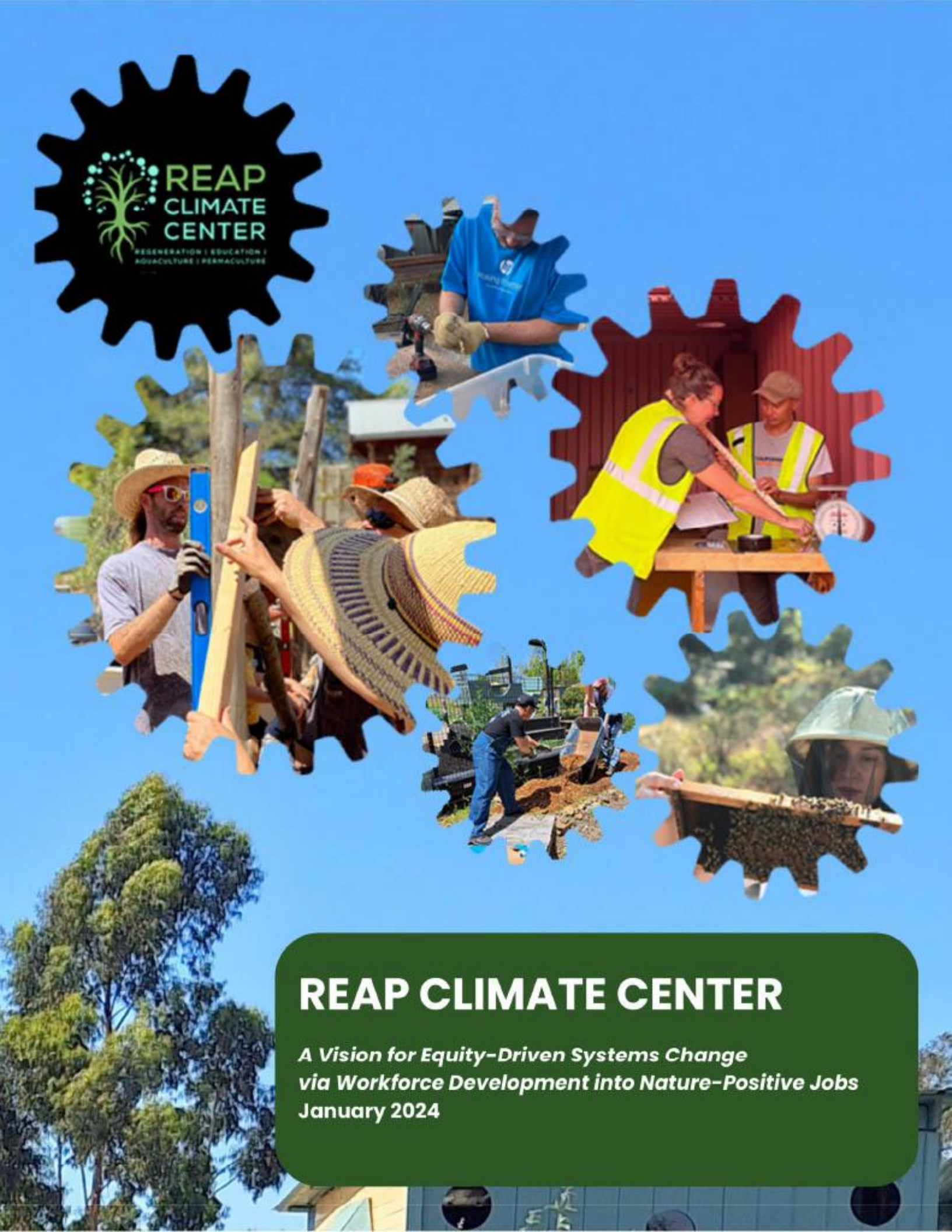
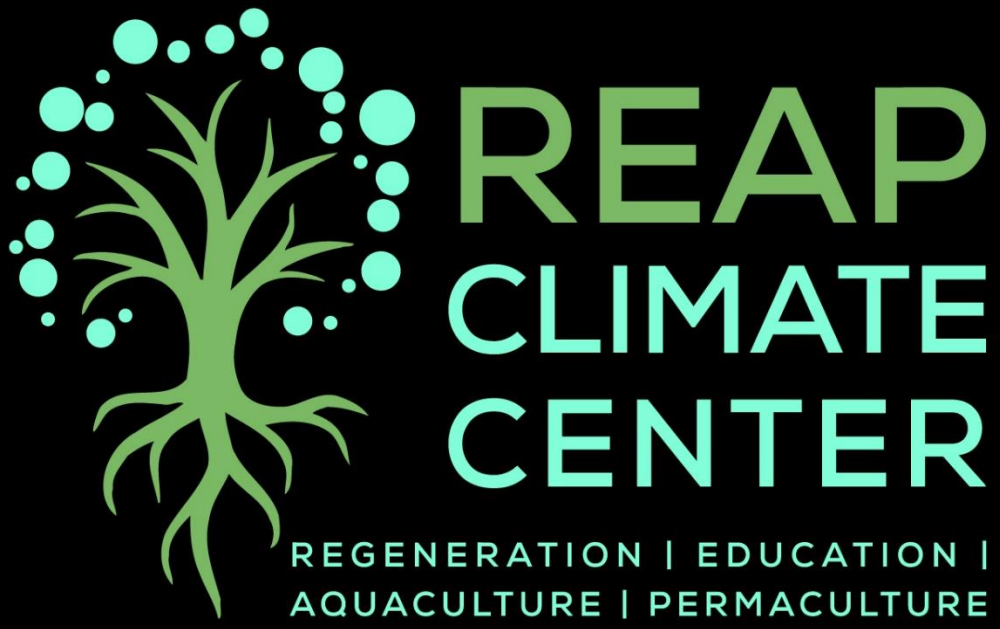


REAP CLIMATE CENTER

A Vision for Equity-Driven Systems Change via Workforce Development into Nature-Positive Jobs

January 2024



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REAP Climate Center is a 501(c)(3) nonprofit organization (TIN 86-1984990) based in Alameda, California. Visit our website at www.reapcenter.org.

Contents and Executive Summary

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Introductory Note

Dear Reader,

The following document describes the vision and strategy for REAP Climate Center. Its goal is to align readers with our high-level goals, overview our plans to achieve them, and help readers understand if and how they can get on board. This is a living document, updated periodically as our strategy evolves, and it is open to informed redirection and feedback.

The Vision Document is built on what we have already accomplished, and it is meant to guide our future work. For an in-depth look at REAP programs and progress, visit our annual report. Unlike an annual report, the Vision Document is meant to stand the test of time and align our many stakeholders to accomplish great things. Not every program in this document is fully built out. Many are seeking partners, practice-keepers, and supporters. If you see where you fit in, reach out to us. If you don't, but still want to help, also reach out. We are building a global coalition of partners and change-makers aimed at realizing this ambitious vision.

Executive Summary

The necessity of action in this moment of climate crisis needs no further argumentation, but the choice of action does. This document's goal is to contextualize, articulate, and argue for REAP Climate Center's strategy in response to the climate crisis: workforce development into nature-positive jobs. Equity-driven systems change via workforce development into nature-positive work has the potential to deliver immense benefits to ecosystems, communities, and economies.

Nature-positive solutions range from regenerative agriculture to green energy, and all of them can be supported and amplified by a workforce development and community-empowerment approach. Embracing the interconnectedness of human and natural systems, REAP—an Alameda, California-based organization—provides individuals and communities with opportunities and training in regenerative agriculture, Nature-based Solutions, technical skills, and advanced climate capabilities. These opportunities span the arc from play and discovery through to certification and job placement.

A workforce development approach has the advantage of acting on three key interrelated forms of development: economic, social, and environmental. Equity-driven workforce development drives climate outcomes with economic growth, social support, and workers' rights while creating opportunities to tie into global initiatives and financial markets.

