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LEVERAGING TECHNOLOGY FOR A HEALTHY PLANET

OPPORTUNITIES TO SUPPORT SOCIAL AND ENVIRONMENTAL WORK

Prepared by:

ASI ACADEMY for SUSTAINABLE INNOVATION

Prepared for:

ENVIRONMENT FUNDERS CANADA
Advancing a sustainable future

Hosted by:

Sustainability Network

ASI ACADEMY for SUSTAINABLE INNOVATION

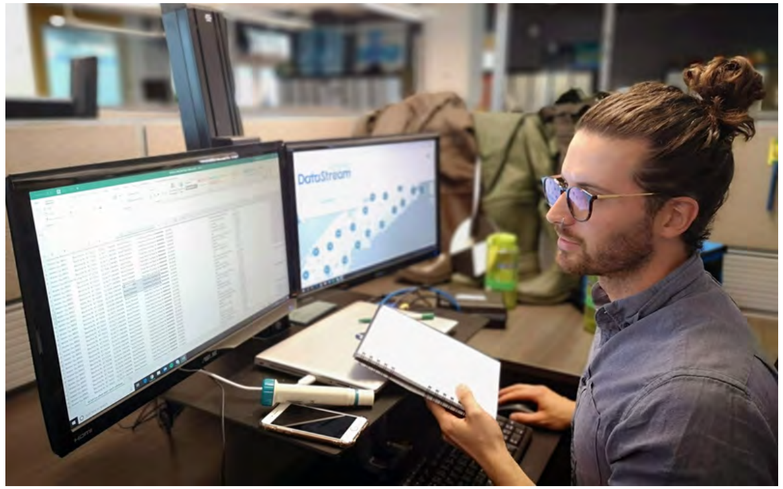
To train and certify a generation of Canadians to lead Canada's transition to a low-carbon, socially-inclusive economy

WEBINAR OUTLINE

- ABOUT THE STUDY
- TECHNOLOGIES IN FOCUS
- PATHWAYS FOR ENGAGEMENT
- FUNDING CONSIDERATIONS
- OPPORTUNITIES FOR PHILANTHROPIC ACTION

ABOUT THE STUDY: CONTEXT

ABOUT THE STUDY: FOCUS



TECHNOLOGIES IN FOCUS

Artificial Intelligence (AI): The science and engineering of making intelligent machines that imitate human behaviour

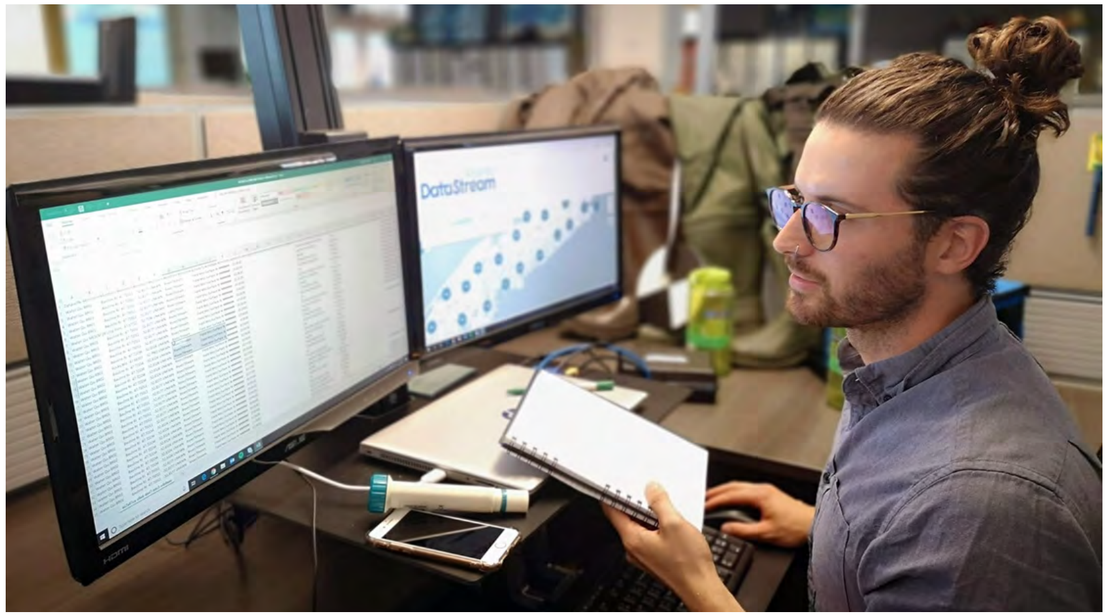
AI works from '**big data'**, analyzing these extremely large data sets to reveal patterns, trends, and associations

