zalf Leibniz Centre for **Agricultural Landscape Research (ZALF)**

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Adoption of Agroecological Practices in Northern Ghana:
Exploring Motivations, Challenges, and Farmer Profiles.

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Introduction

- West Africa is among the regions most affected by agricultural systems sustainability challenges (Wudil et al., 2022).
- Agroecology (AE) has the potential for building resilient and sustainable food systems (HLPE, 2019).
- This has generated policy momentum (e.g. ECOWAS, Senegal, Burkina) (Goïta et al., 2020).
- However, the adoption of agroecological practices across the region is limited (Souissi et al., 2024), despite farmers holding positive perceptions of AE (Bottazzi et al., 2023).

Research Gap & Aim

- We know perceptions exist, but how do they inform farmer profiles and shape adoption behaviour?
- **Aim**: To examine the drivers, barriers, and typologies of agroecological adoption in Northern Ghana.
  - To uncover the underlying structure of farmers' perceptions.
  - To classify farmers into perception-based groups.
  - To examine the adoption behaviour of groups.

Methodology
Conceptual framework
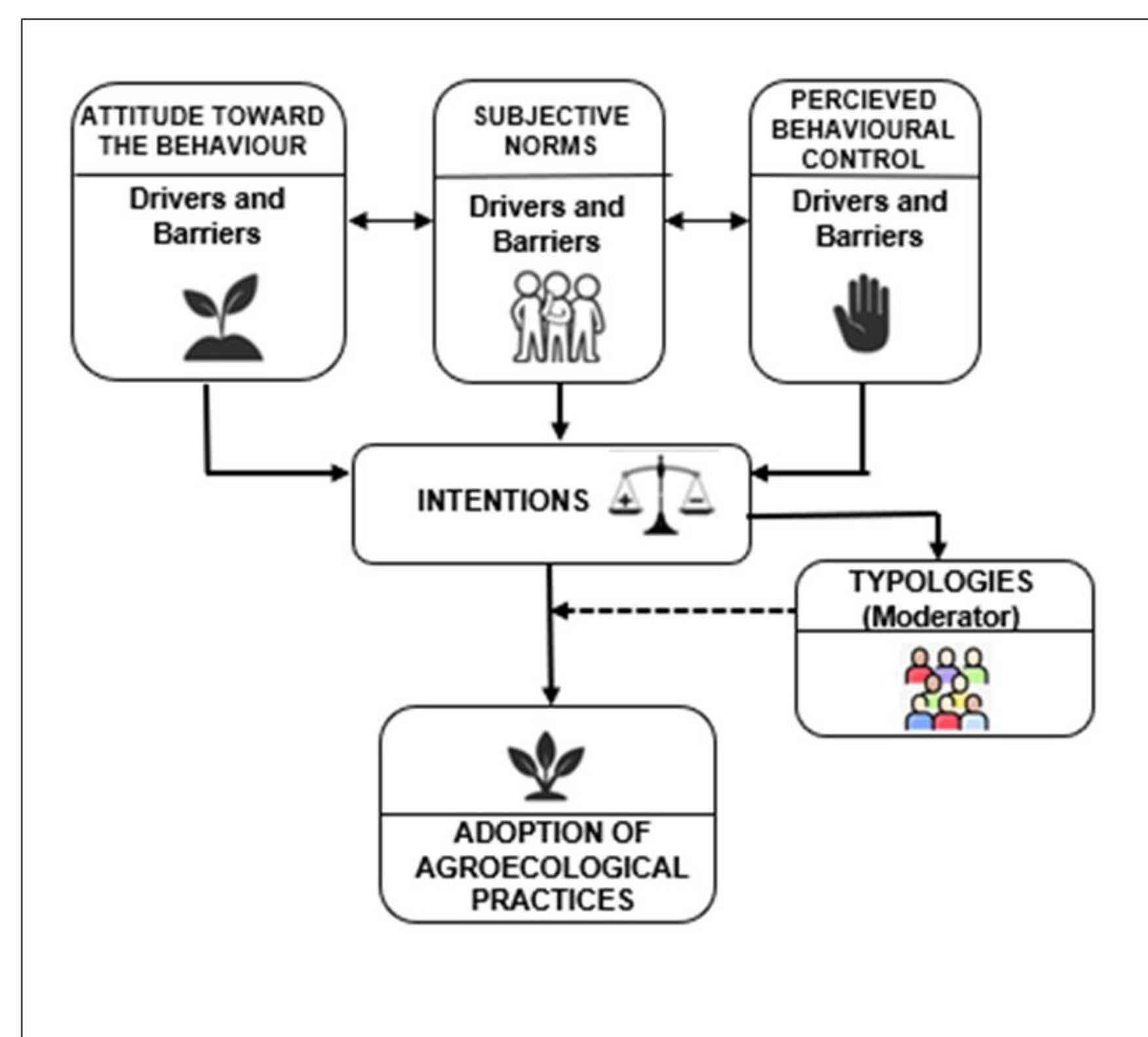
Adapted Theory of Planned Behaviour (Ajzen, 1991)