Even though the benefits of creating proficiency in nature-positive work are widespread, a supply-driven approach without economic demand will not generate maximum impact. To address this, REAP envisions the Land Pledge model, which expands opportunities for applying regenerative practices at scale and facilitates measurable impact.

Because our goal is to drive progress through the lens of equity and because we recognize the outsized burden placed on these groups by climate change, our primary constituency for workforce and community offerings is vulnerable populations–which include veterans, seniors, folks with disabilities and special needs–and underserved and marginalized communities.

We see demand for and a path to 400 bioregional workforce centers in the U.S. In our estimates, the 400 centers would support 22,000 employees, as many as 4,000 on-campus partner organizations, and 200 different courses servicing 4 million acres of land. These resources would create opportunities for as many as 350,000 workforce clients every year and 1.3 million additional people engaged through other channels.

By empowering people through certification and job placement, building community, and doing direct climate action, we can begin to generate outsized benefits for ecosystems, communities, and even economies. This work has already begun at our 4.26-acre pilot campus, in Alameda, California, where we are building impact, engaging community, and supporting livelihoods.

Contextualizing the Moment

REAP Climate Center takes the following four tenets as fact in defining our place in, and approach to, the ongoing climate crisis:

1. Social, racial, and environmental justice are all part of one crucial conversation.
2. The tools to address the climate crisis exist and have existed in nature for millennia: we can deploy Nature as Infrastructure.
3. In the next 10 years, there is the opportunity to transition 395 million people into nature-positive solutions work.[1]
4. Workforce development in nature-positive solutions can drive equitable, widespread systems change.

The climate crisis calls for an immense mobilization of human energy and as such presents an unprecedented opportunity to redirect the flows of power and finance into equity-driven, nature-based, worker-centered, regenerative systems. Extractivist models and practices—relatively recent developments on the scale of our planet's existence—have reframed the relationship between humanity and the Earth so that ecosystems are reduced to linear opportunities for economic value and humans are reduced to the means to achieving that value. There is little equivocation over the necessity of redirecting our course as quickly as possible. It is really a question of how to do so while centering what most failed to center before: equity, justice, and the health of the Earth.

Thankfully, the answers are already in front of us. From Nature-based Solutions and Indigenous Knowledge to scientific tools and technological approaches, we are well-equipped to act *thoughtfully* and *with feeling and spirit* on our people's and our planet's evident needs. We acknowledge, though, that the tools have been available for a long time, held closely by the indigenous wisdom keepers who still steward—in spite of hundreds of years of direct violence and efforts to tear them from their cultural heritage—80% of all remaining biodiversity.[2] Sit with that number for a moment, and it becomes clear who the experts are.

What does "Nature as Infrastructure" mean? To embrace "Nature as Infrastructure" is to recognize that many problems—human-created, and otherwise—can be solved by asking: "how would nature do it?" Natural systems provide time-tested blueprints for all of life's processes, and supporting natural processes is often the best path to a desired outcome for humans, ecosystems, and the Earth that supports them.

It is evident from the current state of collective action that the climate crisis does not pose merely a technological challenge, but an imaginative, cultural, and systemic one. The practices and modes of thought that brought us to this moment are widespread, deeply connected to our understanding of human possibility, and run far deeper than the water we use and the gasoline our cars consume. Addressing the climate crisis will require a holistic approach which acknowledges the relationships between individuals, communities, economies, and ecosystems

Why is the climate crisis an "imaginative, cultural, and systemic" challenge rather than a merely technological one? From green energy to Nature-based Solutions, from personal behavior changes to systemic shifts in priority, there are enough responses to climate change to make an immense global shift in the net impact of humanity on the planet, but progress has been slower than it could be. Conflicting interests, extractivist practices and the inertia inherent in changing the pillars of modern life all contribute to this slowness, which is why we approach climate change from the perspective of mobilizing existing flows of power to serve the needs of the planet.

and renegotiates the very concept of value. REAP's model accepts the immense complexity of this problem, and centers people and communities as a pathway to impact.

At the highest level, REAP Climate Center envisions a world where knowledge of nature-positive solutions and regenerative living undergird healthy and resilient ecosystems and communities. In this world, frontline communities and climate crisis first responders are equipped with the bioregional knowledge, skills, and means to affect positive change in their human and non-human environments.[3] This vision can be achieved by redirecting existing flows of power, finance, and energy to make ecological work—"green jobs"—nature-positive, justice-oriented, and economically robust.

In particular, REAP responds to the need to create equitable pathways to good regenerative jobs at scale. We aim for jobs with direct ecological impact built on scientific knowledge, indigenous practices, and an emphasis on people, community, and equity. By engaging people from play and discovery to training, certification, and job placement and equipping them with knowledge, practices, and community, we can generate outsized positive impacts for all.

One of the four tenets with which we frame our approach is a number from the World Economic Forum (WEF), which states that as many as 395 million jobs could be created to support nature-positive solutions worldwide by 2030. We view these 395 million jobs as an opportunity, a carrot at the end of a stick, but we acknowledge that if we don't follow the carrot, we'll be driven by the stick: 1.2 billion jobs worldwide rely directly on the health and well-being of surrounding ecosystems.[4] This means that—failing to account for *any* indirect consequences—more than one in seven people on Earth's livelihoods are at risk. Whether we look at ongoing biodiversity loss, job loss, community harm, and climate crisis from the stick

FOOD FOR THOUGHT*: DIFFERENT WAYS OF KNOWING

If most or all of the things that we need to solve our problems are already known, then the question isn't what needs to be known, the question is, what is the process of knowing? That's really a cultural question around dissemination and engagement, and maybe we have to allow for the possibility that those things don't fit into the Westernized, mechanized, educational context that we're looking at. We have to think about deep, multi-generational wisdom, knowledge passed through stories, personhood for nature, and completely different value structures. But either way, if all of the technologies and practices and tools already exist today, then climate change is not just a technical problem. It's a cultural problem. And maybe approaching things through standard education isn't the path. And perhaps we have to allow for that in our approach to the future.

**Throughout this document there are a series of sections labeled "FOOD FOR THOUGHT" which explore a topic we frequently discuss at REAP. These sections are informal and discursive, therefore not citational. For further information about them, please reach out!*

side or the carrot side, the bottom line couldn't be clearer: we'd better get to work to protect livelihoods, communities, and ecosystems.

There is already a great deal of work underway in the climate sector, but much of this work has been centered on green energy initiatives, atmospheric PPM thresholds, and net-zero carbon emissions. Decades of hard-won progress in these fields has yielded invaluable benefits and insights into climate innovation, solution implementation, and scalable deployment. Having acknowledged the importance of these initiatives, we must also advocate for continued scrutiny of our approach to the climate crisis: green energy and net-zero carbon goals, crucial as they are, will not be enough to bring us to the regenerative world we envision. Addressing climate through the lens of savior technology fails to address our collective relationship to the Earth and to one another, and inadequately supports vulnerable communities.

In a holistic view of climate change adaptation, the complements to green energy and net-zero initiatives are biodiversity, Nature-as-Infrastructure, and regenerative economics. Technology will play a crucial role in humanity's future, but in order to push beyond sustainability to regeneration we need to center equitable and widespread human engagement. Nature-positive solutions have the potential to call on people and community members to engage in bioregionally specific climate action. Many nature-positive solutions are built on biomimicry and natural processes, empowering and supporting nature's long-tested technologies. We at REAP are not the experts on these subjects: our model is to foreground practice-keepers and create opportunities to spread informed, regenerative practices.

From this holistic standpoint, we can work toward biodiversity and systems change with a nature-positive, workforce-driven, and economically robust approach. Creating quality jobs in nature-positive fields allows us to center equity and indigenous practices, amplifying a collective call to climate action with widespread, accessible benefits.

FOOD FOR THOUGHT: THE DRAWBACK OF CARBON PPM GOALS AND NET-ZERO INITIATIVES

We have to do all things for climate change mitigation, but among those one might say there are two camps. Most climate mitigation efforts so far have been focused on the electrification side of the equation: the electrification, the decarbonization, the electrified microgrid, all of these different things.

