Funding climate action through collaboratives: lessons from grantmaking to communities

Abstract. Since 2009, collaboratives primarily comprised of local government practitioners and climate-oriented philanthropy have worked together to fund and deliver climate action at the local level. This contribution examines topical, programmatic, and impact data from 5 such groups collectively for the first time. Data from these collaboratives' competitive re-granting programs is compiled, anonymized, and classed against the United Nation's Sustainable Development Goals (SDGs). Then, the dataset is examined for trends indicating how effective re-granting has been at: (1) creating frameworks and transferable case studies to inform approaches and show implementation methods; (2) producing, implementing, and scaling climate solutions across locales, regions, and nations; (3) partnering across governance levels, sectors, and disciplines to accelerate impact; (4) testing new approaches to sharing power by practicing equity and climate justice principles; and (5) addressing common barriers by sharing experiences with each other. Discussion of findings highlights where this set of climate investments have been most successful in advancing the SDGs, and where they have fallen short. The conclusion summarizes what can be learned from this data snapshot about crafting the next generation of philanthropic investments built to capitalize on the strengths of local communities in the coming decade.

Key Words. Philanthropy, Collaboratives, Competitive Re-granting, Sustainable Development Goals, Impacts

Introduction. Local climate work is reinventing itself. It emerged in the 1990's, beginning a narrative shift from urban centers as climate villains to possible saviors. The 1992 United Nations Framework Convention on Climate Change and 1997 Kyoto Protocol seeded a field focused on reducing greenhouse gas (GHG) emissions (Hoffmann, 2011). All over the world, local governments began developing the practice of Climate Action Planning (CAP) and GHG goal setting and accounting. As communities fail to meet these goals, the decades-old narrative and methodology behind CAP, implementation, and evaluation is being questioned (Angelo & Wachsmuth, 2020). What has been learned thus far needs to be articulated.

For instance, the technical, time-consuming task of tracking local climate progress still relies primarily on GHG measurement within jurisdictional boundaries. This continues to lack standardized calculation methods (Boswell et al., 2012). It is also ineffective as an engagement tool for inspiring necessary community behavior and urban system changes (Stoknes, 2015). Yet the 2015 Paris Climate Accord reinforced local GHG commitments as important, further embedding the culture of local CAP and GHG reporting (Bertoldi et al., 2018). To go beyond GHG calculations, different city ranking systems have existed, dissolved, or combined over the years - like the STAR Community Rating System, which was absorbed by and informed LEED for Cities and Communities. These rating systems can be loosely linked back to various definitions of sustainable development, but - like GHG calculations - are not standardized.

Additionally, the responsibility of CAP and implementation has largely been housed in a single, often siloed sustainability office within a local government. These typically small and underfunded staff teams usually focus their work on those sectors they have direct jurisdictional authority over (Deslatte & Stokan, 2020). For instance, significant effort may be put into adopting energy efficiency building codes to draw down the GHG emissions from local residential, commercial, or industrial building stock (Allman et al., 2004). Less effort is put into equally critical actions like building cross-sector partnerships to maximize climate actions.

This is because building resource-sharing partnerships is labor intensive. It is also not work that sustainability officers can claim as progress toward their climate goals. However, spreading the responsibility for climate action is becoming a key tactic to address the root causes still largely unfactored into climate mitigation and adaptation actions (Tosun & Schoenefeld, 2017). This is being done by sharing design questions and decision-making power with community groups and regional organizations. Doing so connects climate action to the daily needs of the people it tries to protect (Kelman, 2014; Nagoda, 2015).

As communities increasingly face climate change as a force impacting their members in disparate ways, CAP processes are expanding beyond jurisdictions and GHGs, incorporating hotly debated concepts like sustainable consumption, climate resilience, and climate justice (Baldwin & King, 2018). This trend reflects a growing realization in this now 30-year-old field of practice that: (1) most local governments with climate commitments are not going to meet their goals doing business as usual - meaning that more multilateral approaches are needed; and (2) GHGs are a symptom of embedded issues in current systems, both cultural and physical. Root causes still need to be identified and realistically addressed (Markolf et al., 2020).

The role of climate collaboratives. While a culture of learning from past climate actions is a gap in this still-developing field, a culture of peer learning and horizontal collaboration between local government sustainability staff has been growing since the early 2000's (Hawkins & Krause, 2021). National cohorts of local governments funded by other levels of government are one example – like the U.S. Department of Energy's (DOE) efforts to share energy efficiency successes and challenges across jurisdictions. At the same time, collaboratives of local government practitioners and sustainability advocates funded by climate-oriented philanthropy emerged regionally, nationally, and internationally (Lee & Van de Meene, 2012).

First, these collaboratives existed to connect similar practitioners and funders to their peers. Then, they began articulating and aligning priorities. As common goals coalesced, competitive member re-granting funds emerged in some of these organizations to incentivize adaptive learning in collaborative settings. These funding opportunities tested what could be produced together to solve shared problems. They also tested the ability of funded tools to transfer solutions across locales. Encouraging emergent learning, creativity and testing around evolving climate hypotheses is the overarching goal (Darling et al., 2016). However, each collaborative defines their re-granting success and tracks progress differently, depending on which type of practitioners they serve and how embedded their strategy is into their annual workplans.

Driven by increasing social and scientific pressures, these collaboratives are starting to discuss the shortcomings of CAP and GHG reporting (City Scale, 2020). Practitioners know that climate work increasingly centers around people and justice principles, but struggle to connect this work to traditional GHG reduction work. As the field tries to identify with and organize around community needs like jobs and affordability, using GHGs as a CAP baseline and measuring stick is increasingly unhelpful.

Climate practitioners need to know what they are doing that is working well, so that they can capitalize on those areas. Likewise, they need to understand weaknesses, so they can avoid or strengthen those areas as appropriate. This understanding will help them align around a common course of action that better connects climate work to the root causes of GHG emissions, while centering individual community priorities.

Dual hypotheses embracing field evolution. In complex urban systems, knowledge is created by experimenting with a constantly evolving set of hypotheses about how to advance climate goals (Acuto & Leffel, 2020). This study tests dual hypotheses. (1) If philanthropy funds emergent learning via collaborative climate action, then local progress can contribute to global sustainable development goals.

Likewise, (2) if local government climate practitioners and sustainability advocates work with each other and across sectors, then their collective creativity can scale climate solutions across jurisdictions.

There is periodic speculation about what these kinds of investments accomplish. They are sometimes assessed for signals about the philanthropic community's interest in - and local government's ability to deliver - impactful climate work (Nisbet, 2018). This study adds knowledge to, and draws implications from, what philanthropically funded collaborative climate work accomplishes. It is not comprehensive, however. The urban sustainability field is still limited to data snapshots and subsets of activity within a much larger climate action effort.

Even if it was possible to create comprehensive datasets showing all philanthropic climate investments at the local level, linked to their associated outputs and outcomes, there is no common urban sustainability impact analysis method (Swann & Deslatte, 2019). Different city ranking systems have added to the confusion surrounding urban sustainability impact evaluation, especially concerning what kinds of work should be counted or not (Diaz-Sarachaga & Jato-Espino, 2019). There is, however, growing consensus that the effectiveness of local governments in climate work is directly linked to their ability to connect their work to initiatives in nonprofit and private sectors (Fuhr et al., 2018). This study seeks to understand how effective local governments are in making these connections to achieve global and local climate goals.

Methods. To add to the literature that examines the implications of past local climate work on future climate investments, this study compiles and anonymizes grantmaking data from five collaborative networks: the Urban Sustainability Directors Network (USDN); the Carbon Neutral Cities Alliance (CNCA); Partners for Places (P4P); the Green Infrastructure Leadership Exchange (the Exchange) and the new Mobility Fund (MF). Table 1 summarizes portfolios by number of projects and investment amounts.

Table 1. Number of Projects and Investments by Fund.

