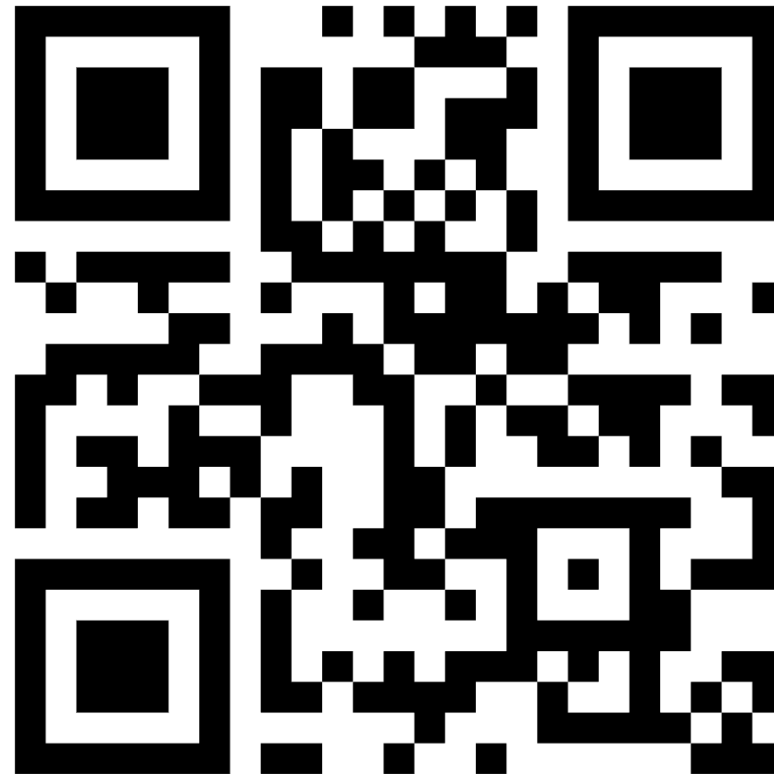


CLIMATE PREPAREDNESS CAPACITY-BUILDING THROUGH SERIOUS GAMES

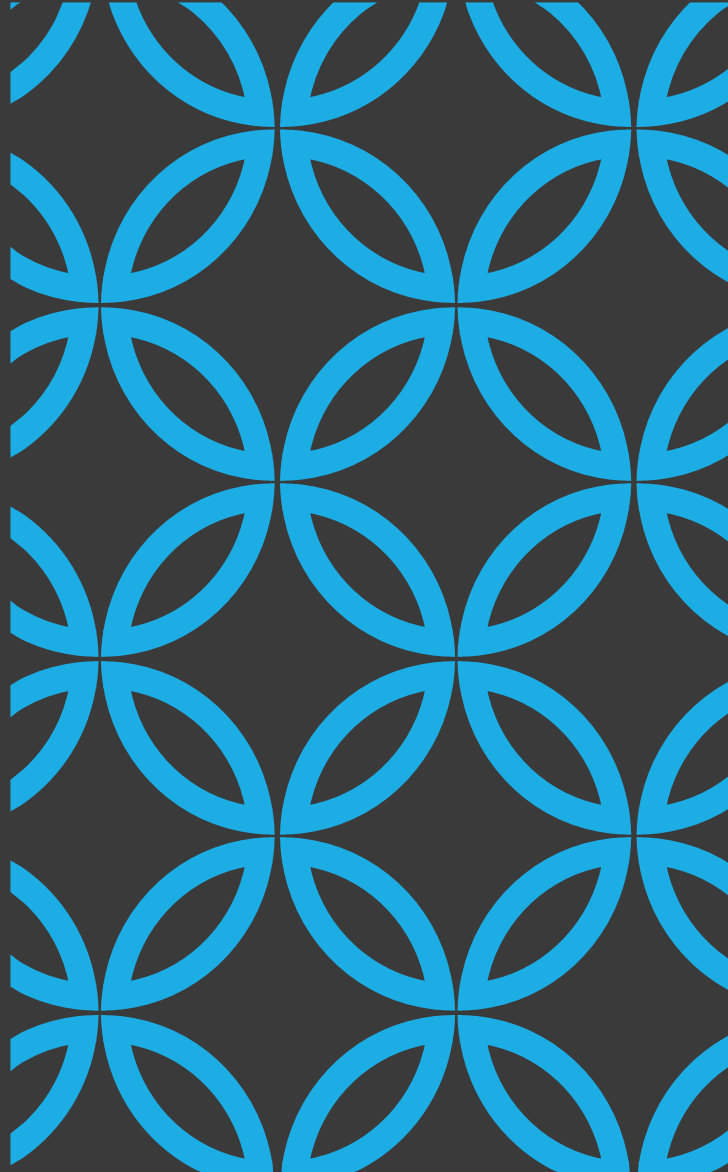
Victoria Forum 2025

- Dr. Robin Cox
- Vivian Forssman
- Geoff Evamy Hill

ACCESS TO VICTORIA FORUM CONFERENCE PRESENTATION



<https://resiliencebydesign.com/projects/workforce/climate-preparedness-capacity-building/>



NEW OPTIONS FOR CLIMATE ACTION CAPACITY-BUILDING

WHY?

