Regen10

Transition Pathways

Overview of findings

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Regen10 – Landscape Transition Pathways - Overview

- **Regen10** has developed **landscape-level transition pathways** across five significant agricultural regions.
- A **transition pathway** represents a switch from the conventional agricultural practices common in the landscape to regenerative ones, that helps **restore** and rebuild **natural systems**.
- A key element of this process is understanding the **economics of transitioning** to regenerative agricultural practices.
- Regen10 recognizes that there is **more than one way to create a regenerative food system**. The proposed approaches are not prescriptive, and practices were selected after careful contextual analysis of their relevance and evidence of their intended outcomes.

Selected Landscapes

Country	Landscape	Focus Ag Product
Brazil	Querência City	Soy & Beef
India	Punjab State	Rice
United States	North Dakota	Wheat & Maize
United Kingdom	East of England	Potato
New Zealand	Waikato Region	Dairy

Source: Systemiq analysis.

General approach to transition pathway development

Current state of agricultural landscape

- **Land-use**
- **Farm archetypes**
- **Agronomic practices**
- **Challenges**
  - Economic
  - Environmental
  - Agronomic
  - Social

Transition pathways
10-year time frame

Model a transition that incorporates a combination of principal sets of changes…

Growing crops	Managing livestock	Designing landscapes
■ No or minimum tillage ■ Cover crops ■ Longer, more diverse crop rotations ■ Ley farming ■ Inter-cropping or polycultures ■ Retaining crop residues on soil ■ Applying compost, manure, other biological soil amendments ■ Using integrated pest management to minimise pesticides ■ Reducing or eliminating synthetic fertilisers ■ Better irrigation management (e.g. for rice)	■ Raising livestock on pasture for whole life ■ Mob grazing / adaptive multi-paddock grazing / holistic grazing techniques ■ Integrating grazing animals into crop rotations and orchard management ■ Avoiding hormones & antibiotics	■ Shelterbelts ■ Hedgerows ■ Pollination strips ■ Riparian area restoration ■ Water conservation through landscaping (e.g. keyline) ■ Managing non-productive areas for ecological goals
	Integrating trees ■ Planting trees on cropland (agroforestry) ■ Planting trees on pasture (silvo-pasture) ■ Mulching pruning residues and old trees in orchards	

… considering their relevance to the local context and emerging results from pioneers

Future state of agricultural landscape

Transition pathway economic benefits

Assessment of the transition pathway against desired landscape level outcomes from Regen10 Framework

Source: McMahon, P. 2024, Investing in Regenerative Agriculture Reflections from the Past Decade

The transition analyses focuses on the combined zone of the landscapes (agricultural area)

The extent to which the agricultural area is accounted for in the modeling differs for each landscape according to the amount of land-used by the selected agricultural products in each region and the relevance of other crops for the proposed transition pathway.