Portfolio Summary	**All Funds**	**USDN Funds** ***North American Local Governments since 2009***	**P4P Funds** ***North American Local Governments, Funders, Community Orgs since 2013***	**CNCA Funds** ***International Local Governments since 2015***	***Exchange Funds North American Local Stormwater Practitioners since 2017***	**MF Funds** ***U.S. Mobility Advocates since 2020***
Total # Projects	**424**	192	155	55	12	10
Total Investment	**$19,302,256**	$6,124,499	$ 8,518,606	$ 3,858,796	$ 413,856	$ 386,500
Total Leverage	**$135,854,244**	$ 8,299,941	$ 82,385,028	$ 43,720,706	$ 401,625	$ 1,046,944

This study includes a total of 424 projects initiated since 2009, representing $19,302,256 in investment and $135,854,244 in monetary leverage from other partners. The 2021 data is only partially complete. The data examined in this study runs through the end of September 2021. A few of these collaboratives made some of their annual awards after that.

Four of these groups (USDN, P4P, CNCA, and the Exchange) are focused on advancing urban sustainability by supporting different kinds of local government practitioners, such as sustainability officers or stormwater engineers. One emerging group (MF) is focused on funding local mobility advocates that work outside of government. This one is included because philanthropy is beginning to move to trust- and community-based investments, resulting in fewer lead-applicant grant opportunities for local governments (Tufano, 2021).

Aligning datasets to a common classification system. Because each collaborative re-granting fund has its own performance metrics in place that are used to track goal progress, a common classification system first needed to be established. The United Nations (UN) Sustainable Development Goals (SDGs) are current and jurisdiction-spanning. Their broad themes are echoed throughout the various urban sustainability rating and ranking systems. Hence, the grants in this dataset were first classed against the SDGs (Table 2).

Table 2. Aligning the Compiled Network Grant Portfolios to the 17 SDGs.

Sustainable Development Goal	Project Classification Parameters
Goal 1: No Poverty	Includes projects that impact individuals, including social services, and poverty prevention
Goal 2: Zero Hunger	Includes projects that strive to change and improve food systems
Goal 3: Good Health and Well-being	Includes projects that promote public health and a better quality of life in communities
Goal 4: Quality Education	Includes projects that provide access to general education and continuing education / technical training programs for green jobs
Goal 5: Gender Equality	*Gender Equality has not been addressed explicitly in the funds' sustainability and climate work to date*
Goal 6: Clean Water and Sanitation	Includes projects that work to improve community water systems and advance green stormwater infrastructure
Goal 7: Affordable and Clean Energy	Includes projects that advance the transition to renewable energy and/or energy efficiency efforts
Goal 8: Decent Work and Economic Growth	Includes projects that advance local economies through sustainable economic development, sustainability financing mechanisms, and programs that aim to support local businesses and quality jobs for workers
Goal 9: Industry, Innovation and Infrastructure	Includes projects that (1) improve the built environment through sustainable and equitable transportation systems and infrastructure, and (2) advance sustainable industry and new technologies to foster climate innovation
Goal 10: Reduced Inequality	Includes projects that primarily focus on increasing equity / climate justice in communities
Goal 11: Sustainable Cities and Communities	Includes projects that primarily focus on making communities more sustainable and livable
Goal 12: Responsible Consumption and Production	Includes projects that work to reduce waste and consumption in communities
Goal 13: Climate Action	Includes projects that adapt to climate change and/or reduce greenhouse gas emissions
Goal 14: Life Below Water	Includes projects that improve ground water or use life in water bodies to sequester carbon
Goal 15: Life on Land	Includes projects that increase public parkland, urban biodiversity, and natural resource protections
Goal 16: Peace and Justice Strong Institutions	Includes projects that prioritize equity / climate justice, specifically in local governance practices through civic engagement at the community level
Goal 17: Partnerships to achieve the Goal	Includes projects where partnerships across governance levels, sectors, disciplines, and geographic regions are integral to success

Excepting the Mobility Fund, each collaborative's grant portfolio was already classed by their fund management teams against the same community codes in their customer relationship management (CRM) databases. These community codes were based on the now-defunct STAR Community Rating System's categories. In 2018, this ranking system merged with the U.S. Green Building Council, informing some of the LEED Cities and Communities rating system. Prior to this, STAR was seed-funded by USDN's re-granting program. It was developed by sustainability directors for their own performance measurement. Hence, it focused on climate actions that local governments could take. Two SDGs ("Gender Equality" and "Partnerships for the Goals") do not have community codes assigned because none directly aligned.

There is no evidence that gender equality has been addressed explicitly in the work funded by these grant programs. However, while not specifically assigned a community code, work that requires partnership is embedded within the community code descriptions shown in Appendix 1. Because partnerships are so important to the mission of these collaboratives, grants featuring the following collaborations are classed against this SDG: silo-breaking collaboration, cross-departmental collaboration, local government collaboration, regional network participation, and international collaboration.

It is possible for each project to have up to 3 community codes assigned to it: 1 code to denote the primary focus of the project, 1 secondary code if the work focuses on an additional aspect, and the option for a tertiary code, which is rarely used. If 2 codes are used, the project had an equally split project focus - doing energy efficiency upgrades in low-income housing, for example. If 3 codes are used, 3 project focuses were equally weighted. For example, building a tool describing how to work at the nexus of climate mitigation, adaptation, and equity, for many communities to use. Most projects across grant portfolios are assigned 1 to 2 community codes.

Other portfolio data that directly applied to SDG descriptions was also aligned, including project topics, partnership types, impact-indicator categories that grantees report against, and fund-specific metrics. For instance, in addition to community codes, USDN and CNCA's projects are assigned at least one topical designation,[1] which established a categorized system for online product posting. These were classed to their corresponding SDGs. In the Exchange's portfolio, grants were assigned an annual priority topic. These topics were also each assigned to a corresponding SDG.

Because it serves a non-governmental sector, the Mobility Fund does not class projects against community codes. Thus, the following fund metrics are aligned with these SDGs: (1) community organizing was classed against the "Sustainable Cities and Communities" SDG; (2) integrating equity was classed against the "Reduced Inequalities" SDG; (3) optimizing public transit capacity was classed against the "Industry, Innovation, and Infrastructure" SDG; (4) supporting low carbon trips was classed against the "Climate Action" SDG; (5) supporting priority community groups was classed against the "Peace, Justice and Strong Institutions" SDG; and (6) partnership with mobility advocate and priority community groups was classed against the "Partnerships for the Goals" SDG.

As with community codes, each project may be assigned multiple SDGs, depending on the specifics of the work. This means that the total number of SDGs is greater than the total number of projects within any given fund's portfolio. For example, a USDN project may be assigned 4 SDGs because it has 2 community codes linked to two different SDGs, 1 instance of regional network participation linked to a third SDG, and 1 topic linked to a fourth SDG. In this way, the portfolio data from each grant-making program was assigned to the SDGs in one compiled, anonymized dataset, so that it could be queried in a uniform way for trends.

Searching impact indicators for trends. Four of the 5 funds (USDN, CNCA, P4P, and the Exchange) share indicator categories to identify project impacts. These include: (1) plan development; (2) inventory, assessment, or survey conducted; (3) enforcement and /or incentives enacted; (4) practice improvements; (5) policy and code adjustments made; (6) education and outreach activities; (7) partnership and collaboration exhibited; (8) facility and infrastructure improvements made; and (9) programs and services

[1] These topics include climate change preparedness, community engagement, consumption, district-scale solutions, economic development, energy, equity, food systems, government operations, metrics, natural ecosystems, network building, public health, public policy, sustainability planning, technology, transportation, waste systems, and water systems.

implemented. Grantees provide details in these categories during their final reporting. Impacts were examined to identify additional ways in which these investments have made a broader impact on the field.

