

REGENERATIVE PRACTICES IN SMALLHOLDER OIL PALM SYSTEMS IN CÔTE D'IVOIRE: AGRONOMIC, ECOLOGICAL AND ADOPTION RESPONSES

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1| Why regenerative oil palm ?



Importance:

Oill palm is a key livelihood crop for smallholders in Côte d'Ivoire.



Challenge:

Declining soil fertility and ecosystem degradation may threaten long-term plantation sustainability.



Knowledge Gap:

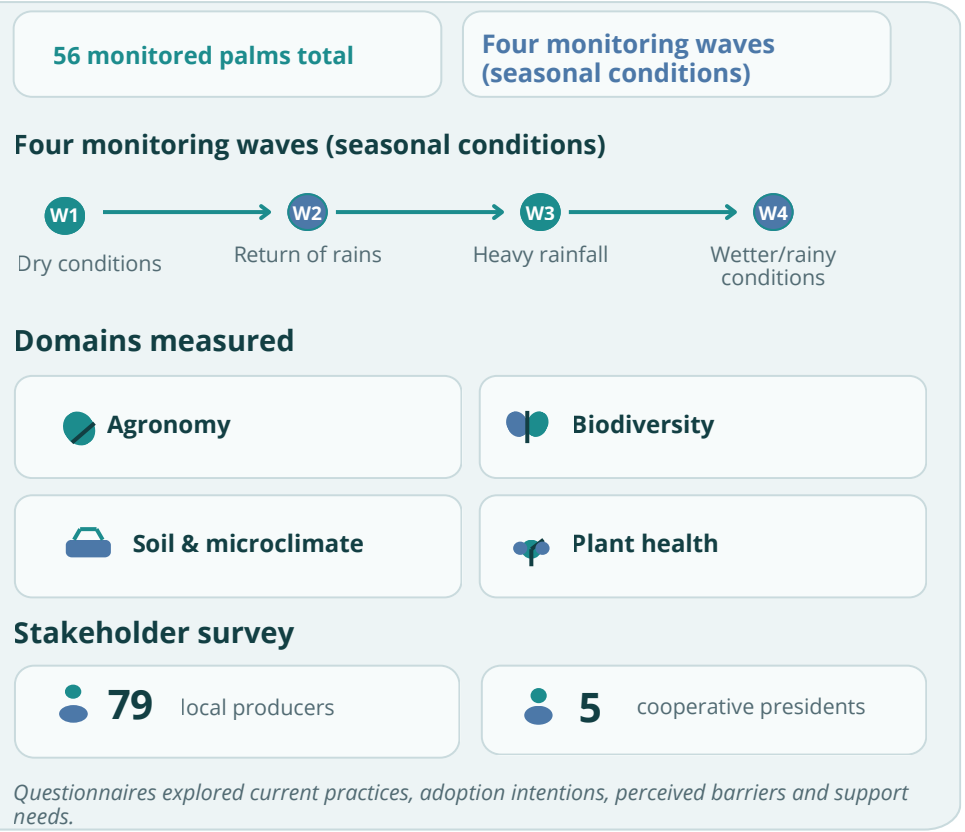
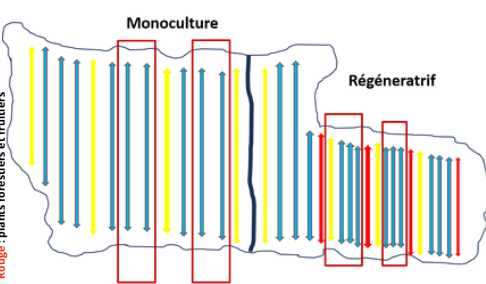
Evidence on regenerative oil palm management under West African field conditions remains limited.



Objective:

