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Collaborative Alignment: a framework for community-based collaboration for natural resource management, environmental policy decisions, and locally-led climate action

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This essay introduces the Collaborative Alignment Framework (CA) and proposes its suitability for empowering and engaging communities as they address issues related to SDG 15. The fifteenth Sustainable Development Goal is concerned with protecting, restoring and promoting sustainable use of terrestrial ecosystems; managing forests sustainably; combating desertification, and stopping and reversing land biodiversity loss. Doing so necessarily involves communities and the parties that have a lot at stake related to environmental safeguards and management practices. Consequently, the discussion of Collaborative Alignment occurs in the following steps: First, it situates CA in the community-based forest collaborative movement in the United States, a movement that emerged in the forestry sector in the 1990s. Second, the essay addresses the foundations of CA. Third, CA is explained. Fourth, case examples of CA applications are featured. Lastly, the essay presents the relevance of Collaborative Alignment to “locally-led adaptation”, a community and place-based approach for addressing climate change (and SDG 13).

KEYWORDS

collaboration, alignment, participation, capacity building, adaptation

Introduction

In early 2016, the Supervisor of a National Forest in the Western United States and the Commissioners of two county governments in the State where this Forest is located contacted the Director of the National Collaboration Cadre, a United States Department of Agriculture Forest Service program (USDA-FS). The two County Governments had received a small grant from this State’s Office of the Governor to explore the possibility of establishing community-based collaborative organizations (CBC) that would address issues related to “life on land;” first and foremost forest health and management.

The Governor of this Western State believed, and the County Commissioners concurred, that communities needed to be engaged collaboratively with federal land management agencies in this region (e.g., the Forest Service and the US Department of Interior Bureau of Land Management) and stakeholders on an on-going basis. The Counties were often the federal agencies’ adversaries, and local, state, and federal government officials were looking for a viable alternative approach to the types of adversarial actions (e.g., objections, appeals,

litigation) that often tied up land management projects and planning (Wondollock and Yaffee, 2000; Daniels and Walker, 2001; Weber, 2003; Cox, 2010; Clarke and Peterson, 2016).

Forest Service leaders and elected officials were aware of successful community-based forest collaboratives (CBFCs) in nearby States but none existed in the State that was home to this Forest (Abrams et al., 2015; Davis et al., 2020). That would change with the Governor's grant program.

The County Commissioners and the Forest Supervisor asked the National Collaboration Cadre Director to send a team to the State to work with the two Counties to establish CBFCs. Two of the three authors comprised that team. Although the team members had extensive experience working with government agencies, local communities, and diverse stakeholders on forest management issues, they decided to employ a new approach to develop the CBFCs: Collaborative Alignment.

This essay introduces the Collaborative Alignment Framework (CA) and considers its suitability for empowering and engaging communities as they address issues related to SDG 15. As the *Frontiers in Communication* call states, the fifteenth Sustainable Development Goal is to “protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss”. Doing so necessarily involves communities and the parties that have a lot at stake related to environmental safeguards and management practices. Consequently, the discussion of Collaborative Alignment occurs in the following steps: First, it situates CA in the community-based forest collaborative movement. Second, the essay addresses the foundations of CA. Third, CA is explained. Fourth, case examples of CA applications are featured. Lastly, recommendations are presented regarding CA and community-based actions regarding sustainable development generally and SDG 15 specifically. This last section also addresses the relevance of Collaborative Alignment to “locally-led adaptation”, a community and place-based approach for addressing climate change (and SDG 13).

Community-based forest collaboratives

Collaboration about natural resource management and environmental issues is not new—its history goes back over more than 30 years (Gray, 1989) in the United States. Collaborative groups gained visibility in the early 1990s, with organizations such as the Applegate Partnership in Oregon and the Henry's Fork Watershed Council in Idaho providing examples of success (Weber, 2003).

From their inception, collaborative groups have often struggled to become enduring. At a July 1997 conference on “Communities, Land Use, and Conflict” in Catron County, New Mexico, Sam Burns from the Ponderosa Pine Partnership in southwest Colorado (and a professor at Fort Lewis College) outlined twelve characteristics of successful, community-based collaborations, particularly in the Western United States. Among them he emphasized the “development of trust and confidence in the partnership's abilities to make real progress in achieving community ecosystem stewardship”. He stressed the importance of “a planning process

based in mutual education, learning, and increased social awareness among all partnership members”. He called for “a commonly accepted set of trustworthy facts about the economy, natural resources, values and ways of life of the community that can form the basis of consent” (Burns, 1997). The characteristics that Burns highlighted applied to the collaborative organization of which he was a part, but the Ponderosa Pine Partnership did not endure. Although Burns' ideas remain relevant to CBFCs today, compliance with a set of characteristics does not guarantee permanence. A collaborative group endures to the extent that its members consider it to be meaningful and productive—and the best procedural option for addressing complex controversial natural resource and environmental management situations. Examples of enduring CBFCs include the Blackfoot Challenge in Montana (Wilson et al., 2017) and the Clearwater Basin Collaborative in Idaho (Pinel, 2013).

Not all collaborative efforts succeed, but many communities, stakeholders, and agencies are viewing collaboration as a preferred approach (Davis et al., 2020). Not surprisingly, community-based forest collaboratives have gained momentum in recent years (Davis et al., 2020). In the USA State of Washington, for example, eight forest collaboratives have formed the Washington Forest Collaboratives Network (WFCN).¹ Its website states that “forest collaboratives are place-based groups that emphasize inclusive planning processes that achieve balanced social, ecological, and economic objectives. Forest collaboration can be a time-intensive process, but what continues to bring stakeholders back to the table are durable, cross-cutting relationships and improved projects that reflect the varied forest management goals of members” (WFCN) (see text footnote¹).

In the USA State of Oregon CBFCs have been increasing in number since the mid-1990s (Davis et al., 2015). According to a 2013 Oregon Solutions Report, “the emergence of these collaborative partnerships has been in large part to provide review and provide recommendations for [United States Federal Government] forest management activities occurring near their communities” (Oregon Solutions, 2013, p. 2).

The Oregon Solutions Report presents “key findings” from an inventory of the 23 CBFCs that existed in Oregon prior to 2013. These findings include:

- The rate at which collaboratives are being created has increased substantially in the past decade.
- More than 170 organizations are engaged in the 23 collaborative groups.
- All 11 USDA-Forest Service National Forests and seven of nine USDI-Bureau of Land Management Districts in Oregon are engaged in collaboratives.
- Each collaborative is typically engaged with just one National Forest; in contrast, each National Forest is typically engaged with two or more collaboratives.
- Although not yet formally quantified, anecdotal comments by collaborative contacts strongly suggest that collaboratives

¹ Available online at: <http://washingtonforestcollaboratives.org/> (accessed January 26, 2021).

have significantly reduced litigation of Federal land management actions.

- Funding is the most-commonly reported need for Oregon collaborative groups (Oregon Solutions, 2013, p. 2).

