



# Regenerative Agriculture

Wednesday 22 June: 14:05 – 15:00 (55 min)

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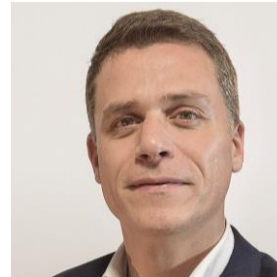
## With Speakers:



**Marco Reyes**  
Senior Director –  
Sustainability  
| Walmart Stores,  
Inc.



**Vamshi Krishna Pulluri**  
Associate Director  
Sustainable Agriculture  
| WWF India



**Rui Fontura**  
Fiber and Materials  
Strategy Lead:  
Cotton & Crops  
| Textile Exchange

## Facilitator:



**Lena Staafgard**  
Chief Operating  
Officer | Better  
Cotton



Textile  
Exchange

# Regenerative Agriculture Landscape Analysis

BETTER COTTON – 22 JUNE, 2022

*Photo: Ashish Chandra, courtesy of Oshadi*

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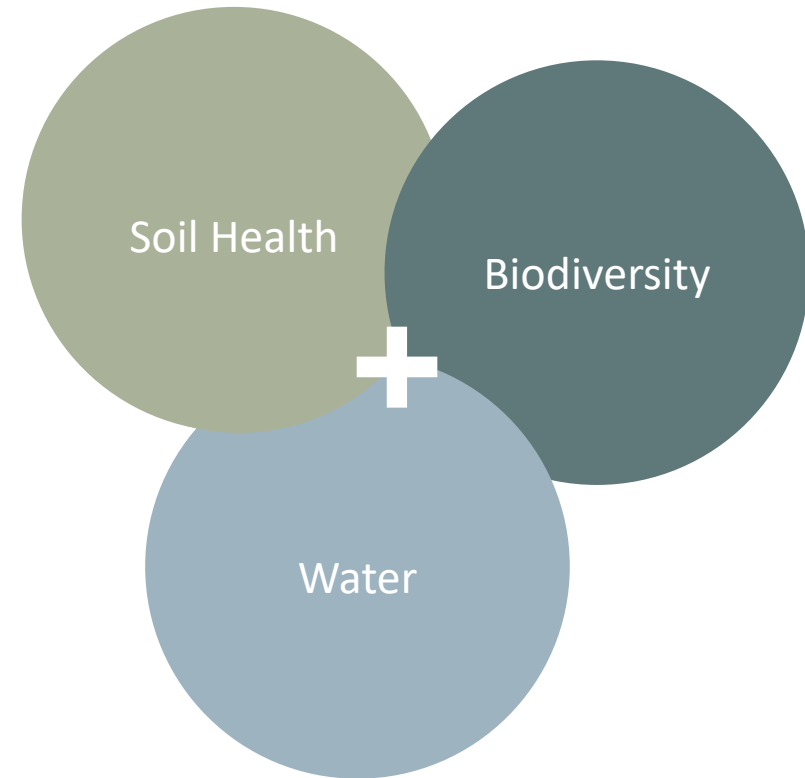


## Climate+ Strategy

At Textile Exchange, we're guiding a growing community of brands, manufacturers, and farmers towards more purposeful production from the very start of the textile supply chain.

Our goal is to help the industry to achieve a 45% reduction in the emissions that come from producing fibers and raw materials by 2030. In doing so, we aim to help limit global warming to 1.5°C and repair the damage that's been done.

We're calling this pathway Climate+, because it's about more than just emissions. Instead, it's an interconnected approach that swaps siloed solutions for interdependent impact areas like soil health, water, and biodiversity.





An aerial photograph showing a winding river with a dark blue-green hue, meandering through a landscape. The river is flanked by dense green trees and shrubs. The surrounding land is a mix of vibrant green fields and a large, light-colored, plowed field with visible furrows. The overall scene is captured from a high angle, looking down on the terrain.

