

Scaling Two-Eyed Seeing in Natural Asset Management (NAM)

Profession, skills, collaboration and technology



**Indigenous Climate Resilience:
Bridging Indigenous Knowledge and Technology
Thursday November 23rd, 2023**

**Presented by:
Kim Neale, Project Manager and Indigenous Affairs**



Bridging Indigenous knowledge in...

KEY DEFINITIONS

Natural Assets: Ecosystem features that can be protected, maintained and restored to provide services in a community.

Natural Asset Management (NAM): The practice of identifying, measuring, and monitoring natural assets as part of an overall asset management strategy to prioritize and inform evidence-based capital and operating costs to reduce risk, maintain service levels and implement climate adaptation actions.

Traditional Ecological Knowledge (TEK): Knowledge and practices about ecosystems that have been passed from generation to generation informed by cultural memories, sensitivity to change, and values that include reciprocity and relationships with nature.

Natural Asset Management (NAM)

NAM in the Prairies + Arctic

NAM = Nature + Tech + TEK



NAM: Western Lens on Ecosystem Services

Types of Natural Assets

Forests

Boreal, coniferous, deciduous, temperate, street trees

Water

Lakes, streams, rivers, aquifers

Agricultural

Industrial, regenerative, agroecology

Wetlands

Marshes, swamps, bogs, fens

Grasslands

Prairies, meadows, grazing

Quantity



Quality



Condition



Risk

Types of Ecosystem Services

Provisioning

Drinking Water, food, medicinal plants, fuel, oil + gas, wood, minerals

Regulating

Drinking water filtration, carbon sequestration, flood prevention, erosion control, pollination

Supporting

Nutrient and water cycling, soil formation, habitat provision for biodiversity

Cultural

Health, well-being, Traditional Ecological Knowledge (TEK), educational, recreation and aesthetic

Tangible



Intangible

Ecosystem Services in the Economy

Market

Infrastructure

Non-Market

Non-Infrastructure
Unknown/Unmeasured

Ecosystem Services in the Economy

Oil + Gas

Drinking Water

medicinal plants

Provisioning

minerals

wood

food

Regulating
carbon
sequestration

Cultural
Tourism + TEK

Supporting
Soil formation + some
biodiversity



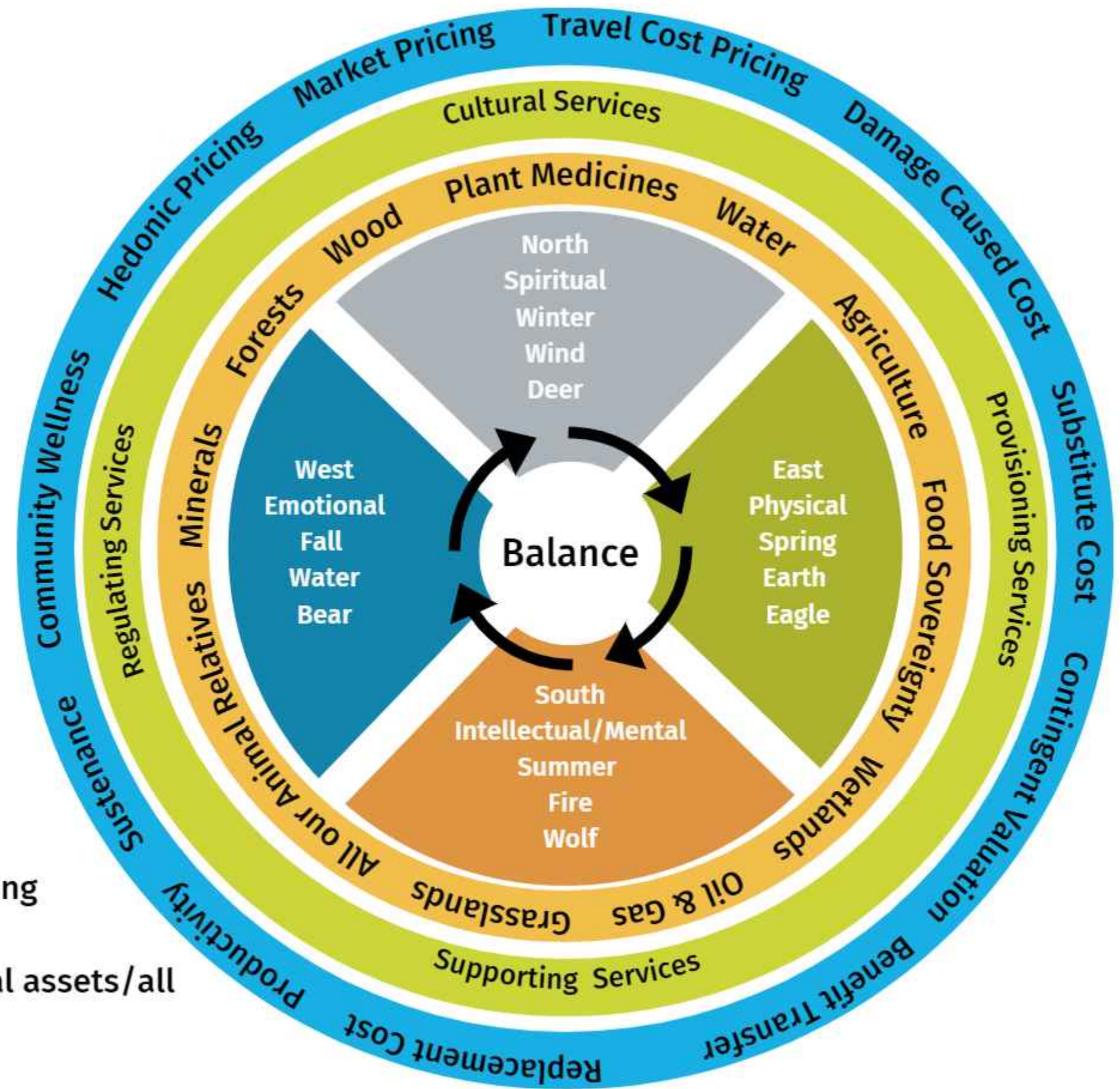
Two-Eyed Seeing Lens on Ecosystem Services

