## Regentio Webinar

Wednesday, 26 June

Regen10

## Regen10 Webinar | June 2024

Welcome & Opening Remarks Tara Shyam, Regen10

**Regen10 Outcomes-Based Framework & Feedback Survey** Theodora Ewer, Food and Land Use Coalition (FOLU)

**Q&A | Feedback Survey** Theodora Ewer, Food and Land Use Coalition (FOLU)

**Transition Pathways – Brazil** Carlos Agnes, Systemiq

**Transition Pathways – India** Carlos Agnes, Systemiq

**Closing remarks** Tara Shyam, Regen10



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## Regen10 Outcomes-Based Framework & Feedback Survey

Theodora Ewer, Food and Land Use Coalition (FOLU)



Regen10 is developing a framework to create a shared understanding and 'north star' on the desired outcomes of regenerative food systems

### Challenges that the Framework seeks to help address:

 Lack of alignment across food system stakeholders on what it takes to transition to regenerative food systems

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- 2. Siloed approach to thinking about regenerative food systems often ignoring the critical sociocultural dimensions
  - 3. Focus on practices over outcomes

Existing measurement frameworks tend not to be based on farmer needs and experiences

## The framework has three core objectives





The Framework can be used across food system stakeholders to guide data collection and decision making, and identify areas for support



Regen10 is seeking to develop the 'Framework' for understanding regenerative agriculture, which will in turn influence assessments



## FRAMEWORK

#### Dimensions and outcomes at farm and landscape level

The foundation for thinking about regenerative agriculture: A shared understanding across the value chain that empowers farmers



### ASSESSMENT

Indicators, metrics & measurement methodologies

Monitoring and learning: Collecting data against the Framework to track progress over time

## Regen10 will be conducting dialogues, consultations and trials this year to update the Framework



Three methods for testing:

**1. Consultations and dialogues** with farmers, businesses and Indigenous Groups

**2. On-the-ground trials** in a diversity of farm and landscapes

**3. Survey Outreach and 1-1s** with Experts Network, High-Level Advisory Group and Civil Society Organisations **Objectives of the testing phase:** 

- To understand how an outcomes-based
  Framework can be useful and feasible
- To identify to what extent is there agreement with the outcomes outlined in the 'Zero Draft' framework
- To identify the **feasibility of collecting data** against the Framework



### (1.) Gather expertise from civil society groups

who are already working with farmers and landscape actors to:

- a) Help understand and shape the use cases for the Framework for different stakeholder groups
- b) Inform the structure and content of the Framework for its ongoing development
- 2. Gain a wider reach with engagement for framework development so that more views and perspectives are included
- **3.** Generate momentum around the Framework as it enters next phase of development/release

## Survey Structure: What Regen10 would like you to do



- Takes approx. 20 mins. You can skip some sections if needed
- Structure consists of:
  - $\,\circ\,$  Background information on the Framework
  - $\,\circ\,$  Section 1: Your opinion on the usefulness of an outcomes-based framework as a concept
  - Section 2: Your expertise to help shape the outcomes within the Framework, based on your experience.
  - $\odot$  Your organization profile
- Potential follow-up interviews if agreed
- Participation is voluntary. Responses will not be shared beyond the Regen10 team.
- Survey open for one month from launch date. Closes on **22<sup>nd</sup> July**





## Transition Pathways Briefs

Carlos Agnes, Systemiq



### **Regen10 – Landscape Transition Pathways – Project overview**

- Regen10 has developed landscape-level transition pathways across five significant agricultural regions to model the economic outcomes of shifting to regenerative practices.
- The combination between countries and agricultural products was made based on impact, feasibility, representation and applicability of results. The choice of landscapes was primarily driven by their national-level importance in the production and export of the specific products.
- A key element of this process is understanding the economics of transitioning from conventional agricultural practices to regenerative ones, as well as the potential environmental and social outcomes of such transitions at landscape level.
- A transition pathway represents a switch from conventional practices common in the landscape to those that help restore and rebuild natural systems.

#### Selected Landscapes



Notes: The proposed approaches are not prescriptive but represent potential pathways for agricultural transition, amongst the many possible Source: Systemiq analysis.



