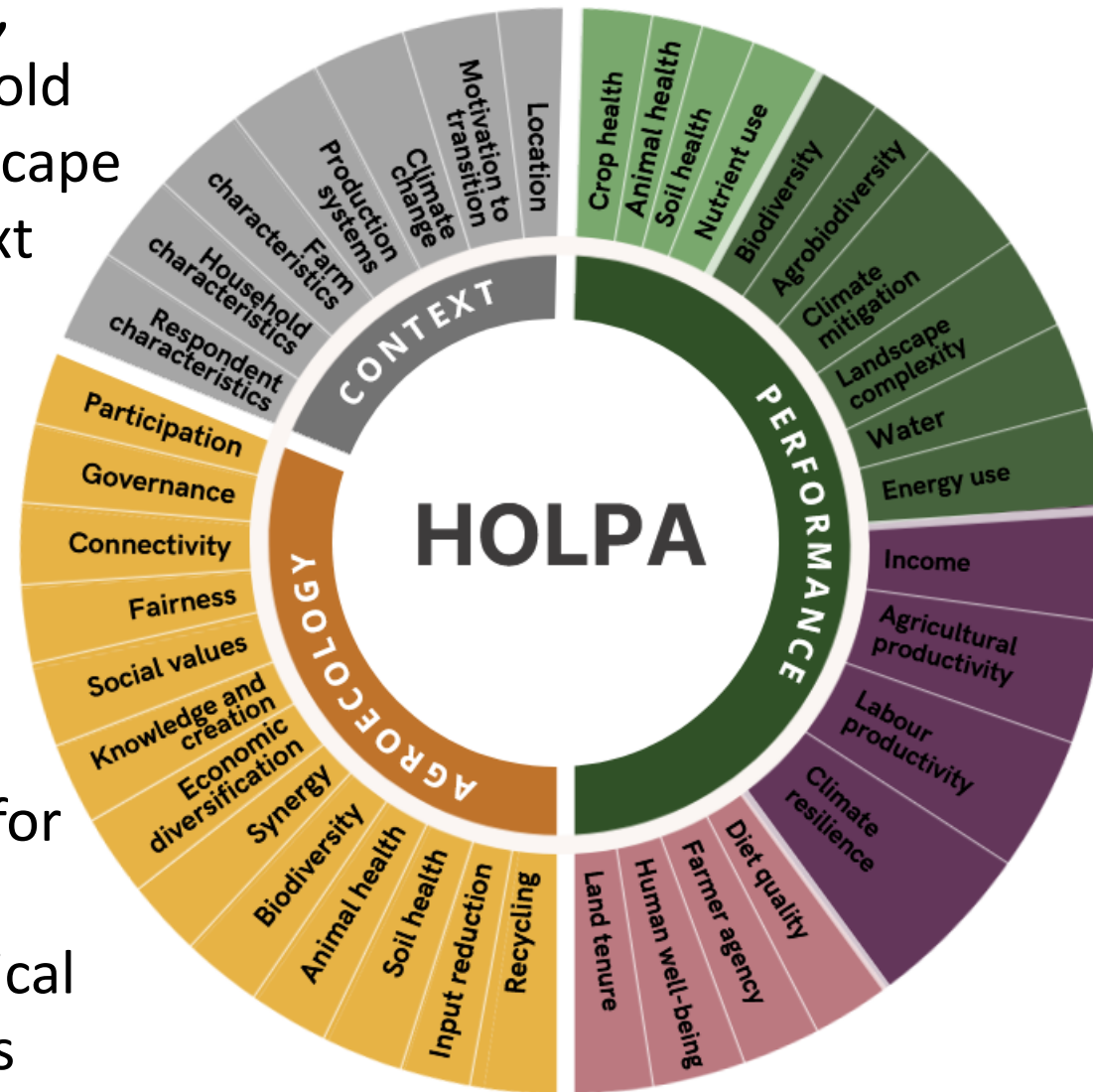
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[andrea.sanchez@cgiar.org](mailto:andrea.sanchez@cgiar.org)

# What is HOLPA?

- Survey-based tool co-developed through a **review** of existing metrics, tools and approaches, participatory **consultative workshops** with AE-I staff and partners, and **piloting** in-field with farmers