- **Querencia city/BRAZIL:**
Entire agricultural area

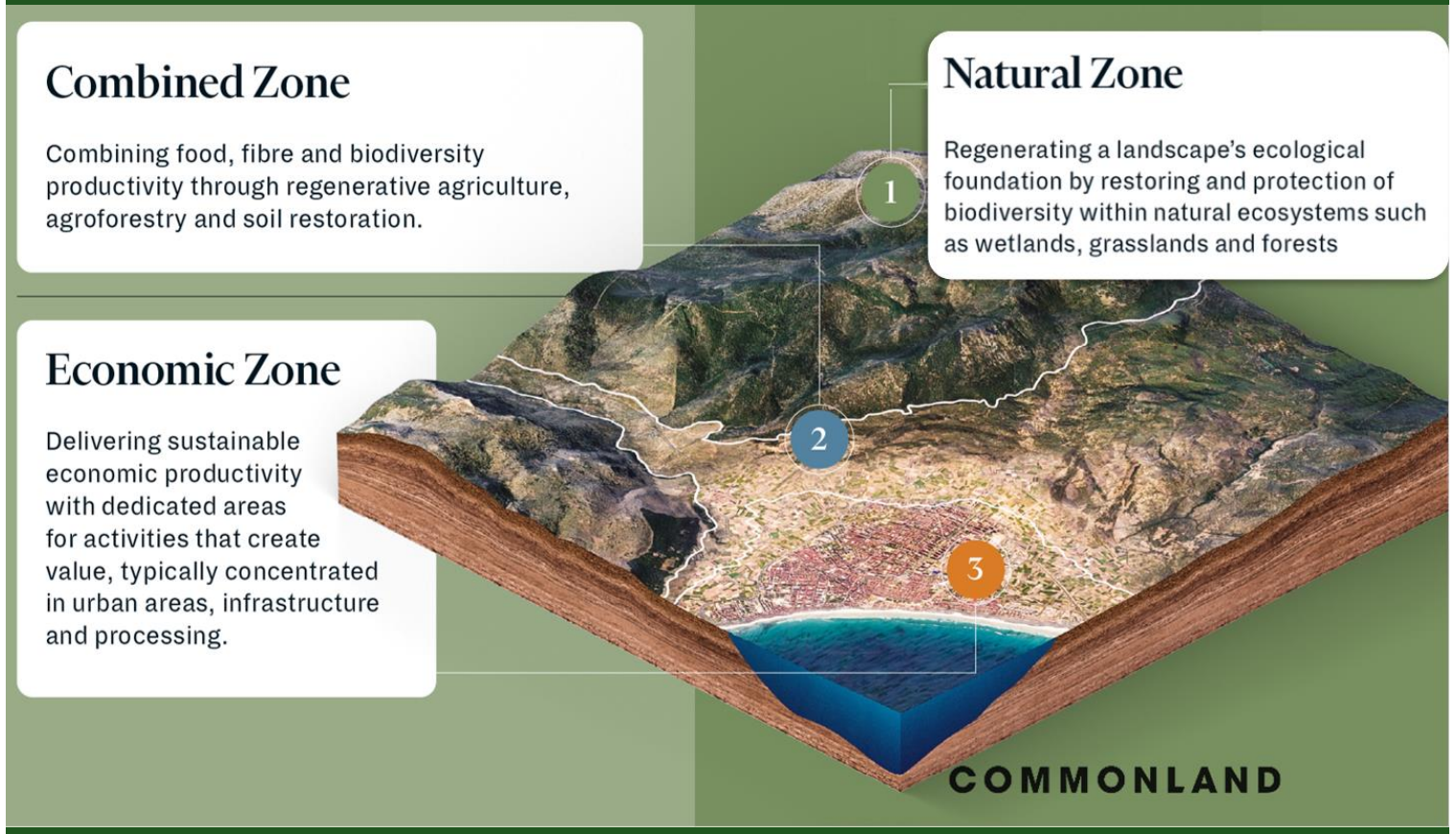
- **Punjab state/INDIA:**
Entire agricultural area

- **North Dakota state/USA:**
Food crops net farming area (40% of agricultural area)

- **Waikato region/NEW ZEALAND:**
Entire agricultural area

- **Easter of England region/UK:**
Potato farming area (4% of agricultural area)

