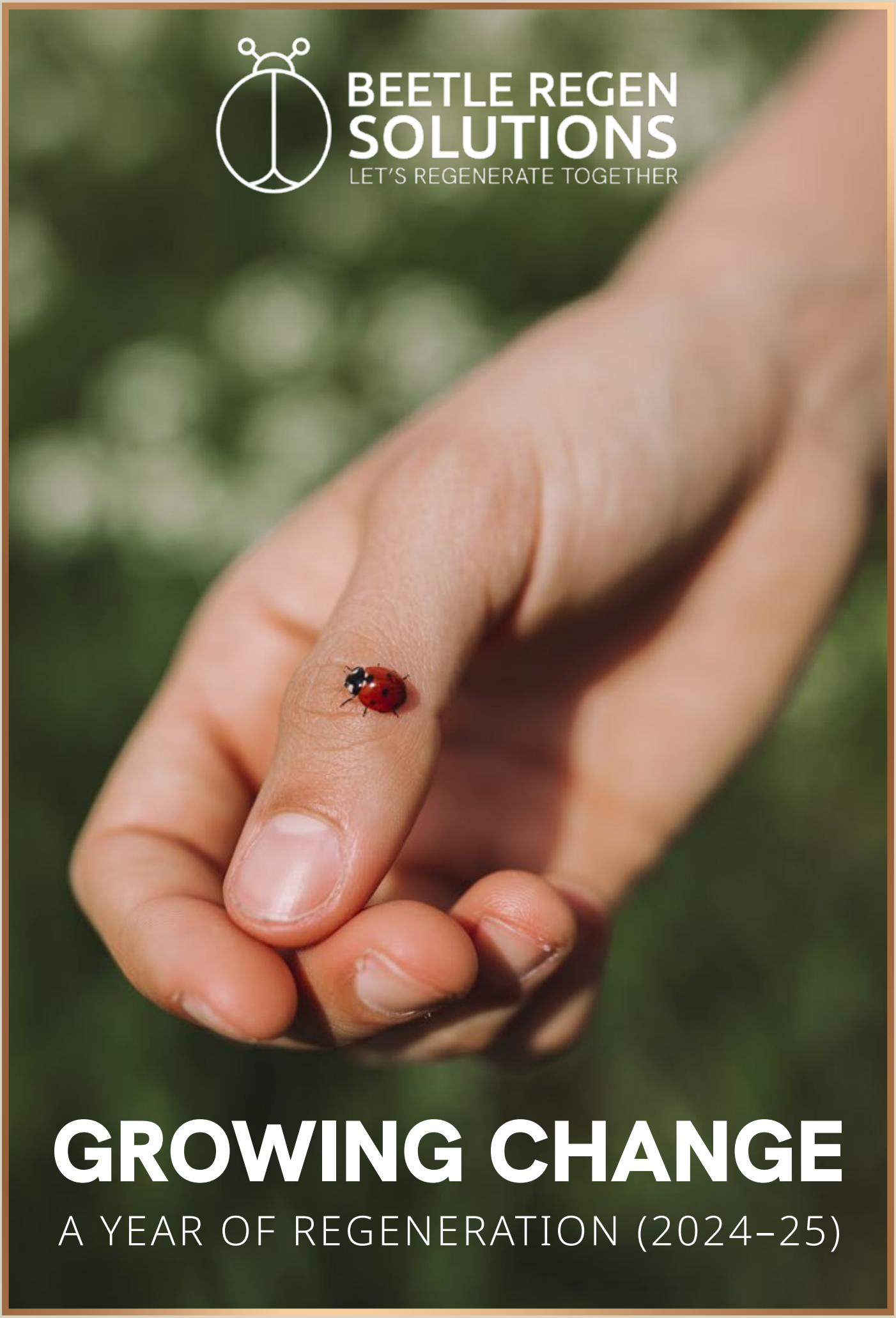

BEETLE REGEN
SOLUTIONS
LET'S REGENERATE TOGETHER
GROWING CHANGE
A YEAR OF REGENERATION (2024–25)

TABLE OF CONTENTS

01 Foreword 01

02 From COO's desk 03

03 Executive Summary 05

04 A Note of Gratitude 07

05 Snapshot of Our Progress This Year 08

06 Beetle's Theory of Change & KPIs 11

07 Measuring Early Outcomes 13

08 Carbon sequestration and Carbon dioxide removal 15

09 Biochar-Based Carbon Removal 16

10 GHG emissions avoided 16

11 Regeneration in Practice: Farmer Stories 17

12 Building a Biochar Model for Smallholder Farmers 19

13 Biochar Production & Carbon Credit Generation 20

14 Supply Chain Impact & Traceability 21

15 AWD (Alternate Wetting & Drying)
- Our Experience in Rice Farming 22

16 Partnerships and Collaborations 23

17 Green Sustainability Accelerator 23

18 CITI-CDRA Partnership for HDPS Adoption 23

19 Looking Ahead: Future Strategy & Goals 26

FOREWORD

Rajeev Baruah

Chief Strategic Advisor,
Beetle Regen Solutions

It gives me immense pleasure to write this foreword, on Beetle's journey with regenerative agriculture and the steps that have been taken for yield enhancement in cotton. Regenerative agriculture is an approach to farming that uses soil conservation as an entry point to regenerate. The main practices that we have focussed on are minimal tillage, crop rotations, use of manure and composts, minimum external inputs, intercropping and maintaining live roots through the year. Our conversations with farmers are to understand the impediments to adoption based on which we set measurable goals for ourselves. For the first time several farmers planted a green manuring crop (Sesbania) during summer after the winter crop to rejuvenate the soils, a practice that we hope will gain momentum.