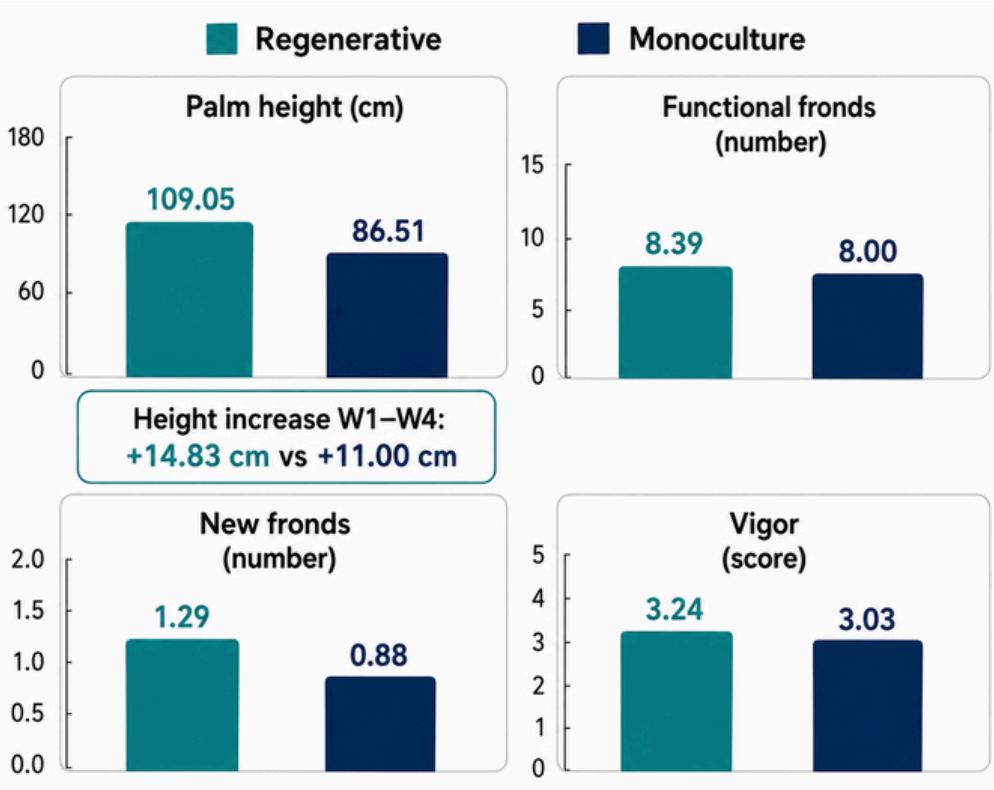
Compare agronomic performance, biodiversity and soil/microclimatic conditions between regenerative and monoculture oil palm systems, and assess the feasibility of farmer transition toward regenerative practices.

2| Study approach ?



3| Palm performance remained positive under both systems

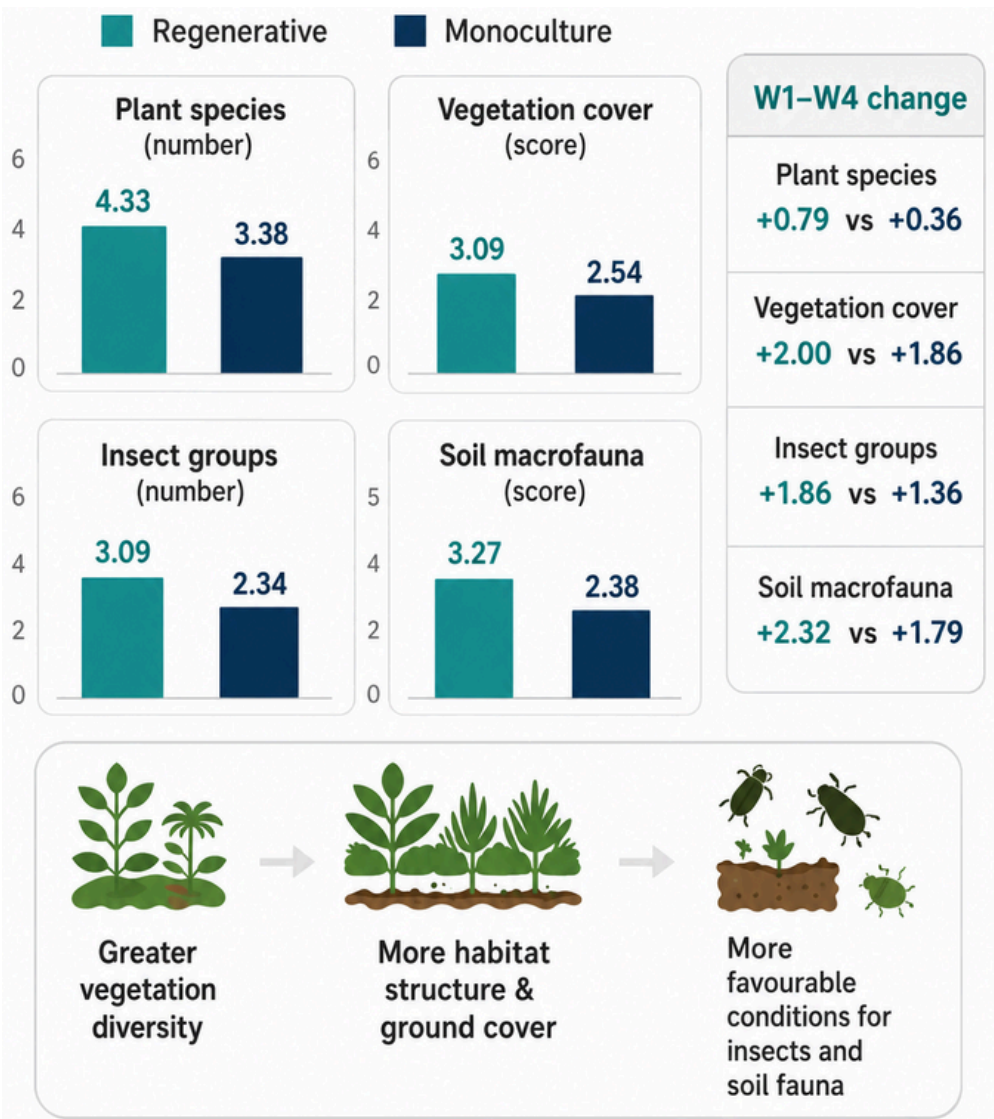
Figure 1. Agronomic indicators averaged across four monitoring waves



