

Agroecological practices and drivers of adoption by arable crop farmers, Cross River State, Nigeria



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Introduction

- Global food production is plagued by a myriad of challenges like climate change, population explosion, and food quality.
- Agroecological farming is gaining recognition as one of the solutions to these challenges.
- However, the rate at which agroecological practices are adopted has remained low.



Cassava planted under oil palm trees



Use of cover crop in cassava farm

Results

- Improved crop yields (MS=4.89); locally available inputs (MS=4.78), and it helps cope with change adaptation (MS=4.77) were ranked as the first three drivers of adoption of agroecological practices (Table 1).
- Efficient water resource use (MS=2.46) and reduced CO₂ emissions (MS=2.17) were the least drivers (Table 1)

Table 1: Perceived drivers of adoption of agroecological practices

Drivers	Mean score (MS)	SD	Rank
Productivity drivers			
• Boosts crop yields	4.89	0.18	1st
• Healthy food quality	4.38	0.17	8th
• Healthy environment	3.75	0.16	14th
• Improved soil fertility/health	4.50	0.18	6th
• Sufficient local food varieties	4.71	0.18	4th
• Helps cope with climate change	4.77	0.18	3rd
• Efficient water resource use	2.46	0.15	17th
• Reduced CO ₂ emissions	2.17	0.18	18th
• Generation/exchange of local knowledge and innovation	3.85	0.16	13th
Profitability drivers			
• Management of harvesting activities via selection, breeding for next season	4.41	0.18	7th
• Improved farmers' income	4.31	0.17	10th
• Preservation of farmers' livelihoods	4.15	0.17	12th
• Conservation of soil resources	4.33	0.18	9th
• Diversification of income sources	4.56	0.18	5th
• Little financial investment	3.53	0.16	15th
Affordability drivers			
• Relatively affordable inputs	4.18	0.17	11th
• Inputs are locally available	4.78	0.17	2nd
• Available extension services	3.05	0.17	16th

Conclusion

- Farmers use different agroecological practices for food crop production but rate of adoption of certain practices is low
- Adoption of agroecological practices is driven mainly by productivity factors like improved crop yields, need for adaptation to climate change, and desire for local food varieties.
- Farmers face enormous challenges constraining use of these practices

- Main agroecological practices adopted were: intercropping practices (100%), green manure (95.8%), scarecrows/traps (95%) and cover cropping practices (93.3%) (Fig. 1).

- Increased demand for food (MS=4.79), lack of incentives (MS=4.7), limited awareness and knowledge on agroecological practices (MS=4.66) were ranked the top 3 constraints to the use of agroecological practices (Table 2).

- Results of the binary logistic regression showed that Sex ($p = 0.032$) and extension agent contact ($p = 0.027$) had a significant positive effect on the adoption of agroecological practices at $p = 0.05$.

Methods

- The study employed a survey design.
- Multistage sampling procedure was used to select 120 arable crop farmers in the three agricultural zones (Ogoja, Ikom and Calabar) that make up Cross River State.
- Binary logistic regression was used to test the effect of farmers' selected socio-economic characteristics on adoption of agroecological practices

