



“Solutions come from the people who are actually impacted by the problem and who have a stake in solving those problems.”

A Conversation with Gauraang Biyani of [Varaha](#)

Carly Lanning
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Carly Lanning: Please introduce yourself and tell us about your social venture.

Gauraang Biyani: I'm Gauraang Biyani, Chief of Staff at Varaha. Varaha is a carbon removal startup headquartered in Gurugram, India with carbon removal projects across India, Nepal, Bangladesh, and Kenya. We started in March 2022 to partner with smallholder farmers to shift them to sustainable practices that reduce or remove carbon emissions from the atmosphere, sequestering them in soil, trees, et cetera.

We provide the entire technology required to validate and quantify the impact of these practices. On the basis of that, we generate carbon credits. These credits are then sold to large corporations in the US, or India, other countries, to help them reach their net zero goals. Most of the money we get from selling credits goes back to the farmers. That is the business model.

In terms of scale, we've had two equity financing [rounds], and raised around \$13 million in equity and grants as well. We are working now with 100,000-plus smallholder farmers covering over a million acres.

Carly Lanning: How do you find the farmers you work with?

Gauraang Biyani: Our model is to partner with local farmer producer organizations. These are farmer cooperative groups and NGOs working with farmers at scale, for example, Roots Foundation, Conservation International, and The Nature Conservancy. They have already been working with farmers for decades and have trusted relationships with them, so we leverage those. It's not possible to approach farmers

individually in India because they are smallholders and very fragmented, so we end up partnering with these kinds of institutions.

Carly Lanning: What do farmers gain from this partnership?

Gauraang Biyani: Firstly, of course, there's the money from the carbon credits they receive. Beyond that, these practices increase the soil fertility by raising the soil organic carbon [SOC] levels. The soil in India is heavily depleted, so we're helping restore the SOC levels. We are also increasing the resilience of the farms because the farmers' dependence on water decreases. The soil is more nutritious and fertile. We're improving biodiversity, for instance, when we plant trees, that has an impact on local biodiversity.

We are also helping improve the health of the farmers because many times farmers burn the crop residue, which releases toxic emissions. This impacts their health, as well as people in surrounding areas. We help them process that residue, so they don't need to burn it. We're also generating local livelihoods by engaging local farmers in projects.

Carly Lanning: What's distinctive about the approach you're taking?

Gauraang Biyani: The first thing is, no other carbon removal company in the world has all four of these project types in its portfolio. That helps us because when buyers approach us, we can sell them a diverse portfolio of credits from our projects. This helps bring in more carbon financing to farmers at a faster and larger scale.

The second differentiator is that we are very 'science first.' Our team has PhD scientists, machine learning engineers, and AI engineers. We've invested in deep scientific and technical expertise to quantify the carbon in a manner that is very accurate, transparent, and traceable.

Carly Lanning: What is the scale goal? Working with more individuals in India, or taking this model to other countries?

Gauraang Biyani: There's a lot of scope in India itself, and a big focus of the company is to expand to at least 80% of the states in India. We are already in Nepal and Bangladesh, where, culturally and geographically, there's a lot of overlap and similarity. We've been able to expand pretty rapidly there. We also have a project running in Kenya.

We would like to expand [even more] internationally, starting with Southeast Asia. That's where we see a lot of scope in terms of availability of biomass. A lot of farmers are still not mechanized, which is not efficient. There's a lot of scope to improve it. There's also buyer interest for carbon credits in Southeast Asia. South Asia and Southeast Asia is the geography of strategic interest for us. Of course, this model is replicable and eventually, we would like to cover Sub-Saharan Africa as well.

Carly Lanning: What stood out to you and made you want to join the company?

Gauraang Biyani: I was a strategy consultant at Dalberg Advisors for three years. I decided to join Varaha in July 2023 because I had a lot of conviction in the founding team since all three of them came from an agricultural background. They had been working in the agri-sector for 10 years or more. The approach the company is taking to invest in science and tech also made a lot of sense to me.

Carly Lanning: What's an example of the impact of your work? How do you know it's effective? What inspired your approach and the successes you see?

Gauraang Biyani: The most direct metric of success is to measure the carbon removal. We know what has happened due to the interventions. Also, we do surveys of the farmers. We know that in Nepal, for example, where we have given farmers fruit and nut tree samplings to plant for free, we have been able to calculate how much income increased, sometimes more than doubling or tripling it from what it was. The cotton farmers who applied basalt rock to their fields in the enhanced weathering projects have also seen their yields go up. We have many impact stories like this. There's also peer-reviewed scientific literature in Nature [magazine] and others, [showing that] regenerative practices over five years can raise incomes.