## Querência – Brazil – Soy & Beef



## Brazil, along with the US, dominates the soy and beef industries

- Brazil contributes 34% of global soybean production and 14% of global beef production.
- The country's significant role as a global soybean producer and exporter has bolstered economic growth and job creation.



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Source: FAOStat 2021, OEC

### In Querência City, large soy and beef farms meet Indigenous territories at the Amazon frontier

Querência produces 1.2 million tons of soybeans annually, even though 40% of the city area falls within the Xingu and Wawi Indigenous territories



#### Landscape information

- Geographical Area: 1.8M ha
- Agricultural Area: 0.52M ha
- Population: 0,026M (54% rural)
- Land holdings: 678
- Average farm size: 1230 ha
- Indigenous Territories: 0.7M ha (Wawi and Xingu)

#### **Current Challenges**

#### Environmental:

- Monocrop dominance of soybeans and cattle systems
- Degraded pastureland from multiple years of low-tech extensive cattle ranching
- Significant legal forest reserve deficits in rural settlements and ongoing deforestation

#### **Economic:**

- Stricter regulations from importing countries
- Revenues highly concentrated in three main products
  - Limited profitability resilience in existing cattle management model

#### Social:

- Tensions over Indigenous land rights and agricultural expansion
- Rapid populational growth driven by expanding agricultural production

#### Extensive beef cattle ranching



Figure: Everton Queiroz. Extracted from Acrimat (2023) https://acrimat.org.br/portal/com-novo-recorde-mt-se-mantem-na-lideranca-com-o-maior-rebanho-bovino-do-pais/

#### Large soybean cultivation fields



Figure: Kamikia Kīsêdjê. Extracted from Mongabay (2021) https://news.mongabay.com/2021/07/as-soy-frenzy-grips-brazil-deforestation-closes-in-on-indigenous-lands/

Sources: : IMEA, IBGE, P4F, IPAM, Embrapa, USDA

## An alternative approach in Querência includes crop, livestock and forestry integration systems

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- increase cattle productivity<sup>1</sup> and animal welfare<sup>2</sup>, diversify incomes with timber, and reduce pressure for new agricultural land for pasture.
- Adoption of integrated crop and livestock systems in the soy area using maize sequencing in association with forage, permitting animal weight gains during the dry season, lower synthetic input use, and healthier soils with better soy yields.
- **Restoration of legal forest reserves** as 'ecological corridors' to connect reforested and native areas, supporting biodiversity conservation and Forest Code compliance.

- forest restauration
- Livestock/grazing: integration into crop sequencing, intensification and better pasture management
- Cover crops: forage for animal feed in consortium with maize
- Crop diversification: amplification of maize sequencing post-soy

Notes: <sup>1</sup> Higher stoking rate (up to 2.5 heads/ha in summer) and weight gains per animal from better pasture management systems. <sup>2</sup>From tree shadowing, shelter and enhanced grazing options during dry season. Sources: MapBiomas, IBGE, Embrapa, Systemig analysis, Expert interviews

## By year three of the transition, farmers are expected to achieve levels of profitability similar to the current state

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- Farmers' profitability decreases during an interim transition period and reaches a point of equilibrium 34% higher in the alternative state after year 6.
- The initial drop in profitability is mostly due to reforestation costs, introduction of timber trees and investments in enhanced pasture management.
- The revenue decline from converting agricultural land back to natural areas is balanced by increased livestock and soy productivity through crop and forestry integration, along with additional timber gains starting from year 6.
- Farmers would forgo 270 USD/ha in cumulative profits before profitability returns to current state levels (undiscounted cash).
- For an average 1230 ha farm, a short-term cost of ~\$300k (profit lost in years 1-3) is offset by expected additional profits of ~\$1.4M in years 4-10, resulting in a net gain of ~\$1.1M over the 10-year period (undiscounted cash).<sup>3</sup>