CAPACITY BUILDING



TRAINING



LEARNING



KNOWLEDGE



SKILLS



COACHING



SUPPORT



DEVELOPMENT

CLIMATE PREPAREDNESS CAPACITY-BUILDING; AND DISASTER RISK REDUCTION: INTERGOVERNMENTAL AND STATE LEVEL ACTIONS

Intergovernmental:

IPCC: Increased focus on measurement of climate adaptation actions;

UNEP: Increasing understanding of what transformative change means;

UNDRR – Sendai Framework for Disaster Risk Reduction 2015-2030

National

Environment and Climate Change Canada (ECCC)

Natural Resources Canada (NRCan)

Public Safety Canada

Provincial and Indigenous Climate Leadership



HOW ARE WE UPSKILLING AND RESKILLING THE WORKFORCE TO ADDRESS CLIMATE-RELATED LEADERSHIP AND ACTION?

1. Strategy and data tracking: National Adaptation Strategy (NAS) 2023 + outcomes report 2025
2. GoC funding: Building Regional Adaptation Capacity and Expertise (BRACE); Transition Accelerator; etc.
3. Federation of Canadian Municipalities: capacity-building support for local governments, funded by GoC
4. National, provincial, regional initiatives (e.g. Smart Prosperity, Future Skills Centre, Climate West, etc.)
5. Post-secondary education initiatives (climate courses, micro-credentials, academic programming, etc.)
6. Applied research consortia (e.g. Pacific Institute for Climate Solutions - PICS)
7. Canada School of Public Service
8. Indigenous-led Natural Climate Solutions (e.g. Indigenous Guardians Program)
9. NGO's (e.g. EcoCanada, ZEIC, Tamarack, ASI, etc.) + social, economic, health organizations and initiatives
10. K-12 and Youth initiatives
11. Industry and Civil Society Conferences (e.g. GLOBE, Victoria Forum, etc.)

NATIONAL ADAPTATION STRATEGY

- REDUCING THE IMPACTS OF CLIMATE-RELATED DISASTERS
- IMPROVING HEALTH AND WELL-BEING
- PROTECTING AND RESTORING NATURE AND BIODIVERSITY
- BUILDING AND MAINTAINING RESILIENT INFRASTRUCTURE
- SUPPORTING THE ECONOMY AND WORKERS

AND HIGHLIGHTING THE NEED FOR
CLIMATE ACTION UPSKILLING AND
RESKILLING

Canada's National Adaptation Strategy

Building Resilient Communities and
a Strong Economy



For comments

NATIONAL ADAPTATION STRATEGY TARGETS FOR ECONOMY AND WORKERS

Bold targets for capacity-building require innovative tactics that drive practice and policy towards a dynamic education and training environment for rapid upskilling and reskilling

Economy and Workers	
Objectives	Targets
Skilled workforce	By 2027, 75% of the members of professional associations (i.e., civil engineers, planners, landscape architects, and accountants) have the capacity to apply climate change adaptation tools and information and communicate the business case for adaptation measures to their clients
Climate-exposed sectors	By 2027, 80% of highly exposed businesses include adaptation to climate change in plans and strategies in order to strengthen their competitiveness

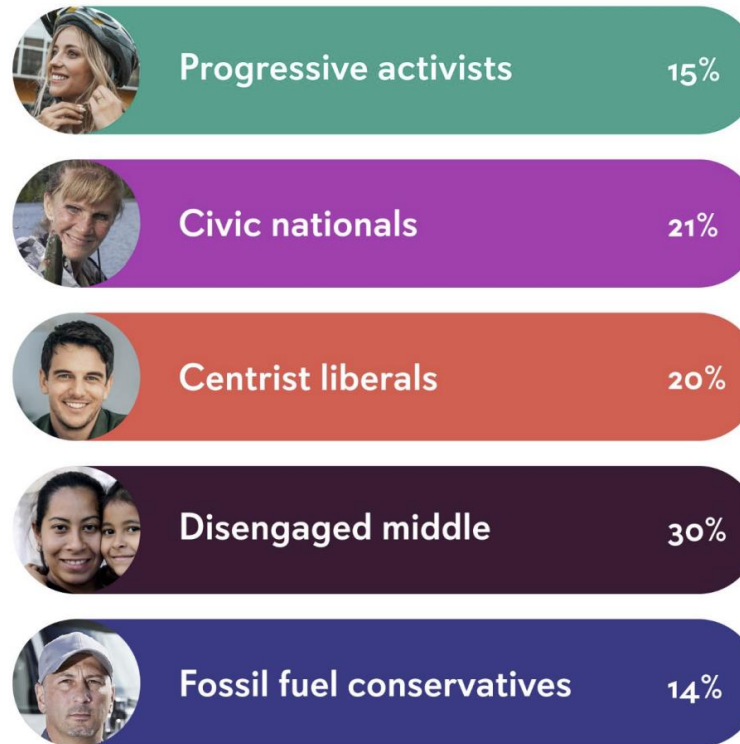
Future of Jobs Report 2025

- Climate-change mitigation: 3rd-most transformative trend
- Climate change adaptation: 6th-most transformative trend
- Demand for roles such as renewable energy engineers, environmental engineers, electric and autonomous vehicle specialists (all among the 15 fastest-growing jobs).
- Climate trends also expected to drive an increased focus on environmental stewardship, which has entered the Future of Jobs Report's list of top 10 fastest growing skills for the first time.