Farm,  
household  
and landscape  
context

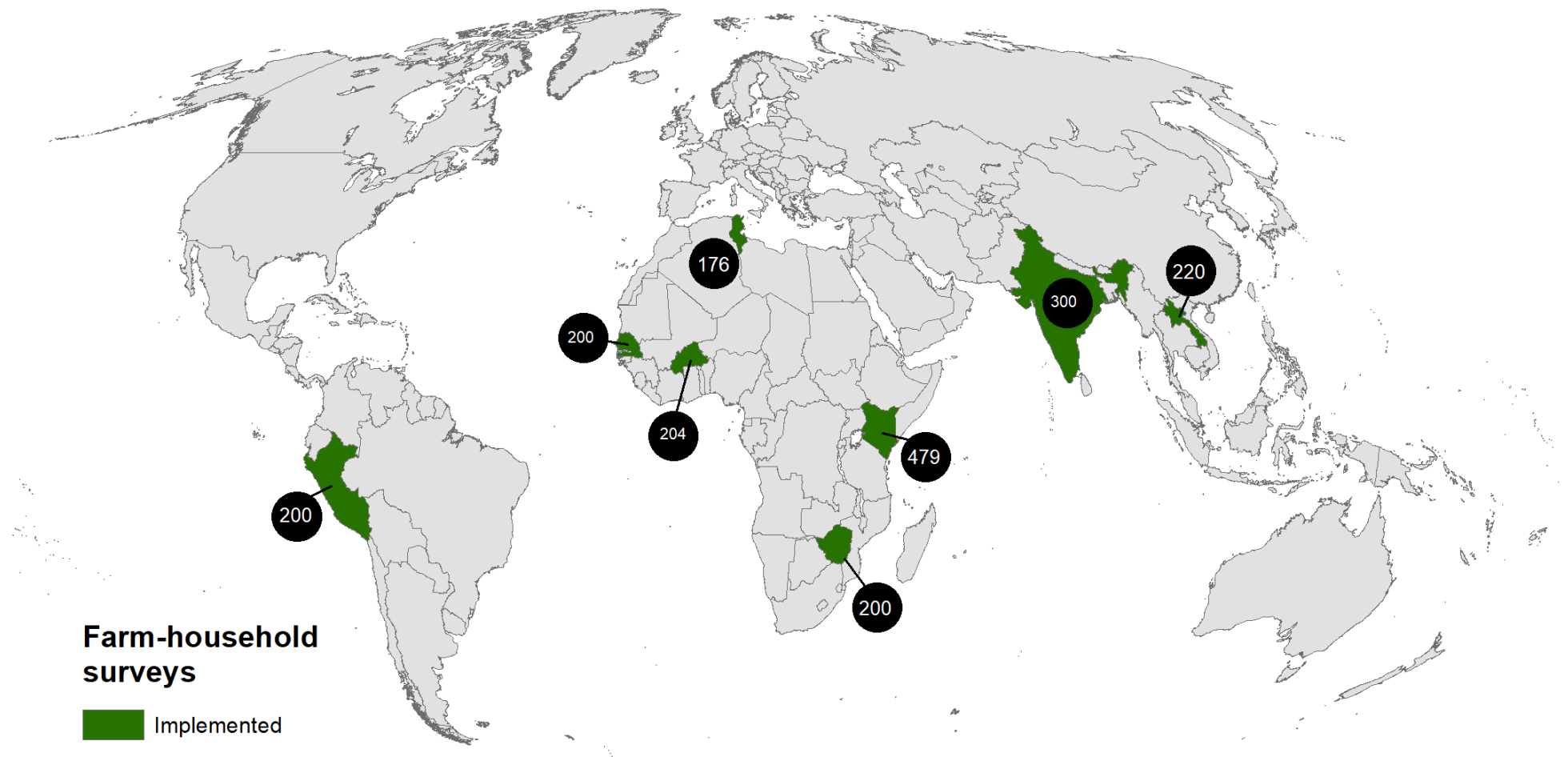
Indicators for  
13  
agroecological  
principles



