

The Next 5 Years of Protecting the World's Fresh Water

Strategic direction for
IISD's Water Program
for 2023–2028





IISD Winnipeg headquarters are located on Treaty #1 territory, and Manitoba is located on the Treaty territories and ancestral lands of the Anishinaabeg, Anishininewuk, Dakota Oyate, Denesuline, and Nehethowuk Nations, as well as the homeland of the Métis Nation.

The IISD Experimental Lakes Area field station is on the traditional land of the Anishinaabe Nation in Treaty #3 territory and the homeland of the Métis Nation.



Background

The International Institute for Sustainable Development (IISD) has been working on freshwater policy and watershed management for over two decades, both in Canada and around the world. In 2014, IISD assumed operations of the Experimental Lakes Area (ELA), taking on the unique freshwater research facility with a long history of ecosystem science and monitoring on a series of small boreal lakes in northwestern Ontario.

In 2016, IISD completed the first 5-year strategic plan for IISD's Water Program/IISD-ELA (2016–2021). This plan combined the history of IISD policy work on water with the strong scientific capacity of IISD-ELA and aimed to develop science-based solutions for clean water and healthy ecosystems.

Since 2016, IISD has seen considerable success in the five strategic priorities of this plan:

- conduct and facilitate collaborative ecosystem research,
- operate a robust Long-Term Ecological Research (LTER) program,
- support strong linkages between scientific research and policy formation,
- provide a platform for science education and innovation, and
- communicate with the public, governments, and the scientific community.



These successes include over 210 peer-reviewed scientific publications; 16 ecosystem-level studies at ELA; continued LTER research with open data that contributes to 10 Canadian collaborative networks; 394 data requests for ELA data; participation in over 50 publications or tools related to policy or management best practices; 14,500 students engaged through field courses, presentations, and visits to the facility; and an innovative science communication program that has resulted in a large number of media articles focusing on our work, including in the *Globe and Mail*, *WIRED*, *BBC*, and *The New York Times*, to name a few.

Similarly, over this period, funding has been secured to support and grow the work, with the annual budget for the joint program more than doubling from 2016 to 2022



thanks largely to four core funding agreements for IISD-ELA from the Province of Ontario, the Department of Fisheries and Oceans Canada, Environment and Climate Change Canada, and the Canadian Foundation for Innovation.

The *Strategic Direction for IISD's Water Program for 2023–2028* aims to recognize and build on these successes, capitalizing on the momentum that has been generated and the validation of the work by partners, donors, and the general public. It also incorporates IISD's strategic direction, [Tomorrow Needs Us Today \(2020–2025\)](#), and our partnership with the African Center for Aquatic Research and Education (IISD-ACARE), signed in 2020.

The *Strategic Direction for IISD's Water Program for 2023–2028* was developed by asking the following questions:

- What is the state of play for freshwater science, policy, and management today?
- Which of our strategic priorities is still relevant to the current situation?
- What needs to be adapted based on what we have learned in the past 9 years?
- What are we missing?

Given this context, the *Strategic Direction for IISD's Water Program for 2023–2028* does not seek to radically change direction but rather is an opportunity to examine where we are in the world today, how we can build on our successes, and what areas need attention and focus.



Strategic Direction for IISD's Water Program for 2023–2028

Introduction

Human activity—from pollutants to climate change—is threatening the health of our planet's freshwater resources. Just as fresh water flows across borders, our work stretches across nations and sectors. IISD works to influence how we manage these resources by creating a scientific understanding of the impacts humans have on freshwater systems and informing policy recommendations and best practices.

A cornerstone of this work is IISD-ELA, an exceptional natural laboratory comprised of 58 small lakes and their watersheds set aside for scientific research. Located in a sparsely populated region of northwestern Ontario, Canada, the lakes are not directly affected by human impacts. By influencing processes in these small lakes, scientists can examine how all aspects of the ecosystem—from the atmosphere to fish populations—respond. Findings from these real-world experiments are often much more accurate than those from research conducted at smaller scales, such as in laboratories. This unique research approach has influenced billion-dollar decisions in governments and industries. It has generated more cost-effective environmental policies, regulations, and management practices, all to ensure the safety of our freshwater supplies.

IISD's work on water policy and practice takes those and other scientific findings, combines these with other knowledge systems, and develops practical solutions for governments, civil society, and industry to protect and enhance the natural environment, keep our fresh water clean, and improve human well-being. This work fosters innovative and practical solutions, including watershed and lake management, natural infrastructure, and bioremediation, working across boundaries to bring all the relevant sectors and stakeholders to the table.

What are our biggest achievements to date?