Applying the Anishinaabe medicine wheel to centre an Indigenous worldview when conceptualizing NAM.

All Traditional Ecological Knowledge (TEK) systems and Indigenous communities have different strengths. The strength of the Anishinaabe medicine wheel represents only one Indigenous worldview or perspective.

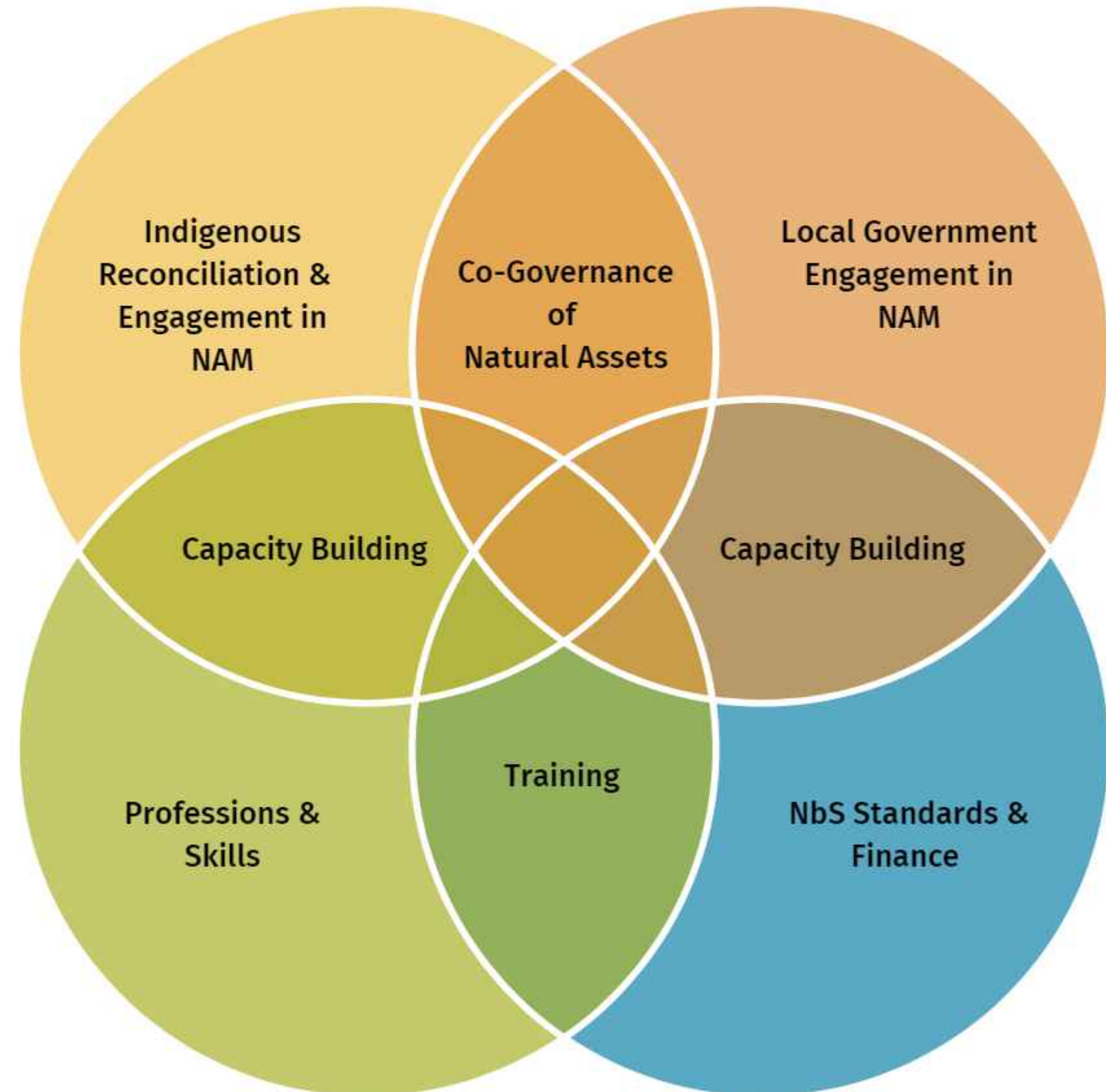


- Keewatinong
- Wabanong
- Shawanong
- Sha'ngabi'hanong
- Types of natural assets/all our relations
- Types of ecosystem services
- Valuation approaches for ecosystem services



Natural Assets Initiative: Our Mission

- **Mainstream natural asset management (NAM) practice from coast-to-coast-to-coast**
- **Partner with communities and build capacity to implement NbS**
- **Continuously improve NAM to capture nature's benefits for consideration in bioregional watershed decision-making**



Growing NAM numbers.