Indicators for  
18  
performance  
themes

# HOLPA implementation to date

- 1979 farm-households across 8 countries between March and October 2024





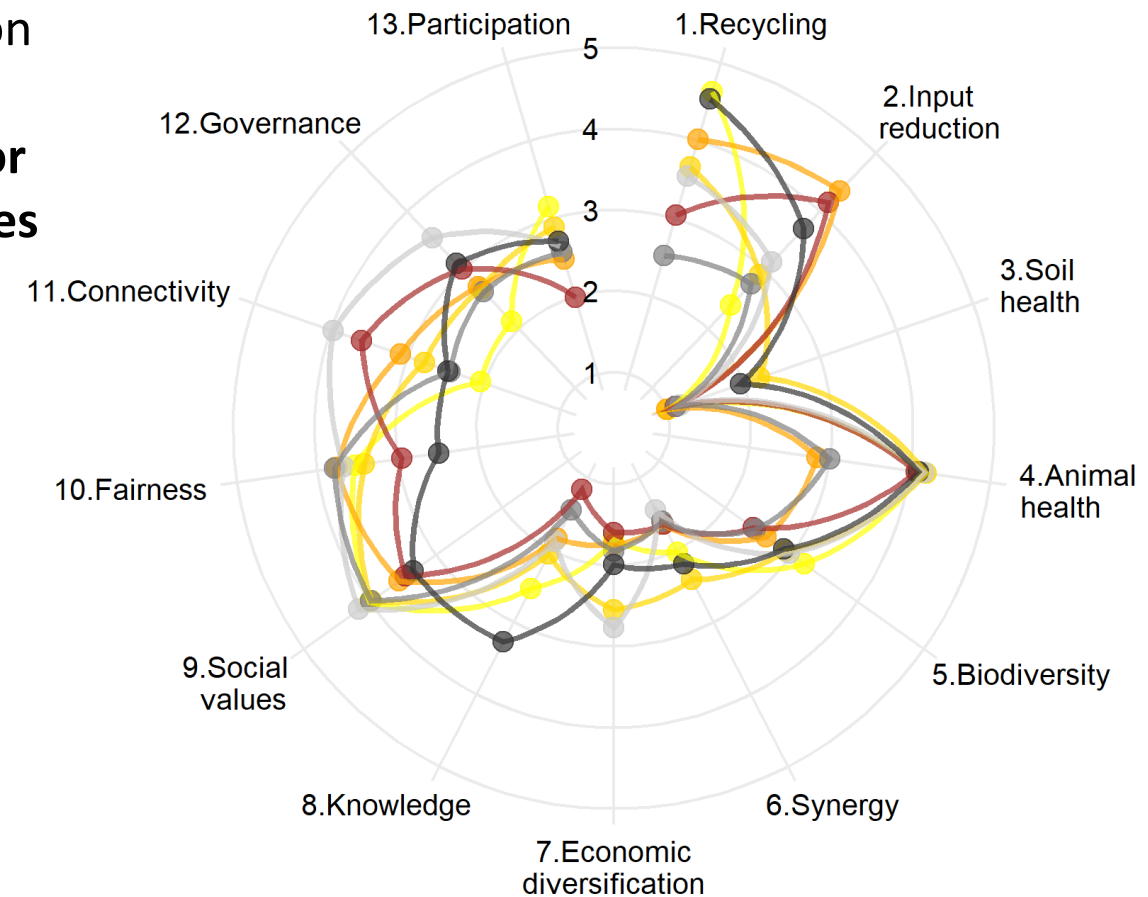
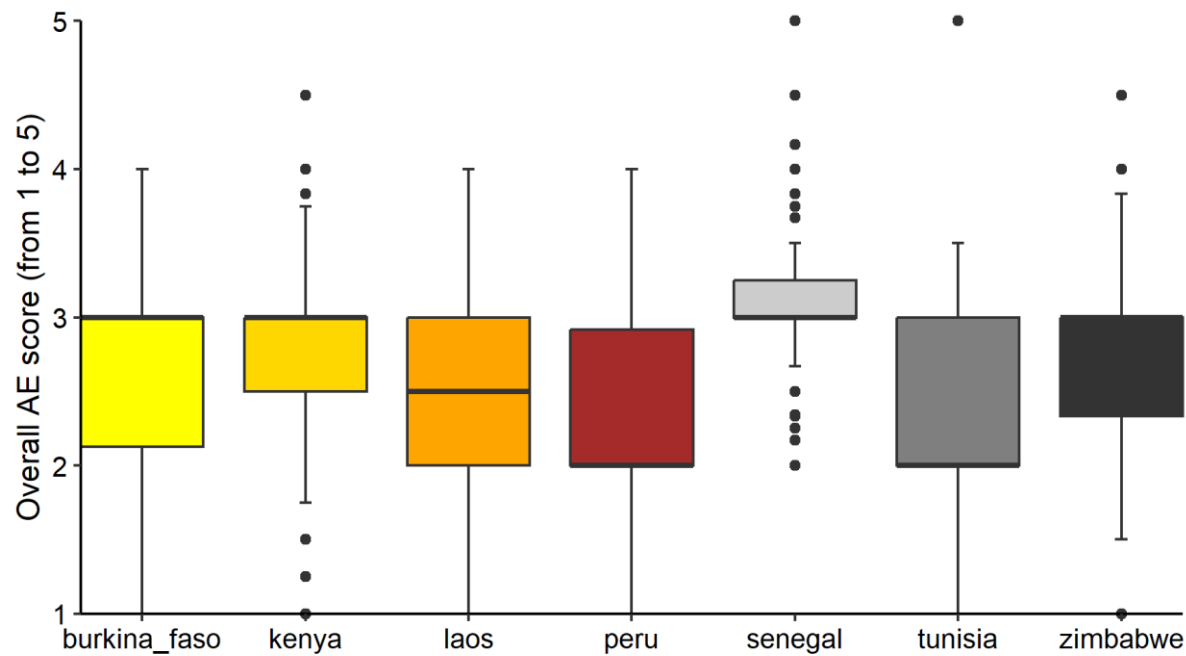
# Research questions