What the counterpart is–and there's obviously a Venn diagram here somewhere–is climate change mitigation through biodiversity, through nature as infrastructure, through restoration and improved ecosystems and habitats. Those two are very complementary, and they meet in the middle around carbon.

But the electrification side of the equation has focused a lot of messaging on global temperature targets and parts per million (PPM) in the air. Those are super important metrics, and they do a lot to align nations and global governing bodies, but they also keep a lot of the rank-and-file folks on the sideline. There are a lot of barriers to engagement, and pulling gas out of the air and redesigning the power grids aren't exactly accessible for most people.

If you look at the other side, though, which are the time-tested, Earth-positive, biomimicry-based solutions of Nature-as-Infrastructure, a lot of those solutions are readily accessible to the average person today. They can grab a shovel, they can go outside, they can turn some dirt, they can do a thing. And so if we say hey, listen, we need to mitigate climate change as a species and we need to find as many on-ramps as possible into climate work, that biodiversity side of the Venn diagram has a lot more opportunities for people to engage immediately today than the electrification, PPM side.

Trim Tabs and Regenerative Systems

REAP's regenerative systems change strategy is informed by a number of time-tested ideas and models. One of these key concepts is the idea of the "trim tab," first articulated as a metaphor for systems change by architect and systems theorist R. Buckminster Fuller in 1972. He describes trim tabs as follows: "The whole ship goes by and then comes the rudder. And there's a tiny thing on the edge of the rudder called a trim tab. It's a miniature rudder. Just moving that little trim tab builds a low pressure that pulls the rudder around. It takes almost no effort at all."[5]

Led by a shift in the trim tab's position, the rudder and then the whole ship start on a new course. Fuller applies his metaphor of the trim tab to change-making individuals: through well-placed, "low" pressures, minimal investment can result in maximum change. The trim tab turns the ship by cleverly leveraging the ship's own momentum in changing its course. The question for equity-driven systems change, working out of Fuller's framework, is how can we efficiently generate leverage and redirect this ship which is headed full-steam toward total global catastrophe? What trim tabs exist, and how can we pull them, turning meaningful investment into outsized benefit for people, for the planet, and for the future?

You've said "nature-positive solutions" and "Nature-based Solutions." What do those mean and are they different? Firstly, although they look very similar on the surface, these are different terms. "Nature-based Solutions" refers to climate change solutions which support, manage, and enhance natural systems for the benefit of human systems and ecosystems. Think of them as built by nature, supported by humans. "Nature-positive Solutions" refers to all climate change solutions that are nature positive, ie. add value to natural systems by any means. For example, green energy is a nature-positive solution when we consider it as an alternative to fossil fuels, but it is not a Nature-based Solution because it does not rely on pre-existing natural systems, but on technology. Nature-based Solutions are one particular type of nature-positive solution, and they are perhaps the most nature-positive solution of all.

The answer lies in nature-positive solutions. Nature-positive solutions are responses to climate change aimed at halting and reversing biodiversity and habitat loss worldwide. Rather than aiming for "net-zero" or seeking to "sustain" or "save," nature-positive solutions work to regenerate, renew, and revitalize our planet's natural systems. There are many nature-positive solutions, but to illustrate their potential as trim-tabs we will begin with just one: soil.

Soil alone is capable of sequestering as much carbon as humanity emits annually, making it the second largest carbon sink on the planet, second only to the ocean.[6] Compared with other regenerative system changes and changes to human behavior worldwide, soil is one of the largest available steps toward Net Positive human emissions. It is not surprising that soil meets the scale of our climate crisis because soil is itself a global system, a natural system as old as it is powerful in its regenerative capabilities. Plus, like many Nature-based Solutions, regenerative soil

Who do we mean by "Frontline communities and climate crisis first responders," and why are they important? Climate crisis first responders are those with the skills and capacity to respond to the climate crisis, both reactively and through prevention and resilience. Frontline communities are those most affected by climate change; these communities are disproportionately underserved and often communities of color. From wildfire smoke to sea-level rise, from increased storm intensity to more intense heat waves, frontline communities will feel the effects of human-driven climate change most strongly. We believe that frontline communities should have the resources and support necessary to lead the response to the climate crisis and define outcomes for their community.

practices have positive implications for health, equity, and overall human and ecosystem well-being.

In addition to sequestering carbon, healthy soil is home to a host of microbes which we now know are directly related to enhanced nutrition and human health. Information compiled by groups like Kiss the Ground, backed by scientific research and Indigenous Knowledge, paints a complete image of how carbon sequestration through soil regeneration builds huge widespread benefits for ecosystems, human health, and even economies, relieving farmers of their reliance on an abusive technology and debt structure.[7]

But if soil is such an incredible solution, why isn't it working? The world is full of dirt! Modern agricultural practices have depleted our supply of topsoil and eradicated soil's living ecosystems. According to Kiss the Ground, the average farm in America is losing over 4 tons of topsoil per acre per year.[8] This topsoil loss is due to mismanagement of agricultural land which leaves topsoil vulnerable to erosion, winds, and other factors.

Conventional farming practices such as tilling, widespread pesticide and herbicide use, and monocropping are the primary cause of this vulnerability. These practices are ubiquitous for many reasons, but one crucial reason is that American crop subsidies are given by the weight yield produced. Many decades ago, this may have seemed like a rational decision: the scale was the appropriate tool for measuring the success of a farm. However, the result of optimizing agriculture for weight yield was bigger, not necessarily more nutritionally dense, products. Today, with both traditional and science-backed understandings of agriculture and nutrition, we have opened up the possibility of optimizing for soil life, soil quality, and nutritional yield. Farming subsidies are one immensely powerful trim tab: optimizing agriculture for nutrition would redirect farming efficiency, producing outsized benefits for ecosystem and human health.

REAP's role in this particular trim tab is educational, instructional, and systemic: to ensure stakeholders (from consumers to appraisers to farmers) have access to the tools, technologies and training to deploy this Nature-based Solution at scale. That can mean helping consumers understand that sometimes, a carrot with no nutritional value is just a stick. It can mean bringing that knowledge to a conventional farmer and

What does it mean to aim for "regeneration" instead of "sustainability"? A regenerative human existence means living in such a way that natural systems are able to thrive, restore, and undo the harm humanity has done to Earth and its ecosystems. Regeneration also necessitates a collective understanding of our role *in* Earth's natural systems, rather than enforcing a separation between human and non-human which is artificially contingent on a notion of "protection": humans play a crucial role in Earth's natural systems, but it doesn't have to be a negative one, or even a neutral, "sustainable" one—we can help regenerate life on Earth!

connecting them with the resources, certifications and funding to convert to low-till/no-till practices. It can mean feeding hundreds of people with food regeneratively grown on our own campuses. It can mean supporting organizations trying to bring tools like handheld spectrometers to market by engaging them with our on-campus partners. By pulling on this wormy, mushroomy, very soily trim tab, we can begin to generate outsized systems change for workers, for individuals, and for the environment.

FOOD FOR THOUGHT: THE CONNECTION BETWEEN THE MICROBIOMES OF THE SOIL AND THE GUT

As we look at the relationship between biodiversity in the soil and the biodiversity in your gut, a beautiful symbiosis emerges, and it's related to food security and health. As we look at the many pathways to food security, we realize we're going to have to get there through optimization, not just through more. Lots of folks suggest we can just have more food, and think that will solve it. But what they're doing is optimizing for the wrong things in the system.

We pay farmers for their weight yield of crops, but we don't have any subsidy streams paying for the nutritional yield. We're aiming for something other than what matters most. As a species, we're really good at optimization, but we're really bad at choosing what to optimize for, so when we optimize for weight yield of food, we end up with heavy food that's devoid of nutrients. We optimize for shelf stability and transport stability as opposed to nutritional value.

But there are new tools that can change that. For example, the BioNutrient Food Association is building a handheld spectrometer that can measure the nutrient density of food and fit in your pocket.