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# Making Sense of the Swirl



## Report Overview

### Process:

- 25 stakeholder interviews in 5 categories
- Call for input
- 100+ reports, journal articles, other sources

### Content:

- Background, definitions, and key frameworks
- Current science and considerations
- Supply network best practices
- Engagement pathway & matrix of programs
- Financing mechanisms
- Case studies
- Recommendations and next steps



## Five key takeaways about regenerative agriculture for the fashion and textile industry

**#1: A transition to regenerative agriculture is fundamental for the fashion and textile industry.**

The long-term health of the sector will depend on how it is able to work with farmers to develop more resilient systems, and regenerative practices offer immense social and environmental benefits too.

**#2: Regenerative agriculture can't be defined in a single statement or set of practices.**

It is contextual and nuanced, and instead calls for a holistic systems approach that puts humans and ecosystems at its core.

**#3: Programs should be rooted in justice, equity, and livelihoods.**

Indigenous advocates call for an acknowledgement of the Indigenous roots of regenerative agriculture and of past and current racial injustice to underpin future work.

**#4: Regenerative agriculture is about much more than increasing soil carbon levels.**

While evolving soil science is calling into question exactly how long-term soil carbon sequestration works, holistic regenerative systems have documented interdependent co-benefits related to biodiversity, water availability and quality, climate resilience, and livelihoods.