1. How does farm-household adherence to agroecology vary across landscapes in Burkina Faso, (India), Kenya, Laos, Peru, Senegal, Tunisia, and Zimbabwe?
2. How does the agronomic, environmental, social and economic performance vary across farm-households at different levels of adherence to agroecology?



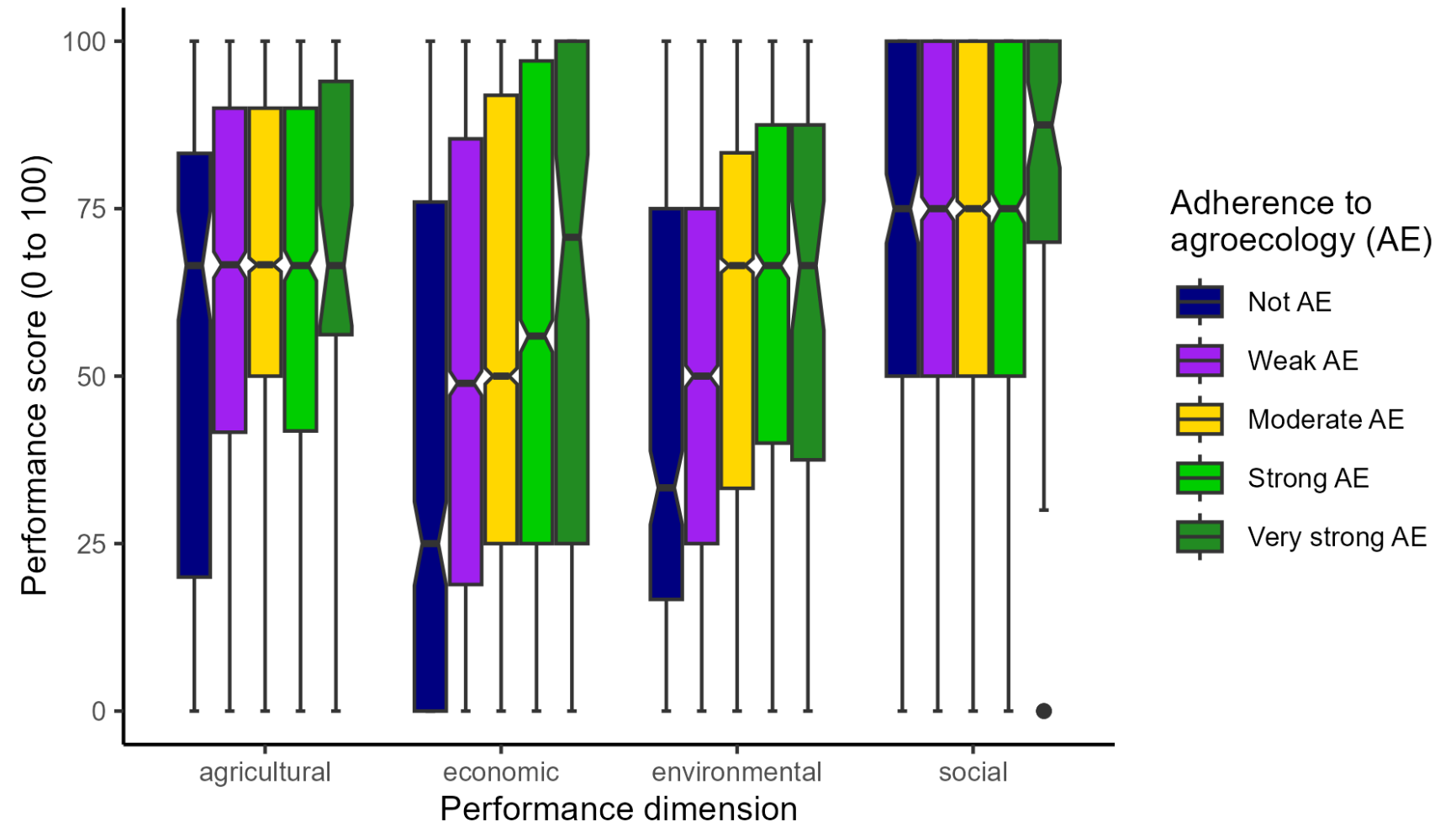
# Result 1 – adherence to agroecology

- **Moderate adherence to agroecology** (score 2 to 3) with Senegal, Kenya and Burkina Faso in advance
- Divergence in adherence to recycling (1), input reduction (2), knowledge (8), fairness (10), connectivity (11), governance (12) – **highlighting different entry points for agroecology transitions across countries and landscapes**



# Result 2 –agroecology performance

- Consistent trend towards **higher performance scores with increasing adherence to agroecology**, across economic, environment, and social performance dimensions