Palm development remained positive under both systems, while regenerative plots showed higher mean height and new-frond emergence during monitoring.

4| Palm performance remained positive under both systems

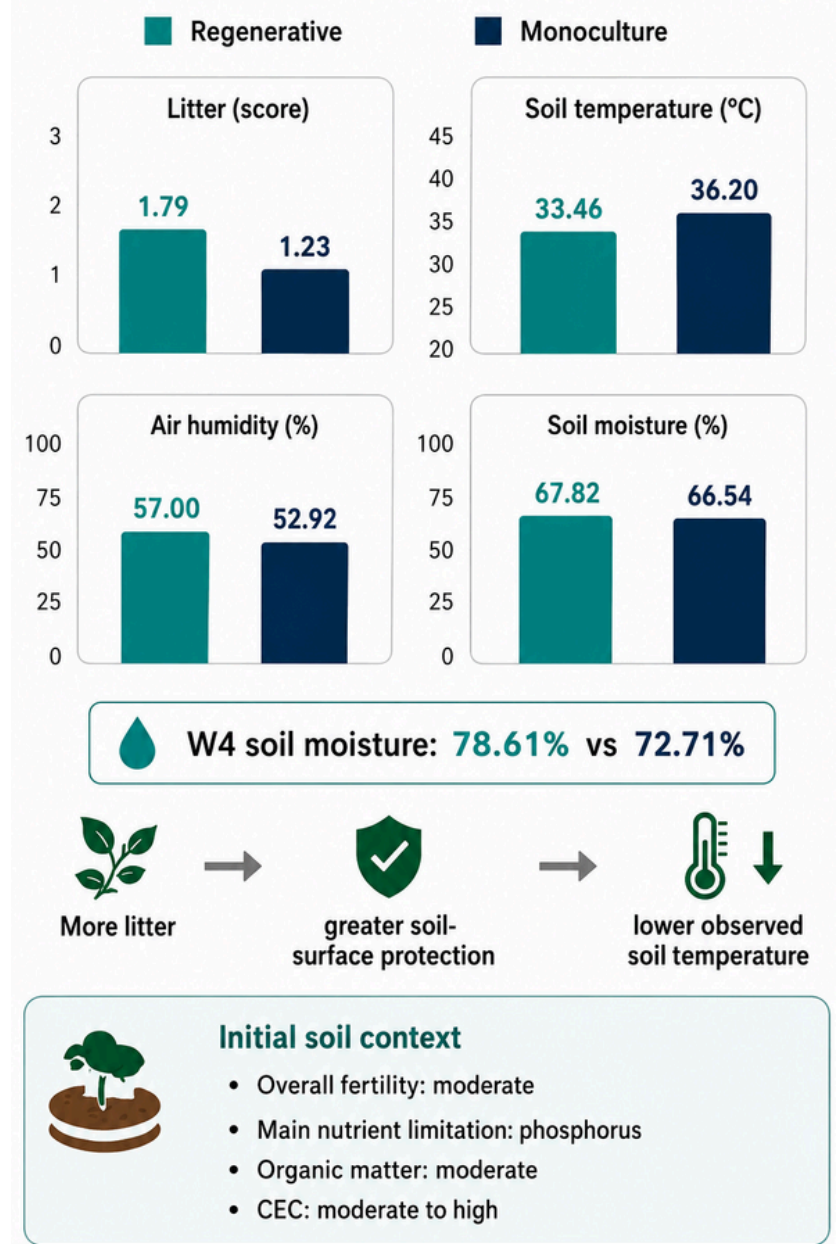
Figure 2. Regenerative plots consistently showed higher mean values for all four biodiversity indicators.



