



Closing Green Learning Opportunity Gaps for a Just Transition:

Transformative Approaches for a
New Green Learning Agenda for
Postsecondary Institutions

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About the New Green Learning Agenda Project

As we find ourselves in a kaleidoscope of efforts, strategies, and actors in pursuit of results-oriented approaches to tackling the climate crisis and achieving a just transition, we are alarmed by the inadequate attention to the education and training required to support meaningful and sustainable actions in the short-term and to seed deep systemic transformation in the long-term.

This project aims to address this gap by organizing the richness of perspectives not always invited to green economy decisionmaking tables. In doing so, this project aims to empower the actors in the education and training ecosystem to identify actions toward building a New Green Learning Agenda. This agenda will serve as a vision for education and training in a climate-impacted world that ensures the transition to the green economy is inclusive, diverse, and just, centering the needs and experiences of environmental justice communities and climate vulnerable populations around the globe. This report is the second report of two.

The first report, *Education and Training: An Opportunity to Achieve a Just Transition to a Low-Carbon, Socially Inclusive Economy*, illuminates the extent and scope of postsecondary education and training investments needed to achieve a just transition in the U.S. The report maps the landscape of green jobs, green skills, and green learning opportunities with an eye toward understanding how gaps in these landscapes intersect with issues of justice, equity, diversity, and inclusion. The report also provides recommendations to postsecondary institution leaders and education decisionmakers to direct future U.S. climate policy attention toward more transformative investments in education and training.

This second report is the byproduct of a collaboration between Unbounded Associates and place-based research partners in Hawai'i, Chicago, and Kentucky. Together, we explore community-driven approaches to closing green learning opportunity gaps from a variety of voices across three case studies: from community-based organizations to workforce training program alumni and from faculty and administrative staff of postsecondary institutions to students of community and technical colleges. This report synthesizes insights from these actors and cases on the paradigm shift required among postsecondary institutions to unlock their potential as both community-based actors and community-serving actors. The report also offers a set of recommendations for postsecondary institutions to co-define with community-based organizations a New Green Learning Agenda that can enable a just transition that serves the needs of historically marginalized populations in their surrounding communities.



Key terms

Climate Resilience: “the capacity of interconnected social, economic, and ecological systems to cope with a hazardous event, trend, or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure. Resilience is a positive attribute when it maintains capacity for adaptation, learning and/or transformation.” (Arctic Council, 2016)

Environmental Justice (EJ): “refers to those cultural norms and values, rules, regulations, behaviors, policies, and decisions to support sustainability, where all people can hold with confidence that their community and natural environment is safe and productive. EJ is realized when all people can realize their highest potential, without interruption by environmental racism or inequity. Environmental justice is supported by decent paying and secure jobs, quality schools, and recreation; decent housing and adequate health care; democratic decisionmaking; and finally, personal empowerment. A community of environmental justice is one in which both cultural and biological diversity are respected, and where there is equal access to institutions and ample resources to grow and prosper.” (Greenaction for Health & Environmental Justice, n.d.)

Green Jobs: “any job that contributes to the wellbeing and flourishing of present and future generations; upholds human rights, including women’s rights and the rights of indigenous populations and peoples of color; and supports the regeneration of the natural world, its resources, and its socio-ecological systems on which our human economies rely.” (Kwauk & Casey, 2021, p. 4)

Green Learning Opportunity: an education or training program that aims to develop a breadth of green skills, empowering the learner to contribute to building a just, equitable, and inclusive green economy.

Green Skills: “includes the specific, generic, and transformative capacities needed to contribute to a socially, economically, and environmentally just human society that cares for the human and nonhuman world and reduces the impact of human activity on others. Specific capacities include those needed to thrive in green jobs (e.g., skills from caring to coding). Generic capacities include cross-cutting “life skills” or “socioemotional skills” that contribute to greener ways of thinking, being, and doing (e.g., problem-solving, critical thinking, teamwork, coping with uncertainty, and empathy). Transformative capacities include those needed to disrupt and change both the individual behaviors and structural factors that exacerbate the

climate crisis (e.g., the ability to recognize and redress unequal relations of power).” (Kwauk & Casey, 2021, p.5)

Just Transition: “is a principle, a process, and a practice. The principle of just transition is that a healthy economy and a clean environment can and should co-exist. The process for achieving this vision should be a fair one that should not cost workers or community residents their health, environment, jobs, or economic assets. Any losses should be fairly compensated. And the practice of just transition means that the people who are most affected by pollution—the frontline workers and the fenceline communities—should be in the leadership of crafting policy solution.” (Just Transition Alliance, n.d.)

Just Transition Education And Training Ecosystems: hyper-local collections of public and private, formal, and nonformal education and training providers of a breadth of green skills that people need to participate in green jobs. Just like natural ecosystems, just transition education and training ecosystems provide important provisional, regulating, cultural, and supporting services that are vital to community wellbeing and prosperity. (Kwauk et al., 2023)

Wholeness Approach: an approach that encompasses the complexity of integrating and treating the challenge as a whole. It is distinct from a holistic approach which considers the relationship of the parts with the whole. A wholeness approach is focused on the whole, and is grounded in the notion that climate and environmental justice cannot be achieved in bits and pieces.

Economy of Care: an economy motivated by the types and quality of relationships one has, rather than being motivated by what or how much one owns. An economy of care stems from, but is more than, a “care economy,” which describes the subset of the economy centered on caregiving, like child care and elder care. While the care economy is typically discussed in terms of the number of care jobs or by the wages of care workers, an economy of care can also be discussed in terms of its orientation to recognizing and caring for the needs of people. It focuses on stewarding resources and achieving shared prosperity among all and in balance with Earth’s ecosystems.

Introduction

With a set of historic climate policies guiding the United States, postsecondary institutions (PSIs)¹ have a unique opportunity to support the country’s transition to a green economy.² But to achieve a just transition—a transition that leaves no one and no community behind—PSIs will need to transform their existing approach to education and training and, if any, to green education and training. Importantly, this means aligning PSI missions to serving the needs of their surrounding communities to build climate resilience³ and to achieve environmental justice⁴ as communities seek to build a more prosperous, resilient, and socially inclusive economy.

Research suggests that “education as usual” does not bode well for a just transition. Current trends in green job growth in the U.S. favors white males, while lower skilled and lower wage green jobs are more likely to be filled by people of color, and administrative occupations in green industries filled by women (Kwauk et al., 2023). These trends do not look like they will change anytime soon. Current trends in educational attainment, especially in fields of study required for the fastest and largest growing green jobs, suggest that the supply of green workers over the next decade is set to look much the same. Even more alarming is that the existing landscape of green learning opportunities across the country is unevenly distributed, creating green learning opportunity “deserts” for disadvantaged communities (Kwauk et al., 2023). In these ways, the education and training landscape is not currently set up to facilitate a just transition to a low-carbon, socially inclusive economy because historically underrepresented populations face additional barriers to access a breadth of green skills needed to participate in the most in-demand green jobs.

What should PSIs do to ensure historically marginalized communities can benefit from the country’s green transitions—especially those underinvested and disadvantaged communities living in green learning opportunity deserts? What is the role of PSIs in supporting the environmental regeneration and economic revitalization of their surrounding communities, near or far?

This report attempts to answer these questions by exploring the perspectives of a set of diverse actors from community-based organizations (CBOs) and PSIs, including directors, staff, and alumni of green learning programs, across three locations: the island of O’ahu, Hawai’i; Chicago, Illinois; and the southeastern region of Kentucky (see [Annex](#) for more on our methodology). Through this work we have found that the insights generally coalesce around a rather urgent need for PSIs to expand their role in the pursuit of just transitions from providing education and training for green jobs to also focusing on closing inequality gaps in green learning opportunities among historically marginalized communities. To expand their role requires PSIs to simultaneously pursue two actions:

First

First, PSIs must actively work to strengthen local just transition education and training ecosystems by coordinating and partnering with CBOs to create more diverse, inclusive, and transformative opportunities for green learning in communities where there are currently none or few. Such an approach would be especially significant among disadvantaged and underrepresented communities for whom traditional brick-and-mortar postsecondary institutions and even online learning have been historically out of reach.

Second

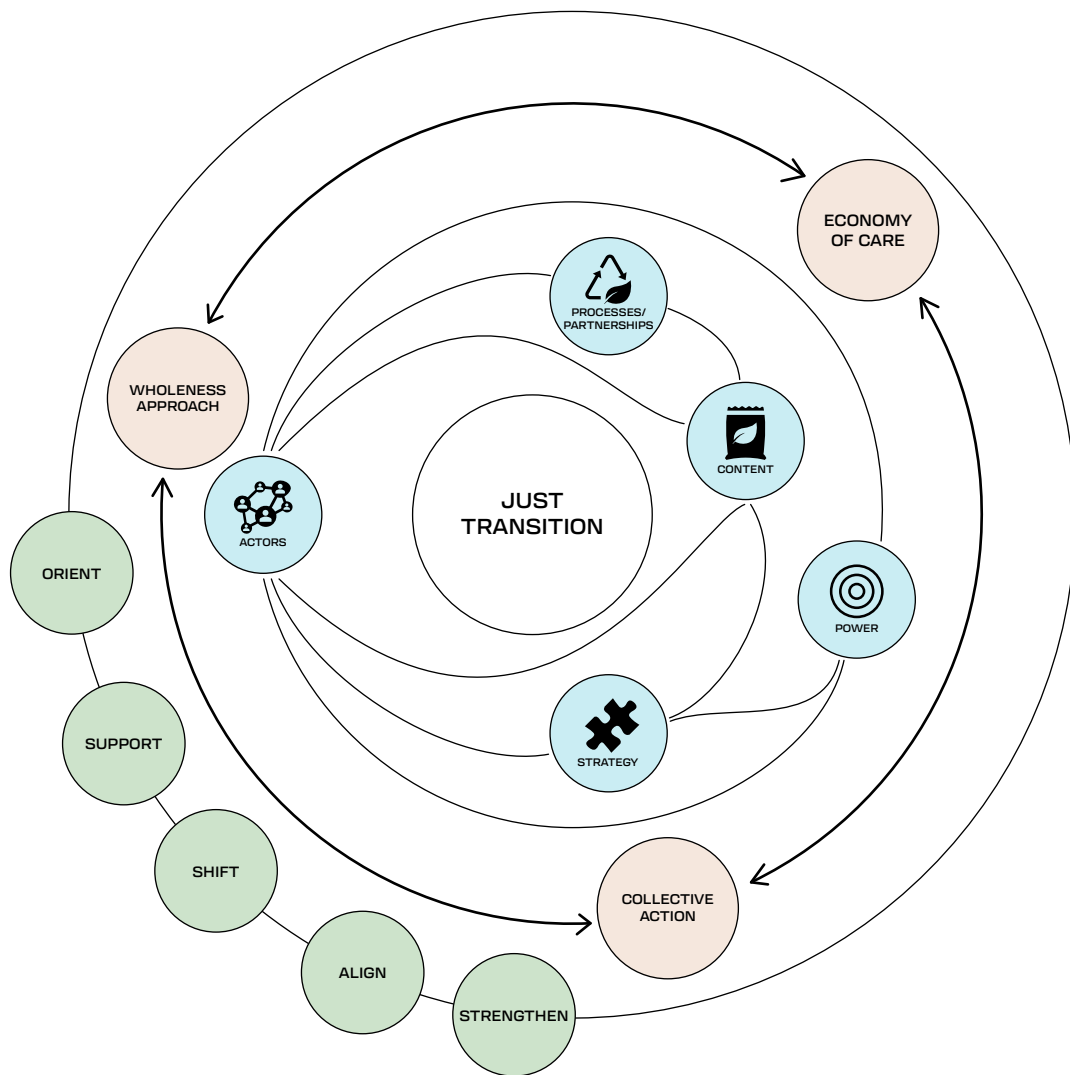
PSIs must work together with CBOs and the broader education and training ecosystem stakeholders to define a New Green Learning Agenda (NGLA)—an agenda that orients local education and training ecosystems to the provision of a breadth of green skills needed not only for green jobs but also for systems transformation. Such an agenda would function to shift the positionality of PSIs in relation to their nearby and/or surrounding communities, and with that, shift their green learning strategies to address the transformative needs of place-based economies rooted in local cultural assets and community wellbeing.

This report expands on these two ideas by synthesizing a set of three transformative approaches for PSIs and five areas of recommended actions for co-defining with communities on an NGLA. This report is part of a larger project seeking to bolster the role of PSIs in a just transition (Unbounded Associates, n.d.), transforming “education as usual” to make green learning an opportunity for all. It picks up where our previous report left off (Kwauk et al., 2023), which highlighted critical gaps in green learning opportunities among historically marginalized communities across the U.S. and builds on two of its key recommendations for action: **to strengthen just transition education and training ecosystems** and **to define an NGLA for PSIs**.



Caption: Aloha 'Āina classroom at Kāko'o 'Ōiwi kalo farm, He'eia, located in the ahupua'a of Ko'olaupoko on the island of O'ahu, Hawai'i. Photo credit: LorMona Meredith

This report is organized as follows:



SECTION 1: TRANSFORMATIVE APPROACHES TO PROMOTE A JUST TRANSITION

Insights from our case studies illuminate three approaches embodied by community-driven institutions to green learning that not only train, educate, and create new economic opportunities, but they do so while centering the wellbeing of communities. These are approaches that PSIs should endeavor to adopt to strengthen local just transition education and training ecosystems: take a wholeness approach to identifying problems and solutions, engage the green economy as an economy of care, and work through collective action with CBOs.

SECTION 2: COMPONENTS OF AN NGLA

Our case studies shed light on how efforts toward a just transition are built on a New Green Learning Agenda. Importantly, this involves more than just considering the education and training content to be delivered. It also entails considering alignment with existing and/or proposed strategies toward a just transition, power dynamics that must be navigated or shifted, the processes and partnerships needed to guide momentum forward, and the actors to be engaged.

SECTION 3: RECOMMENDATIONS TO IMPLEMENT AN NGLA

To close green learning opportunity gaps, our three case studies point to actionable recommendations for PSIs according to each component of a New Green Learning Agenda.

SECTION 4: THREE CASE STUDIES

Three diverse case studies provide insights into how actors in a just transition education and training ecosystem in Hawai'i, Chicago, and Kentucky are (or are not) addressing gaps in education and training with community-oriented, community-driven approaches in mind. These can be read independently as standalone studies or read in conjunction with this larger report.

Why Now? The Opportunity for PSIs to Drive Transformative Systems Change

Postsecondary institutions have played an important role in closing inequality gaps by creating access to learning opportunities that enable socioeconomic mobility among underrepresented and disadvantaged populations. They can also play an important role in closing the emissions gap through their research and development of green technologies that are critical for decarbonizing sectors. However, PSIs have also been complicit in reproducing, perpetuating, and worsening emissions, and inequality gaps. For instance, PSIs have helped to reinforce harmful relations of power by participating in extractive or exploitative practices over marginalized communities and on Indigenous lands (Byrd, 2017). They have also helped to uphold harmful practices like investing institutional endowments in fossil fuels or accepting research or programmatic funding from fossil fuel companies that not only undermine institutional efforts in sustainability and climate action but also further inflict environmental injustices by perpetuating industries that harm marginalized communities (Almond et al., 2022; Bratman et al., 2016; Thacker, 2022).

In the current U.S. climate policy context, though, PSIs have a rare and important opportunity to course correct. As more opportunities for PSIs to collaborate and partner with CBOs and environmental justice organizations (EJOs) are created by U.S. climate policies⁵ and incentivized by federal funding,⁶ PSIs must make good on their social, moral, and ethical obligation to reverse course on actions that harm communities and the environment and drive transformative systems change. This is a foundational step to greening their local economies in ways that propel their communities toward a more regenerative and just future.

At a minimum, driving transformative systems change means taking actions that promote sustainability (e.g., by reducing the carbon and ecological footprints of their campuses), drive green innovation (e.g., by supporting the research and development of new green technologies), and green the curriculum (e.g., by integrating climate-relevant knowledge and sustainability competencies across all colleges, disciplines, and programs) (Nishimura & Rowe, 2021; White & Cohen, 2014).

But as systems change agents, PSIs must also consider taking actions to help right past wrongs and/or to redistribute power and opportunity through new ways of working and relating, especially among underrepresented communities for whom PSIs are intended to serve. For some PSIs, this might require restoring relationships of care, trust, and respect with their surrounding communities. And for others, it may mean stewarding new relationships to create opportunities to extend the geographic and demographic reach of green learning opportunities. In short, driving transformative systems change means PSIs must rethink their positionality in relation to the communities they serve. And through these actions, PSIs can help local communities benefit from the economic opportunities that the green transition promises.



Box 1: Persistent Challenges in Postsecondary Education and Training

While this report addresses the needs, challenges, and strategies toward a more transformative approach to green learning, PSIs must not forget persisting challenges of postsecondary education, such as equity of access, relevance of learning, and workforce transitions. These challenges make learning opportunities—green or not—out of reach for underrepresented populations and historically marginalized communities (Table 1).

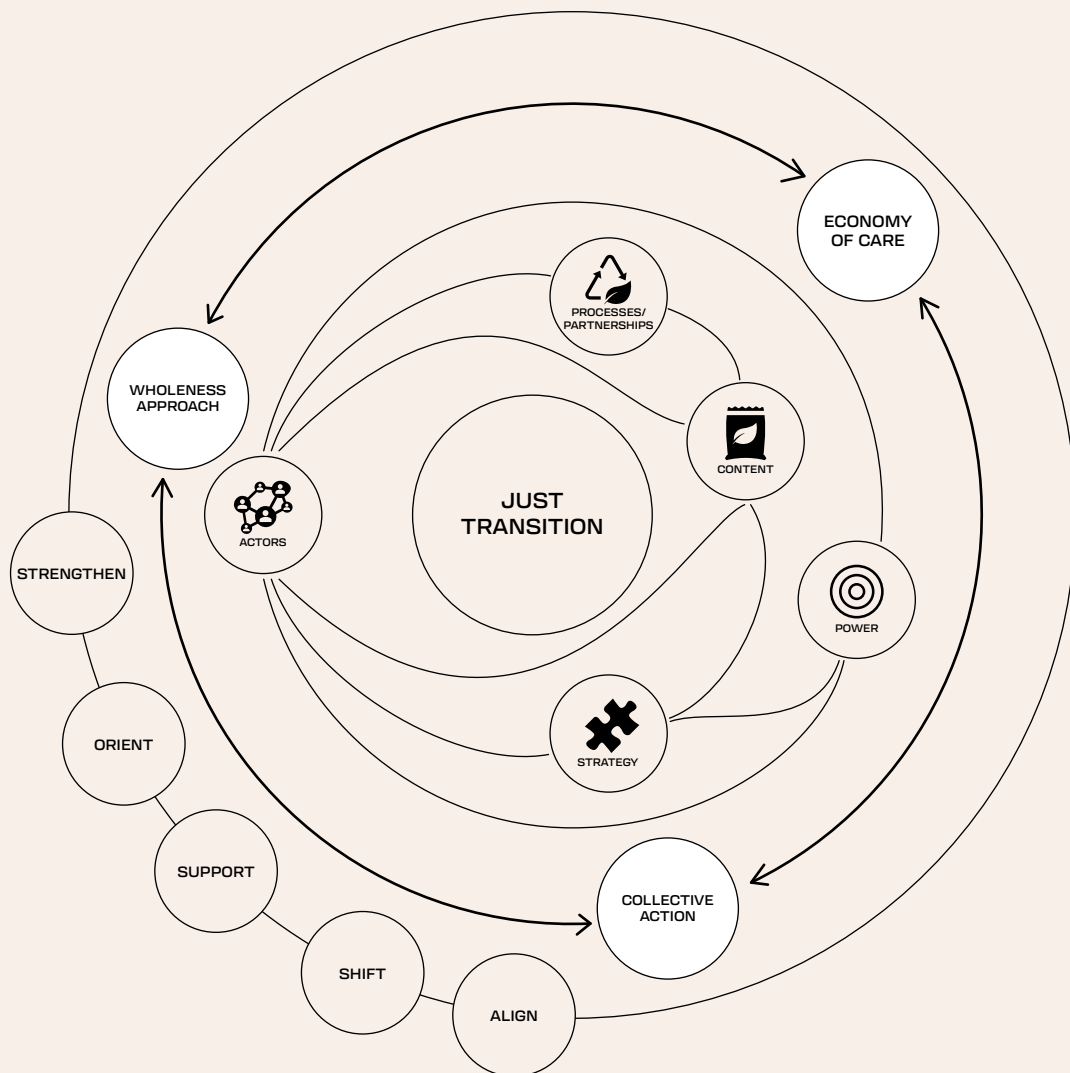
Additionally, PSIs face internal challenges of their own, including faculty and staff workloads, departmental silos, ineffective distribution of funds, and liability issues in providing hands on experience for students.

Table 1: Persisting Challenges Driving Educational Inequalities

INCLUSION CRITERIA		
<p>Barriers to access Including:</p> <ul style="list-style-type: none"> • Racial discrimination • The lack of <ul style="list-style-type: none"> • Social security and/or care—child care, elder care, health care, mental health care • Relationships or networks to learn about and/or to take advantage of education and training opportunities • Technology • Transportation 	<p>Relevance of learning Graduates leave with a shortage of relevant knowledge and skills, including:</p> <ul style="list-style-type: none"> • Advocacy • Business skills • Collaboration • Critical thinking • Cultural awareness • Future thinking • Interdisciplinary thinking • Leadership • Mathematics • Negotiation • Networking skills • Problem-solving 	<p>Employment pathways Graduates experience poor workforce outcomes, due to the lack of:</p> <ul style="list-style-type: none"> • Alignment between programs and labor market needs • Broader skills to meet workforce needs • Jobs that meet community needs • Jobs available in the field • Job counseling • Job promotion/opportunity • Decent paying jobs • Life-coaches or mentorship

SECTION 1

Transformative Approaches to Promote a Just Transition



With the goal of achieving a just transition, PSIs must consider themselves as community-serving institutions, cornerstones of a broader ecosystem of actors oriented around community wellbeing. This means PSIs cannot separate their function to fulfill the skill-building needs required for green transitions from their role as changemakers meeting the development needs of communities, especially those that have experienced historic underinvestment and/or environmental injustices. As such, the relationships that guide PSI priorities when supporting green transitions cannot be limited to meeting the needs of green industries and/or tightening connections to the private or public sector. But the priorities must equally be—if not more—anchored in serving the place-based social, economic, and environmental justice needs of communities.

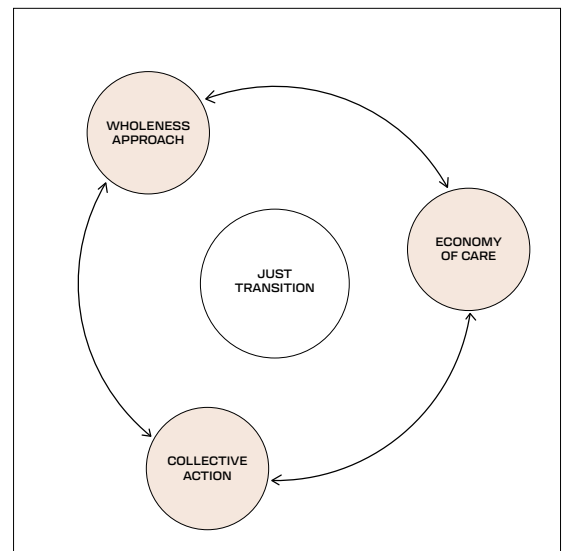
When it comes to orienting PSI positionality and priorities toward community needs, PSIs have much to learn from CBOs. More than just engaging in community outreach or “allowing” for initiatives to be locally led, orienting toward community needs requires a shift in the anchoring assumptions that guide and determine the priorities of PSIs. Here, we have identified three interrelated anchoring assumptions that could transform the orientation of PSI approaches to promoting a just transition, especially when it comes to strengthening a broader ecosystem of education and training actors who can help to serve the needs of communities presently out-of-reach of green learning opportunities delivered online or at brick-and-mortar institutions. These transformative approaches emerged from our conversations with community leaders, businesses, and PSI faculty⁷ when describing how CBOs have been addressing critical education and training gaps in their communities through community-oriented and community-serving approaches (Figure 1).

1. **Wholeness approach.** A just transition requires more than building green knowledge and green skills for a green workforce. It also entails the promotion of health and wellbeing, as well as the strengthening of community identity and belonging. For PSIs, this requires a wholeness approach to the generation of ideas for education and training programs that enable communities to address systemic barriers to cleaner, safer, healthier, and economically viable communities.
2. **Economy of care.** For the green economy to be a socially inclusive, low carbon economy, the orientation to limitless growth—and the extractive and transactional relationships that this engenders—

must be replaced with an orientation to an economy of care. For PSIs, such an orientation would create limits to profit, instead rooting incentives in shared prosperity, in the stewardship of natural resources, and the building of relationships of reciprocity and care with surrounding communities and the environment.