- Survival and growth of IISD Experimental Lakes Area
- Stabilizing medium-term funding
- Science: Climate change, oil, spills, emerging contaminants, ecosystem dynamics, long-term impacts of pollutants
- Retaining/attracting remarkable staff members and growing the funding network
- Continuation and protection of long-term data sets
- Impressive publication record
- Partnership with ACARE
- Relationship building and education with Treaty #3 communities and schools
- Increasing public awareness/strong science communications
- Building of the Toxicology, Education/Relations, and Natural Infrastructure programs



Vision

Healthy freshwater systems for people and the planet.

Mission

To accelerate solutions for freshwater protection and management through ecosystem research, influence on policy and practice, and public engagement.

Unique Value Proposition

The ability to conduct whole-ecosystem research on small boreal lakes and leverage this work into policies and solutions for water and environmental management.



Scientific Principles

We conduct objective, evidence-based research that provides information for the public interest and decision-makers. We are committed to an open and transparent process and the following scientific principles:

1. Research will utilize credible, scientifically defensible approaches that will result in independent, objective, unbiased, verifiable, and replicable research.
2. Data will be made available upon request to scientists, students, and the public after a sufficient period to allow primary researchers to publish their results. Data that are restricted from public release by legal or ethical requirements are exempted from this policy.
3. Primary data and physical samples will be preserved, stored, and protected for use by future researchers and the public.
4. We will seek to publish results in peer-reviewed journals and other outlets in a timely fashion.
5. We will publicly disclose all research funding sources and potential conflicts of interest. Funders may not prevent or significantly delay the publication or presentation of any results.
6. For large projects, we will seek to involve partners with different points of view and with different stakes in the outcome.



Core Approaches: HOW we work

IISD's Water Program has several core approaches that support all aspects of our work. These describe HOW we work. These approaches are truly crosscutting and speak to our values and culture.

Collaborate on science, policy, education, and innovation

IISD's Water team seeks to collaborate on all aspects of our work. We believe that involving multiple partners and voices from the early stages of research development to public education to policy formulation leads to greater impacts. Partners bring expertise to the table and support increased reach and policy influence. IISD believes in investing in partnerships and collaboration as a core component of what we do.

Prioritize the health and wellness of the organization and team

Staff and organizational wellness are top priorities in everything that we do. IISD believes in investing in our team and ensuring they have the resources needed to get the job done. IISD-ELA works hard to ensure health and safety at the IISD-ELA facility and puts safety above all else. IISD's Water Program is in a time of growth, and we recognize the importance of managing change and investing in the tools and staff needed for this transition for the long-term health of our organization.

Cultivate an inclusive workplace

We believe in a workplace that welcomes and values employees of all backgrounds and diverse characteristics. This means investing in equitable employee compensation, benefits, work-life balance, gender equality, and racial diversity and inclusion. It also means working continuously to understand barriers to diversity and address them across all aspects of our work.

Grow a green IISD-ELA facility to support research and education

The IISD-ELA field station is the cornerstone of what we do. Smooth operations at the IISD-ELA station facilitate science and education and ensure that our staff and partners have a bed to sleep in and food to sustain them as they do their work. IISD is committed to continually improving the facility and its operations, including updating aging infrastructure, reducing our own environmental footprint, and transitioning to renewable energy solutions.





Build meaningful relationships with Indigenous Peoples and communities to respect and protect the land and water and learn from one another

We believe in the value of Indigenous Knowledge and science and respect the relationship between Indigenous Peoples and the land and water. IISD is working to build relationships and collaborate based on the recognition of rights, respect, and partnership. We believe that we have a lot to learn from our Indigenous partners, colleagues, and friends.

Invest in innovation in all aspects of our work

Innovation is critical to accelerating change. IISD's Water Program invests in innovation in all aspects of our work, from water quality monitoring to communications to policy advocacy. We believe in understanding and testing new technology and approaches and adopting those that are effective for us. IISD is working continuously to adapt to this ever-changing world and recognizes that innovation is a critical part of helping us move our agenda forward.

Our Strategies: WHAT we do

IISD's Water Program has five connected strategies that lead to our desired impact and vision for the future.

1. Conduct long-term ecological research and share our data extensively

The IISD-ELA LTER program includes meteorological, hydrological, water quality, and fisheries data collected since 1968 from a number of lakes and their watersheds in the IISD Experimental Lakes Area. This data set is critical to our understanding of the implications of climate change on boreal lakes and as a reference for the whole-ecosystem research that is conducted at the IISD-ELA facility.

IISD-ELA's long-term data set is a valuable national resource that has been acquired through decades of investment. This data is irreplaceable and requires appropriate management to ensure long-term availability for continued understanding of our changing climate and future whole-ecosystem science at IISD-ELA. We freely share this data with the scientific community, and it has contributed to a growing number of studies evaluating global change.