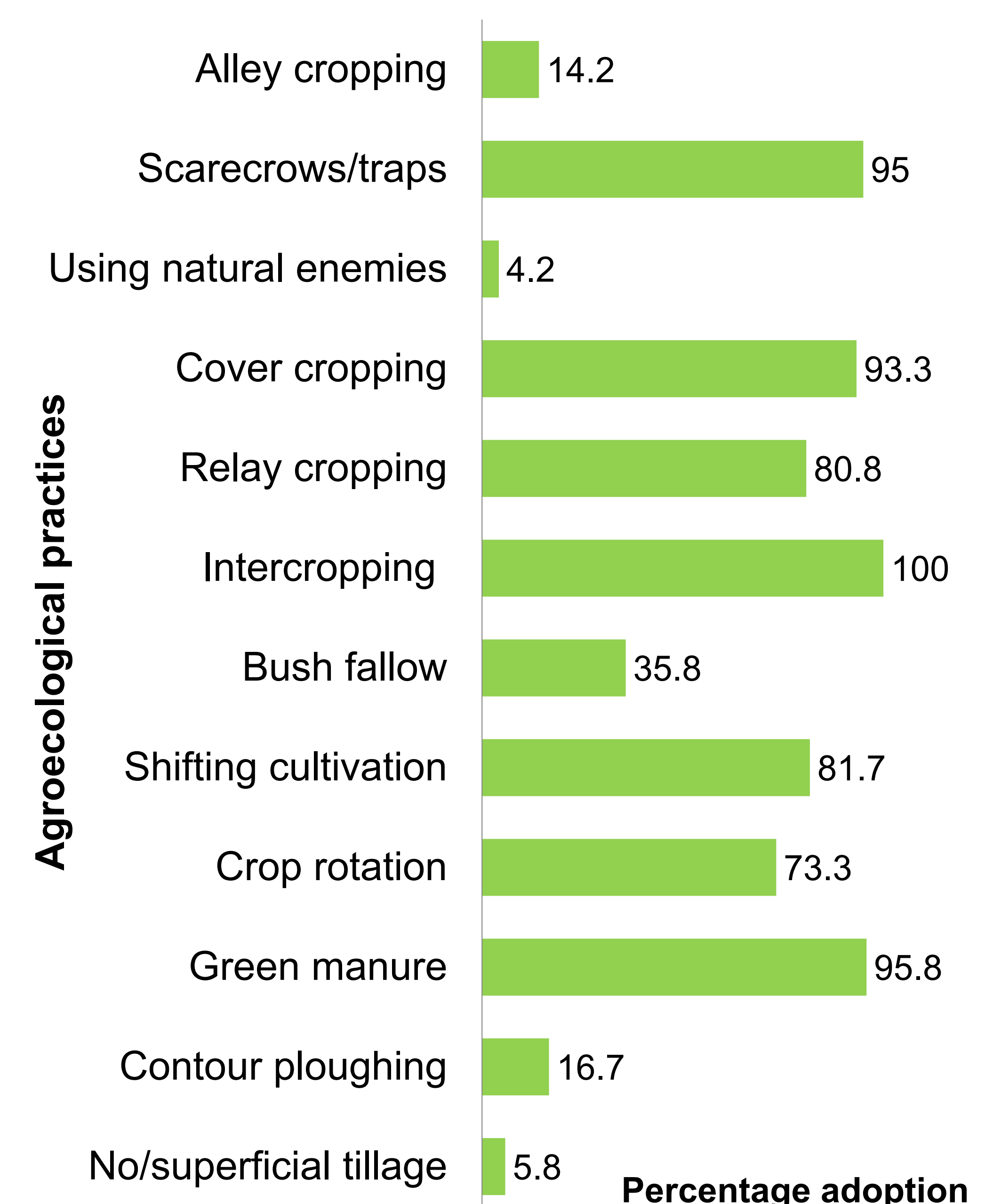


Fig. 1: Agroecological practices and adoption

Table 2: Constraints to use of agroecological practices

Constraints	Mean Score	SD	Rank
• Climate change constraints	4.65	0.17	4th
• Lack of training on use of practices	3.93	0.15	13th
• Cultural and religious beliefs	3.32	0.14	15th
• Government policies that promote use of chemicals	3.89	0.15	14th
• Government policies that promote use of hybrid planting materials	4.17	0.16	9th
• Weak involvement of government and NGOs in agroecological programmes	4.21	0.16	8th
• Lack of incentives to farmers	4.7	0.17	2nd
• Limited farmers' awareness and knowledge on agroecological practices	4.66	0.17	3rd
• Little technical knowhow/skills on use of agroecological practices	4.28	0.16	7th
• Inconsistent government policies on agricultural biodiversity conservation	4.15	0.16	10th
• Unsecured land tenure systems	4.02	0.15	11th
• Inadequate extension services provision	4.32	0.16	6th
• Lack of interest by farmers	4.54	0.16	5th
• Increased demand for food and raw materials	4.79	0.17	1st
• It is risky trying out practices that I am not familiar with	4.01	0.16	12th