3. **Collective action.** The path to a just transition is complex and cannot be solved by PSIs alone or in isolation. Rather, collective action is fundamental to tackling underlying systemic challenges to transitioning to a green economy that leaves no one behind. Collective action is also vital to catalyzing transformative change for those communities historically marginalized by discrimination, underinvestment, and/or environmental racism. For PSIs, collective action means creating space for partnerships, collaborations, and the sharing of resources with CBOs, and amongst PSIs as well as with other community-based actors in a just transition education and training ecosystem. Such collective action is essential to tackling systemic barriers to green learning opportunities across the country.

Figure 1. The Three Transformative Approaches Transformative approaches that the green economy stakeholders are using to propel a just transition



Source: Figure created by authors.

Below, we explain further these transformative approaches, and in [Section 3](#) we present actions to implement these through a New Green Learning Agenda.

A Wholeness Approach

The climate crisis and environmental injustice are complex interconnected problems that require a wholeness approach. Such an approach is more than tackling barriers to climate or environmental justice in a holistic manner or through systems thinking. Rather, it is grounded in the notion that achieving things like climate or environmental justice is about integrating and treating the challenge as a whole. A state of wellbeing cannot be achieved in bits and pieces. And, therefore, one cannot pursue solutions that attempt to break wellbeing into parts, even if they are interconnected and integral to the whole.

Achieving a just transition to a green economy is therefore more than “green skilling” the present and future workforce; it also requires the removal of systemic barriers that obstruct or diminish the flourishing of a broader set of community assets, including mental health, cultural identity, native traditions and/or indigenous ways of knowing, connection to land, nutrition and food security, affordable and clean energy, affordable housing, public transportation, and more. In this way, PSIs must broaden their role as providers of skills and certificates to also being systems change agents supporting local actors to address long-standing challenges to cleaner, safer, healthier, and economically viable communities in their entirety.

“ — PSIs must broaden their role as providers of skills and certificates to also being systems change agents supporting local actors to address long-standing challenges to cleaner, safer, healthier, and economically viable communities in their entirety.

According to our case studies, a wholeness approach enables community actors to expand the parameters within which PSIs and other local actors can engage and collaborate. In Hawai‘i, a wholeness approach helps both faculty members and job training institutions to push against the tendency to silo and teach sustainability from a Eurocentric perspective of science that disregards the relationship humans hold with nature. Instead, faculty are teaching climate science from a perspective rooted in local cultural identity and history, allowing students to broaden their understanding of their relationship to place.

In Chicago, a wholeness approach helps CBOs push against the tendency to try to solve problems through singular approaches that only scratch the surface of deeper issues of systematic inequalities. For example, community actors in Chicago spoke about how their concern for lower-income communities was not just about a lack of jobs, but that the jobs available in their communities are jobs that create pollution and exacerbate the poor health of members of the community. In this context, providing community members with training for green jobs that their communities will be unlikely to benefit from (e.g., training in renewable energy that will likely benefit wealthier communities first) is a shortsighted approach to green learning that does not bring about environmental or climate justice.

Similarly, in Kentucky a wholeness approach enabled local community actors to recognize that the obstacle to a just transition for rural Appalachian communities is not simply an issue of access to green skills or the adoption of renewable energy. Rather, the obstacles span a range of issues, from a shortage of affordable housing—especially in the wake of destructive floods—to issues with food security, opioid addiction, and chronic underinvestment. A wholeness approach helped local PSIs and CBOs develop programs that lean on local cultural assets to build a breadth of green skills, from carpentry to small business development to coalition building through the arts, in support of community identity and economic development.

Communities face a cluster of obstacles to a just transition that touch simultaneously on issues of urban planning, rural transportation, energy, housing, education, health, early childhood services, and so on. A wholeness approach enables local actors to identify relevant entry points to addressing such interconnected challenges, and then to identify collaborations and partnerships between PSIs, CBOs, and businesses to address the root causes of climate vulnerability and environmental injustice through a green learning agenda that puts the achievement of climate justice at its heart.

The Economy of Care

The green economy will not deliver environmental justice for historically marginalized communities if its orienting system of values are the same as those driving the current economy. This means jobs in green industries that continue to extract resources from and/or exploit marginalized communities are no closer to

promoting environmental justice than jobs in polluting industries. Instead, engaging the green economy with a different set of values, a set that structures and supports an economy of care, serves to shift the economy's orientation to resources—both human and natural—from one of extraction and exploitation to one of stewardship and circularity. It also reorients actors away from personal profit at any cost to shared prosperity in balance with our supporting ecosystems.

As we learned from our case studies, what this reorientation looks like in practice varies from one location to another. In Hawai'i, understanding the green economy as an economy of care emerges from the resurgence of Native Hawaiian traditions and the centering of indigenous knowledge. It means returning to practices that for generations have sustained and maintained the health and wellbeing of local ecosystems while providing for communities across the islands of Hawai'i. In Kentucky, an economy of care is perceived as centering the wellbeing, health, and social fabric of the community in the pursuit of economic development, not just economic growth driven by industries and big business. For CBOs in Chicago, an economy of care has meant working to shut down polluting industries in low-income communities and communities of color, fighting against new industries that may bring a lot of new jobs, but while sacrificing the health of present and future generations. It has also meant creating community gardens that allow neighbors to access free and nutritious food, while helping to create new relationships between neighbors that supports local commerce.

“ — Jobs in green industries that continue to extract resources from and/or exploit marginalized communities are no closer to promoting environmental justice than jobs in polluting industries.

In all three cases, community leaders point to the importance of reciprocal relationships between people and the environment, of stewarding the natural resources that nourish us, and solidarity between people of different backgrounds who share and are nurtured by those same natural environments and resources. With that, as a community leader in Hawai'i explained, an economy of care is not motivated by what or how much one owns, but rather by the types and quality of relationships one has. Such relationships—not ownership—creates abundance, a set of values

and a perspective that could transform the way PSIs engage with other actors in a green economy.

Box 2: Green Jobs: From a Normative to an Expanded Definition

To understand the green economy as an economy of care, it is necessary for PSIs to shift how they conceptualize and define green jobs. Green jobs must meet three criteria to be both socially inclusive and low carbon. They should promote 1) environmental sustainability, 2) economic empowerment, and 3) social empowerment. With this broader understanding, green jobs include not just sectors like energy, transportation, and manufacturing, but also education and health, which contribute to nurturing and regenerating the natural and human resources essential for thriving. In this way, green jobs are:

“... any job that contributes to the wellbeing and flourishing of present and future generations; upholds human rights, including women's rights and the rights of indigenous populations and peoples of color; and supports the regeneration of the natural world, its resources, and its socioecological systems on which our human economies rely. Green jobs center, nurture, and develop our individual and collective capacity to care for others and the environment and to educate ourselves and others about the unsustainability of the status quo.” (Kwauk & Casey, 2021, p. 4)

As an example, in Hawai'i, librarians in PSIs see themselves as members of the green workforce by assuming the responsibility of seeding awareness among students and the broader community of how science, society, and culture contribute to sustainability. Through their “green” work promoting sustainability, librarians are growing relationships of care with the communities whom their PSIs serve, strengthening a shared sense of stewardship toward facilitating a green transition (see the Hawai'i case study for more).

Collective Action

Because climate change and environmental racism are complex and systemic challenges, PSIs cannot act alone or in isolation—neither can CBOs or businesses. Indeed, what has become clear through this research

is the need for PSIs to see themselves as part of a larger ecosystem of education and training actors, including community-serving institutions fighting for environmental and climate justice in geographic areas out of commuting distance. In this way, collective action is not only an underlying assumption shaping how PSIs should promote a just transition. It is also an approach through which to build solidarity, to shift power imbalances, and to leverage shared resources with and alongside other community-based actors.

However, to work in solidarity with CBOs through collective action, PSIs may need to first repair relationships of trust with their surrounding communities and with CBOs and to restore a collective understanding that PSIs will not “burn” other actors in the process of seeking ideas and securing resources. In Chicago, this emerged most clearly in how community leaders described limited access to essential services like education and healthcare faced by members of their communities alongside betrayal by elected officials and the tokenization of community participation. Such relationships have left communities distrustful of formal institutions, including PSIs. Working in collective action with CBOs will require PSIs to take consistent steps to demonstrate their motivations rest in meeting community needs, as determined by community members. And it will require PSIs create space for communication that is mutual, reciprocal, and simultaneous, not one-sided, extractive, or after-the-fact.

and engaged in mutual respect, especially as they emerge around complex issues facing the community, from economic recovery to the opioid crisis.

In Hawai‘i, collective action for climate and environmental justice has been conceptualized by community leaders as oriented around two levels: 1) at the regional level where Hawaiian identity and action is viewed as interdependent with that of the Pacific Islands, and 2) at a local level where the center of action is deeply rooted in indigenous knowledge and the *‘ike kupuna*, or the teachings of the elders. For instance, indigenous knowledge teaches Hawaiians the essential value of relationships amongst people, amongst generations, and with the land.

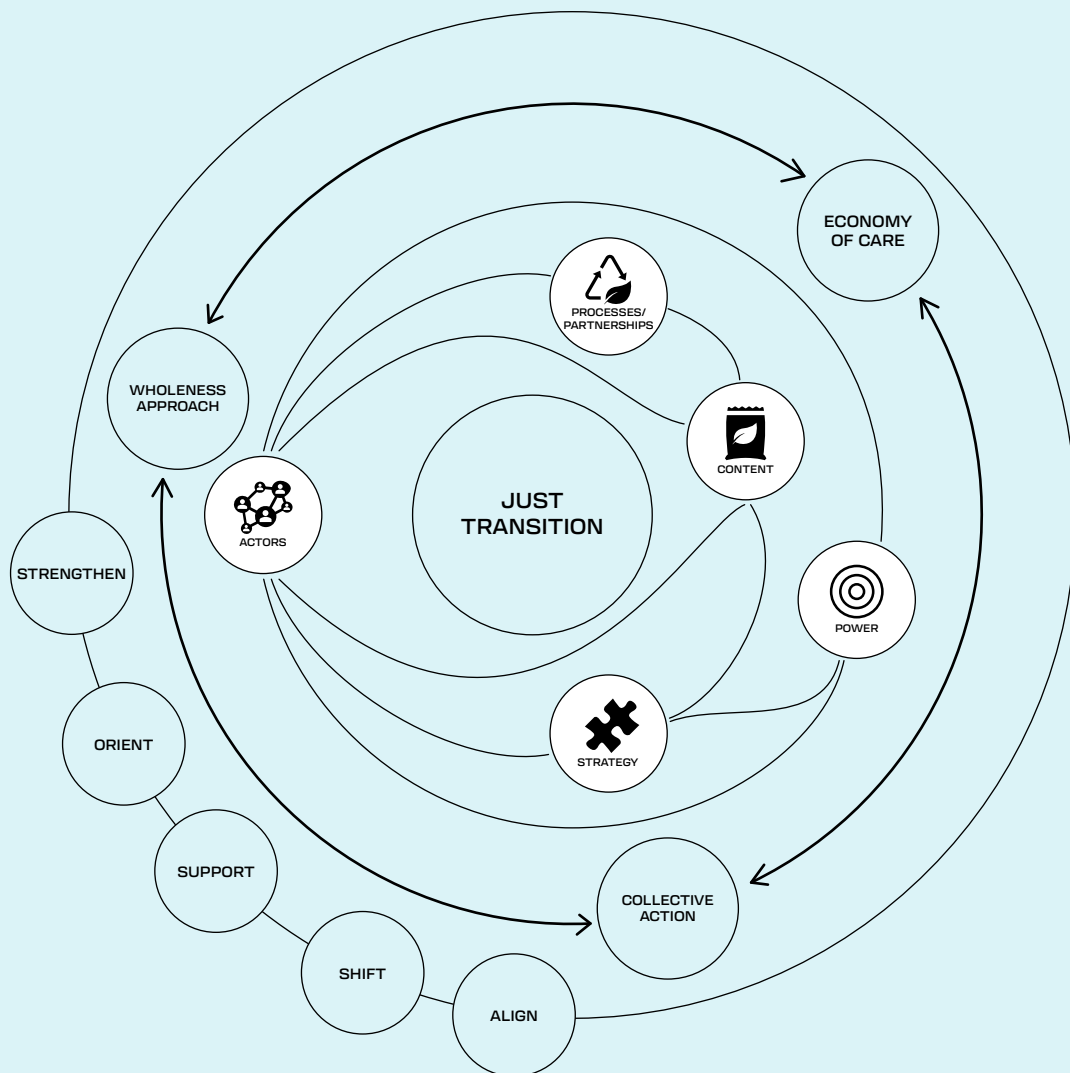
While diverse in orientation, these approaches to collective action appear to have a common thread: they have emerged in response to historic discrimination, exclusion, and underinvestment. Through collective action, communities have been able to shift power imbalances that harm them by harnessing the power of many (even across generations and sometimes across divides) to work in solidarity with each other in order to resist oppression, to change policies, and to challenge those who wield power against others. Such collective action also paves the way for reconciliation and healing—vital aspects for a just transition.

“ — Through collective action, communities have been able to shift power imbalances that harm them by harnessing the power of many (...) to work in solidarity with each other in order to resist oppression, to change policies, and to challenge those who wield power against others.

In Kentucky, collective action has been a strong part of the history of Appalachian communities where workers unions and CBOs have come together to discuss and organize. This is where efforts like the fight for mine safety, Black Lung benefits, and the protection of the top of Black Mountain from strip mining are important examples. However, these spaces have had stark divides within the community. Interestingly, community-based theater has become a safe space for diverse viewpoints and experiences to be uplifted

SECTION 2

Components of a New Green Learning Agenda



For postsecondary learning to support both environmental regeneration and economic revitalization, PSIs will need to co-define with other actors in a just transition education and training ecosystem a transformative vision for education—what we call a New Green Learning Agenda (NGLA). More than curricular reform or greening campuses, an NGLA is the wholesale repurposing of postsecondary education and training to prepare learners to thrive in a climate-impacted world where every job can be a green job and where shared prosperity and collective wellbeing within planetary boundaries are the North Star.






Such an agenda is “new” because it is not only concerned with green learning that builds a breadth of green skills to fuel the transition to a green economy. It is also concerned with seeding systemic social and economic change for the achievement of climate and environmental justice through the transformation of the education system. This system includes its **actors** (implementers, decisionmakers, beneficiaries), the **content** it delivers, the **processes** and partnerships that hold it together, the relations of **power** between its actors, and the **strategies** orienting it (Figure 2).

Though we differentiate between these five components, they are all interlinked. The actors involved in education planning and PSI decisionmaking influence the content delivered and the skills prioritized. Actors are also influenced by policy and funding opportunities and determine the partnerships

and processes by which they co-create green learning opportunities and employment pathways to the green economy. Likewise, relationships between actors determine who in the ecosystem is sitting at the table and who is not; conditioning power structures within and across communities, determining which communities are likely to access green learning opportunities and benefit from the green economy and which are not. Defining an NGLA with due consideration to these five interrelated components—content, actors, process, power, and strategy—ensures an NGLA is less about green retrofits and more about identifying pathways for transformative systems change.

Previous efforts have attempted to define a New Green Learning Agenda—or a similar vision thereabouts—by laying out broad approaches to education that prioritize sustained individual and collective wellbeing within the Earth’s planetary boundaries (Briscoe et al., 2022; Kelly et al., 2022; Kwauk & Casey, 2021). Building on this work, as well as insights from our case studies, the remainder of this section offers recommendations to PSIs interested in initiating a co-creation process for defining an NGLA with CBOs and other actors in the education and training ecosystem. What an NGLA actually entails—its objectives, its strategies, its plans for action for different stakeholders—should be defined locally and collaboratively. What we offer here are insights for ensuring this co-creation process can result in the most transformative NGLA as possible. This section considers the five components introduced earlier and is organized accordingly.

Figure 2. Five Components to Consider when Defining a New Green Learning Agenda

ACTORS	CONTENT	PROCESSES	POWER	STRATEGY
				
The community of postsecondary education actors and stakeholders (e.g., CBOs, training providers, private sector, learners, etc.) in a local just transition education and training ecosystem	The education and training content (e.g., curriculum, skills, etc.) to be delivered that will propel a just transition	The processes and partnerships guiding the just transition education and training ecosystem toward addressing the needs and experiences of historically marginalized populations	The relations of power between stakeholders of a just transition education and training ecosystem that much be navigated, negotiated, and/or rebalanced to achieve a just transition	The alignment (and leverage) between green learning opportunities and strategic opportunities in policy, funding, and practice for systems transformation

Source: Figure created by authors.



Actors

A diverse set of actors beyond PSIs and CBOs constitute just transition education and training ecosystems across the country. These include research centers, local government agencies, private training institutions, and businesses, among other formal and informal institutions and networks of learning, sources of indigenous knowledge, and relationships of mentorship and/or apprenticeship.⁸ While not all actors may necessarily self-identify as being part of this ecosystem—nor may some actors be perceived by other actors as being part of this ecosystem—they each play an important role in the provision of green learning opportunities. This is especially the case for underrepresented and/or historically marginalized populations who may be out of reach (or out of mind) by some actors. With more intentional and inclusive coordination across this ecosystem—something that requires building relationships of trust and care—the ecosystem of education and training actors could be better mobilized to propel a just transition and serve the needs of the most marginalized communities. Yet, as our case studies indicate, many of these actors work in isolation and sometimes even in discord with each other, reducing the potential for meaningful impact.

From our case studies, CBOs are largely perceived to be “closest to the problem” and as a result have a deeper understanding of the environmental struggles experienced by communities and the threats posed by climate change to them. Consequently, CBOs are perceived to be best positioned to identify the “right” solutions, including the most relevant green skills, and to be able to provide green learning opportunities that would otherwise have been inaccessible.

For example, [Little Village Environmental Justice Organization](#), [Southeast Side Youth Alliance](#), and [Sustainable Option for Urban Living](#) are providing

training in solar and gardening to address a lack of jobs and food insecurity in the most underserved neighborhoods in Chicago. In Kentucky, [Appalachians for Appalachia](#) and [Mountain Association](#) are affirming the role of local small businesses and entrepreneurs to tap into local community assets, talent, and ideas for economic revitalization. In Hawai‘i, CBOs like [Ma‘o Organic Farms](#), [Paepae o He‘e‘ia](#) and [Kōkua Kalihi Valley Ho‘oulu ‘Aina](#) draw on indigenous knowledge and cultural practices to shape solutions that are connected to the roots of community identity and values.

Many of the CBOs mentioned in our case studies view their mission as not simply to identify skills that would provide the quickest means to economic growth or development, but rather to nurture community assets and to strengthen community health and wellbeing. However, limited funding means that CBOs are constrained in how far they can support their communities—a common challenge that hampers the sustainability of their efforts and of their impact. For instance, as was evident in our case studies, community leaders and CBOs often have much on their plates when it comes to working against systemic discrimination and toward transformative systems change. Working in this manner and with limited resources, these actors risk burnout from chronic stress. Efforts to strengthen such an ecosystem must therefore be rooted in providing support and collaboration that enables these leaders and entities to move forward while thriving, not draining them further of resources and energy.

In contrast to CBOs, big businesses and governments—while key players in the transition to a green economy—were not often perceived as having priorities and values aligned with those of historically marginalized communities. Their motivations were often characterized as resting more in “economic growth,” less in a “green” transition, and even less in a “just” transition. Across all three case studies, big businesses are both historically responsible for pollution, environmental injustices, and extractive relationships. But they also bring opportunity for cleaner, healthier, and economically viable communities with the promise of green jobs. Identifying the right business and government partners, however, has been the challenge, especially with the goal of prioritizing community-driven development rather than industry-driven development. The latter, as indicated by the Kentucky and Chicago case studies, can lead to unfulfilled job promises that create brain drain as trained workers move elsewhere to find jobs, or can lead to compromises in community health and wellbeing if jobs go from one dirty industry to another.

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When it comes to PSIs, our case studies in Chicago and Hawai'i made clear that some PSIs must repair their relationships with underserved communities before becoming effective stakeholders in a just transition. Furthermore, given the position and relative privileges that PSIs hold in the broader education and training ecosystem, PSIs have the unique opportunity and responsibility to be a connector and to coordinate alliances for collective action that addresses the wholeness of problems, and to open spaces to redistribute power and resources that nurture and care. For example, where there are collaborative efforts happening, like The Appalachian Big Ideas Festival, which brought together national and local thought leaders, artists, small businesses, and innovative ideas to Hazard, Kentucky in September 2022, PSIs could play a more active role in identifying educational needs coming out of such efforts and where new or existing relationships could be strengthened.

Importantly, PSIs are not homogenous, nor are they monoliths. Within PSIs are faculty, staff, administrators, and often sustainability offices that are spearheading sustainability, climate action, and environmental justice initiatives in classrooms, across campuses, and with communities. However, these actors often face the challenge of "departmentalization" (i.e., placing these initiatives under the purview of a single department), hamstringing efforts at collective action and diluting the scale of transformation needed. And within PSIs, there are also faculty, staff, and administrators who may themselves desire green learning opportunities of their own, as well as those who did not "sign up" to be climate or environmental justice activists who must be supported and respected where they are.

“ — Programs must be focused on building the socioemotional skills (like leadership, teamwork, collaboration, negotiation, coping with emotions, etc.) and the transformative skills (like coalition building, solidarity, understanding relations of power, etc.) necessary to adopt different ways of thinking, being, and doing with each other that are not only more sustainable, but also more equitable, just, and caring of all people and the environment.

Finally, participants from the Hawai'i case study emphasized the importance of including actors from early childhood centers, elementary and high schools, as well as nonformal learning environments such as community libraries, afterschool programs, and summer camps, in the just transition education and training ecosystem. By including these actors, the boundaries of the ecosystem can be broadened, and the root challenges of postsecondary green learning gaps can be addressed more "wholly," starting from early childhood. It is critical for PSIs and CBOs to work together with a wide range of actors, including those serving older adults, to strengthen lifelong green learning pathways that focus on addressing environmental and climate challenges faced by local communities.



Content

Achieving a just transition will require the content of green learning opportunities and the skills and competencies targeted to be transformative. This means simply retrofitting education and training programs to target specific green skills required for specific green jobs will not be enough to address the underlying root causes of climate vulnerability, environmental racism, or economic exclusion. Rather, programs must be focused on building the socioemotional skills (like leadership, teamwork, collaboration, negotiation, coping with emotions, etc.) and the transformative skills (like coalition building, solidarity, understanding relations of power, etc.) necessary to adopt different ways of thinking, being, and doing with each other that are not only more sustainable, but also more equitable, just, and caring of all people and the environment. This calls for PSIs to work with the broader ecosystem of actors, including those from and representing historically marginalized communities, to identify content (and pedagogies) that promotes a breadth of green skills. In fact, across our case studies, four characteristics have emerged quite clearly to help identify such breadth:

Interdisciplinary and transdisciplinary: Aligned with the notion that PSIs must approach green learning from a wholeness approach is the notion that content identification and delivery must also be integrated and treated as a whole, not in separate bits and pieces. Not only does this mean every student should be exposed, for instance, to the science of climate change and climate solutions, but also to the social

science of climate justice and environmental justice. Such interdisciplinary and transdisciplinary learning encourages learners to use a wholeness approach when identifying and solving problems that are tied to achieving a just transition. In addition, integrating the knowledge and culture of indigenous communities and/or the cultural and/or racial history of underrepresented populations can further anchor such holistic approaches within the local community and its context.

Power shifting: Key to linking the content of an NGLA to transformative systems change is attending to content that helps to raise awareness and understanding of both the power of relationships and the impact of historic and harmful power imbalances. Our case studies highlighted the importance for an NGLA to help learners question the status quo to ensure structures, systems, and processes of exclusion and extraction are replaced with those of inclusion, care, and regeneration. In Chicago, case study participants point to the significance of raising awareness among community members about the flow of money in public decisionmaking processes. Such knowledge enables communities to identify the areas where they can apply pressure and influence the decisionmaking that has a direct impact on their neighborhood, jobs, and daily lives.

Justice-centered: Related to power shifting is the need for content to center environmental and climate justice issues. Teaching sustainability only from a science perspective overlooks the interdependent relationships between humans and nature that define cultures and wellbeing. Similarly, delivering green skills training from a purely technical approach overlooks the struggle some communities face in accessing resources and opportunities that could enable them to reach their full “green” potential. A learning agenda without attention to culture and justice therefore risks teaching solutions that are disconnected to the local social and cultural context, creating barriers to behavioral shifts and social change that are rooted in the personal and emotional connection needed to care for and about others. PSIs must begin to recognize how addressing inequality and injustice in locally specific ways is a way to thread soft and hard skills into their green learning opportunities. In this way, PSIs can support learning that not only supports a transition to a green economy, but one that is more equitable and just.