Data collection and Analysis

- 📋 Household survey (95)
- 🎤 Interviews (3)
- 👥 Stakeholder workshop (1)
- 🔍 Principal Component Analysis (PCA) + Cluster Analysis + COM. Poisson regression

Field Photo 2024: Farmer's field in study Region

Results
Perceived Drivers and Barriers

🌱 **PC1: Resource Compatibility (Driver)**
Farm resources
Knowledge & experience

🌱 **PC2: Pest & Resilience Benefits (Driver)**
Reduced pests/disease
Climate resilience

✅ **PC4: Food Quality (Driver)**
Improved food quality & safety
Preference for agroecological

PC7: Knowledge & Culture Preservation (Driver)
Traditional knowledge conservation
Cultural compatibility

🏛 **PC3: Institutional Barriers (Barrier)**
Lack of government support
Lack of technical support/training

⚠️ **PC5: High Risk Perception (Barrier)**
Lack of specific markets
Lower yields

🚶 **PC6: Labour & Info. Challenges (Barrier)**
Labour intensity
Limited access to information

📈 **PC9: Training Gaps/ Future Uncertainty (Barrier)**
Uncertainty about future gains
Lack of technical support/training

Perception-Based Groups of Farmers

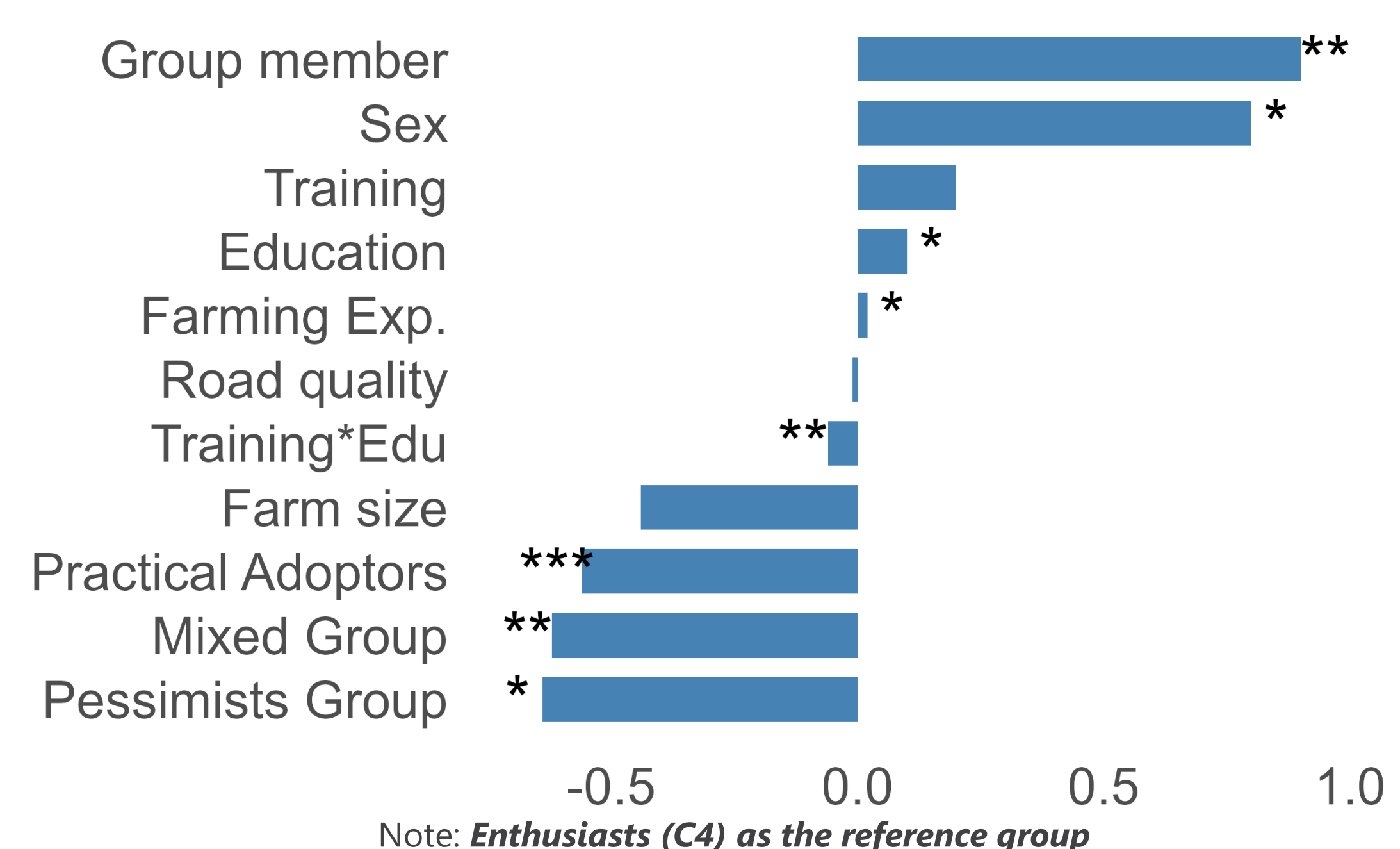🏺 **Cluster 1: Mixed Group**
- 32% of respondents
- Associated with PC2, PC3, PC5