THE CLIMATE COMMUNICATIONS CHALLENGE

Five value personas

Ranked by level of engagement on climate change, high to low

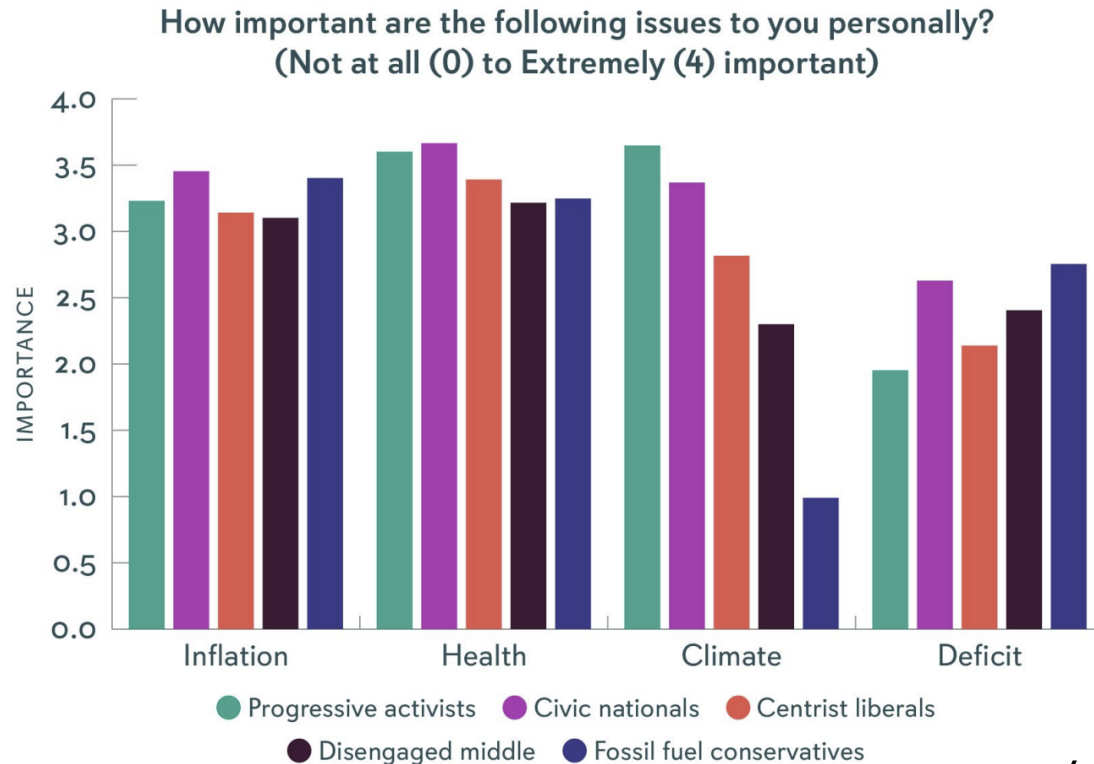


Percentages indicate proportion of respondents in each segment

CANADIANS "CARE" ABOUT CLIMATE CHANGE... BUT THIS EXISTENTIAL ISSUE COMPETES WITH OTHER ISSUES

Climate change salience across segments

Civic nationals care about climate change nearly as much as Progressive activists



© EcoAnalytics

<https://ecoanalyticscanada.org/research/>

SHIFTING CLIMATE ACTION CAPACITY-BUILDING TACTICS: FROM ONLINE COURSES, MICRO-CREDENTIALS, ACADEMIC PROGRAMS..... TO IMMERSIVE PARTICIPATORY LEARNING

Period	Projects	Funding Support
2019 - 2022	Adaptation Learning Network (ALN): facilitated 11 climate adaptation course development initiatives via collaboration with 6 BC PSIs	NRCan BRACE + BC CAS
2022	Created an Open Educational Resources library of 11 Creative Commons licensed courses (Pressbooks)	NRCan BRACE + BC CAS
2019 - current	Developed, advanced adoption of the Climate Action Competency Framework; CACF is published as an OER with extensive use cases (attached)	NRCan BRACE + BC CAS
2019 - 2022	Created a LinkedIn network of "climate action" working professionals in Canada	NRCan BRACE + BC CAS
2022-2023	Convened a national dialogue on potential for professionalizing nature-based solutions/natural asset management	RRU/MITACS
2021	Adaptation Hub: Applied research and recommendations for a digital hub of climate adaptation knowledge and actions	NRCan
2021 - 2024	YDCR: Conducted applied research, fostering climate capacity-building with youth, in Puerto Rico and Canada	SSHRC
2022 - present	Developed, approved by DQB; operational teaching and student support in Master of Arts in Climate Action Leadership (MACAL)	RRU
2023	Organized and facilitated the RRU Climate Action Conference Dec 2023	RRU
2023 - 2024	Co-developed and facilitated a youth experiential learning program called HOWL	Gov of Canada (ESDC)
2023 - 2024	Collaborated with Pearson College; launched CACF-aligned climate action courses for youth	RRU/Pearson College
2023- 2025	Developed a micro-credential (MC) strategy ; prototyped Climate Adaptation Fundamentals MC with RRU-PCS	BC Min Advanced Education
2023- 2025	Leads the Sustainability in Higher Education Across Canada (SHEAC) CoP; advancement via Universities Canada	Forssman
2023	Developed Adapting to a Changing Climate , an online course offered through Canada School of Public Service for federal government employees	Gov of Canada (ECCC)
2023	Participated in an applied research project, Upskilling for Canada's Climate Transition	Future Skills Centre
2024	Initiated development of a digital platform for climate action communities of practice, CanAdapt ; service on Project Advisory	NRCan BRACE/CRI
2024	Provincial Climate Resiliency Taskforce	PICS/BC EMCR
2024-2025	Maldives project	Global Affairs Canada/Aitre
2025 (current)	Climate adaptation skills gap analysis in Arctic Canada	NRCan BRACE via GNWT
2025 (current)	Prototyping use of "serious games" for climate adaptation and disaster risk reduction	Gov BC via Climate Risk Institute
2025 (current)	Mentoring in the Women4Climate program, for Zero Emissions Innovation Centre (ZEIC)	

