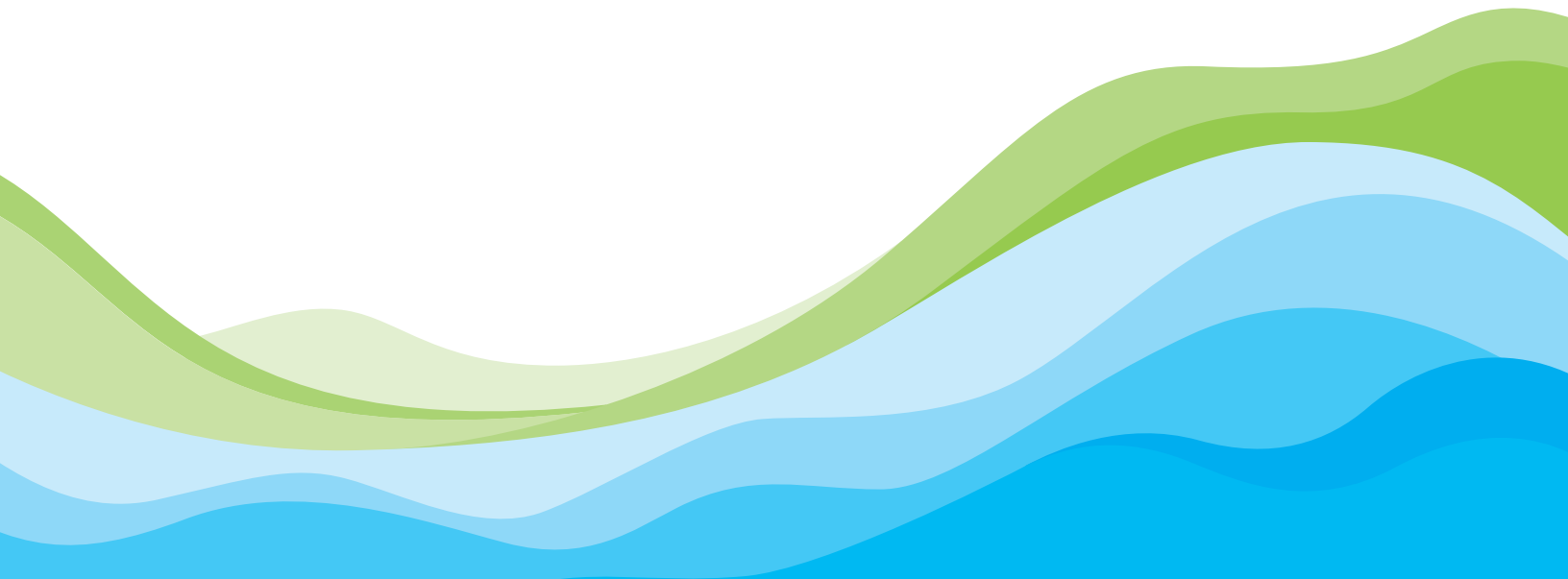COMMISSION FOR
ENVIRONMENTAL
COOPERATION

Community Environmental Justice Strategies and Tools for Climate Change Adaptation and Mitigation

April 2025

The Communities for Environmental Justice Network (CEJN) hosted a trinational workshop from 16–18 November 2023, in Oaxaca, Mexico, to facilitate the exchange of community-based environmental justice stories, strategies, and lessons learned between representatives from thirteen organizations and communities from across North America. The Network aims to strengthen the capacity of Indigenous, local, vulnerable, disadvantaged, and/or underserved communities to address environmental justice concerns in the context of climate change.

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1. Introduction

Within the framework of the "Communities for Environmental Justice Network" project, the Commission for Environmental Cooperation (CEC) has supported the creation of a network to facilitate the dissemination and exchange of community knowledge, traditional knowledge and practices, experiences, lessons learned and guidance between local and Indigenous communities in the three North American countries, to increase their ability to cope with the effects of climate change. Among the activities planned in the project is the integration of a database on community environmental justice strategies and tools for adapting to climate change and mitigating its effects.

Under the framework of the CEC project, climate change adaptation and mitigation tools, from an environmental justice perspective, are defined as a set of methods, techniques, instruments and strategies developed by communities and/or organizations (through consultation) in North America that strengthen the capacity of ecosystems and communities themselves to increase resilience and reduce the effects of climate change, and decrease greenhouse gas emissions, while promoting environmental equity and eliminating pre-existing inequalities.

In the context of environmental justice, actions are sought to address climate change through mitigation and adaptation measures based on respect for human rights, the elimination of inequalities, and the promotion of equity. This means recognizing the impacts of climate change and responsibility for its cause vary among different communities and countries, and also that climate action must be prevented from creating new vulnerabilities or discriminating against historically disadvantaged communities.

The document "Community Environmental Justice Strategies and Tools for Climate Change Adaptation and Mitigation" provides examples of free and accessible resources and materials, as well as guidance on knowledge, experiences, and techniques that will enable communities and the general public to identify actions to address climate challenges, so they can prepare themselves and strengthen their capacities to adapt to changing climate conditions and the scenarios that are expected in the medium and long term.

By compiling strategies and tools created by communities and organizations, based on real practices and proven approaches, the database not only gains greater credibility and acceptance, but also facilitates the identification of opportunities for collaboration between those who use it and those who integrate and maintain it, thereby promoting the exchange of experiences and shared learning.

Tools for adapting to climate change and mitigating its effects, with consideration of the dimensions of environmental justice, are characterized as:

- be simple and accessible;
- provide a framework for combining local knowledge, traditional knowledge, experience and learning;
- come from a variety of communities;

- able to be used at different levels of decision-making, easily adapted to specific communities, and have the potential to inspire the implementation of concrete actions;
- include a broad understanding of climate change and its effects;
- seek to develop concrete and detailed measures;
- serve as a guide and model that can be reproduced in other contexts.

2. Methodology

In order to integrate the preliminary version of the document "Community Environmental Justice Strategies and Tools for Climate Change Adaptation and Mitigation," the following methodology was implemented:

Activity 1.
Design the case study evaluation table.

Activity 2.
Evaluate workshop case studies, Story Map and current CEC contributors.

Activity 3.
Evaluate additional community case studies and organizations in the three countries, for inclusion in the database.

Activity 4.
Preliminary draft.
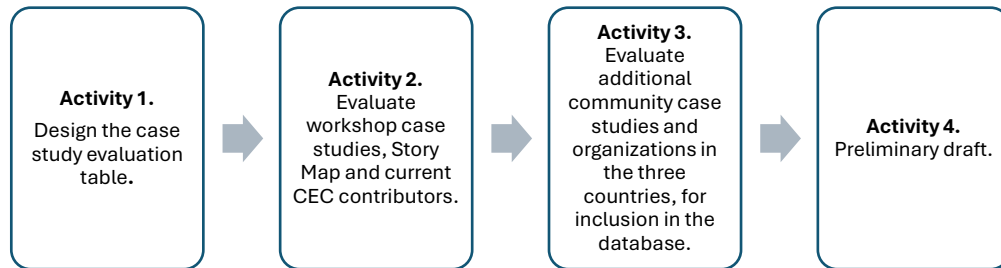
Figure 1. Methodology of the preparation of the database

During development of the database, the consultants in charge met on several occasions with CEC staff to check the evaluation and review criteria for the selected case studies. This contributed significantly to the selection of organizations and tools with an environmental justice perspective.

It is important to consider that this database is a compilation of strategies and tools for mitigation and adaptation to climate change—implemented by organizations and communities in North America—so its contents and structure could be subject to a continuous feedback process and be constantly adapted, based on the observations, challenges and needs that arise from the members of the Communities for Environmental Justice Network (CEJN).

This dynamic approach allows active integration of the experiences, learning, and concerns of the participating communities, which in turn ensures that the database will remain relevant, practical, and aligned with the specific realities and challenges that communities and organizations face in their work for environmental justice.