One of the very key elements for small holder farmers especially in the tropics is the conversion of crop residues to biochar- often crop residues do not find way back to the soil in conventional agriculture systems. The physiochemical properties of biochar, such as high porosity, expansive surface area improves soil structure and retains nutrients. Simultaneously biochar's recalcitrant carbon structure resists microbial decomposition (critical in tropical countries where we work), enabling long-term carbon storage. Convinced about biochar we took the plunge and moved well beyond demonstrations into actual production and soil applications, the results of which would soon be seen in the seasons to come.

As an organisation, we could not turn away from the low productivity of cotton in India. Indian productivity of cotton currently stands at around 445 kgs of lint/ha against the global average of 775 kg of lint/ha. As per official statistics 37% of India's area only produces less than 300 kgs of lint/ha, which are alarming stats for the biggest producer of cotton and with the one of the largest number of farmers. The need to increase productivity is a foregone conclusion. We embarked on a scalable technology of the Central Institute of Cotton Research (Nagpur India)-High Density Planting Systems (HDPS), through short season compact genotypes dovetailed with appropriate agronomy (spacing, nutrient scheduling and canopy management). Overall, The results of the teams' and farmers' efforts have been very encouraging – onwards and upwards!

Hope you enjoy reading Beetle's first End of Year report.

FROM COO'S DESK

Hemant Rajput

COO,
Beetle Regen Solutions

India has been the largest or 2nd largest producer for several crops globally on a consistent basis for many years – lakhs of smallholder farmers in India grow huge quantities of cotton, sugarcane, rice, millets, wheat, spices, tea etc. in an ecosystem which is still rich with resources but are depleting sharply. The average Soil Organic Carbon in India stands at less than 0.5% on average & with the rampant unsustainable agricultural practices underway, it's bound to drop further, if unchecked. Beetle Regen Solutions, since its inception, has been on a mission to change just that through our technology and expertise backed regenerative programs.

As far as our core is concerned - From farm to fabric, India's cotton journey (and Beetle's) is not just about growth - it's about growing sustainably, empowering farmers, and weaving a better future for all. As India leads the world in cotton production, regenerative agriculture is the thread that can stitch together a more sustainable, fair, and prosperous future for farmers and communities.

What sets us apart in the industry is our unique combination of innovation, sustainability, and technology-driven solutions. We are committed to transforming agriculture through regenerative practices that not only restore soil health, enhance biodiversity and increase resilience to climate change but also take care of the communities practicing them. Unlike traditional approaches, our methods are rooted in science and cutting-edge technology, ensuring that every step we take is both sustainable and scalable. Our solutions align with this shift by promoting practices like minimum tillage, intercropping, crop rotation, agroforestry, and reduced chemical use by compensating with more biological inputs, helping farmers restore ecosystems while improving yields and resilience.

Our biochar preparation process stands as a prime example of our innovative approach. Biochar, produced from sustainable biomass, is an integral part of our soil restoration efforts. It not only helps sequester carbon but also enhances soil fertility, moisture retention, and nutrient availability. This eco-friendly solution is part of our broader commitment to sustainable farming and carbon-neutral agriculture.

The scale at which we are driving regenerative agriculture is one of our unique strengths. By working with large networks of farmers and leveraging scalable technologies, we can implement impactful changes on a much larger scale for impact. This enables us to reach more farmers, restore more land, and have a far-reaching positive impact on both the environment and the agricultural community.
Various climate smart practices and technologies (Alternate Wetting and Drying (AWD), Biochar, Regenerative Ag, Enhanced Rock Weathering (ERW) etc. adopted at scale not only have the potential to tangibly impact millions of producers and create positive environmental outcomes but also support our partner industries and brands in their net zero and insetting goals.
As part of our regenerative agriculture approach, we've placed strong emphasis on carbon sequestration and emission reduction practices to recognize their role in addressing climate change and improving farm resilience. These practices are tailored to the local context, allowing farmers to restore soil health while contributing to broader environmental goals.