Our approach is very farmer centric. Whenever we approach a new geography, we don't take a top-down approach. We hold local stakeholder consultation workshops where we ask farmers, "What are the challenges you face?" Then we can create a customized menu of interventions that the farmers can pick and choose to implement. They don't have to do everything. They can do just one thing. As they see success, we introduce them to more practices. It's very important for them to see the value and benefit of what they're doing. That's an important aspect of our approach.

Carly Lanning: What are some challenges that farmers have shared with you?

Gauraang Biyani: The weather patterns have become erratic. Monsoons have been delayed. Summers are getting hotter. All of this has an impact on their yield. Also [they face] water scarcity as the groundwater levels are heavily depleting in multiple states of India. How can they make farming more water efficient? Also, in India, farming is still very heavily dependent on the application of chemical pesticides and fertilizers. That has a positive impact in the short-term, but in the long-term, it can decrease soil fertility.

Carly Lanning: Any misconceptions or different beliefs about your product from farmers?

Gauraang Biyani: Our approach when we enter a geography is to identify progressive farmers. These are farmers who have already started at least one sustainable practice, so they already have some buy-in. We position them as champions who can educate and inspire their fellow farmers. Farmers learn from farmers as word spreads in the village, and that's how more people get interested.

Farmers are sometimes hesitant about decreasing the application of chemicals. We have pamphlets and demonstrations in the local language. We invite farmers to speak, and it has a lot of impact when they hear from their fellow community members. They

have trust in the NGOs who have been working with them for a long time. When NGOs are invited to the workshop, that also helps with credibility.

Carly Lanning: Thinking about the support your organization received, is there anything that surprised you? What has been the most helpful type of support to scale?

Gauraang Biyani: The most helpful support is when companies do upfront financing of our projects. For example, we signed a deal with Google recently, which was [in the news](#) for [selling] 100,000 carbon credits for biochar. Google will give us money to invest and expand the project, and generate the credits. In return, it's a success-based model, where we will give them a number of credits in return for their investment. It makes a significant difference when companies who have conviction in our ability to execute can invest upfront in the projects. The Rippleworks model is somewhat like that.

Carly Lanning: How would you gauge a successful relationship? Is it based on the number of carbon credits? What evidence are you looking for?

Gauraang Biyani: For partners, it's the number of farmers and acres of farmland they can bring on board with the project, and also the number of farmers who pass the eligibility checks and are eligible to participate in the carbon [credit program] according to the requirements of the global carbon standard credits to generate per acre. Also, [we look at] how cost-efficient is the implementation on the ground. For buyers, we look at how many credits they can purchase from us, at what price, what volume, and whether we can have frequent transactions with them in a long-term relationship, with a consistent stream of credits that they're constantly taking from us.

Carly Lanning: What role does trust play in your relationship with funders?

Gauraang Biyani: Trust plays an important role because this is a very complex business market that's continuously evolving. Carbon credits and carbon markets are still being built as we speak. Trust plays an important role because investors and philanthropies need to have conviction in the team's ability to pivot as the market evolves.

For example, when we started off, we were originally an agriculture company. Then as we saw more opportunities, we built more business lines for biochar, ERW [enhanced rock weathering] and afforestation [the process of establishing a forest in an area where there was no forest before, or not for a long time]. What really helped is our investors' conviction that the team has the scientific and technical expertise to build out those business lines.

The second [trust] is on the buyer's side. Many buyers also invest in our projects. They need to trust the integrity of the operations on the ground, the data, and the calculations we are doing. They do very detailed due diligence, and nothing is taken for granted.

Carly Lanning: Any advice on how funders can cultivate trust with social ventures?

Gauraang Biyani: It's important to meet the team face to face because a lot of funders might be abroad, [while] companies might be in the global south. Not only meet the founders, [but also] the team that's actually executing [projects] on the ground, and the farmers or other beneficiaries of the projects.

When we see an investor go the extra mile of interacting with the team and the farmers, then we feel that they are as invested in the journey as us. That's what Rippleworks did. They had conversations with different team members and with our investors as well.