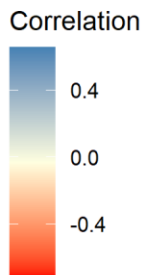


# Result 3 – agroecology performance



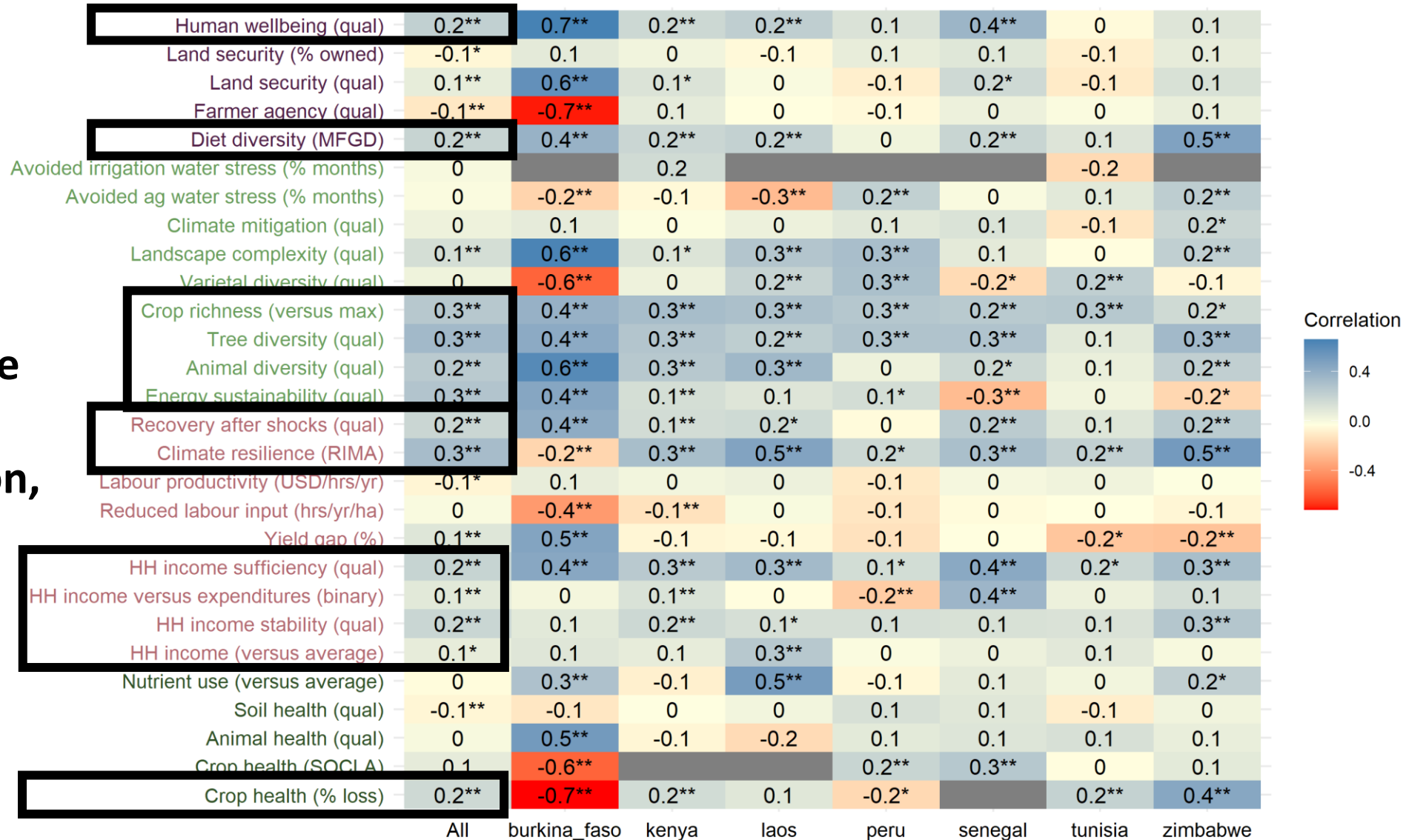
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SOC	Human wellbeing (qual)	0.2**	0.7**	0.2**	0.2**	0.1	0.4**	0	0.1
	Land security (% owned)	-0.1*	0.1	0	-0.1	0.1	0.1	-0.1	0.1
	Land security (qual)	0.1**	0.6**	0.1*	0	-0.1	0.2*	-0.1	0.1
	Farmer agency (qual)	-0.1**	-0.7**	0.1	0	-0.1	0	0	0.1
	Diet diversity (MFGD)	0.2**	0.4**	0.2**	0.2**	0	0.2**	0.1	0.5**
ENV	Avoided irrigation water stress (% months)	0		0.2				-0.2	
	Avoided ag water stress (% months)	0	-0.2**	-0.1	-0.3**	0.2**	0	0.1	0.2**
	Climate mitigation (qual)	0	0.1	0	0	0.1	0.1	-0.1	0.2*
	Landscape complexity (qual)	0.1**	0.6**	0.1*	0.3**	0.3**	0.1	0	0.2**
	Varietal diversity (qual)	0	-0.6**	0	0.2**	0.3**	-0.2*	0.2**	-0.1
ECO	Crop richness (versus max)	0.3**	0.4**	0.3**	0.3**	0.3**	0.2**	0.3**	0.2*
	Tree diversity (qual)	0.3**	0.4**	0.3**	0.2**	0.3**	0.3**	0.1	0.3**
	Animal diversity (qual)	0.2**	0.6**	0.3**	0.3**	0	0.2*	0.1	0.2**