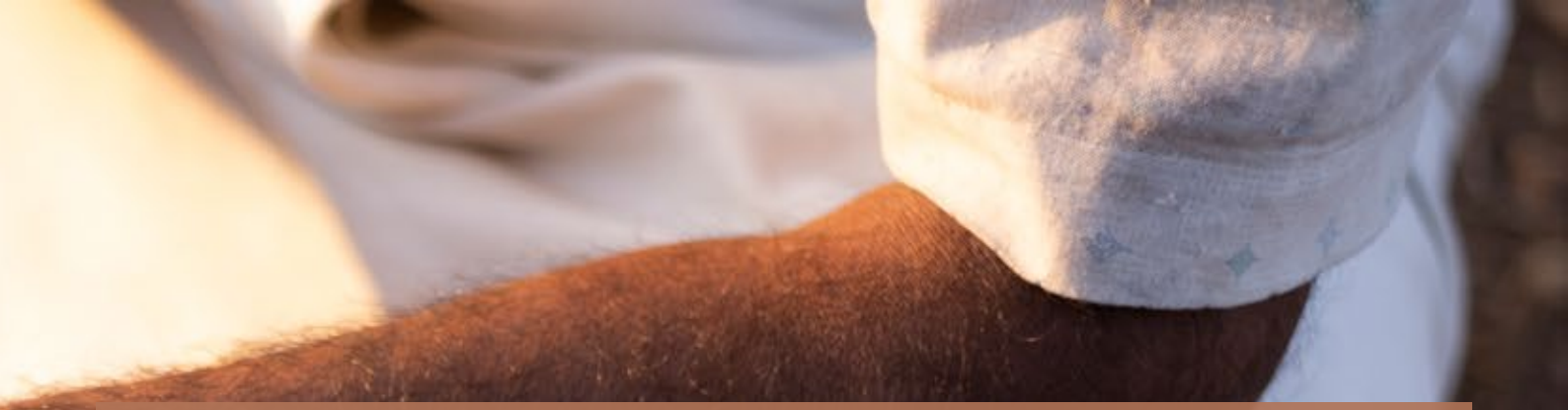
Implementing regenerative agriculture practices at this scale of 70k+ farmers across 100k+ Ha area, in our very first year, has not been without its challenges. We've faced resistance from farmers who are used to conventional methods. They are also reluctant in sharing information like "aadhar card" numbers or other details, which is a must when we are talking about keeping 100% traceability in our supply chain. We have also faced logistical hurdles in scaling up new technologies, like biochar production for farmers. However, through constant engagement, education, and adapting solutions to local contexts, we've learned the importance of patience and persistence. These experiences have reinforced the need for collaboration, innovative thinking, and a long-term commitment to sustainable farming.

Our intention with this report is to reflect on the foundation we've laid, share early progress, and acknowledge the lessons we're learning along the way. As a first-year effort, it's less about presenting outcomes and more about starting a conversation with partners, peers, and anyone invested in regenerative agriculture and CDR removal. This is a snapshot of work in progress, not a final word. We hope it encourages dialogue, invites collaboration, and brings more people into the effort to build climate-resilient, future-ready farming systems. Our experiences so far have underscored the importance of collective effort, innovative thinking, and long-term commitment to address the challenges of greenhouse gas emissions and global warming.

EXECUTIVE SUMMARY

India’s smallholder farmers are highly vulnerable to climate change facing declining soil health, increasing dependency on chemical input and growing uncertainty. At the same time, regenerative agriculture holds the key to solving many of these challenges through practical, locally adapted, and climate positive solutions. At Beetle Regen Solutions, we’ve spent the last year focused on turning that potential into action on the ground.

In 2024–25, we worked across two commodities, cotton and rice. Biochar was a major thrust area to build scalable carbon dioxide removal (CDR) method that deliver measurable benefits for both farmers (in terms of soil health)and the environment. Our team engaged over 71,000 farmers across more than one lakh hectares in Madhya Pradesh, Maharashtra, and Andhra Pradesh. Through a combination of training, field support, and digital tools, we supported farmers in adopting practices like intercropping, crop rotation, production and application of natural inputs, alternate wetting and drying (AWD) in rice, high-density plantation systems (HDPS) and biochar production.



This year also marked the launch of one of its kind smallholder led biochar and carbon removal model. With 807 Tonnes of biochar produced and over 1,724 carbon credits generated, we demonstrated how farm level carbon action can be made accessible, traceable, and linked to markets. In Andhra Pradesh, we piloted water saving and low methane rice farming methods, through Alternate Wetting and Drying (AWD) that show early success in both irrigation efficiency. Meanwhile, in cotton, we supported the creation of end-to-end traceable supply chains that link verified climate data to global brand partners, setting a new standard for transparency and accountability.

We also evaluated the carbon sequestration potential of our regenerative projects. A study modeled soil and nutrient interventions across our cotton-growing area, estimating a potential of 328,000 to 403,000 tCO_2e sequestered annually across 106,866 hectares. This forms a strong scientific foundation for future carbon farming and credit generation.

Initial results from the projects are promising. 35% percent of our farmers have already adopted two or more regenerative practices. We've recorded reductions in greenhouse gas (GHG) emissions and irrigated water use, along with increased farmer incomes and improved crop yield. Beyond numbers, we saw growing trust and participation from communities, which is a strong foundation for scaling our efforts.

This report brings together field insights, outcome data, farmer stories, and lessons from our first year of implementation. It covers our work across regions, crops, and partnerships from soil health improvements and GHG assessments to biochar production, AWD in rice, and supply chain collaborations. The journey is just the beginning, but these early efforts show what's possible when practical solutions meet strong systems and community-led change.

Beyond the data lies a deeper transformation, one of mindsets, identities and endless possibilities. Farmers are not just adopting practices, they are reclaiming control over their land and choices. Communities are no longer passive recipients of aid, but active architects of climate resilience. More women are stepping forward as decision-makers and innovators, shaping the future of farming with confidence and clarity. This is the quiet but powerful revolution we're witnessing, rooted in everyday life, yet redefining the future of regenerative agriculture from the ground up.

A NOTE OF GRATITUDE

As we reflect on the year gone by, one thing feels deeply true - this journey has only been possible because of each one of you.
To our farmers, who are not just growing cotton but nurturing a future -your trust, resilience and openness to change have been the heart of everything.