This enables and enhances monitoring, analysis, prediction and intelligent decision-making.

Photos courtesy of WWF Canada, 2020

TECHNOLOGIES IN FOCUS

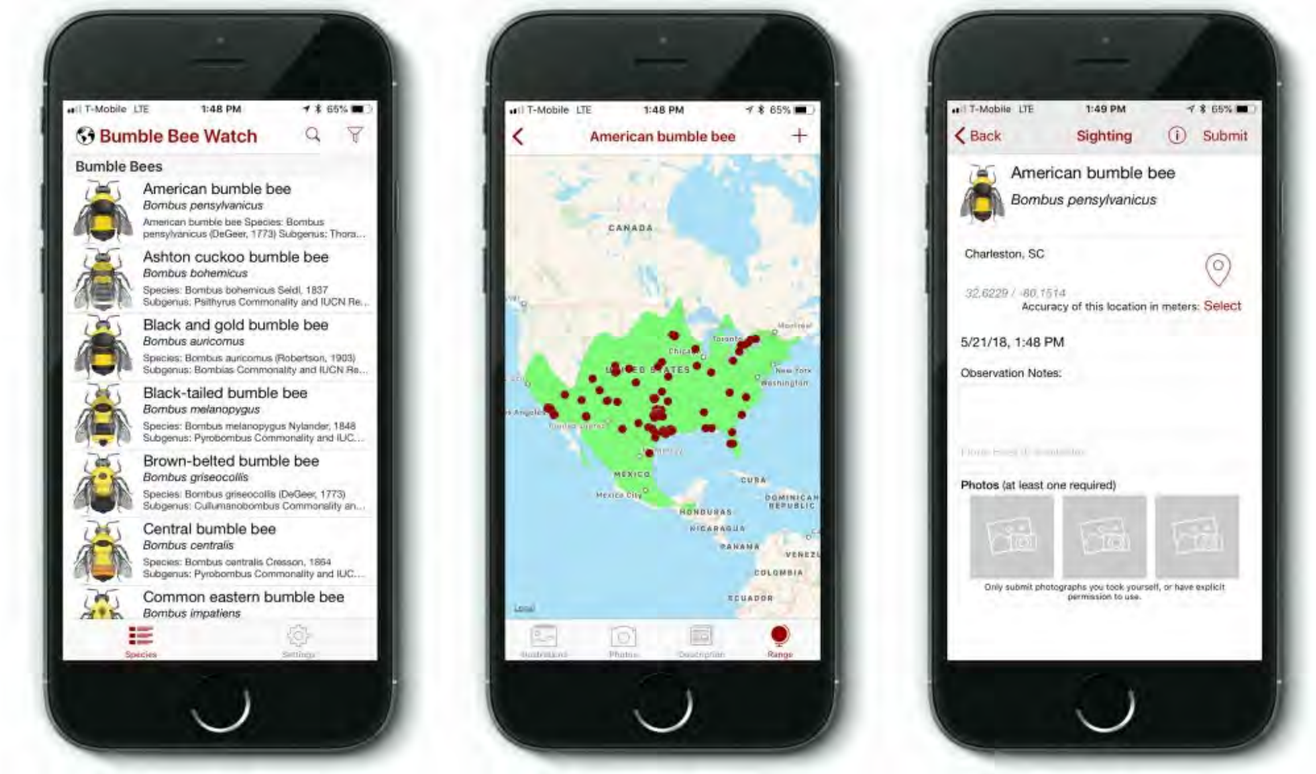
Blockchain: a list of tamper-proof records that allows for digital information to be distributed, but not copied, thereby spreading verified information accurately across a network