Five questions were asked of the compiled dataset to better understand how effective local government has been over the past 10 years as they have strived to:

1. *Create frameworks and transferable case studies to inform approach and implementation methods.* The full portfolio was queried to identify the number of projects that produced a plan, framework, guide, tool, or case study as an output.
2. *Produce, implement, and scale climate solutions across locales, regions, and nations*. Participation records from each project were explored. How many engaged other local governments from across local, regional, and international geographic boundaries to scale the work were determined.
3. *Partner across governance levels, sectors, and disciplines to accelerate impact*. Projects with cross-departmental and cross-sector partnerships were reviewed. Teams that had hosted a convening or had reported education and outreach – to include knowledge sharing between peers via webinar hosting or conference presentations – were counted.
4. *Testing new approaches to sharing power by practicing climate justice principles*. Project teams that claimed that equity or climate justice principles had guided their work were looked at in depth, to understand if those principles were evident in award budgets and in how the work was conducted.
5. *Addressing common barriers by honestly sharing experiences with each other*. Projects were evaluated to see if the project team utilized education and outreach efforts to share lived experience.

To establish a common language and maintain consistency, Appendix 2 contains definitions of terms used in this data analysis that may have multiple meanings, depending on the audience.

Results. This section visualizes the portfolio by SDG and queried to answer these 5 questions.

Portfolio assessment against the SDGs. Figure 1 shows that the top 5 SDGs represented in the portfolio are "Partnership for the Goals" (57.1%), "Climate Action" (34.4%), "Sustainable Cities and Communities" (32.5%), "Affordable and Clean Energy" (26.2%), and "Peace, Justice and Strong Institutions" (25.5%).

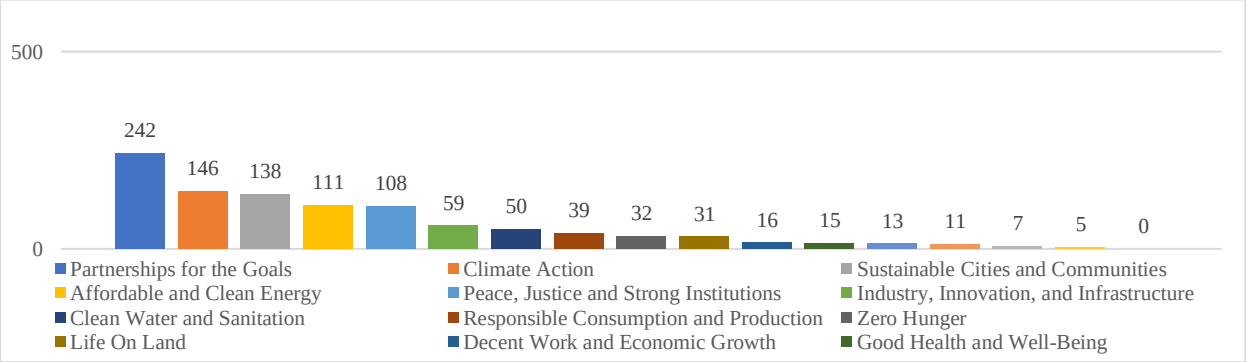

Figure 1. All Portfolio Projects Classed Against the Sustainable Development Goals.

Figure 2 shows total investment by SDG. Funds for a single project were counted in more than one SDG if there was more than one main project focus, so the total represented in this chart is greater than the amount awarded to date. Of the $19 million (M) USD invested, $10.4 M has been invested to support partnership development across local governments, departments, organizational silos, regions, and international

networks of practitioners and funders working around the world. Over $6 M has been used to advance local climate action in communities.

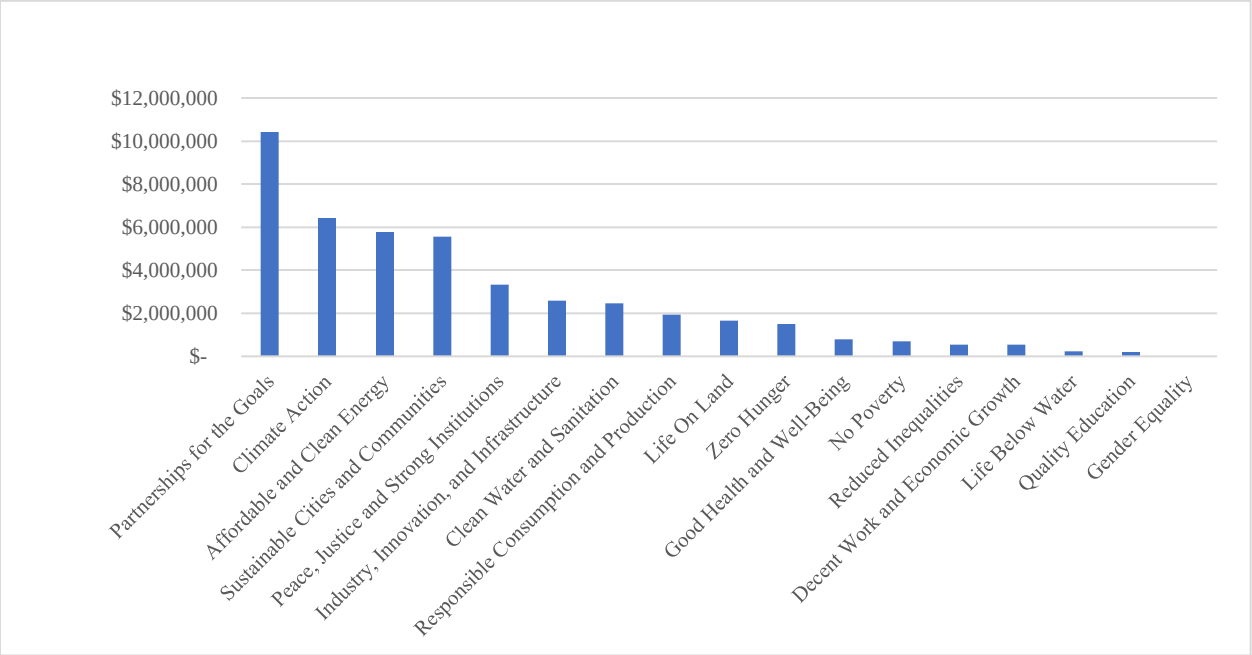

Figure 2. Total Investment by Sustainable Development Goal.

Climate investing by the collaborative has not been large or static over time. Figure 3 shows that each year fluctuates as funders come and go, and as networks prioritize various topics and programs.

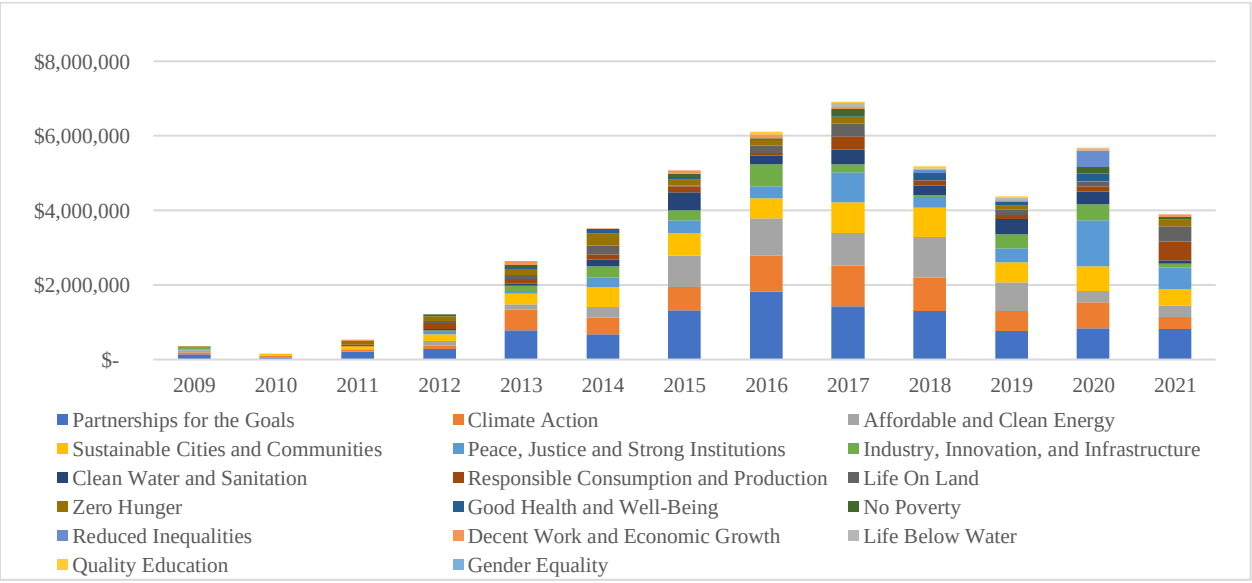

Figure 3. Total Investment by Sustainable Development Goal and Year.