You are the real changemakers.

To our supply chain partners, development organisations, certification bodies, and collaborators- Thank you for believing in the vision and lending your support at every step. Your commitment to your cause has helped us build something more meaningful and lasting.
To our field teams and Regen Ambassadors, who show up each day with dedication and a stronger resolve, your presence on the ground brings this vision to life.

This report is more than data and stories- it's a reflection of the intent, effort and ownership that each of you has contributed.

Thank you for walking with us, for challenging the norm and for helping build something that matters - not just for today, but for generations to come.

With heartfelt gratitude,
Team Beetle

SNAPSHOT OF OUR PROGRESS THIS YEAR

71000+ farmers
engaged across
106,866 hectares *of land*

366k
regenerative bales certified cotton bales produced

807 tonnes
of biochar produced;
issued **~1700 carbon credits**

20+
supply chain partners *&* **5**
corporate partners

Improved net annual farmer income by **18%**
through High-Density Plantation System (HDPS)
& regenerative practices

BEETLE'S THEORY OF CHANGE AND KPIs

PROBLEM — Global warming & Environmental degradation

Reduce global warming by increasing carbon sequestration through various means

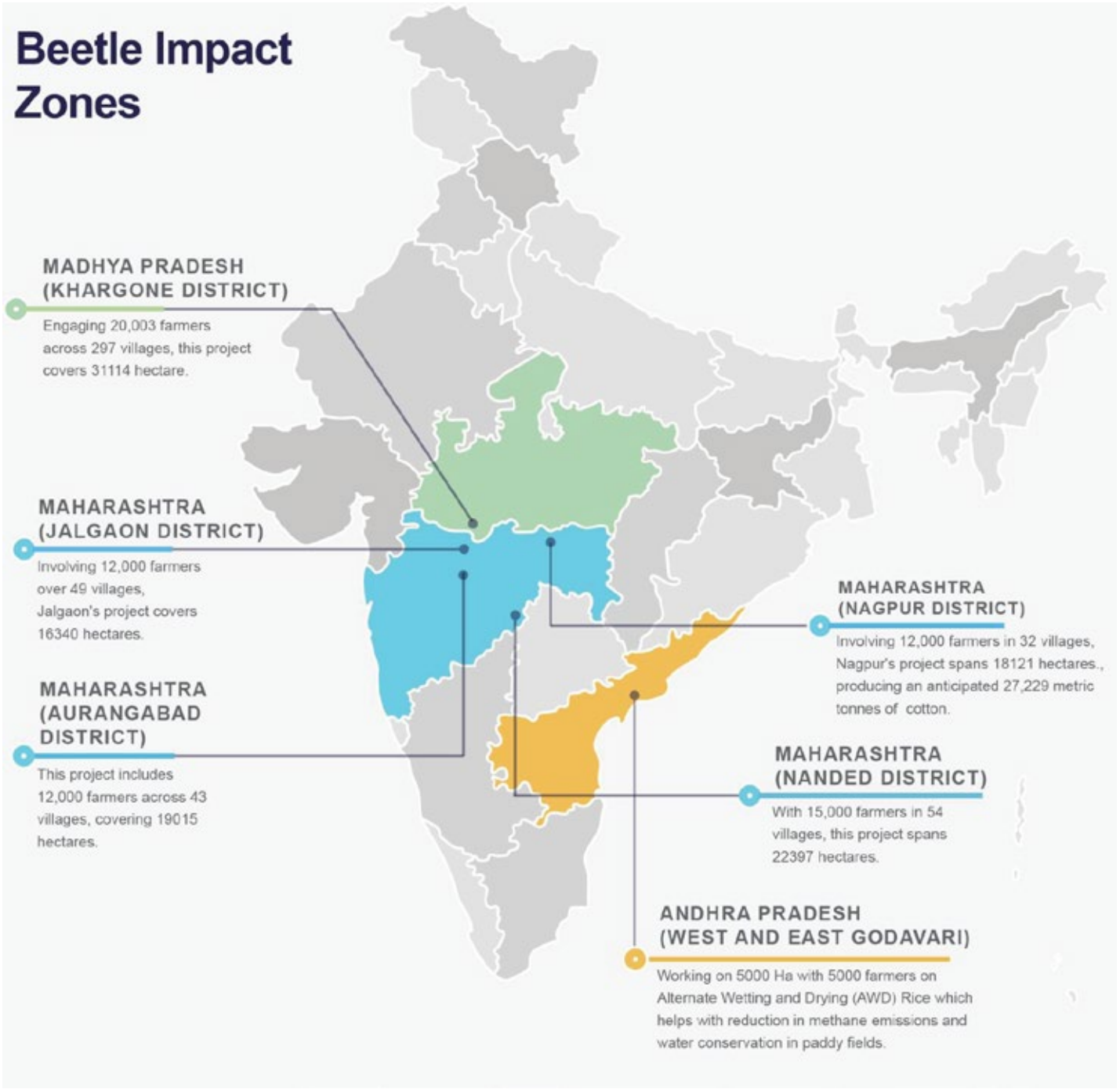
- Tree planting
- Residue management
- Avoiding synthetic inputs
- Application of Biochar