2. Implement and facilitate collaborative whole-ecosystem science

The IISD-ELA's unique value to the scientific community is the ability to conduct whole-ecosystem research. We are the only place in the world where it is possible to experiment on whole lakes and study how all aspects of the ecosystem—from the atmosphere to fish populations—respond. We have 55 years of experience examining a range of issues affecting freshwater systems—including the impacts of nutrients, acid rain, mercury, and other contaminants—and have shown that findings from these real-world experiments are often much more accurate than those from research conducted at smaller scales, such as in laboratories.



3. Support applied ecosystem science in Canada and around the world

IISD conducts applied ecosystem research in terrestrial and freshwater ecosystems in Canada and globally. Based on the knowledge and expertise at IISD-ELA, we conduct collaborative research in watersheds, rural and urban communities, and freshwater lakes outside of the ELA facility to inform our knowledge of these systems and develop impactful management solutions for chronic and emerging freshwater issues where they are being experienced. This work includes research on water flows and hydrology, water quality and bioremediation, and the impacts of natural infrastructure solutions on critical water needs. Our partnership with the African Center for Aquatic Research and Education allows us to extend our reach globally, address regions and freshwater issues that are under threat, and broaden our impact.

4. Influence policy and practice

IISD's Water Program draws on research at IISD-ELA, as well as other regional and global ecosystems, combining these with relevant socio-economic information and other knowledge systems to provide recommendations for policy and practice related to freshwater management. This work involves local and global partnerships and applies analytical tools and frameworks linking ecosystem functions, ecosystem services, and human well-being on issues such as water quality management in agricultural watersheds and water infrastructure needs in urban communities. IISD strives to provide practical solutions for governments, funders, industry, and practitioners for adaptive management in freshwater-related sectors around the world.

5. Educate and inspire the next generation of freshwater enthusiasts

The unique nature of the IISD-ELA facility and our whole-ecosystem approach to freshwater science and policy impact provide an opportunity to deliver a different kind of science communications and educational programming for a wide variety of audiences. IISD believes in effective science communication as a key tool for decision making at all levels—from personal choices to national and international policy and collaboration. We work hard to effectively communicate our research to multiple audiences through a diverse stream of platforms and approaches.





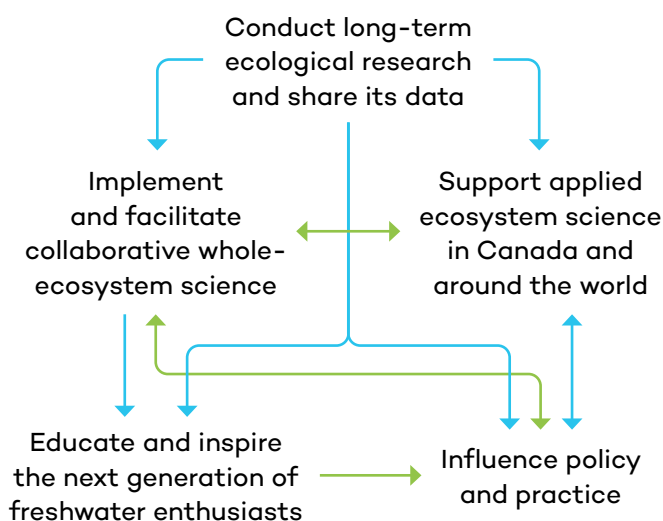
IISD's Water Program: Theory of Change

MISSION | To accelerate solutions for freshwater protection and management through ecosystem research, influence on policy and practice, and public engagement.

HOW WE WORK

- Collaborate on science, policy, education, and innovation
- Prioritize the health and wellness of the organization and team
- Cultivate an inclusive workplace
- Grow a green IISD-ELA facility to support research and education
- Build meaningful relationships with Indigenous Peoples and communities to respect and protect the land and water and learn from one another
- Invest in innovation in all aspects of our work

WHAT WE DO



OUR UNIQUE VALUE

The ability to conduct whole-ecosystem research on small boreal lakes and leverage this work into policies and solutions for water and environmental management.

OUR WORK'S IMPACT

- Increased knowledge of human impacts on freshwater systems
- An unparalleled dataset that tracks the health of fresh water in the long term
- Policy-makers and a public that are inspired and equipped to protect fresh water

OUR VISION FOR THE FUTURE

Healthy freshwater systems for people and the planet.



Next Steps

The above strategy will form the basis of the IISD-ELA management framework for the next 5 years. From here, specific objectives will be developed for each of the five core strategies, and key performance indicators will be identified to track their success.

IISD-ELA also maintains an Enterprise Risk Matrix, which is reviewed annually by the Audit Committee. TOWS will be reviewed at this time and cross-checked to address upcoming trends, global issues, and institutional risks.