Community-driven: Importantly, we learned from our case studies the importance of community-driven education and training programs when it comes to green learning opportunities that promote a just transition. When the content of education and training

programs are driven largely by labor market demands and/or the interests of big business, like the tourism industry, the fossil fuel industry, or the transportation industry, these programs do not end up serving the needs of the community well, including health, housing, dignified livelihoods, and the mitigation of climate risks or reduction of environmental harm. Moreover, industry-driven training programs risk exploiting lower-skilled and lower-income populations and depleting or polluting local natural resources, forcing communities to pick between wages and wellbeing. Content driven only by industries also do not always leverage or strengthen existing community cultural assets, like Appalachian cultural roots and stewardship of the mountains and water, in the case of Kentucky, or Indigenous knowledge and land practices in the case of Hawai‘i. The processes that determine content are therefore just as critical as the content of an NGLA itself, which we turn to next.



Processes

Unequal relations of power, historic structures of discrimination, and persistent systems of exclusion have contributed to the disproportionate burden of inequalities, including green learning opportunity gaps, experienced by communities of color, indigenous communities, and rural communities around the country. Such negative experiences can be reproduced by PSIs if the processes guiding them as an actor in the just transition education and training ecosystem, and the partnerships they pursue to implement green learning programs, continue to perpetuate relationships with communities that are one-sided and extractive in nature rather than reciprocal and caring in nature.

For example, in Chicago, case study participants mentioned how outreach to underrepresented communities by businesses and private training providers were often futile, as members of these communities could not participate during the hours required because they needed to work for a living and could not dedicate time for full time training. So even though green learning opportunities exist and were intended for historically marginalized populations, they cannot always access these because of persisting structural inequalities (e.g., lack of access to health, affordable child care, or transportation). To avoid repeating such mistakes, PSIs must work closer with CBOs and other community-based partners to better understand the needs of underrepresented

groups that may work multiple jobs or manage various responsibilities that limit their access to opportunities. To illustrate, Hazard Community and Technical College worked in conjunction with a housing nonprofit and addiction recovery organizations to integrate training with income generation and a more flexible class schedule. This enabled people in more vulnerable circumstances to participate in a formal green learning opportunity while meeting their financial needs.

As PSIs seek to define an NGLA, they must critically reflect on their relationships to make sure these influence the nature of green learning opportunities in ways that benefit local communities and not just private interests. As we saw in our case study in Kentucky, informal partnerships between PSIs and big businesses have often helped to maintain the status quo when it comes to the content of education and training programs offered by PSIs in the region. Budget-tight PSIs find themselves limited to offering education and training programs for which the costs can be recouped—a process that can lead PSIs to forego a program offer not because they do not think it is a good program, but because big businesses and industries did not say that program and the skills it offers is what the market needs and therefore for what students will be willing to pay.

For an NGLA to promote a just transition, PSIs must identify and promote processes and partnerships that shift the source of incentives from an economy of profit to an economy of care. Such a process can help PSIs not only arrive at the identification of in-demand green skills, but also work to transform unequal relations of power and structures and systems that perpetuate marginalization and exclusion. This may, however, first require repairing relationships between PSIs and their surrounding communities from ones that may have been transactional, extractive, and in service of business bottom lines to ones that are based on care, reciprocity, and shared prosperity. The Hawai'i case study lays out an interesting way of conceptualizing the source of such a relationship rooted in the latter. Specifically, partnerships between the elder generations (*kupuna*) and the younger ones (*keiki*) are not only critical for sharing intergenerational knowledge, but also for activating ancestral wisdom and Indigenous knowledge in conversation with the concerns and realities of future generations. Such partnerships between the elderly and the young ensure learning is grounded in processes of care, reciprocity, and shared prosperity.

Our case studies also illustrate the significance of creating space for and spending time on the hard

work of transformation. Such processes emphasize participation, reconciliation, and understanding between different stakeholder groups—moving at the pace of trust—rather than processes that are more transactional, extractive, and linear (Brown, 2017). PSIs can learn from the example of [Higher Ground](#), a community arts initiative started at Southeast Community and Technical College in Kentucky, that creates spaces for collaboration among community members with diverse experiences and viewpoints through the arts and theater. In Hawai'i, [Kupu](#), a CBO is threading relationships between young adults and mentors in the green economy by creating “learning by working” opportunities for youth to learn how to regenerate the land while also conserving their cultural heritage. These spaces and the processes observed allow for people that would otherwise not interact to listen to each other and to experience another’s point of view through artistic or service-learning mediums. Such work takes time and intentional facilitation. It also requires a willingness to dive fully into the messiness of communities and their challenges in order to create meaningful, transformative solutions.



Power

Addressing unequal relations of power between PSIs and historically marginalized communities is an equity and justice issue deserving attention in its own right. But in the context of defining an NGLA, addressing unequal relations of power is especially timely given the conditions created by U.S. climate policy for renegotiating power in ways that could catalyze systemic transformations in the landscape of green learning opportunities.

On the one hand, U.S. climate policy—with much credit to the Justice40 Initiative’s effort to direct resources to environmental justice communities—has cast PSIs not in a leading role but rather in a co-starring role *in partnership* with CBOs, EJOs, and other entities. For instance, to be eligible for much of the grant funding made available by the Inflation Reduction Act (IRA), PSIs will need to collaborate with community-based actors to address environmental justice issues (This is Planet Ed et al., 2022). Such conditions encourage a shift in power that is more equally distributed across PSIs and CBOs.

On the other hand, U.S. climate policy reinforces PSIs as playing a key role as anchor institutions for

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their communities. For example, the Environmental Protection Agency (EPA) and Department of Transportation have recently designated 14 regional Environmental Justice Thriving Communities Technical Assistance Centers (EJ TCTACs) across the country, eight of which will be hosted at PSIs and all of which engage a number of PSIs as partners. These EJ TCTACs were created with the recognition that CBOs face a disadvantage in accessing federal funding like that created by the IRA. They were also created with the intention to remove systemic barriers among environmental justice communities to accessing federal funding by providing technical assistance and capacity building.

Under an “education as usual” approach, such incentive structures for PSI-CBO collaboration could strain already tense relationships between PSIs and their surrounding communities, especially where CBOs may perceive PSIs with suspicion when it comes to their genuine interest in community partnerships and in serving community-identified environmental justice needs. But under a more transformative approach guided by the three approaches discussed earlier, PSIs can actively work to become catalysts for change, redistributing power and resources to historically marginalized communities in the pursuit of shared prosperity and an NGLA.

In considering the redistribution of power, our case studies demonstrate the importance of critically reflecting on where the “source” of power imbalances rest. In Chicago, case study participants point to how PSIs have historically guarded their resources, talent, technology, and knowledge, creating tension between them and surrounding communities without access to these institutions. Likewise, CBOs hold strong relationships with communities, who themselves hold a particular type of power: the power to claim one as part of their own. Such cultural capital and the power of belonging can wield much value when it comes to collective action. PSIs, especially those for whom relationships with CBOs are not equal, must begin to recognize that redistribution of power to CBOs is not a zero-sum game, but rather a way to

leverage capital from both sides to create meaningful education and training opportunities for all.

Our case studies also remind us of how power is embedded in ownership of the land and of the natural world, which subsequently structures access to natural resources that communities need to thrive. The privatization of the natural world shifts nature from something with which we should live in reciprocal relationship and therefore nourish, to something a few use to extract for profit, therefore depleting for all. This leaves those who have been historically marginalized struggling to gain access to clean water, clean air, and so on. Overlaying such environmental injustice with the conditions that enabled the climate crisis, the task of redistributing power means PSIs must consider carefully how they will contribute to an economic system that enables community flourishing without the depletion of natural resources.

In all case studies we found that there is a financial dependency to an industry that has an extractive relationship with both the community and the environment. In Kentucky, it is the coal industry. In Hawai'i, the tourism industry. And in Chicago, polluting corporations. All offer the promise of jobs but at the cost of individual and community health and the health of the environment. Case study participants often raised the question of how to promote economic development without furthering dependence on extractive industries. And while our case studies show that there is a diversity of approaches to negotiating such extractive imbalances of power, doing so in the context of an NGLA would require PSIs to critically reflect on their own positionality and power dynamics as community-based actors.

For example, in Chicago, imbalances of power are negotiated over the struggle for green spaces, which are the embodiment of community power because they represent both health and wealth. It is not lost on members of disadvantaged communities that the richer parts of the city have more green spaces. Chicago's CBOs have worked to mobilize and raise awareness among the community about their right to a healthy environment and to green spaces, as well as how this is implicated in public decisionmaking processes on budgeting and urban planning. They have sensitized communities about how the lack of green spaces diminishes the possibility of a healthy, dignified, and joyful way of life.

In Kentucky, CBOs have similarly trained community members to voice their concerns in public hearings, and to push for an inclusive economic recovery. They

have actively engaged voters and opened discussion spaces where all community members are invited to contribute their ideas for what a fairer, sustainable, economically viable future looks like. In Hawai'i, imbalances of power are negotiated by finding power elsewhere, in this case by nurturing children and youth in the knowledges and practices with deep cultural and indigenous roots. Through an education that places

“ — Defining an NGLA for a just transition means PSIs will need to actively reflect on their own power and positionality, and what relations of power will need to be rebalanced.

value on shared prosperity, CBOs in Hawai'i are helping to validate social and economic practices that put into question the values and practices of the status quo.

These examples, while not specific to postsecondary education, offer a glimpse at how negotiating unequal relations of power is as much about community self-determination as it is about redistributing resources to those communities that have been historically marginalized. Defining an NGLA for a just transition means PSIs will need to actively reflect on their own power and positionality, and what relations of power will need to be rebalanced. With the opportunities for greater collaboration between PSIs and CBOs, the redistribution of power can help catalyze transformative systems change.



Strategy

It goes without saying that it would be strategic to align an NGLA with existing policy priorities. Such alignment opens access to funding, resources, and opportunities. However, if priorities have been narrowly defined, policies can constrain the transformative vision of an NGLA and therefore confine action and fragment impact. Policies can also hamper efforts toward a just transition if they incentivize actions that are extractive, especially in historically marginalized communities. For example, the Infrastructure Investment and Jobs Act (IIJA also known as the Bipartisan Infrastructure Law), the CHIPS and Science

Act, and the Inflation Reduction Act (IRA) constitute the current **national climate policy** landscape to which PSIs and other actors can leverage in the near term. However, these opportunities are limited to a few narrowly defined sectors, and as mentioned earlier do not consider the oftentimes tense relationship between PSIs and their surrounding communities. Similarly, while the Climate and Equitable Jobs Act of Illinois, the Hawai'i Clean Energy Initiative, and KYE3: Designs for a Resilient Economy in Kentucky have prompted shifts in investment in clean energy at the **state level**—and subsequent downstream demand for relevant education and training—such policies would offer limited opportunity for an NGLA to support the systems level change needed for a just transition. Such shortcomings point to the importance of using a wholeness approach when defining an NGLA, and not to be pushed by a fear of missing out.

Policies at the **PSI level** also emerged in our case studies as being an important lever that needs to be tapped more intentionally to promote a just transition. At present, institution-wide strategies like the University of Hawai'i System's S-Designation have been instrumental in aligning efforts and generating collective action for sustainability across a number of institutions in the state. In Kentucky, however, the Kentucky Community and Technical College System's Green Sustainability Initiative created a framework for action but was left primarily to individuals to take initiative. As one interviewee stated, he was not even aware that the initiative existed, but his efforts at the community college were referenced by the Initiative's coordinator. In this case, there is an apparent disconnect between strategy and implementation. Nevertheless, efforts to green PSI campuses and curricula, where they exist, have been primarily internal facing (i.e., within campus walls), leaving much more work to be done externally (i.e., beyond campus walls) to catalyze wider systems change. While inside-outside lines are often blurry—especially when individual faculty may be involved in community-level work—institutional boundaries can hamper opportunities to work in solidarity with community-driven efforts toward sustainability and environmental justice. As place-based actors within a larger ecosystem, PSIs must begin to see their “green” goals as intertwined with the green goals of their surrounding communities. PSI sustainability policies must therefore reflect these shared goals with the community while amplifying efforts taken by other actors to do the same.

Importantly, the alignment between institutional policy and community vision should also extend to

the ways PSIs support **community-driven policy advocacy**. Our case studies illustrate how CBOs have worked to strengthen the policy advocacy muscles of communities through community organizing, civic engagement (and/or dissent), and co-creation of policy proposal development. In Chicago, CBOs were

and wellbeing of local communities and their natural surroundings. In Hawai'i, there is the additional dimension to this narrative that sees the green economy as an opportunity for Hawaiian youth to prosper on their own land. Green learning opportunities are linked to green jobs that promise an alternative yet vibrant and prosperous local economy.

“ — Our case studies illuminate the importance of listening to community narratives, as told by communities themselves, to better understand the stories that empower and inspire action

especially aware of the importance of raising awareness among community members of where, when, and how policies are made locally and how these decisions impact their daily lives. With this understanding, CBOs could increase the community's influence on budget allocations, and incentives to decarbonize the economy.

Finally, our case studies illuminate the importance of listening to **community narratives**, as told by communities themselves, to better understand the stories that empower and inspire action. In all three case studies, stakeholders recognize how a transition to clean energy offers the opportunity for homegrown solutions that can improve the health

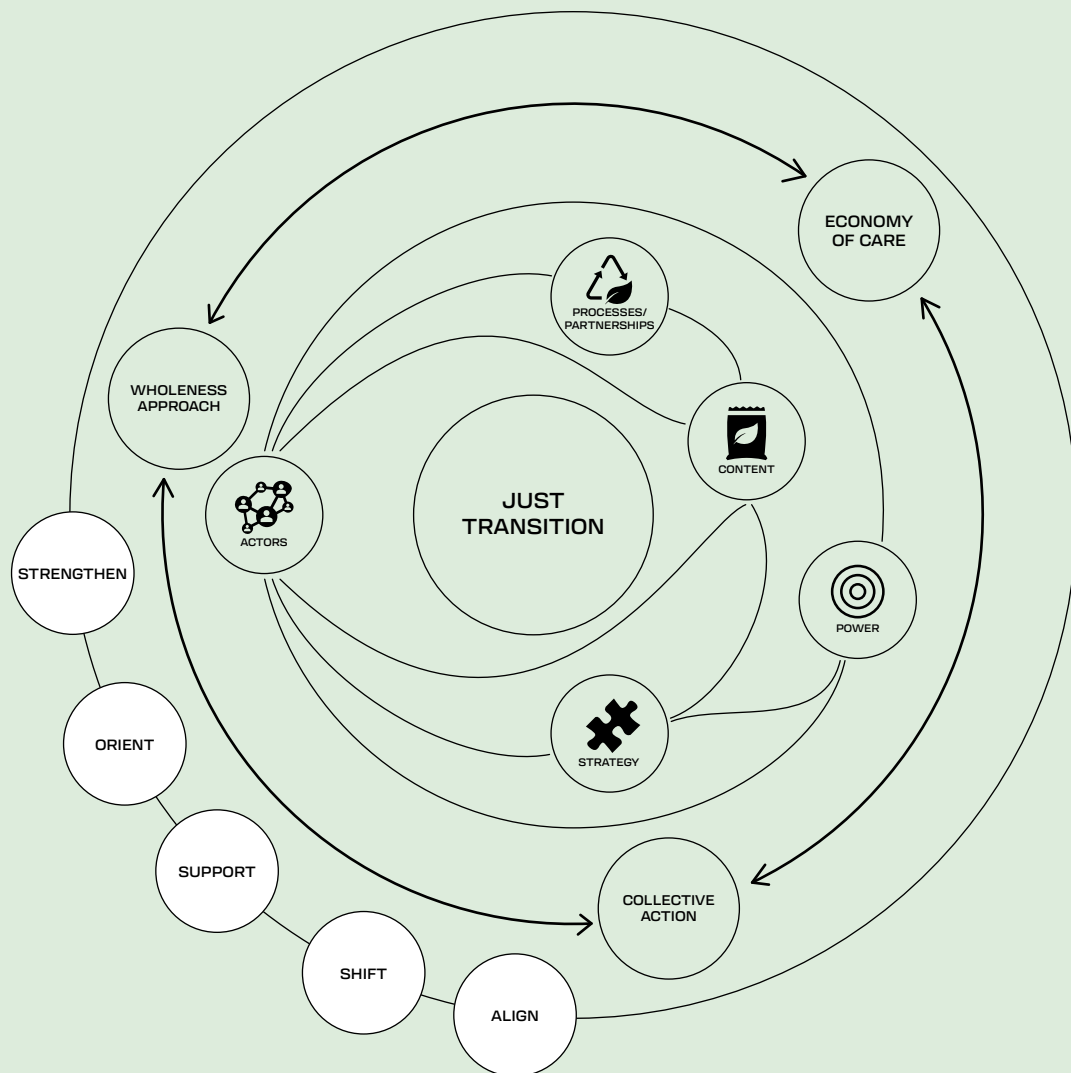
However, when community narratives are created externally and/or influenced by external actors, there is little space left for community agency. The case of Kentucky makes this point quite well. Telling a story about education and training for a more regenerative future can become challenging work if it means upsetting the fossil fuel industry and those individuals whose influence and decisionmaking the industry has bought. The consequences for aligning an NGLA with the community's stories could mean alienating the power structure benefiting PSIs. Such external influence means that the outlook of Kentucky's green learning agenda is focused on quick wins rather than addressing the underlying historical drivers of environmental injustice. In this case, if PSIs are to co-define an NGLA that promotes a just transition, they will require leadership that is willing to facilitate processes and nurture partnerships that are prepared to engage the hard and difficult work of transformative systems change.

The key message here and throughout the components of an NGLA continues to circle back to the significance of critically reflecting on the positionality of PSIs as place-based actors in a just transition education and training ecosystem. Such a position requires PSIs and PSI leaders to orient their purpose, their objectives, their policies, and their practices toward achieving shared prosperity and promoting collective wellbeing in balance with Earth's planetary boundaries. Aligning a vision for an NGLA with enabling policies and processes must be done together and in solidarity with other actors committed to shifting power in service of and through content that is anchored in the just transition needs of historically marginalized communities.



SECTION 3

Recommendations to Implement a New Green Learning Agenda



Recommendations for PSIs

The following recommendations (organized by each component of an NGLA) are a nonexhaustive list of interconnected actions that can enable PSIs to put into practice the three transformative approaches discussed earlier. These recommendations are inspired by the three case studies.



To strengthen the ecosystem of actors for an NGLA:

- Convene actors in the just transition education and training ecosystem to promote collective action around an NGLA; create space and platforms for CBOs and the communities they serve to voice their concerns; and create a task force and dedicate staff, space, resources, and funding to this work.
- Conduct a community mapping of actors providing formal and informal green learning opportunities for underrepresented populations. Note who is on the periphery and who may be missing. Note which populations are being served or not, including geographic pockets in the community, adults transitioning jobs, and children/youth at different levels of their learning journeys. Note what types of green learning opportunities are being offered, or not.
- Identify existing just transition initiatives and networks that could be strengthened through the participation of educational actors, like PSI leaders, faculty, students, and so on.
- Support PSI faculty and staff to address the fragmentation of sustainability efforts, including green learning opportunities, within PSI. And provide continuous professional development opportunities for PSI faculty and staff in a breadth of green skills and in linking their disciplinary area to environmental and climate justice content.



To orient content toward an NGLA:

- Through collective action, map and identify with community stakeholders the relevant breadth of green skills that should permeate across all PSI

programs, including technical green skills, generic green skills, and transformative green skills that respond to community needs (Kwauk & Casey, 2022).

- Create a transdisciplinary task team to work alongside CBOs to identify interdisciplinary entry points (wholeness approach) to education and training programs that are relevant to local just transition challenges experienced by surrounding communities.
- Incorporate into NGLA content, the building of awareness and skills among faculty and learners to question the status quo and the power structures that have historically harmed the most marginalized populations, and the building of skills to identify alternatives that center justice and to put these alternatives into practice in collaboration and solidarity with historically marginalized populations.



To support transformative processes for an NGLA:

- Create or facilitate space for coalition building or reconciliation with CBOs, community members, students, local businesses, and other key stakeholders from the surrounding communities to find common ground, identify shared visions of the future for the community, and to create trusting and caring relationships that can sustain and support long-term collective action.
- Codevelop a participatory, community-based 3–5-year strategic plan of action and a 50–100-year plan that promotes the identification of green skill-building needs that respond to the just transition needs of the community.
- Make engagement and collaboration between PSIs and CBOs more accessible. Develop transparent and non-onerous processes for CBOs to request the use of PSI space and resources, and to access faculty and initiatives.
- Create new metrics that can support “the capacity of decisionmakers to identify their blind spots and to make more justice-centered evidence-informed decisions.” Such metrics should link PSI green learning opportunities with community outcomes that are regenerative in nature and localized to the geographic needs of communities (Kwauk et al., 2023, p37).



To shift power imbalances for an NGLA:

- Include members of environmental justice communities and other relevant community stakeholders in PSI spaces of decisionmaking, alongside representatives of business, philanthropy, and other sectors. Ensure members of EJ communities have decisionmaking power and are not tokenized.
- Identify ways to share existing PSI resources, including facilities, technology, and talent, with CBOs and identify ways to direct new resources, including unrestricted funding opportunities, to CBOs.
- Dedicate resources and capacity to support efforts that can help bridge the disconnect between plans and initiatives that are generated on flagship campuses and their implementation on branch campuses and/or in historically marginalized areas.
- Conduct a power mapping of stakeholders in the local just transition education and training ecosystem. Note where imbalances of power are located and consider why and what actions might be taken or relationships repaired to redress these imbalances. Reflect honestly about PSI's relationships within this mapping and whether these are extractive or reciprocal. Seek feedback from community members and identify ways to shift power.



To align strategies to and for an NGLA:

- Build a shared narrative with community members about what a just transition looks like for the community and identify ways in which education and training can help realize this vision. Within this, identify aspects that could be facilitated by new or revised policy—both at the institutional level of PSIs and other actors in the just transition education and training ecosystem, as well as at the city, county, and state level. Identify strategies for PSIs to support community-driven advocacy for these policies.
- Conduct an analysis of local and state climate policy, including sectoral strategies, that can be leveraged by PSIs, CBOs, and other actors in a just transition education and training ecosystem to strengthen green learning opportunities, especially among historically marginalized communities.
- Align investments in the professional development of faculty, faculty grants, and campus-wide sustainability and/or green economy initiatives with the goals of an NGLA.
- Identify staff whose role is to serve as a liaison between PSIs and the broader just transition education and training ecosystem (including CBOs, churches, students, businesses, small business leaders, elected officials, and so on), and whose function is dedicated to identifying new national or local policies that would impact community wellbeing negatively in the context of just transitions. This staff would be responsible for organizing community participation in the development of community-driven policy.



Conclusion

Closing green learning opportunity gaps across the U.S. will require PSIs to transform the anchoring assumptions and overarching vision that guide and orient their purpose and activities as place-based, community-serving actors in a just transition education and training ecosystem.

Steered by our case studies, we identified common approaches to how CBOs are filling green learning opportunity gaps through community-driven approaches that seek to achieve shared prosperity and collective wellbeing within planetary boundaries. These transformative approaches could radically reorient PSI efforts to supporting a just transition. These are: reframing “the problem” through a **wholeness approach**, by shifting relationships toward an **economy of care**, and by working through **collective action** with CBOs and other stakeholders in the education and training ecosystem, to remove both systemic and geographic barriers that prevent historically marginalized communities from benefiting from the country’s green transitions.