Biodiversity indicators increased as seasonal conditions became wetter, while regenerative plots maintained higher values throughout monitoring.

5| Regenerative plots had more litter and cooler soils

Figure 3. Soil and microclimatic conditions averaged across four monitoring waves

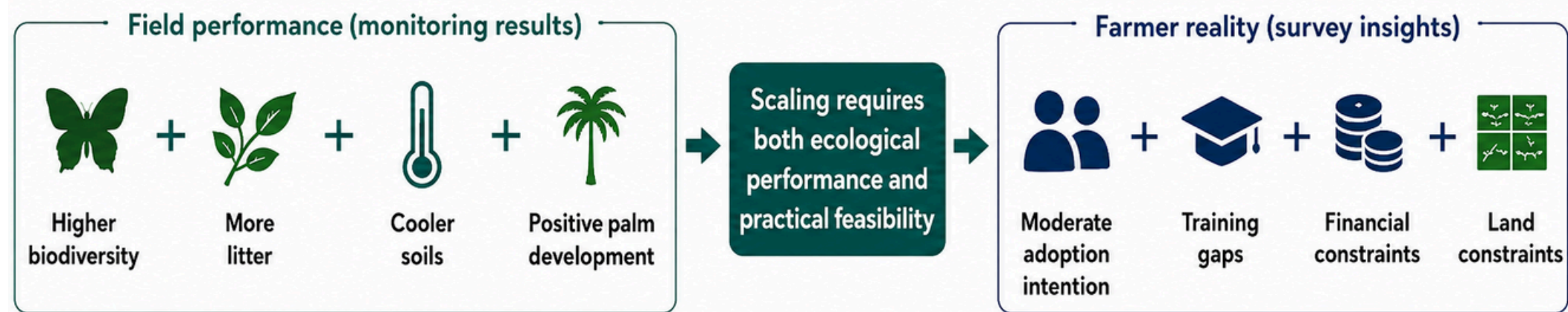
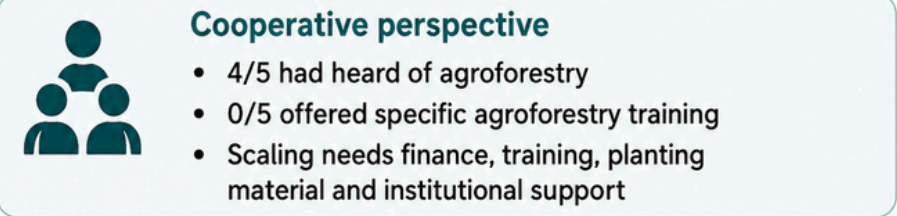
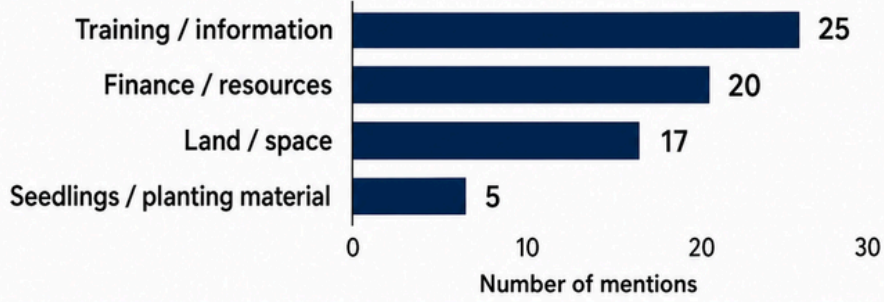


Regenerative plots accumulated more litter, maintained lower soil temperatures and had higher mean air humidity, while overall soil moisture remained broadly comparable.

6| Interest exists, but adoption faces practical barriers



Figure 4. Main barriers to transition



Regenerative oil palm shows promising ecological and agronomic potential, but successful scaling depends on making the transition technically understandable, financially accessible and practically feasible for smallholders.

Key conclusions

- Regenerative management was associated with stronger biodiversity indicators, greater litter accumulation and cooler soil conditions while maintaining positive early palm development.
- Seasonal rainfall strongly influenced changes across monitoring waves and must be considered when interpreting management effects.
- Farmer transition will require more than evidence of ecological performance: training, finance, planting material and institutional support are also needed.