	Energy sustainability (qual)	0.3**	0.4**	0.1**	0.1	0.1*	-0.3**	0	-0.2*
	Recovery after shocks (qual)	0.2**	0.4**	0.1**	0.2*	0	0.2**	0.1	0.2**
AGR	Climate resilience (RIMA)	0.3**	-0.2**	0.3**	0.5**	0.2*	0.3**	0.2**	0.5**
	Labour productivity (USD/hrs/yr)	-0.1*	0.1	0	0	-0.1	0	0	0
	Reduced labour input (hrs/yr/ha)	0	-0.4**	-0.1**	0	-0.1	0	0	-0.1
	Yield gap (%)	0.1**	0.5**	-0.1	-0.1	-0.1	0	-0.2*	-0.2**
	HH income sufficiency (qual)	0.2**	0.4**	0.3**	0.3**	0.1*	0.4**	0.2*	0.3**
	HH income versus expenditures (binary)	0.1**	0	0.1**	0	-0.2**	0.4**	0	0.1
	HH income stability (qual)	0.2**	0.1	0.2**	0.1*	0.1	0.1	0.1	0.3**
	HH income (versus average)	0.1*	0.1	0.1	0.3**	0	0	0.1	0
	Nutrient use (versus average)	0	0.3**	-0.1	0.5**	-0.1	0.1	0	0.2*
	Soil health (qual)	-0.1**	-0.1	0	0	0.1	0.1	-0.1	0
	Animal health (qual)	0	0.5**	-0.1	-0.2	0.1	0.1	0.1	0.1
	Crop health (SOCLA)	0.1	-0.6**			0.2**	0.3**	0	0.1
	Crop health (% loss)	0.2**	-0.7**	0.2**	0.1	-0.2*		0.2**	0.4**
		All	burkina_faso	kenya	laos	peru	senegal	tunisia	zimbabwe