Figures 4 through 6 break the SDGs into top, mid-range, and low investment areas, by year and amount. In Figure 4, it is evident that the collaboratives changed strategies and funding practices in 2021. This was due to reducing the frequency of Requests for Proposals (RFPs), reducing award amounts, and requiring more community-based decision-making and racial equity work, using smaller, experimental award amounts.

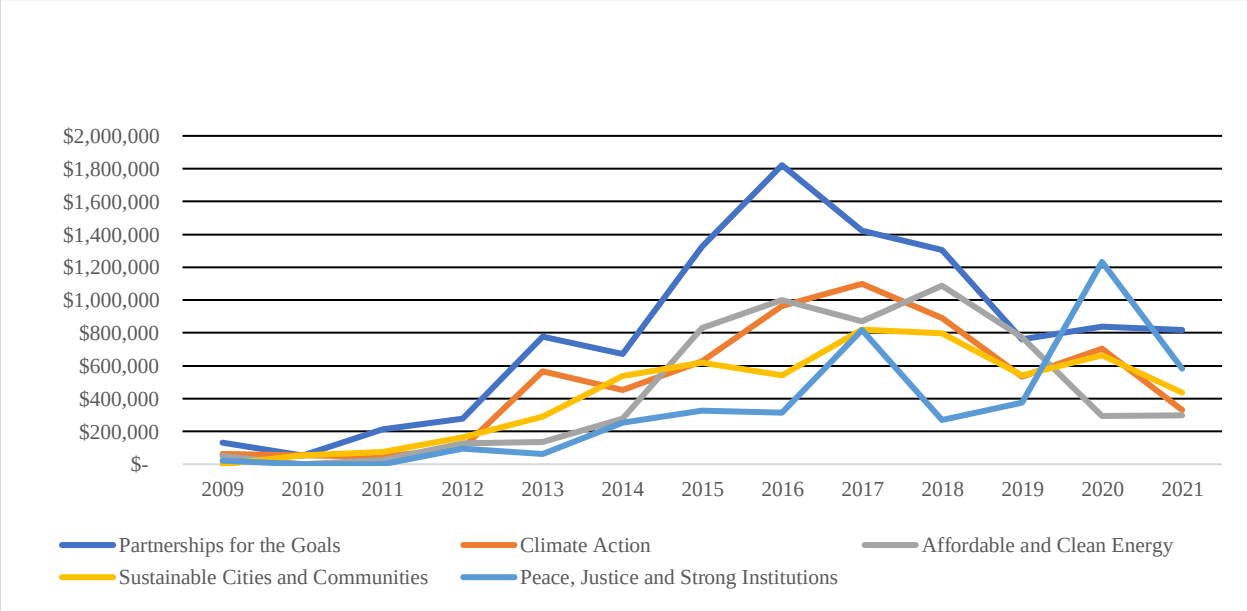

Figure 4. Top-Investment Sustainable Development Goals Representing More Than $4 Million.

Figure 5 shows that "Responsible Consumption and Production" has recent investments as cities stive to create circular economies that share, reuse, repair, and recycle existing materials and products. "Life On Land" is on the rise due to investment in carbon sequestration as an adaptation tool. "Zero Hunger" spiked in 2014 due to interest in creating urban agriculture systems. This is once again a focus as cities try to eliminate food deserts as an equity in climate adaptation strategy.

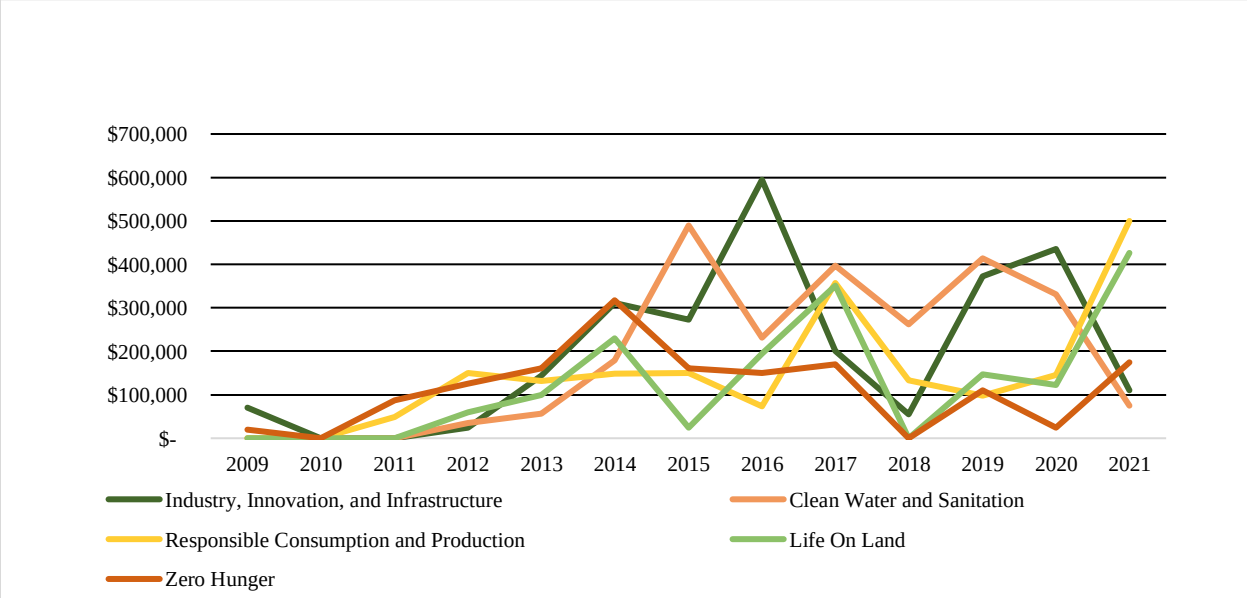

Figure 5. Mid-Range Investment Sustainable Development Goals Representing $1 - $4 Million.

Figure 6 shows that, excepting "Life Below Water", the lowest investment categories reflect harder climate justice work. Many local governments and their community groups do not share trust, and working to create a functional relationship takes time, energy, and skills that require often-lacking confidence and sustained

commitment. Addressing these weaknesses is a strong focus in recent work. The water-focused SDG is represented by carbon sequestration in the portfolio, primarily in port cities interested in seaweed cultivation for this purpose.