What we've found is that food grown in healthy soil with a microbially rich environment has a much higher nutritional yield. So, if you look at regenerative food and the healthy microbes in a healthy microbial environment, it sometimes outperforms organic food 90 to one. That means that sometimes, if you have a carrot that's grown in organic environments, and you compare it to one that's grown in a regenerative environment with a healthy soil biome, you may end up with 90 times the nutritional yield for that regenerative carrot. So you'd have to eat 90 of the organic carrot or just one of the regenerative ones to get the same nutrients. Anyone who stops to closely consider can tell that something is out of balance.

So, what is the relationship between our gut microbiome–the microbes that live within us–and the microbes that live in the soil? As it turns out, they are counterparts. We've heard a lot for a long time about the idea that we should eat local, and the presupposition in that has been that it's just to support local farmers or decrease carbon footprint, but it turns out that we establish a relationship with the land where our food is grown, or rather the microbes in your gut establish a relationship with the microbes in the soil, and that is the emergent science.

So if you take two healthy individuals and one has not established that healthy relationship, they might be each eating that same regenerative carrot, but one may only retain 50% of the nutrients because they do not have the counterparts in their gut to accept the way the nutrients have been packaged. This is where the research comes in, that people actually retain more of that food's nutrition because of that healthy relationship. And so then you can start to play that out through health systems effects, and there's the saving on health care and insurance and all these other things. The system's effect is massive, and it's an outsized opportunity that we're not really looking at.

Soil is just one nature-positive trim tab among many, and in order to achieve outsized, systems-level change, we must engage soil and all nature-positive solutions through the lens of human empowerment, economic prosperity, and community resilience. The breadth of that lens explains why the scope of REAP's programs is so sprawling: our offerings range from compost and soil amendment to urban forestry and green energy. By empowering individuals through equity-driven workforce development and job placement, REAP engages a huge number of regenerative systems that, when employed in conjunction and at scale across the globe, produce immense benefits for ecosystems and communities alike. It is worth pausing to elaborate on a few more of these regenerative systems and the roles they play in ecosystem health and human equity.

1. **Urban greening as an ecosystem service:** Not only do urban forests restore native habitats and increase biodiversity, they also provide a suite of infrastructural benefits. Increased green spaces in cities have been shown to sequester carbon, remove harmful pollutants from the air, clean and mitigate stormwater runoff, and reduce sun exposure and temperature across neighborhoods. Urban forests reduce rates of asthma, cardiovascular diseases, and rates of stress, anxiety, and depression. Plus, they look nice! Investment in and maintenance of trees is low-cost, and the benefits are immense. Historically, a lack of urban forestry coverage has been correlated with economic and racial inequity. These historically underserved communities could reap the benefits of urban greening with a small adjustment in planning and community engagement.[9,10]
2. **Oyster reefs as an alternative to concrete sea walls:** Oysters are a critical foundation species for benthic ecosystems, forming habitats for fauna and increasing local biodiversity. Strong oyster reefs can act as living seawalls, providing a nature-based alternative to concrete and bringing a host of other ecological benefits. In addition to providing habitats, they are important filter feeders. Oysters remove biomass from the water and draw it down to the benthos–ie. the bottom of the body of water–providing additional nutrient sources to ecosystems. In doing so they improve water quality, decreasing harmful algal blooms and increasing the amount of sunlight that reaches the water's depths which expands the areas where another foundation species, eelgrass, can live. Oysters are also important for oceanic carbon sequestration, depositing carbon in their calcium carbonate shells as they grow. Finally, oysters are a natural path to sea-level rise adaptation, as they are the second most effective solution to coastal erosion (second only to mangroves), providing a barrier to storm surges. From carbon

What Nature-positive Solutions does REAP engage with through its programs and campus? REAP has a vast set of regenerative systems-oriented programs in nature-based workforce development, urban farming, ecology and habitat restoration, regenerative labs and exhibits, maker space and technical skills, and other on-campus partnership-driven programs. We build our programs around our bioregionally specific needs and build local communities while attracting global expertise. It's worth noting that many of these programs are very young and might not be apparent if you stepped onto campus! We are working to package and prepare these programs for funding and partnerships that will enable us to create meaningful engagements with volunteers, organizations, and workforce cohorts.

Is there a more complete list of climate change solutions available? Yes! There are many resources detailing the vast possibilities of Nature-positive Solutions. One aggregator of these solutions is Project Drawdown, whose Table of Solutions gives an overhead look at many available solutions and their relationship to carbon in the atmosphere. As we consider the various solutions we want to engage, REAP is keen to seek out biodiversity and equity metrics in addition to carbon, but the Project Drawdown table is an encouraging look at what can be done, from regenerative agriculture practices to green energy to bike transit optimization.

sequestration to biodiversity and from seawall construction to coastal erosion mitigation, oysters are a Nature-based Solution with vast and critical applications.

3. **Fungi-based bioremediation services:** We have only just begun to understand the complex relationships between plants, animals, and fungi within healthy ecosystems. We do know that in soil, vast networks of mycelium appear to live symbiotically within tree root systems where they help transform material elements and distribute nutrients. In primordial forests, we have found fungi decomposing fallen trees, leaves, scat, and corpses in a central, ancient role. More and more data are showing the incredible potential of fungus, especially for ingesting and neutralizing harmful hydrocarbons and plastics, and even for cleaning nuclear radiation. As we continue to adapt to the poisons and pollutants humanity has spread across the surface of the earth, we will find ourselves turning to fungi for help as an economical and effective Nature-Based solution.[11]
4. **Ecosystem restoration with direct and measurable return on investment:** The environments around us are the result of millennia of natural processes. From the oceans to the prairies, every ecosystem has a thriving web of life that connects the smallest bee to the biggest bear. Human behavior and human-driven climate change are dramatically degrading this life. 30,000 species are listed as endangered and a further 8,400 are critically endangered.[12] That loss is not unavoidable, and the solution lies in habitat restoration, through which the UN estimates we could avert 60% of expected loss.[13] Plus, restoring habitats and increasing biodiversity can increase the resilience of our fisheries and timber production, prevent the risk of agricultural collapse, protect us from sea level rise and coastal erosion, and as the cherry on top, sequester carbon across the board.[14] Ultimately, restoring native habitats removes the need for us to invent human-centered solutions. Many practice-keepers still steward wildlife and manage habitats in the traditions of their ancestors, and by taking the time to learn from them, we can learn the ways in which humans can exist reciprocally with nature.
5. **Biodiversity and carbon measurement training:** As we continue to create real, nature-positive impacts across a wide field of systems and solutions, it will be critical to understand what those impacts are and how we can continue to improve them. For that reason, the coming years will necessitate massive breakthroughs in biodiversity and carbon measurement, both of which are nascent and evolving fields. Supporting the development and deployment of field methodologies for measuring carbon and biodiversity impacts will allow us to enhance practices, better evaluate the prospects of future work, and improve and demonstrate progress. Measurement also opens the door to high-level funders that require reported impact, giving

small-scale impact-makers a way to see themselves represented on global platforms.

When we start looking into all the possibilities nature-positive solutions offer, the climate crisis begins to morph from a cause for hopelessness into an opportunity. For each nature-positive solution above and others, REAP has programs calling in experts, practice-keepers, and interested community members dedicated to creating real impact. In areas where we don't yet have a partner, we do our best to stand up programs and get started. Our Alameda, California campus—the pilot for REAP's model—is a physical testimony to the success of this approach; it tells a story of starts, meaningful progress, and—when a partner or expert joins us—equally meaningful redirections.

It is one thing to enumerate these solutions and systems, and another to begin implementing them. For every nature-positive solution, indigenous practice keepers, applied researchers, and highly motivated individuals have charted courses to change in their communities. They have identified specific paths to impact, built knowledge and practices, and begun to act at whatever scale they can. However, often the organizations and individuals doing on-the-ground, localized, community- and equity-driven work are disconnected from global initiatives and financial flows. All of this knowledge and practice keeping—scientific, indigenous, both or otherwise—can benefit from increased access to audiences, workers, and investment to increase positive real-world impacts that center equity and the regionally specific needs of communities. Through the lenses of our many programs, REAP seeks to act as a workforce-oriented platform. By foregrounding knowledge and practices in nature-positive solutions at scale, we can create financially sustainable pathways to real ecological change, enabling nature-positive practices to reach maximum impact.