TECHNOLOGIES IN FOCUS

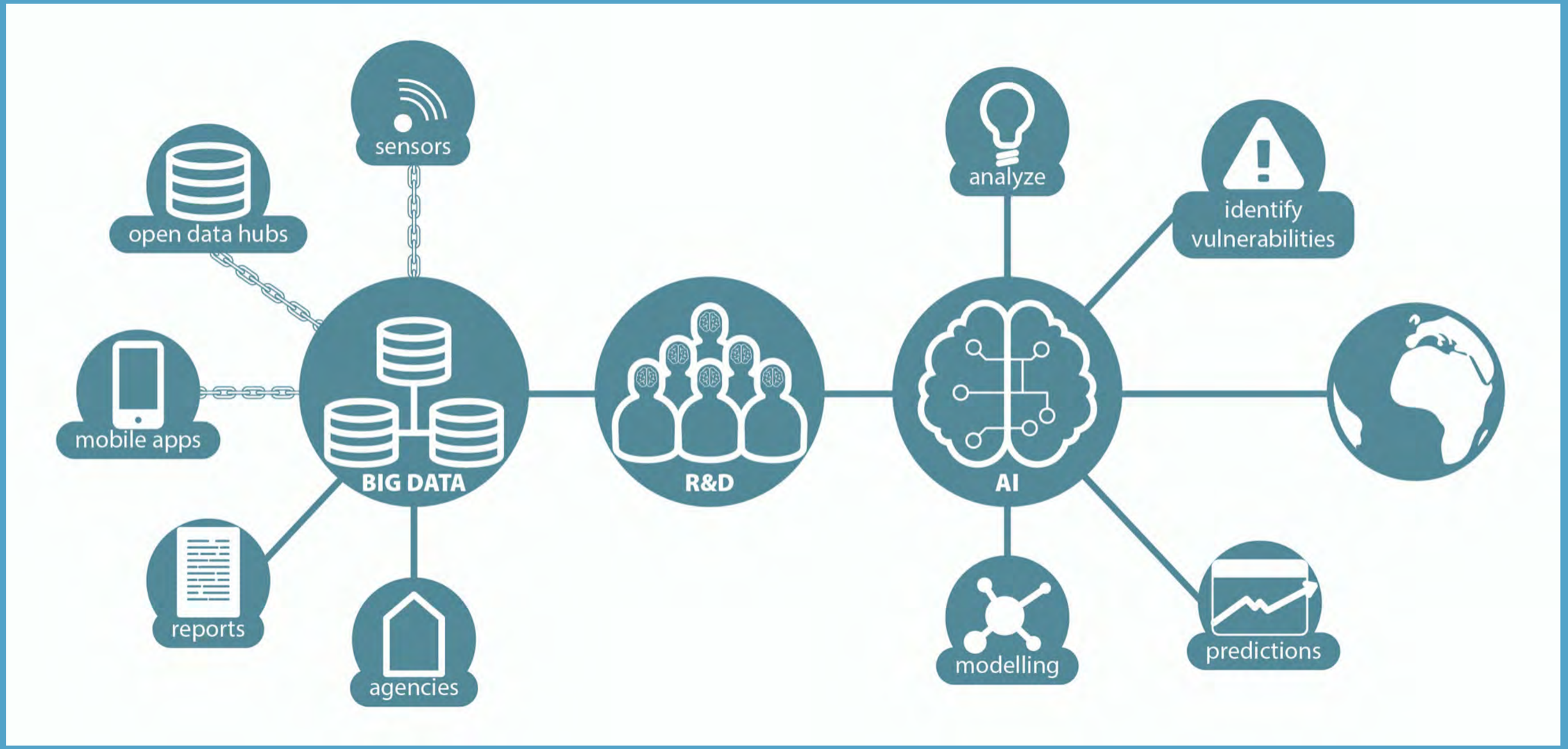
Smartphone application (app): a mobile software designed to run on a personal, handheld device