- Number of trees planted
- Diversity of species
- Reduction in burning in terms of mt
- Fertilizers avoided per ha in kg
- Pesticides avoided per ha in It or kg
- Number of hazardous & banned pesticides avoided
- Diversified uses of residues
- Quantity of biochar produced & applied

- MT of CO_2 sequestered
- Carbon credits generated

OBJECTIVES	ACTIVITIES (Eg.)	OUTCOME INDICTORS	RESULT INDICATORS OR KPIs
Improve commodity supply chains by enabling end to end sustainability & traceability solutions	Adopt enery efficient processing methods Implement traceability protocols	Energy metrics in fiber production MT of lint under traceability	
Restore soil health through regenerative practices			Area covered under regenerative farming

Beetle Impact Zones



BEETLE'S
THEORY OF CHANGE & KPIS

At Beetle, we believe the future of farming lies in restoring what matters most to smallholder farming ecosystems: farmer resilience, soil health, and ecological balance. Our work is rooted in the idea that regenerative agriculture isn't just about changing how we grow crops; it's about shifting the systems that connect farms, supply chains, and climate outcomes.

That's why our 'Theory of Change' is built on three core objectives:

- Empowering farmers on regenerative practices to improve soil health
- Reducing global warming through carbon sequestration
- Strengthening commodity supply chains through traceability and sustainability

These goals are linked through on-ground activities such as cover cropping, minimal tillage, intercropping, agroforestry, residue management and biochar application, biodiversity-enriching practices, and the adoption of digital systems.

We focus on making these solutions practical for farmers, and scalable across landscapes. Whether it's piloting biochar, supporting HDPS (high-density plantation system) in cotton, digitizing supply chain data, or helping farmers shift to low-input systems, we see our role as building models that are grounded, measurable, and adaptable.
This year was about taking the first steps of testing models, building protocols, gathering baseline data, and co-creating systems with our partners and communities.
Our outcome indicators now reflect not just changes at the farm level, but broader environmental and supply chain shifts: fertilizer and pesticide reduction, GHG emissions per hectare, traceable lint volumes, and carbon credits generated.

We realize that there's a lot more to be done towards building more awareness and deeper adoption, stronger partnerships, and more rigor. But these early steps have laid the foundation for a regenerative model that connects people, climate, and supply chains through credible, science-backed action.

MEASURING EARLY OUTCOMES

As part of our first year of implementation, we monitored key outcome indicators to assess how regenerative practices are influencing farmer behavior, resource use, and environmental performance. The results presented below reflect early but meaningful progress, comparing project farmer outcomes with baseline or control groups. These insights span across cotton and the rabi season, highlighting adoption trends, reductions in chemical inputs, improvements in traceability and gains in climate-related metrics.

Result Indicator	Outcome
Farmer Adoption	**Over 70,000 farmers trained.** 35% of project farmers adopted two or more regenerative practices in Year 1
Synthetic Fertilizer & Pesticide Reduction	Achieved **~15-26% reduction in chemical inputs usage per hectare** compared to chemical input usage of control farmers
Water Use Efficiency	**Improved water-use efficiency** in cotton crop **by ~12%** compared to control farmers
GHG emissions avoidance by project farmers crop vs Control farmers per Ha (2024)	**Avoided greenhouse gas emissions per hectare by ~6%**
Farmer Profitability	**Improved net annual farmer income by ~27%** compared to that of control farmers
Carbon Sequestration	Produced and applied **800+ tonnes of biochar**, generating **1,700+ carbon credits** and preventing cotton crop residue burning of more than 2,300 tonnes. Carbon sequestration potential of **328,000-403,000 tCO_2e** per year across 106,866 hectares. Produced and applied 800+ tonnes of biochar, generating 1,700+ carbon credits & preventing cotton crop residue burning of more than 2,300 tonnes.

Beetle's regenerative agriculture program was monitored using a structured MEL (Monitoring, Evaluation & Learning) framework, with indicators aligned with our Theory of Change for mitigating climate change, enhancing farmer resilience & empowering communities.

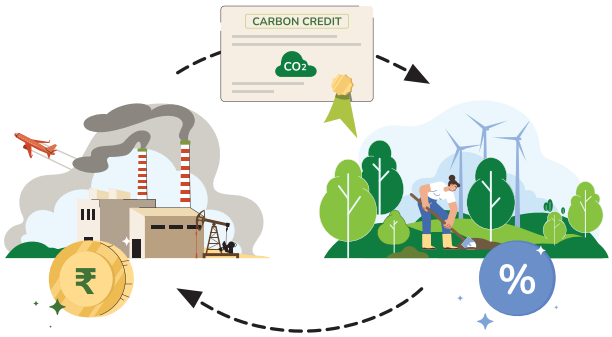
Continuous monitoring and comprehensive data collection was collected across project farmers and control farmers.
Several data points were verified through third-party audits (by Control Union) and dMRV (digital monitoring recording and verification) systems where applicable.

CARBON SEQUESTRATION AND CARBON DIOXIDE REMOVAL

Based on Beetle's total project area of **106,866 hectares**
this translates to an estimated carbon sequestration potential of
328,000 to 403,000 tCO_2e per year
depending on the level of practice adoption & environmental conditions.

Beyond reducing greenhouse gas (GHG) emissions, Beetle's regenerative model also supports long-term carbon di oxide removal and soil carbon sequestration through a set of good practices.