The Workforce Development Model

Approaching climate change from the standpoint of workforce development comes with a host of benefits, chief among which is the way it acts on the three key interrelated dimensions of development: economic, social, and environmental.[15] Equity-driven workforce development into nature-positive work drives climate outcomes with economic growth, social support, and workers' rights.

As noted above, in the next 10 years, the climate crisis has the potential to create a massive migration in labor, amounting to as many as 395 million nature-positive jobs. The WEF correlates these jobs to $10 Trillion of opportunity, linked to job creation and nature-positive work.[16] But the benefits for the planet are even more pronounced: if 395 million people worldwide align their work with the well-being of our planet, we can completely reverse the direction of human-driven climate change, engaging and supporting global and regionally specific nature-positive solutions.

The infrastructure necessary to facilitate this kind of transition justly and adequately will be enormous, especially when we consider the current state of job transitions: according to a National Bureau of Economic Research working paper, fewer than 1% of workers who transition out of carbon-intense work move into green work.[17] From farmers to construction workers, communities are economically dependent on jobs that are driving climate change. Of course, these communities are also an opportunity for impact: pathways for workers into regenerative, worker-centered jobs need to be justly and massively expanded to increase the accessibility and viability of nature-positive work.

This is precisely the challenge that REAP addresses. As a place-based workforce platform, REAP equips people from underserved communities with the skills and certifications necessary to take fulfilling, quality jobs in nature-positive fields with direct outcomes for their communities. We do this by creating global and local partnerships, developing scalable curricula, and aligning what we teach with global measurement frameworks. The ultimate goal is good, robust careers with long-term climate impact. This approach bridges three key gaps in nature-positive work today: gaps between practice keepers and people, skills and certifications, and direct action and global financial markets.

What does a partnership with REAP look like? The Wild Oyster project uses spent oyster shells in a biomimicry-based process to build living oyster reefs to mitigate sea level rise, filter water, restore biodiversity, and more. As partners, REAP and the Wild Oyster Project identified a barrier to implementing oyster restoration at scale: there are existing certifications for commercial oyster farming, but none to support oyster restoration. Now, REAP and the Wild Oyster Project are collaborating to create a curriculum and credential that will allow people to learn oyster restoration and deploy it at scale.

Consider again that worldwide, 80% of remaining biodiversity is under indigenous protection, even though indigenous peoples constitute just 5% of the

world's population.[18] The bottom line is undeniable. We know where to find the experts, it is now a question of how to learn, perhaps in a whole new way.

Taking this into account, REAP aims to foreground regenerative practices and nature-positive solutions through its partnership model. We form key partnerships with organizations that are already deploying nature-positive practices aligned with our programs. These organizations often have years of expertise and experience in the field.

What is a "microcredential"? You know about diplomas and degrees and maybe even certifications. Microcredentials are similar, but… smaller! They're a formal recognition that someone has been taught a particular technique or skill, allowing employers to recognize that capacity in them. Microcredentials go in depth on specific subjects—for example, oyster reef restoration—to provide methods and applications to empower individuals to make direct impact.

Our partnership model is built on the acknowledgment that there are people who know what needs to be done and how to do it; we don't need to reinvent the wheel, rediscover the role of pollinators, or redesign the bioswale.

Some of the practices that emerge in our partnerships are relatively new, such as employing a hand-held spectrometer to measure nutrients. Others are incredibly ancient, like indigenous wildfire resilience or no-till agriculture. Many of these nature-positive solutions are identified as "emergent" (ironic, given some have existed for millennia) which is to say that the jobs, expertise, and knowledge, are relatively new to Western science and technological frameworks. In other words, they are not standardized or incorporated into existing systems of value, making it difficult to facilitate a mass transition of workers, no matter how well-trained. While regenerative practices and emergent techniques are becoming more prevalent, mere skills training in Nature-based Solutions work is not enough to give people access to secure jobs aligned with their needs and values; REAP provides place-based pathways in the form of training, certifications, network building, and job placement, to support people as they transition into quality jobs.

These curricula and certifications emerge organically from our partnerships. When a partner joins REAP, they bring practices and business models that they want to scale. In order to achieve this, their knowledge needs to be made accessible, peer-reviewable, and credible in the form of a certification. REAP develops, in partnership with specialized organizations and capacity builders, microcredentials and certifications aligned with jobs and funds on high levels.

Aligning certifications and curricula with global frameworks allows the direct regenerative work of our cohorts to be fundable and supportable by global initiatives and markets. Up until recently, the only value that markets have recognized has been financial. Now, we are beginning to see major financial bodies accounting for carbon emissions and biodiversity loss.[19] As of 2023, nearly half of global assets under management are integrating biodiversity or carbon metrics into their accounting practices. Asset managers looking to account for biodiversity and carbon need access to direct action, people, measurement, and tools. We have the opportunity now to train individuals to bring value to the Earth first and the economy second by aligning with global metrics.

Recording and quantifying carbon sequestration, biodiversity, and equity for high-level alignment is a novel field, and a challenging one. REAP will stay abreast of

advancements made by groups such as the Ecological Benefits Framework, helping to push the field forward with direct, measurable action. By bringing practice keepers, measurement groups, and high-level frameworks into one room—or onto one campus, as it were—REAP can create direct pathways to fundable climate impact through emergent and existing pools of value.

One benefit of creating measurable impact through employment is that the workforce development industry already manages immense flows of people, from certification to job placement. REAP redirects these flows, offering certification and placement into nature-positive work, measuring workers' impacts, and aligning it with pools of value.

Through partnerships with existing workforce programs in the Department of Labor, the Department of Rehabilitation, the Department of Agriculture, OSHA, Native American Health Centers, and regional school districts, REAP redirects existing flows of people to bring value to ecological systems, human systems, and human individuals.

In the coming years, REAP will develop a suite of curricula and business practices in regenerative agriculture, Nature-based Solutions, technical skills, and advanced climate capabilities. These curricula will be developed over time from practice-keeping partners and front-line workers worldwide, then deployed at regional climate centers through our scalable model to suit the needs and constraints of each different place. When deployed, the place-based partnership model will again become crucial as we tailor work and training to specific bioregions and communities, engaging with folks who have been on the ground doing work for decades.

FOOD FOR THOUGHT: WORKFORCE DEVELOPMENT IS A POWERFUL TOOL IN CLIMATE CHANGE MITIGATION

Sure, some green jobs are greener than others, but it's important that we're driving people into all of the green jobs–electrification, decarbonization, air capture, biodiversity, Nature-as-Infrastructure–and more.

At REAP, we do that through workforce development, which has the potential to play a huge role in climate change mitigation and equity. Here at REAP, we really value the organizations that we work with that are doing urban forestry or oyster reefs instead of sea walls to mitigate sea level rise. That's amazing, and there's a lot of things that are right on the nose - environmentally.

But when we start to expand the concept of green jobs into industries that didn't use to be considered green, and we change them structurally to be working on behalf of nature, we start to see how workforce development can be the single greatest tool we have for getting as many people as possible engaged in climate change mitigation. When we get to the moment when somebody has a green job and they don't even know that it's green, that's when we're starting to win the fight.

Centering Workers and Equity

From low-lying communities vulnerable to sea-level rise to urban neighborhoods without adequate tree cover, the health and livelihood impacts of the climate crisis will not be equally distributed: socially vulnerable communities will be disproportionately affected by climate change. Black Americans, for example, are 40% more likely to live in areas with the highest projected increases in mortality due to climate-change driven temperature extremes, while minorities across the board are 41% more likely to reside in areas with the highest projected increase in traffic delays due to high-tide flooding.[20] Understanding this, REAP's primary focus is to serve vulnerable populations–which include veterans, seniors, folks with disabilities, and special needs–and underserved and marginalized communities.