# Result 3 – agroecology performance

- On average, agroecology has a positive effect on **biodiversity** (tree diversity, crop species richness), **energy use**, **climate resilience**, **human wellbeing**, **nutrition**, **income**, and **crop health**

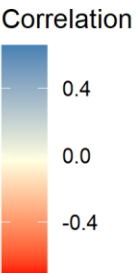




# Result 3 – agroecology performance

- Mixed/no effect on climate mitigation or water conservation
- Mixed/negative effect on labour productivity, soil health, farmer agency, land tenure security (or vice-versa)

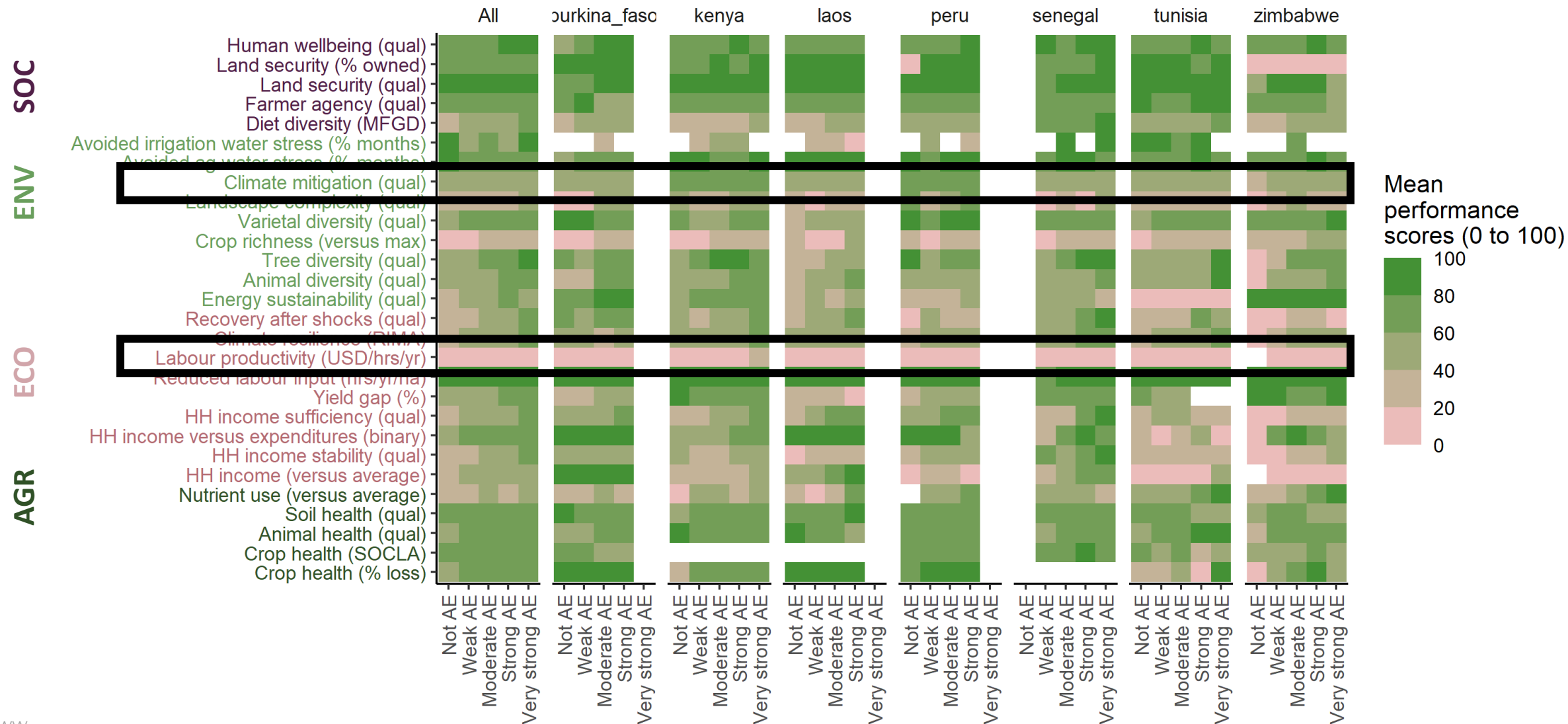
Human wellbeing (qual)	0.2**	0.7**	0.2**	0.2**	0.1	0.4**	0	0.1
Land security (% owned)	-0.1*	0.1	0	-0.1	0.1	0.1	-0.1	0.1
Land security (qual)	0.1**	0.6**	0.1*	0	-0.1	0.2*	-0.1	0.1
Farmer agency (qual)	-0.1**	-0.7**	0.1	0	-0.1	0	0	0.1
Diet diversity (MEGD)	0.2**	0.4**	0.2**	0.2**	0	0.2**	0.1	0.5**
Avoided irrigation water stress (% months)	0		0.2				-0.2	
Avoided ag water stress (% months)	0	-0.2**	-0.1	-0.3**	0.2**	0	0.1	0.2**
Climate mitigation (qual)	0	0.1	0	0	0.1	0.1	-0.1	0.2*
Landscape complexity (qual)	0.1**	0.6**	0.1*	0.3**	0.3**	0.1	0	0.2**
Varietal diversity (qual)	0	-0.6**	0	0.2**	0.3**	-0.2*	0.2**	-0.1
Crop richness (versus max)	0.3**	0.4**	0.3**	0.3**	0.3**	0.2**	0.3**	0.2*
Tree diversity (qual)	0.3**	0.4**	0.3**	0.2**	0.3**	0.3**	0.1	0.3**
Animal diversity (qual)	0.2**	0.6**	0.3**	0.3**	0	0.2*	0.1	0.2**
Energy sustainability (qual)	0.3**	0.4**	0.1**	0.1	0.1*	-0.3**	0	-0.2*
Recovery after shocks (qual)	0.2**	0.4**	0.1**	0.2*	0	0.2**	0.1	0.2**
Climate resilience (RIMA)	0.3**	-0.2**	0.3**	0.5**	0.2*	0.3**	0.2**	0.5**
Labour productivity (USD/hrs/yr)	-0.1*	0.1	0	0	-0.1	0	0	0
Reduced labour input (hrs/yr/ha)	0	-0.4**	-0.1**	0	-0.1	0	0	-0.1
Yield gap (%)	0.1**	0.5**	-0.1	-0.1	-0.1	0	-0.2*	-0.2**
HH income sufficiency (qual)	0.2**	0.4**	0.3**	0.3**	0.1*	0.4**	0.2*	0.3**