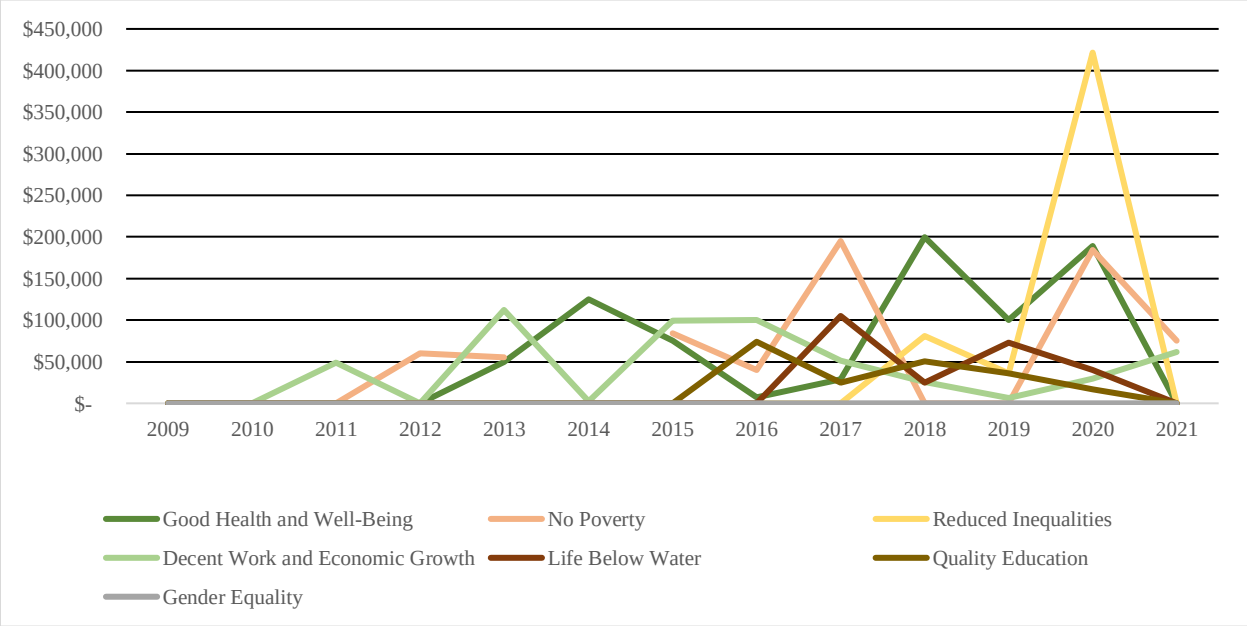

Figure 6. Low-Investment Sustainable Development Goals Representing Less Than 1 Million.

Answering the five questions. The first question asked of the portfolio data is what percentage of projects created approach-informing frameworks and transferable case studies that show implementation methods. Figure 7 shows that only 37.0% of projects created a framework, guide, or tools to spur climate action, and only 11.3% created case studies.

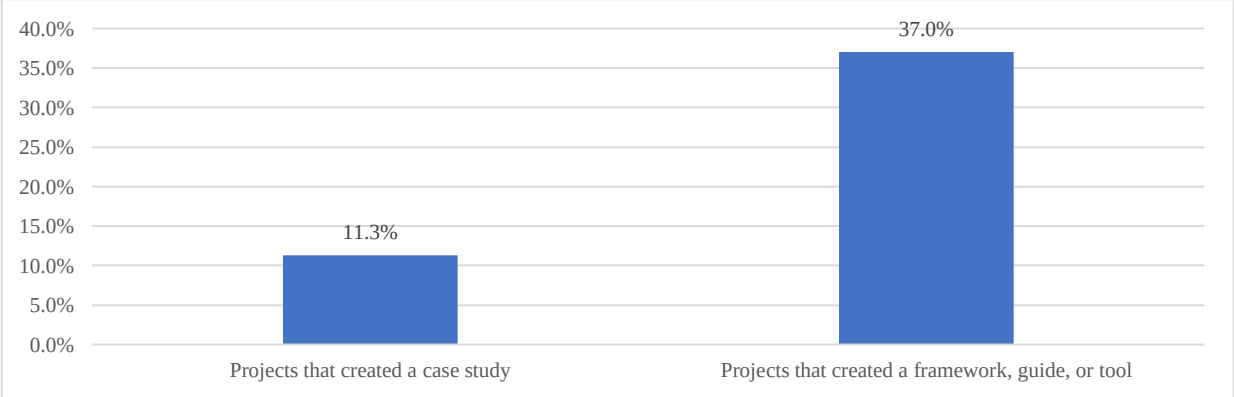

Figure 7. Percent of Projects Creating Frameworks and Case Studies.

When they are produced, however, these support just and sustainable resilience to climate change in two main ways. First, they are shared with other local governments internally in networks and sometimes externally, providing context and practical advice. Second, in place-based projects, frameworks and case studies provide a way to communicate sustainable resilience principles, working across sectors and disciplines to create buy-in.

Figure 8 shows what the projects create beyond case studies and frameworks. The percentages of projects that result in practice improvements (57.3%), program and service implementation (40.3%), policy and code adjustments (15.3%), and enforcements or incentives (8.3%) represent tangible, long lasting local government process changes due to these grant-making activities. Once one community adopts a process, it provides proof of concept, making it easier for other communities to follow suit. This is a common theme in grantee final reports.

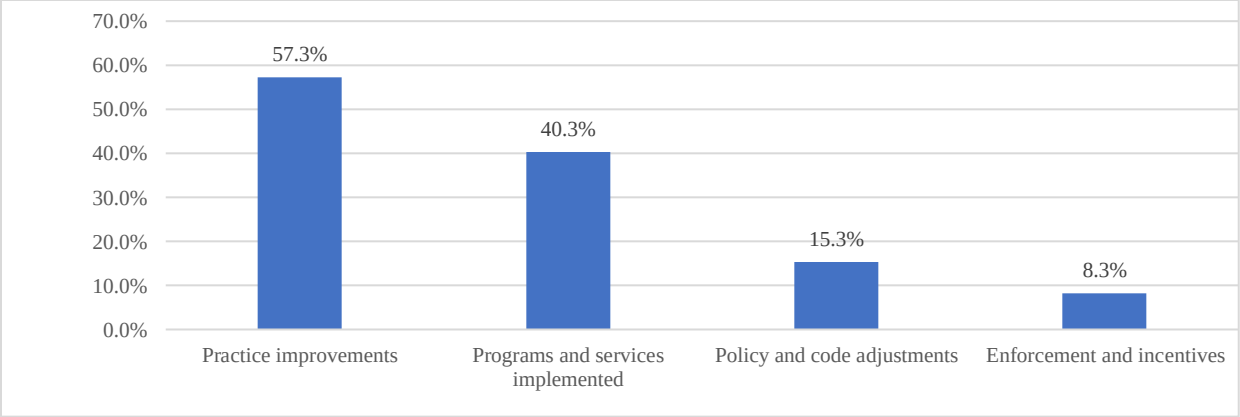

Figure 8. Percent of Projects that Implemented Programs and Policies.

The second question asked of the portfolio data is what percentage of projects produce, implement, and scale climate solutions across locales, regions, and nations (Figure 9). Collaboration is a requirement across all these re-granting programs. This is because awards are intended to produce, implement, and scale climate solutions. Collaboratives are best at driving coordination between two or more local government members. It becomes harder and less common as the geographic boundaries expand to other regional networks and internationally. However, more than half (54.9%) of funded projects reported generating continuing work. This indicates the uptake of climate solutions by other partners, signaling usefulness.

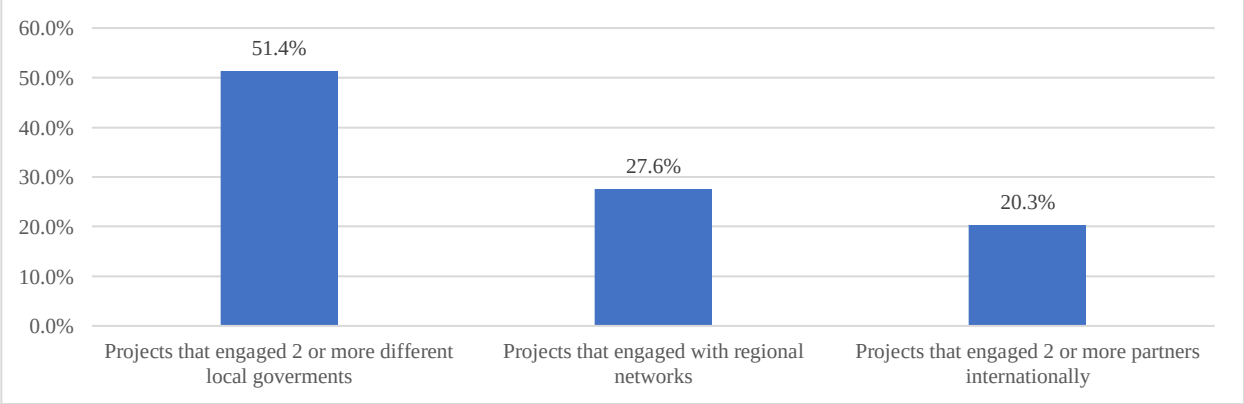

Figure 9. Percent of Projects that Show Collaboration Across Geographical Boundaries.