3. Dimensions of Environmental Justice

Development of the database was supported by the conceptual framework and dimensions of environmental justice, as described in the discussion paper, *Environmental Justice:*

Origins, Evolution, and Common Grounds in North America,[1] published by the CEC in June 2024. Environmental justice is complex and "involves overlaying vulnerabilities related to environmental inequities [such as vulnerability to the impacts of climate change, the central object of this project] and systemic inequities that include dimensions of race, ethnicity, class, gender, culture, age, sexual orientation, migratory status, income level, and geography, among others."[2]

To achieve coherence in the organization of the information gathered in this document and to cover the various systemic vulnerabilities affecting groups and communities, the following categories were used to represent the dimensions of environmental justice:

- *Race and ethnicity*: includes, but is not limited to, Indigenous, black, racialized communities
- *Gender*: includes girls and women
- *Sexual orientation*: refers to the 2SLGBTQI+ community
- *Age*: includes older and younger people
- *Class*: refers to socioeconomic or migratory status
- *Disability*: refers to people with visible or invisible disabilities

Regarding the profiles of communities included in the database, an attempt was made to apply categories that reflect the dimensions, protagonists and target communities that each organization explicitly mentions in its official documents. It is important to keep in mind the intersectional nature of *vulnerability* in terms of environmental justice, and also that a community or the work of an organization can rarely be represented by a single dimension. For this reason, in some cases the classification was not limited to one category.

Where organizations do not specify a particular group, the category of "vulnerable communities" was used, a broad concept that integrates the dimensions of environmental justice, ensuring an inclusive and representative approach.

4. Tools

Organizations and communities have designed and implemented a wide range of tools aimed at strengthening their response to climate change, adapting and mitigating its effects. These methods, techniques, strategies and instruments are grouped into various categories that correspond to the key aspects defined to classify the resources included in this project:

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[1] CEC (2024), *Environmental Justice: Origins, Evolution, and Common Grounds in North America*. Montreal, Canada: Commission for Environmental Cooperation. 66p.

[2] *Ibid.*, p. 4.
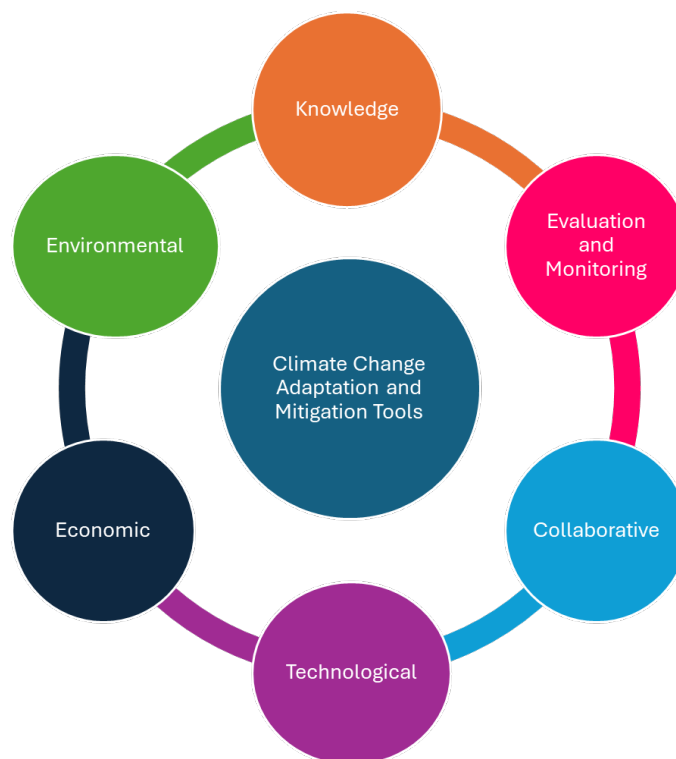
Figure 2. Classification of Climate Change Adaptation and Mitigation Tools

- **Knowledge.** These tools focus on raising awareness, building capacities and skills, and boosting participation in mitigation and adaptation initiatives. They may include awareness programs, workshops, courses and training; practical guides, manuals and protocols, teaching and dissemination materials, etc.

- **Evaluation and monitoring.** These tools allow you to identify areas for improvement, adjust strategies, and ensure that actions are effective and equitable. They can include climate models, sustainability indicators, vulnerability assessment, environmental monitoring systems, impact assessments, records and reports, etc.

- **Collaborative:** These tools facilitate the exchange of knowledge, experiences, learning and resources, while strengthening the social fabric and promoting joint and synergistic solutions. Their implementation can be manifested through collaborative platforms, international cooperation initiatives, learning networks, multisectoral alliances, forums, conferences, and other spaces designed to foster teamwork and collective action toward the achievement of common sustainability and climate adaptation goals.

- **Technological.** These tools cover the implementation of innovative technical solutions for process optimization and problem solving. They include renewable energy, energy efficiency, sustainable agriculture practices and sustainable management of natural resources and can include solar panels, smart irrigation systems, energy storage technologies and digital platforms for environmental monitoring.

- **Economic.** These tools include strategies and approaches aimed at creating local economic systems that can withstand and even adapt to the adverse effects of climate change. Examples include strengthened local capacities, access to climate finance, economic diversification, investing in sustainable infrastructure, creating savings groups, and formulating and implementing public policies and regulations for sustainability. Their purpose is to ensure long-term economic growth, minimize adverse environmental impacts, and promote social equity, while fostering resilience to climate change.

- **Environmental or climatic.** These tools include strategies, approaches, technologies and instruments designed to reduce emissions or enhance greenhouse gas sinks (mitigation), as well as to reduce the vulnerability of social, economic and natural systems to the effects of climate change (adaptation and resilience). They can integrate a strategic mix of innovative technologies, sustainable public policies, responsible practices and resilient infrastructure. Their main purpose is to foster environmental sustainability, which in turn includes restoring and conserving the local environment, as well as preserving biodiversity by protecting native species and cultural practices that contribute to resilience.

The following sections of this document describe the North American organizations and communities initially selected to be part of the database, as well as their respective strategies and tools.

4.1 Organizations and Communities in Canada

Black Environmental Initiative

Environmental Justice Dimension: Race and Ethnicity

CEJN Story Map Category: Mobilization

Website: https://beinitiative.com/

This is an organization that promotes environmental engagement for Black and Brown communities, as well as environmental protection for all people, especially those with low incomes. Through environmental education, the creation of employment opportunities, and driving community-based renewable energy initiatives, the Black Environmental Initiative empowers the communities and people with whom it works, by encouraging their participation in sustainability and environmental stewardship.

Tool Type	Name	Description
Knowledge	**I Can Breathe**	Environmental education program aimed at promoting environmental engagement in Black and Brown communities, with participation of people of all ages. https://beinitiative.com/i-can-breathe/

Economic	**Renewable Energy for Equity-Seeking Communities**	Project focused on promoting "green" investments, managed by the community itself and for the benefit of black and brown communities. https://beinitiative.com/renewable-energy-for-equity-seeking-communities/
Economic	**Green Jobs**	This initiative aims to promote greater access to decent jobs in the green transition (environmental and clean energy) sectors for people from diverse backgrounds and marginalized communities. https://beinitiative.com/green-jobs/

Community Resilience to Extreme Weather (CREW)

Environmental Justice Dimension: Vulnerable Communities

CEJN Story Map Category: Extreme Events

Website: https://crewresilience.ca/

Dedicated to inspiring, enabling and supporting the creation of intergenerational and cross-sectoral, community-led community networks, Community Resilience to Extreme Weather has, as its main objective, to raise awareness of the local impacts of climate change and promote resilience in communities, with a particular focus on the most vulnerable groups. Through an inclusive and collaborative strategy, the organization works to strengthen local adaptive capacity and encourage the participation of all sectors involved in the construction of sustainable solutions to climate change.