The second thing is that investors and funders should also realize that [startups need flexibility to innovate], since sometimes things may not go exactly according to plan. It's good to have flexibility to pivot and change your approach when new opportunities arise. Just be in touch and understand the challenges we are going through. If things need to be done differently from what was initially envisaged, talk through that and be a support partner through that process.

Carly Lanning: How do you figure out who you want to work with? Who are the right types of funders for you?

Gauraang Biyani: [We prefer] people who come from the climate domain or smallholder domain and understand the sector. Rippleworks with its very strong tech and smallholder focus was a natural partner. Many of our equity investors also are climate and agricultural venture capitalists [VCs]. They have very valuable networks, knowledge, and relationships they can open to us. We always prefer to partner with funders who are already in the sector or have invested in the sector, and who can then add value beyond just money.

Carly Lanning: What bold shifts need to happen in funding to center people and voices that are closest to the problems?

Gauraang Biyani: More funding should go to founders from less represented communities, such as women, local communities, marginalized communities, tribes and castes, because when the solutions come from the people who are actually impacted by the problem and who have a stake in solving those problems, that's when real impact and change happens.

Our founders experienced these issues in their own lives. Our CEO grew up in the Himalayas, so he's literally seen glaciers melting and how that has impacted his community and his family. Our co-founder has also worked with women farmers a lot, being a woman herself, so she really understands their challenges. That's a shift I would like to see, rather than founders sitting in US or Europe with operations happening in India or Africa.

Carly Lanning: You're rooted deep in your communities to create impact on the ground.

Gauraang Biyani: We have over 70 people on the ground every day, working alongside farmers.

Carly Lanning: What type of work are they doing with farmers?

Gauraang Biyani: They are working on correct implementation of practices, doing visits to the farms to check that farmers have all the knowledge and training they require. Surveyors are deployed by the NGOs to onboard the farmers and train them on how to use our mobile application. We also do on-ground experimentation, and carry out soil sampling tests and gas flux experiments, to gather that data from the ground.

Carly Lanning: Can you say more about the support you received from Rippleworks?

Gauraang Biyani: We did a project with Rippleworks around two years ago before I joined the company, so I don't know too much about it, but I know [they offered] support on machine learning and tech for the quantification of carbon credit. Rippleworks was able to provide a very technical support that was very unique. Very recently, we received another offer of support from Rippleworks, just being finalized now, which involves supporting the expansion of our carbon projects.

Carly Lanning: How has their support been a unique type of support?

Gauraang Biyani: We periodically lean on Rippleworks to guide us on certain strategic aspects. For example, they helped develop our tech platform, and [helped] on our international and domestic expansion. We had periodic calls with Rippleworks to discuss which geographies we should enter, and which kind of crops are suitable. Rippleworks already has a portfolio of companies working with smallholders in Asia and Africa who are able to bring some valuable perspectives.

Carly Lanning: How did their capacity-building support impact your work?

Gauraang Biyani: It's had a direct impact on which areas we prioritize for our expansion, which crops we prioritize, and which countries we are thinking of entering. On the tech side, [they have helped] make our tech platform more robust, and increase the accuracy of our carbon quantification.

Carly Lanning: Any gaps in the Rippleworks capacity-building model or other feedback?

Gauraang Biyani: Overall, we've been very satisfied with the level of engagement and type of support. I feel we can always reach out to Rippleworks for anything we need, and get someone to talk things out with.

Carly Lanning: What do funders not understand about capacity building? Why is it so useful to put support behind capacity building for a social venture?

Gauraang Biyani: It requires you to get your hands dirty and to dig into the nuts and bolts of early-stage impact ventures, which is not in the DNA of most organizations. Rippleworks is very different as a nonprofit, given that the founders of Rippleworks have their background in the tech industry and startups. It would be great to see more foundations build capacity of business-minded folks within the organization who have worked at startups, like the team at Rippleworks. Some funders hold back from providing technical assistance if they've either not been in the trenches, or it's been a while.

We did our first Rippleworks engagement in 2024. Our teammate, Kaushal Bisht, participated in the Leader Studio called *Growing Yourself*.

Carly Lanning: What tools did he gain from participating in the Leader Studio?

Gauraang Biyani: He felt it was great to interact with people he wouldn't have otherwise, to understand what challenges others face and how similar they are to his own problem statements, and also to learn to communicate in an effective manner under pressure.

Carly Lanning: Do you get most of your funding from foundations, grants, private sector, the government? Who are the major supporters for your organization?