**out of silos to speed up the transition.**

To advance the field of regenerative agriculture overall, apparel, textile, and footwear companies should also increase information-sharing with the food and beverage sector, ensuring that apparel brands influence the latest policy developments, financing models, and research initiatives.

**#5: We need to move**

## What is Regenerative Agriculture?

While there is no standardized definition of regenerative agriculture, Textile Exchange takes the view that the concept must be inclusive of the following:

- A view of agriculture that works in alignment with natural systems, recognizing the value and resilience of interconnected and mutually beneficial ecosystems vs. extractive agricultural systems.
- An acknowledgement that Indigenous and native peoples have been employing this mindset to growing food and fiber for centuries—it is not a new concept.
- A holistic, place-based, systems approach, not a “one-size-fits-all” checklist of practices.

*The above is part of the “working definition” submitted by Textile Exchange to be used for the updated UN Fashion Industry Charter on Climate Change (UNFCCC).*



## What is Regenerative Agriculture?

“These are indigenous practices! These practices have been done for centuries. How do you talk about regenerative farming without lifting up and giving credence to the indigenous people?”

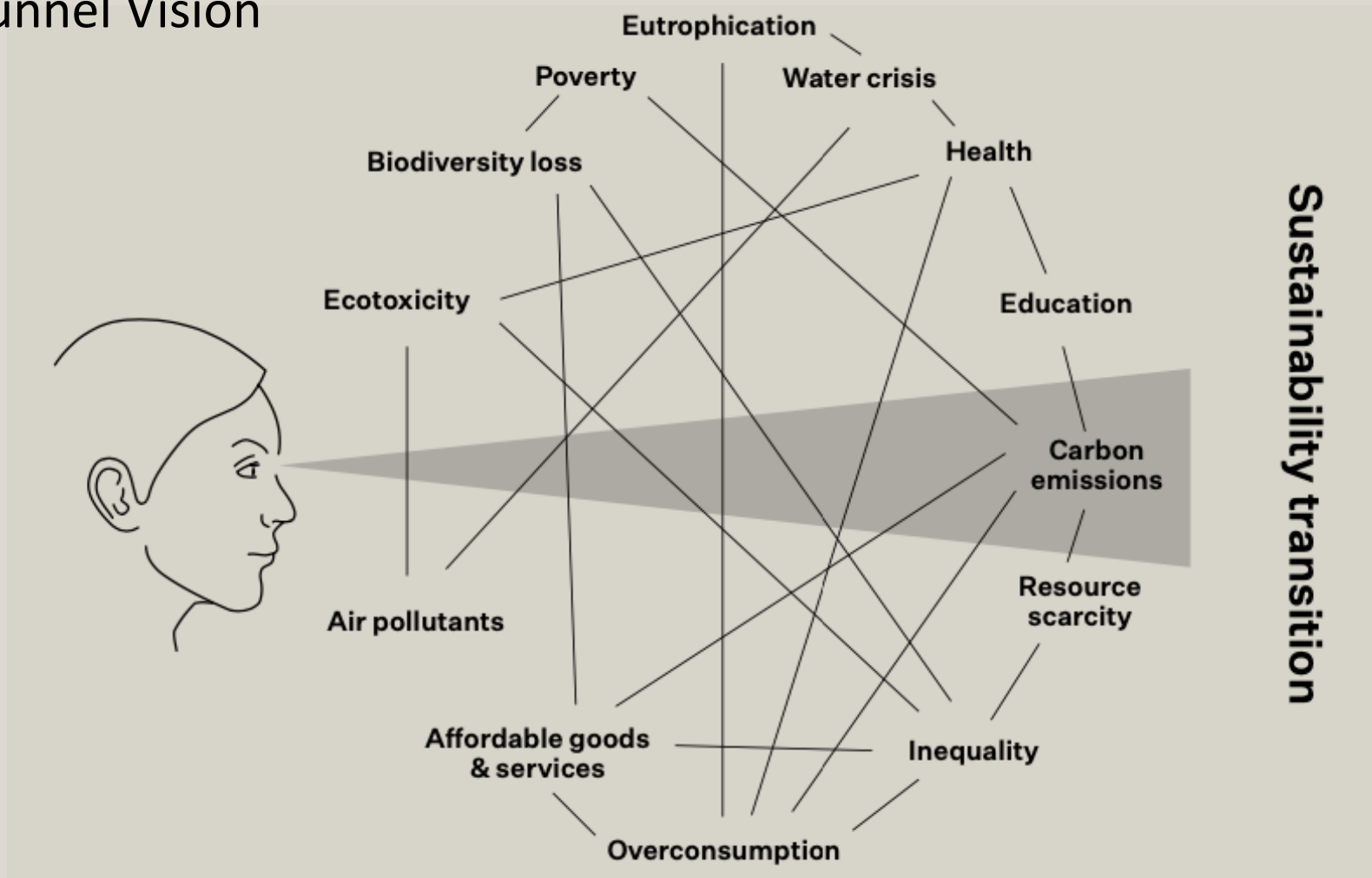
- Karen Washington, Black Farmer Fund. *Source: O'Connor, “Barriers” Report*