Tool Type	Name	Description
Knowledge	**The Heatwave Protocol**	CREW has a protocol that includes specific plans and actions for "vertical" communities (residing in tall buildings, such as residential towers), to ensure effective emergency response during heatwave events. https://crewresilience.ca/our-projects/neighbourhood-heatwaves-response-project/
Knowledge	**Linking Green Paths**	This project proposes to connect a population to green spaces within a radius of 2 kilometers. In addition, CREW works to ensure that these spaces have adequate infrastructure to combat extreme heat (e.g., water fountains, trees, cooling stations, etc.). https://crewresilience.ca/our-projects/linking-green-paths/
Collaborative	**Resilientvillle Canada**	An initiative which, using a game format, exercises are carried out to simulate emergency situations in the locality, in order to prepare the population for possible unanticipated extreme events or natural disasters. https://crewresilience.ca/our-projects/resilientville-canada/
Knowledge	**Neighbourhood Resiliency Maps**	Pilot program that identifies and maps the risks and hazards associated with climate change in Toronto's neighbourhoods, together with local strengths and weaknesses. https://crewresilience.ca/our-projects/neighbourhood-resiliency-maps/

Collaborative	**Community Workbook**	Community Workbook sharing tools and strategies will help communities prepare for the impacts of climate change. https://crewresilience.ca/our-projects/community-workbook-for-climate-resilient-high-rise-neighbourhoods/
Collaborative	**Creating Social Networks**	Social networks are critical to community resiliency. This initiative seeks to get local people to collaborate and work together in groups, forming a social network that can then expand to include other meaningful and productive connections within and outside their neighborhood. https://crewresilience.ca/impacts/social-networks/

First Peoples Group

Environmental Justice Dimension: Race and Ethnicity

Website: https://firstpeoplesgroup.com/

This Indigenous advisory firm offers customized consultancy services in training, facilitation, and relationship building, with a focus on reconciliation and sustainability. It is composed of a team of specialists (First Nations, as well as Métis and Inuit), and fosters collaboration between industry, community, and government. Its vision integrates Indigenous ancestral wisdom and scientific knowledge to achieve sustainable and healthy development, creating spaces where the voices of people with spiritual leadership are heard in the processes of resource use and environmental protection.

Tool Type	Name	Description
Evaluation & monitoring	**Indigenous Climate Monitoring TOOLKIT**	Developed collaboratively by different Indigenous co-authors, this online platform offers resources on monitoring climate change and its effects by Indigenous communities across Canada. It includes: • Step-by-step guidance • Stories of strategies and initiatives • Resource repository • Map of climate monitoring projects led by indigenous communities https://indigenousclimatemonitoring.ca/

Food Producers Forum

Environmental Justice Dimension: Vulnerable Communities

CEJN Story Map Category: Food

Website: https://foodproducersforum.com/

A non-profit organization created as an information hub, the Food Producers Forum aims to promote and expand food sovereignty and security and community health through projects tailored to local realities in Newfoundland and Labrador.

Tool Type	Name	Description
Technological	**Earth sheltered greenhouse**	Construction of greenhouses adapted to the climatic conditions of Labrador to make better use of sunlight. https://foodproducersforum.com/earth-sheltered-greenhouse/
Technological	**Greenhouse Outreach Project**	Collaborative project to help communities design greenhouses adapted to local needs. https://foodproducersforum.com/outreach-project/
Knowledge	**NL Grown**	Map of local food producers across the province of Newfoundland and Labrador, identifying community gardens, small and large farms, butchers, and other types of food producers. https://foodproducersforum.com/nl-grown/
Knowledge	**From the ground up**	This initiative contributed to the creation of a television and radio series about local producers in Newfoundland and Labrador. https://foodproducersforum.com/from-the-ground-up-project-with-cbc/
Collaborative	**Building a provincial food network**	Creation of a network of food producers in the province through an online platform that facilitates connection and generates a more direct system of food distribution and nutritional education. https://foodproducersforum.com/food-producers-network/

Sahtú Renewable Resources Board

Environmental Justice Dimension: Race and Ethnicity

Website: www.srrb.nt.ca/

Co-Steering Board, the Sahtu Renewable Resources Board, which works with the five Dene and Métis communities in the Sahtu region of the Northwest Territories to preserve their harvesting traditions and practices; ensuring the health of the land and animals, and promoting their sustainability for future generations.

Tool Type	Name	Description
Knowledge	**Dene Cookbook**	Cookbook in which recipes collected by inhabitants of the different communities of the Sahtú region are collected with the intention of transmitting their traditions to future generations. It was created as part of a project with the aim of supporting the adaptation of Dene systems to climate change through a collection and exchange program involving hunters, women and youth from five communities in Sahtú. [The final document will be available online in May 2025.]
Knowledge / Collaborative	***Women's Harvest Workshop***	Document presenting the information gathered during workshops organized with women and youth from five Sahtu communities as part of the *Dene Béré* collection and exchange campaign. This initiative gathered community views on climate change adaptation and food security, as well as their needs expressed through surveys and during workshops. [The final document will be available online in May 2025.]

The IPCA Knowledge Basket

Environmental Justice Dimension: Race and Ethnicity

Website: https://ipcaknowledgebasket.ca/

The IPCA Knowledge Basket is a digital space created to honour, celebrate and catalyze Indigenous-led conservation pathways and initiatives in Canada, particularly as they relate to Indigenous Peoples' Protected and Conserved Areas (IPCAs). This tool is home to a wealth of free and open-access resources, such as stories, case studies and academic research on IPCA, as well as practical guidance on establishing, managing and maintaining conservation initiatives led by Indigenous Peoples. Supporting Indigenous-led conservation is critical to community recovery, re-establishing relationships, and boosting Indigenous peoples' rights, titles, responsibilities, and sovereignty.

Tool Type	Name	Description
Knowledge	**Resources**	Consult the IPCA Knowledge Basket resource database to find tools, reports, audio-visual resources and other information to support IPCA and Indigenous Peoples-led conservation. These resources come from governments and Indigenous organizations; other governments (federal, provincial, territorial); non-profit organizations, and others. https://ipcaknowledgebasket.ca/resources/
Knowledge	**Communications Guidelines for Indigenous-led Conservation**	These guidelines provide anti-oppressive practices, considerations, and approaches aimed at establishing respectful, reciprocal and responsible communication with Indigenous peoples and their conservation leadership in the Canadian context. https://ipcaknowledgebasket.ca/balancing-the-narrative-communications-guidelines-for-indigenous-led-conservation/

The Confederacy of Mainland Mi'kmaq

Environmental Justice Dimension: Race and Ethnicity

Website: https://cmmns.com/

A not-for-profit tribal council located in Nova Scotia, the Confederacy of Mainland Mi'kmaq is tasked with promoting and supporting Mi'kmaw community initiatives for self-determination and community strengthening. Its activities include advisory services in areas such as finance, economic development, community planning and governance, adopting new guidelines for assessing vulnerability to climate change and designing projects to strengthen resilience to its effects.

Tool Type	Name	Description
Environmental	**Video: Mi'kmaq Wildfire Prevention Program**	These testimonies from the Mi'kmaq community (L'sitkuk First Nation) are about their experiences with wildfires and the creation of a fire prevention and action group. The video explains their community engagement methodology for creating the program;
Knowledge		

Collaborative		activities to promote community relations, and preventive actions from home. www.youtube.com/watch?v=dc0Vjrugyv8
Environmental Collaborative Knowledge	**Video: Mi'kmaq Forestry Initiative - Working Together**	This video testimonial on traditional forest management practices in Nova Scotia, highlights the deep spiritual and cultural connection of Indigenous peoples to the forest. It includes a historical sketch of forest management prior to colonization and addresses strategic alliances to promote sustainable management according to the sociocultural context of the Mi'kmaq community (L'sitkuk First Nation). www.youtube.com/watch?v=gZQ214Ec0aw
Knowledge	**Conference: Mi'kmaq Forest Knowledge**	This initiative comprises three conferences: • *Mi'kmaq Forestry Initiative*, by Troy Robichaud, Senior Research Advisor to the Confederation of the Mi'kmaq of Tierra Firme. • *Traditional Use on the Land*, by Sherilyn Young, Forestry Consultation Project Officer at the Kwilmu'kw Maw-klusuaqn Negotiation Office. • *Archaeology and Forestry*, by Dr. Heather MacLeod-Leslie, Senior Archaeologist at the Kwilmu'kw Maw-klusuaqn Bureau of Negotiation. www.youtube.com/watch?v=cuv9KimVBJo

The Resilience Institute

Environmental Justice Dimension: Vulnerable Communities

CEJN Story Map Category: Other

Website: https://resilienceinstitute.ca/

An organization dedicated to addressing the global challenges arising from climate change and biodiversity loss, the Resilience Institute works with a transdisciplinary approach that allows it to integrate various knowledge and perspectives, with the aim of generating innovative solutions and promoting transformative change that minimizes the suffering caused by the effects of climate change. Its work focuses on creating strategies that address the climate crisis and biodiversity loss in an interconnected way, seeking to produce a positive and lasting impact on the most affected communities.

