

PERSPECTIVE • OPEN ACCESS

## Building capacity, momentum and a culture of climate action in the United States

To cite this article: Thomas E Bowman *et al* 2021 *Environ. Res. Lett.* **16** 041003

View the [article online](#) for updates and enhancements.

ENVIRONMENTAL RESEARCH  
LETTERS

## PERSPECTIVE

## OPEN ACCESS

## PUBLISHED

23 March 2021

Original content from this work may be used under the terms of the [Creative Commons Attribution 4.0 licence](#).

Any further distribution of this work must maintain attribution to the author(s) and the title of the work, journal citation and DOI.



## Building capacity, momentum and a culture of climate action in the United States

Thomas E Bowman<sup>1</sup>, Isatis Cintron-Rodriguez<sup>2</sup>, Haley Crim<sup>3</sup> , Timothy Damon<sup>4</sup>, Cyane Dandridge<sup>5</sup>, Jen Kretser<sup>6</sup>, Deb Morrison<sup>7</sup>, Frank Niepold<sup>8</sup>, Kristen Poppleton<sup>9</sup>, William Spitzer<sup>10</sup> , and Laura Weiland<sup>11</sup><sup>1</sup> Bowman Change, Inc., Long Beach, CA, United States of America<sup>2</sup> Rutgers University, New Brunswick, NJ, United States of America<sup>3</sup> Village of Park Forest and Greenest Region Compact, Park Forest, IL, United States of America<sup>4</sup> Global Youth Development Institute, Alliance, OH, United States of America<sup>5</sup> Strategic Energy Innovations, San Rafael, CA, United States of America<sup>6</sup> The Wild Center, Tupper Lake, NY, United States of America<sup>7</sup> University of Washington, Seattle, WA, United States of America<sup>8</sup> National Oceanic and Atmospheric Administration, Silver Spring, MD, United States of America<sup>9</sup> Climate Generation: A Will Steger Legacy, Minneapolis, MN, United States of America<sup>10</sup> National Network for Ocean and Climate Change Interpretation, Monterey, CA, United States of America<sup>11</sup> Climate Education, Communication and Outreach Stakeholders Community, New York, NY, United States of AmericaE-mail: [tom@bowmanchange.com](mailto:tom@bowmanchange.com)**Keywords:** science communication, ACE, UNFCCC, education, communication, action for climate empowerment, climate justice

## 1. Introduction

For most people, this moment in climate history has been deeply discouraging. The Trump administration's attacks on environmental protections and the Paris Agreement undermined earlier progress. Yet time flies and holding global warming below 2 °C requires ever deeper commitments and ever bolder actions.

We approached 2020 as if it might become a rare moment of opportunity for progress on the climate crisis. Through last year, we suspected that even if the US left the Paris Agreement—which it did under President Trump's order—US obligations under the UN Framework Convention on Climate Change (UNFCCC) would still be in effect. The Biden campaign, meanwhile, appeared eager to reaffirm international agreements and bolster US commitments if they won the White House.

Beneath the back-and-forth of national politics, Americans had already been hard at work. According to the 2019 *Accelerating America's Pledge* report and as shown in figure 1,

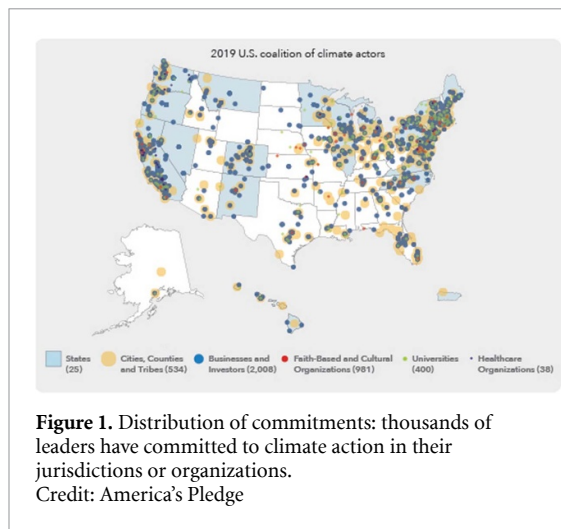
American coalitions of states, cities, businesses, and others committed to climate action in support the Paris Agreement are massive and globally significant. They now represent 68 percent of U.S. GDP, 65 percent of U.S. population and 51 percent of

U.S. emissions. If they were a country, these U.S. coalitions would have the world's second largest economy—second only to the United States itself. (Hultman *et al* 2019, p 2).