Collects, configures and delivers information in an accessible, mobile form



Bumble Bee Watch

Data-leveraging Technologies Working Together



KEY THEMES

SOLUTIONS REQUIRE THE COMBINED DEPLOYMENT OF TECHNOLOGY

WE WILL NEED TO DECARBONIZE POWER WHILE INCREASING SUPPLY

TECHNOLOGY SOLUTIONS REQUIRE NON-TECHNICAL SUPPORTS

SOLUTIONS MUST BE GROUNDED IN COMMUNITY AND INDIGENOUS PARTNERSHIPS

• NATURE-BASED SOLUTIONS

Traditional ecosystem protection and regeneration efforts require rigorous accounting and monitoring on the ground

Data-based technologies

- provide rapid insights into ecosystem vulnerabilities
- monitor and identify threats
- verify the impacts of environmental initiatives with accelerated pace and precision

SPOTLIGHT: DENDRA SYSTEMS

2. LOW (OR NO) CARBON ENERGY

- AI can support the integration of distributed renewable energy sources into the grid
- Blockchain can support peer-to-peer (P2P) electricity trade within local communities
- Additional technologies are required to truly decarbonize the sector. These need early-stage, private-sector investment, political will and capacity to scale-up renewable energy efforts

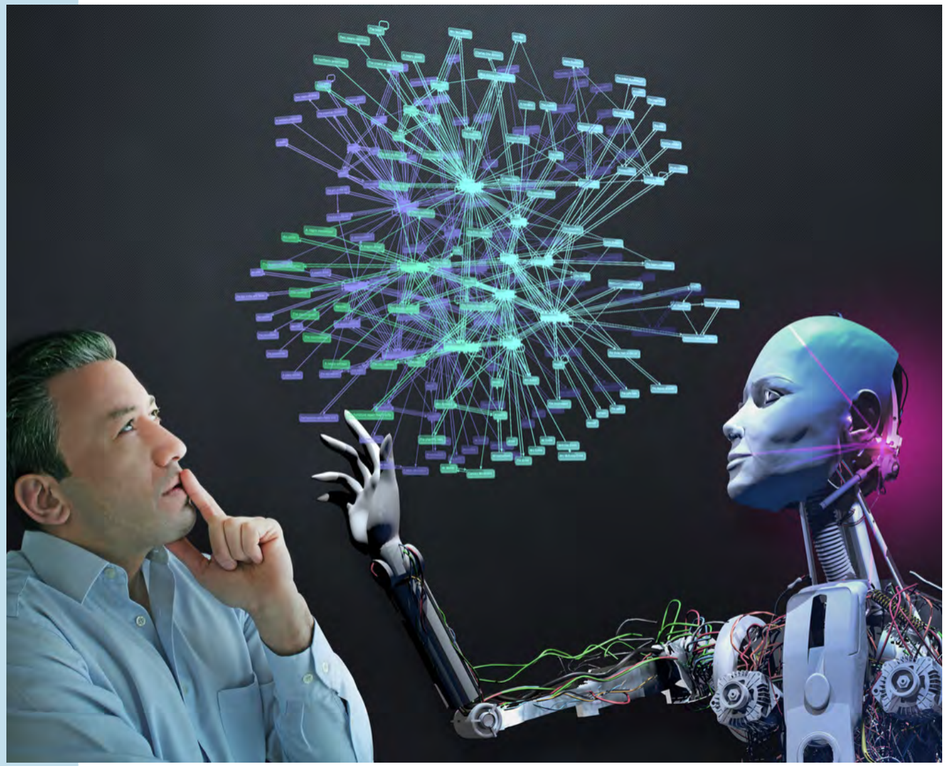
3. EDUCATION AND SKILLS TRAINING

How will the widespread adoption of AI fundamentally change employment?