Tool Type	Name	Description
Knowledge	**Knowledge Hub**	Online courses with certification in topics that are of interest to the community, such as e.g., bison and climate change. https://resilienceinstitute.ca/knowledge-hub/courses/
Knowledge		Collection of reports and voices on topics of interest, e.g., Perspectives on what it means to be resilient in the context of climate change. https://resilienceinstitute.ca/knowledge-hub/resources/

Collaborative		Podcasts focused on the dissemination of information and topics of interest to the community. https://resilienceinstitute.ca/knowledge-hub/podcast/
Collaborative		Collecting stories from people in the community. https://resilienceinstitute.ca/knowledge-hub/stories/
Environmental	**What Sweetgrass is Telling Us**	Traditional plants of local cultural significance, such as the so-called "sweetgrass" or "bison grass" (*Hierochloe odorata*), have been absent from land-use planning since indigenous knowledge was suppressed during colonization. This particular plant stands out for its carbon sequestration properties and its contribution to the challenges of climate change. Planting sweetgrass in grasslands could prove to be an untapped solution to climate change (both in terms of carbon sequestration and its contribution to biodiversity), while supporting the process of reconciliation between indigenous peoples and settlers. https://resilienceinstitute.ca/initiative/sweetgrass-and-carbon-sequestration/ https://resilienceinstitute.ca/potential-of-sweetgrass-to-sequester-carbon/

4.2 Organizations and Communities in the United States

Americas for Conservation + the ARTS (AFC+A)

Environmental Justice Dimensions: Class, Age

Website: https://americasforconservation.com/

Founded and led by Latin Americans, based in Colorado, but also active in Puerto Rico, Americas for Conservation + the Arts (AFC+A) is an organization that fights systemic racism in the work of environmental conservation and artistic creation, leveraging art and culture to promote healthy communities and diversity processes, equity and inclusion (DEI). Since 2008, AFC+A programs have integrated education, art, and environmental advocacy to empower changemakers in Black, Indigenous, and People of Color (BIPOC) communities.

Tool Type	Name	Description
Environmental		Green Promoters is a committee for the reforestation of vulnerable neighborhoods. In addition to planting trees, youth leaders and other participants seek to connect communities with the environment, promoting health education, conservation, and equity in access to green spaces. *Promotores Verdes* thus gain significant work experience while supporting neighbourhoods and communities that have significant inequalities in tree cover. https://americasforconservation.com/our-programs/promotores-verdes/
Collaborative	**Green Promoters (*Promotores Verdes*)**	
Economic		

Boston Food Forest Coalition

Environmental Justice Dimension: Vulnerable Communities

CEJN Story Map Category: Extreme Events

Website: www.bostonfoodforest.org/

Emerging as a community of neighbors with the purpose of addressing the history of systemic racism in the city of Boston, particularly in terms of neighborhood development policies, the Boston Food Forest Coalition (BFFC) partners with local leaders to transform vacant lots into public parks with edible species, under the permanent control and ownership of the community itself. As a community land trust, the BFFC retains ownership of the vacant land it acquires and converts into food forests, protecting them in perpetuity for future generations and increasing the climate resilience of neighborhoods and communities. Through educational workshops and direct technical assistance, the BFFC trains people in the community and puts them in charge of managing and maintaining the parks and green spaces created, preserving the interaction and relationships created as a core part of their climate work.

Tool Type	Name	Description
Collaborative Environmental Knowledge	**Food Forests Parks**	Through local leadership of neighbors, vacant or unused land is identified and acquired by the BFFC for transformation into local food forest parks (food forests), which become the property of the communities themselves, under the protection of the Coalition's community land trust. The spaces are transformed into community urban parks, with infrastructure based on natural principles and with a special emphasis on large canopy trees that help reduce temperatures in the city. The neighbors and community leaders organize themselves to carry out workshops and work tables on education, technical assistance and maintenance. • Presentation of the initiative: www.bostonfoodforest.org/ourwork • Map of the parks: www.bostonfoodforest.org/locations • Helpful Resources: www.bostonfoodforest.org/resource-library

Comité Cívico del Valle (CCV)

Environmental Justice Dimension: Vulnerable Communities

CEJN Story Map Category: Pollution

Website: https://ccvhealth.org/

A nonprofit organization with a strong track record for environmental justice and a pioneer in implementing and recognizing community air quality monitoring in Imperial County, California, the Comité Cívico del Valle (CCV) aims to improve access to health services, encourage research, and advance community programs and environmental justice for California's disadvantaged communities. Their work is based on strategic collaborations,

research, and civic actions for the benefit of children, young people, students, professionals, and the general community.

Tool Type	Name	Description
Evaluation & monitoring	IVAN (*Identifying Violations Affecting Neiborhoods*) Imperial	A community platform that allows air quality problems to be reported to the corresponding agencies, in order to address local environmental concerns. It is a tool that facilitates the documentation and real-time monitoring of air pollution levels in the community. https://ivan-imperial.org/
Knowledge	Salton Sea: Community Outreach Education & Engagement	Platform aimed at informing and training children, students, school staff, parents, local leaders and the community in general about the situation of Lake Salton (also called "Salton Sea") and its impact on public health, also promoting community participation in mitigation solutions in favor of the recovery of the body of water and the formulation of future management proposals. www.saltonseacoee.org/
Collaborative		

Conservation Northwest

Environmental Justice Dimension: Race and Ethnicity

Website: https://conservationnw.org/

Based in Seattle, Washington, Conservation Northwest is an organization committed to protecting and restoring biodiversity, from the state's coasts to mountains. Its initiatives include habitat conservation, wilderness preservation, and recovery of endangered species. Conservation Northwest supports communities that have faced racial oppression, promoting community empowerment through connection and participation in creating resilient ecosystems.

Tool Type	Name	Description
Knowledge	Justice, Equity and Inclusion	Resources on conservation and environmental justice by and for rural, Indigenous, African American, and communities of color. https://conservationnw.org/about-us/justice-equity-inclusion/
Knowledge	The AV Room	Audios and videos about the projects carried out by the organization, including those with the participation of indigenous communities and other under-represented groups. https://conservationnw.org/about-us/resources/

Native Village of Eyak

Environmental Justice Dimension: Race and Ethnicity

Website: www.eyak-nsn.gov/government/

A federally recognized Alaskan Native community, the Native Village of Eyak have faced economic challenges associated with environmental impacts such as oil spills, ocean acidification (OA), and other effects of climate change in *Prince William Sound*, traditional waters of the Eyak people. Kelp mariculture offers a solution that can help mitigate OA by absorbing and fixing carbon dioxide (CO_2), and no fertilizers, pesticides, or herbicides are needed in the process. Moreover, the forage produced from macroalgae has the added benefit of significantly reducing methane emissions in livestock farming.

Tool Type	Name	Description
Technological	**Sustainable Ecosystems and Resilient Economies through Mariculture (SEREM)**	Seaweed, including brown *kelp*, was formerly used in the region for food, tools and medicine, and today it continues to play a key role in the cultural heritage of the indigenous community. The aim of this initiative is to understand the ecological and economic impacts of kelp mariculture and to investigate new ways of cultivating kelp seaweed in the region. www.eyak-nsn.gov/mariculture/ www.adfg.alaska.gov/index.cfm?adfg=wildlifenews.view_article&articles_id=949

Texas Health and Environment Alliance

Environmental Justice Dimension: Vulnerable Communities

CEJN Story Map Category: Pollution

Website: www.txhea.org/

A nonprofit organization dedicated to protecting public health and the environment in Harris County and the Houston/Galveston, Texas region, the Texas Health and Environment Alliance (THEA) focuses primarily on communities impacted by historic pollution, whose conditions are aggravated by the risks from climate change. Through programs based on community engagement, education, and advocacy, THEA empowers vulnerable communities to demand cleanup of contaminated industrial sites and mitigate negative public health impacts.