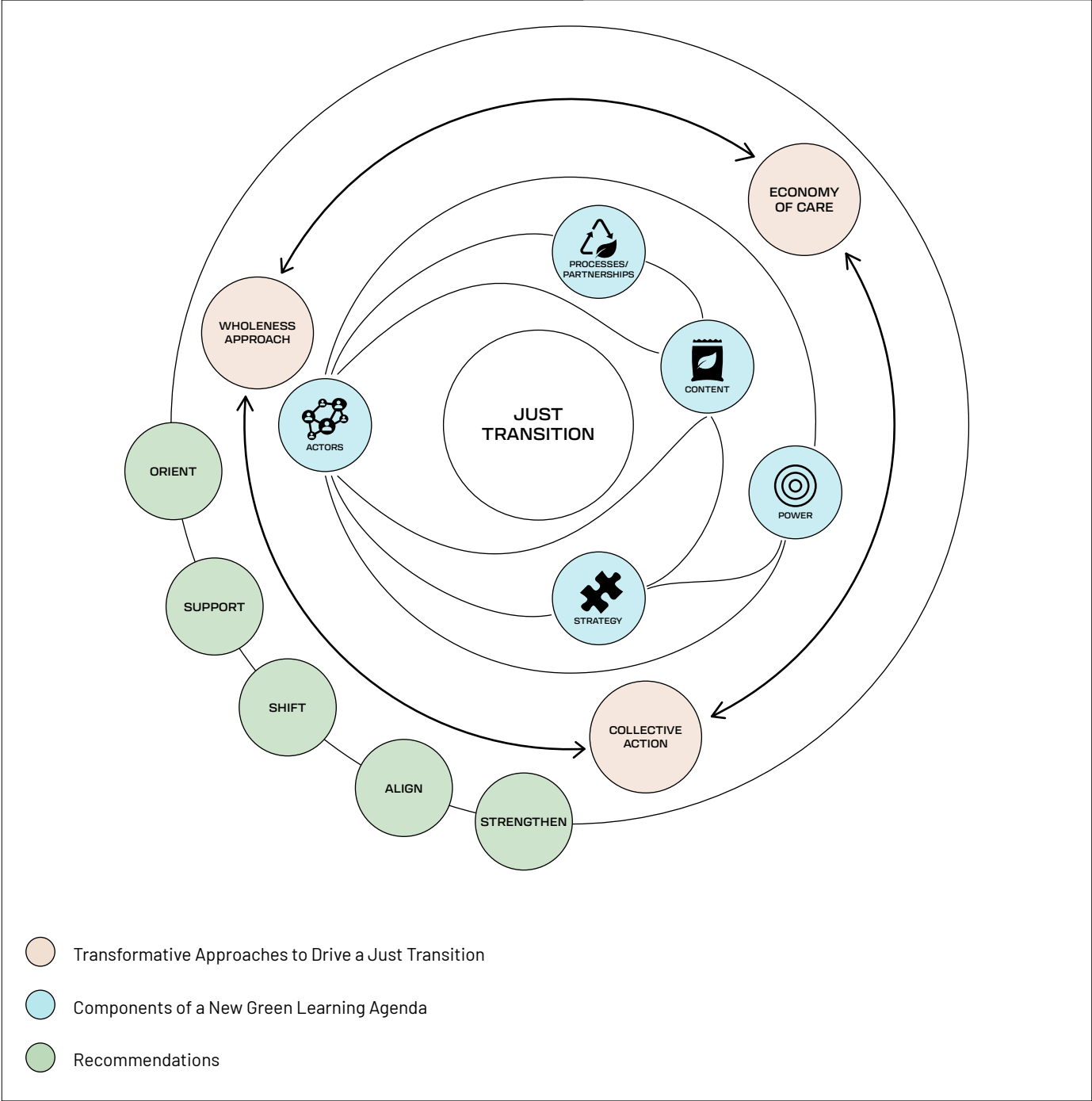
which practices and policies might propel momentum toward a greener and fairer future (**strategy**).

While sometimes in tension with CBOs, PSIs have the power, and the responsibility, to shape not only hands, hearts, and minds of the present and future green workforce. They also have the power and responsibility to strengthen just transition education and training ecosystems that are oriented around and serve to strengthen a broad set of community assets and community networks. In such a role, PSIs can help guide the movements of other actors in the ecosystem toward a green transition that is unapologetically inclusive, diverse, and collaborative. In this way, PSIs can send a strong signal to policymakers and decisionmakers about the power of systems built on relationships of care and guided by the goal of shared prosperity in balance with Earth.

“ — These transformative approaches could radically reorient PSI efforts to supporting a just transition.

Importantly, our case studies also demonstrate that achieving a just transition cannot happen by retrofitting curriculum and the content of programs alone, but that there needs to be an overarching vision, a New Green Learning Agenda, that reorients the purpose of education and transforms the underlying supporting systems. Yet, defining an NGLA must be an incredibly local process. What an NGLA looks like in practice (its **content**) depends on how structural inequalities and environmental racism (relations of **power**) manifest locally. It also depends on who the local education and training institutions are (**actors**) and where they are located, what their relationship is with their surrounding communities (**processes/partnerships**), especially those who have been historically excluded and/or disadvantaged, and

Figure 3. A New Green Learning Agenda for a Just Transition



Source: Figure created by authors.

SECTION 4

Case Studies of a New
Green Learning Agenda
in Three Contexts



Our case study locations (O’ahu, Hawai’i; Chicago, Illinois; and southeastern Kentucky) offer diverse contexts where community actors are working to close gaps in green learning opportunities for historically marginalized communities. They are defining what an NGLA could look like with wholeness, care, and collective action in mind, identifying who should be engaged, reconciling relationships, addressing past wrongs, and strategizing for shared prosperity and collective wellbeing. An NGLA looks different in each case study, but the common thread is: Promoting a just transition is more than creating access to green skills for green jobs. It is also about deeper systems change, signaled by the closing of green learning opportunity gaps and meeting the place-based needs of underserved communities.

Each case study has a unique history with environmental racism and environmental justice as well as a unique set of challenges when it comes to addressing the climate crisis through a just transition.

HAWAII

Hawai’i offers a unique perspective as an island state that has deep relationships with Pacific Island countries with whom it shares culture and history. Hawai’i’s indigenous heritage continues to influence the daily lives of its people and provides hope for a transition to a decarbonized economy. However, the state faces complex challenges, such as rising sea levels, heavy reliance on imported food, and an economy heavily reliant on an extractive tourism industry, with a few exceptions. The historical tensions between PSIs and CBOs in Hawai’i provide an opportunity to explore how partnerships can evolve and collaborate toward a common vision.

CHICAGO

Chicago has a complex past reflected in its streets, neighborhoods, infrastructure, and policies. Economic development as an industrial port city came with the pollution of air, water, and land, as well as the gentrification and segregation of the city’s neighborhoods along race and class. Communities have taken to mobilizing against discrimination and for environmental policy, and progress is marked by the shift from brownfields to parks and community gardens. However, the case study illustrates how this progress has been hard won, off of the labor of CBOs, and presents a set of recommendations for how PSIs can strengthen their relationships with CBOs and play a stronger role as allies toward a just transition.

KENTUCKY

Our case study in southeastern Kentucky gives us a glimpse of what an NGLA could look like in a rural context. Located in the Appalachian Mountains, the region was once home to large coal reserves. However, coal’s dominance created a mono-economy and left the region vulnerable to floods. The shift towards lower carbon energy sources, like natural gas and renewable energy, has made it impossible for families to continue living off the coal mines. And the lack of investment in human capital and alternative livelihoods has left the region with a struggling economy. Despite facing numerous challenges, communities in the region are identifying pathways to a greener, more inclusive future through art, theater, and entrepreneurship, leaning on their cultural assets, showcasing their talent, and creating new spaces for collaboration.



CASE STUDY 1

Culture, Land, and Reciprocity: A New Green Learning Agenda in Hawai'i

CRIVIR IVEE CRUZ & LORMONA MEREDITH



Caption: Kōkua Kalihi Valley Ho'oulu 'Āina. Photo credit: Crivir Ivee Cruz

Introduction

Hawai'i is home to many cultural and ethnic groups, each of whom has contributed to its rich culture, history, and socioeconomic fabric over time. For this case study, the people of Hawai'i include the indigenous Native Hawaiians and residents of other nationalities and ethnicities who now call this place home.

Hawai'i has a special historical context, culture, and sense of place that separates it from the continental United States (US). The Hawaiian Islands are an archipelago, a chain of islands, eight of which are inhabited. Although Hawai'i shares similar climate change and environmental challenges with Small Islands Developing States (SIDS)⁹ in the Pacific, such as coastal erosion and sea level rise, scarcity of freshwater and saltwater intrusion, loss of biodiversity, and more, Hawai'i is not classified economically or politically as a SIDS.

Culturally and ethnically, Hawai'i is part of Oceania, the expansive region of the Pacific Ocean comprising four subregions (Australasia, Melanesia, Micronesia, and Polynesia—the latter of which Hawai'i is located within). Hawai'i shares similar historical experiences to other Pacific islands with Western explorers, missionaries, and colonizers leading to the eventual suppression of its indigenous language, culture, and practices, including land and agricultural practices. In their place came a host of new institutions (including educational), new food crops, animals, and diseases, which eventually led to dramatic changes in the physical terrain, demographics, knowledge systems, and more.

Over the past 40 years, Hawai'i has experienced a revival in re-learning indigenous knowledge systems and cultural practices to better understand and address societal issues of the present and future. This movement has created a transformational shift in local mindsets, behaviors, and practices toward the environment. As an example, the restoration of Native Hawaiian fishponds, which are traditional aquaculture systems designed to raise and harvest a sustainable fish supply for coastal communities. There has also been the revitalization of the Native Hawaiian

language through immersion and charter schools in addition to various nonformal education programs.

As the impacts of climate change intensify in Oceania and beyond, educational institutions in Hawai'i, especially at the postsecondary level, can play an important role in ensuring present and future generations have a fighting chance to address these issues. To ensure that this role for postsecondary institutions (PSIs) is culturally responsive and empowering, this case study presents key themes such as *aloha 'aina* (love of land), cultural reciprocity, and the value and power of partnerships, especially with community-based organizations (CBOs), and how these three components can help inform a New Green Learning Agenda (NGLA) in Hawai'i that achieves a just transition rooted in indigenous knowledge and Hawaiian cultural logics. This case study draws from the wisdom and insights of 16 participants¹⁰ affiliated with PSIs on the island of Oahu, Hawai'i.



Key Messages and Findings

Actors, Pathways, and Barriers to Green Learning in Hawai'i

Actors relevant to Hawai'i's just transition education and training ecosystem include academics and educators, policymakers and advocates, members of the for-profit sector (such as business owners, social entrepreneurs, and impact investors), philanthropists, do-gooders, grassroots organizations, nonprofits and CBOs, community members, leaders and champions, cultural practitioners and experts, peers, mentors, as well as several state government and federal agencies established to mitigate climate change, for example, the Climate Change Commission of the City and County of Honolulu's Office of Climate Change, Sustainability and Resiliency. The list is vast, the categories are plenty, and the people are the same—in purpose, mission, and heart. Important to this ecosystem is yet another set of unique stakeholders: *kūpuna* (the "elderly" population), the respected holders of ancestral knowledge and wisdom, and *keiki* or *kamali'i* (children and youth), the courageous voices of today who are shaping the future of tomorrow.

This ecosystem of actors includes both a consistent string of names who are well-known locally and respected in their field of work, study, and influence, as well as leaders, behind-the-scenes actors, and others who are not typically associated with green learning or climate change but who are nonetheless critical to implementing sustainability in these islands. Each of these actors possesses a wide variety of skill sets, experiences, and work history in their professional and personal spheres that constitute the green learning space in Hawai'i. They also wear multiple hats and play multiple roles in groups that overlap to some degree (for example, one person may be the cultural liaison in a CBO while working full-time for a university). Thus, when sharing their experiences, the actors that we spoke to—the participants in this case study—brought with them valuable and unique insights into sustainability, green learning, and climate change, as well as a common orientation of being rooted in culture and 'aina-based learning (more on this, below).

The pathways these actors followed to becoming advocates for sustainability and green learning are varied—some by choice, others by chance, and still others because of environmental injustices committed against their communities. Some participants had to forge their own paths because the traditional route from education to employment in sustainability fields does not provide an obvious or financially viable pathway for all, especially for women, people of color, and those from underrepresented marginalized communities. As noted by one of our participants, the Pacific Islands are no strangers to the world of climate change. Indigenous people in Hawai'i and across Oceania contribute the least to climate change but are among the first on the planet to feel its impact. In addition, the environmental injustices they have encountered to date have led them to have to fight for the protection of sacred land being used for commercial purposes and advocate for water rights and livable wages. These realities are coupled with their lack of access to affordable educational opportunities that provide recognized professional development certifications in climate change and sustainability, thus resulting in higher-paying jobs in the green workforce in Hawai'i being given to job seekers from outside of Hawai'i, despite the green skills and indigenous knowledge they have learned through experience and elsewhere.

For others in this ecosystem of actors, the path was rather serendipitous. This can be illustrated by the examples of two librarians working at separate campuses in the University of Hawai'i (UH) system. Their pathways to their current positions in the just transition education and training ecosystem also give light on just how broad and wide these issues are. Sustainability and green learning are not just the purview of those who work directly on climate change or environmental issues. These issues affect everybody, and a New Green Learning Agenda should empower everyone to take action.

The Tale of Two Librarians

One of our interviewees is a librarian who was born

and raised in the Philippines. She shared that she considers herself a *“community educator,”* a *“bridge for community and academia.”* Her family background and educational training geared her toward a career as a biologist. What she realized over time during her work and educational experiences was that *“biology was destructive and did not make sense to her as a woman of color,”* which she perceived was a real problem with science and Western education overall. She did not agree with how she was being taught about certain topics nor did she believe that *“putting things into boxes”* made sense. In her career journey towards her current role, she gained a deeper understanding of just how interconnected things are, such as *“culture, environment, and biology,”* and that there should be *“newer standards”* in incorporating culture and science in mainstream curriculum development. Overall, she believes Hawai‘i does a very good job of linking culture, science, and the environment, especially with the rise of intentional green learning opportunities for learners from preschool to postsecondary education.

In contrast, another librarian from a community college recalls that she was *“thrown into”* the sustainability world early in her librarian career. She asked the vice chancellor (VC) at the time a simple question, prompted by some of the students who noticed the lack of sustainable practices on the campus: *“Hey, what’s the deal with recycling?”* She received an unexpected response from the VC at the time: *“Congratulations, you are now a part of the Sustainability Committee.”* She shared that although she did not have any formal background in sustainability education and training, nor conventional sustainability-related disciplines such as agriculture, horticulture, biology, or ecology, she now plays a pivotal role on campus as a *“cheerleader for sustainability initiatives and activities.”* She has been the chair of the community college’s sustainability committee for almost 8 years now, a working group of faculty, staff, and students, which has grown and made impactful strides in greening the campus and creating more green learning pathways for climate change and conservation stewardship activities since 2012. Although this librarian thinks she is *“not the most innovative, creative, knowledgeable sustainability professional by a mile,”* she is *“good at banding people together”* and *“really proud of this group and the kinds of things that they have done over the years.”*

Although perhaps they may not be aware of it, individuals like these two librarians—individuals who are not in leadership positions, nor who are expected to be working on these issues—have played a major role in shaping a *“New Green Learning Agenda”* in

the University of Hawai‘i system. These champions are individuals who have adjusted their ways of thinking and approaches to work by infusing local sustainability concepts and personal experiences into their pedagogies and educational activities—such as creating more *‘aina*-based service projects that would help serve community purposes. Oftentimes, these *“champions become cheerleaders”* for the broader campus-wide sustainability mission and faculty end up doing this work as a form of *“service.”*¹¹ And although these sustainability enthusiasts often initiate climate change awareness campaigns and sustainability activities that are specific to their programs and student population on their campuses, these individuals have become a driving force in various efforts to unite university campuses across the Hawai‘i system in adopting green learning. To advance sustainability goals on a collective scale, these sustainability champions and cheerleaders have become a part (informally and formally) of a larger UH system-wide network called the UH Office of Sustainability (UHOS), which promotes and integrates sustainability policies and practices across the various campuses through research, operations, cultural connections, community engagement opportunities, and educational programs. Four of our case study participants knew of each other because of their affiliation within this systemwide network.

Cultural Components as Green Learning Content

Hawai‘i has a rich culture and history—one that is filled with stories tied to the land (*‘aina*) and people (*kanaka*) that not only provide lessons in sustainable reciprocal living for future generations but also hold historical relevance to understanding how Hawai‘i’s cultural history informs a local approach to a just transition for Hawai‘i today. The following examples of cultural components that case study participants have illuminated hold great relevance to, and cannot be separated from, a local approach to green learning.

‘Aina-based Learning

Hawai‘i’s culture is strongly tied to the *‘aina* (land) and the concept of green learning must be understood as grounded in the interconnection between *‘aina* and people. This gets translated into practice as *‘aina*-based (land-based) learning—place-based learning where learners are allowed to practice sustainability through hands-on science, culture, art, politics, and, most importantly, through the eyes and lenses of those who lived on the land before.

The majority, if not all of the participants we spoke with, referred to coexistence between the land and its people and how green learning must be anchored in and guided by this reciprocal relationship of care. An example is the traditional land division of *ahupuaʻa*, which provides a model of living in precolonial Hawaiʻi where land and its resources were stewarded for the benefit of present and future generations. An *ahupuaʻa* is a large pie-slice-shaped subdivision of land from the top of a mountain down to the shore and holds historical, socioeconomic, geologic, and climatic value in which people treated their resources in a way that was sustainable to them and their environment.

Embedded within the *ahupuaʻa* as a model of *ʻaina*-based learning is a fundamental cultural belief that *if you take care of the land, the land will take care of you*. For example, it is the people's *kuleana* (responsibility and privilege) to take care of the land and its resources so that it may continue to thrive and provide sustenance for current and future generations. In the context of green learning and the advancement of a just transition, such *ʻaina*-based learning encourages the adoption of a more socially responsible attitude towards protecting and restoring one's natural resources, and enables a more caring approach to ensuring these resources are there for future generations. In other words, the conditions and state of the social, natural, and physical environment are dependent on how people care for and treat each other.

The Transfer of Indigenous Knowledge

Just as Native Hawaiian and Pacific Island cultures play a key role in shaping the notion of green learning in Hawaiʻi, the generational transfer of indigenous wisdom and ancestral knowledge of how to care for and sustain natural resources through *moʻolelo* (stories), provides further insight into how lessons of the past can be used to take care of the future.

In particular, this practice of knowledge sharing is as much about who is sharing as it is about how and why traditional knowledge is passed on to certain individuals. Some cultural practitioners and community/family leaders are the bearers, vessels, and holders of traditional knowledge. Those who are privileged to be taught Native Hawaiian values, concepts, and practices, are expected to apply them in daily living, and it may or may not be the receiver's *kuleana* (right or responsibility) to share these values, concepts, and practices with others. Often the permission to share and apply this knowledge is based on one's identity and positionality—who you are, who gave you this knowledge

and why, and how you received this knowledge—as well as the intention behind the act of teaching.

The approach to green learning is as important as the content of green learning. For example, there is the concept of *hoʻoponopono*, a Hawaiian practice to “make things right” in a culturally appropriate and accepted way. This ancient Hawaiian practice is a process of making things right in one's relationships, including the relationships one has with one's ancestors, the earth's resources, and especially with oneself. How one handles and manages these relationships in life matters. Because Native Hawaiian knowledge and culture were almost lost, it matters what is being taught and by whom to re-learn this knowledge.

The considerations above help provide some insight into the landscape of cultural assets and cultural nuances which would aid in defining an NGLA in Hawaiʻi. How these cultural components are understood and who needs to be involved to shape the role of PSIs in facilitating a more sustainable and just economy in Hawaiʻi deserves greater exploration. The thoughts, insights, and sentiments shared by our study participants provide a glimpse of how existing efforts and attempts to move toward a greener and more caring economy could be built on the values and cultural tenets of those who have stewarded resources in Hawaiʻi for past generations.

Formalizing Green Learning & Sustainability Education

When it comes to defining approaches to quality education for climate awareness and action, PSIs in Hawaiʻi have started to develop and implement formalized structures to deliver green learning opportunities. Among these are the UH system's sustainability degrees and S-Designation, and Hawaiʻi Pacific University's (HPU) sustainability degree programs. Both approaches aspire to develop a green mindset in the learner, build a breadth of green skills, and target systems transformation in a way that is aligned with the cultural logics of local and indigenous approaches to sustainability as discussed above. The formalization of both approaches within the PSI academic structures and processes serves to create value, status, and certifications around the knowledge, skills, and practices that such green learning enables, especially within the Western context. One approach leaves it up to faculty and students to self-select into these courses, degrees, and programs (UH), while the other approach integrates sustainability

into their general education requirements (HPU). This means that green learning opportunities in the latter are exposed to all undergraduate students as part of their required learning, whereas green learning opportunities in the former appear to be limited to specific spaces in these institutions depending on the student’s chosen area of study.

University of Hawai’i: Sustainability Degrees and the S-Designation

The University of Hawai’i recognizes the need for inter- and trans-disciplinary curricula that prepare a new generation for productive futures in the face of accelerating future trends. Future career pathways include sustainability professionals, resiliency officers, socioecological restoration practitioners, change agents to transform legacy systems, and perhaps even careers in fields that do not yet exist. In addition, students can obtain a degree in sustainability through these new degree programs designed around teaching sustainability as a discipline to prepare students to become change agents equipped with competencies which empower them to work towards transformation of the socioecological systems upon which our societies depend”

University of Hawai’i website

In the UH system, there are three formal “sustainability” degree programs held at the following campuses: (1) the UH Mānoa’s Bachelor of Arts in Sustainability Studies, (2) UH Maui College’s Bachelor of Applied Science in Sustainable Science Management, and (3) UH West Oahu’s Bachelor of Applied Science in Sustainable Community Food Systems. According to the [University of Hawai’i Website](#): “The courses required for the successful completion of these programs educate students about how different dimensions of sustainability relate to and support each other in theory and practice. Sustainability degree programs are interdisciplinary and teach sustainability as an integrated concept, including its cultural, social, economic, and environmental dimensions.” In addition to the three specific degree programs, each of the 10-campus that comprise the UH system (3 universities, 7 community colleges), has offerings on several sustainability topics integrated into their curricula (including General Education courses) across multiple disciplines at the BA, MA, and PhD level. These courses vary in nature and are usually specific to each campus.

A few of our UH case study participants are involved in teaching and conducting research across multiple disciplines. In doing so, they shared having to undergo a lengthy S-Designation approval process (a UH-wide strategic process) to have courses recognized with a sustainability focus, especially if the course is in a different type of discipline that does not fall under the natural sciences. For the S-Designation to be given, the faculty member has to apply every 2 years for renewal and must reflect on how their syllabus and course schedule appropriately integrates sustainability topics and practices in their curriculum and training. One of our participants uses the S-Designation in the introductory Pacific Island Studies and Hawaiian Studies courses he teaches. Although the process is a tedious one, he shared that it is very valuable and necessary as it validated the support he receives from the university, his professional peers, and the community members he works with. The S-Designation makes it “more official” and also gives his courses “power” into his content, such as the power of credibility, recognition, relevance, value, and authenticity. This “power” seemingly also enables conditions to broaden his network and increase the number of students who enroll in his courses, strengthen his teaching practices, and further deepen his impact within the community, especially through his relationships with respected cultural practitioners/leaders.

Interestingly, in contrast to the sentiments expressed above, regarding the development of the S-Designation in UH’s institutional history, one participant shared that it “was a grassroots effort that emphasized faculty-driven and peer-to-peer conversation about courses emphasizing sustainability” and not meant to be a “lengthy process” with “bureaucratic requirements.” Furthermore, as described in the curriculum handbook, the S-Designation was meant to serve as an “opt-in” process that had a ‘talk story intake’ with faculty peers, to encourage interdisciplinary faculty dialogue.” The S-Designation was developed to challenge the university and address the following question: “What is sustainability in your discipline, or course?” The initiative “was the expression of a grassroots, ground-up, transformation of courses across every discipline” and “preceded the Executive Policy 4.202 Systemwide.” The participant further elaborated, “It was the statewide sustainability summits (UH System, and also including Chaminate and Hawai’i Pacific University) that created EP 4.202 through a lengthy, extremely tedious process of input from hundreds of stakeholders.”

In addition to the S-Designation, there are many other activities and initiatives the UH schools engage in that foster specific capacities for skills that are geared towards green jobs and just transitions (innovation, technology, environment management, analytical, data-driven, research, development, research), as well as soft “green” life skills that can be applied across any fields of study (such as empathy, open-mindedness, adaptiveness, collaborative thinking, leadership, resilience). UH campuses also allow for and encourage students to actively design and drive their own sustainability initiatives by providing various structures of support: accelerator and entrepreneurship programs, seed funding, technical assistance, coaching, and more.

Hawai'i Pacific University (HPU) and The Natural + Sustainable World

In contrast to the UH System’s S-Designation of sustainability courses and the systemwide strategic attempt to integrate these courses in an interdisciplinary fashion, the HPU has specific certificate and degree programs at both the undergraduate, graduate, and postgraduate levels tailored towards environmental and sustainability type fields. Their approach is different in that they do not have a broader university-wide effort to incentivize other courses with a “sustainability emphasis,” but rather offer the following options as potential fields of study for each level (Table 1).

One participant shared that in addition to these



Caption: Ho’okua’aina, Lo’i kalo in Kailua, located in the ahupua’a of Kailua at Kapalai in Maunawili on the island of O’ahu, Hawai’i. Photo credit: LorMona Meredith

sustainability and environment-focused programs, students enrolled in the undergraduate general education courses are *required* to take one course offering in the following curriculum areas as part of their first-year common core competencies: The American Experience, Creative Arts, Critical Thinking and Expression, Global Crossroads and Diversity, The Natural World, The Sustainable World, Technology and Innovation, and lastly, Traditions and Movements that Shape the World. Out of the eight available options on this list of offerings for first-year common core competencies, there are two related to sustainability—*The Natural World* and *The Sustainable World*. This can be seen as HPU’s attempt to make sustainability a foundational piece of the student’s undergraduate education experience that would help give them some basic understanding of green learning concepts and skills before advancing to higher-level graduate degrees. However, it should also be noted that out of the long list of eight first-year options, there are only two sustainability-related courses, which means the student’s probability of going into the sustainability field and green learning space is significantly lower.