Community-based collaborative groups extend beyond forests in the United States. Local collaborative groups have organized around watersheds in the form of watershed councils and watershed forums (Margerum, 2011). Community-based collaboration is a global phenomenon, related to such areas as natural resources management (e.g., World Neighbors, 2022) and climate change adaptation (Ensor et al., 2014). World Neighbors, a foundation that supports community-based natural resources management in 13 countries, includes in its mission: “Recognizing the interdependence of community well-being and ecosystem health, World Neighbors strengthens the capacity of communities to have a voice in decisions about planning and design of conservation initiatives affecting them.” Its approach features the following:

- Multi-stakeholder collaboration that involves all participants, from communities, to government, to NGOs, and promotes coordination among them.
- Conflict management mechanisms—support processes to manage natural resource conflicts among stakeholders.
- Participatory action research—collaborative fact-finding and analysis generates a mutually agreed upon perspective for action.
- Strong local organizations, such as forest-farmer groups and inter-village networks are built from the bottom up.
- Livelihood improvement and environmental services. We work to sustain environmental conservation by linking it to farm and community enterprises. Provide opportunities for reinvestment by linking upland environmental services to lowland and urban communities.
- Policy support and law enforcement are essential to curbing illegal encroachment leading to ecosystem degradation.
- Collaborative management plans—build shared responsibilities and decision-making among all stakeholders through joint management plans of natural resources. This leads to healthy communities and ecosystems.
- Participatory monitoring and evaluation—promote learning, trust and accountability through monitoring of the natural resource base and application of the management plan.
- Gender and social justice in access to, and control of, natural resources is the ultimate measure of the sustainability of community-based natural resource management efforts (World Neighbors, 2022).

World Neighbors’ approach is consistent with how viable and successful collaborative efforts are described in the relevant literature from a range of fields (e.g., Wondolleck and Yaffee, 2000, environmental studies; McKinney and Harmon, 2004, public policy; Margerum, 2011, natural resources; Dukes et al., 2011, conservation; Clarke and Peterson, 2016, communication). When parties form a community-based forest (or natural resources) collaborative, they intend to make it a best alternative for

decision-making and management and they hope it is productive and enduring.

The Collaborative Alignment Framework has been designed to help develop and sustain enduring and productive collaborative organizations. CA can serve as a multi-stakeholder platform on which a strong local organization can be constructed. It can include methods for dealing with conflict, improving livelihoods, inviting participation, and monitoring and evaluating its actions.

Collaborative Alignment foundations

When teaching a course in conflict management in the 1990s, one of the authors introduced a simple frame for assessing a conflict situation. Influenced by the work Hocker and Wilmot (2017) (*Interpersonal Conflict*, many editions, most recently 2017) and Folger et al. (2018) (*Working Through Conflict*, many editions, most recently 2018), the instructor presented students with three dimensions a conflict situation that warranted analysis: the substance or content of the conflict, the relationship factors involved, and the relevant procedural elements.

A faculty colleague who attended the class listened to the “substance-relationship-procedure” discussion and observed that the three dimensions could be considered a triangle, with the conflict management goal including meaningful progress on all three dimensions. Together, the two professors created the “Progress Triangle”.

The Progress Triangle has appeared in natural resources management and environmental conflict literature (e.g., Daniels and Walker, 2001; Ramsilovik-Suominen, 2010; Clarke and Peterson, 2016; Lee et al., 2018). It has become a staple of The National Collaboration Cadre’s work, both in project assessments and training programs. Clarke and Peterson (2016, p. 60) explain that:

This visual representation identifies three basic dimensions of all environmental conflicts and highlights the relationships between these dimensions. The substance dimension refers to the tangible and symbolic issues, sources of tension, complexity, information needs, meanings and interpretations, and opportunities for mutual gain. The relational dimension focuses on the stakeholders, their relational histories, incentives, positions, and interests; level of trust; sources of power; knowledge and skill; and their status. Finally, the procedural dimension focuses on the logistics of a process. It answers questions about decision space, resources (e.g., time & money), jurisdiction, timing, procedural history, procedural alternatives, and procedural preferences (Walker et al., 2008).

In 2015 a National Collaboration Cadre team was asked by senior managers of a National Forest in a Western US State to conduct an assessment and to examine specifically a community-based forest collaborative that was struggling. This Forest Collaborative had lost key members (and consequently, its diversity), lacked stable leadership, and had a fragile relationship with the adjacent National Forest. One of the team members speculated that a modification of the Progress Triangle (Daniels

and Walker, 2001) would provide an appropriate assessment tool. Based on his professional experience with government agencies and community development organizations, he replaced substance with “purpose”, procedure with “process”, and relationship with “people”. The Cadre team subsequently evaluated the Forest Collaborative in terms of its purpose, its process, and the people involved. The Cadre Team’s “3-Ps” assessment provided a foundation for the Forest Collaborative to address its key challenges and implement reforms.

Shortly thereafter, the “3-Ps” approach, as the modification was titled, was presented to another Cadre member. The Cadre colleague proposed a fourth P—Product, and Product was added. The colleague noted that stakeholders, communities, and agencies, when participating in a collaborate effort, want tangible results. They want to produce something—achieve positive outcomes—such as a new recreation site, rehabilitated trails, and prescribed fire management program. As Cadre members reflected on the utility of the 4 Ps, they realized that these areas—Purpose, People, Process, and Product—need to be in sync; a kind of collaborative alignment. The result was a variation on the Progress Triangle—the Collaborative Alignment Framework.²

Collaborative Alignment and the 4 Ps

Context

The Collaborative Alignment Framework has emerged out of National Collaboration Cadre work with National Forests throughout the United States. Consequently, CA is presented here in that context (USDA, 2019, 2021).

Situations can occur from natural events or from human induced timeframes that create a sense of urgency for natural resource management agency personnel (such as the United States Forest Service) and the communities and stakeholders that work with them. Some of the natural occurrences include wildfires, drought, and insect and disease outbreaks. The human induced sense of urgency may include legislative or regulatory deadlines for competitive project applications such as the Forest Service’s Collaborative Forest Landscape Restoration Program (CFLRP) or the United States Government’s Farm Bill. The sense of urgency to address the situation may be so strong that people come together easily and quickly with a desire to respond to, or “fix” the situation, but with little thought as to what they will accomplish or how they will do it.

Comments from collaborative partners in these types of situations have included (paraphrased here):

- “I want to hear the sound of chainsaws in the woods, not people talking in conference rooms.”
- “Planners develop plans, but we need to produce results.”
- “We need to be focused on products, not process.”
- “We need to be doing things on the ground this field season, or we will lose an entire year.”

² Gary Severson, one of the authors, developed much of the 4Ps discussion for material prepared for the National Collaboration Cadre of the USDA Forest Service (USDA, 2019).

There is a direct correlation of building the foundation of a collaborative effort to its effectiveness and durability over time. When the National Collaboration Cadre is invited to examine the diminished effectiveness of a once highly functioning collaborative group working with the Forest Service, a Cadre team often finds that a proper foundation was never built initially or was not maintained over time. One of the authors, a Community Representative on the National Collaboration Cadre has observed this situation numerous times.

In their enthusiasm to “get things done on the ground”, collaborative groups often overlook the foundational essentials of diverse people working together: What is our purpose? Who needs to be involved? How will we make decisions and resolve disagreements among us? Where will we focus our efforts and what will we produce? When we examine faltering collaborative groups, we often find that a solid foundation was never built in the first place, or situations changed and what used to work is no longer working for them and their foundation needs to be revisited (USDA, 2019).