### A holistic framework

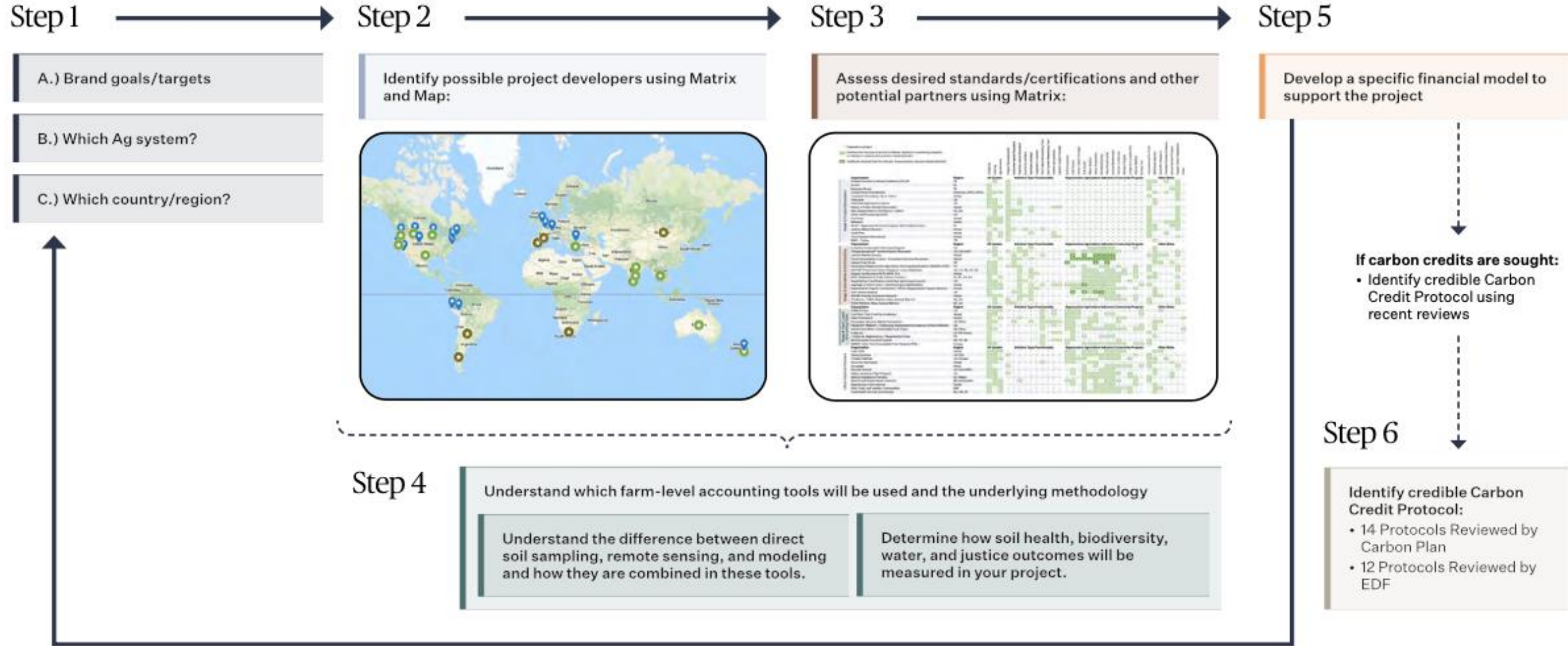


*These 4 elements are supported by a 2020 review by Newton et al., “What is Regenerative Agriculture?”*

## Carbon Tunnel Vision



# Engagement Pathway (Summary)







## Map: Sample of project developers and regenerative agriculture pilot projects



## Recommendations for Brands

Approach regenerative agriculture as an investment in a fundamentally different system.

Centuries of Indigenous knowledge and extensive scientific evidence show that regenerative practices are critical for community and ecosystem health. Rather than continuing in the current extractive system, brands must see regenerative agriculture as part of a fundamentally different approach.

Our report is a call to action for companies to start investing in pilot projects that are developed in full financial partnership with farmers, Indigenous communities, and researchers, generating more data on regenerative agriculture as they go.



## Recommendations for Brands

Look into existing supply networks and identify areas of opportunity with interested producers.

Regenerative agriculture pilots are an opportunity to fundamentally rebuild sourcing models and align with an industry-wide push for direct connections and transparency down to the farm level.

## Recommendations for Brands

Expand scientific and technical capacity to engage in regenerative agriculture

Companies should examine their staffing structures to expand their in-house or contracted capacity to engage in meaningful regenerative agriculture projects grounded in fast-evolving soil science. They should also consider investing in the role of technical service providers for regenerative practices to support farmers and growers on the ground.

## Recommendations for Brands

Build on the rigor of existing certifications and standards

Interviews and research revealed an emerging consensus against the development of additional new standards or certifications for regenerative agriculture. Instead, the industry could assess the development of “add-on modules” that respect the rigor of existing standards while assessing outcomes for soil health, water systems, biodiversity, and social justice.



## Recommendations for Brands

Develop long-term contracts and creative financing mechanisms.

Investing alongside farmers and growers means sharing the risk of transitioning to regenerative practices. In addition to long-term purchasing contracts, brands should seek a combination of funding sources across the organization to ensure that the success of the project is a shared financial goal.



- Marketing, CSR, Operations Budgets
- Charitable Arm / Foundation
- Impact Incentives
- Creative use of Integrated Capital; many emerging models

## 2022 Engagement Opportunities – Textile Exchange Regenerative Agriculture Community of Practice

- Participate in Textile Exchange’s Regenerative Agriculture Action Cohort.
- Become a project sponsor of Textile Exchange’s “Phase 2” regenerative agriculture research.
- Engage in action projects within Textile Exchange’s Round Tables.