Tool Type	Name	Description
Evaluation & monitoring	**Texas Health and Environment Alliance: Community Health Survey**	Online survey, in English and Spanish, with the purpose of identifying the needs and concerns of communities related to health and contaminated sites. The survey makes it possible to connect the dots and establish a relationship between the sources of pollution and the local incidence of cancer and other diseases. www.txhea.org/resources Community Health Survey: https://grasshopper-blackbird-6rwx.squarespace.com/resources/#health-survey
Knowledge	**Blog & News**	Publications focused on the fight against toxic pollution in the Houston and Harris County region, particularly at Superfund sites. www.txhea.org/resources

The Indigenous Climate Resilience Network

Environmental Justice Dimension: Race and Ethnicity

Website: www.icrn.us/

A network that brings together Indigenous peoples, tribes and communities, as well as organizations and members of the scientific and academic communities, in order to identify threats from climate change and develop adaptation and mitigation strategies. It aims to support Indigenous leadership on climate resilience, facilitate access to tools and resources, and promote collaboration between communities, researchers and allied entities.

The Indigenous Climate Resilience Network (ICRN) is guided by an advisory board and supported by the Institute for Sustainable Development at Menominee Nation University.

Tool Type	Name	Description
Knowledge	**Impacts to Tribes & Indigenous Peoples**	A platform that presents Indigenous perspectives on climate change and provides detailed information on the ways which different tribes, peoples and organizations cope with its impacts. Includes: • *Tribal Climate Profiles* developed by the *Institute for Tribal Environmental Professionals* for various tribes and organizations interacting with climate change and its impacts at the regional level. • Videos produced by various nations, indigenous peoples and communities, as well as projects and organizations. www.icrn.us/impacts-to-tribes-indigenous-people
Knowledge	**Indigenous-led Climate Change Planning**	Examples of climate change mitigation and adaptation strategies, based on traditional knowledge and values. www.icrn.us/indigenous-led-climate-change-planning
Knowledge	**The Tribal Climate Adaptation Menu**	A compilation of adaptation actions that provides a framework for integrating Indigenous knowledge, culture, languages, and history into the climate change adaptation planning process. www.icrn.us/tribal-climate-adaptation-menu
Knowledge	**Climate Change Data Tools**	A website that compiles tools and resources available online related to climate change in order to support the planning and integration of strategies, with a focus on the adaptation of local tribes and Indigenous communities. www.icrn.us/climate-change-data-tools
Knowledge Economic	**Education & Training Resources**	A compilation of websites that offer free training on topics such as climate change, ecological adaptation, and the use of geospatial technologies. In addition to courses and resources, they include tools for writing to finance proposals for projects related to the climate phenomenon. www.icrn.us/education-and-training

The Institute for Peoples, Place, and Possibility

Environmental Justice Dimensions: Race and Ethnicity, Gender, Age, Class, Disability

Website: www.i-p3.org/

A nonprofit organization dedicated to strengthening the capacities of communities to create lasting change in health and well-being, The Institute for Peoples, Place, and Possibility provides support in strategy development, use of data, technology integration, and storytelling, with a focus on equity and concerted action to drive community change. Its mission is to empower communities so that they can implement sustainable and scalable solutions that improve the quality of life of their inhabitants.

Tool Type	Name	Description
Knowledge / Collaborative	**Community Commons**	A platform that, with a view to fostering collaboration and learning between communities, compiles tools and resources on more than 200 topics. Includes: • Toolkits • Best Practices • Data and Map Tools • Stories and narratives www.communitycommons.org/ More specifically in relation to environmental justice and the climate crisis: www.communitycommons.org/search?q=climate

The Rural Community Assistance Partnership

Dimensions of Environmental Justice: Race and Ethnicity, Class

Website: www.rcap.org/

A national network of nonprofits that provides technical assistance, training, resources, and support to rural communities and their territories, including tribal lands. The Rural Community Assistance Partnership promotes a culture of respect, diversity, equity, and inclusion, with the belief that diverse experiences and backgrounds enrich and strengthen rural communities.

Tool Type	Name	Description
Knowledge	**Tools for Climate Change, Water, and Environmental Justice**	Interactive tool that collects information on climate change, water, equity, and environmental justice. It includes geographic information systems and platforms on: • Climate impacts and environmental justice • Local impacts and risks of climate change • Risk and adaptation https://storymaps.arcgis.com/stories/6d5ddb73bf0c455d88677e7b2fab3406

4.3 Organizations and Communities in Mexico

Cántaro Azul

Environmental Justice Dimension: Class

Website: www.cantaroazul.org/

A civil association based in Chiapas, Cántaro Azul provides accompaniment to schools and rural communities in the fulfillment and respect of their human rights associated with water. It also promotes sustainable practices related to water, hygiene and sanitation.

Tool Type	Name	Description
Technological / Knowledge	**Safe water in schools**	Design, adaptation and installation of safe water (SAS), hygiene and sanitation systems for schools. The infrastructure can include rainwater harvesting systems, ecological toilets and sinks, and the implementation of the systems is carried out through a participatory program that involves teachers, students and parents. www.cantaroazul.org/agua-segura-en-escuelas
Knowledge / Evaluation & monitoring	**Community management**	Diagnostic and participatory plans for the improvement of water and sanitation, according to the needs of families and the local context. Implementation of participatory and didactic strategies to promote the sustainable consumption of safe water and adequate hygiene practices, from an intercultural approach and with a gender perspective. A map of the results of the analysis of water quality in Mexico is available. www.cantaroazul.org/gestion-comunitaria
Collaboration	**Water governance**	Works at the regional and national levels with the legislative and executive branches, as well as with organizations and key actors in the water sector. Processes of collaboration and partnership between community organizations are promoted and strengthened, which allow the creation of watershed management projects, in particular through the participatory agenda for safe water. www.cantaroazul.org/gobernanza-del-agua
Collaboration	**Emergency care**	Sanitation is a key point for emergency response. Many diseases can be avoided with the installation of temporary dry toilets, and rainwater harvesting system components for sinks. www.cantaroazul.org/atencion-a-emergencias

Comunidad Indígena de Nuevo San Juan Parangaricutiro

Environmental Justice Dimension: Race and Ethnicity

CEJN Story Map Category: Territory

Website: www.gob.mx/conafor/articulos/nuevo-san-juan-parangaricutiro-un-modelo-a-seguir

Located on the Purépecha plateau in Michoacán, the Indigenous Community of Nuevo San Juan Parangaricutiro has 20,000 inhabitants and is a benchmark for community forest

management, ecotourism, biodiversity conservation and organizational model in Mexico and abroad.

Tool Type	Name	Description
Economic	**Forest harvesting**	Establishment of various enterprises such as a sawmill, furniture factory, water bottling plant and blueberry greenhouses, and sustainable forest management. It is certified by the Forest Stewardship Council and practices for tree management and marking are applied. www.gob.mx/conafor/articulos/nuevo-san-juan-parangaricutiro-un-modelo-a-seguir Video: https://youtu.be/Oy-BxG2wlCE?si=8ofs157ad8-fq8mc (in Spanish)

Consejo Civil Mexicano para la Silvicultura Sostenible (CCMSS)

Dimensions of Environmental Justice: Race and Ethnicity, Class

Website: https://ccmss.org.mx/

As an organization made up of individuals and entities from civil society, its work focuses on accompanying and advising on community processes, such as sustainable management of forests, land and water. In addition, the CCMSS actively participates in the identification, evaluation and management of processes that could potentially threaten the territory, such as forest fires, prolonged droughts, the privatization of social property and the imposition of tourism, real estate or agro-industrial projects.