The 4-P foundation

Purpose

When people come together in a business, a community organization, a church, a recreational activity, a political action group, a social club, a neighborhood association, a special interest group, or any of a wide variety of interests, there is a purpose that beckons people to gather together. The clarity of the purpose is the calling card for the group as it attracts more people. People are aware that investing time and energy in a group with others that share similar interests, concerns and values can lead to accomplishing things they could never accomplish on their own. The former mayor of Leadville, Colorado was once asked why he participated in a collaborative effort with the Forest Service to address a bark beetle outbreak in the state’s high elevation Lodgepole Pine forests, he responded “*Because it makes us all bigger*”. The purpose is the vision, glue, and touchstone for the group and its efforts. All things of the group begin and end with the purpose (USDA, 2019).

People

If the purpose provides the vision for a collaborative effort, the people who come together give it life. Participants’ views and priorities vary, and this variety provides the richness of diversity in communities. When people come together to share a vision provided by a specific purpose, the dynamics of human interaction unleash great amounts of creativity and energy in striving to make the vision a reality. However, just because people may share the same vision, doesn’t make them monolithic. All people are uniquely different and it is the differences of individuals working together toward a shared vision that makes collaboration so potentially powerful. Regarding one CBFC, an elected member of the state legislature was asked what were some ideas for reengaging a group of people into the process. The response was, “*Why should we*

attempt to reengage them when we know that we are going to disagree with them.” This is the very reason why they should be reengaged. The diversity of ideas, opinions, talents, and skills of people working together in a collaborative effort toward the same purpose provides vitality and health for the effort (USDA, 2019).

Process

The uniqueness of people provides richness in the diversity of ideas and opinions as they strive together for a shared purpose and vision. That same uniqueness and individuality, however, can provide an environment for disagreement, divisiveness, and chaos. Effective collaborative groups have developed a system of governance regarding how they will work together. Governance elements include a wide variety of numerous considerations. Everything from the nuts and bolts of meeting logistics to how decisions will be made and behavioral principles and guidance are all part of process. The process or procedural agreements reached by those who are participating in a collaborative effort, become the “rules of the road” that will serve the group of people as they work together (USDA, 2019).

Product

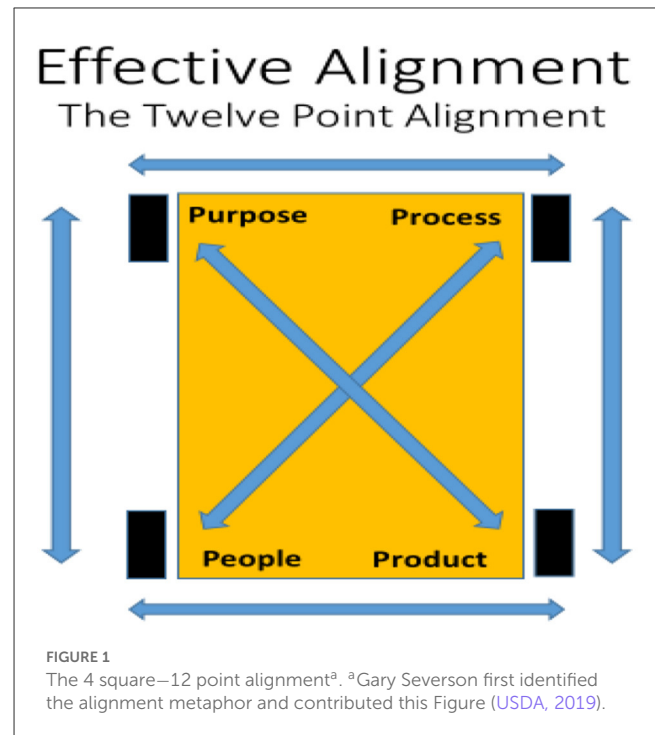
Collaborative groups that meet to simply to share information with one another do not last long. Members expect tangible outcomes—progress on substantive issues. If the collaborative effort is not producing actual outcomes, other demands for a person’s time and energy will begin to take higher priority. When a collaborative group shares a purpose, the group needs to know how to measure its progress in achieving that purpose. Just as mile markers on a highway inform the driver of the progress they are making toward their destination, milestones of accomplishment inform the collaborative participants of their progress in striving toward their vision of purpose. The identification of product milestones is important to allow collaborative partners know the progress they have made, celebrate accomplishment, and inform them how much further they must go in achieving their vision and purpose (USDA, 2019).

Aligning the 4-Ps

Collaborative groups such as forest collaboratives should consider using the 4-Ps, and do so in a manner that aligns the Ps with one another. Hallmarks of alignment include (1) the consistent delivery of measurable progress on the group’s objectives, (2) participant satisfaction and involvement, (3) meeting or exceeding expectations, (4) and clear evidence of achievements.

A “vehicle” or “rig” as a metaphor

A way to understand this concept of alignment is to compare it to the alignment of the tires on a truck or car. When all four tires are perfectly aligned, they are all working with one another to assist the vehicle to run straight down the road effectively and efficiently.



The ride is smooth, the steering is easy, the tires last longer, and the fuel efficiency increases.

However, gradually over time the tires begin to get out of alignment with one another due to road conditions, climate, and the wearing of parts. The misalignment usually occurs so gradually that it is imperceptible to the driver. Eventually, the driver may notice signs that things are not quite right: the car or truck pulls to the left or the right, the tires are wearing unevenly, and the ride is not as smooth as it once was. The driver finally decides that it is time for an all-wheel tire alignment to get the vehicle running correctly again, so the driver takes it to a tire alignment facility and a technician runs a 12-point check, identifies the problems, and corrects them putting the tires back into perfect alignment.

The same can be said of collaborative groups. Usually the misalignment of the four foundational building blocks of the collaborative group occurs so gradually that it is imperceptible to the participants, until the sign of wear begins to show and the participants notice that things do not seem quite right. When that happens, it’s time to perform a 12-point check on the collaborative alignment of the 4-Ps (see Figure 1).

Understanding the alignment among the 4-Ps begins with asking pertinent questions, such as these examples:

1. Are the desired **Products** aligned with the **Purposes**?
 - Does a product contribute to a larger plan?
 - Does a product address fundamental needs regarding the purpose, or merely symptoms/indicators of it?
2. Are the **People** who are participating aligned with the **Purposes**?

- Have the purposes been clearly communicated?
 - Are some people ideologically opposed to some of the purposes?
 - Are some people or organizations threatened by the purposes?
3. Is the **Process** aligned with achieving the **Products**?
- Are the resources adequate?
 - Are the deadlines realistic?
 - Is there enough time for meaningful learning about the complexity of the situation?
 - Is the staff support and facilitation sufficient?
4. Are the **Products** aligned with the skills, experience, and authority of the **People**?
- Do participants have the skills needed to achieve the products?
 - Are there adequate linkages to authority outside the group?
5. Are the **People** aligned with the **Process**?
- Is there buy-in to the operating rules guiding the process?
 - Are the various roles clear?
 - Has leadership been clearly assigned and constructively employed?

Proper alignment is important to the effectiveness and efficiency of the collaborative group. Periodic checks, perhaps annually, are as good an idea to collaborative groups as periodic tire alignments are to the car or truck owner (USDA, 2019).

Case examples

The Collaborative Alignment Framework is relatively new and has been employed with United States National Forests and their communities in both Western and Midwestern regions of the United States. These initial applications have demonstrated the viability of CA. Two Community-Based Forest Collaboratives (CBFC) examples are presented here.