Work in nature-positive solutions has immense potential for benefitting these groups and their communities. As REAP creates paid pathways to quality, nature-positive jobs, we are always aiming to bring resources and opportunities to those who need them most. From sliding-scale pay structures to partnerships with equity-driven workforce development programs, we are looking to raise individuals above barriers of entry and to support people as they transition into work aligned with their communities' needs and values.

While ensuring equitable access to REAP's resources and opportunities is a crucial start, we must also look beyond our campus to supporting peoples' careers in the long run. For us, this means paid, apprenticeship-model pathways to quality jobs with stable, career-long benefits.

By believing and investing in job quality and workers' rights, we are also optimizing climate impact and the robustness of the climate workforce. So, although the emphasis on workers' rights is of course about protecting people, it's also about maximizing environmental and economic impacts: according to the US Department of Commerce, improved job quality can significantly increase worker satisfaction, resulting in increased enthusiasm, retention, performance, productivity, and revenues.[21]

What is a "quality job"? According to the US Dept. of Commerce, job quality is driven by a number of key factors including: recruitment and hiring practices; benefits offered; diversity, equity, inclusion, and accessibility; empowerment and representation; job security and working conditions; organizational culture; pay; skills and career advancement. A union enables the collective protection of all of these drivers. REAP Climate Center, itself an employing organization, strives to lead by example in these respects.

The green energy sector—one area in which REAP is developing curricula—has already demonstrated the positive impacts of quality jobs and worker support for people, economies, and the environment. According to Betony Jones, Director of the Office of Energy Jobs at the Department of Energy, by investing in skill development and job quality in green energy work, one can create longer-lasting energy savings, since long-term energy efficiency depends on the skill of workers involved in installation and upkeep. This finding is backed up by research on green energy job creation by the Department of Energy and the UC Berkeley Labor Center, which indicates clearly that by supporting workers, programs like REAP can improve outcomes for people, ecosystems, and economies.[22,23]

A major part of long-term job quality is high skill and proficiency, and classroom education alone cannot maximize a worker's skill. Most of the work required by major green energy projects—and many nature-based projects such as habitat restoration and urban greening—are in hands-on fields like construction, fabrication, or the in-field applications of advanced tools. These jobs benefit greatly from apprenticeship training and hands-on opportunities. Hands-on training and teaching at REAP's campus creates more durable knowledge and hirable experience by engaging people directly in Earth's systems under the guidance of those who know them best.

This approach is modeled after union apprenticeships, and when possible we will create pathways through real, registered apprentice programs. Apprenticeships are demonstrably effective in improving outcomes for workers and productivity, leading to larger returns for workers, employers, and ecosystems. According to the Department of Labor, 92% of apprentices are employed after completing a Registered Apprenticeship, and their average starting salary is $72,000 per year.[24]

REAP's model is to support and create practice-sharing structures and the space for their paid deployment, facilitating experiential skill-building, apprenticeship, and certification in emergent nature-positive fields. Looking to the green energy sector as a sign of potential impact, we see a critical opportunity to create measurable and scalable climate impact, robust economic development, and create pathways for individuals to well-paying jobs and improved quality of life.

Although much of this research is specific to the green energy sector, and emergent job markets like habitat restoration and nature-positive solutions work do not yet have strong unionized apprenticeship pathways, these are nonetheless positive indicators of the possible futures for biodiversity work and nature-positive solutions generally. This moment is an opportunity to set workers' rights, quality jobs, and equity into the foundations of these crucial emergent sectors. In the long run, creating positive work experiences will lead to a more robust climate and economic regeneration.

By creating quality, robust jobs with reliable benefits, schedules, pay, and workers' rights, not only are we optimizing social, economic, and environmental outcomes, but we are creating ways for people to see themselves in the solution.

The Land Pledge Model

Building equitable, robust, nature-positive jobs brings immense value to ecosystems and communities. But unless that value can be tied out to existing and emergent pools of economic value, there will not be opportunities to fund employment and impact.

In other words, REAP's workforce development model is a supply-driven approach, focused on building a workforce and equipping individuals to do direct impact. Without real economic demand and clear opportunities to deploy regenerative practices, we will not be able to serve the workers, communities, and ecosystems that are at the center of our mission.

What indicates that markets are beginning to value the Earth? In "Moving Beyond Net-Zero to Nature Positive," Boston Consulting Group highlights that nature-positive work can enhance business resilience, giving substance to ESG (Environmental, Social, and Governance) practices. ESG-related assets in global capital markets are projected to rise to $50 trillion by 2025, marking a significant shift towards recognizing the value of nature-positive practices in financial markets.

We are confident that in the mid-to-long term, markets will catch up with the Earth's need for nature-positive work, biodiversity regeneration, and carbon sequestration.[25] In many ways, global financial markets are already on track to bring economic value to these forms of real, ecological, and social value. In order to deliver impact in the short term and align with high-level markets in the long term, REAP needs access to one crucial resource: land.

When we imagine what climate impact looks like, we often think first of the land. We imagine healthy grasslands where tilled monocropping left an arid dust bowl, verdant forests in the place of clearcuts, and urban forests cooling formerly overheated concrete landscapes. Healthy land means healthy ecosystems, in turn leading to healthy people, uniting the natural and human worlds in a reciprocal, caring relationship.

Under the constraints of our monetary reality, none of this is possible without the security of the legal right to land. For example, in most land-management grants, the outstanding statistic for a given proposal is the number of acres worked. Ownership is one model of land-based engagement, but ownership is too slow and too expensive to be the center of a rapid, scalable impact strategy. To apply regenerative practices at scale, REAP envisions building a massive coalition of landholder pledges and deed restrictions, calling in landholders with a reciprocal service offering that fits directly into REAP's operational model.

This regenerative land pledge program is a structure for individuals to promise, pledge, or deed-restrict their land to regenerative practices, and to receive support and resources commensurate with their pledge. Pledged or deed-restricted land will be serviced by REAP and used to expand workforce offerings and capacity, enabling us to better serve our workforce clients. In the long run, carbon or biodiversity market funds could be returned to the contributing landowner. From a desire to make a positive impact on the planet to financial and beautification

incentives, there are many reasons why a pledge or deed restriction might appeal to landowners.

The goal of the pledge program is simple: it creates a massive acreage for measurable climate impact, job training, and the deployment of regenerative practices with the potential to broadly implement greening and regeneration on private property.

As the marketplace for carbon sequestration and biodiversity work advances and organizations seek to fund biodiversity and carbon jobs, pledged land becomes

FOOD FOR THOUGHT: STRANGELY, GREEN ECONOMICS MAKES US OPTIMISTIC

You know, it's funny to be optimistic about climate change given the current state of things. But one of the things that motivates us is a shift in economics. Specifically, we are motivated by the fact that almost half of global assets under management today have brought biodiversity and carbon onto their books, into their accounting practice, in one way or another.

Looking at things like the Task Force on Climate-related Financial Disclosures for carbon-related risk and the Task Force on Nature-related Financial Disclosures for biodiversity-related risk, the trend we're seeing now is fascinating. We are seeing a shift from a single materiality standard disclosure to a double materiality standard disclosure. What does that mean? Well, single materiality is when you have to disclose the risk to your portfolio, whereas double materiality means you have to disclose the risk of the behavior of your organization to that sector. The two-way flow is what's most interesting.

And just to be clear, when we talk about climate-related risks for carbon, that comes in two forms: there's the built risk and the transition risk. The built risk is when you have a portfolio that's a bunch of high rises on the beach in Miami. Well, as it turns out, that's going out of style, and you've got to tell that to your investors. The transition risk is when you are heavily invested in a widget that only works on an oil platform. Well, it turns out, that's going out of style, and you've got to expose that to your investors.