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**Resilience
by Design Lab**

INSPIRING
CLIMATE ACTION

IMMERSIVE PARTICIPATORY LEARNING

UNEP Goal, which cascades to national and institutional goals:

Increase understanding of what transformative change means, how it occurs, and reflecting on the potential roles that all actors can take in promoting and accelerating transformative change.

THE NEW "HOW": IMMERSIVE PARTICIPATORY LEARNING

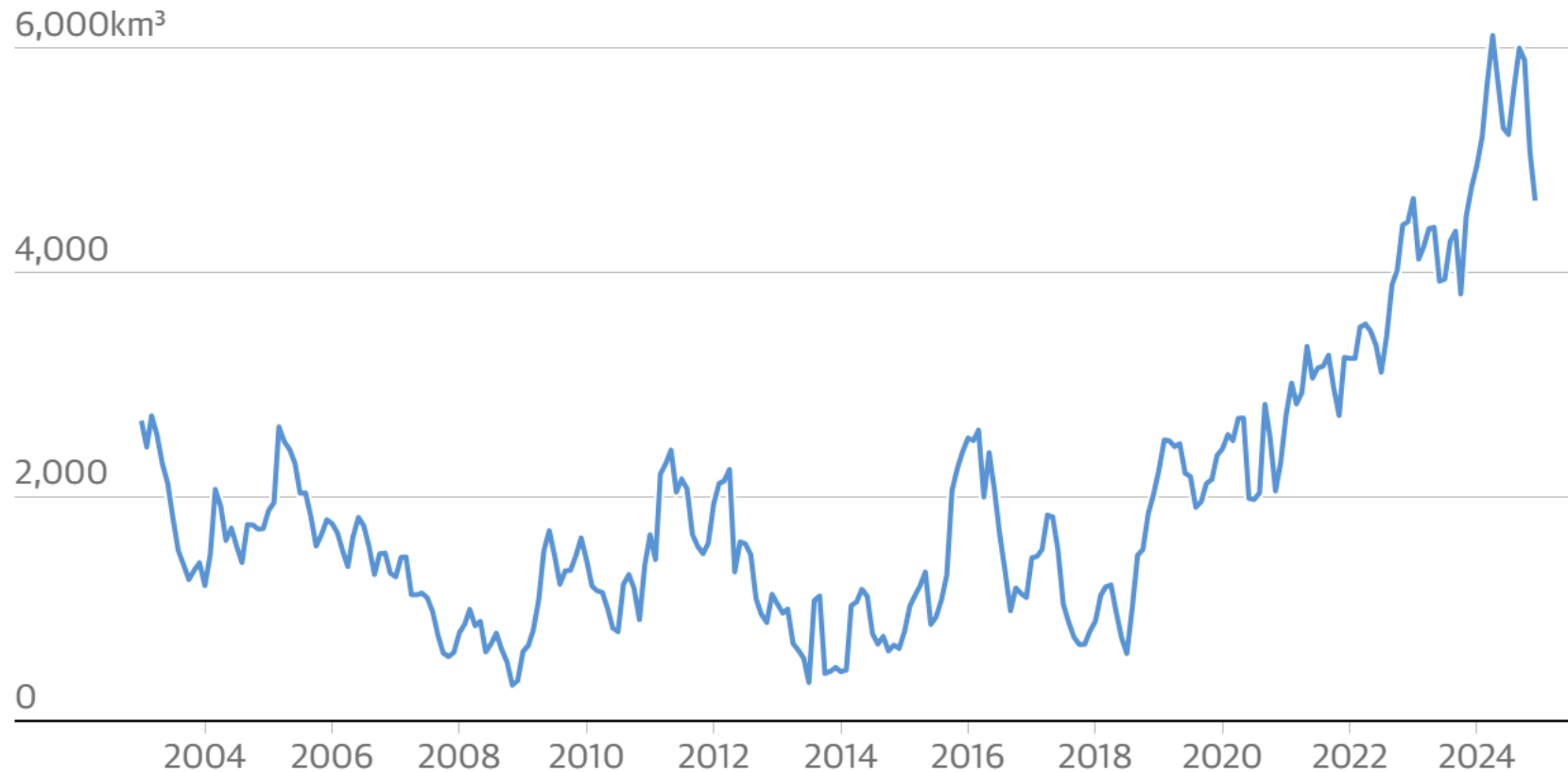
- enhances engagement,
- improves knowledge retention,
- promotes development of critical thinking and problem-solving skills, all within a safe and risk-free environment,
- and if undertaken in a cohort of people with localized community interests, advances mutual learning and trust

(OODLES OF SCHOLARLY RESEARCH ON THIS TOPIC)

WHY CLIMATE PREPAREDNESS?