Animal Fibers  
Round Table



Biosynthetics  
Round Table



Organic Cotton  
Round Table



Manmade Cellulosics  
Round Table



Sustainable Cotton  
Round Table



Responsible Leather  
Round Table

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Textile  
Exchange

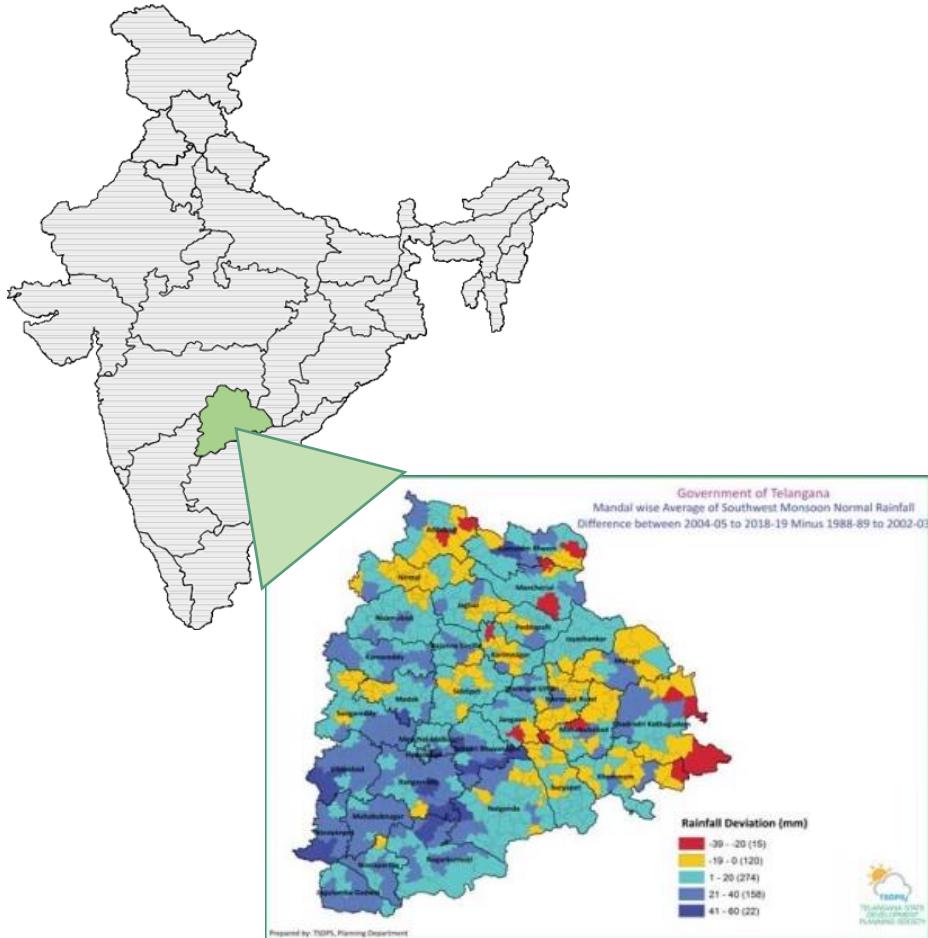
# Thank you

- Project Team
- Textile Exchange advisory group
- Interviewees
- Advance reviewers
- Project Sponsors

A woman with dark hair in a braid, wearing a green top and an orange shawl, is sitting on the ground and writing on a yellow form with a yellow marker. The form has a grid and some text. The background is a grey concrete wall and floor.

**Better Cotton and  
Sustainable Land  
Management  
Telangana :**

# Telangana: A Snap shot



Semi arid tropical conditions



164% increase in Cotton area last two decade  
56% of net cultivated area under Cotton in the state