Tool Type	Name	Description
Knowledge	**Publications**	Publications produced by the CCMSS on forest management and forest policy analysis. https://ccmss.org.mx/acervo_filter/publicaciones-del-ccmss/
Knowledge	**Maps**	National maps are developed in a collaborative and participatory manner concerning forest management, social property, and economic activities with an impact on forest areas. https://ccmss.org.mx/mapa/
Knowledge / Economic / Collaborative / Environmental	**Videos**	Videos on community experiences in forest management. These include testimonies and strategies for environmental adaptation and mitigation. www.youtube.com/@CCMSSAC
Collaborative / Knowledge	**Rural women leaders in climate change adaptation**	Stories of women leading sustainable management and climate resilience initiatives in the Amanalco-Valle de Bravo Basin. They are part of a brigade of combatants dedicated to preventing and fighting wildfires, promoting women's participation in natural resource

Environmental		management, and strengthening their capacities through workshops in environmental justice, forest management, and leadership. Video in English: www.youtube.com/watch?v=v_0rv1pSqSU
Environmental Collaborative Economic	Support Program for Integrated Territorial Management (PASMIT)	A trust that finances the incremental costs associated with the management and conservation of lands, waters, and forests in ejidos. It provides technical and economic support to more than 30 peasant and Indigenous communities, in their governance, conservation, and land management actions in central Mexico. www.ccmss.org.mx/wp-content/uploads/2016/03/mecanismo-local-de-PSA-en-Amanalco.pdf https://ccmss.org.mx/amanalco/

Coordinadora de Pueblos Unidos por el Cuidado y la Defensa del Agua (Copuda)

Dimensions of Environmental Justice: Race and Ethnicity, Class

CEJN Story Map Category: Water

Website: www.youtube.com/watch?v=nrsCzzpjQ5o

Made up of 17 peasant and Indigenous Zapotec communities from the central valleys of Oaxaca, Copuda governs its actions and initiatives by the fundamental principles of care, preservation and defense of water in their territories. As a result of their struggle, the federal government publicly recognized the autonomy of communities to manage, control, and recover water from their territories.

Tool Type	Name	Description
Technological Collaborative	Demonstration plots	An initiative focused on accompaniment and technical advice for the implementation of solid rain management systems, solar pumping, efficient irrigation and natural pest control. Water sowing processes are also shown, through three types of rainwater absorption works: dams, basins and wells. https://eventos.semarnat.gob.mx/files/uploads/rodolfo/2024/06/12/16-may-informe-copuda.pdf

Espacio de Encuentro de las Culturas Originarias

Environmental Justice Dimensions: Race and Ethnicity, Class, Gender

Website: https://eeco.org.mx/

As a non-profit organization founded by Indigenous and rural women and men from Oaxaca, the organization focuses on reactivating the local economy, strengthening community culture and values, and building capacities through workshops, communication campaigns, cultural events, and processes of social and environmental self-management. Its projects cover ecological restoration, prevention of gender-based violence, economic empowerment and self-management of natural resources, promoting self-sufficiency, solidarity economy, gender equality, interculturality, human rights and the fight against climate change.

Tool Type	Name	Description
Technological / Knowledge	**Manuals & Posters**	Documents with instructions to guide the construction and maintenance of sustainable environmental technologies. They include but are not limited to: • Handbook of biofilters for grey water • Healthy Stove Construction Manual • Healthy stove use and maintenance manual • Biodigester Manual • Composter dry toilet manual Posters that indicate the correct use and maintenance of sustainable environmental technologies. https://eeco.org.mx/contenido-descargable/
Knowledge	**Radio campaigns**	Audio broadcasts of radio campaigns on topics such as water, forests, community organization, climate change and self-construction of eco-techniques such as dry toilets, wood-saving stoves and rainwater harvesting, among others. www.ivoox.com/en/escuchar-programas-eeco-a-c_al_9971718_1.html?show=programs
Knowledge / Economic / Technological	**Women's productive initiatives in the face of climate change**	Informative brochures on economic empowerment initiatives for women in the Isthmus of Tehuantepec, through sustainable projects and techniques adapted to climate change. https://eeco.org.mx/contenido-descargable/

Fondo Oaxaqueño para la Conservación de la Naturaleza (FOCN)

Environmental Justice Dimension: Vulnerable Communities

Website: https://fondoax.org/

An organization that contributes to the conservation of biodiversity, hand-in-hand with local communities, identifying community conservation knowledge and practices, it has several strategic axes: oceans, climate change, and ecosystems and species.

Tool Type	Name	Description
Collaborative / Environmental / Technological / Economic / Knowledge	**Community Mangrove Reforestation and Regenerative Ecotourism**	For ten years, the "guardians of the mangrove" of the Lagarto Real Cooperative have been dedicated to reforesting and restoring the lagoon of La Ventanilla. Through community ecotourism, they generate the economic and social conditions to achieve a strong commitment to the conservation of the local ecosystem, which is as important and fragile in the face of the impacts of climate change as the increasingly frequent hurricanes. Video: https://fb.watch/xy4TtA6gXU/ (in Spanish)

Isla Urbana

Dimensions of Environmental Justice: Race and Ethnicity, Class

CEJN Story Map Category: Water

Website: https://islaurbana.org/

An interdisciplinary collective whose purpose is to promote sustainable development in water through rainwater harvesting, Isla Urbana promotes educational and dissemination processes on water sustainability, redefining water as a sacred resource. Isla Urbana has developed its own methods and technologies for rainwater harvesting and encourages the exchange of knowledge and experiences in rural and indigenous communities, especially in those regions with limited access to drinking water.

Tool Type	Name	Description
Knowledge / Technological / Evaluation & monitoring	**Rain Gallery**	Information centre on rainwater catchment. Includes: • Academic research on the water crisis • Academic research on rainwater harvesting • Calculator for rainfall harvesting • Hydrological Observatory (link to the Regional Network for Monitoring Rainfall in the Valley of Mexico) https://islaurbana.org/pluvioteca/
Technological	**Rainwater Harvesting – City Systems**	Thousands of catchment systems have been installed in cities, such as Oaxaca and Mexico City, so that families have access to drinking water without depending on a network connection, and also in emergency situations, such as after an earthquake. https://islaurbana.org/sistemas-de-ciudad/
Technological	**Rainwater harvesting – Field Systems**	Catchment systems have been installed in rural areas of Mexico, especially where Indigenous populations live with a worrying lack of drinking water. The intervention model and the testimony of participants and beneficiaries are shared. https://islaurbana.org/sistemas-de-campo/
Knowledge / Collaborative / Technological	**Rain Schools**	A comprehensive program that allows the installation of rainwater harvesting systems to provide clean water in schools, provide environmental education workshops and collaborate with school staff and families. https://islaurbana.org/escuelas-de-lluvia/

Ko'ox Taani Fundación para el Desarrollo Comunitario y la Inclusión Social

Environmental Justice Dimensions: Race and Ethnicity, Class, Gender, Disability

CEJN Story Map Category: Other

Website: https://fundacionkt.org/

A non-profit civil society organization, made up of a group of Yucatécan businessmen committed to improving the quality of life and resilience of families in situations of extreme

poverty, it works by building economic and human capacities to face climate change in an inclusive way.

Tool Type	Name	Description
Knowledge	**Testimonies**	A series of audiovisuals that share the degree of impact of the initiatives, the work of accompaniment and their experiences. https://fundacionkt.org/p/testimonios
Knowledge	**Blog**	Articles produced by the Foundation on accompaniment and implemented strategies, productive activity, community savings, food security and human development. https://fundacionkt.org/blog
Economic / Collaborative	**Graduation Approach**	Methodology for the sequential development of training to achieve sustainable livelihoods. The strategic elements of its implementation are: group loans (community savings), food production at home, seed capital for business development, and capacity building. https://fundacionkt.org/estrategia/enfoque-de-graduacion

5. Mapping Tools and Other Governmental and Nongovernmental Resources

The following section provides a non-exhaustive list of mapping tools and other governmental and non-governmental resources. The instruments or strategies presented are not necessarily related to climate change adaptation and mitigation, but can guide, support or inspire the implementation of measures in favor of environmental justice and the resilience of vulnerable communities.

5.1 Mapping Tools and Other Nongovernmental Resources

Tool Type	Name	Description
Knowledge	**United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)**	An international instrument of the United Nations that establishes the individual and collective rights of Indigenous peoples. English version: https://social.desa.un.org/sites/default/files/migrated/19/2018/11/UNDRIP_E_web.pdf
Knowledge	**The National Centre for Truth and Reconciliation website**	The National Centre for Truth and Reconciliation (NCTR) is a place of learning and dialogue where the truths of the experience of Indigenous residential schools in Canada are honored and their memory is kept safe for future generations.