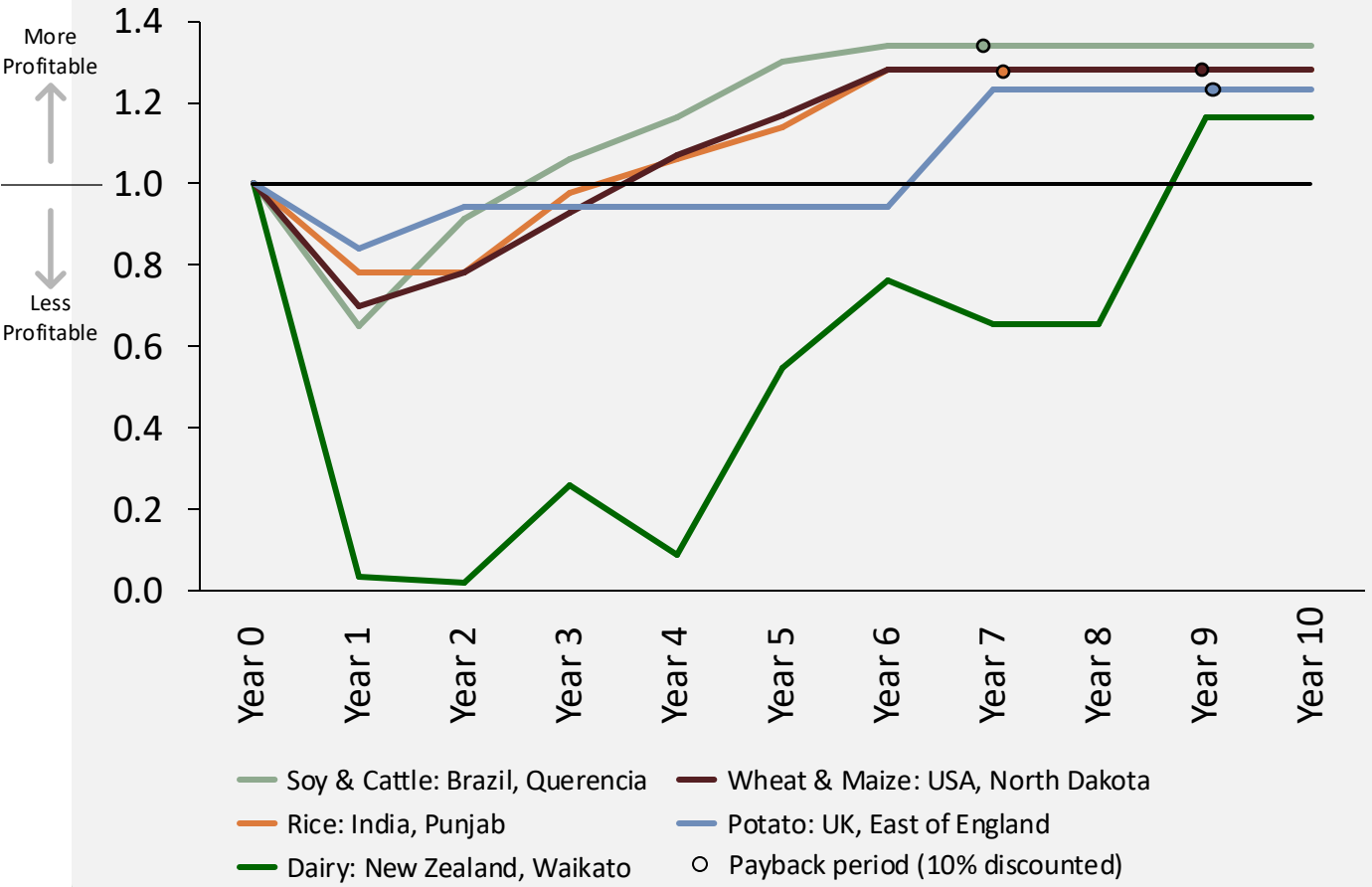
The tree different zones that form a terrestrial landscape



Source: Commonland

Transitions at a glance – impacts on landscape agricultural profitability

Change in net profitability over a 10 years period for proposed transition pathways (current state/alternative state) Indicated in absolute terms