Cotton mostly grown as rain fed crop in monsoon (Kharif) season



Average annual rainfall is 980 mm



Uneven rainfall –Deviation ranges from -42% to +62%



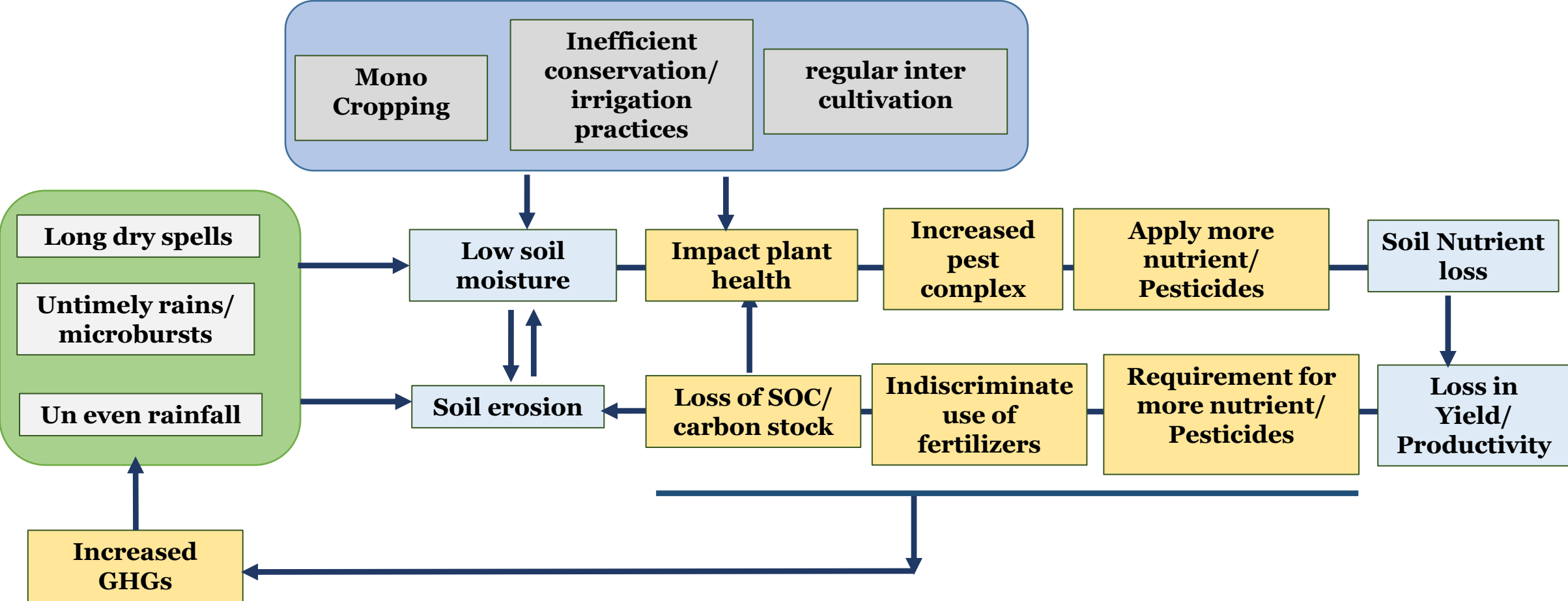
Frequency of Long dry spells increased-11 events in last 15 years



Micro bursts at least 3 in last six years



# Key sustainable issues: Cotton



# Sustainable land Management in Cotton ecosystems



## Regenerative agriculture practices – on farm

- Develop Regenerative Agriculture protocol and demonstrate
- GHG emission studies
- Monitor Soil Organic Carbon

## Agroforestry in Cotton ecosystems

- Promote and develop successful Agroforestry models
- Study the land degradation/ C sequestration studies

## Plantation in Wetland catchment: Reduce runoff

- Soil erodibility Map
- Plantation on degraded/ riparian/ hill areas

# Regenerative Agriculture : Trainings & Demonstration



S.No	Principle/ Objective	Activity	SOC +ve	Soil erosion control	Biodiversity +ve	Adoptability
1	Minimize tillage	Low tillage / avoid tillage for weeding	+	+++	+	+
		Controlled traffic	+	++	+	+++
2	Maintain Soil cover	Cover Crop	++	+++	++	+
		Mulching	++	+++	*	*
		Green leaf manuring	+++	+++	*	+
3	Adding soil OC (10)	Manure application	+++	+	*	+++
		Compost	+++	+	*	+++
		Biochar	+++	+	*	+
4	Sequester Carbon	Agroforestry	++	+++	+++	++
		Plantation	++	+++	+++	++
5	Foster plant diversity	Crop rotation	++	++	++	*
		Intercropping / mixed cropping	++	++	++	+
6	Avoid pesticides/	No pesticides for first 45 days_IPM			++	++
7	Water quality	Less Fertilisers (Urea replaced by foliar application of nano Nitrogen)	+	+	+	
		Soil test based application	*	*		+++