Meanwhile, the horrific killings of George Floyd and other African Americans by police, and nationwide protests in response, made deep systemic inequities clearer than ever. Black, Indigenous, and other People of Color live significantly more dangerous lives with fewer opportunities. They will face greater harm as the climate system warms, yet their rights to self-determination and their invaluable knowledge have largely been ignored (Porter *et al* 2020, Haverkamp 2021).

A majority of Americans supported the Black Lives Matter movement in 2020, albeit with partisan differences (Parker *et al* 2020). For its part, the majority in the US House of Representatives declared that climate solutions provide a pathway to rebound from the COVID-19 pandemic and the economic crisis and can 'begin to repair the legacy of environmental pollution that has burdened low-income communities and communities of color for decades. Climate solutions must have justice and equity at their core' (House Select Committee on the Climate Crisis 2020, p 1).

All of this seemed to be sinking in with the public. Majorities of Americans agreed that climate change is real and primarily caused by human activities, although important misunderstandings remained



and still do (Leiserowitz *et al* 2018). The level of concern across the political spectrum has never been higher (Goldberg *et al* 2020). Even so, climate was not a top priority for voters going into the 2020 elections (Leiserowitz *et al* 2020), and confidence that humanity will succeed in reducing global warming was not very high (Leiserowitz *et al* 2018).

The US has an obligation to do more to foster climate change learning and action. Article 6 of the UNFCCC (United Nations General Assembly 1992) and Article 12 of the Paris Agreement (United Nations General Assembly 2015), which are now known as Action for Climate Empowerment (ACE), urges countries to increase public understanding, build capacity, and empower people to participate in creative decision-making and behavioral change. ACE calls upon every nation to develop a national strategy that is guided by principles of gender equity and intergenerational and multi-sectoral collaboration.

ACE guidelines from UNESCO and the UNFCCC Secretariat are both optimistic and demanding:

The solutions to the negative effects of climate change are also the paths to a safer, healthier, cleaner and more prosperous future for all. However, for such a future to become reality, citizens of all countries, at all levels of government, society and enterprise, need to understand and be involved. (Paas and Goodman 2016, p 2).

This theory of change, as embraced by the UNFCCC, is based on the premise that climate action is accelerated by working with a coordinated constellation of networks that are tightly connected at key points, known as 'knotworking' (Engeström 2005, Lidskog and Elander 2010). Racial equity, environmental justice and the rights of low-income and Black, Indigenous, and People of Color (BIPOC) are equally central to ACE goals and strategic planning

processes. Moreover, the framers of the UNFCCC treaty considered Action for Climate Empowerment central to achieving a just and efficient transition to a low-carbon world. To date, however, no major emitting country has produced an ACE national strategy.

We believe that now is the time for the United States to act. As ACE leaders from diverse communities and perspectives, we organized an initiative that produced a collaborative ACE national *Strategic Planning Framework*, which was completed and made public on November 30, 2020 (Bowman and Morrison 2020a). This framework made substantial progress toward developing an equitable and just ACE national strategy for the United States and provided a highly effective participatory process for completing the strategy in time for COP26 in November of 2021.