Note: <sup>1</sup>When accumulated profits from alternative state surpasses those from current state. <sup>2</sup>Model focuses on the agricultural landscape (aggregation of farms) and do not contemplate costs for new landscape level infrastructure or market channels. Conservatively assumes no carbon revenues, green premiums, or increase in land value, and a cyclic approach for earlier timber harvesting. Landscape transition happens all at once. <sup>3</sup>Costs and returns will vary significantly based on the farm's portfolio with animal growers experimenting higher costs on average. Source: Systemiq analysis

### A positive net change in profitability indicates an economically attractive transition for Querência in 10 years

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- Implementing integrated crop-livestock and silvopasture systems is a profitable transition with 471 USD/ha or ~250 Million USD for the landscape in Net Present Value.
- Post-transition cumulative profitability is 12% higher in NPV terms, more diversified and legally compliant with the Brazilian Forest Code.
- Lower Opex<sup>2</sup> from a smaller agricultural area (due to forest restoration) and cost savings on soy synthetic inputs are the main contributors to the reduction in overall costs.
- The positive change in gross revenues from transition is smoothed in NPV terms by the delayed revenues from silvopasture.

Notes: <sup>1</sup>Net Present Value <sup>2</sup>Operating Expenses Source: Systemiq analysis

## Regenerative systems also offer improved environmental and social outcomes for the landscape

Regen10 Framework landscape-level outcomes <sup>1</sup>	Indicative impact from transition
Economic Environmental Social	Negative Neutral Positive
Increase economic diversification and resilience	
Increase landscape value creation	
Optimize landscape biodiversity & habitat functionality	
Minimize water, soil and air pollution	
Improve water availability	
Minimize GHG emissions	
Optimize carbon sequestration and storage	
Enhance inclusivity and empowerment of local communities	
Enhance well-being of local communities	
Increase employment, knowledge and education	
Optimize access to safe and nutritious food	

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#### Key implications and recommendations

- Integrating crops, livestock and forestry systems can increase farmers income by 34% after the transition (nominal terms).
- Farmers can diversify income through forestry and reduce vulnerability to market shifts, as timber acts as a stabler financial asset.
- Transition is viable even with legal forest reserve restoration, easing compliance burdens and improving environmental outcomes.

#### For the transition to be possible, we need:

- Rural credit and financing options that permit initial investments in the transition with repayment terms that match delayed revenues.
- Farmers, particularly in the city's rural settlements, to be assisted with affordable technical aid and land tenure regularization.
- Overcome cultural resistance to change.

Notes: <sup>1</sup>Regen10 Outcome Framework Indicators for Landscapes from zero-draft version. Qualitative base analysis. Source: Systemia analysis



## Punjab – India – Rice (Preview)



#### Summary slide

India

**Punjab State** 

## Diversifying Punjab's agricultural landscape could add USD 3 billion to farmers' income while improving environmental outcomes

#### Transition pathway hypothesis



#### **Crop diversification**

- Decrease area for water intensive paddy and diversify landscape with cotton, maize and oilseeds pulses.
- Widespread the adoption of direct rice and wheat sowing, alternate wetting drying, and stubble management for better water usage and lower air pollution.

#### Forestry/trees

• Implement perennials (fruit and native trees for timber) to increase carbon sequestration, increase biodiversity and further income diversification.



#### Change in net profitability over a 10 years period for proposed transition pathway (alternative state/current state)<sup>1</sup> Indicated in relative terms



- The short-term costs of transitioning to regenerative practices are offset by an average ~30% increase in long-term farm profitability after year 6.<sup>3</sup>
- Cost savings on cash crops and higher revenues from perennials are the **main contributors** to the positive net change.
- **\$3 Billion Net Present Value** (NPV 10% discount) or 710 USD/ha could be generated in the landscape with payback in year 7.

Note: <sup>1</sup>Undiscounted cash. <sup>2</sup>Model focus solely on the agricultural landscape (aggregation of farms) and do not contemplate investments in technical assistance, new landscape level infrastructure and market channels. Conservatively assumes no carbon revenues or price premiums, high fruit spoilage rates and a cyclic approach for earlier timber harvesting. Landscape transition happens all at once. <sup>3</sup>Costs and returns will vary significantly based on the farm's portfolio.



# Thank you for joining us!