Tool Type	Name	Description
Collaborative		English and French version: https://nctr.ca/ The website collects documents of interest, such as: • *The Truth and Reconciliation Commission's 94 calls to action*: https://nctr.ca/records/reports/ • Teaching resources for all ages: https://nctr.ca/education/
Knowledge Environmental Collaborative	**Buffalo: A Treaty of Cooperation, Renewal, and Restoration**	Website that addresses collaboration between Indigenous communities and allies to protect and conserve the buffalo as a cultural symbol and key resource. Offers: educational resources, testimonials, stories, news, interviews, and treaty details. Author: International Buffalo Relations Institute Country: Canada, United States www.buffalotreaty.com/ https://buffalorelations.land/
Knowledge Environmental Collaborative	**The Central Grasslands Roadmap Initiative**	Website of a collaborative initiative between governments, Indigenous communities, NGOs and scientists for the protection and conservation of grasslands in North America. It offers reports, collaborative projects, conservation strategies, scientific research, opportunities and maps. Author: Central Grasslands Roadmap (CGR) partnership Country: Canada, United States www.grasslandsroadmap.org/
Knowledge Environmental Collaborative	**Indigenous vision (IV) Maps**	Personalized map collection highlighting cultural, environmental, and social information. It includes: water health, environmental impacts, reports of violence and disappearances of Indigenous Peoples, indigenous businesses, and other key areas of social and environmental concern. Author: Indigenous Vision - An educational non-profit Country: Canada, United States www.indigenousvision.org/maps/
Knowledge Evaluation & monitoring Environmental	**CartoCrítica**	Interactive maps of geospatial data that include information on socio-environmental context, natural environment, water, urban development, forest management, electric power, mining and hydrocarbons. Author: CartoCrítica - Research, maps and data for civil society Country: Mexico https://cartocritica.giscloud.com/
Knowledge	**Get started with ArcGis StoryMaps**	A guide for storymapping ArcGIS. Author: ArcGis English version: https://storymaps.arcgis.com/stories/cea22a609a1d4cccb8d54c650b595bc4
Knowledge	**Introduction to Community-based**	The guide's *Introduction to community-based environmental monitoring: practical guidance for monitoring of natural resources by Indigenous Peoples and local communities* describes the key stages of

Tool Type	Name	Description
Evaluation & monitoring Environmental Collaborative	**Environmental Monitoring**	designing and implementing a biodiversity monitoring strategy, including practical advice and directions to other resources. Author: Guide created through the Paths of Transformation project (https://transformativepathways.net/) Available in English, French and Spanish: https://transformativepathways.net/introduction-to-community-based-environmental-monitoring-practical-guidance-for-monitoring-of-natural-resources-by-indigenous-peoples-and-local-communities/
Knowledge Evaluation & monitoring Environmental Collaborative	**Protocol for biodiversity monitoring in private and voluntary conservation areas**	The Nature Conservancy's Guide to standardizing and facilitating biodiversity monitoring in areas under private conservation schemes. It is designed to generate scientific information that supports decision-making and effective management of these areas. www.nature.org/content/dam/tnc/nature/en/documents/AFC_Protocolo_biodiversidad_pagina_Baja.pdf (in Spanish)
Conocimiento Colaborativa	**The last thing our community needs: LNG in Chester, Pennsylvania**	StoryMap that explores the negative impacts of a liquefied natural gas project in Chester, Pennsylvania. It highlights community concerns related to the health, environment, and economic well-being due to this development. In addition, it emphasizes the struggle of communities to protect their rights and the environment in the face of controversial energy projects. Author: We Act Country: United States https://storymaps.arcgis.com/stories/a72d37bbce71473195da5d2d86a102d2
Knowledge Collaborative	**Pollution Investigation in Mexico**	StoryMap that chronicles the contamination of different hydrocarbon facilities in Tabasco, Mexico. Includes videos. Author: Earthworks and Patricia Rodríguez Country: Mexico English version: https://storymaps.arcgis.com/stories/483ddb719220416d934980fbebb62325
Knowledge Collaborative	**Environmental Racism in Toronto**	StoryMap that analyzes environmental racism in Toronto, Canada. It features maps and data showing disparities in air quality, access to green space, and exposure to pollution sources. Author: Daniel Divito for the Toronto Outdoor Education Schools Country: Canada https://storymaps.arcgis.com/stories/e0f3332504c5452a9bd94e00b667c89a
Knowledge	**Climate Data for a Resilient Canada**	Tool that facilitates access, analysis and visualization of historical climate data and future projections, supporting climate change adaptation planning and informed decision-making. It fosters

Tool Type	Name	Description
Environmental Evaluation & monitoring		collaboration between climate service providers to provide specific information to different sectors. Author: Collaboration between Environment and Climate Change Canada (ECCC), the Computer Research Institute of Montréal (CRIM), CLIMAtlantic, Ouranos, the Pacific Climate Impacts Consortium (PCIC), the Prairie Climate Centre (PCC), and HabitatSeven Country: Canada English version: https://climatedata.ca/
Knowledge Environmental Evaluation & monitoring	**The Climate Atlas of Canada**	Interactive tool that combines climate science, mapping, and storytelling along with Indigenous knowledge, community research, and videography to raise awareness and inspire action. Among others, it provides climate data maps for First Nations, Inuit and Métis communities as well as an interactive map that allows you to explore how climate change will affect different localities in Canada. Author: The Prairie Climate Centre Country: Canada English version: https://climateatlas.ca/

5.2 Mapping Tools and Other Government Resources

Canada

Tool Type	Name	Description
Knowledge Evaluation & monitoring Environmental	**Interactive indicator maps**	Interactive map and tools to explore key environmental indicators in Canada. It includes data on air quality, water, biodiversity, and climate change, as well as allowing the analysis of trends and the evaluation of sustainability in different regions. Author: Government of Canada English Version: https://indicators-map.canada.ca/App/CESI_ICDE?keys=AirEmissions_SOx&GoCTemplateCulture=en-CA
Knowledge Environmental	**Nature-based Climate Solutions**	Strategies such as restoration, conservation, and management of ecosystems (wetlands, grasslands, coasts, and forests) to mitigate climate change and protect biodiversity. This includes data on Canada's natural resources. Author: Government of Canada English Version: www.canada.ca/en/services/environment/our-environment/nature-based-climate-solutions.html

United States

Tool Type	Name	Description
Knowledge / Collaborative / Evaluation & monitoring	**EPA's Environmental Justice Collaborative Problem-Solving Model**	Manual to address environmental and public health problems in communities, through the participation of all people in the development and application of environmental policies. Author: US Environmental Protection Agency (EPA) www.epa.gov/sites/default/files/2016-06/documents/cps-manual-12-27-06.pdf
Knowledge / Environmental	**CalEnviroScreen 4.0**	Interactive map of California related to environmental and social issues, highlighting geographic data and analysis relevant to decision-making. It includes dynamic visualizations that allow the user to explore key information about resources, risks, and geographies-specific characteristics. Author: OEHHA California Office of Environmental Health Hazard Assessment English Version: https://experience.arcgis.com/experience/11d2f52282a54ceebcac7428e6184203/page/CalEnviroScreen-4_0/
Knowledge / Evaluation & monitoring / Environmental / Collaborative	**US Climate Resilience Toolkit**	Website that provides tools, information and specialized experiences for climate resilience. It offers all the information of the federal government. Includes: • Steps to Resilience • Case Studies • Tools • Experts Author: NOAA's Climate Program Office https://toolkit.climate.gov/ https://toolkit.climate.gov/tools
Knowledge / Collaborative	**Climate Change Communication Toolkit**	Website that includes educational materials and other support resources for climate change communicators in parks and protected areas. It includes courses, internships, publications, graphics, communication guides, etc. Author: National Service Park www.nps.gov/subjects/climatechange/toolkit.htm
Knowledge / Environmental	**Tools for Climate Change Adaptation**	Tools and resources designed to help communities and organizations adapt to the impacts of climate change and implement mitigation strategies. They cover a variety of topics: air quality, water management, public health, adaptive planning, waste management and emergency response. Author: US Environmental Protection Agency (EPA) www.epa.gov/arc-x/tools-climate-change-adaptation