Gauraang Biyani: Most of our funding comes from private sector, equity financing, or venture capital.

Carly Lanning: Is most of that support through word of mouth, people you've met within your networks, or funding you're applying for?

Gauraang Biyani: It's a pretty even combination of both.

Carly Lanning: What have been some challenges in the support that you received? Any gaps or learnings?

Gauraang Biyani: One thing that most grants and philanthropies are not so comfortable with financing is 'capex' [plant equipment, plant, machinery, the upfront investing that needs to happen]. They're more comfortable with 'opex' [operational expenses]. More funders willing to invest in 'capex' would be good.

Carly Lanning: Why are they hesitant to fund this?

Gauraang Biyani: I honestly don't know. It's something we've encountered many times. That's something we would like to understand.

Carly Lanning: What changes would you like to see in funding to help you scale? What should funders know? What type of funding would you like to receive?

Gauraang Biyani: It would be great to get more funding and support from multilaterals in governments, because that creates a lot of confidence in the carbon markets, and

buyers can see that governments and multilaterals are putting their name behind companies and credits coming from countries like India.

Carly Lanning: What advice would you have for funders who want to help social ventures be successful?

Gauraang Biyani: It's important to build your team in a way that the social venture can see the value in engaging with you, the resources, knowledge, and skills that your team brings to the social venture. Be very deliberate about the team you are creating for program offerings. Be in touch with the venture and have regular check-ins to build more personal connections with the founders.

Carly Lanning: What are the top three things you need to unlock your ability to scale and sustain your organization?

Gauraang Biyani: Our number one need is for the carbon markets to become more mainstream and to get the stamp of validation from countries and multilateral institutions. Currently, we are selling our credits to companies that are buying them voluntarily, but more regulations around that would boost the demand for credits.

Secondly, the process to generate credits is currently a bit cumbersome because we have to deal with carbon registries that are very legacy organizations, very bureaucratic, and they take their time. [It would be good to] have more nimble, streamlined processes for generating the credits.

Lastly, it would be great to see more companies, for example, Microsoft, Meta, Salesforce and others, who are forming coalitions. Some of these tech companies have created a coalition to buy credits together, so maybe we can have, for example, a fashion coalition with large fashion brands clubbing together funds, or a coalition of automobile companies. It helps to unlock demand and scale when you club together different companies.

Carly Lanning: Is the accessibility of information around the carbon market changing? Are there some general education shifts that need to happen to help people better understand how important this is?

Gauraang Biyani: It is improving, and people are a lot more knowledgeable and interested, but there's still definitely an education gap, and we still need to educate people about carbon credits.

Carly Lanning: Why is it so important for people to be involved in the carbon market?

Gauraang Biyani: People need to understand that agriculture is responsible for nearly a quarter of carbon emissions, which not many people know. We really need to decarbonize agriculture to meet net zero. It's not only about aviation, automobiles, cement, steel. These are what typically come to mind, but agriculture needs to be decarbonized and nature can be part of the solution. Nature isn't just a victim of climate

change. It can be the tool we use to combat rising temperatures, whether it's planting trees or creating biochar to recognize the potential of nature as an asset and a tool for combating climate change.

Carly Lanning: There's so much happening in the world and it can feel very overwhelming. How do you stay focused on your goals and the changes you want to make?

Gauraang Biyani: What helps us remain focused is seeing the big picture. There might be disruptions, spikes, or troughs in interest in climate at certain times. We've seen this before. Eventually, we need to solve climate change because we don't have an option. We only have this one planet and we can't go to Mars yet. Having built a team at Varaha that is very passionate about climate change, and having like-minded colleagues to work with on these issues, makes a big difference. When it comes directly from the founders who genuinely care about the issue, that is very motivating. It's an uphill battle, but [then it becomes] more energizing. Thank you for the opportunity to talk with you.

Carly Lanning: Thank you for taking the time, I appreciate it.

[Carly Lanning](#) is a trauma-informed journalist and founder of Voices Editorial LLC, a communication consultancy providing a variety of writing, editing, impact storytelling, and marketing services to mission-driven organizations and nonprofits. She's worked in communications across a variety of fields including the philanthropy, digital media, publishing, and gender-based violence spaces. Carly is passionate about using storytelling to uplift and empower human connecting, healing, and social change. Her articles - many of which focus on the topics mental health and sexual violence - have been published in Psychology Today, Ms. Magazine, HelpGuide, and more. "

** This interview has been edited and condensed.*