About 6 years ago one of our participants, who is a social work instructor at HPU, was approached to teach undergraduate courses in social work—with a notable sustainability focus. This was this instructor’s first time getting into the topic of sustainability and was admittedly a big learning curve for him. He went to work right away, did extensive research in reading about the topic, and engaged in conversations with his colleagues and other experts in the field. Since then, he’s been teaching it every semester. He believed the university leadership and faculty had great foresight in strategically building the sustainability aspects of learning as part of the general education required core competency courses for first-year social work students. Every incoming freshman had to take a course in sustainability, the natural world, and the other focus areas listed above, whether they liked it or not. It was an intentional approach to expand the student’s worldview, expose them to interdisciplinary and experiential ways of learning, and also instill core values in these new students for long-term success: to become knowledgeable about social economic, and environmental issues such as environmental justice, climate change, sustainability, critical thinking, natural resource environmental stewardship and more.

In the instructor’s undergraduate Social Work & Sustainability course, he has the students design and undertake a project that touches on the social, economic, and environmental aspects of an issue; then, has them develop an action plan that incorporates

classroom learning into real-life applications. He also encourages the students to identify and work with an agency or community group that addresses this issue, as well as tie in their projects into meeting one or more of the 17 United Nations Sustainable Development Goals (SDGs). An example of a student-developed project that he proudly shared was one on the issue of food waste in Hawai'i. His students wanted to raise awareness of finding more sustainable ways to use food waste within the tourism and hospitality industry, specifically with large restaurants. The students partnered with nonprofit organizations to learn how to deal with food waste and went to work in the *lo'i* (taro patch) and *loko 'ia* (fishpond) to get hands-on experiences for farm-to-table and fish-to-table sustainable practices, which they later shared with the restaurants they were involved with. They also worked closely with grassroots organizations that other study participants mentioned in their partnerships as well, such as *Papahana Kuaola* and *Ma'o Farms*.

Cultural Reciprocity and PSI Systems

A key finding in this case study is this notion of "cultural reciprocity" and its value in the PSI systems, which involves recognizing and valuing the contributions of others engaging in a reciprocal learning process. In general, there is almost a natural reciprocity in the way green learning and sustainability concepts are being taught and practiced in Hawai'i. In particular, this reciprocity is shown by the respectful and equitable exchange of knowledge, traditions, and practices between indigenous people and communities in this space. This exchange has natural or assumed expectations in everyday interactions in nonformal settings, which often promotes cooperation, trust, loyalty, and unity amongst individuals and groups. There is incredible value in reciprocal relationships and how these actors nurture, strengthen, and maintain their networks.

There is also cultural reciprocity in the communities that offer "spaces" for green learning and sustainability

concepts to be applied when university instructors create and expose their students to these community spaces. However, it appears that there is no formal recognition and/or additional compensation for the extra time and resources faculty spend in offering these unique learning opportunities to their students. For example, one of our non-Native Hawaiian study participants observed that it takes "a lot more time and effort to take your class to the *lo'i* (fishpond) than to deliver a PowerPoint" and that "there's a lot more relationship-building to create the places to meet with cultural practitioners. Cultural work requires gift-giving and meal-sharing. Gifts take time. Food costs money. None of that is compensated, rewarded, or even acknowledged. Faculty spend their own money and their weekends to make this happen. Reciprocity is not at all convenient to any kind of reimbursement report or program budget." As an "outsider" who has observed this long-time occurrence, this participant recognizes the significance of this cultural work, the number of hours, and amount of work it takes to provide this type of community-driven training in a higher education system. They also recognize its impact on the time, energy, and resources of the faculty who deliver it (mostly exemplary Native Hawaiians who go above and beyond).

In addition to this, this participant also recognizes there are genealogies related to these places in which 'aina-based learning is being taught. The participant further illustrates in this example when "a person who wants to do research, or a class project, or anything that might be a really great thing, needs to be in a relationship" with "the people with genealogies to the place. There's a different timeline. It's not always convenient to the class schedule or the semester timeline."

The Value of 'Aina-Based Learning in CBOs

As mentioned earlier, most of the interviewees wear multiple hats, not only working in a professional capacity within a PSI, but also being involved with a variety of nonprofit and community-based organizations and initiatives, especially those that

Table 2. HPU Certificate and Degree Program

GRADUATE/PROFESSIONAL CERTIFICATES	BACHELOR DEGREE PROGRAMS	MASTER'S DEGREE PROGRAMS
<ul style="list-style-type: none"> Local Leadership & Sustainability Development Environment, Policy & Leadership 	<ul style="list-style-type: none"> Bachelor of Science in Environmental Science Bachelor of Arts in Environmental Studies 	<ul style="list-style-type: none"> Master of Arts in Sustainability



Caption: Hale in Ala Kukui Cultural Retreat Center, Hana, Island of Maui, Hawai'i. Photo credit: LorMona Meredith

promote and provide 'aina-based learning and experiential learning opportunities, either through partnership work, part of their leadership board, or through volunteer and advocacy support work.

Most of these partnerships stemmed directly from the individual's direct relationship (either personal or professional) with a community member, and provided a way for the PSI to engage with the grassroots entities at the local level, thus creating opportunities for students to participate in hands-on learning and skills development activities that were both meaningful and transformational. For instance, a few of the college instructors had solid relationships with notable organizations which afforded their students direct access to internship and practicum opportunities, while in turn also giving community service and benefits back to the natural environment. These included natural farming, learning about agriculture sustainably, engaging in community work days in the fishpond, and more.

The CBOs are usually more inclined to engage university students in their programming and service-learning if they had a direct relationship with their faculty instructor/coordinator, one that was built on trust and reciprocity. Making and building relationships this way is usually much more effective in this space if it was initiated by someone who is familiar with and has a great rapport with the CBO. The students were also encouraged to forge their own way of identifying other CBOs they were interested in working with that were

outside of the options provided. In these cases, they would be encouraged to identify potential connections the CBO had within the faculty and community that would help make this relationship possible.

One widely known organization in Hawai'i that has been highly successful in making a deep impact in aligning green learning and service-learning opportunities through collaboration across all sectors is Kupu. As a relatively young organization (established in 2007), Kupu has done a marvelous job in developing partnerships with PSIs, CBOs, businesses, and a variety of other local and nationwide initiatives. Kupu is a nonprofit organization aimed at empowering youth to build character, leadership capacity, and environmental stewardship mindset through service-learning opportunities. Since its inception, they have partnered with over 100 local schools, colleges, nonprofit, and profit organizations, community networks, and social enterprises.

Kupu's impressive partnership list continues to grow as its reach expands and deepens with its innovative environmental training programs. Kupu's organizational values are reflected in the CHOSEN acronym, which stands for Character, Humility, 'Ohana, Service, Excellence, and Nobility. These values appear to be integrated into their recruitment strategies, operations, services, and programming. Compared to other organizations, perhaps the significant difference here is that Kupu has made successful strides in the process of how they built their partnerships with postsecondary institutions and other organizations, established the foundation of these collaborative relationships with mutual respect, and grounded them in trust and integrity. Through its programs, Kupu *"works in intermediate and high schools to provide work-based and 'aina-based learning directly to students; provides out-of-school opportunities for 6-12th graders; offers professional development to educators; and works in partnership to provide strategic support at the school, district, and DOE-level"* (Kupu Website). Kupu continues to leverage opportunities in the community for systemic transformation, while at the same time providing community benefits, which includes developing and empowering a locally grown green workforce through their youth and young adult participants.

For example, Kupu recently launched their Natural Resource Sector Partnership (NRSP) led by their Environmental Education Department (EED), which, according to one of our study participants, is a collaboration platform to convene together

Hawai'i's educators as well as people who work in and support the natural resources management and conservation fields. The purpose of this group is to discuss and address systemic issues in natural resource management, particularly the lack of green job development opportunities in Hawai'i, and provide creative innovative solutions that work.

The overarching goal of the NRSP collaborative partnership is to develop a homegrown natural resources workforce to prevent the recurring "brain drain" phenomenon (where people leave Hawai'i to gain green skills education and work skills elsewhere and end up living in those places outside of Hawai'i). The group is fairly new, but the goal is not, and perhaps through this coordinated ambitious effort there can be more of a realization of creating a just economy and a more "green-skilled" local workforce that would be better equipped to handle climate change and environmental issues in the Hawai'i of today.

In summary, the process of building partnerships with PSIs and CBOs is important (whether formal or informal) as it is a key driver of enabling an NGLA in Hawai'i. Through the specific examples given, we understand that: (1) PSI faculty members engage in informal and formal partnerships with CBOs to support community-driven initiatives while at the same time giving students meaningful service-learning opportunities that expand on their green training/training in the classrooms, and (2) nonprofit organizations and CBOs (such as Kupu) can provide alternative pathways to service learning opportunities that are sometimes not available to students through their PSIs, especially if their faculty/instructor does not have direct relationships with the community involved.

Power: Who Has It and What Impact Does It Have on the Implementation of an NGLA?

Inherent in the way that green learning takes shape at the postsecondary level in Hawai'i is the dynamic giving and taking of *power*. The imbalances of power underlie the tensions within the green learning ecosystem amongst all actors—between the PSIs and CBOs and even within the PSIs themselves. Whereas power is rooted in *aloha 'aina* (love for the land), *aloha*, and service appear to empower a green learning agenda that is regenerative, sustainable, and nourishing. While a struggle *for* power and struggle *with* power is inevitable, our participants highlight the importance of being aware of the existence of power and its impact within the world of climate change, sustainability,

and green learning. It would be wise to recognize the influence of power and how it plays in enabling an NGLA, through power imbalance or power abundance.

Imbalances of power as shared by our participants in this study were experienced either personally through their work or the system within their workspaces. For example, this can be seen through the examples of the UH participant seeking power validation for his courses through the S-Designation, or via the HPU social work instructor's power given to him through assignment by his leadership to redesign his course with a sustainability focus. It can also be seen in the tale of the two librarians, where they shared respectively that they felt empowered to lead a sustainability initiative when they were tasked with a project by their campus leadership. In these examples, we notice that power is significant in making things happen by giving permission to act and do, leading and supporting sustainability initiatives, recognizing and validating courses taught within the green learning fields, and building rapport and relationships, especially when working with communities.

Our participants also observed the limits of their own power, in their ability to influence others and influence outcomes within their programs. For example, some of our UH-affiliated participants recognize the power that institutional systems have on faculty, and how this power can shift from one group of actors to the next. For example, as in the case of the S-Designation initiative, when it was initially established by the faculty at a grass-roots level, it was a strategy to foster open dialogue and collaboration across disciplines and campuses, giving faculty the power over the decisionmaking process on how their sustainability courses were implemented. Now that the S-Designation initiative has been adopted as part of the institution's executive policy, it appears that power has shifted from this faculty group to the institution, making faculty members work extra steps to get their courses recognized with a sustainability focus after going through a tedious approval process.

Yet, the power was not always discussed as an imbalance between entities (between people or institutions) but as something in abundance and rooted in *aina*, *aloha*, and service to others.

For example, one of our university participants described that her role as a "Hawaiian Epistemologist" is to "indigenize the university". She sees sustainability as an area of study in her life—an idea that has "*always been about love of land*" and "*serve people*."

She mentions her work in philosophy as “specifically indigenous epistemology,” which is about healing that can happen “between knowledge and service to land.” In her own words, “to summarize Hawaiian epistemology, it’s to love land, serve people. And I think the concept of sustainability is that simultaneously to love lands with people. And it’s a hologram because it is actually also to serve land, love people.” From this concept, we learn that by living the principle of aloha and aloha ‘aina (love for the land), we can calibrate these power imbalances for ourselves and our communities. This is about giving our own people the power to liberate themselves, through this knowledge of aloha (love) and service. This power is energized and sourced by this very simple concept in Hawaiian epistemology: to love land and serve people.



Caption: Aloha circle at Kōkua Kalihi Valley Ho‘oulu ‘Āina mālama ‘āina community work day. Photo credit: Crivir Ivey Cruz

Recommendations

This case study offers many insights into how local green learning actors attempt to align green learning with opportunities that include leveraging systems, structures, and partnerships to build a framework that contributes to systems transformation. For example, with HPU, the university leadership strategically planned to include green learning and green skills development in their core program offerings by making it a requirement in their general education courses. In other cases, local actors leveraged current systems of formal and informal relationships and networks within communities to advance green learning opportunities that translate into locally relevant green workforce opportunities that serve community needs, such as when the college instructors partnered with CBOs to provide *‘aina*-based learning activities and when Kupu launched their Natural Resource Partnership initiative. These types of strategic moves provide green learning stakeholders with opportunities to create, enable and sustain just transitions—where people are empowered to live, learn, work, and thrive in the places and spaces they grew up in while ensuring these places are available and can sustain future generations with the same, if not better, quality of life.

We only began to touch the tip of the iceberg in terms of gathering insights from education and community leaders that could inform a New Green Learning Agenda for the Hawaiian islands. Many community voices that are central to this conversation were not included in this initial study due to time constraints and limitations in capacity. There is a lot more to unpack, and we hope that these initial findings can give light on what is currently happening and be a valuable source in our efforts to deepen and broaden our understanding of a New Green Learning Agenda in Hawai‘i.

What surfaced at this moment in time are the following recommendations to aid postsecondary institutions in Hawai‘i to co-define an NGLA that is rooted in local understandings, promotes the diverse unique cultural assets of Hawai‘i, and addresses longstanding power imbalances for a more just island future:

1. **Harness the value, power, and strength of community-based organizations across the Hawaiian islands:**
 - a. Target outreach to respected community leaders across disciplines, organizations, and fields through appropriate culturally informed ways.
 - b. Invite and include additional voices across the other islands of Hawai‘i to integrate varied perspectives and unique island contexts.
 - c. Develop a robust map of organizations that currently do this work in Hawai‘i and research what they do and provide ideas of entryway for NGLA to advance/support ongoing work, rather than reinvent the wheel. Leverage existing synergies and fill the gaps to avoid redundancies and maximize partnership opportunities.
 - d. Identify and create strategic pathways that place the community at the forefront of the relationship when building partnerships—doing so creates and retains trust for a more positive and long-lasting deep relationship.
2. **Expand on existing initiatives and invest more resources in community colleges:**
 - a. Providing more access to resources to help to build capacity and infrastructure.
 - b. Creating and implementing innovative relevant programs through partnerships with CBOs that not only address climate change and environmental issues in their learning outcomes but also are specifically developed for the people who live and work in Hawai‘i.
 - c. Increasing vocational training opportunities and strengthening pipelines for the community college sustainability programs into university and the professional sectors.

3. Create, utilize, leverage, and maximize strong partnership and collaborative action to develop the following tools and opportunities:

- a. Use a comprehensive data and metric system that explores green learning and green skills development across various PSIs in Hawai'i, like Unbounded Associates Green Learning Opportunities Database.
- b. Explore other innovative ways to engage with the for-profit sector (specifically businesses in the tourism and hospitality industry for example) and partner with the emerging "fourth" sector, those unique but impactful for-benefit enterprises that are mission- and purpose-driven, which incorporate private sector approaches with social and environmental benefits typical of public and nonprofit organizations. This would include sustainable for-profit businesses, faith-based organizations, co-ops, social enterprises, and more.
- c. Create a smoother transition pathway from education to employment that not only values and celebrates culture, social equity, and gender equality but also enables conditions for a just transition. This includes providing more information on training programs, skills development, job opportunities, internships, and more.

4. Recognize, embrace, and elevate the voice of women, people of color, and other underrepresented groups, especially within the Pacific diaspora:

- a. Make a seat for everyone at the table—enabling fair, just, and equitable conditions for everyone to feel included in the discussions and decisionmaking processes.
- b. Identify solutions that enable and empower women and underrepresented groups to engage in and seek employment opportunities within the green sector, for example, expanding on the efforts of building a locally grown workforce tailored for jobs in conservation and natural resource management such as through Kupu's NRSP initiative and offering compensation benefits that cover caretaking and other livelihood responsibilities that pose as barriers to green learning and green employment.
- c. Allow the ideas and contributions of underrepresented voices to germinate and flourish without judgment and ridicule.

Conclusion

In conclusion, we recognize that as the impacts of climate change evolve and continue to change the livelihood of our people, our ways of thinking, learning, and adapting to this phenomenon must also evolve. We recognize the incredible value and the important role postsecondary institutions in Hawai'i have in ensuring that present and future generations have a fighting chance to address issues surrounding climate change, green learning, sustainability, and environmental injustices.

As evident from the collective voices and insights shared by our case study participants, the critical role PSIs play is to be a culturally responsive and empowering entity that would help enable conditions for achieving a just transition. The key themes that emerged from this case study: *aloha 'aina* (love of land), cultural reciprocity, and the value and power of partnerships with CBOs are consistent factors in helping to inform and shape a New Green Learning Agenda in Hawai'i, especially one that achieves a just transition rooted in the indigenous knowledge and Hawaiian cultural logics.

Hawai'i's historical experience with environmental racism, its geographic vulnerabilities to climate change, and its cultural landscape of green learning approaches offer a unique perspective to defining a New Green Learning Agenda for postsecondary institutions in Oceania that is rooted in and empowered by indigenous knowledge and local practices around the stewardship of natural resources and the land.

Furthermore, Hawai'i's location both in Oceania and the U.S. offers postsecondary institutions (PSIs) significant opportunities to drive a just transition in the U.S. that cultivates relationships with Pacific SIDS, while addressing environmental and climate injustices in U.S.-Pacific regional affairs. By centering and amplifying the voices of Native Hawaiians, Pacific Islanders, and other historically marginalized populations in Hawai'i, efforts to define a new green learning agenda in Hawai'i will be rooted in local cultural logics for climate justice.



CASE STUDY 2

Green Justice for Chicago: A Community-Based Approach to a New Green Learning Agenda

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Introduction

For the past few decades, community leaders, allies, and some governmental officials throughout the Chicagoland area have fought to address environmental injustice within communities of color. Fighting for clean air and green space in the name of combatting environmental racism and community disinvestment, neighborhoods throughout the city and in some suburban areas have slowly begun to see improvements. But there are continued battles and ongoing environmental injustices that have resulted in racialized violence, the perpetuation of anti-immigrant and white supremacist policies, and actions targeting communities of color.

I think that if universities want to be part of the just transition, they need to have radical standards for how they're going to get to just transition. And they need to be able to name themselves as responsible and take action steps.

Alma, Little Village Environmental Justice Organization [LVEJO]
Focus Group, 08/15/2022

In these battles, the historic lack of engagement by universities and community colleges adds to the disadvantages these communities face. If Chicago is to achieve a just transition, it must solve the systematic racism entrenched in urban planning, policy, and city investments—and not just as they relate to education and training. Postsecondary institutions ought to play a transformative role in engaging communities, strengthening transformative skills to tackle environmental racism, and enabling advocacy across the city and nearing suburbs, and promoting green learning opportunities that build a breadth of green skills, including those to tackle systemic discrimination. The relationship between postsecondary institutions and communities of color in Chicago is even more critical as greater attention to environmental justice and the pursuit of a just transition by federal and state policy has created more incentives for collaboration and partnership.

In this case study, for postsecondary institutions, we attempt to shed light on the social, political, and

economic dynamics that must be accounted for in any attempt to define or implement a New Green Learning Agenda in Chicago that advances a just transition. Through the course of 6 months, our Chicago research team, Green Justice for Chicago (GJ4C), worked collectively to identify common narratives of key community stakeholders when it comes to the cost of neglecting the intersectionality of green learning and historic environmental injustice. Through individual and focus group interviews, we documented the experiences and educational recommendations of local community organizations, entrepreneurs, community leaders, and alumni of a solar certification program, to capture how educational institutions can better serve communities of color in support of a just transition and environmental justice.

This case study focuses on three Chicago communities and one surrounding suburb. The following narrative captures the ways in which community stakeholders talk about systemic racism, unethical leadership, and the way community-based organizations (CBOs) have filled critical gaps in green learning opportunities impacting their neighborhoods. Based on these insights, we then provide three community demands that, if acted upon, could help postsecondary institutions better support a New Green Learning Agenda in Chicago.

Context

Our study took place in four communities of color within the Chicagoland area's 77 official communities and a nearing suburb: The South East Side of Chicago; West Humboldt Park; and the Little Village Neighborhood, also known as South Lawndale and La Villita; Dolton, Illinois.

The map shows the outline of the Chicagoland area. Four specific regions are highlighted in dark blue and labeled with arrows: WEST HUMBOLDT PARK (northwest), LITTLE VILLAGE (west), THE SOUTH EAST SIDE (east), and DOLTON (southwest).

The South East Side of Chicago

The South East Side of Chicago is located 13 miles south of downtown Chicago between the Calumet River and the Illinois-Indiana state line. The neighborhood has a park on Lake Michigan, Calumet Park, and a forest, Eggers Grove Forest Preserve. The South East Side neighborhood also holds an industrial corridor that houses factories that produce pollution, emissions, and other contaminants that affect the residents in various ways. Over 75% of the population of the South East Side of Chicago is Latinx, and only 30% of the population has some postsecondary education (Table 3).¹²

Table 3. Demographics for The South East Side of Chicago

DEMOGRAPHICS	TOTAL
Population:	41,422
Latinx	75.8%
White	12.6%
Black or African American	4.8%
Asian American	1.6%
Other	5%
MEDIAN AGE	41
Educational Attainment:	
Less than high school (HS)	53%
HS Graduate	10%
Some College	10%
Bachelor Degree	15%
Graduate Degree	5%
MEDIAN HOUSEHOLD INCOME	\$51,256

West Humboldt

West Humboldt is the area west of Sacramento Boulevard.¹³ Many residents have low incomes and are working class. Historically, residents and property owners in West Humboldt Park are known for organizing to address problems and enhance the livability of the area. In 1995, they incorporated The United Blocks of West Humboldt Park (TUBOWHP) to a) establish and maintain an open line of communication with government agencies and other neighborhoods, and b) provide an open process by which all residents may involve themselves in the affairs of the neighborhood. Approximately 75% of the population is either Black or African American or Latinx, and 45% of residents have some postsecondary education¹⁴ (Table 4).

Table 4. Demographics for West Humboldt

DEMOGRAPHICS	TOTAL
Population:	79,704
Latinx	→ 51.8%
Black or African American	→ 25%
White	→ 8.9%
Native Hawaiian and Other Pacific Islander	→ 2.1%
Asian American	→ 1.7%
Other	→ 6.9%
MEDIAN AGE	33
Educational Attainment:	
Less than HS	→ 40%
HS or equivalent	→ 10%
Some College	→ 15%
Associate Degree	→ 5%
Bachelor Degree	→ 10%
Master Degree	→ 5%
Professional or Doctorate Degree	→ 10%
MEDIAN HOUSEHOLD INCOME	\$42,735

Little Village

Little Village, or *La Villita*, is located in South Lawndale and has a long history of the community asserting its voice. For example, in 2001, mothers and other community members came together in a hunger strike at Camp Cesar Chavez¹⁵ to demand a new high school, fighting until leaders agreed to build the Little Village Lawndale High School in 2005. In 2012, the Crawford Coal Plant, which had been in operation since 1924 and the source of pollution (along with other nearby industrial factories), was successfully shut down after nearly 20 years of community organizing efforts.

Table 5. Demographics for Little Village

DEMOGRAPHICS	TOTAL
Population:	71,399
Latinx	→ 80.8%
Black or African American	→ 13%
White	→ 5.5%
Asian American	→ 4%
Other	→ 3%
MEDIAN AGE	30
Educational Attainment:	
Less than HS	→ 41%
HS or equivalent	→ 32.6%
Some College	→ 12.2%
Associate Degree	→ 3.4%
Bachelor Degree	→ 8.4%
Professional or Doctorate Degree	→ 2.4%
MEDIAN HOUSEHOLD INCOME	\$33,612

However, the plant was soon replaced by a warehouse purchased by Hilco Global, then leased to Target which brought hundreds of diesel-fuel trucks to the neighborhood a day, contaminating the air from a different source of pollution. Today, Latinx represent 80% of the population, with Mexicans as the dominant ethnic group, many of whom identify as working-class laborers.¹⁶ *La Villita* is also home to the largest single-site county jail in the nation, currently housing over 5,000 male (92.7%) and female (7.0%) inmates.¹⁷ Of these, 73.7% are reported to be Black or African American and 15.7% Latinx. Just over 25% of the population has some postsecondary education (Table 5).