Case one—Western US State one

Featured in the introduction, two Counties in a Western US State established CBFCs in 2016 and 2017. Two 1-day workshops that featured the CA Framework were held in each county. Workshop participants reflected a diversity of interests and organizations, ranging from conservation organizations to state and federal agencies to local businesses to homeowners. The first workshop introduced the CA approach and the 4 Ps. It then focused on Purpose and People. The second workshop, which took place 3 months later, revisited Purpose and People before devoting most of the workshop time to Process and Product.

An in-state experienced facilitator (from an in-state university) attended these workshops. The facilitator continued to work with

the groups in the two counties to establish operating agreements that were built on the 4-Ps. The progress of one of these Collaboratives can be highlighted as follows:

Purpose

The group emphasized the importance of including diverse interests to learn and listen together in order to create recommendations to federal, state and private landowners and managers regarding fuel reduction and other forest management. It would also develop recommendations regarding restoration activities in the County to protect wildland urban interface areas and watershed health while benefiting recreation, wildlife, and livestock.

People

The workshop participants endorsed a bounded process with a fixed set of seats at the table. The Forest Collaborative should be representative of people and groups with interests in the conditions of the forests in the County. During the Collaboration Cadre's workshops, the participants identified interest groups that they felt should be invited to the new Forest Collaborative. Members of those interest groups were subsequently invited.

Process

A University Institute drafted a Charter, which was reviewed by a subset of participants, and then submitted to the whole Collaborative for approval. It was agreed to at a follow-up meeting after deliberations by the Collaborative members and changes to the Collaborative organization were made. The Charter was signed by all participating stakeholders. The Collaborative would use a decision making process that takes the Collaborative from problem identification to recommended actions and employ a consensus-based decision protocol referred to as "gradations of consensus".

Product

The U.S. Department of Agriculture (USDA) invested nearly \$32 million to mitigate wildfire risk, improve water quality and restore healthy forest ecosystems. More than \$711,500 of that funding was designated for a forestry project in the State that would be managed, in part, through the Collaborative.

Case two—Western US State two

On an Western US National Forest, a highly functioning Collaborative Forest Landscape Restoration Program (CFLRP) included a collaborative group that had been operating for about 8 years. This CBFC had completed work with the National Forest on Environmental Impact Statements for two projects, were working on a third, and planning the fourth. However, participation in the collaborative group was dwindling and their breadth of diversity was narrowing. The National Forest Supervisor and local officials contacted the National Collaboration Cadre asking for assistance in identifying the problems and recommending ways

to get the CBFC back on track. Two Cadre members visited the forest collaborative and CFLRP and met with current members to assess their concerns. They also met with former participants to determine why they dropped out and what it would take to get them interested in being involved again. Using the Collaborative Alignment Framework, the Cadre members identified several key issues leading to reduced participation:

- The focus of the group was narrow and didn't address the interests of some participants.
- The monthly meetings were always held in the same location, making some of the participants drive long distances every month, even in winter.
- The leadership of the group, and many of the participants, were suffering from what the Cadre termed "collaboration fatigue"—they were tired of the constant grind of the multi-year CFLRP process. When one project ended, there was always another one waiting to take its place.
- The collaborative group's decision process was perceived as being unfair to those in the minority, causing some participants to attend meetings out of a sense of self-defense.
- There was a sense among some parties that the Forest Service placated them when they suggested ideas, knowing that they could not, or would not ever implement them.

All of the identified reasons for the collaborative losing participation, and hence its effectiveness, could be traced to the foundational elements of the group. Following the assessment, the Collaboration Cadre team (two of the authors) conducted "stock taking" workshops using the Collaborative Alignment—4 Ps Framework. The first day-long workshop focused on Purpose and People. The second full day workshop continued to work on Purpose and devoted time to Process and Product. The workshops used guiding questions and worksheets (called Notes Forms) for generating and recording ideas, issues, interests, and concerns. A worksheet example appears in [Figure 2](#), using a fictitious identity. Since this assessment and CA workshops, the CBFC, in consultation with the local National Forest, has taken steps to bring disaffected members back into the Collaborative, to clarify and refine its purpose, and to focus on what is feasible to produce.

Modifying, refining, and customizing the Collaborative Alignment Framework

As we have been developing and applying the Collaborative Alignment Framework, in addition to the various field projects, we have presented CA at conferences and seminars in various countries (e.g., Malawi, Bangladesh, the United States). Both through field work and presentations, we have realized that CA can—and should—be modified to apply best to the unique features of a given community and situation.

To illustrate, why does the CA Framework have only four parts—the "4 Ps?" Imagine a 6 P approach, with "Practices" and "Projects" added. Although Practices could be accommodated within the Process and Product areas, in some cases making

this concept distinct may be beneficial. A Practice is arguably part of a Process (e.g., sending a substitute to represent one's organization and a meeting) and a Practice could also be part of a Product, such as a Memorandum of Understanding (MOU). So, too, could highlighting Projects be important, although this area could be addressed as part of the Product component of Collaborative Alignment. Any framework, and certainly Collaborative Alignment, should be flexible, modified, and adapted to be appropriate and effective in the context of community and situation.

As the CA Framework has been developed and applied, one of the authors has asserted its relevance to community-based efforts about climate change. As of this writing, Collaborative Alignment has been presented at a number of international events, but it has yet to be applied at the community level in a manner similar to the cases in the United States. The international response, though, has been positive and encouraging. In looking ahead, the CA Framework may be useful in local climate change efforts as it has been with community-based collaboration in the United States. Just as a community-based forest collaborative needs a resilient, flexible, adaptive, and well-understood structure, so, too, does a local, community-based effort whose purpose is to build community resilience and develop ways to adapt to climate change. The evolution of community-based adaptation to locally-led adaption relates well to Collaborative Alignment—with CA serving as a framework for communities to establish and improve organizational capacity.

Considering other frameworks

Just as an organization—public, private, community, non-profit—may find Collaborative Alignment useful, other frameworks deserve consideration. Collaborative Alignment is not the only approach for building and strengthening organizational capacity or analyzing an environmental conflict or decision situation. The professional and academic literature features a variety of frameworks that may be appropriate and insightful for a given situation. A popular framework, for example, is "SWOT"—strengths, weaknesses, opportunities, and threats ([Helms and Nixon, 2010](#); [Yan et al., 2015](#); [Bull et al., 2016](#)). Other frameworks include the livelihood framework ([Deligiannis, 2012](#)); the integrated conceptual framework for understanding biodiversity conflicts ([White et al., 2009](#)); an analytical framework for urban land conflicts ([Lombard and Rakodi, 2016](#)); systems-related frameworks ([Browne et al., 2021](#)); a framework for exploring trust ([Emborg et al., 2020](#)); the unifying negotiation framework for policy analysis ([Daniels et al., 2012](#)); the collaborative capacities framework ([Cheng and Sturtevant, 2012](#)); and the five-feature framework for stakeholder engagement ([Talley et al., 2016](#)). Each framework features elements or variables to guide research and practice. As examples, [Cheng and Sturtevant \(2012\)](#) propose six variables of collaborative action: (1) organizing, (2) learning, (3) deciding, (4) acting, (5) evaluating, and (6) legitimizing. [Talley et al. \(2016\)](#) highlight five "features:" (1) set clear objectives, (2) systematically represent stakeholders, (3) use relevant methodologies, (4) create opportunities for co-ownership, and (5) reflect on processes and outcomes.