The third question asked of the portfolio data is what percentage of projects partnered across governance levels, sectors, and disciplines to accelerate impact (Figure 10). Although RFPs make partnership an eligibility requirement, some grantees do not report specific benefits from these collaborations, which can at times be politically sensitive. For instance, local governments may work together to influence a regional electric utility to diversify its energy portfolio. While sometimes difficult, the collective influence can be

powerful. It can also be hard to work across sectors. Local governments and non-profits can often feel comfortable working without time budgets and shifting specified outputs, whereas the private sector often cannot enjoy this flexibility. Different revenue models and pain points can challenge collaborative work.

In this dataset, 66.3% of projects report benefits from partnership, 39.3% of projects engage across departments, 40.5% engage in cross-sector, silo-breaking collaboration, and 41.0% made a point to communicate the work. While these collaboratives do focus on communicating and sharing knowledge between members, this has not been a primary outcome of many funding opportunities. There is only one funding opportunity represented that is solely dedicated to convening and knowledge sharing.

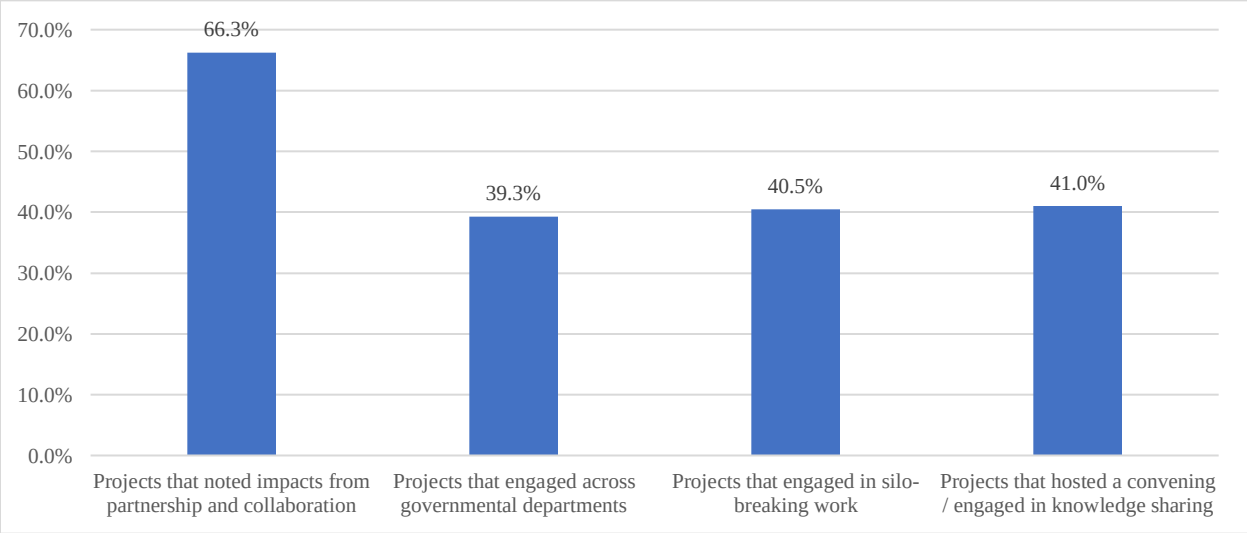

Figure 10. Percent of Projects With Collaboration Across Sectors, and Disciplines.

The fourth question asked of the portfolio data is what percentage of projects explore and test new approaches to sharing power by practicing equity and climate justice principles in local work. These make the work accessible and transparent, while sharing ownership of the responsibilities (Figure 11).

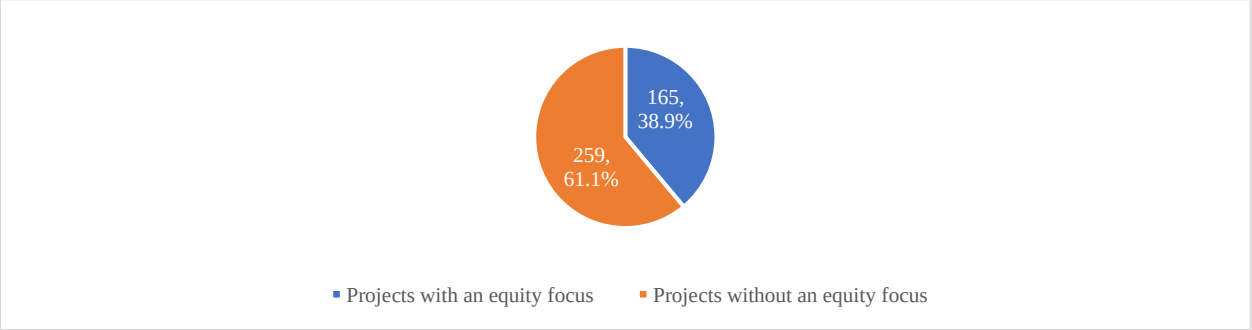

Figure 11. Percent of Projects Focusing on People.

While only 3.1% of projects focus primarily on “Reducing Inequalities” SDG, and 25.5% address “Peace, Justice and Strong Institutions” SDG, 38.9% claim to focus on equity or address climate justice in some way. However, this is based on the definition of equity or climate justice at the time of the award. These principles reflected across the SDGs have been rapidly evolving over the last decade.

What was considered an equity-focused practice 5 years ago does not qualify by today's standards. For instance, even 2 years ago, a grantee could claim community engagement as equity work. This is not the case now. Grantees must show how they are involving community partners in the design, decision-making, and implementation processes, changing how local climate work is conducted. Since this data set spans this evolution, equity-focused work is based on the definition of equity at the time the work was done. Equity and climate justice initiatives have only emerged in larger numbers recently in the collaborative portfolios.

The fifth question asked of the portfolio data is what percentage of projects address common barriers by having project participants share their personal experiences with each other. Figure 12 shows the percentage of projects designed to help cities address barriers through education and outreach efforts[2] (55.7%) and through community engagement (44.4%). Funding opportunities have increasingly required these elements within proposals, to incentivize grantees to identify and address shared concerns. Since the COVID-19 pandemic began, rapid response funding opportunities have been offered to help communities cope with uncertainty by rethinking methods for direct community engagement and prioritizing this work.

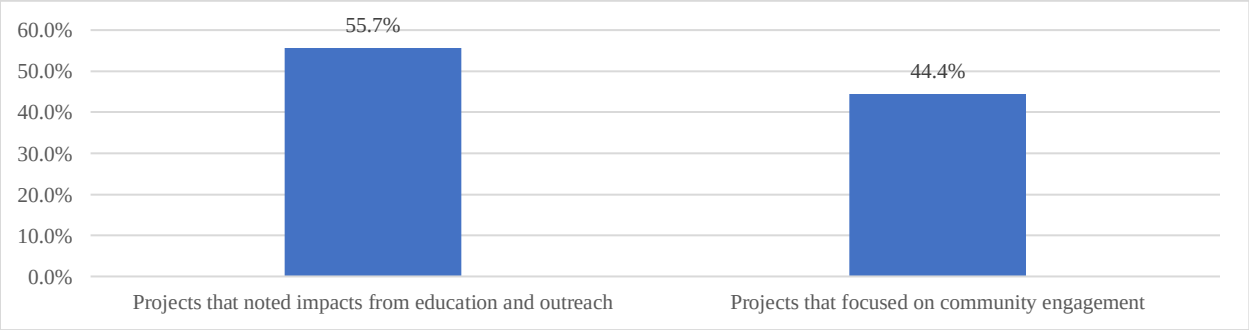

Figure 12. Percent of Projects working on education, outreach, and community engagement.