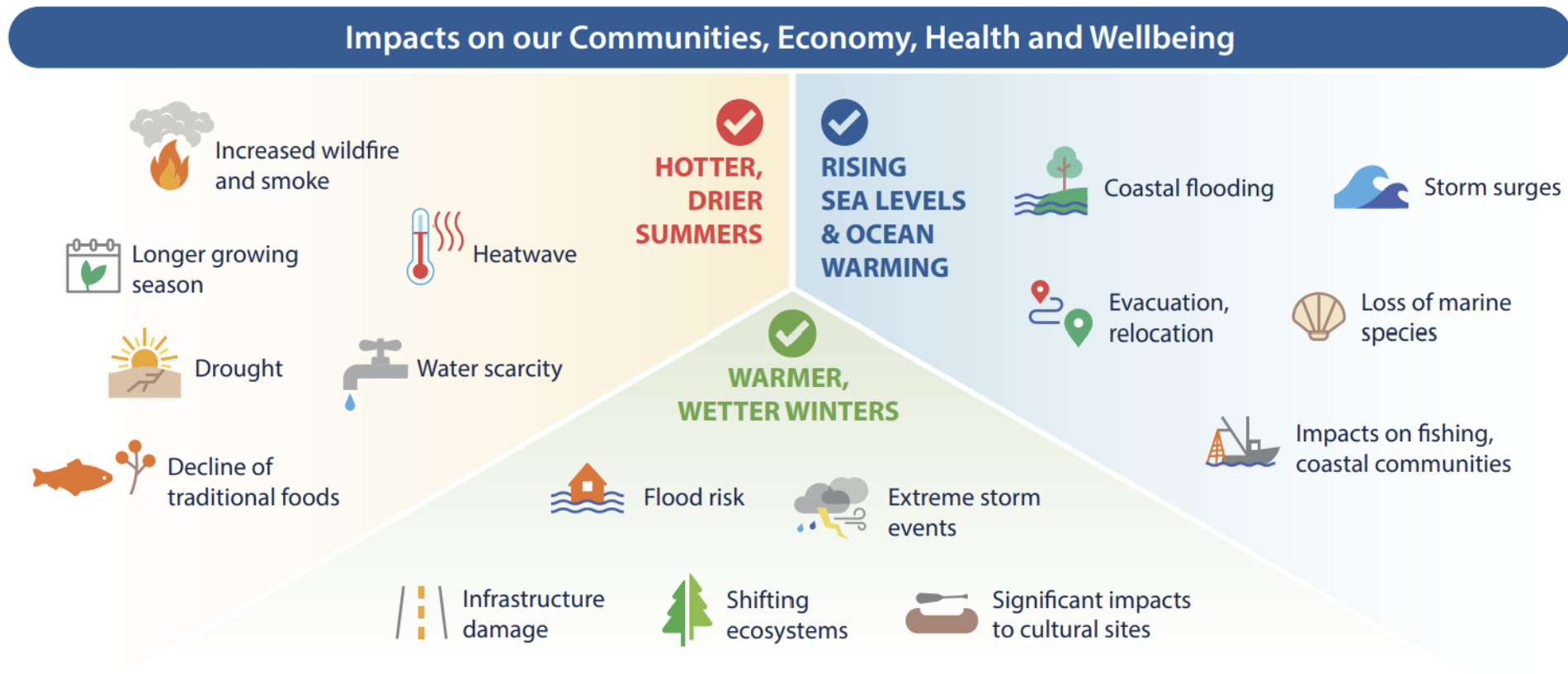
The intensity of weather extremes has risen rapidly in recent years

Monthly intensity of droughts and floods by area affected, Jan 2003 to Dec 2024



Guardian graphic. Source: Nasa Grace/GWI, Rodell and Li

WHAT IS CLIMATE PREPAREDNESS?



WHAT IS CLIMATE PREPAREDNESS?

Fostering Community-based Resilience

Climate
Adaptation
(longer term
actions)