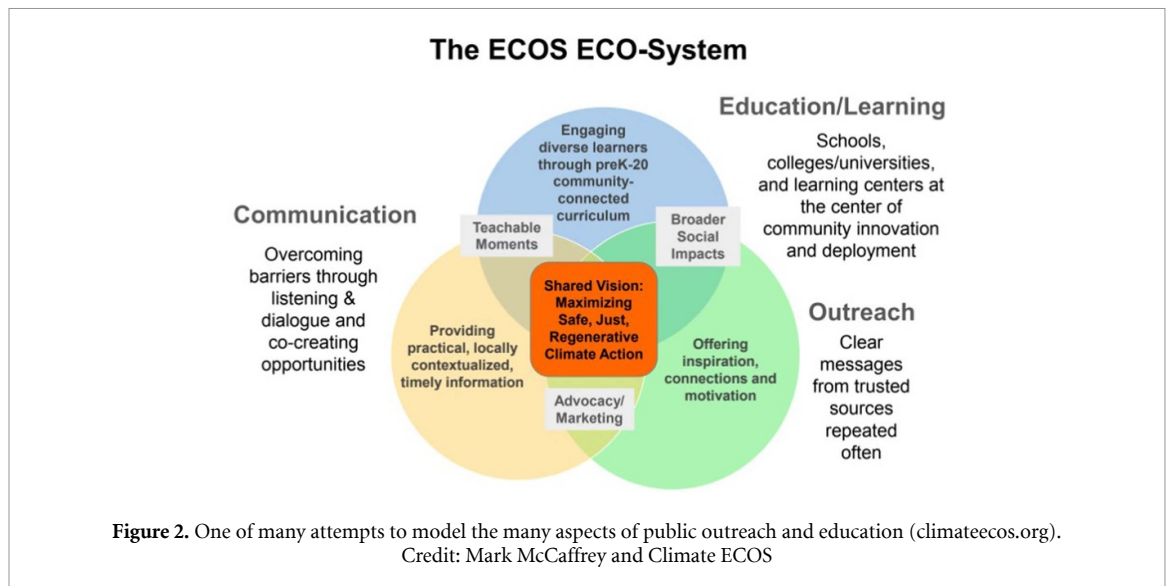
*An ACE National Strategic Planning Framework for the United States* accomplishes a number of important things. It identifies key ingredients of an effective national strategic plan; provides the shared vision for where public engagement should be in 2040 by diverse organizations and communities of practice in public engagement; identifies the ACE community's<sup>12</sup> chief concerns; calls for multiple evaluation methodologies that are responsive to diverse communities and cultures; clarifies key obstacles and opportunities to improving capacity and performance; disrupts historic inequities and demonstrates an effective participatory process for fully integrating the voices, knowledge, concerns, and leadership of marginalized peoples; recommends infrastructure to improve strategic alignment and collaboration among ACE initiatives; and establishes a broad coalition of climate action leaders who express deep support for an ACE national strategic plan.

At its core, the *Strategic Planning Framework* effort demonstrated how a participatory process built on mutual respect and equitable co-creation can increase commitments among the numerous individuals, organization, and networks that are needed to build an effective and equitable public response to the climate crisis (Bowman and Morrison 2020b).

## 2. ACE resources are deep but poorly aligned

As we undertook this task, we acknowledged that the US has an abundance of resources for public education, engagement, and empowerment (figure 2). We

<sup>12</sup> The ACE Community is a general name for the many organizations and people working across the six ACE elements. A cross-section of the community members can be found in appendix A of *An ACE National Strategic Planning Framework for the United States* (Bowman and Morrison 2020a). Co-coordinating, designing, and writing work. Bowman, T., Morrison, D., & US ACE National Community. Retrieve from <https://aceframework.us/the-framework>.



have formal education programs from kindergarten through graduate school, and technical education. There are lifelong learning opportunities at museums, aquariums and zoos. We have myriad in-service and professional training programs involving Tribal and city governments, NGOs, community groups, professional societies and trade associations. Leading organizations have issued summaries and messaging platforms in climate science, public health, environmental justice, national security, economics and business. And federal partnerships and various organizations and networks help facilitate information exchange among many ACE communities of practice.

In addition, public opinion research is ongoing and multi-dimensional, and assessments with recommendations for public outreach appear from time to time. We have active social movements, including investor campaigns, legal actions, and campaigns led by youth, Indigenous communities and communities of color. Cities, companies, NGOs and other institutions are making climate commitments. Many businesses are revising their supply chains, operations, and reporting practices. Entrepreneurs, meanwhile, bring innovations and new expectations to the public via consumer and industrial markets. There is even a non-profit media relations office that delivers climate-related stories to the press (climatenexus.org).

All of this good work delivers results, yet the ACE community's collective efforts are poorly aligned. There is still much to be done and time is of the essence. Strategic planning can, among other benefits, address some well-known obstacles.

- (a) Our diverse ACE communities need to learn from historically marginalized People of Color and Indigenous leaders. Their interests, knowledge, expertise, styles of communication and creativity are invaluable assets that have

been ignored for too long. It seems axiomatic to say, for example, that local knowledge plays a crucial role as communities cope with the warming climate (Kaplan 2020). The ACE community asserts that an effective national strategy can and should promote inclusive decision-making, respect for the rights of minority communities, and establish a shared vision of justice in ACE activities. The *Strategic Framework* further recognizes that local and Indigenous knowledge are not commodities that are available for others to extract. Rather, the initiative demonstrates how trusting relationships based on genuine engagement and reciprocity are the foundation for mutual commitment and exchange of knowledge and expertise in achieving societal goals. Consent is a crucial, yet often missing element of collaborative problem-solving.

- (b) Fischhoff (2007) observes how important humility and collaboration are in other areas as well.

Climate science is needed to focus on choices that matter and get the facts right. Decision science is needed to identify the facts that should matter most when people evaluate their options. Social science is needed to describe people's perceptions of those critical facts, as well as their goals when making choices (p. 7206).