Social, emotional and technological skills will become of increasingly high value

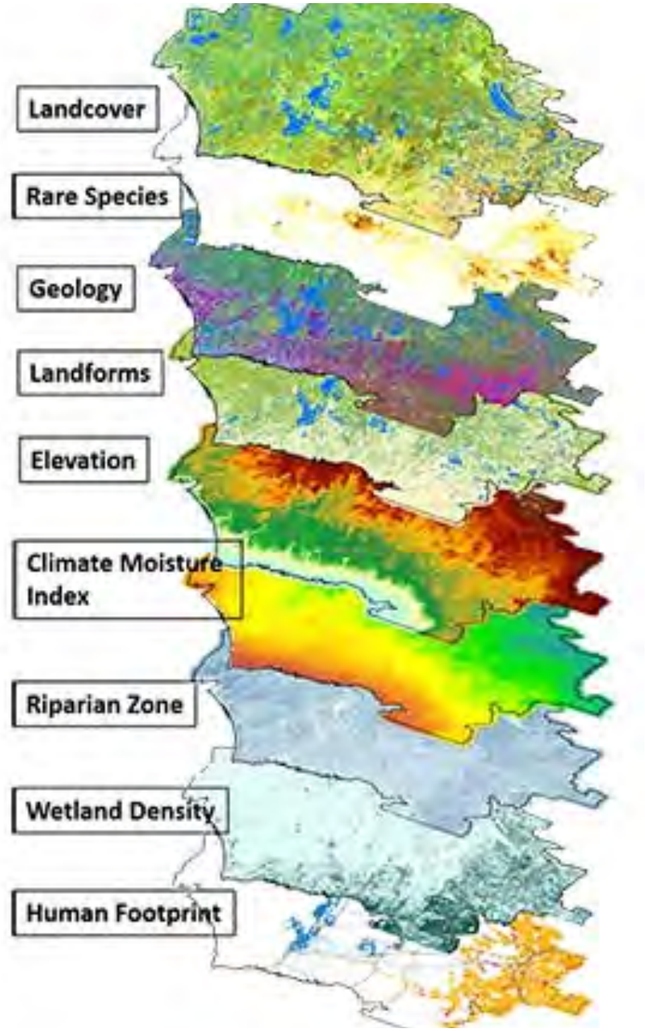
How can workers prepare for the speed and scope of change?

Upskilling and reskilling for the adoption of technologies in the workplace



4. COMMUNITY-BASED INITIATIVES

Cree Tallymen from the community of Mistissini map cultural features to help develop proposals for protected areas of significance to the Crees and the Cree way of life (Photo by NCC)



Geographic datasets developed by NCC in support of the Cree Regional Conservation Strategy for Eeyou Istchee (map by NCC).

Climate Modelling: Cree of Eeyou Istchee and Nature Conservancy of Canada

CITIZEN SCIENCE

Challenge: lack of data standards, regulations and open-sharing policies

Solution: community based monitoring or citizen scientists

- Allows for the widespread collection of data
- More scalable than traditional research
- Added benefits: builds awareness + community buy-in for the conservation of local ecosystems

SWIM DRINK
FISH

5. INDIGENOUS PARTNERSHIPS

Consultation

Integrating Indigenous knowledge and input into project design, data collection and technology deployment

Consent

Building trust and asking permission before collecting or sharing data and when exploring technology solutions

Support

Recognizing infrastructure gaps and supporting development where want and need exist.