Tool Type	Name	Description
Knowledge	**NCA 5: The Fifth National Climate Assessment**	Fifth National Climate Assessment Report of the United States, which analyzes the impacts of climate change in the country. The report assesses changes in natural, human and economic systems, providing key information on topics such as: climate impacts, adaptation and mitigation, climate injustice and ecosystems and natural resources. Author: US Global Change Research Program (USGCRP) https://nca2023.globalchange.gov/
Knowledge Environmental	**The Climate Explorer**	A website that provides climate information for each city in the United States. It includes climate maps, climate graphs, historical climate information, and resources for building resilience plans. Author: NOAA's Climate Program Office https://crt-climate-explorer.nemac.org/
Knowledge Evaluation & monitoring	**Coastal Flood Exposure Mapper**	A tool for the generation of personalized maps on risk and vulnerability assessment to coastal hazards. Maps can be saved, downloaded, or shared. It offers guidance to engage the community and stakeholders in the maps. Only available for the East Coast, West Coast, Gulf of Mexico, Great Lakes, and Pacific and Caribbean islands. Author: NOAA's Climate Program Office https://coast.noaa.gov/digitalcoast/tools/flood-exposure.html
Knowledge Evaluation & monitoring	**NASA Center for Climate Simulation**	Website that makes available tools and services related to climate simulation, data analysis and data visualization. Mainly oriented for scientific research. Author: NASA Center for Climate Simulation www.nccs.nasa.gov/services/data-sharing-and-tools/data-tools
Knowledge Evaluation & monitoring	**Climate Tools**	Climate tools website to assess and understand risks related to sea-level rise and their impact on coastal areas. It includes: flood exposure, projection of sea-level rise, flood frequency design, scenario modeling, and local assessments. Author: NASA Sea Level Change https://sealevel.nasa.gov/climate-tools/all/

Mexico

Tool Type	Name	Description
Knowledge	**National Risk Atlas**	Official platform of the National Center for Disaster Prevention (Cenapred) that offers geographic information on natural and anthropogenic risks. It includes: interactive maps, analysis of risks, vulnerabilities and capacities, as well as tools for land management and disaster prevention. www.atlasnacionalderiesgos.gob.mx/

Tool Type	Name	Description
Knowledge Evaluation & monitoring Environmental Collaborative	**BIOCOMUNI: Community Biodiversity Monitoring**	Guide created by the National Forestry Commission (Conafor), the United States Agency for International Development (USAID-Mexico), the United States *Forest Service* (USFS) and the Mexican Fund for the Conservation of Nature (FMCN), aimed at agrarian nuclei and designed with the aim of providing a tool for social participation to contribute to the collective construction of the inventory of natural resources. https://sgi-biodiversidad.cnf.gob.mx/biocomuni/
Knowledge Environmental	**Interactive Maps of Protected Natural Areas**	Interactive maps of protected natural areas of the National Commission of Protected Areas (Conanp). It includes: • Interactive Atlas of the Natural Protected Areas of Mexico. • New-to-science species registered in NPAs. • Interactive Map of Areas Voluntarily Designated for Conservation. • Vegetation Viewer within Natural Protected Areas. https://sig.conanp.gob.mx/Generales_Interectivos
Knowledge Environmental	**Geoportal of the National Biodiversity Information System**	Interactive maps from the National Commission for the Knowledge and Use of Biodiversity (Conabio), with environmental data and information on natural resource management, in three categories: • Biodiversity • Risk • Climatology www.conabio.gob.mx/informacion/gis/
Knowledge	**National Atlas of Vulnerability to Climate Change**	Interactive map showing territorial vulnerability to climate change with maximum resolution at the municipal level. Includes maps of: • Vulnerability due to landslides. • Vulnerability to flooding. • Vulnerability due to dengue. • Exposition. • Sensitivity. • Adaptive capacity. Author: National Institute of Ecology and Climate Change (INECC), Ministry of Environment and Natural Resources (Semarnat) https://atlasvulnerabilidad.inecc.gob.mx/atlas/mapa
Knowledge	**Flood Vulnerability Map**	Interactive map that offers information on climate risks, natural disasters and their impacts. It includes vulnerability maps showing locations of floods, landslides, dengue fever and water stress. Author: National Institute of Ecology and Climate Change (INECC) https://mapas.inecc.gob.mx/ICCEM/mapas/ve_riesgos.html
Knowledge	**Climate Change and**	Interactive map that allows you to visualize recent temperature and precipitation patterns as well as different future climate change

Tool Type	Name	Description
Evaluation & monitoring Environmental	**Biodiversity Explorer**	scenarios. It also includes the visualization of areas of high biological value. Author: National Commission for the Knowledge and Use of Biodiversity (Conabio), National Commission of Protected Areas (Conanp), Institute of Biology UNAM https://servicios.conabio.gob.mx/ECCBio/
Knowledge Evaluation & monitoring Environmental	**Climate Change Information System**	Portal that integrates statistical and geographic information and available indicators for climate, greenhouse gas and compound emissions, mitigation projects, vulnerability, risks, population and biodiversity. Author: National Institute of Ecology and Climate Change (INECC), Ministry of Environment and Natural Resources (Semarnat), National Institute of Statistics, Geography (Inegi) https://gaia.inegi.org.mx/sicc/
Knowledge Environmental Collaborative	**Tool for the Development of Climate Change Adaptation Programs in Protected Natural Areas**	A manual that addresses the design and development of Climate Change Adaptation Programs. It includes a conceptual framework, methodologies, key stakeholder analysis, vulnerability assessment, and alignment of adaptive strategies. Author: National Commission of Protected Areas (Conanp) www.gob.mx/conanp/documentos/herramienta-para-la-elaboracion-de-programas-de-adaptacion-al-cambio-climatico-en-areas-naturales-protegidas?state=published
Knowledge Environmental Collaborative	**Climate Change Adaptation Programs in Protected Natural Areas**	Strategies for Natural Protected Areas to Address the Impacts of Climate Change. Author: National Commission of Protected Areas (Conanp) www.gob.mx/conanp/documentos/programas-de-adaptacion-al-cambio-climatico-en-areas-naturales-protegidas
Knowledge Environmental Collaborative	**Tool for the Analysis of Social Vulnerability to Climate Impacts at the Local Level in Protected Natural Areas**	Participatory exercises and semi-structured interviews, with a gender approach, aimed at key informants and focus groups for the analysis of social vulnerability to climate impacts. Author: National Commission of Protected Areas (Conanp) Available in Spanish and English: www.gob.mx/conanp/documentos/herramienta-para-el-analisis-de-vulnerabilidad-social-a-los-impactos-climaticos-a-nivel-local-en-areas-naturales-protegidas
Knowledge Environmental	**Atlas of the Indigenous Peoples of Mexico**	Audio and video materials, photographs, maps and the ethnographic description of the general knowledge of the country's Indigenous peoples. Author: National Institute of Indigenous Peoples https://atlas.inpi.gob.mx/

5.3 CEC Tools

Tool Type	Name	Description
Knowledge Collaborative	**CEJN Story Map**	The story map is a product of the Communities for Environmental Justice Network project (CEJN) that features profiles of communities and organizations of North America that have environmental justice concerns. This map allows the sharing of resources and solutions that have been implemented at the community level in the three countries. https://www.google.com/maps/d/u/0/viewer?mid=1ioeWHuw08un hGW-wPJvCY9NAplDDUEY&ll=47.65169507759698%2C-103.71324024999998&z=4
Knowledge Collaborative Environmental	**Tools and Resources**	It provides access to a variety of resources designed to address key environmental issues in North America. These tools are focused on managing the shared environmental challenges between Canada, the United States and Mexico. It includes: maps and geographic layers, data on pollutants, information collections, conservation tools, among others. http://www.cec.org/tools/
Knowledge Collaborative Environmental	**North American Environmental Atlas**	A tool that integrates harmonized geospatial data from Canada, Mexico and the United States, with thematic maps on land cover, water resources and areas of environmental interest, among others. http://www.cec.org/north-american-environmental-atlas/
Knowledge Collaborative Environmental	**Climate Adaptation Toolkit for Marine and Coastal Protected Areas**	It offers practical tools for assessing vulnerabilities, identifying adaptation strategies, access to experts and resources, and search tools. This tool is designed for protected area managers and seeks to simplify the climate adaptation planning process through practical examples and specific resources. www.cakex.org/MPAToolkit