Disaster Risk
Reduction

Emergency
Management

Developing Regenerative Approaches
to ecological, social, economic systems

THE EVOLVING RISK LANDSCAPE

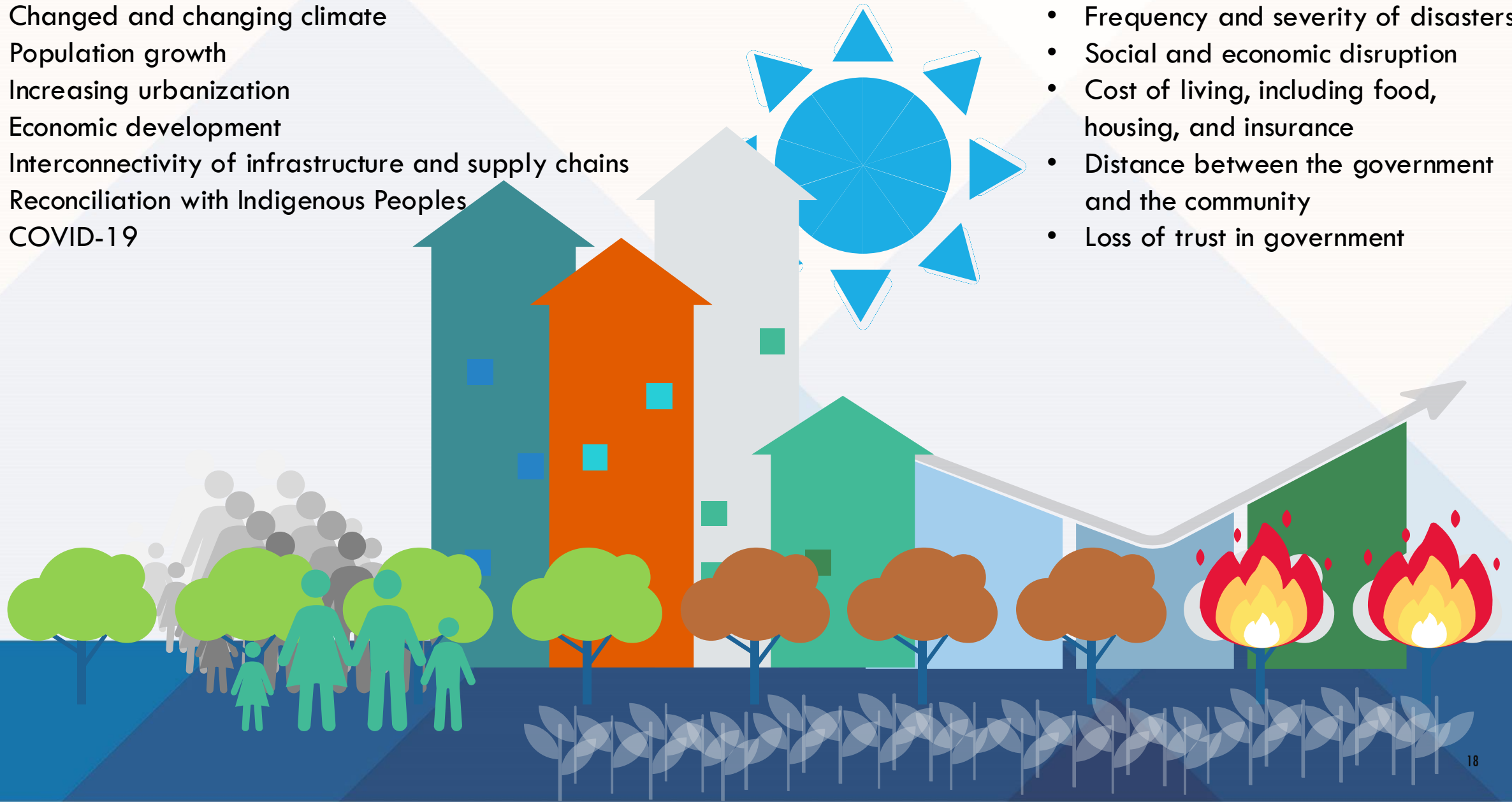


Major change drivers

- Changed and changing climate
- Population growth
- Increasing urbanization
- Economic development
- Interconnectivity of infrastructure and supply chains
- Reconciliation with Indigenous Peoples
- COVID-19

Increasing

- Frequency and severity of disasters
- Social and economic disruption
- Cost of living, including food, housing, and insurance
- Distance between the government and the community
- Loss of trust in government





Community-based
Resilience

Government Emergency
Management Systems

Community-based Resilience

+

Trusted and locally grounded, close to the action, adaptive to systemic shortcomings, honours lived experience, responsive to unique community needs.

-

Inconsistent approaches, limited resources, lack of formal authority, risk downloading and volunteer burnout

Government Emergency Management Systems



Community-based
Resilience



Government Emergency Management Systems

+

Structured coordination, predictable processes,
legal compliance, scalable resources,
clear funding

-

Slow to adapt, rigid, siloed systems, distant from
communities, distrusted, can stifle local initiative



WHAT IS A CLIMATE GAME

A climate game is a game — digital, analog, or hybrid

Designed to help players understand, explore, or respond to climate change through interactive play.

These games are often used in education, policy engagement, and community planning to turn abstract or complex climate challenges into tangible experiences.

TRANSFORMING MENTAL MODELS THROUGH PLAY

Games are “playable systems.”

“Strategic games let players understand how a system works by taking on the roles of different actors involved in real-world socio-environmental scenarios.”

Games introduce human unpredictability into the loop of models.





DAYBREAK (ANALOG)

A fully cooperative climate-action board game by Matt Leacock & Matteo Menapace: players take on world powers (U.S., China, Europe, Global South) to decarbonize the economy and build resilience; you win by reaching net-zero and surviving the final crises—lose if it gets too hot or too many people are imperilled.

