

LOW CARBON RESILIENCE



Low carbon resilience (LCR) is a **step change in climate action that coordinates and mainstreams adaptation, mitigation, and co-benefits in planning and decision-making processes.** This approach brings into focus the multiple considerations and trade-offs of policies, investments, projects, and decisions made today while acknowledging their legacies for tomorrow.

A COORDINATED CLIMATE ACTION APPROACH

Typically, climate adaptation (risk reduction) and mitigation (emissions reduction) are planned separately. This draws on separate budget streams and capacities across organizations, leading to siloed and, at times, contradictory approaches. For example, mandating air conditioning in new developments is an adaptation solution to reduce the impact of extreme heat, but increases emissions, exacerbating climate impacts. Alternatively, developing infrastructure, such as green buildings, in areas exposed to climate hazards such as flood and wildfire, undermines returns on investments over time (see Figure 1).

A step change in systemic action is urgently needed. Climate change is a highly complex and structural issue with multiple touchpoints. Diverse sectors and organizations must respond with increasingly integrated and systemic thinking. This is the spirit and substance of the LCR approach.

ADVANCING MULTIPLE CO-BENEFITS

LCR mainstreams climate risk and emissions criteria into all decisions, which advances more systemic thinking about co-benefits such as cost savings, increases in equity, health, biodiversity, green jobs, and more. Notably, nature-based solutions (NbS) have emerged as a flagship LCR strategy (see reverse).

The LCR approach breaks down decision-making siloes and integrates climate action in all organizational decisions and priorities. This helps to avoid contradictions and identify trade-offs, spurring innovation. All this supports robust and enduring decisions and investments that multi-solve. Done well, LCR orients organizations toward resilient and sustainable futures over time (see Figure 1).

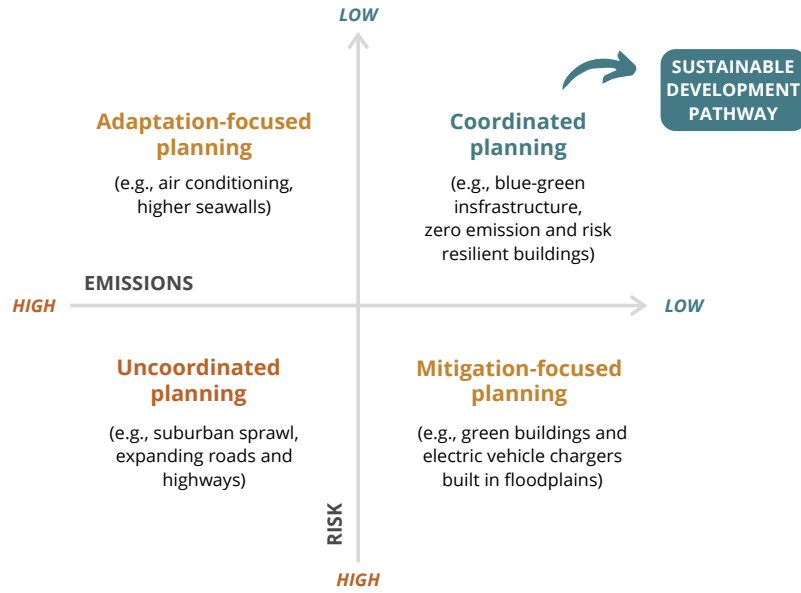


Figure 1: This LCR diagram illustrates the benefits of integrating adaptation and mitigation (upper right quadrant), rather than pursuing adaptation or mitigation in siloes (top left and bottom right quadrants) (ACT, 2020; updated 2024, adapted from Cohen & Waddell, 2009).

ACT IS A THOUGHT LEADER IN LCR PLANNING AND IMPLEMENTATION

At ACT - Action on Climate Team, we help leaders and practitioners in government, business, non-profits, and philanthropic and public sector organizations adopt LCR approaches that make sense. We work with organizations at all stages of climate action development, and help to piggyback LCR approaches in planning, operational, investment, and other decision processes.



Scan the QR code to learn more about how to apply LCR, or email us at actinfo@sfu.ca.

Simon Fraser University respectfully acknowledges xwməθkwəy̓əm (Musqueam), Skwxwú7mesh Úxwumixw (Squamish), səliłwətaʔt (Tsleil-Waututh), qíćəy (Katzie), kwikwəx̣'əm (Kwkwetlem), Qayqayt, Kwantlen, Semiahmoo and Tsawwassen peoples on whose traditional territories our three campuses reside.

THE NATURAL SOLUTIONS INITIATIVE



PUTTING NATURE BACK INTO NATURE-BASED SOLUTIONS

A COHESIVE AND SYSTEMIC FRAMEWORK FOR NBS ACTION

Nature-based solutions (NbS) are a crucial low carbon resilience (LCR) climate action strategy (**see reverse**), and include a suite of approaches that can be used to multi-solve across key societal challenges. Forests, wetlands, rain gardens, and green roofs, for example, can increase heat and flood resilience, store and sequester carbon, and provide multiple co-benefits such as water and air quality, health and well-being, cost savings, green jobs, etc.

The Natural Solutions Initiative (NSI) aims to overcome disconnected disciplinary and practitioner approaches, ad hoc planning, and narrow applications of NbS projects which fail to fully capture an abundance of ecological and community benefits.

THREE NESTED NBS APPROACHES

The goal of the NSI is to create a framework-for-action that optimizes NbS benefits for people and nature. The NSI organizes around three interdependent NbS approaches:

- **Ecosystem-based management** - emphasizes ecological processes and ecosystem health and resilience at the watershed scale;
- **Natural asset management** - emphasizes protection, restoration, and expansion of natural areas to enhance ecological processes and ecosystem services; and
- **Blue-green infrastructure strategies** - emphasizes green design and engineered solutions, such as green roofs, bioswales, and permeable pavements.

FOUR SCALES OF NBS ACTION

Considering the interconnectivity of NbS across scales is crucial. This framework aims to align all NbS in support of underlying ecological processes, building resilience to climate changes, and sustaining the ecosystem services upon which our communities and economies depend. This 'upstream' view aims to encourage cohesive NbS which both support **watershed** scale ecological processes (e.g., water flows, pollination, etc.) and ecosystem services at **community, neighbourhood, and parcel** scales (e.g., stormwater management, heat alleviation, etc.).

FIVE KEY AREAS

While the pace of NbS implementation has been accelerating, projects are being designed to achieve specific, often singular objectives, minimizing the multi-solving potential of NbS. An extensive review of scholarship and practice highlights five key areas where NbS are being applied:

- **Climate action (adaptation and mitigation)**
- **Biodiversity**
- **Indigenous knowledges and leadership**
- **Sustainable service delivery**
- **Health, equity, and justice**

Considered together, these key areas can help to optimize NbS policy, planning, and project decisions. ACT invites collaboration and partnership from national, regional and local organizations to build a community of practice aimed at applying the NSI Framework-for-Action.

Scan the QR code to learn more about how the NSI might be optimized in your region, or email us at actinfo@sfu.ca.



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