To evaluate this potential, Beetle collaborated with Kosher Climate India Pvt. Ltd. to conduct a feasibility study using the VM0042 Agricultural Land Management (ALM) methodology, approved under Verra standards. This methodology is well-aligned with regenerative agriculture and places particular emphasis on improving soil organic carbon (SOC) levels.



Carbon sequestration estimates were calculated using two complementary methods:

- A biogeochemical, process-based model was used to estimate GHG fluxes related to soil carbon stock changes, methanogenesis, and nitrogen cycling. This approach required detailed, site-specific data, such as soil type, historical land use, climatic conditions, and nutrient management practices to simulate the long-term impact of regenerative farming on carbon storage.
- In parallel, emissions from fuel combustion, fertilizer application, and other field-level activities including CO_2, N_2O, and CH_4 were estimated using standardized emission factors.

The model was calibrated using agronomic data collected directly from Beetle's cotton-growing regions in Aurangabad, Maharashtra including fertilizer use, tillage frequency, cover cropping, crop residue incorporation, and the application of EM-treated farmyard manure.
The results showed that project farmers could sequester up to 3.77 tCO_2e/ha/year under optimal conditions, with even conservative estimates above 3.07 tCO_2e/ha/year, all without any yield penalty. These findings are grounded in real field data, ensuring that the carbon potential reflects the actual practices followed by our farmers.

BIOCHAR-BASED CARBON REMOVAL:

Through biochar production, project farmers removed an additional 1,724 metric tons of CO_2e from the atmosphere. When combined with reductions from lower farming emissions, the total GHG reduction stands at 6,745 metric tons of CO_2e.

GHG EMISSIONS AVOIDED

Beetle assessed greenhouse gas (GHG) emissions from its project farms and a comparable group of control farmers using the globally recognized Cool Farm Tool, designed for farm-level GHG accounting. The analysis covered key emission sources including fertilizer and pesticide usage, irrigation, fuel and energy use in farm machinery, and transport of seed cotton to ginning units.
This enabled a comprehensive comparison of emissions (per hectare and per kilogram of seed cotton) highlighting the carbon emission reductions achieved by project farmers relative to control groups operating under similar geographic & climatic conditions.

Per Hectare Impact:

Project farmers emitted 47.05 kg CO_2e less per hectare than control farmers.

Resulting in a total **reduction of 5,021,647 kg CO_2e (or 5,021 metric tons)** of emissions avoided across the project area.

47.05 kg co_2e per hectare

REGENERATION IN PRACTICE: FARMER STORIES

Recognition and Results: How Tulsiram's Success Sparked a Shift

In 2024-25, Beetle took its first steps towards introducing High-Density Planting Systems (HDPS) & closer spacing in cotton with 881 farmers in Khargone Madhya Pradesh for yield enhancement. Among these early adopters, one farmer's journey stands out.

The award recognized his successful adoption of a simple yet impactful practice: closer spacing in cotton sowing. Though the method itself is not new, to the best of his knowledge, no one in the surrounding villages has ever implemented it.
Tulsiram implemented closer spacing on his cotton field his crop was monitored by our team. The results were positive: his yield rose by 17% and he earned an additional income of INR 10,000/- . He also noticed fewer pest issues and reduced spraying costs. But what mattered just as much was what it did for his self-belief. His success became a point of reference for others.

The approach is simple but effective: reduce the space between plants (and combine with high density plant management techniques) to optimize yields.

Tulsiram's success didn't go unnoticed. It stirred conversations in the village, drew attention from neighboring farmers, and quietly started a shift. When one farmer tries something new and it works, it gives others a reason to reconsider what is possible.

"उस दिन मैं इतना खुश था जितना अपनी शादी वाले दिन भी नहीं था।"

Tulsiram Lohare, Farmer,
CITI sustainability award winner

When Tulsiram Lohare received the CITI Sustainability Award at Bharat Tex 2025, he said, "I felt more joy that day than I did on my wedding day." It wasn't just the trophy or the applause; it was the pride of being recognized in front of senior officials, brand representatives, and fellow farmers for the steps he had taken.

FAKIRCHAND'S FIELD:

How One Farmer Found Life in the Soil Again

In the heart of Wakti village in Chhatrapati Sambhaji Nagar, Maharashtra, Fakirchand Laxman Gudade stands beside his cotton field, looking at the land his family has worked on for generations - seven acres that carried the weight of both legacy and struggle.

When Beetle's field team arrived in April 2024 with talks of soil health and living ecosystems, Fakirchand admits he was curious but skeptical. The way the team engaged with soil, through drawings, through that Rangoli farmers made with seeds and soil layers, it stuck with him.

That season, he started adopting regenerative practices. He also piloted the High-Density Planting System at 90X15cm instead of the traditional 122 X 122 cms cotton spacing he'd used for years which resulted in improvement in yields.

For Fakirchand & his family, these changes brought a shift in perspective. Farming became more intentional. Paying attention to the soil and responding to the land's needs is the way forward.

"I grew up watching my father sow cotton the same way every year," Fakirchand says. "Same spacing, same inputs, same crop. We never thought to question it. We just tried to grow more by adding more - more fertilizer, more sprays, more water."