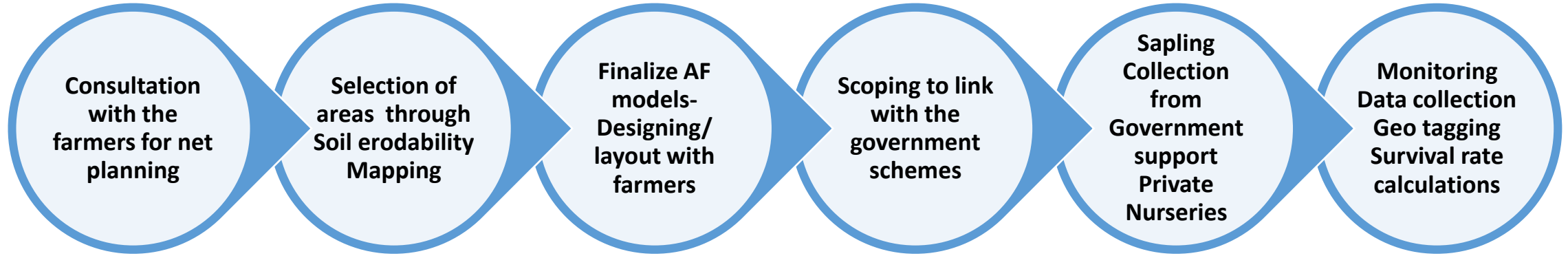
\* Not significant/ not possible  
(Inspired by Giller et al )

+ Least possible/ low impact, ++ medium possible/impact, +++ Possible / better impact





# Agroforestry in Cotton ecosystems: Progress



# Suggested Agroforestry Models in Cotton ecosystems



**Mango based / Fruit based – Mango+ Cotton Model –Preferable in Private lands/ with minimum irrigation facility**



**Bamboo based–Preferable in Community/ Degraded lands/ with medium to high slope**

**Bamboo based – Bund plantation in Cotton lands with sandy-slopy lands**



**Acacia Nilotica based- Tank shore areas and Fringe areas of hillocks**



**Teak based- Bund and Alley plantation in private lands**



**Mixed Fruit/ Timber –Ridge areas –fringe of hillock areas**



# Plantation in Degraded and Riparian Areas: Progress



Community lands  
Forest fringe areas/ buffer  
Ridge Areas



Community/ Societies  
Gram Panchayat/ Revenue Department  
Forest Department / NREGS



Division of work (pitting/ sapling/  
watering)  
Agreement for maintenance of  
plantation



Pitting & digging by NREGS  
Plantation/ Arranging Saplings  
Management by Community/ authority





# Agroforestry in Cotton ecosystems: Progress



**3887** Farmers adopted AF models



**1827.2 Ha** Private cotton farms land covered under AF models



**710.4 Ha** of degraded/ Community lands covered

**138691** Plantation completed



**73%** Survival rate in the first year



# Result – Outcome - Impacts

RESULT



39092 farmers under Better Cotton project



24304 Ha under Better Cotton



1543 farmers benefited with Agroforestry



1027 Ha under Agroforestry



710 Ha. Covered with plantations



138691 plantations completed



40000 seed balls dispersed

OUTCOME



17% Reduction in synthetic fertilizers



30% Reduction in Pesticides



7% Increase in yield

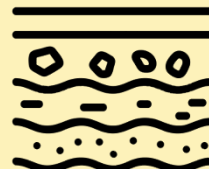


21% improvement in net income

IMPACT



31.8 % reduction in GHG emission in Better Cotton



42% reduction in Soil Erosion



4408 Ts Co2 sequestration

# Challenges and learnings



## Challenges

- Availability of quality saplings is difficult
- Cost of establishment is high for an agroforestry model
- Maintain the trees for better survival rate in the initial years is challenging
- FCRA Amendment & COVID restrictions have impact on planning local collaborations on field monitoring-planning



## Adaptive Strategies

- Recommending wide range of AF models
- Project arranged best saplings – Encouraging FPCL for nursery establishment
- Linking with the government programmes for initial financial Support



## Learnings

- Agroforestry models can easily attract farmers, if the local market facilities are available
- Technical feasibility of the Models to be verified for better results
- Net planning for farmer choices is important to design models
- Great support from Governments on plantations



రాష్ట్రపంచాయితీ కార్యాలయం  
రా. నాదపల్లి మం. పేర్వరసిం కట్టా: వరంగల్ (తూ.గో.)

పంచాయితీ  
బహురంగ మల వివరణ రహిత గ్రామం  
500 మంది మహిళా శిక్షణ



**Thankyou**





Cotton +  
Climate Action

Thank you