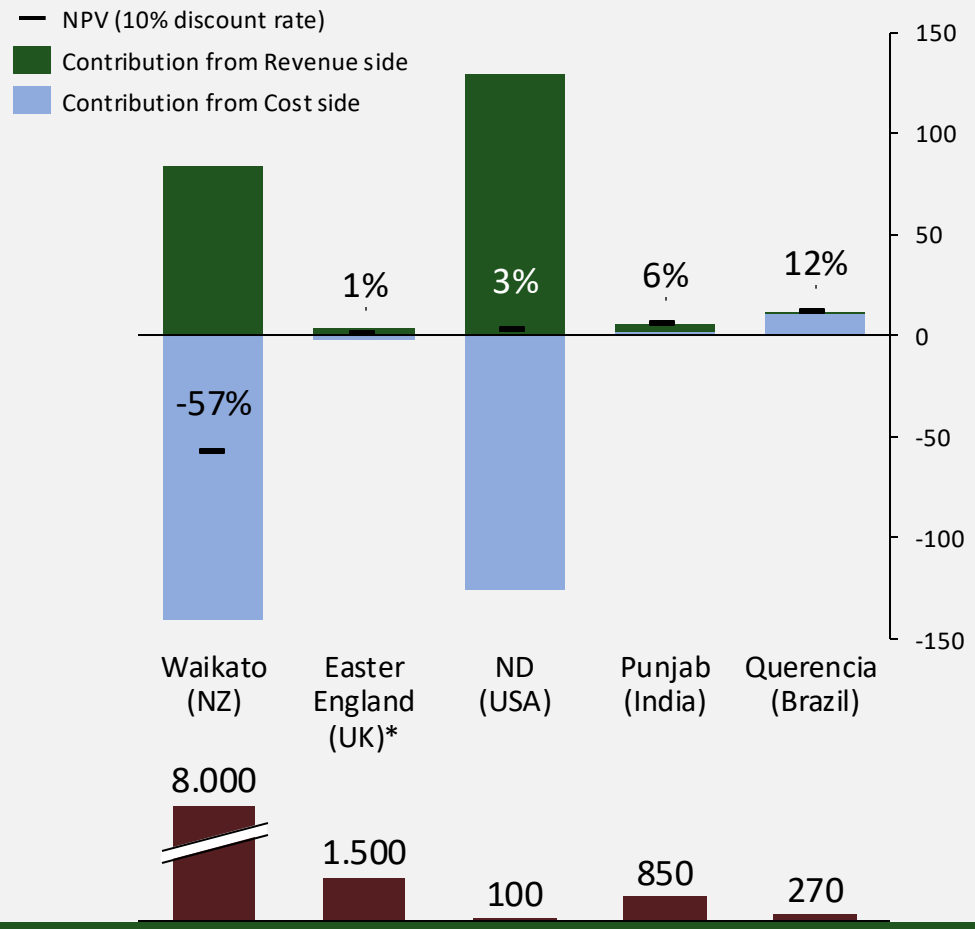
Key Takeaways

- All transitions **eventually show a profit relative to conventional practices,** but it takes up to ten years**.**
- The discounted **payback period** usually happens between years 6 and 9, except for Waikato.
- **The transitions pathways will require an upfront expenditure,** which causes an initial drop in profitability due to expenses needed for the transition such as cover crops, seeding techniques, new machinery, tree planting and other practices.
- Generally **increasing diversification and reducing input costs** in healthier soils appears to be the most viable economic components of transitions.

Source: Systemiq analysis.
Note: Regenerative Agriculture seeks varied landscape states departing from typical practices, balancing informed choices over a decade for feasible, beneficial shifts, avoiding extremes.

Transitions at a glance – impacts on landscape agricultural profitability

Net Present Value of transition in 10 years
Upper bars show cost and revenue fluctuations to reach NPV



Profit forgone per hectare before breakeven[1] (USD/ha)
Lower bars indicate cumulative profit loss during transition[2]

Key Takeaways

- Some landscape actors will need **external longer-term support** to make the transitions financially viable, given the modest NPV and profitability risks.
- Alternative revenue streams (carbon, PES), green premiums, or increases in land value, not included in the analysis, can further **enhance economic attractiveness for farmers.**
- Transition NPV and costs (profit forgone by farmers) vary significantly by landscape, emphasizing need for **tailored investment strategies and targeted support.**

Source: Systemiq analysis.
Note: [1]When future profits match current levels [2]Aggregated value, varies by farm portfolio.

Thank you.

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