तेच अंतर, तेच इनपुट, तेच पीक.
आम्ही कधीही त्यावर प्रश्न
विचारण्याचा विचार केला नाही.
आम्ही फक्त अधिक खते, अधिक
फवारणी, अधिक पाणी घालून
अधिक पिकवण्याचा प्रयत्न केला.

Fakirchand,
Wakti village

BUILDING A BIOCHAR MODEL FOR SMALLHOLDER FARMERS

This year, Beetle piloted the first of its kind smallholder biochar and carbon insetting model designed to deliver multiple benefits- improving soil health, boosting yields, reducing farm waste and creating access to carbon markets for farmers.

In cotton farming, crop residues like stalks are often burned or left to decompose, adding little value to farmers or the environment.
Biochar provides a smarter alternative, turning that waste into a valuable form of carbon that helps lock CO2 in the soil for years.

We introduced two simple, farmer-friendly production methods (backed by the Ithaka Institute):

1) Metal Kon-Tiki units 2) Earth Cone Pits

These solutions enabled farmers to convert the cotton stalks (crop residue) into biochar using locally available resources, turning what was once treated as waste into a valuable input for soil health. While initial adoption faced hurdles, especially due to the common practice of quickly clearing fields for the next cycle, early results of Biochar are encouraging. Farmers are beginning to see the long-term benefits of better crop residue management from reduced burning to improved soil structure and fertility, marking a shift toward more circular, regenerative practices rooted in their own fields.

Under the Artisan Pro model of Carbon Standards International, our local partners set up cluster-based Earth Cone Pits or Metal Kon-tikis for converting biomass into biochar. The Global Artisan C-Sink conditions were followed under the guidance of Circonomy – our C-Sink Manager to create Biochar. Circonomy's geo-tagged dMRV system ensures each batch of biochar is tracked from production to mixing with compost for field application.

BIOCHAR PRODUCTION & CARBON CREDIT GENERATION

Agri Waste → Kon-Tiki Kiln → Biochar → Soil → Carbon Storage

Biochar Production & Carbon Credit Generation	Amount / Volume
Volume of biochar produced	807 Metric ton
Verified carbon credits generated & potential revenue	Carbon Credit – 1724

This first-of-its-kind smallholder biochar pilot has laid the groundwork for scaling in the upcoming season.

While there were challenges in aggregating the biomass in the first year but farming communities have seen the positive results of this year and show interest in adopting it in future, we are optimistic about bringing more farmers on board.

Looking ahead, we plan to expand biochar production with additional smallholder, and advanced technology units, helping us scale both climate impact and carbon offsetting through our growing CDR projects. These large scale carbon Di Oxide solutions deployed with our cotton farmers are also helping us create insetting solutions for textile brands and retailers who can now incentivize GHG mitigation efforts within their own supply chains.

SUPPLY CHAIN IMPACT & TRACEABILITY

This year, Beetle took a significant step forward by successfully implementing end-to-end traceability for regenagri - certified cotton, connecting women farmers in Madhya Pradesh to one of India's largest spinners and a leading global brand.

Our traceability system goes beyond tracking cotton's origin. By linking each bale back to lots from a group of farmers and capturing farm level impact data, we were able to demonstrate lower carbon footprints for project farmers and for each MT of cotton, compared to the production from conventional farmers in nearby villages.
This data supported sustainability claims for a leading global brand, setting a new benchmark for verified impact.

Traceability also helps strengthen future insetting claims, making it possible to verify whether the cotton produced with lower emissions is coming from the same farmers practicing carbon sequestration or carbon dioxide removal activities.
This alignment could allow brands to purchase carbon credits from the very project they source regenerative cotton from, creating the opportunity for integrated, verifiable traceable insetting solutions in the future.

Cotton Farm → Ginning → Spinning → Fabric Manufacturing → Garment Manufacturing → Brand

Volume Traced

575.28 MT of regenagri certified lint cotton

Farmers Connected

691 farmers

Partners Engaged

Vardhman and a leading US brand

AWD
(ALTERNATE WETTING & DRYING)

Our Experience in Rice Farming

Beetle introduced Alternate Wetting and Drying method of irrigation in West Godavari, Andhra Pradesh, , aiming to reduce methane emissions and improve water efficiency in rice farming.

We started by building awareness in the community and getting the support of the agriculture department. Farmers were registered, their fields geo-tagged, and AWD water pipe indicators were installed to help them monitor irrigation more effectively thus alternating between drying out and irrigating their fields depending on the requirements.

Training sessions were held on how to practice AWD, and other sustainable techniques. Throughout the season, farmers received regular field visits and on-ground support to help them adopt these practices confidently.

While farmer hesitation was natural in the beginning, the hands-on demonstrations and continuous engagement helped build trust.

The project showed that with the right guidance and partnerships, farmers are open to trying new, practical solutions that are good for their farms and for lower environmental methane levels.

PARTNERSHIPS & COLLABORATIONS

In 2024-25, Beetle strengthened its collaborative ecosystem, working alongside partners who supported us in expanding both our business readiness and on-ground impact with farmers.

Greenr Sustainability Accelerator

As a young organization scaling multiple climate and agriculture solutions, Beetle was selected to join the Greenr Sustainability Accelerator Program, an initiative by TechnoServe, supported by the IKEA Foundation and Visa Foundation. This opportunity provided us with access to expert business mentoring, peer learning, and market linkages.