Meadowlands Forest Community Collaborative (MFCC) Workshop

Working on Purpose – Notes and Ideas

Name _____ Contact (phone/email) _____
(optional) (optional)

As we consider the MFCC **Purpose**, we are going to work on the purpose generally, as well as examine clarity and relevance. As a starting point, consider what is in the MFCC By-Laws, Article 1, Sections 1 and 2 (Mission and Objectives). They are in your packet.

One. What are your concerns about the purpose of the MFCC?

- Is the purpose well understood? Is a purpose statement needed, or do the mission and objectives statements suffice?
- Do the mission and objectives statements clarify the MFCC's purpose?
- Are the mission and objectives relevant for the MFCC's work for the next 5 to 10 years)?

Two. What action(s) do you recommend regarding the purpose of the MFCC – its mission and objectives? Should the mission and objectives remain the same? Should they be revised or updated? If you recommend any changes in the MFCC's purpose – mission and objectives – please note them here.

Three. How well is the Purpose of the MFCC reflected in the MFCC's Work Plan and priorities? How well are the MFCC's Outcomes and Products aligned with its Purpose?

Other comments:

FIGURE 2

A sample Collaborative Alignment workshop notes form.

The frameworks literature featured here is far from exhaustive. In addition to frameworks that appear in the academic literature, public policy consulting firms have developed approaches, and methods for addressing environmental conflict and decision situations. Some of the most notable firms are the Keystone Policy Center (<https://www.keystone.org/>), CDR Associates (<http://cdrassociates.org/>); CBI (<https://www.cbi.org/>), Resolve (<https://www.resolve.ngo/>); the Meridian Institute (<https://merid.org/>), Triangle (<https://www.triangleassociates.com/>).

Frameworks serve different purposes, with many providing methods for assessment work. Collaborative Alignment has been designed and applied for assessments as well, and has also proven useful for evaluating and improving an existing organization. CA provides a blueprint for constructing a collaborative group or effort, and in doing so, for building and improving organizational capacity. This latter function may be particularly relevant to community-based efforts to address climate change.

Looking forward: Collaborative Alignment and climate change

In May 2023, the 17th International Conference on Community-Based Adaptation took place in Bangkok,

Thailand. As the International Institute for Environment and Development (IISD) reported, the conference brought together “practitioners, grassroots representatives, local and national government planners, policymakers, and donors” “to share how to put the principles for locally led adaptation (LLA) into practice, recognizing the complexities, innovations, and challenges that must be overcome” (<https://www.iied.org/cba17-local-solutions-inspiring-global-action>). IIED's post on CBA17 highlighted five themes: nature-based solutions, climate finance, youth driving climate action, innovation, and decolonizing climate action, with this last theme addressing power imbalances that perpetuate hierarchical and colonial structures and relationships (IISD).

The CBA Conference was inaugurated in Dhaka, Bangladesh in 2005, a decade after the first United Nations Framework Convention on Climate Change (UNFCCC) “Conference of the Parties” (COP1) took place in Berlin in 1995. The UNFCCC was established in 1992, with COP 1 occurring after a required number of countries had ratified the Convention. At COP 1 the negotiators focused, not surprisingly, on greenhouse gas emissions. The popular term for climate concerns at that time was “global warming”. The country delegations at UN negotiation sessions in Berlin and subsequent UN meetings discussed greenhouse gas reduction targets and mechanisms to minimize the increase

of greenhouse gases. In his discussion of the Kyoto Protocol of 1997 (COP 3), Victor (2001) has noted that, given the difficulties negotiating this agreement, other issues did not receive much attention. Although adaptation and the impacts of global warming were noted in the 1992 UNFCCC text, adaptation issues did not appear prominently on the agendas of the early COPs.

The Kyoto Protocol was the first landmark global climate change agreement; the Paris Agreement, negotiated and agreed to at COP 21 in Paris in December 2015, was the second. Most of the first few articles (2 through 6) of the Paris Agreement addressed mitigation—the reduction of greenhouse gas emissions. Three articles (7, 8, and 11) emphasized issues not in the Kyoto Protocol; such as adaptation, loss and damage, and capacity building.

As adaptation emerged (and the related issues of loss and damage and capacity building) in the years leading up to the Paris Agreement, and in climate negotiations and policy actions since, the role of communities has become increasingly important. Community-based adaptation (CBA), the focus of the 17 CBA conferences, is “a community-led process, based on communities’ priorities, needs, knowledge, and capacities, which seeks to empower people to prepare for and cope with the impacts of climate change” (Reid et al., 2009; Berger and Ensor, 2014, p. 2). Like the Collaborative Alignment Framework (and its foundations in Collaborative Learning), CBA features stakeholder engagement and interaction. Suarez et al. explain that “CBA involves dynamic and dialectical elements that create tensions differing valid ways of understanding climate-related issues... these opposing forces... are not easy to grasp through linear educational approaches”. They advocate for a “multi-stakeholder approach” that includes experiential learning achieved through “innovative platforms to support community-based knowledge generation and sharing” (Suarez et al., 2014, p. 139).

Since the Paris Agreement, community-based adaptation has come under scrutiny and criticism (Kirkby et al., 2018; Piggott-McKellar et al., 2019; Vincent, 2023). Some criticism reflects issues that Cannon (2014, p. 57) has raised: (1) that there is a myth that communities are homogenous or inherently cooperative, but given power relations, there is no guarantee that a grassroots effort will work; (2) that “community-based” may emphasize some forms of participation that are problematic and favor some parties over others; and (3) community projects may be vulnerable to “elite capture” and “concerns about what happens in relation to local power systems”. Cannon’s comments imply the importance of an organizational framework that communities can use to address and work through obstacles and challenges—Collaborative Alignment is one possible approach.

Consequently, while “community-based” adaptation endures conceptually, “climate change activists, particularly within the non-government organization (NGO) and academic communities, are concerned that the term ‘community-based’ has been co-opted, defined, and operationalized in ways that justify top-down approaches to decision-making” (Walker et al., 2022, p. 170). “Community-based” is not synonymous with community-driven. Consequently, a re-casting of local, place-based climate actions has emerged: “locally-led adaptation”. The Global Center for Adaptation notes that it is important “to understand the difference between local action and locally led action, and to identify effective ways

of supporting local leadership”.³ And while the term “local-led adaptation” was first proposed during the United Nations Climate Action Summit in 2019, its roots in the international discourse of climate change go back two decades (Akhter et al., 2023).