Discussion. The top 5 SDGs represented in these investments are either consistent with the requirements of RFPs or with the mission of the collaboratives. The top SDG ("Partnership for the Goals", found in 242 projects or 57.1%) directly reflects the incentive that the philanthropic sector can provide to bridge a gap that is not filled by other drivers, like sustainability measurement systems or mayoral priorities. Without requiring partnerships to qualify for funding, this SDG would not be so strongly represented in the award portfolio. Even when required, local governments still struggle to make it a priority.

During RFP run times, proposing teams are often thrown together to meet eligibility requirements, despite (1) technical assistance given to help engage partners, and (2) diversity in partnerships being a heavily weighted scoring criterion. These teams often did not coalesce during the work. The $135,854,244 of additional funds from other partners capitalizing on the initial $19,302,256 in philanthropic investment would also not be as high. Small awards act as startup funding for ideas that grow and scale with additional partner investments from entities who see a business case for advancing the work. For instance, USDN invested $202,242 in 15 Rapid Response projects in 2020. While a match was not required, these seed funds leveraged $316,137 in additional funds,[3] producing a 156% return on USDN's investment.

[2] Education and outreach can be targeted to a specific sector, and is not necessarily engaging with community members at large.
[3] At the time of USDN award completion, members reported any funds obtained in addition to USDN's that were / are being used for the work.

Three of the other top 4 SDGs represent the missions of the collaborative networks represented. "Climate Action" was found in 146 projects (34.4%), "Sustainable Cities and Communities" in 138 projects (32.5%), and "Peace, Justice and Strong Institutions" in 108 projects (25.5%). Finally, "Affordable, Clean Energy", which was found in 111 projects (26.2%) represents an early local government strength, as municipal buildings were retrofitted to become energy efficient, including installation of renewable energy systems. Additionally, incentives and codes were passed to ensure other locally regulated sectors followed suit.

The mid-range SDGs indicate various collaborative focuses over the years: "Industry, Innovation, and Infrastructure" (13.9%), "Clean Water and Sanitation" (11.8%), "Responsible Consumption and Production" (9.2%), "Zero Hunger" (7.5%), and "Life on Land" (7.3%). For instance, "Industry, Innovation, and Infrastructure" is represented by sporadic work on mobility infrastructure and developing various technological products and platforms for local government use. "Clean Water and Sanitation" reflects a focus on advancing green stormwater infrastructure (GSI) that is shared by two collaboratives in this dataset. "Responsible Consumption and Production" and "Zero Hunger" are represented by early and recently renewed consumption and urban agricultural work across the collaboratives. "Life on Land" is represented as various collaboratives focused early work on access to greenspaces and park development, to promote urban biodiversity and healthy communities.

These collaboratives have been weak in the areas of "Decent Work and Economic Growth" (3.8%), "Good Health and Wellbeing" (3.5%), "Reduced Inequalities" (3.1%), "No Poverty" (2.6%), "Quality Education" (1.7%), "Life Below Water "(1.2%), and "Gender Equality" (0%). These low-investment SDGs represent moments of interest within the collaboratives on items like workforce training and seaweed carbon sequestration. They do not appear with consistency, if at all. Excepting "Life Below Water", these SDGs represent harder equity and climate justice work, traditionally the purview of local nongovernmental organizations or non-municipal governmental agencies.

Regarding the five queries, these collaboratives have been petri dishes for sharing experiences in peer-to-peer environments. Their re-granting mechanisms have been a forcing factor for outreach (55.7%) and engagement (44.4%). Grantees have been best at producing, implementing, and scaling climate solutions city-to-city (51.4%). Regional (27.6%), and international (20.3%) collaboration is still proving challenging. Grantees have been somewhat effective at partnering across governance levels (39.3%), sectors, and disciplines (40.5%) to accelerate impact. Many RFPs continue to tighten team eligibility requirements.

Local governments are generally willing to develop and test new approaches to sharing power by refining and practicing rapidly evolving equity and climate justice principles (38.9%). Not all this self-reported effort is truly equity and climate justice work as it is defined at this moment. However, these reports show how the collaborators are trying to keep up with these concepts, which are a powerful driver in climate philanthropy right now.

Creating frameworks (37.0%) and transferable case studies (11.3%) to inform approach and show implementation methods to spur climate action among peers and across cities are weaker areas. Oftentimes it is technical service providers – for example, the U.S. DOE – who create case studies based on what cities are doing. Local governments are not typically focused on field-building document creation as much as they are on utilizing any applicable methods from presentations of other local government's work. Consultants hired by grant funds often pull these case studies together from other sources to inform grantee work, instead of grantees developing new studies.

The dual hypotheses are confirmed throughout this dataset. When local government climate practitioners and sustainability advocates work together and across sectors ($10.4 M invested), they can create climate solutions that can span jurisdictional nuances and become standard local government practices (with 54.9 reporting continuing refinement). When philanthropy funds emergent learning via collaborative climate action, local climate progress ($6 M invested) does contribute to incrementally advancing global SDGs (all represented in some form in grantee work, save gender equality).

There is clear room for improvement against each SDG. However, actively learning from these past climate investments can inform future investments, increasing their effectiveness through iterative honing of funding opportunity design. Local governments can re-articulate their role in climate change work with the development of a new collective course of action. RFPs can require root cause analyses of GHG emission symptoms and the centering of new climate work around current community priorities.

Conclusion. These results provide a better understanding what local governments are good at and what their current weaknesses are. This information can be used to define new climate action pathways for local climate funders and local governments alike. Climate funders drive urban sustainability evolution, incentivizing expanded partnerships and encouraging not just community interaction, but also metro and regional networking. To be even more effective, grantmakers can:

- Provide past context so that newcomers to a field accustomed to high staff turnover can use this information to understand how to prioritize efforts: what to stop doing and what to expand upon.
- Expand the way climate action is defined, to include established ways to measure partnership and climate justice work, so that there is motivation to move beyond GHG measurement and reporting.
- Fund new frameworks to help practitioners understand how to approach climate action now: how to plan, prioritize, and measure in less prescriptive ways that define impact at the community level.
- Acknowledge that resources will always be limited. Encourage a collaborative funding model, which does not shy from granting small amounts for exploratory work; realizing that if the idea is good, leverage from other funding sources will follow.

Crafting climate strategies that can effectively play to local government strengths will involve these entities learning how to better:

- Transfer power from government to community, sharing responsibility and ownership of local climate work – which re-granting directly to sustainability advocacy groups helps to do.
- Be a funding partner by inserting climate work into local operations and capital improvement budgets – beyond just staffing sustainability offices.
- Be less governor, and more connector and convenor, hosting information-sharing platforms to address shared challenges in consistent, structured ways.
- Identify ways to influence and embed themselves into multilateral partnerships, establishing processes and testing ways to share the load of short and long-term climate goals.
- Collaborate at the metro and regional levels, not just within jurisdiction and organizational boundaries.

In early grant-making years, the focus was on physical systems, like reducing energy consumption in the built environment, or influencing how locally sourced, healthy food is distributed. Now there is growing evidence that local climate funders and governments want to center climate work around social systems. This focus adds a new level of accountability in this still-developing urban sustainability field. More

transparency around issues people care about can accelerate the testing of new kinds of governance models, to help communities become more effective at climate work.

With eager grantees, collaborative climate grantmakers can use RFPs as a forcing mechanism to fill gaps. They can: (1) demonstrate that the standard ways of doing climate work are changing; (2) set climate goals centered upon community priorities; (3) promote less prescriptive and more multilateral initiatives; and (4) guide climate support organizations toward the best use of limited resources. When invested wisely, these resources can unlock others, creating a domino effect that increases the effectiveness of all sectors working on climate change issues.