Dolton

Dolton, earlier known as Dolton Station, is a village in Cook County. It has historically been known as the agricultural center of Chicago, producing potatoes, asparagus, cabbage, onions, sugar beets, eggplants, and lima beans.¹⁸ Today, Dolton is a suburb of Chicago, located just west of the Interstate 94 expressway and immediately south of the city limits. Approximately 92% of Dolton’s population is Black or African American and more than 52% of the population has had some postsecondary education (Table 6).¹⁹

Table 6. Demographics for Dolton

DEMOGRAPHICS	TOTAL
Population:	21,080
Black or African American	→ 92.1%
Asian American	→ 23%
White	→ 5.2%
Other	→ 8%
MEDIAN AGE	36.7
Educational Attainment:	
Less than HS	→ 1.8%
HS Graduate	→ 28%
Some College	→ 34.5%
Bachelor Degree	→ 12.1%
Graduate Degree	→ 6.1%
MEDIAN HOUSEHOLD INCOME	\$50,237



Key Findings

As postsecondary institutions consider how they might implement a new green learning agenda in Chicago, stakeholders must respond to the unique social and economic challenges communities are facing with climate change, environmental racism, and a lack of green learning opportunities for a just transition. We identified narratives around systemic discrimination, unethical leadership and accountable businesses, and unsustainable educational programs, and highlighted how community stakeholders talk about the impacts of each on their neighborhoods.

Race and Racism: Drivers Behind Disinvestment in Chicago's Communities of Color

Historically and across the country, Chicago is known to be one of the most segregated cities in the United States. Over the last century, political and cultural forces have created clear lines of division between racial groups. Through these boundaries, racism is evident in communities of color. Its members are aware of the impact this has on how the city has financially disinvested in communities based on race and proximity to the downtown area. For example, Efrem from Blocks Together, a social and welfare organization located in the West Humboldt Park neighborhood, expressed his concerns about the historical, economic, and educational differences between Black and white communities in Chicago.²⁰

Reflecting on his experiences as a Black man living in a predominantly Black community, he argues about how racism and white supremacist ideology dictate the ways their communities experience disinvestment, materializing as a lack of resources to support the improvement of their living conditions.

Now that shit [food] got pesticide, you don't know where it came from. Resources [housing, jobs, health care, education] cut, and the ones that's left [... are] the leftover resources. I've never thought

about it, how fucked up left over resource [are,] but it's the shit that they don't want.

Efren, Blocks Together, 08/04/2022

In calling out the way that resources are not equally distributed to communities of color, Efren points out deeply held feelings of animosity and injustice as well as an acute sense of social division and exclusion. If postsecondary institutions are committed to a just transition, then they must acknowledge and address the deep history of inequities of housing discrimination, food insecurity, joblessness, and underresourced schools across Chicago's neighborhoods.

Chicago Policies and Politicians: Extractive Relationships Between Government, Private Sector, and Communities of Color

A second emerging theme focuses on the history of experiences with unethical leadership, both at the corporate level and in particular with Chicago elected leaders. This focus has given participants a strong sense of conviction that there must be stringent policies to hold politicians and other officials accountable for the environmental health and well-being of its residents. For example, Luis from the Little Village Environmental Justice Organization (LVEJO) expressed concern about the environmental injustices that continue to be produced by large corporations and the rise in health concerns in his neighborhood.

Believe it or not, there's a lot of these companies are causing the people in my neighborhood [to] suffer from cancer, asthma, and heart disease. As a matter of fact, my neighborhood has one of the highest child asthma rates in the whole city, which is no surprise, given that 40% of land is dedicated to industry. It's crazy too that right next to the Unilever company, which is a huge manufacturing company that distributes throughout the Midwest region, or

even throughout the nation—it's literally next door to Zapata Elementary.

Luis, LVEJO, 07/28/2022

Luis pointed to the ways in which large corporations settle in communities of color and willingly contribute to producing harmful pollutants.

Participants also spoke about how particular policies have been leveraged to create equitable metrics for investing in the community and also to empower the community to hold politicians accountable. For example, Karla from Blocks Together and Valentina from South East Environmental Task Force (SETF) spoke about how policies impact how city politicians determine and influence decisions made, all while helping community members understand disparities and the impact policies hold for neighborhoods.

Karla argued around the significance of budgeting and understanding the impact financial contributions have on whether or not communities can thrive. Community members need to understand how the city operates.

The more people understand how money works, and, how cities and departments operate, the more they begin to understand how the city prioritizes [decisions.] Shit, they can't lie to you, right? 'Cause numbers don't lie. So, you're gonna tell me youth matters, and you fucking only put \$50,000 in the city budget on youth development? What the fuck you talking to? That [investment] doesn't show me that right? So, at the core [what we want is for people to] understand numbers, understand budgets, and understand who dictates how this stuff moves.

Karla, Blocks Together, 08/26/2022

Furthermore, Valentina explores the possibility of creating equitable policies that impact how zoning ordinances are approved or denied in neighborhoods of color.

So, if I were mayor, I would um, create some equity [around] land use and zoning policies. [...] We don't need to be holding sulfuric acid here. We're making tons of concrete because they're building these massive skyscrapers in the west loop. If they want all these super expensive state-of-the-art things in the west loop, then they're gonna get a cement factory over there right next to them. Why does it have to be halfway across the city in this really poor community?

Valentina, SETF, 07/28/2022

Valentina's account of how she would advance political change through policy stands in stark contrast to that of elected leaders and business leaders. And Karla's account of city financial decisions demonstrates what seems to be most concerning for residents. That is, leaders, especially politicians, who may purport to have the best interest of the community at heart, cannot be trusted. And because of these repeated betrayals, suspicion towards good intentions must be held as there may be an ulterior motive that is not always obvious. During a focus group interview with LVEJO, Gabriela conveys her disappointment after discovering that city mayor Rahm Emanuel, who helped LVEJO close the Crawford Coal Plant, lied to the community about his interest in dismantling the coal plant. He had not disclosed accepting money from the corporation, Hilco Global, which eventually purchased the plant in *La Villita*.

Before he was even elected, Rahm Emanuel actually got money from Hilco. And so, then it made me think, well, why did Rahm Emanuel help us shut down the coal power plant? He had already gotten money from Hilco. So, that deal had probably already been in the works since before Rahm Emanuel was in office. It makes me really angry to think about the hold that corporations have on politicians. [...] We were thankful for the fact that this mayor was helping us advocate to shut down the coal power plant. But what was his agenda? I don't think we knew that he had accepted money until years after we started digging into the Hilco stuff. And so, I think we probably wouldn't have been so welcoming of Rahm Emanuel had we known that he had gotten money for that same site.

Gabriela, LVEJO Focus Group, 08/15/2022

This example illustrates how a politician and business used a critical environmental issue (shutting down a polluting coal plant in *La Villita*) for their own benefit and financial gain. But adding salt to injury, the new occupant of the coal plant has refused to honor the voice and autonomy of residents and community leaders who fought to close the former occupant. Gabriela goes on to share additional information about Hilco's leadership position in the Chicago Police Foundation and how this further entrenches a system of harmful practices by corporate leaders and politicians that sustains an extractive economy, low-wage jobs, and unhealthy neighborhood conditions, making a just transition impossible.



Caption: Former Crawford coal plant in Chicago.
Photo credit: Miguel A. Saucedo

The fact that the CEO of Hilco is also the director of the Chicago Police Foundation [means] we're adding this whole other layer of policing, right? The police already have 40% of our city's budget held hostage. We have no fucking resources. We don't have a community center here in our community, but we bring the second-highest tax revenue to the city. That's extraction, right? That's obviously what we're trying to move away from when we're thinking about just transition. [It] is moving from the extractive economy in which we're in right now to a regenerative economy where we're not only thinking about our money, we're thinking [of] a person as a whole. That's how I see it. That's how I view it.

Of course, te quiero conseguir un trabajo [I want to get you a job]. Of course, I want you to work, but does your job [at Hilco] pay you above living wage? Do you have health insurance? Are you going to be cool if you have a kid that gets sick? Can you leave, [or] are [you] gonna have to find a new job? And thinking about the person as a whole and thinking about the community as a whole too—what Hilco and a lot of these corporations have been doing has been complete bullshit at the cost of our health, at the cost of having no type of development, at the cost of having Cook County Jail, and not have a community resource center.

Gabriela, LVEJO Focus Group, 08/15/2022

Environmental Justice: Holding Health and Wellbeing at the Center of a Just Transition

The pursuit of a just transition in Chicago—and therefore any approach to green learning that postsecondary institutions might pursue—must include that institutions have knowledge of and be fully willing to understand the city's history of racial geographic segregation, housing, and environmental injustices. They need to know the negative impacts of these racial and geographic disparities on the people in these communities.

Impact on health disparities

Raul and Luis from LVEJO describe how geographic discrepancies translate into health discrepancies through environmental racism, putting into perspective how the pursuit of a holistic just transition is entwined with the pursuit of environmental justice.

Environmental racism occurs through the use of zoning in urban planning to place toxic facilities in communities of color, disproportionately impacting communities of color across the country. It also historically goes back to the original colonization of the Americas and the destruction and degradation of indigenous environments.

Raul, LVEJO, 07/29/2022

Environmental justice means being allowed to breathe in good air, and being in a space where your health is not being jeopardized, especially in Black and Brown communities. That's something we don't really have. We suffer from a lot of air pollution, bad water quality, and it's awful.

Luis, LVEJO, 07/28/2022

Sofia, a staff member from LVEJO, shared her vision for supporting environmental justice campaigns. According to Sofia:

LVEJO has been a part of the cleanup right where La Villita Park is now, a formally known Superfund site that not only was causing a lot of air quality concerns but also urban flooding concerns, [which] were a public health risk because a lot of those neighbors were highlighting that they were having rashes in their arms and their feet and their legs, based on

the sewage that was being brought back up to their homes. [...] Another legacy campaign would be the shutting down of the Crawford and Fisk coal plant. That was a 10-year campaign that highlighted the vast amounts of neighbors that we've lost both in Little Village and in Pilsen to premature deaths because of the coal ash being emitted.

Sofia, LVEJO Focus Group, 08/15/2022

Carlos, an LVEJO alumni, points out how simply cleaning the streets and having green space is symbolic of what all communities across Chicago deserve.

And right away something as simple as that [cleaning the streets and creating green space], is only every day deeply appreciated by the communities that we do these projects because they can see that we're trying to clean up and make the area better. And that just creates a domino effect where people just feel better around seeing green spaces. Southwest and South and Southeast communities deserve as much as the North side does and the North Shore.

Carlos, LVEJO Alumni, 07/14/2022

Impact on zoning and economic disparities

As a continuation of the ways in which the northern and southern parts of the city present significant divides, including disinvestment in small business, housing, and green space, community members like Valentina discussed how the process of gentrification, aided by zoning policies, have contributed to the co-location of less affluent communities and polluting industries.

And on the map, you can see on the south and north side of Chicago that all those neighborhoods that are Black and Brown are dominated by industry, crusher scrap yards, and hazardous waste. And that's not a coincidence. The city laws and rules and policies influenced that. And so, you see communities like Lincoln Park getting zoned back in the day for industry very similar to the southeast side.

And you see as more investments are getting put into place, as the community is getting gentrified and whiter, that the city will overnight, under [the guise of] laws [and] administration, [begin to] zone those neighborhoods. And where did the

industries go? They concentrate them on the south and [less affluent] north side of Chicago.

Valentina, SETF, 07/28/2022

Residents are acutely aware of gentrification pushes investment and resources—in this case, symbolized as green spaces and skyscrapers—into wealthier communities in the city while locating investments into polluting and hazardous industries in communities of color. Ernesto a Solar Alumni and Brayton from Blocks Together describe this phenomenon even further.

Those [the factory on Pulaski] are our skyscrapers. Those are like the landmark where you know where your neighborhood starts and where your neighborhood ends. So, it starts on California [Avenue] and it ends at Pulaski [Road]. That smokestack would let you know, hey you're already in a different neighborhood.

Ernesto, Solar Alumni, 08/07/2022

Like we got pollution, we got like a lot of abandoned buildings, a lot of empty spaces.

Brayton, Blocks Together Focus Group, 08/04/2022

Given the historic legacy of environmental racism among communities of color in Chicago, any pursuit of a just transition must be pursued simultaneously with environmental justice. In this context, opportunities for green learning are as important as opportunities for community well-being and health.

Economic disinvestment not only impacts the health of communities of color and their surrounding natural environments, but it also impacts “who” has access to postsecondary education and training opportunities for the green economy. Census data shows how within the more affluent northern parts of Chicago, there is more access to higher educational attainment compared to demographics reported on the less affluent southside of the city.

Furthermore, residents within the communities of this case study expressed the visible differences between the North and South neighborhoods of Chicago and how these differences are symbolic of being left behind or excluded from access to resources, including those within postsecondary institutions.

Community-Based Organizations: A Key Actor in a Just Transition Education and Training Ecosystem

The cost of neglecting green learning in the coming years will translate into the further stratification of the green workforce into high-paying jobs versus cheap labor. The testimonies from community residents, alumni from solar training programs, and leaders of CBOs demonstrate the need to fight for resources and investment to advance green learning campaigns, programming, and services to train residents of low-income and communities of color in green jobs. In this regard, participants shared the need for workforce development agencies and postsecondary institutions to partner with and fund CBOs to implement education and training programs in communities of color throughout Chicago to prevent the further economic exclusion of their residents. This is especially the case for vulnerable populations like those living in food deserts, with a high number of returning citizens, and/or with gaps in green learning and employment opportunities.

Importantly, participants also stressed that for efforts to partner with CBOs to be successful, workforce development agencies and postsecondary institutions must lean into CBOs' prior knowledge of their communities, especially the challenges and realities that residents are navigating. Referring to a student survey that was conducted by Blocks Together in the West Humboldt Park neighborhood to understand the job-seeking experiences of youth, Karla explains the connection between youth unemployment, violence, and the need for survival.

I think it was like 500 students that they [Blocks Together] surveyed about getting summer jobs. [They found that] less than 5% actually got those jobs [that they applied to]. But out of those same [students], almost 70% already had had some interaction with money, making money on a hustle.

So, we know that money is the biggest driver of the violence in our community. But yet we're not bringing in anything to really financially sustain our children. Or even people that are coming back out [of incarceration]—we're working [in an area that has] a high percentage of returning citizens, but we're not putting anything in place for them to become financially independent. [We've] analyzed a lot of these crimes as crimes of survival. [If you] take the need to survive out, we would be the fucking

most calm-ass neighborhood in the fucking world. There's this need to provide people with holistic support. And it's not just about the jobs—because there has to be an understanding that if there's not a culture of work, throwing jobs in the neighborhood is not going to work.

Karla, Blocks Together, 08/26/2022

Here, Karla draws attention to the dangers of designing and implementing green learning or green jobs programs without an understanding of the challenges communities are facing. CBOs play an important role not only as implementers but as stakeholders who hold critical knowledge of community needs and, therefore, community solutions that heal. Ignoring this will mean neglecting a just transition.

Notably, CBOs point to the need for those in power, such as corporate leaders and politicians, to stand in solidarity with community members rather than perceiving efforts to support and empower them, especially returning citizens, as charity. CBOs play a critical role as the amplifier of individual voices and the appropriate platform to implement the training and learning opportunities for the green economy.

When given the tools, you decide you have agency. And I think that's part of that humanization respect—that you're [seen as] a whole person. You may be in different situations. And I think that's the notion of solidarity, not charity.

Karla, Blocks Together, 08/26/2022

Sustained Educational Programming: The Need to Invest in the Long-Term

While most of the interviewees that participated in LVEJO solar training/certification programs reported good experiences and had gained a general understanding of the solar field, many students wished there were follow-up programs that could expand on more specific solar topics and offer advanced degrees. However, students were also aware that the lack of sustained educational programming was a result of LVEJO not being sufficiently funded to provide additional training for students. To effectively address the green skills gap, key actors need to develop and implement a holistic approach to green skills development.

There's just so many things that deal with solar technology that can be beneficial for these programs to expose the trainees to. For example, about the different levels of skill required for different [jobs] in the industry. There's just a ton to do. The more advanced courses will be very beneficial after learning the basics.

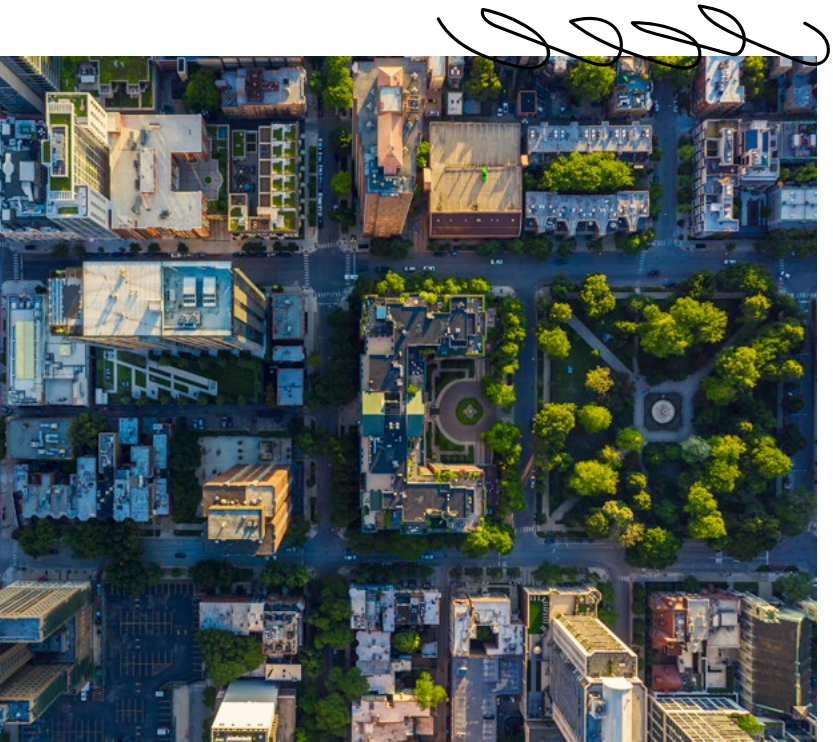
Carlos, LVEJO Alumni, 07/14/2022

For green learning opportunities to support short-term green transitions in low-income and communities of color as well as the long-term community transformation needed for environmental justice, postsecondary institutions, and other workforce development partners need to consider how to sustain educational programming. As Carlos references above, offering the basics should be viewed as an entry point to all postsecondary credentials in addition to green learning opportunities. Without a long-term green learning agenda, residents may become stuck behind a glass ceiling of low-paying jobs. Aiyden, an alumnus of the LVEJO solar training program, explained how it was through local connections that he found and applied to the LVEJO solar program.

I looked into a bunch of different options. I looked into classes in my community college, I looked into trade schools that you had to pay for. None of them really seemed like they'd be worth it. And then I decided to go with LVEJO.

Aiyden, LVEJO, 08/01/2022

For reasons beyond the scope of this case study, residents are likely to look for education and training opportunities that are local. However, for communities that have faced historic disinvestment, environmental racism, and social exclusion, a lack of sustained, local green learning opportunities means residents will continue to be neglected to access these programs and a just transition will not be possible. As our interviewees pointed out, low-income and communities of color not only need access to green learning opportunities, they also need sustained ones.



Recommendations

The communities we highlighted in this study put forward three demands for postsecondary institutions to better support a New Green Learning Agenda in Chicago: 1) honor community self-determination, 2) fund CBOs and their environmental justice campaigns, and 3) prioritize community needs first and foremost in postsecondary institution partnerships.

1. Honor Community Self-Determination

The first demand urges policymakers, researchers, and philanthropists to respect the autonomy of communities' vision for a just transition in their respective neighborhoods. Universities and foundations that conduct research studies and fund grant projects in communities of color need to honor and respect communities. Organizations argue that they want to be included from the inception to the end of the project and not merely seen as research subjects. All of the CBOs in our research expressed that university researchers often design research projects and programs and identify milestones without the inclusion, input, and insights of community leaders and residents. Instead, participants are brought in at the end of the research project when community outreach needs to be conducted. Such a top-down approach is disrespectful to communities of color and creates ongoing mistrust among community residents and university researchers, politicians, and philanthropists. University researchers often enter the research process with an attitude of paternalism, with a lot of assumptions, and are unaware of the real problems communities face. Chantel expressed her vision for community self-determination:

I've always wanted to see our community [to] be able to grow. But to be self-sufficient, I want to see our community be able to grow using our resources. And I think that number one resource is our people.

Chantel, SOUL Focus Group, 08/08/2022

Viewing the residents as the primary resource and solution to implementing a just transition in her neighborhood, Chantel's comment puts front and

center what is often ignored by actors in power—be it those that exclude residents from the research process and funding grants or those that view the community through a deficit lens and as recipients of charity. Participants demanded that if just transition efforts are going to be implemented in Chicago, those critical actors in power need to respect the autonomy of communities and view its residents as assets and resources when designing, funding, and implementing research and campaign strategies.

2. Fund Community-Based Organizations and Environmental Justice Campaigns

For the second demand, CBOs seek to challenge environmental racism in their neighborhood and be equal decision-makers in the further development of their community, especially when addressing the health of residents, the impact of pollution from local industries, the development of new community green spaces, and the creation of new green jobs. To combat environmental racism in Chicago, residents argue that there needs to be an intentional strategic plan to fund CBOs and their environmental justice campaigns to help educate and organize local residents to implement just transition efforts at the community level. By funding these environmental justice campaigns, organizations can boost their general operating budget, increase staff capacity, and expand programming.

All of the CBOs shared that they are consistently operating with a limited budget and cannot afford to financially support staff salaries, pay general operations costs, as well as fund their existing programming. Organizations argue that grants from universities and foundations cannot solely fund programs that funders want organizations to implement. On the contrary, more funding is needed to support CBOs as essential entities in local education and training ecosystems who serve critical functions that a just transition requires. Therefore, the program needs, and financial stability of organizations ought to be acknowledged and included when determining what organization and/or program will be funded.



3. Hold Postsecondary Institutions Accountable to Communities

The third and final demand is a call to action for postsecondary institutions to be more accountable to communities, especially those historically excluded and marginalized, and to be better champions in support of a just transition movement in Chicago, especially when it relates to providing access to knowledge, skills, and campus resources. CBOs in our research suggest that colleges and universities could employ college interns to help with various campaigns, especially for organizations that need assistance with conducting research, co-applying to grants that can help fund programming, direct partnerships with individual professors, and other pro-bono services. Participants also shared that their residents need access to campus resources, such as legal services, and can serve as guest speakers in the college classrooms to educate students about the environmental issues that are impacting residents.

Alma from LVEJO shared a note to philanthropists:

Fund environmental justice movements, with no strings attached... Just get out of the way. We're gonna bring you up to speed. Just watch.

Alma, LVEJO Focus Group, 08/15/2022

Efren from Blocks Together also shared that what his organization needs are:

Funds. [We] need money. [We] just need the money, not [just] to talk about the money. Organizations need that check. Somebody get it done.

Efren, Blocks Together, 08/04/2022

Alma and Efren are both expressing that grantors should allow CBOs to manage the funding as they see best fit instead of creating tedious grant processes, deliverables, and limitations. Since CBOs are the primary vehicle for community outreach and sharing of resources with residents, especially those most vulnerable populations, they need the autonomy and funding to execute their operations and programs as they envision. If postsecondary institutions and foundations are going to partner with CBOs, they must recognize that CBOs are systemically underfunded and must respect the decision-making and future direction of their continued groundwork.

Participants shared many critical examples of how colleges and universities can be key partner organizations by supporting CBOs to meet the demand for a just transition in Chicago. Santiago calls on institutions of higher education to:

... help [residents] get their education. There's a lot of people around here that would love to get their GED. Even better, they would love to get their high school diploma.

Santiago, LVEJO Alumni, 08/03/2022

We see that in many communities of color, the educational attainment level is lower than their affluent counterparts. Without educational skills and credentials, residents are limited in their economic opportunities and unable to qualify for green skill jobs. As a result, those residents who do not hold at least a high school diploma cannot enter the workforce and enroll in certification programs that colleges and universities offer. This educational barrier creates severe challenges for recruiting these community residents to enter the green workforce. Aliyah from SOUL shared:

If colleges and universities really want to step up... let's attract individuals with an entrepreneurial mindset. Then give them the tools [education and training] that we really need.

Aliyah, SOUL Focus Group, 08/08/2022

Both Santiago and Aliyah argue that colleges and universities can be better actors in moving the just transition agenda forward by providing communities with a breadth of green learning opportunities, from the basic educational needs to access to postsecondary certifications and advanced degrees and skills needed to enter the green workforce. In addition to being more accountable to communities as educational providers and partners, Sofia from LVEJ0 goes on to say that postsecondary institutions could also grant communities access to their campus resources. She articulates that colleges have an abundance of resources.