Throughout the year, our team participated in several capacity-building workshops covering business management, legal frameworks for green startups, and investor communications. We also received tailored support to build an investor-ready pitch deck and explore funding opportunities. This partnership helped us sharpen our long-term strategy while staying focused on delivering real impact on the ground.

CITI-CDRA Partnership for HDPS Adoption

Beetle also partnered with the Confederation of Indian Textile Industries – Cotton Development Research Association (CITI-CDRA) to promote High-Density Planting Systems (HDPS) in Madhya Pradesh. This partnership aimed to help smallholder cotton farmers increase yields, reduce input costs, and adopt more regenerative farming practices.

Through this collaboration, farmers were introduced to closer cotton spacing techniques, bio-inputs, & pest management methods that showed promising results.

This partnership not only helped demonstrate the potential of HDPS as a scalable model for Indian cotton farmers but also supported wider awareness and farmer engagement through training sessions, demonstrations, and field activities across the region.

Strategic Collaborations for Carbon, Climate and Supply Chain Impact

Beetle partnered with Circonomy as a knowledge & technical expert to enable the conversion of agricultural waste into high-quality biochar. With their support, we implemented pilots across our farming network & jointly generated carbon credits. Circonomy's expertise has played a key role in ensuring scientific accuracy, methodological alignment, & credibility of our biochar-based carbon removal efforts.

Seeking to expand regenerative agriculture in Maharashtra, Beetle collaborated with Kosher Climate to bring soil health-focused farming to smallholder cotton farmers. Kosher Climate's team conducted a feasibility study to explore the carbon credit potential for practicing regenerative agriculture. The results aided in developing financial models and assessing the scalability of CDR projects in Maharashtra.

Beetle partnered with Boomitra in Madhya Pradesh, involving farmers from our regenerative agriculture network. Using Boomitra's dMRV platform, we've initiated monitoring of improved agriculture practices and gains in soil organic carbon, thus connecting smallholder farmers to emerging carbon market opportunities.

Each of the above partnerships has helped us in the development of transparent CDR projects with low-cost monitoring. We integrate it with on-ground validation by field staff, real-time data inputs from farmers, and additional remote sensing services to ensure accuracy and accountability. This hybrid approach enhances traceability and credibility of carbon credits while reducing verification costs, offering high-integrity carbon credits.

Climate Asia Partnership for Advocacy & Awareness

With the vision to accelerate climate action, we collaborated with Climate Asia by hosting a panel discussion centered around developing sustainable supply chains and climate-resilient ecosystems via regenerative agriculture. The partnership has flourished since then as we continue to jointly advocate and make efforts towards building climate resilient communities and institutions and enabling sectoral dialogue.

Supply Chain Partners

In partnership with Vardhman, Beetle has been implementing a Women in regenerative cotton program for a leading global brand, building a fully traceable supply chain with verified impact, GHG reporting and end-to-end traceability.

Beetle was approved as a regenerative cotton partner for Hugo Boss, strengthening its role in supporting brands on their sustainable sourcing journey.

Traceability

Beetle teamed up with TTpro to strengthen traceable and sustainable cotton sourcing, connecting farm-level practices to industry supply chains.

LOOKING AHEAD: FUTURE STRATEGY & GOALS

At Beetle Regen Solutions, 2024-25, our first year of operations was never meant to be a pilot year, it was meant to be a blueprint for change and scalable Climate impact.

What began as a vision to rethink the strategy towards mitigating climate change, in just one year, has become something far more rooted and far-reaching: a ground-up, farmer-led ecosystem for regeneration, traceability, and carbon removal purpose-built for scale.

From smallholder cotton fields in Madhya Pradesh to paddy farms in Andhra, from smallholder kilns producing biochar to our chain of custody portal, M&E dashboard and partner dMRVs tracking every kilogram of carbon sequestered and impact created, we've built more than pilots. We've built proof that end-to-end, climate-smart systems can emerge from the soil up, not just top down.

This year, we created our unique smallholder-driven Artisanal biochar model where the power to heal soils and biodiversity, enhance livelihoods and reduce air pollution lies in the very hands of our leaders of change – our farmers. We linked CO_2 removals to carbon markets, climate data to cotton bales & farmer resilience to global climate ambition. We digitized what was once invisible. We measured what once went ignored. And more importantly we listened more than we told!

But more than anything, we moved - Not just data or products but hearts, practices, supply chains & systems. We regenerated - Regeneration of soil, resources, ecological balance & most importantly regeneration of belief!

And still, this is only the beginning.

The path forward is ambitious and that's by design. As the Co-founder and CEO of Beetle, I've always believed that if we're not building something bold enough to shape global trajectories, we're not building at all. Our next chapter is about deepening our science, scaling our technology, and expanding our impact across the globe, while holding fast to the one principle that anchors everything we do: climate solutions must work first for the people, and then for the planet.

So, as we closed this year of grit, growth, and ground-laying, we look ahead not with mere optimism, but with conviction. Because what we're creating isn't just an organization. It's a movement. One that grows from the soil, scales through systems, and leads with belief.

And belief, as we've learned, is the most regenerative force of all!

Hope you enjoyed the report and could find ways to collaborate.

Until next time!

Amol
Co-Founder & CEO

BEETLE REGEN SOLUTIONS

LET'S REGENERATE TOGETHER

Contact us:

info@beetleregen.com

www.beetleregen.com