🧵 **Cluster 2: Practical Adopters**
- 28% of respondents
- Associated with PC1, PC5, PC7

⚠️ **Cluster 3: Pessimists Group**
- 8% of respondents
- Associated with PC4, PC8 PC9

🌱 **Cluster 4: Enthusiasts**
- 32% of respondents
- Associated with PC4, PC6, PC7

Adoption Behaviour of Groups

Note: *Enthusiasts (C4) as the reference group*
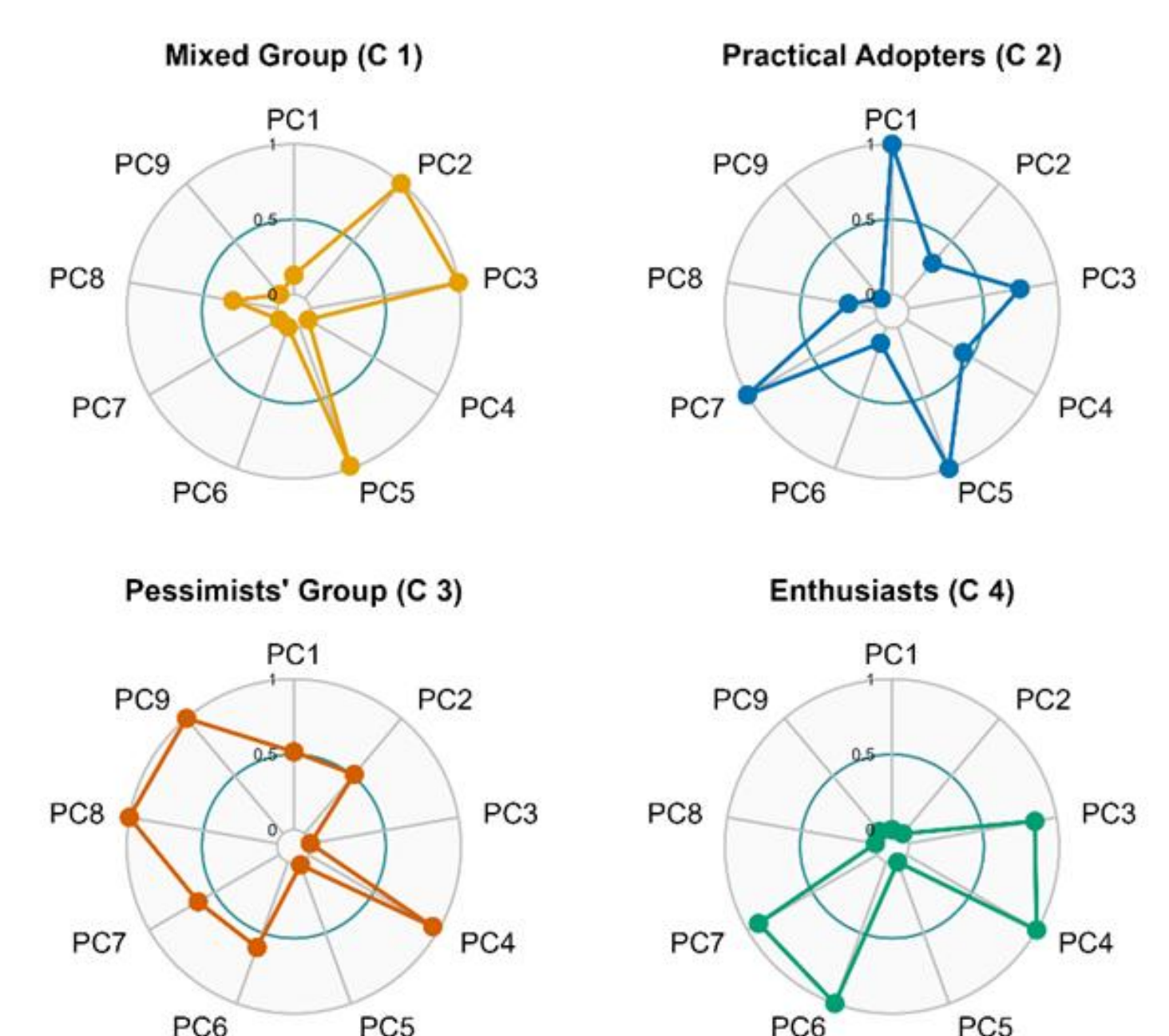
Conclusion

- 🌱 Farmers hold positive attitudes toward agroecology, recognizing environmental, economic, and sociocultural benefits.
- ⚠️ Optimism is tempered by concerns over production reductions, limited policy support, and insufficient training/information.
- 🛠 One-size-fits-all training is ineffective - negative interaction between education and training.

Policy recommendations

- Remove structural barriers, close knowledge gaps, promote inclusive strategies.
- Tailor programs to different educational backgrounds.
- Leverage enthusiasm of Agroecology Enthusiasts to catalyse grassroots transformation.

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