They have empty classrooms. I don't understand why we can't host our solar program at UIC instead of in a crowded space. No offense to the space. But you know, these are the opportunities I think that the university can really lend itself to. They're not using all these classrooms all the time. Community organizations [should be able to] use these classroom spaces [and to] use these resources.

Sofia, LVEJ0 Focus Group, 08/15/2022

Participants in our case study are challenging postsecondary institutions, politicians, and philanthropists to take a bolder stance and act on their commitment to address environmental justice issues in Chicago. To truly implement a New Green Learning Agenda, university partners must play a more active role in addressing environmental racism in communities of color while simultaneously providing the education to advance the just transition movement.

Conclusion

Achieving a just transition for communities of color in Chicago is more than offering green skills training or creating green jobs. It is also about addressing long-standing issues of environmental racism, economic underinvestment, and relationships of extraction by politicians and industries. By extension, achieving a just transition for communities of color in Chicago also means centering community needs, health, and wellbeing, and investing in the CBOs that know and understand these struggles and have established relationships of trust with and care for the communities they serve.

Surfacing these common narratives, however, does not give license to postsecondary institutions to step in and act like community-based organizations where relationships of distrust and exclusion are predominant. Postsecondary institutions seeking to co-create and partner with communities and CBOs must be prepared to spend time and resources to repair relationships and to be willing to be held accountable to serving community needs.

Importantly, this also entails respecting the autonomy and self-determination of communities, and recognizing the central role that CBOs play in the education and training ecosystem of historically marginalized communities in Chicagoland as well.



CASE STUDY 3

Green Skills, Creative Placemaking, and a New Green Learning Agenda in Eastern Kentucky

COLLEEN UNROE



Caption (right): Carl Shoupe - a retired 3rd generation coal miner and union organizer from Benham in Harlan County, Kentucky, instrumental in getting solar panels on the Benham Coal Mining Museum. Photo credit: Colleen Unroe

Introduction

Central Appalachia is composed of counties in Kentucky, Ohio, Tennessee, Virginia, and West Virginia. This region has long been associated with extreme poverty and unequal distribution of land where outside corporate interests colonized through resource exploitation (Montrie, 2003). The coal industry negatively affects residents' health, miners' working conditions, and environmental quality, and these detrimental effects continue to increase (Ahern et al., 2011; Aken et al., 2009; Bell, 2013). Nevertheless, the local communities' strong identification with coal mining also continues (Bell & York, 2010). The global coal market decline and climate change increase the need for economic transition in these communities (Evans & Phelan, 2016). Some communities have started to focus on what is being called "Just Transition," which consists of "a strategy for reconciling the needs of workers with the imperative of environmental reform" (Abraham, 2017, p. 222).

Since the end of World War II, and most starkly the last two decades, increased mechanization of the coal industry reduced jobs for residents, increased productivity of coal, and caused greater environmental

damage (Carley et al., 2018). Figure 1 demonstrates the long-term decline in coal employment. From 1985 to 1997, direct coal employment dropped by 50%, while production hit its peak in 2011 (McIlmoil et al., 2013). Since 2011, coal production has dropped, due in part to a shift towards an increase in lower-carbon natural gas development and environmental regulations (Carley et al., 2018). Coal employment declined as the industry shifted to strip mining, particularly mountaintop removal mining, that enables the coal companies to maximize profits. As one interviewee described it, "We've been struggling, I mean, even with low-labor force participation, with poor educational outcomes, with extremely high poverty, with underfunded schools, underfunded local governments for 50 years or since the '60s when they started measuring stuff like that."

The impact of coal mining has not only put communities in Central Appalachia at a higher risk of exposure to environmental hazards, but it has also contributed to climate change through fossil fuel emissions, increasing the frequency of large-scale flooding and resulting in the region to be highly vulnerable to climate disruptions. On July 28th, 2022, there was a 1,000-year flood that resulted in 43 deaths and 10,000 people applying for aid from FEMA (Estep, 2023a; Hudson, 2023). At the same time, the underinvestment in the region has resulted in communities not having the opportunities to build the skills needed for economic transitions, let alone just transitions, nor the job opportunities that could revitalize the local economy and help build more climate resilience. There is an urgent need to address the investment in community economic development and green skills development (also referred to as green learning) that is more broadly defined to include and build upon local cultural assets, improved health, community identity, and belonging.

However, the predominance of the coal industry in the region has been a barrier to thinking about economic diversification and the significant investments needed in "human infrastructure," including living wage green jobs for people in the community. As one interviewee stated, "If you even hinted that we needed economic development that wasn't tied to the coal industry,



Caption: Tile Mosaic in the Appalachian Center at Southeast Kentucky Community and Technical College in Cumberland, Kentucky. Photo credit: Higher Ground.

you were seen as radical.” As a result, communities in Eastern Kentucky are left with few options. Right now, there are plenty of jobs if you can afford to work for 10, 12, 15 dollars an hour. I mean, they’re not great jobs, but they’re there.” But because these jobs do not pay a living wage, the alternative is to remain unemployed to remain eligible for social programs that grant access to basic needs like food and health insurance.

As one interviewee put it, “I do think, part of the challenge right now are the benefit cliffs where people, if they go back to work, then they lose these benefits.” Without adequate social support or the widespread availability of living wage jobs, and without the skill-building infrastructure needed to set in motion the economic development needed in the region, communities in Central Appalachia will be left behind.

This case study focuses on the need to support the Appalachian communities that bear the brunt of the negative impacts of industrialization that the rest of the country has relied on for several years. The study highlights the experiences of 14 participants with postsecondary education in multiple counties in Eastern Kentucky, including Perry, Harlan, Knott, Breathitt, and Letcher Counties. Many of these conversations took place before the devastating floods in 2022 and right after during recovery.



Key Findings

Key Players in Green Learning in Kentucky

There are a variety of actors engaged with building skills to help transition the local economy. Several post-secondary institutions exist within the region, including the Kentucky Community and Technical College System (KCTCS), University of Pikeville, Union College, Alice Lloyd College, and the University of Kentucky Extension.

For this case study, the community colleges were the central focus to learn about their role in efforts to support change in green learning. The KCTCS System has had a Sustainability Initiative since 2009. This plan stated that it would “facilitate cultural change, promoting sustainable communities inside and outside of KCTCS, using an all-encompassing, no-silo approach” that would address each functional area of KCTCS. This plan was called the KCTCS Green + (Plus) Initiative, and included four forces: environment, economics, energy, and stakeholders (Kentucky Community and Technical College, 2009).

Nonetheless, this approach was not systematically integrated or prioritized throughout each of the KCTCS campuses. For example, efforts on food security and community gardens have been at the prerogative of individual faculty members. In contrast, Higher Ground is a community arts organization that is a part of the Appalachian program at Southeast Community and Technical College. The organization works with community members on important community issues through different art mediums, including musicals based on oral histories and tile mosaics.

Within the community colleges in the region, there are several Workforce Ready programs tied to jobs that are currently available, such as manufacturing, construction, transportation, health care and business. These programs are informed by major employers in the area, like the coal companies, Appalachian Regional Hospital, and Pikeville Medical Center. Some of these programs target green jobs, like the carpentry program, allied health, welding; others do not target green jobs, like coal miner, truck driver, and auto repair programs.

Many local community-based organizations, such as Mountain Association, Housing Development Alliance (HDA), North Fork Local Foods, Community Farm Alliance, Appalachians for Appalachia, Foundation for Appalachian Kentucky, and Invest Appalachia (a regional investment fund), and Shaping Our Appalachian Region (SOAR), are also addressing specific needs for skill development that support socially inclusive, green economic development. This includes providing skill-building support for specific sectors like community health, local foods, and clean energy, as well as business skills development to support creative placemaking through entrepreneurship and business development within the region. Some of the entrepreneurial efforts draw from the local culture through the arts. These efforts address specific needs identified by the organizations and are sometimes done independent of the post-secondary institutions.

Just transition stakeholders recognize that skills training is key for economic development, and several different entities are creating learning opportunities that are consistent with the vision of a New Green Learning Agenda (NGLA)—an agenda that orients education and training to climate action and the pursuit of climate justice. Importantly, some of the skills gaps are being filled by community-based organizations. While these organizations indicate that community colleges are supportive of community-driven efforts, there could be more communication to create a shared vision for the region that helped to identify a breadth of green skills to move the region forward.

Moving from Labor-market Driven to Community-driven Processes

The traditional approach to identifying vocational training programs has been labor-market driven and in partnership with businesses in the community. However, when considering green skills and a just transition, there is a need to go beyond traditional approaches to community-driven approaches to identify opportunities, like carpentry, that respond to a community need, like the lack of housing.

The process of community engagement reflected in the Higher Ground approach could be a model to explore green learning needs. There is also a need for community-based organizations to work in partnership with different post-secondary institutions for different segments of the population, like farmers and carpenters. Furthermore, there is a need for processes to take a more inclusive approach as it relates to gender.

Postsecondary institutions in the region have traditionally identified vocational training opportunities through a process that industry identifies needs to post-secondary institutions. As one interviewee expressed,

[How] It typically works is business and industry will come to a local college and say, 'Hey, look, we have this need and how can you help us meet it? Can you help develop programming?' There's also program advisory committees that are made up of business and industry from multiple different sectors of business. In other words, the skills development and learning priorities are a labor-market driven approach. This approach is conducted by faculty and leadership of the community colleges.

And then you know, we also are still like doing our own research, you know, into trends, labor market trends, and in our various colleges. So, it's a combination of different things that we do. But most of the time, it usually starts with, you know, the people being knowledgeable about their local economy and, you know, looking at the forecasts of business coming into the area and meeting the needs of existing business and industry.

There is a need to go beyond this approach to think more holistically about what the learning needs are in terms of creating opportunities for just transitions. This current strategy merely looks at the existing job opportunities as opposed to think about what could be created locally.

While the community colleges in the region have vocational training programs that aim to transition people into jobs, these are sometimes in service of community-development needs. Not only are these programs driven by a labor-market approach to prioritizing skills, but sometimes these programs train people for jobs that are not available. As one interviewee noted,

I think it's more through workforce development training, you know, that's on the technical side and then the training in allied health areas, from nursing to radiography to physician assistants to things of

that sort. They train some truck drivers to get their licenses to drive you know, long haul trucks and things, you know, carrying big loads.

These kinds of opportunities are addressing some of the immediate industry needs in the area but are not necessarily helping to support the cultivation of sustainable long-term employment. For example, one person described that everyone they knew who had participated in the lineman program had to move outside of the area to find work.

There are a few examples of community-based organizations and post-secondary institutions working in partnership to develop green skills. The HDA partners with the Hazard Community and Technical College (HCTC) in a program called Hope Building. In this joint program, HCTC, HDA, the Perry County Drug Court, and Hickory Hills Recovery Center support the on-the-job skills development of people recovering from drug addiction. This effort includes four trainees at a time for up to a year. Trainees work with HDA 4 days a week and attend college classes at HCTC 1 one day a week, working towards a certificate. An interviewee explained that this structure has made the program successful because:

The college has been super flexible to work with us [HDA]. Some of our students are essentially doing independent study and all of that because their normal carpentry pro classes were two days a week for four or five hours a day. That [kind of schedule] would have interfered with actually having a job or doing the training, and so they've been super flexible to make that more doable.

This model reflects a community-of-care approach that addresses green learning opportunity gaps by providing support to people facing barriers to access, like those in recovery from addiction. Although a successful partnership, the reach of Hope Building has been small and predominantly male—in part because the drug recovery programs are targeted at males and the carpentry skill-building program and resulting jobs are predominated by males. Future partnerships between community-based organizations and post-secondary institutions should consider gender-responsive approaches to opening the door to job opportunities by encouraging more females to participate in male-dominated green sectors.

Existing efforts at green learning make it evident that the process of just transition requires community engagement. The Higher Ground project from

Southeast Kentucky Community and Technical College in Cumberland, Kentucky, is a good example that used the arts to respond to the opioid crisis in the community in a way that created dialogue and relationship building across the community. In a gender-inclusive way, this effort strengthened community belonging and community pride. Being able to build connections across lines of difference is important to exploring opportunities for just transitions. This effort has included photography, a community photography exhibit, theater, a tile Mosaic Project, and a local music festival. As described by the coordinator of the project,

We did a long, a community engagement process. I think we interviewed over 200 people for it. It was kind of student managed. The strength of the work was in the amount of input and the number of people giving input that came from the community, that it had to be in response to energy within the community.

The Higher Ground Project has and continues to involve strong community ownership. It also enabled students to gain skills to engage in a project in the arts and culture field that is relevant for a sense of belonging.

Another resident reflected, "It created opportunities for people to have a dialogue." This community engagement created a place for people across the county to be able to embrace the culture and talk about critical issues like the opioid crisis. A leader in a local organization stated that this was especially



Caption: Mural by Lucy Hale, Hindman in Knott County, Kentucky. Photo credit: Colleen Unroe

important for their community work as well. She stated, "All the money in the world isn't going to help us, isn't going to do much for us, unless we have the community behind it." Creating community dialogue and ownership that bolsters a sense of identity is critical to identifying opportunities for just transitions and related green learning opportunities.

Approach to Green Learning Content in Eastern Kentucky

To achieve a just transition in Eastern Kentucky, a new green learning agenda needs to be created that goes beyond responding to the immediate needs of big businesses to identifying green economic development possibilities that are rooted in anticipated community needs. Looking more closely at existing approaches to green learning in Eastern Kentucky, there are potentially six entry points, which include green carpentry, energy efficiency, creative placemaking, small business, local foods, and green soft skills that promise to support a bottom-up approach to green community development.

Green Carpentry and Energy-Efficient Housing

With the recent flooding in Kentucky, there is a significant need to address the lack of adequate housing in the region. Developing carpentry skills would respond to this community-driven need. A state senator's efforts to get investments in housing during the special legislative session related to the flooding did not result in substantial resources at the state level. But with the Inflation Reduction Act's (2022) attention to investing in energy-efficient retrofits to existing infrastructure, there is an opportunity to ensure that what housing is developed is energy efficient.

There are several efforts around enabling people to gain green carpentry skills with an interest in retrofitting homes to make them more energy efficient. As stated by one respondent associated with a nonprofit housing organization, "We teach a lot [and] we employ a lot of carpenters, and we're teaching energy-efficient construction to them . . . small things that matter." Similarly, through the local affordable housing organization, HDA workers are learning green construction skills on the job. As noted, "We're teaching energy-efficient construction to them . . . when they leave here and they go someplace else [within the region], they will take those skills with them." And the Mountain Training Network, an offshoot of the Higher Ground effort at Southeast Community and Technical College, is "teaching construction

trades in areas that aren't as common within the community." One area is a focus on commercial roofing that enables people locally to address renovations needed for dilapidated buildings. This would enable the revitalization of the local economy while building skills locally for a need identified by the community.

With the focus on energy-efficient housing, there has been a lot of interest in state and national-level policy discourse around solar installers as an avenue to create green jobs within the region. This is especially the idealized vision for supporting the transition of former coal miners to green jobs. There are efforts in the region to create such solar training programs, including Big Sandy Community and Technical College in Prestonsburg. However, stakeholders in the region debate the feasibility as well as the potential impact of such programs on green transitions in the region. For example, someone with an affordable housing organization in the region raised the question:

How many solar installers does East Kentucky need? Even if you were bold and said that across the whole of East Kentucky, we need 20—which seems like a lot to me from where I'm sitting, but it may not be. Because if you're doing residential, I mean, [it will take] you two, three days. And not everybody on the crew has to be an installer. You just have to have one or two people who know what they're doing, and the others can be laborers. So, with 20, does that become 10 crews? And if you have 10 crews, and they can do a solar install, and you know, two per week, that's 100 a week. If you got 10 crews, it's 1,000 a year. Can we do 1,000 residential installs a year in Eastern Kentucky? So, what ends up happening, I think, particularly when you think about training programs is you end up having to scale them way down. And then some of the federal programs, they're not big enough to have an impact.

While solar installers are expected to be among the fastest-growing green jobs over the next decade, it remains to be seen whether it would be possible to shift a significant number of former coal miners in these types of roles. A more community-driven approach would reflect the need to invest in green carpentry and energy efficiency as a point of entry to green learning more than renewable energy.

Creative Placemaking

The National Endowment for the Arts defines creative placemaking as an integration of "arts, culture, and design activities into efforts that strengthen

communities (National Endowment for the Arts, n.d.)." This brings attention to community assets, brings new energy to communities, envisions new possibilities, and connects communities. To achieve this reinvigorated sense of place, investments are needed in efforts like Higher Ground that enable people to make art to cultivate a sense of belonging. Creating these spaces has enabled people to critically reflect on their communities, which is important to build green transitions. Postsecondary institutions have not adequately invested in creative placemaking and may need to be made aware of the interest, possibilities, and opportunities to support creative placemaking as a way to support efforts to facilitate green transitions.

Several respondents talked about the importance of changing the narrative of the region. This is one of the main areas of work for one of the local organizations, Appalachians for Appalachia. One respondent described,

Narrative work really has a hand in changing perspectives of people inside. I think changing perspectives outside the region is an obvious goal, but it's just [as important to] change the mindset of people [inside the region] saying [things] like, 'There's nothing here; there's no room for growth, no sort of upward mobility or anything of that nature.'

Changing how people view themselves and the possibilities within the region seems to be a key factor. The local community colleges could help support these efforts through their engagement with students and how they engage with the community.

Some of the community colleges seek to ensure that Appalachian culture is incorporated within it. As one person was describing the Southeast Kentucky Community and Technical College,

It was important that the Appalachian culture and history [were centered]. The kind of engagement with the region, [with] its culture more than [with the region's] issues. [This culture and history] needed to be a strong part of the identity of the college, so that it would be seen as community integrated.

Tapping into local cultural assets, like Appalachian foodways, music and the arts, or connection to the land, is important for creative placemaking. As another interviewee noted,

It's all about creating the new narrative that art has value. And that when we teach it to young people, we

teach them to think outside of the box; we teach them to be the next people that are going to deal with, you know, our, you know, dependency on fossil fuels.

Additionally, there have been efforts to enable artisan-based activities to create economic opportunities. One example is the Kentucky School of Craft at the Hindman branch of Hazard Community and Technical College which enabled people to gain skills in the making of different crafts, like furniture making, jewelry making, and metalworking. Importantly, “the idea was to train people not just in the craft but in the business of the craft.” This includes both tangible artisan skills as well as business skills.

However, many of the craft-making and related business programs have been cut over time. Many of the respondents felt like the lack of support for the School of Craft was a missed opportunity:

They didn’t have very good leadership there. It was very small-minded in terms of what they could do or wanted to do . . . I thought that they had a huge opportunity to be super successful. And they just really didn’t. [They just] kind of let it be what it was, and [did] not really look for growth or partnership or ways to continue to develop.

This lack of leadership included limited efforts by the leadership to expand funding. But, there was strong interest in reviving this effort and really investing in this program. As a result, community

organizations have sought to fill in some of the gaps. For example, The Foundation for Appalachian Kentucky and Mountain Association reports having,

brought in professional artists to just discuss how they were successful, they would do PowerPoints and talk about how to price your work and do the math on that, because that’s a complicated area, when you’re creating something more like, how do you evaluate the hours put in, you know, all these elements that you don’t think about.

This type of approach enabled new artists to gain skills in how to figure out an important part of their work. One person described how valuable their training was to help with “marketing and all of the different facets of business ownership.” This reflects the business side of crafts.

Other small business support

Beyond the business of craft-making, the development of business skills appears to be an important pathway to supporting community-driven green economic development. One interview said, “We need to be training young folks to build up an entrepreneurial ecosystem, while tangibly having the option to work in rising sectors like solar or tech, coding, etc.” He also stated that there is a need for “business and financial literacy training.” There could also be value in worker-self-directed enterprises (Billings, 2016).

Different community organizations support entrepreneurship development in the Eastern Kentucky area, including Mountain Association, the Foundation for Appalachian Kentucky, and SOAR—although stakeholders have mixed opinions about the focus of SOAR. Local nongovernmental organizations, including Invest 606, have also taken this on. The mission of Invest 606 seeks “to catalyze business growth in the 606 by connecting entrepreneurs with the resources they need to succeed today and grow tomorrow” (Invest 606, n.d.). This effort includes cohorts of small business owners, including all genders and races, from across the region that gains skills over time. An additional interviewee described,

And what that has translated to is a stronger small business ecosystem and a more entrepreneurial community, where folks are encouraged and supported to, you know, take up a new challenge, you want to start a business, go for it, we’re going to try and figure out the tools and resources you need to survive and make it a success. So, I think a lot of that



starts with, you know, educational anchors, being supporting and training young entrepreneurs in really innovative ways.

This is an area of growth in terms of support for community colleges.

Local Foods

There is a growing emphasis on supporting small-scale local farmers in the region. Supporting local agriculture reflects an important sector of a just transition and an area to build green skills. Much of the work within the region has been through the North Fork Local Foods and the Community Farm Alliance, which identifies skill-building needs from the ground up. This included “visiting a farm and talking with farmers one on one about what they need and what they want and how they want to grow and making connections.” Many of the younger farmers they spoke with about their needs and goals are female. This is an opportunity to encourage more females in male-dominated green sectors.

Another important avenue for learning is the Eastern Kentucky Farmer Conference. This annual gathering consists of farmer leaders and technical assistance providers leading workshops over a day and a half. The farmer conference was described as an important way to help farmers build their skills and develop relationships with one another to build a regional network. This combination of nonformal education and informal learning has supported the local agriculture sector, particularly with the development of skills and a network.

Food security is another area where people are feeling the effects of climate change, providing an opening for new green learning opportunities. Farmers are seeing the changes happening in the weather patterns and with extreme weather events, and they have also been drastically affected both financially and psychosocially by the flooding that has occurred during the last 2 years. As a result of recurring crop loss and damage to farms, green learning opportunities that provide knowledge and skills on how to mitigate these impacts are in high demand. Exploring the University of Kentucky Cooperative Extension services could also be of benefit since they have local agents within the region.

Green Soft Skills

Green learning efforts in Eastern Kentucky stress a need for soft skills, like critical thinking and leadership, and not just technical skills like carpentry

or retrofitting energy efficient housing, that can support bottom-up green economic development. As stated by one respondent, “Critical thinking and reasoning and just literacy and communication skills and being able to read and interpret a text are in demand by employers.” It was also stated, “If we want to promote sustainable development truly, you have to have these institutions be places of reflection and critical thinking.” The community colleges, especially through efforts like Higher Ground, have been important places for critical reflection about larger systems and structures that help to create a sense of solidarity and belonging, therefore building trust and the potential for community development.

Leadership also emerges as an important green soft skill for students, especially in helping to build confidence and a sense of self-efficacy and agency to start a small business, for example, or to pursue green economic opportunities that have not been tried before or that may have seemed unachievable. To illustrate, a local entrepreneur described her experience teaching high school seniors how to make jewelry,

I spent a week with the high schoolers, and they were just stunned about cutting glass and using torches and grinders. Like [they] started out [saying], I can't do that. That's always the way it starts out. I do jewelry making, and the first thing I do is I start up a torch and put it in somebody's hands. We talk about safety, of course. And the thing is, it seems so big and so impossible and scary until you realize it's not, until you have that opportunity to weld something, to use a torch, to use a forge and hammer. And I think [for these] young people, [they thought welding] was what other people did. It seemed like [a] foreign thing. And the moment that you do something like use a torch, that develops a kind of self-efficacy. And it also develops an interest in trying and doing new things, things that don't seem typical.

This kind of personal leadership is valuable for students as they enter the workforce as it helps to cultivate empowerment, which is essential to creating just transitions. But not only is there a need to connect these efforts more strongly to green learning, but also to more inclusive learning. As another interviewee alluded, an important dimension to leadership is the capacity to create safe spaces that are inclusive and welcoming of all, looking out for those most likely to be excluded or marginalized because of historic inequities.



Caption: Solar panels in Lynch, Harlan County, Kentucky.
Photo credit: Colleen Unroe

Like even [with] the Art Station [a local non-profit in Hazard], [...] we have to work around [issues like] being [perceived as being] backwards, racist, homophobic, etc. We've had folks just refuse to come here because they don't feel comfortable, [or] they perceive they won't be comfortable or safe. We have to work on that from the ground up. So I think that's a skill [being inclusive] that a lot of our communities don't have and struggle with.

Indeed, the inclusion of Black people in local leadership is an important issue that needs to be explored more in depth. A local Black leader stated, "A lot of the time, we feel invisible and unheard, which only adds to the stereotypes of how others see us here in Eastern Kentucky." Creating the space for inclusive leadership is essential to facilitating just transitions. While technical green skills are important for the region's transition to a green economy, so too are green soft skills. Skills like critical thinking and leadership are vital to building social foundations and economic opportunities that are inclusive and improve the wellbeing of the community and the surrounding natural environment.