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- The Carbon Neutral Cities Alliance (CNCA): https://carbonneutralcities.org
- The Green Infrastructure Leadership Exchange (the Exchange): https://giexchange.org
- The Funders Network (TFN): https://www.fundersnetwork.org
- The Mobility Fund: https://www.mobilityandaccess.org
- The Urban Sustainability Directors Network (USDN): https://www.usdn.org

Working closely with these collaborative networks for the past decade as part of their fund management teams has provided understanding of how the field of urban sustainability is evolving. This is especially true regarding the ways in which funders want to invest, and the ways in which collaboratives explore root causes and possible climate solutions. Additionally, working with partners like City Scale has uncovered patterns within the field, helping to articulate the next steps needed to advance it.

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Appendix 1 | Assignment of Community Codes to Sustainable Development Goals

Table 1. Method for Classing Award Portfolio Data Against the Sustainable Development Goals.

Sustainable Development Goal	Sustainable Development Goal Description	Community Code Action Category	Community Code Action Category Description (based on a dissolved rating system that was called STAR)
No Poverty	End poverty in all its forms everywhere	Human services	Ensure that essential human services are readily available for the most vulnerable community members
		Poverty prevention and alleviation	Alleviate the impacts of poverty, prevent people from falling into poverty, and proactively enable those living in poverty to obtain greater, lasting economic stability and security
Zero Hunger	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	Food access and nutrition	Ensure that community members have educational, physical, economic, and transportation access to fresh, healthful, and safe food supplies
Good Health and Well-Being	Ensure healthy lives and promote well-being for all at all ages	Arts and culture	Provide a broad range of arts and cultural resources and activities that encourage community member participation, self-expression, and a strong sense of community
		Aging in the community	Encourage active aging by optimizing opportunities for health, participation, and security, to enhance quality of life
		Active living	Enable community access to amenities that allow for healthy, active lifestyles as an integral part of daily routines
		Community health	Achieve positive health outcomes and minimize risk factors associated with behaviors / poor indoor air quality in buildings
		Health systems	Support high quality local health systems that are accessible
		Outdoor air quality	Ensure that outdoor air quality is healthy for all living things, to protect community welfare
Quality Education	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Workforce readiness	Prepare the workforce for employment through attainment of post-secondary education, and offer effective workforce development programs
		Educational opportunity	Achieve equitable attainment of a quality education for all community members who want it from birth to adulthood
Gender Equality	Achieve gender equality and empower all women and girls	None apply	No applicable description
Clean Water and Sanitation	Ensure availability and sustainable management of water and sanitation for all	Community water systems	Provide a clean and secure water supply through the management of potable water, wastewater, and stormwater
		Water efficiency	Minimize water use and demand to conserve local water supply
		Green infrastructure	Design and maintain a network of green infrastructure features that integrate with the built environment to conserve ecosystem functions and support local life
Affordable and Clean Energy	Ensure access to affordable, reliable, sustainable and modern energy for all	Greening the energy supply	Work with the energy sector to transition the energy supply, including for transportation, to renewable energy sources
		Energy efficiency	Minimize energy use and demand in the residential, commercial, and industrial sectors to increase energy efficiency
Decent Work and Economic Growth	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Business retention and development	Work with the business sector to support equitable economic prosperity and stability by retaining and expanding businesses throughout the community
		Quality jobs and living wages	Expand job opportunities, offer supportive workplace policies, and pay living wages so that all can afford their necessities
		Local equity	Create a self-reliant community supported by a robust local economy that helps small independent businesses thrive
Industry, Innovation, and Infrastructure	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Transportation choices	Promote accessible mobility options, including walking, biking, and public transit, that not personal vehicle dependent
		Targeted industry development	Increase community competitiveness by strengthening clusters of businesses, suppliers, manufacturers, and their intermediary organizations
		Exemplarity performance	Reward performance in the non-profit and private sectors for local climate action with local incentives
Reduced Inequalities	Reduce inequality within and among countries	Social and cultural diversity	Celebrate, respect, and represent the diverse social and cultural backgrounds of the community and its members
		Civil and human rights	Respect and protect the civil and human rights of all members of the community
Sustainable Cities and Communities	Make cities and human settlements inclusive, safe, resilient and sustainable	Ambient noise and light	Minimize ambient noise and light levels to protect the health and integrity of human and ecological systems
		Compact and complete communities	Concentrate development in walkable neighborhoods that connect to public transit, offer different uses and services, and provide housing options for all income levels

		Housing affordability	Construct, preserve, and maintain an adequate supply of affordable housing options for all residents
		Infill and redevelopment	Focus growth and redevelopment in infill areas and ensure infrastructure is in satisfactory working condition
		Community cohesion	Promote socially cohesive neighborhoods where residents are connected and feel a sense of community
		Historic preservation	Preserve and reuse historic structures and sites to retain local, regional, and national history and heritage
		Environmental justice	Ensure no one is overburdened by environmental pollution, especially those in low-income communities
		Emergency response and management	Utilize collaborative approaches to reducing harm from catastrophic events by increasing local capacity to respond to acute and chronic incidents
		Hazard mitigation	Reduce or eliminate the long-term risk from hazard events by establishing pre, during, and post-event process
		Safe communities	Prevent and reduce crime and increase perceptions of safety through interagency collaboration and with residents
Responsible Consumption and Production	Ensure sustainable consumption and production patterns	Waste minimization	Reduce and reuse waste produced in the community, applying it to other local uses when possible
		Green market development	Increase market demand for products and services designed to protect the environment
Climate Action	Take urgent action to combat climate change and its impacts*	Climate adaptation	Strengthen the resilience of communities to climate change impacts in natural, economic, and social systems
		Greenhouse gas mitigation	In partnership with other sectors, achieve greenhouse gas emissions reductions (GHG) throughout the community
		Local government GHG and resource footprint	Reduce local government GHG emissions and minimize energy and water use in local government facilities
		Best practices and processes	Experiment and test ways to embed and accelerate community-scale climate work
Life Below Water	Conserve and sustainably use the oceans, seas, and marine resources for sustainable development	Water in the environment	Protect water and restore the integrity of the water cycle in the natural environment
Life On Land	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Public parkland	Create a system of safe parklands that feature equitable, convenient access for community members
		Biodiversity and invasive species	Maintain urban habitat, promoting biodiversity and managing invasive species
		Natural resource protection	Protect and restore natural ecosystems and cultural landscapes to support clean water and air, food supply, and safety
		Working lands	Conserve lands that provide health benefits and raw materials
Peace, Justice and Strong Institutions	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels	Civic engagement	Facilitate inclusive civic engagement by asking all community members to participate in local decision-making
		Equitable services	Establish equitable access to community assets within and between neighborhoods, populations, and across cultures
		Local intervention	Encourage and reward creative, effective approaches to dealing with new events in sustainable ways
		Good governance	Implement process changes in local governance that encourage equity, diversity, and inclusion in decision-making
Partnerships for the Goals	Strengthen the means of implementation and revitalize the global partnership for sustainable development	None Apply	*No community code action categories specifically to this SDG. Instead, partnership is represented throughout many of the community code action categories. Partnerships are also tracked separately by each re-granting fund*

Appendix 2 | Definitions

Because the terms below can mean different things to different audiences, the following definitions are used in this data assessment:

- **Case studies:** A description of a specific effort that has been done in a particular place that can be used to inform similar efforts in other places. Case studies highlight the transferable elements of the work.
- **Continuing work:** Work that occurs after the timeframe of an award is complete. This is self-reported by the grantee or other project participants.
- **Equity and climate justice principles:** The fair treatment and involvement of all people and communities—regardless of race, gender, national origin, or income level—in the development, implementation, and enforcement of environmental laws, regulations, and policies to address issues of unequal distribution of resources and risks. (*Adapted from the U.S. Climate Resilience Toolkit definition of Social Equity*)
- **Framework:** A product designed to provide best practices and guide others, regardless of sector, to advance common goals. This can include products named frameworks, tools, roadmaps, and guides.
- **Partnership:** For this evaluation, partnerships include collaboration locally and across geographic boundaries between different sectors and disciplines.
- **Silo-breaking work:** Work that develops partnerships across sectors that do not traditionally work together to unlock additional resources and build capacity for local climate work.