Biodiversity risk is a little more difficult to nail down but a simple example is if, let's say, you were a bank funding a railroad in the Amazon whose sole purpose is to remove biodiversity. Well, eventually that biodiversity is going to be gone and there will be other things that loss causes in terms of risk of global biodiversity and ecosystem collapse, or ecocide. How do you handle that? These are really interesting considerations, and again, $50 trillion in assets under management are now working in either a single or double materiality standard for disclosure. For context, the global economy is 104 to $106 trillion on any given day and the US economy is about $23 trillion.

So what we see here is a tipping point in those disclosures. Plus, these are cross-national standards. These are publicly traded global companies. And what's most interesting to me is the fact that many major accounting software companies–SAP, IBM, Oracle, Microsoft, and Salesforce for example–are now shipping their software with fully supported extensions for biodiversity and carbon. What that means is that those elements are showing up under the balance sheets of multinational, publicly traded corporations.

It means that for the first time ever we are dispelling the myth of economic externalities. Once we dispel the myth of externalities. from an economics perspective, it means that there'll be a moment in time when we should–but we won't–acknowledge that all balance sheets up until now have been wrong. But what it really means is that we can start to forecast harm, and we can start to now track things on our books like equity, biodiversity loss, and carbon, and start to attribute value back to those things - where it has always belonged.

countable, regenerative acreage. It is therefore an avenue for creating job opportunities and bringing the financial benefits of regeneration back to communities while also benefiting ecosystems from urban environments to the Urban-Rural Interface.

The land pledge model is representative of REAP's approach to the climate crisis: it centers the power of people, communities, and collectives. Just as our approach to workforce centers on impact through people, the land pledge model creates opportunities for individuals fortunate enough to own land to contribute meaningfully to regenerative systems change. It unites individuals under a common goal and creates a coalition of landholders supporting the implementation of durable nature-positive solutions across 10,000+ acres of land in Urban and Urban-Rural Interface areas.

What is the Urban-Rural-Interface (URI) and why is it important to REAP's mission? The Urban-Rural-Interface is the transitional space between the urban and the rural. Urban areas and the URI are where high concentrations of people and disparity intersect with resources and the possibility for deep systems change. REAP's physical context is from the urban to the Urban-Rural-interface. REAP's mission is to bring jobs to people and communities, and from the Urban to the URI, there is a significant need and potential for fulfilling that mission.

As of now, we are still researching the exact pathways to implementing a land pledge model. We are examining existing structures to assess this idea and move toward implementation and the formation of a robust, long-term platform for impact.

Following our partnership model, we are seeking expertise and guidance as we consider the capacity of a land pledge program to support REAP training and regenerative practices at scale.

As we design REAP's scalable model, we envision each regional workforce hub forming its own regional collective land pledges, creating the opportunity to service, maintain, and learn from millions of acres nationwide. Each collective will be managed in the image of its ecosystems. Land then becomes the site of learning, adaptation, and innovation specific to that region, and ties the community together through work, commitment, and collective vision while the landholder benefits from the learning-based work being done on their land.

Expanding Community Impact

Equity-driven workforce development is the highest level of REAP's vision for regenerative systems change. That said, we firmly believe that climate action is and must be accessible to all, and as we develop the resources to share practices and knowledge, we are also developing a series of onramps into climate action outside of workforce development. We consider these programs and engagements central to our mission of equity-driven systems change because they allow us to maximize community engagement, empower interested individuals, and spread understanding of regenerative systems.

It is crucial for an organization like REAP to be deeply and openly involved in its surrounding community because we cannot hope to make meaningful systemic change without centering the individuals we serve. Decision, strategy, and execution must be informed by a bottom-up approach, even if part of REAP's mission involves tying into high-level initiatives and funding. By creating active communities around the work we do, we create spaces for ideation, change, and partnership that can ultimately evolve into meaningful direction.

REAP's three modes of engagement—volunteering, curated experiences, and workforce development—represent a complete arc from play and discovery through to certification and job placement. We imagine regularly engaging volunteers and community members through our many programs, creating enough interest for them to join a workshop, and for those skills to be the beginning of a certification allowing them to engage in direct impact. By operating all of these engagements on a sliding scale from paid-for to pay-roll, we ensure equitable access to these resources.

Our two primary forms of non-workforce engagement are curated experiences and volunteering. "Curated experiences" is our word for workshops, team-building experiences, municipal engagement, and conference hosting. These one-off events give enrollees—whether they are independently interested individuals or groups of corporate workers—in-depth exposure to regenerative systems while fostering an ongoing community around the topic. The content for our curated experiences is distilled from the research and practices condensed in our curricula and certifications, spotlighting real implementations of nature-positive solutions.

Each curated experience serves a slightly different purpose and engages with a different group. Through workshops, we aim to teach applicable skills and build interest and community. Workshops are open for public enrollment, taught by field experts, and build opportunities for continued engagement through our programs. Where workshops are public, team-building experiences are designed for specific groups. These experiences are built around a defined set of activities, but they are more focused on creating a positive experience of regenerative systems and revealing opportunities for impact. Similarly, municipal engagement gives decision makers and public workers access to knowledge and practices they may not be familiar with while creating opportunities to form crucial connections. Finally, conferences are forms of sector and inter-sector engagement allowing specialists and interested parties to form organizational connections and ideate around shared

passions. Hosted conferences are opportunities to give a platform to all the incredible work being done in regenerative fields, and to seek new ways forward. In all of these examples, REAP provides education, points to actionable steps forward, and builds community around climate action.

Another way to build community around climate action is through volunteering. Volunteering is the most accessible form of climate action. At its best, it offers people the space to do visible work with known outcomes, to collapse the distance between concept and praxis, and to be the change they want to see in the world. Climate action volunteer spaces have the potential to be overwhelmingly positive experiences, redirecting climate anxiety into climate agency, developing meaningful habits, and perhaps even igniting a passion that might lead to a workshop, which might then lead to a certification.

Plus, while many nature-positive solutions require specialized knowledge and practices, many others can benefit from the millions of people interested in spending a weekend morning with their hands in the soil. Engaging with systems change at scale creates many opportunities for volunteering and direct impact, from habitat restoration to tree planting. These volunteering opportunities can foster an understanding of large-scale regenerative systems and help change our relationship with our environment. In many ways, volunteering can be a form of experiential learning, just like our curated experiences and hands-on workforce curricula.

The REAP campus is the site and center for all of this work, and the design of each campus is crucial to the success of its mission. REAP's Alameda, California campus is a template for future spaces. We are thoughtfully building out a playful and informative space filled with hands-on, discovery-driven experiences like our Regenerative Labs and Exhibits, traditional classroom training facilities (built from upcycled materials), and applied training spaces like our Permaculture Garden, Makerspace, and Food Forest. The very design of the campus represents the arc from play to employment, with passive and active opportunities for learning.

Even though workforce development is REAP's primary objective, it is easy to see how the resources necessary to develop a climate workforce also provide the opportunity to engage larger, non-professional communities in curated experiences and volunteering. The endpoints of these multiple onramps into climate action are all the same: climate change mitigation, green jobs, and community resilience.

Two Paths to Scale

By empowering people through certification and job placement, building community, and doing direct climate action, we can begin to turn the trim tabs controlling outsized benefits for ecosystems, communities, and even economies. This work is underway at our 4.26-acre pilot campus, in Alameda, California, where we are already building impact, engaging community, and supporting livelihoods. But our person-driven approach to regenerative systems change has been designed with a scale in mind far beyond this amazing little island. We think on the scale of the 395 million jobs that could be made by 2030, because that is how we see humanity flipping the narrative and reversing course in the face of the climate crisis.

What is bioregionalism? In the 1970s, environmentalist Peter Berg used the term "bioregion" to describe location based on local ecosystem relationships rather than arbitrary manmade guidelines. Akin to indigenous land practices, bioregional thinking decentralizes humans in our relationship to land and encourages observation of local, existing natural systems to inform practices of stewardship. REAP's approach to climate action and nature-positive solutions is aligned with bioregional thinking in that each REAP center would serve the specific needs of its bioregion. Much as the first REAP center is doing now in Alameda, future REAP and REAP-like centers would engage local organizations, local communities, and local ecosystems while being tied into a national and global network of practice-keepers, curriculum, and funders.