HH income versus expenditures (binary)	0.1**	0	0.1**	0	-0.2**	0.4**	0	0.1
HH income stability (qual)	0.2**	0.1	0.2**	0.1*	0.1	0.1	0.1	0.3**
HH income (versus average)	0.1*	0.1	0.1	0.3**	0	0	0.1	0
Nutrient use (versus average)	0	0.3**	-0.1	0.5**	-0.1	0.1	0	0.2*
Soil health (qual)	-0.1**	-0.1	0	0	0.1	0.1	-0.1	0
Animal health (qual)	0	0.5**	-0.1	-0.2	0.1	0.1	0.1	0.1
Crop health (SOCLA)	0.1	-0.6**			0.2**	0.3**	0	0.1
Crop health (% loss)	0.2**	-0.7**	0.2**	0.1	-0.2*		0.2**	0.4**
	All	burkina_faso	kenya	laos	peru	senegal	tunisia	zimbabwe



# Result 4 – agroecology performance



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# Take-away messages

1. Across the 7 countries, **most farms are showing signs of weak to moderate adherence to agroecology**
2. **Agroecology makes sense for biodiversity, climate resilience, nutrition, human wellbeing, income:** all are positively correlated with adherence to agroecology
3. Some performance aspects are **not significantly affected by agroecology**, including labour productivity which remains low in all countries, and climate mitigation which has variable scores
4. Next set of analyses will focus on **gathering deeper insights** on relationship between agroecology and performance as farm context varies, and what motivates and enables farmers to transition to agroecology, to **strengthen evidence and support upscaling**

# Thank you to the HOLPA WP2 country teams, their partners, and all participating farmers



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•8 CGIAR centres:

- [Alliance BI-CIAT](#) and [IWMI](#)– lead centers
- [CIMMYT](#)
- [CIP](#)
- [ICARDA](#)
- [IFPRI](#)
- [IITA](#)
- [WorldFish](#)

•CIFOR-ICRAF, Cirad, TPP, GIZ, Biovision

•35 national institutions (national agricultural research institutes, NGOs, cooperatives, universities)

•1979 farmers