And writers and designers are needed to make messages accessible and 'sticky.'

Unfortunately, collaborations across different ACE disciplines are rarely funded and are still relatively unusual. The *Strategic Framework*

recommends better alignment of skillsets and funding to support backbone organizations that will promote more creative collaboration. Additionally, the ACE community calls for better and more consistent evaluation—including by culturally-appropriate methodologies—and evidence-based decision-making. The objectives are to identify the attributes of successful community-based and regional initiatives and encourage their uptake elsewhere.

- (c) Too many funding decisions are made without a clear understanding of their strategic merit or the timescales required for projects to achieve their full potential. Few ACE initiatives advance beyond the proof-of-concept phase. Even at this level, funding choices often reflect the funders' institutional preferences and boundaries rather than strategic alignment with other ACE activities. An ACE national strategy should help guide increased and sustained financial investments that increase the ACE community's collective impact.

These are a few of the ways in which the *Strategic Framework* calls for a national strategy that will bolster commitments that the US urgently needs. The *Strategic Framework* recommends that funding applications be simplified so that community-based organizations are more able to compete and that decisions be aligned with project timescales, support the infrastructure needed to keep effective ACE actors engaged, and be responsive to evaluations of project effectiveness. These and other changes will help keep the nation's most experienced talent working on public empowerment, which is not always possible now. A national strategy can be designed to guide participatory and evidence-based decision-making that embraces historically marginalized knowledge and views. The plan can support the financial investments that are needed to meet the public empowerment challenge successfully.

Beyond these issues, the *Strategic Framework* initiative makes substantive and specific recommendations to policymakers and the funding community regarding each of the six ACE elements: education, training, public awareness, public access to information, public participation and international cooperation. The recommendations can be woven into policies at every level of government.

As the organizers of this effort, however, we could not have foreseen all of the outcomes when we undertook the project. Indeed, undertaking something as expansive as a national strategic planning process for public engagement without the official support of the federal government seemed highly speculative from the beginning.

In truth, the organizers and participants recognized that the 2020 presidential election might

create a rare moment of opportunity to address long-standing weaknesses in the nation's efforts to engage the public in justice and climate action. They embraced the ACE national planning guidelines provided by UNESCO and the UNFCCC Secretariate and were thoughtful about the unique social and multi-cultural circumstances of the United States. The results suggest that the entrepreneurial nature of the process and the trust that participants placed in their peers were significant factors in the quality of the outcomes.

### 3. The ACE framework building process

UNFCCC Article 6 calls attention to education, training, public awareness, public access to information, public participation and international cooperation (figure 3). These terms suggest that learning, broadly defined, is essential for deliberative and democratic decision-making. ACE guidelines also go further to include other dimensions of civic and consumer behavior as well. Strategic planners are urged to:

Assess needs specific to national circumstances regarding implementation of Article 6 of the UNFCCC, using special research methods and other relevant instruments to determine target audiences and potential partnerships; and develop communication strategies on climate change based on targeted social research in order to create behavioural changes (Paas and Goodman 2016, p 6).

We recognized that communicating with the public is complicated. Communication takes place in a crowded marketplace where other issues and disinformation also compete for attention, and decision-making is not entirely deliberative. People also make choices based on fast and largely unconscious mental processes that involve multiple psychological and social influences. We also recognize that changing behavior can lead to new insights, just as learning can lead people to adopt new behaviors.

These insights suggest a need to promote strategic rigor across ACE's many dimensions. The question, therefore, was how to design a responsible and inclusive process that would yield a useful strategy for the diverse society and multi-jurisdictional governance found in the United States.

We were guided by the UNFCCC's embrace of 2018 Talanoa Dialogue Platform (UNFCCC 2018). Talanoa is a Fijian process for inclusive and participatory dialogs that set aside combative negotiation agendas in order to 'build empathy and to make wise decisions for the collective good.' The Talanoa process encourages storytelling and listening in order

Scope	Objectives	
Education	Change habits in the long-term	Foster a better understanding of, and ability, to address climate change and its effects
Training	Develop practical skills	
Public Awareness	Reach people of all ages and walks of life	Promote community engagement, creativity and knowledge in finding climate change solutions
Public Access to information	Make information freely available	
Public Participation	Involve all stakeholders in decision-making and implementation	Engage all stakeholders in debate and partnership to respond collectively to climate change
International Cooperation	Strengthen cooperation, joint efforts and knowledge exchange	

(Source: Adapted with permission from UNFCCC, 2005)

**Figure 3.** UNFCCC article 6 elements: scope & objectives (Paas and Goodman 2016, p 3).  
Credit: UNESCO/UNFCCC 2016

to build trust, while discouraging criticism and blaming of others.