REAP's workforce development model is both scalable and regionally adaptable. We understand that scale involves risk, especially of endangering our mission to approach systems change equitably. Therefore, we listen to experts, community leaders, and indigenous practice keepers to guide our steps as often as possible. To scale REAP's model, we envision a bottom-up approach, wherein our open-source curricula and business practices are tweaked and reshaped in the regions where they're deployed to match that region's social, racial, economic, and bioregional needs.

We estimate demand for as many as 400 bioregional centers like REAP because 400 centers would bring nature-positive workforce development to every major American bioregion and every major Urban-Rural-Interface. The accrual of knowledge, data, techniques, and impact across 400 regional training centers would be immense, allowing REAP to take shape as a widespread, distributed knowledge base to serve communities around the globe.

Operating 400 bioregional workforce centers would generate a massive positive impact. In our estimates, the 400 centers would support 22,000 employees—part time, full time, fellowships, internships and contractors all included. Across the centers, there would be as many as 4,000 on-campus partner organizations, servicing 200 different courses over 4 million acres of land. These resources would be focused on creating opportunities for 350,000 workforce clients every year and 1.3 million additional people engaged through other channels.

REAP envisions two paths to 400 centers: direct deployment, and what we call a Contextual Toolkit. Direct deployment is the more intuitive model of the two: acquiring space to deploy a REAP center template from scratch as an offering to and in partnership with local community-based organizations. New community

connections would be forged, new local partnerships made, and existing curricula modified to suit the particularities of the surrounding ecosystems and communities. Many of the lessons learned in REAP's early days would be applied here in the creation of a new regional workforce hub.

The second path to scale—the Contextual Toolkit—will help existing organizations adopt REAP's model, and comes with the added benefit of rapid deployment and building off of the wonderful work that precedes us.

There is a global shift in the understanding and importance of biodiversity and ecosystem health which will have major long-term impacts on economic development, prosperity, and workers. As these markets and high-level initiatives shift, regional organizations like urban farms, community gardens, community education centers, and more will see the context of their work shifting. The community-based organizations that have been working on climate change at a local scale for decades will suddenly have the opportunity to be part of a global economic transformation.

It is essential that organizations such as these, with bioregional specific practices, deep community roots, and long histories, be included in the future we are building together. Where applicable, rather than setting down new roots through a direct deployment model, it may make more sense to direct and support pre-existing organizations with our Contextual Toolkit.

The Contextual Toolkit will provide organizations with tools, assistance in change management, and a path to greater impact through workforce development, community engagement, and alignment with measured value—economic, carbon, and biodiversity. The toolkit would contain programs, thought leadership, metrics, pathways to solvency, and modular, applicable curricula. All of this is more than open source: it is actively given and alongside additional support and resources, because our duty is to the Earth and all its beings first and foremost.

Pre-existing organizations interested in seizing on their now-enhanced value in a shifting global context will be equipped to begin developing local workforces, landholder pledges, and community pathways to climate action, allowing them to fit into a global context of nature-positive work. For example, an innovative urban farm can thrive with access to workforce development funding, certifications, wide bodies of knowledge, increased land stewardship, and a greater role in creating community and ecosystem resilience. Making elements of REAP available for existing organizations gives them the opportunity to reap greater rewards from the work they are already doing.

Between Contextual Toolkit partnerships and newly deployed REAP centers, we see immense potential for impact. Accounting for landholder pledges, food growth, workforce training, volunteer engagement, workshops, food waste diversion, urban greening initiatives, and more, a full national deployment of REAP centers could result in millions of acres managed, hundreds of thousands of job placements every year, vast urban greening outcomes, thousands of active volunteers, significant carbon sequestration figures, and major contributions to biodiversity regeneration and human health improvements. All of a sudden, this moment does not seem so hopeless.

Alameda: An Island in the Bay

Talking about scale can leave the mind reeling, or lost, or forgetting where we are and what's been done already. The sheer enormity of the task at hand and the potential of our chosen path is enough to distract us from what we have already achieved. REAP Climate Center is real: an urban campus on an island in the San Francisco Bay ("The Bay") with a growing community, and a lengthening list of workforce offerings. The work of bringing REAP to scale is underway, as we test and develop our approach in Alameda.

Let's pause on that for a moment: why Alameda? It isn't random, nor is it coincidence.

Island nations and municipalities are and will continue to be among the places hardest hit by climate change, Alameda among them. But there are a few things that set this little island apart from the pack: firstly, it's the largest island municipality in the State of California, a state which—on its own—is the 5th largest economy in the world (and poised to become the 4th).[26] Alameda is located just across The Bay from San Francisco, one of the largest innovation hubs in the world. And because of geopolitical and colonial factors, it is one of the few island nations and municipalities that benefits from and participates in the economic upsides of the system whose damages now directly threaten its livelihood.

Alameda's unique position of both affluence and threat resulting from climate change gives us an obligation to provide leadership and innovation as we can, and to listen and observe as we must. That is why Alameda.

As we navigate our relationship to the economic and ideological systems that brought us to crisis in the first place, we acknowledge that our goals and vision are ambitious and that the journey ahead is difficult. However, we refute the winner-takes-all ideology so common to startups throughout The Bay: we believe that each step forward has an incremental payoff. In other words, if it all ended here, we'd still have done so much good: we have graduated our initial workforce clients, engaged with over 4,000 people, made 420 tons of compost, forged crucial municipal connections. and spread word of the power of regenerative systems change. Most of all, we have deployed a business model that may carry us into the future to deliver huge, widespread benefits to ecosystems, communities, and economies. We are already winning along the way.

But in order to make this work, we need to expand our local and global partnerships, from CBOs and NGOs to general volunteers and pro bono experts. Catalytic philanthropy, both big and small, will also play a critical role in the coming years. This will take all of us coming together.

We stand at a crossroads seldom experienced in the history of humanity. Our actions now will dictate the course of human and non-human history, and there are viable, actionable, paths to move forward effectively and equitably. At this point it is a matter of choice.

Concluding Note

Thank you very much for reaching this point in the document. We recognize that this paper is ambitious in its scope, almost as ambitious as REAP itself. We hope that by making this document publicly accessible, we can clearly assert our goals, ideas, and the gaps in our knowledge at this moment. We seek to expose blindspots, pitfalls, and risks, and cultivate deeper knowledge of the many highly complex areas of our vision.

We hope that this document can be seen as a call to individuals and organizations who are aligned with our vision and how we plan to get there. By forging relationships over this shared understanding, we can work together toward creating a more equitable, regenerative world. We also hope that as you learn more about REAP and contemplate the interconnectedness of these many, many large concepts, you find yourself wanting to get involved with us in some way. From funding and spreading our mission to volunteering guidance, time, or skills, we are always looking for help in refining and executing this vision.

To see what we've done so far and our current status, please visit our 2023 Annual Report at www.reapcenter.org/resources/documents/2023-annual-report. If you're ready to get on board, visit our website at www.reapcenter.org.

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[16] World Economic Forum, *New Nature*, 4.
[17] The study categorizes jobs as “carbon-intensive,” or “dirty,” if they are closely associated with fossil fuel extraction, fossil energy production, or manufacturing fields with high reliance on fossil fuel energy. Likewise, “green” jobs are defined as jobs associated with the production of renewable energy and renewable usage. Although this is a narrower scope of “green jobs” than REAP considers relevant, the study remains informative: pathways out of carbon-intense work must be expanded. E. Mark Curtis, Layla O'Kane, and R. Jisung Park, *Workers and the*

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[18] Sobrevila, *The Role*, xii.

[19] One of the most prominent examples of accounting for carbon is the Net-Zero Asset Manager's Initiative, which commits $57 trillion to accounting for carbon emissions and reducing carbon emissions over time. Net Zero Asset Managers Initiative, https://www.netzeroassetmanagers.org/.

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