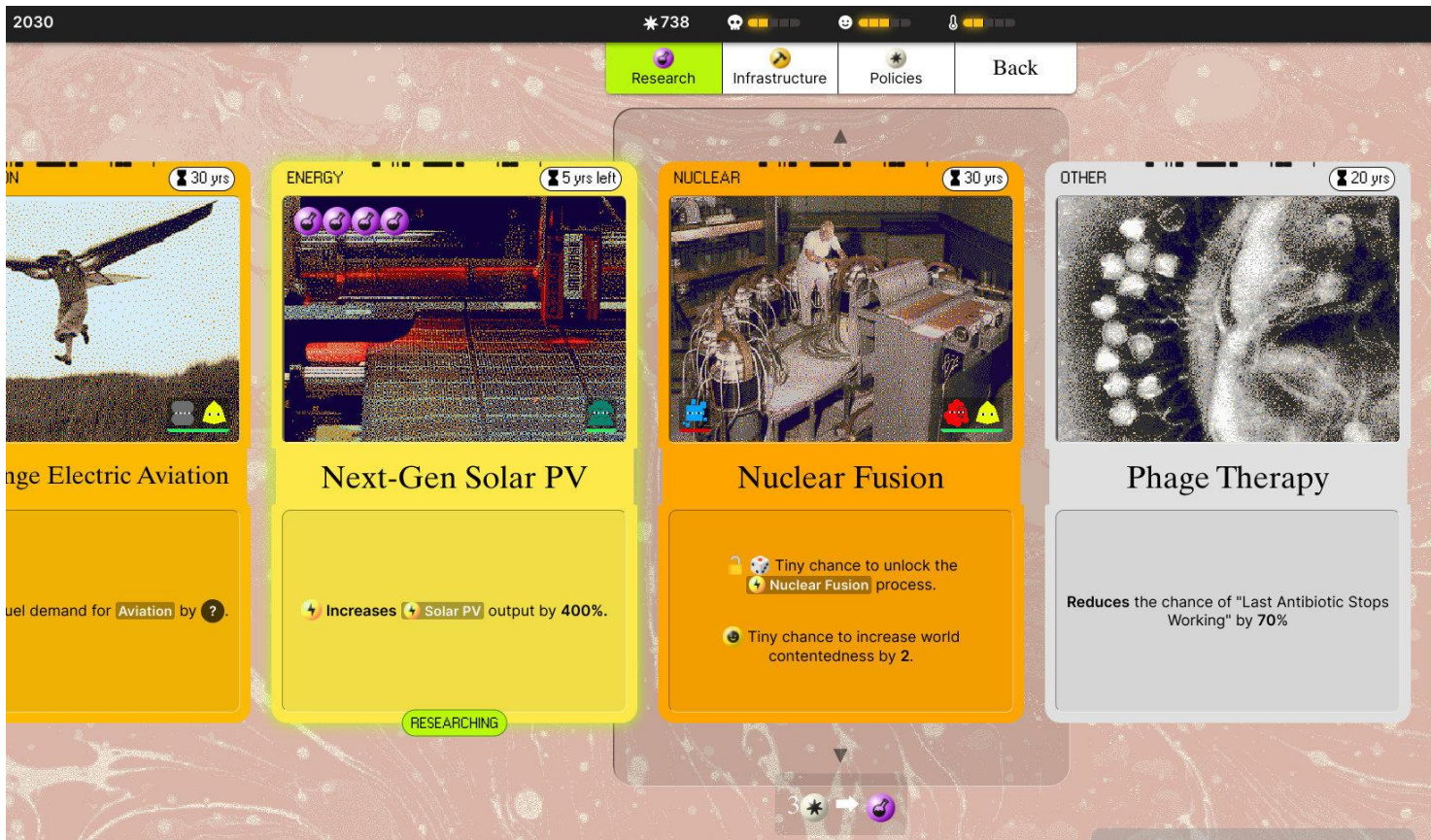
THE ADAPTATION GAME (TAG) (ANALOG)

A facilitated, collaborative tabletop workshop where participants “live through” three local climate disasters and co-create place-based stories about how they—and their community—prepare and respond over the next ten years, building shared understanding of risk and resilience.



LUX RISKGAMING (ANALOG)

- A series of tabletop-style, character-driven strategic scenarios that model real-world trade-offs and incentives; players act independently, creating emergent behavior and practicing high-stakes decision-making.
- Delivered as live sessions and downloadable kits; early scenarios include “Hampton at the Cross-Roads” (climate & U.S. maritime security) and “Powering Up” (China’s EV push). More incoming.



A browser-based planetary-planning sim where you act as a global planner, toggle policies/technologies across ideologies, and see modeled impacts on emissions, climate, food systems, and biodiversity and their interconnectedness.

HALF EARTH SOCIALISM
(DIGITAL)

CLIMATE FRESK (ANALOG)