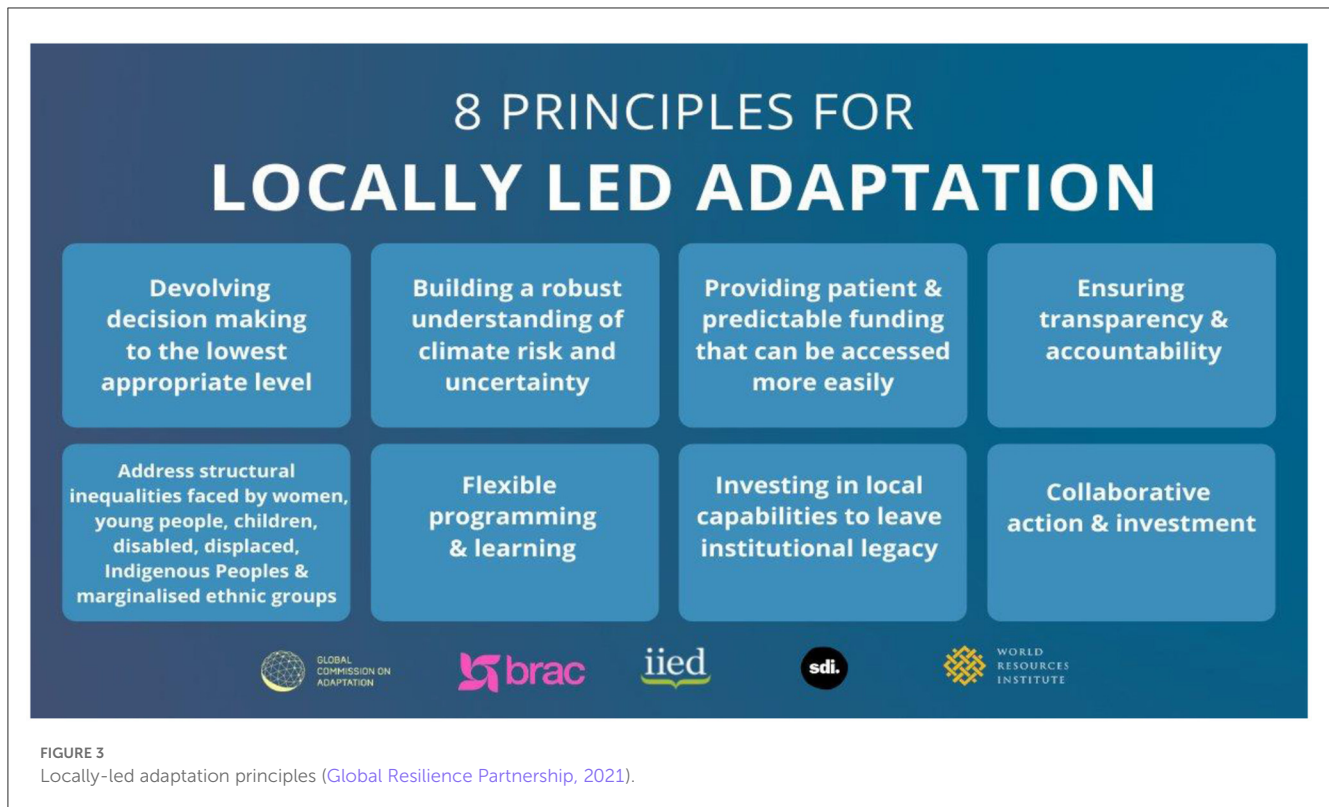
This term has implications for appropriate collaboration and the nature of public engagement. Westoby et al. (2020, p. 1466) contend, based on “a growing body of evidence and new frontiers in research, rather than adaptation being ‘community-based’, it needs to be ‘locally-led, not limited to ‘communities’, and should take place across different entry points and incorporate, as appropriate, elements of autonomous/Indigenous ownership”.

Climate change initiatives and NGOs are featuring locally-led adaptation (LLA). The Global Commission on Adaptation, founded in 2018, stated on its website that “local communities are on the frontlines of climate change impacts, yet rarely do they and other local actors have a voice in the decisions that most affect them;” there needs to be a shift “from current top-down approaches to a new model where local actors have greater power and resources to build resilience to climate change” (GCA, 2021; see also CAS, 2021).

The Global Commission on Adaptation brought together the International Institute for Environment and Development (IIED, 2023), the World Resources Institute (WRI) and the International Center for Climate Change and Development (ICCCAD) to lead a year-long consultative process to generate a set of principles to guide locally-led climate action. The LLA Principles appear in Figure 3.

Collectively, the LLA principles embody active public engagement at the local level in ways consistent with appropriate collaboration methods like Collaborative Alignment and Collaborative Learning. Westoby et al. express concern that “there remains a tendency for adaptation to be driven by, and over-reliant on, external ‘experts’ and resources, which can diminish local efficacy, agency, and overall adaptive capacity” (McNamara et al., 2020; Westoby et al., 2021, p. 2). They emphasize that locally led adaptation needs to be “controlled by local people [and] grounded in local realities”, ensuring that equity and inclusivity are valued. Furthermore, LLA should be “facilitated by local networks and institutions” (Westoby et al., 2021, p. 2). The Westoby team calls for “a reframing around the strength of local people, their knowledge, networks and capabilities, and their deep understanding of their own complex and multidimensional realities so that they can determine their own adaptation futures” (Westoby et al., 2021, p. 6). The strengths, assets, and contributions of local people, the Westoby group notes, include (1) “Local people *in situ* are the best litmus test of local realities and their context on-the-ground,” (2) “Local people have valuable tacit local knowledge and coping mechanisms that are critical for adaptation”, and (3) “Local people’s networks are important and should be nurtured to enhance adaptation outcomes” (Westoby et al., 2021, p. 6, see also Westoby et al., 2020). Locally-led adaptation highlights public engagement and collaboration in ways not guaranteed by all “community-based” perspectives.

³ Global Center on Adaptation. Available online at: <https://gca.org/programs/locally-led-adaptation/> (accessed July 20, 2022).



To build capacity for locally-led adaptation, parties need resources and tools to develop, implement, and evaluate locally appropriate climate action plans. Resources include finance and technology, while tools include frameworks, methods, and skills for organizing local people, empowering local voices, and integrating local knowledge. The framework of Collaborative Alignment can embrace all eight LLA principles, but it particularly elevates (1) Devolving decision making to the lowest appropriate level; (2) Addressing structural inequalities; (3) Investing in local capabilities; (4) Flexible programming and learning; and (5) Collaborative action and investment.

Conclusion

“Collaborative methods of problem solving,” Clarke and Peterson (2016, p. 10) write, “provide an attractive alternative to technocratic conflict management, one whose outcomes achieve both a high level of technical competence and social discourse”. They identify conditions for a collaborative approach, including representation of multiple interests, voluntary participation, direct engagement, mutual agreement on process, and mutual agreement on decisions (Clarke and Peterson, 2016). There are other frameworks, methods, and approaches that may embody these conditions. Drawing on the work of Elinor Ostrom, Cox et al. (2010) present and examine a set of design principles for community-based natural resource Management. In a somewhat similar work, Gruber (2010) reviews different approaches to community-based management and concludes with a set of design principles. Talley et al. (2016) propose a

five feature framework for stakeholder engagement. Regarding community-based forest management, Cheng and Sturtevant (2012) offer a framework for assessing collaborative capacity. The approaches cited here are far from a comprehensive group; the literature is replete with studies of community-based cases and efforts concerning natural resource management and environmental action. Collaborative Alignment respects the body of work and offers an adaptive structure that communities understand and relate to easily and work with efficiently. The Collaborative Alignment—4 Ps Framework has yet to be scrutinized by the academic community, but on-site evaluations by participants in CA applicants have been very positive (Cadre).

Cast in terms of Collaborative Alignment, multiple interests and voluntary participation relate to people, direct engagement and agreements on procedure pertain to process, and mutual agreement on decisions is germane to both process and product. Collaborative work, though, begins with purpose—a point on which Clarke and Peterson would likely concur.