Our framework-building process began with three panel discussions that brought diverse perspectives together. These were followed by four online Talanoa-style dialogs focusing on (a) transformational learning and engagement; (b) inclusive and responsible community engagement in decision-making; (c) training a climate-ready workforce and (d) sectoral, sub-national, national, Indigenous and international coordination and collaboration.

The decision to host four dialogs rather than one for each of the six ACE elements was deliberate. We recognized that people and organizations tend to work within their professional or geographical silos. We believed that the transformational power of ACE would be enhanced by bringing people from different silos together to collaborate as equals (Yankelovich 1999). These dialogs are designed to attract leaders with many different perceptions, objectives, time horizons, theories of change, methodologies, obstacles and opportunities to the conversations. The process was inherently wide-ranging because listening and building empathy and trust were among the most important outcomes.

This does not mean the dialogs were disorganized. Following guidance provided by the Engage4Climate toolkit, organizers engaged participants in a backcasting exercise in which they described their vision for where effective ACE work would be in 2040 and then stepped backward to recommend actions and policies that would be needed in 2030, 2025, and 2022 in order to achieve that vision (see [engage4climate.org](http://engage4climate.org)).

A companion process sought validation and additional input and guidance from leaders who have deep knowledge and experience in a wide range of ACE-related fields and communities. A small writing team synthesized inputs from the dialog into a draft *Strategic Framework* that included all of the strategic recommendations put forward by the ACE community. The draft was reviewed by the coordinating team and then by 20 invited strategic reviewers. The strategic reviewers made comments and corrections to the second draft. After revisions were completed, the dialog participants and their wider networks participated in a final round of community review. This open process led to a highly vetted final product: *An ACE National Strategic Planning Framework for the United States*.

The *Strategic Framework* has gained support from the ACE community since its release (See [www.aceframework.us](http://www.aceframework.us)). At the time of this writing, various third-party networks are urging the Biden administration to embrace ACE and use the *Strategic Framework* and a core processes for developing a full-fledged ACE national strategy and action plan. Such a process will undoubtedly include additional dialogs, some of which would seek participation from sectors of society that were underrepresented in the framework-building process. These sectors might include rural communities, Tribes, large and small businesses, labor organizations, scientists, and additional government agencies (Bowman and Morrison 2020b). UNESCO and UNFCCC Secretariat guidelines also call for a review of ACE-relevant government policies, plus a more comprehensive map of stakeholders and ACE-related networks than we have been able to accomplish thus far.

Regardless of the administration's ultimate decision, however, the ACE community has now co-created a *Strategic Framework* and much of the content for a national strategy, and they are invested in seeing it put into practice. As of 2017 there were nearly 4000 US states, cities, universities and businesses working on commitments to the Paris Agreement (Hultman et al 2019). *An ACE National Strategic Planning Framework for the United States* is meant to help them engage more effectively with their audiences.

Going further, the Biden administration's day-one reaffirmation US commitments to the Paris Agreement 'and every article and clause thereof on behalf of the United States' (Biden 2021) seems to put ACE on the fast track where it belongs. A great many organizations and people are working to help the public in the United States take action on climate change. We urge them to lend their support and wisdom to the processes that have proven effective in advancing a US national strategy for public education, engagement, and empowerment.

### Data availability statement

No new data were created or analysed in this study.

### Acknowledgments

Financial and Value In Kind support provided by: Bowman Change, Inc.; Citizens' Climate Lobby; Climate Education, Communication and Outreach Stakeholder Community; Climate Literacy and Energy Awareness Network; National Oceanic and Atmospheric Administration; Spencer Foundation; The Wild Center