Strategy to Implement Just Transitions

At the heart of green learning opportunities in Eastern Kentucky is the goal of job creation. However, while there have been some investments, like the National Dislocated Workers fund and the U.S. Department of Labor, to stimulate incremental systems change, there has not been a large-scale investment, like that proposed by the Green New Deal, that could help mobilize the scale and pace of change required for a just transition in the region. Some significant investments in the arts have been made that could be further leveraged and modeled by approaches to design and implement a New Green Learning Agenda locally. For example, with the Higher Ground effort, "Our Town' and 'Our Place' grants tied art and cultural work to the redevelopment of economically-strapped communities both within cities." These resources enabled a lot of work to get done quickly. The IRAs focus on energy efficiency could be leveraged to get a lot of work down quickly as well.

Recommendations

KCTCS, the umbrella for the community and technical colleges in the state, can support sustainable economic and cultural development in Eastern Kentucky. With their accessible Kentucky campuses, KCTCS is strategically placed to provide vocational training, fundamental business skills, and liberal arts education. There needs to be a holistic approach to creating an NGLA that integrates community-based organizations. This needs to go much beyond just a concern for retraining former coal miners, many of whom are struggling with a disability, including Black Lung disease (Estep, 2023b); there is a need to look at opportunities for all people in the community. Instead, the concern should be on making sure that all people in the region have the opportunity to gain skills for living wage jobs that are good for the environment and community health and wellbeing.

To facilitate the achievement of just transitions, six priorities should be pursued: invest in creative placemaking, focus on remediation, create a community of care, take a gendered approach to green learning, pursue hybrid models, and advocate for large-scale investments in the region.

1. Invest in Creative Placemaking

Many people attested to the fact that creative placemaking through arts-related opportunities in the community colleges was valuable for creating dialogue and building on local culture and local assets to build community resilience and local solutions to ongoing challenges in the region, including opioid addiction. This approach provides a model for green learning and a just transition in the region, specifically in terms of how creative placemaking skills can be leveraged as a transformative green skill that enables broader systems change, generated from within the community. Such attention to creative placemaking as a transformative green skill will require strong and committed leadership at the postsecondary level—something which seemed to have wavered over time. For instance, there was a clear need for leadership to sustain (and later revive) efforts related to the Kentucky School of Craft, which taught craft-

making skills and business development. Interviewees reflected on what this program could have become:

If it had been invested in harder by the school and by the community, I can't imagine what amazing things could come out of there. And I know some of the dulcimer makers that came out of that program, some of the jewelry makers, and they're doing awesome. And I can't imagine, like if it had been given a little bit more love, I guess a little bit more investment.

Investment in green-oriented creative placemaking skills is important because it provides skills that could enable people to make a living based on local culture.

2. Invest in the Remediation of Environmental Impacts

There is a significant need to address the impact and legacy of the coal industry on the region in terms of its high levels of contaminated water and air pollution. However, remediation is not talked about by either the local community colleges or most community-based organizations working on community development, despite the opportunity to support job creation. For example, the proposed federal RECLAIM Act²¹ seeks to fund a large-scale cleanup of abandoned mines by expanding the eligible uses for the Abandoned Mine Reclamation Fund (RECLAIM, 2021). The community colleges in the area could play an important skill-building role, enabling local people to engage in this type of work while promoting the revitalization of local land and waterways and the health and well-being of the community.

3. Create a Community of Care

In an effort to shift from industry-identified needs to community-driven opportunities, there is a need to integrate the wellbeing of the community, including meeting basic needs like housing, food security, transportation, childcare, and the cost of education. Such a community of care approach aims to help members overcome barriers to learning opportunities, and not just simply bridge green skills gaps. Enabling

people to address these needs enables people to participate in education, which puts them on a path to participate in the green economy. As one interviewee stated, “The community college has to remain accessible.” The programs that specifically target people in recovery are good models in terms of creating the additional support needed to enable people to thrive. Additionally, there was a suggestion of creating mentoring programs that could support people on the path to becoming entrepreneurs.

There are also much broader needs like universal healthcare and adequate housing. Investing in carpentry and energy efficiency is a green skill that could help to address the housing crisis. The basic infrastructure needs to be addressed, like access to water, sewer, roads, and broadband internet. Overall, there are some examples where the local community colleges and the local community-based organizations are creating a patchwork quilt of green learning opportunities that enable people to get skills in creative placemaking, energy efficiency, small business, remediation, and critical thinking. However, much more investment is needed overall in the region to create jobs and educational opportunities to complement those opportunities.

4. Take a Gendered Approach to Green Learning

A gendered approach to green learning would make educational opportunities and the transition to a green economy more inclusive. This not only means paying

attention to outreach and recruitment (e.g., are all referral partners focused on services for men?), but also to barriers to participation in green education and training programs (e.g., are there adequate support networks and support services, including childcare? Are programs designed to be flexible to accommodate gendered demands on women’s time?). It also means ensuring women have access to living wage green jobs after training programs conclude. Women in the community did not have living wage jobs before the decline in coal mining employment. If the goal is to create a just transition, all people need to have access to living wage opportunities. Many of the available opportunities for women are service sector jobs that do not provide an adequate living. There needs to be greater emphasis on jobs and training that are both gender-inclusive (e.g. equal emphasis on green jobs predominated by males and green jobs predominated by females) and gender transformative (e.g., efforts to encourage males to enter the green jobs predominated by females and vice versa).

5. Pursue Partnership Models between Post-Secondary Institutions and Community-Based Organizations

There could be more opportunities for the local community colleges to collaborate with community-based organizations. Such a model could integrate community-based organizations and post-secondary institutions in partnership for the delivery of green skills development. Some of the areas that are key areas might include local foods, small business skills, and more support for creative placemaking. There is a need for creative ways to support people engaged in the work that do not all need to come through the community college. Hope Building is a good example of a program that involves both community-based organizations and the community college. Creating other opportunities like this could help advance green skills development.

6. Advocate for Large-Scale Investments in the Region

There is a need for substantial investment in the area to create jobs overall. The scale of the investments needs to be on the level of the Marshall Plan, which provided economic assistance and support to restore infrastructure in postwar Europe (National Archives, n.d.). Green learning needs to go beyond education for specific green jobs defined by larger businesses in the area because this strategy is not only missing the breadth of skills but also the need for community-based development.



Caption: 2018 Mural Fest participants, Harlan County, Kentucky. Photo credit: Higher Ground

There is also the fundamental need that regardless of the educational opportunities available, there need to be good jobs with livable wages people can have. There is a need for substantial financial investment, or as one participant put it:

How do we get something like a Green New Deal and get the word out that it's something of value for sustainability? And [when you're] working [to] develop connections with national, regional groups, [then you feel like] you're part of the solution.

If people are not able to find opportunities, then they will take their newly acquired skills and have to leave the area, which is not the intended outcome. For example, there is much need in terms of addressing the housing stock. Substantial investments in energy efficiency could provide opportunities for people to have good-paying jobs. For example,

Because when we've had grant money to pay for energy efficiency, people love it, when we ask people to either choose between energy efficiency, or maybe a new porch because we don't have enough money to do both, people almost always go for the tangible work.

If there were investments directed toward energy efficiency, it could improve the situation.

Conclusion

This case study speaks to the importance of assessing green skills in rural communities rooted in the fossil fuel economy. There are important strides already being made with carpentry and creative placemaking, for example. However, this preliminary research speaks to the need to expand on six key areas of investment in green learning: invest in creative placemaking, invest in remediation of environmental impacts, create a community of care, take a gendered approach to green learning, pursue partnership models, and advocate for large-scale investments in the region.

There is a need to support a breadth of green skills development for more community-driven development that moves beyond a market-driven orientation. By continuing to build on the local culture, there are opportunities to strengthen community belonging while creating economic opportunities. There is a substantial need to cultivate specific green skills, like business and green carpentry.

But green soft skills, like critical thinking and leadership, are also needed to cultivate new green opportunities that are rooted in community needs and backed up by community engagement. Investment in a community of care approach could help to expand childcare, transportation, and additional resources for educational attainment. While some key areas have been identified, a much deeper level of analysis is needed to understand these issues more fully.



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Annex A: Technical Note

Our Methods

This report reflects Part 2 of a two-part project on the role of postsecondary institutions (PSIs) in a just transition. In this two-part project, led by three place-based research teams, we (see Box on our positionality as coauthors) conducted three case studies using community-based approaches to explore how communities are addressing education and training gaps while promoting transformative systems change in pursuit of environmental and/or climate justice. The case studies aimed to identify innovative partnerships and policies that contribute to closing inequality gaps while advancing green learning opportunities among historically marginalized communities.

Box 3: A Note on Our Positionality as Coauthors

We are a diverse group of researchers, educators, advocates, and trainers, who work toward addressing the legacies of social and economic discrimination as they manifest in educational inequalities across the U.S. and beyond. We came together as a team of coauthors around a common interest and a common concern. Our common interest was in understanding how PSIs might step up to a once in a lifetime opportunity to shape the course of the U.S. transition to a cleaner, greener economy that leaves no one behind. Our common concern was that this opportunity of a lifetime might be missed, or worse that the unacceptable educational inequalities that we have come to normalize would be perpetuated by PSI practices that promote “education as usual,” even if greener.

From this common ground, we strove to understand how PSIs might navigate the opportunities opened by U.S. climate policy in ways that address systemic inequities that have structured postsecondary learning, and therefore the unequal economic trajectories of communities, for decades. We have come to understand these “ways” to be context-dependent, community-centered, rooted in local assets and relations of trust, and focused on redistributing power, addressing historic inequities, and creating social and economic systems of nurture, care, and flourishing for people and the planet.

Such an understanding also meant being transparent about our own positionalities as individual researchers and as a team spread across the country. We acknowledge that we each come to this research from different positions of privilege, especially in relation to our case study communities from whom we have synthesized the key messages, the transformative approaches, and recommendations for action to PSIs. This report is the product of our attempt to navigate those privileges through as consultative and reciprocal a process as we could create with limited resources and limited time.

Additionally, led by a cross-site team, we conducted a comparative analysis to provide insights for PSIs to become more community-serving institutions in a larger ecosystem of actors fostering an inclusive and diverse green workforce. The research was guided by a set of questions concerned with five dimensions to the task of defining a New Green Learning Agenda.

Box 4: Research Questions

1. Actor questions: Who constitutes the ecosystem of actors in the implementation of a NGLA for postsecondary learners (e.g., through PSIs, community-based organizations, nongovernmental organizations, or other entities)?
2. Content questions: What types of knowledge, skills, and competences are targeted by programs, or not (e.g., by PSIs or others who may be filling gaps in green education/training)?
3. Process/Partnerships questions: How are PSIs working in partnership (if at all) with communities (e.g., CBOs or other entities) to recreate the economy/transform society by implementing “a NGLA” to develop the skills needed to pursue such transformation?
4. Power/Equity questions: How are imbalances of power negotiated by different actors in the development and implementation of “an NGLA” in the effort to pursue a more just transition?
5. Strategy questions: How are PSIs (and/or other actors) aligning green learning with policy/funding opportunities for systems transformation? What lessons can be applied to upcoming just transition policy opportunities?

By addressing these research questions, the study aimed to shed light on effective strategies, partnerships, and considerations that can support the definition and implementation of an NGLA that not only builds a breadth of green skills among the present and future workforce. But it will also include that an NGLA can also proactively work to expand access to green learning opportunities among historically marginalized communities so that they can participate in and benefit from the country's green transition.

The research teams in each site conducted in-depth interviews with local stakeholders and community leaders identified through both convenience and snowball sampling (see Table 7, 8, 9). The teams at each location developed their own interview protocols based on the project's core research questions, above, adjusting terminology and open-ended questions based on their knowledge of the local context and the just transition needs and experiences of historically marginalized communities in their case study location. These protocols are available upon request. Interviews were recorded and transcribed using Otter.ai to ensure accurate and comprehensive documentation of the discussions and to aid the analysis.

Annex B: Supplementary Materials

Table 7. Interviews with Local Stakeholders and Community Leaders in Hawai'i

HAWAI'I				
Postsecondary Institutions	Networks and Committees	Academic and Research-based Institutions	Community-Based and Nonprofit Organizations	Businesses
<ul style="list-style-type: none"> Hawai'i Pacific University** University of Hawai'i's Honolulu Community College University of Hawai'i's Kapi'olani Community College University of Hawai'i's Leeward Community College University of Hawai'i at Mānoa Kewalo Marine Laboratory University of Hawai'i West O'ahu Hālaul Kū Māna Public 		<ul style="list-style-type: none"> East-West Center Asia Pacific Leadership Program East-West Center's Pacific Island Development Program East-West Center YSEALI Academic Fellowship on Environmental Issues 	<ul style="list-style-type: none"> Āina Aloha Economic Futures Ceeds of Peace Hawai'i Nature Conservancy KUPU Ma'o Farms Matsunaga Institute of Peace Papahana Kuaola Peace Studio Trust for Public Land Vibrant Hawai'i Waiwai Collective 	

*With training programs ** Private PSI *** Secondary school

Table 8. Interviews with Local Stakeholders and Community Leaders in Chicago

CHICAGO				
Postsecondary Institutions	Networks and Committees	Academic and Research-based Institutions	Community-Based and Nonprofit Organizations	Businesses
<ul style="list-style-type: none"> Roosevelt University University of Illinois Chicago University of Illinois Urbana-Champaign 			<ul style="list-style-type: none"> Blocks Together Little Village Environmental Justice Organization (LVEJO)* Southeast Environmental Taskforce Southeast Side Youth Alliance Sustainable Option for Urban Living (SOUL) 	<ul style="list-style-type: none"> Earth Solar Electric GRNE Solar Millennium Solar Electric Training Academy (MSETA)* North American Board of Certified Energy Practitioners* Resporting Consulting Co-Op Sonrun Solar Terra Firma* Windfree Solar*

*With training programs ** Private PSI *** Secondary school

Table 9. Interviews with Local Stakeholders and Community Leaders in Kentucky

KENTUCKY				
Postsecondary Institutions	Networks and Committees	Academic and Research-based Institutions	Community-Based and Nonprofit Organizations	Businesses
<ul style="list-style-type: none"> Hazard Community and Technical College The Kentucky Community & Technical College System Southeast Community College 	<ul style="list-style-type: none"> Kentucky Community College and Technical System board 		<ul style="list-style-type: none"> Appalshop-Letcher County Culture Hub Foundation for Appalachia Kentucky Housing Development Alliance Invest 606/Appalachian Community Impact Fund InVision Hazard Kentucky Highlands Investment Corporation Mountain Association (formerly Mountain Association of Community Economic Development) NorthFork Food/Community Farm Alliance Rural Community College Alliance 	<ul style="list-style-type: none"> Benham Schoolhouse Inn

*With training programs ** Private PSI

To facilitate data analysis, the team developed a codebook of predefined codes and categories derived from the research questions and literature review. The codebook underwent several iterations to adjust to insights that emerged during data collection. Using Dedoose, the research team coded all interviews from the three cases, with at least one researcher consistent across the coding and analysis of all three cases.

To ensure the robustness of the findings, each case study underwent review by at least two community advisors, while the cross-site analysis received input from a pool of experts representing PSIs, CBOs, business, and government. We sought to maintain the active engagement with local community stakeholders and peer reviewers to ensure their valuable perspectives were incorporated throughout the research and writing process.

Once all interviews were coded, a thorough review of the coded data was conducted to identify converging and diverging narratives and perspectives related to a just transition, environmental justice, climate justice, and/or sustainability and the role of education and training in achieving these, whether delivered by PSIs and/or CBOs. Common themes that were identified are supported by examples from each case study. The data analysis also focused on identifying key recommendations to PSIs from various U.S. stakeholders, including community-based organizations, PSIs, training implementers, and others. These recommendations aimed to provide actionable insights for PSI to address gaps in green learning opportunities and to work towards a New Green Learning Agenda while promoting a just transition.

Table 10. National Education and Training Ecosystem: Actors Referenced by Case Study Participants, Type and Scale of Work

TYPE OF ACTOR/CASE LOCATION	NATIONAL SCALE		
	HAWAI'I	CHICAGO	KENTUCKY
NONGOVERNMENT ORGANIZATIONS (NGOS)	Sierra Club	Delta Institute	AmeriCorps
	Oakland Community Land Trust	Elevate	
		Faith in Place	
		Ink Works	
		Sierra Club	
		Terra Firma	
NETWORKS AND COMMITTEES	Association for the Advancement of Sustainability in Higher Education (AASHE)	Sirius	North American Association for Environmental Education
	Pacific Islands Forum	Social Justice League	The American Association of Colleges and Universities
		Transportation Equity Network	American Association of Community Colleges
		North American Board of Certified Energy Practitioners	
		International Brotherhood of Electrical Workers (IBEW)	
BUSINESSES	Kokua Kalihi Valley Ho'oulu 'Āina	Blue Raven	
	Matsunaga Institute for Peace	CiCLO**	
	NOAA Society	GRNE Solar	
	Purple Mai'a	Hilco**	
	NOAA Society	Livewire	
		Petco**	
		Rivian	
		SunPower	
		Sunrun Solar	
		Tesla**	
GOVERNMENT AGENCIES	Department of Land and Natural Resources		Appalachian Regional Commission Environmental Protection Agency
	Deputy Secretary of Oceans Fisheries and Polar Affairs		Deputy Undersecretary for Rural Development , United States Department of Agriculture (USDA)
	National Oceanic and Atmospheric Administration (NOAA)		Federal Emergency Management Agency
			Federal Emergency Management Agency
RESEARCH INSTITUTE	Smart Water Resources Research Center		

** International scale

Table 11. State Education and Training Ecosystem: Actors Referenced by Case Study Participants, Type and Scale of Work

TYPE OF ACTOR/CASE LOCATION	STATE SCALE		
	HAWAI'I	CHICAGO	KENTUCKY
UNIVERSITIES AND COMMUNITY COLLEGES	Kapi'olani Community College	Dawson Technical Institute, Kennedy-King College	Bellarmine University
	Northern Marianas College	DePaul University	Big Sandy Community and Technical College in Prestonsburg
	University of California Santa Cruz	Oakton Community College	Gateway Community and Technical College
	University of Hawai'i	Roosevelt University	Jefferson Community and Technical College
	University of Hawai'i at Mānoa	University of Illinois	Kentucky Community and Technical College System
	Palau Community College	University of Kansas	Madisonville Community College
	University of the Pacific	University of Michigan	Maysville Community and Technical College
	Windward Community College	University of Vermont	Owensboro Community and Technical College
	Oakton Community College	University of West Virginia	Southeast Kentucky Community and Technical College
			Pikeville College
			University of Kentucky Extension Service
			University of Louisville
			Maysville Community and Technical College
			Big Sandy Community and Technical College in Prestonsburg

TYPE OF ACTOR/CASE LOCATION	STATE SCALE		
	HAWAI'I	CHICAGO	KENTUCKY
COMMUNITY-BASED ORGANIZATIONS	Campbell Foundation Center for Resilient Neighborhoods (CERENE)	Amplify	Appalachian Impact Fund
	Chamber of Commerce Hawai'i	Blacks in Green	Appalachians for Appalachia
	Friends of Hawai'i Iloa	Blocks Together	Appalshop
	Hawai'i Conservation Alliance	Centro de Trabajadores Unidos	The Ashland Alliance
	Hawai'i Environmental Education Alliance	Chicago Environmental Justice Network	Community Farm Alliance
	Hawai'i Nature Center	Chicago Police Foundation	Federation of Appalachian Housing Enterprises
	Ho'okua'aina in Kailua	Chicago Urban League	Housing Development Alliance
	Institute for Climate and Peace	Cicero Community Farm	Invest 606
	Kuhiawaho Lo'i	Growing Home	Kentucky Highlands Investment Corporation
	KUPU	Illinois Solar Energy Association	Mountain Association
	Mālama Loko Ea Foundation	Little Village Environmental Justice Organization (LVEJO)	North Fork Local Foods
	Mālama Pu'uloa (Hui o Ho'ohonua)	Midwest Renewable Energy Association	Redbud Financial Alternatives
	Mitchell Foundation	Millennium Solar Electric Training Academy	Rural Community College Alliance
	Papahana Kuaola	Southeast Environmental Task Force	
	Protect and Preserve Hawai'i	Southeast Side Youth Alliance	
	Sustainable Option for Urban Living	Sustainable Option for Urban Living (SOUL)	
	Chicago Urban League	Tepochcalli Community Education Project	
	Chicago Police Foundation	Warehouse Workers for Justice	

TYPE OF ACTOR/CASE LOCATION	STATE SCALE		
	HAWAI'I	CHICAGO	KENTUCKY
NETWORKS AND COMMITTEES	Hawai'i Tourism Authority Board		Appalachian Funders Network
	Leeward Community College Sustainability Committee		Association of Community College Trustees
			Council on Post-secondary Education
			Kentucky Association for Environmental Education
			Partnership For a Green City
			Kentucky Association for Environmental Education
BUSINESS	Elemental Excelerator	Sunrun Solar	Benham Schoolhouse Inn
	Hawaiian Earth Recycling Menehune Magic Maker	Windfree Solar	Pantry Shelf
	Kualoa Ranch		
	Ma'o Farms		
	Pacific Biodiesel		
	Pacific Islands Institute		
GOVERNMENT AGENCIES		Metropolitan Planning Council	Knott County Recovery Court, Drug Court
RESEARCH INSTITUTES	College of Social Sciences and the Water Resources Research Center		

Endnotes

- 1 We refer to all higher education institutions as post-secondary institutions.
- 2 Importantly, the use of “green” economy in this report does not exclude the priorities, mindsets, or experiences of communities for whom a “blue” economy takes precedence—that is, economies centered on marine- and/or fresh-water based ecosystems rather than land-based ecosystems. “Green” and “blue” (and their relevant breadth of skills) can be used interchangeably, but would need to be more precisely articulated in practice.
- 3 Climate resilience as the combination of both mitigation and adaptation actions. Please see a complete definitions in the Key Terms section.
- 4 We refer to environmental justice in the context of the 17 Principles of Environmental Justice drafted and adopted at the First National People of Color Environmental Leadership Summit (www.columbia.edu/cu/EJ/Reports_Linked_Pages/EJ_principles.pdf)
- 5 Mainly, the Infrastructure Investment and Jobs Act (IIJA), the CHIPS and Science Act, and the Inflation Reduction Act (IRA).
- 6 This includes the recent awarding of eight universities to serve as Environmental Justice Thriving Communities Technical Assistance Centers (EJ TCTACs) by the U.S. Environmental Protection Agency and the U.S. Department of Energy. The purpose of these EJ TCTACs is to “help underserved and overburdened communities across the country access funds from President Biden’s Investing in America agenda, including historic investments to advance environmental justice” (EPA, 2023, “EPA’s Thriving Communities Technical Assistance Centers include a network of over 160 partners to provide resources to unlock access to President Biden’s historic investments in America,” www.epa.gov/newsreleases/biden-harris-administration-announces-177-million-17-new-technical-assistance-centers)
- 7 For a detailed list of actors interviewed see Tables 7 through 9 in the Annex B.
- 8 See Tables 10 and 11 in the Annex B for the ecosystem of actors referenced in the three case studies.
- 9 Some of the most climate-vulnerable countries in the world are SIDS in Oceania, Yet, while SIDS have not been contributors to greenhouse emissions and have extremely low to negligible carbon footprints, colonization and environmental racism coupled with poverty and power imbalances on the global stage have left many SIDS with inadequate tools and resources, including green learning opportunities, to combat the existential threat of climate change in empowering ways.
- 10 Please see the Annex B for details.
- 11 In the context of community colleges in Hawai‘i, where faculty carry some of the highest course loads of any PSIs (i.e., five course in the fall, four in the spring), doing sustainability work as service takes on an additional layer of significance. As one participant explained, faculty who take on additional administrative duties to manage sustainability programs and certificates often get their course loads reduced, a practice which has been viewed as appropriate compensation.

12 www.city-data.com/neighborhood/East-Side-Chicago-IL.html

13 Though in conventional terms the Humboldt Park neighborhood has been considered between Western Avenue, Pulaski Road, North Avenue, and Chicago Avenue. The area west of Pulaski until Kenton Avenue is also considered West Humboldt Park.

14 www.city-data.com/neighborhood/Humboldt-Park-Chicago-IL.html

15 The place where the strike took place was named Camp Cesar Chaves Chavez after the organizer of migrant farm workers. www.areachicagoarchive.wordpress.com/2019/02/18/contested-space

16 According to a report published in June 2020 by the Chicago Metropolitan Agency for Planning (CMAP)

17 www.cookcountysheriff.org/data/jail-population-february-13-2020

18 www.encyclopedia.chicagohistory.org/pages/385.html

19 www.worldpopulationreview.com/us-cities/dolton-il-population

20 Interviewee names are pseudonyms.

21 www.congress.gov/bill/117th-congress/house-bill/1733