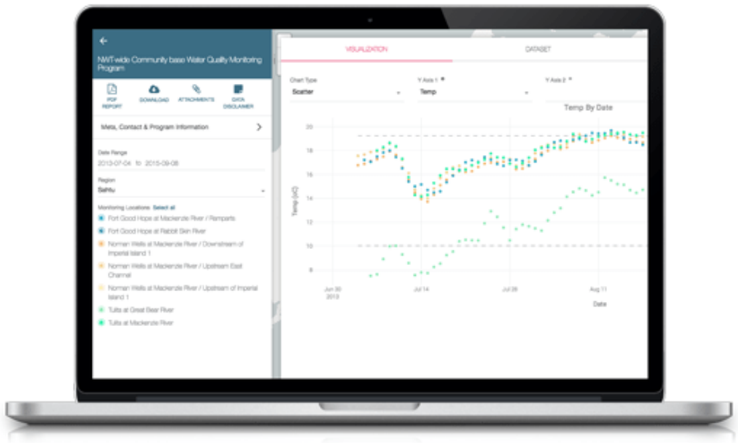
6. POLICY AND ADVOCACY

To support environmental efforts, we need:

- Increased quality and quantity of public and private sector data
- Standards for data collection and sharing
- Legal infrastructure to ensure the protection of information

SPOTLIGHT ON: DATA STREAM

- An open-access, online data hub
- Collects, analyzes and allows participants to visualize comprehensive water data
- Blockchain technology traces collection and sharing of information, building trust and clarity
- Following the example of The Government of Northwest Territories for DataStream data sharing



7. CONVENING

- This work requires a combination of technical, funding, infrastructure, community-knowledge and policy tools

- Often the result of collaboration between
  - one technical partner
  - an ENGO community partner
  - support from philanthropists, impact investors and/or government

8. COMPETITIONS AND PRIZES

- Create tailored solutions to the world's most challenging problems
- Cash prizes for the most innovative and impactful ideas
- Data-leveraging technologies offer the ideal conditions for the facilitation of competitions around a specific goal as they must inherently be programmed towards an objective

FUNDING CONSIDERATIONS

DATA SHARING – PRIVACY AND RESPONSIBILITY

Maintain a respectful sense of community knowledge, permissions, ownership, and engagement, while also promoting data-sharing (where appropriate)

AUTOMATION AND EMPLOYMENT

Support opportunities for upskilling and reskilling, specifically for environmental workers may mitigate the social dislocation that could result from automation.

ACCESS AND INFRASTRUCTURE

Supplementary infrastructure may be needed to facilitate the deployment of data-based technologies in rural and remote communities

PHILANTHROPIC CONSTRAINTS

Explore partnerships with startups, technology companies, universities or university-based accelerators to develop strategic and creative funding proposals.

OPPORTUNITIES FOR ACTION

Systemic and infrastructure solutions

- Decarbonization of energy and industrial systems
- Improved internet and cellular connectivity for rural and remote areas – infrastructural prerequisite for technology solutions
- Technologies using data to protect land and water
- Shared data and open access data hubs

OPPORTUNITIES FOR ACTION

Engage in business solutions:

- Advise early stage technology companies that seek to solve environmental problems

- Explore opportunities to participate in competitions and prizes geared to addressing particular environmental challenges with technology solutions

OPPORTUNITIES FOR ACTION

Educational solutions:

- Advising or partnering with academic institutions as they build environmentally-focused tech programsprograms

- Explore upskilling and reskilling to build technology literacy

OPPORTUNITIES FOR ACTION

Community solutions:

- Explore Indigenous-led data-driven projects and those incorporating traditional knowledge and perspectives

- Community-based environmental monitoring programs

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QUESTIONS OR THOUGHTS?

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LOOKING FOR THE REPORT?

https://environmentfunders.ca/

RECORDINGS AND RESOURCES

https://sustainabilitynetwork.ca