### ORCID iDs

Haley Crim  <https://orcid.org/0000-0002-7629-8566>

William Spitzer  <https://orcid.org/0000-0001-6035-6306>

### References

- Biden J R Jr. 2021 Paris climate agreement: acceptance on behalf of the United States (available at: [www.whitehouse.gov/briefing-room/statements-releases/2021/01/20/paris-climate-agreement/](http://www.whitehouse.gov/briefing-room/statements-releases/2021/01/20/paris-climate-agreement/)) (Washington, DC: The White House)
- Bowman T and Morrison D 2020a An ACE National Strategic Planning Framework for the United States Created in collaborative reflection with the U.S. ACE Community (available at: <http://aceframework.us>)
- Bowman T and Morrison D (eds) 2020b *Resetting Our Future: Empowering Climate Action in the United States* (Alresford: Changemakers Books)
- Engeström Y 2005 Knotworking to create collaborative intentionality capital in fluid organizational fields
- Collaborative Capital: Creating Intangible Value* (Bingley: Emerald Group Publishing Limited) pp 307–36
- Fischhoff B 2007 Nonpersuasive communication about matters of greatest urgency: climate change *Environ. Sci. Technol.* **41** 7206
- Goldberg M, Gustafson A, Rosenthal S, Kotcher J, Maibach E and Leiserowitz A 2020 For the first time, the alarmed are now the largest of Global Warming's Six Americas Yale Program on Climate Change Communications (New Haven, CT: Yale University and George Mason University) (<https://climatecommunication.yale.edu/publications/for-the-first-time-the-alarmed-are-now-the-largest-of-global-warmings-six-americas/>)
- Haverkamp J 2021 Collaborative survival and the politics of livability: towards adaptation otherwise *World Dev.* **137** 105152
- House Select Committee on the Climate Crisis 2020 Solving the climate crisis: the congressional action plan for a clean energy economy and a healthy, resilient, and just America Majority Staff Report, Select Committee on the Climate Crisis, 116th Congress United States House of Representatives (<https://climatecrisis.house.gov/report>)
- Hultman N et al 2019 Accelerating America's climate pledge: going all in to build a prosperous, low-carbon economy for the United States (New York, NY: Bloomberg Philanthropies, Rocky Mountain Institute, and World Resources Institute (available at: <https://assets.bbhub.io/dotorg/sites/28/2019/12/Accelerating-Americas-Pledge.pdf>)
- Kaplan S 2020 *How America's Hottest City Will Survive Climate Change* (Washington, DC: The Washington Post) (<https://www.washingtonpost.com/graphics/2020/climate-solutions/phoenix-climate-change-heat/>)
- Leiserowitz A, Maibach E, Rosenthal S, Kotcher J, Ballew M, Bergquist P, Gustafson A, Goldberg M and Wang X 2020 *Politics & Global Warming, April 2020* Yale Program on Climate Change Communications (New Haven, CT: Yale University and George Mason University) (<https://climatecommunication.yale.edu/publications/politics-global-warming-april-2020/>)
- Leiserowitz A, Maibach E, Roser-Reneuf C, Rosenthal S, Cutler M and Kotcher J 2018 *Climate Change in the American Mind: March 2018* Yale Program on Climate Change Communications (New Haven, CT: Yale University and George Mason University) (<https://climatecommunication.yale.edu/publications/climate-change-american-mind-march-2018/2/>)
- Lidskog R and Elander I 2010 Addressing climate change democratically. Multi-level governance, transnational networks and governmental structures *Sustain. Dev.* **18** 32–41
- Paas L and Goodman D 2016 *Action for Climate Empowerment: Guidelines for Accelerating Solutions through Education, Training and Public Awareness* (Paris, France and Bonn, Germany: United Nations Educational, Scientific and Cultural Organization and the secretariat of the United Nations Convention on Climate Change)
- Parker K, Horowitz J M and Anderson M 2020 *Amid Protests, Majorities Across Racial and Ethnic Groups Express Support for Black Lives Matter* (Washington, DC: Pew Research Center)
- Porter L, Rickards L, Verlie B, Bosomworth K, Moloney S, Lay B, Latham B, Anguelovski I and Pellow D 2020 Climate justice in a climate changed world *Plan. Theory Pract.* **21** 293–321
- United Nations FCCC 2018 2018 Talanoa Dialogue Platform Talanoa Dialogue Platform (available at: <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement/2018-talanoa-dialogue-platform>)
- United Nations General Assembly 1992 United Nations framework convention on climate change Conclusion date: 14 June 1992. United Nations Treaty Series

Online, registration no. I-30822 pp 195–6 (available at:  
[https://unfccc.int/resource/docs/convkp/  
conveng.pdf](https://unfccc.int/resource/docs/convkp/conveng.pdf))

United Nations General Assembly 2015 Paris agreement  
Conclusion date: December 12, 2015. United Nations Treaty

Series Online, registration no. I-54113 (available at:  
[https://unfccc.int/sites/default/files/english\\_paris\\_  
agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf))

Yankelovich D 1999 *The Magic of Dialogue* (New York:  
Touchstone)