Emanating from the Progress Triangle and reflecting factors that contribute to productive and effective collaborative efforts, the Collaborative Alignment Framework offers a method for starting a community-based natural resource or environmental management collaborative group. It also serves as an approach for “taking stock” of a collaborative group that may need realignment. It also seems appropriate for locally-led adaptation efforts to confront the climate crisis. It provides an approach that has been applied and tested in local communities in the United States. The initial applications, including those featured in this essay, indicate that the CA Framework is useful for constructing a foundation

for a collaborative group and for taking stock of an existing group. Its effectiveness, though relies on the commitment of stakeholders to work together, respected leadership, and generating results that could not be achieved by any organization or individual alone.

Collaborative Alignment and its 4 Ps of Purpose, People, Process, and Product provides a framework through which people can construct, maintain, and improve an organizational commitment to work together on the complex and controversial natural resource and environmental management issues they face. The alignment metaphor contributes a powerful image of the importance of keeping all parts of the collaborative group working together and consistently to withstand the inevitable rough patches and potholes on the collaborative road. Achieving the Sustainable Development Goals will rely on local actors and engaged communities. The Collaborative Alignment Framework has proven useful for communities, diverse stakeholder groups, and government agencies to work together on complex and controversial forest management issues. It can guide community efforts related to the Sustainable Development Goals, including SDG 15, Life on Land, and SDG 13, Climate Action, as well.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

Ethical approval was not required for the study involving human participants in accordance with the local legislation and institutional requirements. Written informed consent to participate

in this study was not required from the participants in accordance with the national legislation and the institutional requirements.

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

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Conflict of interest

GS was employed by Severson Consulting, United States.

The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

- Abrams, J., Davis, E. J., and Moseley, C. (2015). Community-based organizations and institutional work in the remote rural west. *Rev. Policy Res.* 32, 675–698. doi: 10.1111/ropr.12148
- Akhter, F., Huq, S., and Mirza, A. B. (2023). *Evolution of LLA: Hoe locally-led adaptation came into the picture of [the] climate change arena*. The Dhaka Tribune/Tribune Supplements/Tribune Climate. Available online at: <https://www.dhakatribune.com/tribune-climate/2023/01/09/evolution-of-lla-how-locally-led-adaptation-came-into-the-picture-of-climate-change-arena> (accessed May 4, 2023).
- Berger, R., and Ensor, J. (2014). "Introduction: progress in adaptation," in *Community-based Adaptation to Climate Change: Emerging Lessons*, eds J. Ensor, R. Berger, and S. Huq (Rugby: Practical Action Publishing), 1–12.
- Browne, C., Ronis, E. M., Miller, J. R. B., Kapetenakos, Y., Gibbs, S., Hendrix, T., et al. (2021). Systems approaches to combating wildlife trafficking: expanding existing frameworks to facilitate cross-disciplinary collaboration. *Front. Conserv. Sci.* 2, 698666. doi: 10.3389/fcsc.2021.698666
- Bull, J. W., Jobstvogt, N., Bohnke-Henrichs, A., Mascarenhas, A., Sitas, N., Baulcomb, C., et al. (2016). Strengths, weaknesses, opportunities, and threats: a SWOT analysis of the ecosystem services framework. *Ecosyst. Serv.* 17, 99–111. doi: 10.1016/j.ecoser.2015.11.012
- Burns, S. (1997). "Characteristics of Successful Collaborative Groups," *Invited Address at the Communities, Land Use, and Conflict Conference, Reserve, New Mexico*.
- Cannon, T. (2014). "Rural livelihood diversification and adaptation to climate change," in *Community-Based Adaptation to Climate Change: Emerging Lessons*, eds J. Ensor, R. Berger, and S. Huq (Rugby: Practical Action Publishing), 55–75.
- CAS (2021). *Climate Adaptation Summit 2021: Locally Led Adaptation*. Available online at: <https://www.cas2021.com/climate-adaptation/locally-led-adaptation> (accessed March 29, 2023).
- Cheng, A. S., and Sturtevant, V. E. (2012). A framework for assessing collaborative capacity in community-based forest management. *Environ. Manage.* 49, 675–689. doi: 10.1007/s00267-011-9801-6
- Clarke, T., and Peterson, T. L. (2016). *Environmental Conflict Management*. Los Angeles, CA: Sage.
- Cox, M., Arnold, G., and Tomas, S. V. (2010). A review of design principles for community-based natural resource management. *Ecol. Soc.* 15, 38–57. doi: 10.5751/ES-03704-150438
- Cox, R. (2010). *Environmental Communication and the Public Sphere, 2nd Edn*. Los Angeles, CA: Sage Publications.
- Daniels, S. E., and Walker, G. B. (2001). *Working Through Environmental Conflict: The Collaborative Learning Approach*. Westport, CT: Praeger.
- Daniels, S. E., Walker, G. B., and Emborg, J. (2012). The unifying negotiation framework: a model of policy discourse. *Conf. Resol. Q.* 30, 3–31. doi: 10.1002/crq.21045