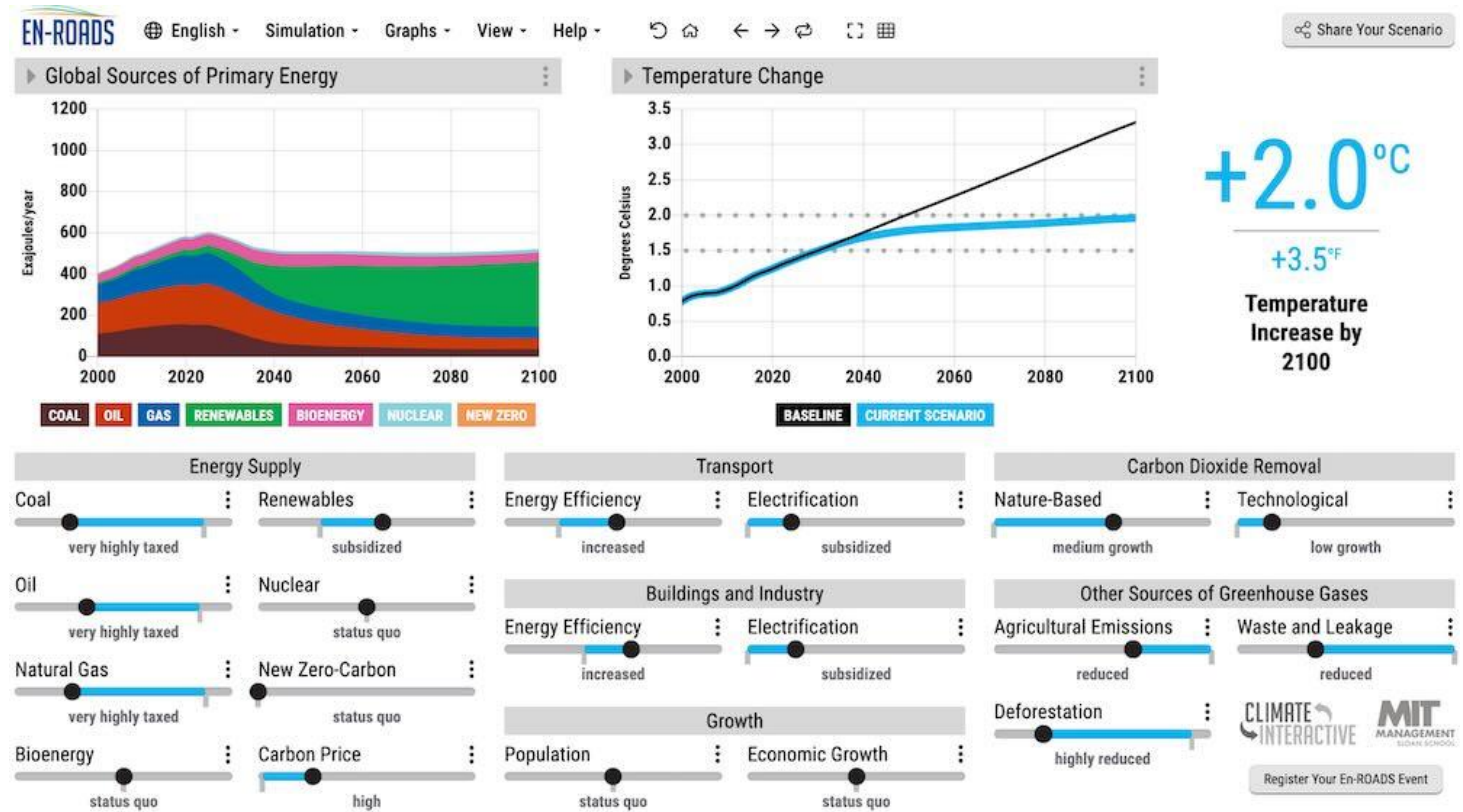
A collaborative, card-based workshop where teams arrange IPCC-sourced concept cards to build a cause-and-effect “fresk” of the climate system, turning complex science into a shared, systems view.

Delivered as a 3-hour, facilitator-led session (in person or online), typically 1 facilitator for up to 14 people; widely adopted worldwide (2M+ participants across 167 countries, 45+ languages) with an easy pathway to become a facilitator.



EN-ROADS (DEVELOPED BY MIT SLOAN) (HYBRID)

An interactive, global climate-policy simulator where participants test dozens of levers (e.g., carbon pricing, renewables, efficiency, land use, EVs, etc.) and see instant impacts on emissions, warming through 2100, energy prices, air quality, sea level rise, etc.



Delivered as facilitated experiences: En-ROADS Climate Workshop and role-playing Climate Action Simulation are free to run with ready-made materials. Widely used by educators, businesses, and policymakers. Requires facilitator training (free)

CRITERIA FOR A CLIMATE PREPAREDNESS "SERIOUS GAME" (DESIGN PRINCIPLES)



1. Cost-effective localization, with map-and-climate-data information (climate impacts are very localized);
2. "Game prompts" presented at appropriate professional level for collaborative scenario work; participants bring experience in natural resource management, ecological issues, watershed management, social resilience, critical infrastructure management, risk evaluation, emergency management, and familiarity with the issues of multiple levels of governance;
3. Relevant for local government and emergency operations centre employees, policy analysts, city councillors and other politicians, critical infrastructure providers, etc.; can be extended for use in professional development and post-secondary learning environments;
4. Advances critical thinking and problem-solving competencies (e.g. [Climate Action Competency Framework](#));
5. Facilitation methods that bring people together in an immersive cohort experience to help build relationships, trust, knowhow, and climate preparedness.

CLIMATE PREPAREDNESS CAPACITY-BUILDING

OUR ROADMAP 2025 - 2026

2023: Climate Fresk adopted by BC Gov as introductory approach for public sector leaders; provides a social learning foundation for "serious games" as a capacity-building approach

2025: Discovery Process: Serious Games for Climate Preparedness

(funding via BC Climate Action Secretariat; delivered through Climate Risk Institute and Resilience by Design Lab):

- Review and synthesis of many existing reports on provincial climate preparedness
- Establish criteria for immersive, participatory experiences that meet requirements for climate preparedness learning
- Experience & evaluate The Adaptation Game (TAG): Calgary: June/25 - an excellent game for citizen participation; not deep enough for people with existing knowledge who work on climate preparedness in local governments
- Experience Design-a-Disaster prototype offering Chilliwack: July/25

2025: Design, Produce, Prototype a Game

- **Design-a-Disaster V2:** Prototyping in Regional District Central Kootenays Oct/25
- Evaluation cycle
- Possible integration into other climate preparedness projects already underway in BC Fall/25

2026: Continue to develop funding proposals to support wider roll-out



NOW OVER TO YOU!

FEEDBACK? QUESTIONS?

CONVERSATIONS!

Climate Preparedness Capacity-building

building community while building climate preparedness capacity

THROUGH SERIOUS GAMES

Victoria Forum 2025

- Dr. Robin Cox
- Vivian Forssman



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CLIMATE ACTION

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