- Davis, E. J., Cerveny, L., Nuss, M., and Seesholtz, D. (2015). *Oregon's Forest Collaboratives: A Rapid Assessment. Research Contribution Summaries - RCS 1*. Corvallis, OR: Forest Research Laboratory, College of Forestry, Oregon State University.
- Davis, E. J., Hajjar, R., Chamley, S., Moseley, C., Wendel, K., and Jacobson, M. (2020). Community-based forestry on federal lands in the western United States: a synthesis and call for renewed research. *For. Policy Econ.* 111, 102042. doi: 10.1016/j.forpol.2019.102042
- Deligiannis, T. (2012). The evolution of environment-conflict research: toward a livelihood framework. *Global Environ. Polit.* 12, 78–100. doi: 10.1162/GLEP_a_00098
- Dukes, E. F., Firehock, K. E., and Birkhoff, J. E. (eds.). (2011). *Community-Based Collaboration: Bridging Socio-Ecological Research and Practice*. Charlottesville, VA: University of Virginia Press.
- Emborg, J., Daniels, S. E., and Walker, G. B. (2020). A framework for exploring trust and distrust in natural resource management. *Front. Commun.* 5, 13. doi: 10.3389/fcomm.2020.00013
- Ensor, J., Berger, R., and Huq, S. (2014). *Community-Based Adaptation to Climate Change*. Warwickshire: Practical Action Publishing.
- Folger, J. P., Poole, M. S., and Stutman, R. K. (2018). *Working Through Conflict: Strategies for Relationships, Groups, and Organizations, 8th Edn*. New York, NY: Routledge.
- GCA (2021). *Principles for Locally Led Adaptation*. Global Commission on Adaptation. Available online at: <https://www.wri.org/our-work/project/global-commission-adaptation/principles-locally-led-adaptation> (accessed July 20, 2022).
- Global Resilience Partnership (2021). *8 Principles for Locally Led Adaptation*. Available online at: [https://www.facebook.com/globalresiliencpartnership/photos/a.103880504779747/209905547510575/?type=\\$3](https://www.facebook.com/globalresiliencpartnership/photos/a.103880504779747/209905547510575/?type=$3) (accessed March 29, 2023).
- Gray, B. (1989). *Collaborating: Finding Common Ground for Multiparty Problems*. San Francisco, CA: Jossey-Bass.
- Gruber, J. S. (2010). Key principles of community-based natural resource management: a synthesis and interpretation of identified effective approaches for managing the commons. *Environ. Manage.* 45, 52–66. doi: 10.1007/s00267-008-9235-y
- Helms, M. M., and Nixon, J. (2010). Exploring SWOT analysis – where are we now? A review of academic research. *J. Strat. Manag.* 3, 215–251. doi: 10.1108/17554251011064837
- Hocker, J. L., and Wilmot, W. W. (2017). *Interpersonal Conflict, 10th Edn*. New York, NY: McGraw-Hill.
- IIED (2023). *CBA17: Local Solutions Inspiring Global Action*. International Institute for Environment and Development. Available online at: <https://www.iied.org/cba17-local-solutions-inspiring-global-action> (accessed May 4, 2023).
- Kirkby, P., Willams, C., and Huq, S. (2018). Community-based adaptation (CBA): adding conceptual clarity to the approach, and establishing its principles and challenges. *Clim. Dev.* 10, 577–589. doi: 10.1080/17565529.2017.1372265
- Lee, J. H., Matarrita-Cascante, D., Xu, Y., and Schuett, M. (2018). Examining the conflicting relationship between U.S. National Parks and host communities: understanding a community's diverging perspectives. *Sustainability* 10, 3667. doi: 10.3390/su10103667
- Lombard, M., and Rakodi, C. (2016). Urban land conflict in the Global South: towards an analytical framework. *Urban Stud.* 53, 2683–2699. doi: 10.1177/0042098016659616
- Margerum, R. (2011). *Beyond Consensus: Improving Collaborative Planning and Management*. Cambridge, MA: MIT Press.
- McKinney, M., and Harmon, W. (2004). *The Western Confluence: A Guide to Governing Natural Resources*. Washington, DC: Island Press.
- McNamara, K. E., Clissold, R., Westoby, R., Piggott-McKellar, A., Kumar, R., Clarke, T., and Namoumou, F. (2020). An assessment of community-based adaptation initiatives in the Pacific Islands. *Nat. Clim. Change* 10, 628–639. doi: 10.1038/s41558-020-0813-1
- Oregon Solutions (2013). *Oregon Forest Collaboratives: Statewide Inventory 2013 (Draft Report)*. Available online at: http://orsolutions.org/wp-content/uploads/2011/08/OFCSI_Draft_February_20131.pdf (accessed January 26, 2021).
- Piggott-McKellar, A. E., McNamara, K. E., Nunn, P. D., and Watson, J. E. M. (2019). What are the barriers to successful community-based climate change adaptation? A review of grey literature. *Local Environ.* 24, 374–390. doi: 10.1080/13549839.2019.1580688
- Pinel, S. L. (2013). Giving and reciprocity in natural resource management and consensus building: An application of economic anthropology to understanding the Clearwater Basin Collaborative. *Hum. Organ.* 72, 164–174. doi: 10.1177/00141801.2013.1228650
- Ramsilovik-Suominen, S. (2010). "Provision of non-market forest goods and services through governance perspective," in *Forest Policy and Economics in Support of Good Governance, EFI Proceedings No. 58*, ed T. Tuomasjukka (Joensuu), 81–92.
- Reid, H., Alam, M., Berger, R., Cannon, T., and Milligan, A. (eds.). (2009). *Community-Based Adaptation to Climate Change. Participatory Learning and Action No. 60*. London: International Institute for Environment and Development.
- Suarez, P., de Suarez, J. M., Koelle, B., and Boykoff, M. (2014). "Serious fun: scaling up community-based adaptation through experiential learning," in *Community-Based Adaptation to Climate Change: Scaling it Up*, eds E. L. F. Schipper, J. Ayers, H. Reid, S. Huq, and A. Rahman (New York, NY: Routledge), 136–151.
- Talley, J. L., Schneider, J., and Lindquist, E. (2016). A simplified approach to stakeholder engagement. *Ecol. Soc.* 21, 38–48. doi: 10.5751/ES-08830-210438
- USDA (2019). *Maintaining the Foundation of Collaborative Groups*. Washington DC: United States Department of Agriculture; Forest Service FS-1128. Available online at: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd646129.pdf (accessed January 05, 2023).
- USDA (2021). *Aligning Expectations for Effective Collaborative Work*. Washington DC: United States Department of Agriculture, Forest Service FS-1163. Available online at: https://www.fs.usda.gov/sites/default/files/fs_media/fs_document/AligningExpectations%20v5.0_0.pdf (accessed January 05, 2023).
- Victor, D. G. (2001). *The Collapse of the Kyoto Protocol and the Struggle to Slow Global Warming*. Princeton, NJ: Princeton University Press.
- Vincent, K. (2023). Development geography II: Community-based adaptation and locally-led adaptation. *Prog. Hum. Geogr.* 47, 604–612. doi: 10.1177/03091325231166076
- Walker, G. B., Daniels, S. E., and Emborg, J. (2008). Tackling the tangle of environmental conflict: complexity, controversy, and collaborative learning. *Emerg. Comp. Org.* 10, 17–27. doi: 10.1080/10.17357.0e0ad1b3f48cade611172d9ad98314a9
- Walker, G. B., Daniels, S. E., and Emborg, J. (2022). "Insights and opportunities in public participation practice: applying collaborative learning in environmental policy decision situations," in *The Routledge Handbook of Environment and Communication, 2nd Edn.*, eds A. Hansen, and R. Cox (New York, NY: Routledge), 157–180.
- Weber, E. P. (2003). *Bringing Society Back In*. Cambridge, MA: The MIT Press.
- Westoby, R., Clissold, R., McNamara, K. E., Ahmed, I., Resurreccion, B. P., Ferrnando, N., et al. (2021). Locally-led adaptation: drivers for appropriate grassroots initiatives. *Local Environ.* 26, 313–319. doi: 10.1080/13549839.2021.1884669
- Westoby, R., McNamara, K. E., Kumar, R., and Nunn, P. D. (2020). From community-based to locally led adaptation: evidence from Vanuatu. *Ambio* 49, 1466–1473. doi: 10.1007/s13280-019-01294-8
- White, R. M., Fischer, A., Marshall, K., Travis, J. M. J., Webb, T. J., di Falco, S., et al. (2009). Developing an integrated conceptual framework to understand biodiversity conflicts. *Land Use Policy* 26, 242–253. doi: 10.1016/j.landusepol.2008.03.005
- Wilson, S. M., Bradley, E. H., and Neudecker, G. A. (2017). Learning to live with wolves: community-based conservation in the Blackfoot Valley of Montana. *Hum. Wildlife Interact.* 11, 245–257. doi: 10.26077/bf8e-6f56
- Wondollock, J. M., and Yaffee, S. L. (2000). *Making Collaboration Work: Lessons From Innovation in Natural Resource Management*. Washington, DC: Island Press.
- World Neighbors. (2022). *What We Do – Community-Based Natural Resources Management*. Available online at: <https://www.wn.org/what-we-do/community-based-natural-resources-management/> (accessed January 26, 2022).
- Yan, J., Xia, F., and Bao, H. X. H. (2015). Strategic planning framework for land consolidation in China: a top-level design based on SWOT analysis. *Habitat Int.* 48, 46–54. doi: 10.1016/j.habitatint.2015.03.001