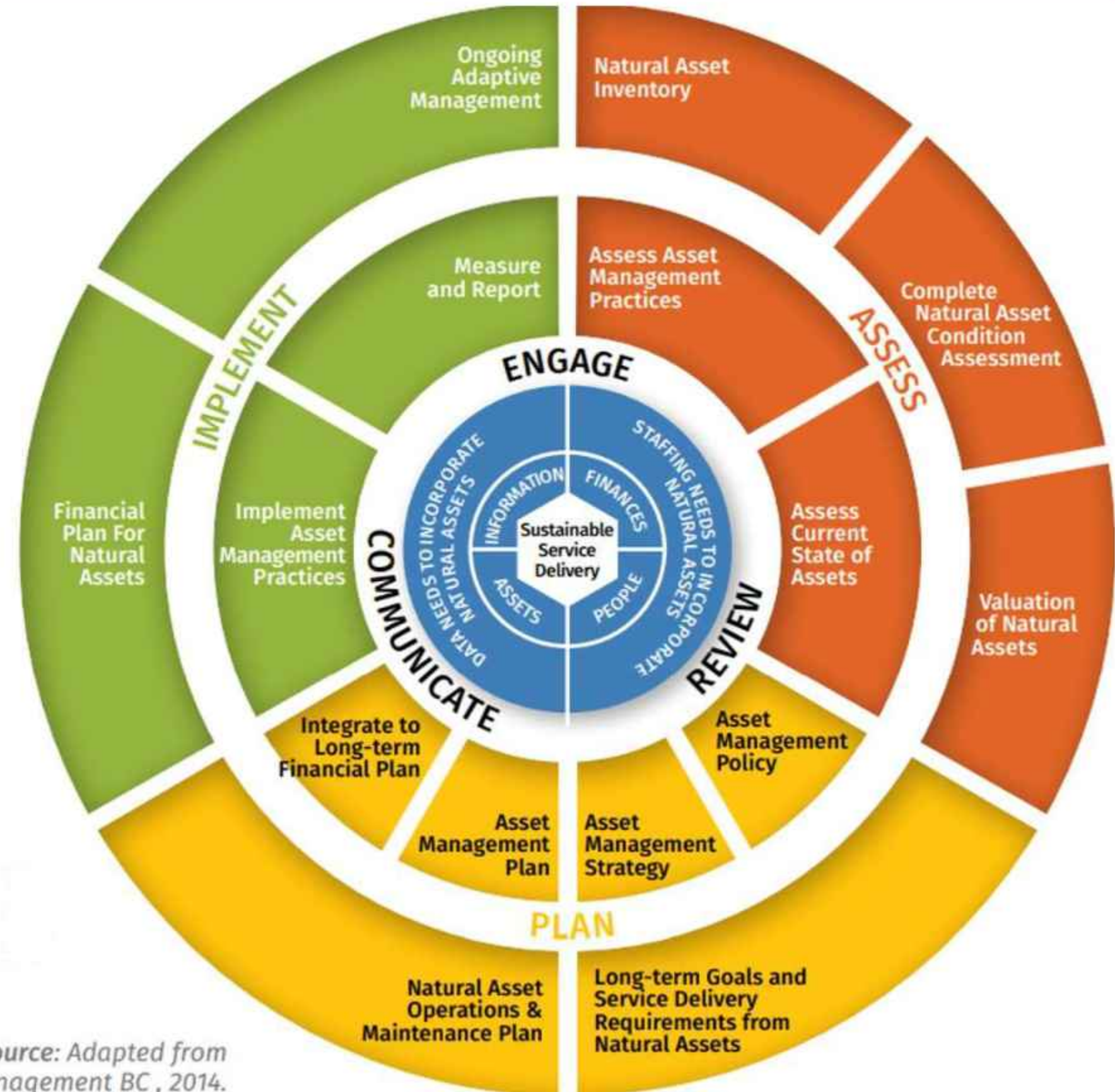


Accurate as of March 2023

NAM Framework:

asset management adapted for nature

Asset management integrates:
People's skills, expertise, activities
+
information about
community's green, grey and
engineered
assets and finances
=
Evidence-based
Sustainable Service Delivery



Source: Adapted from Asset Management BC, 2014.

NAM in the Prairies + Arctic



REGISTER NOW!

Advancing Natural Infrastructure Forum

Only 100 tickets available

February 21-22, 2024
Calgary, Alberta

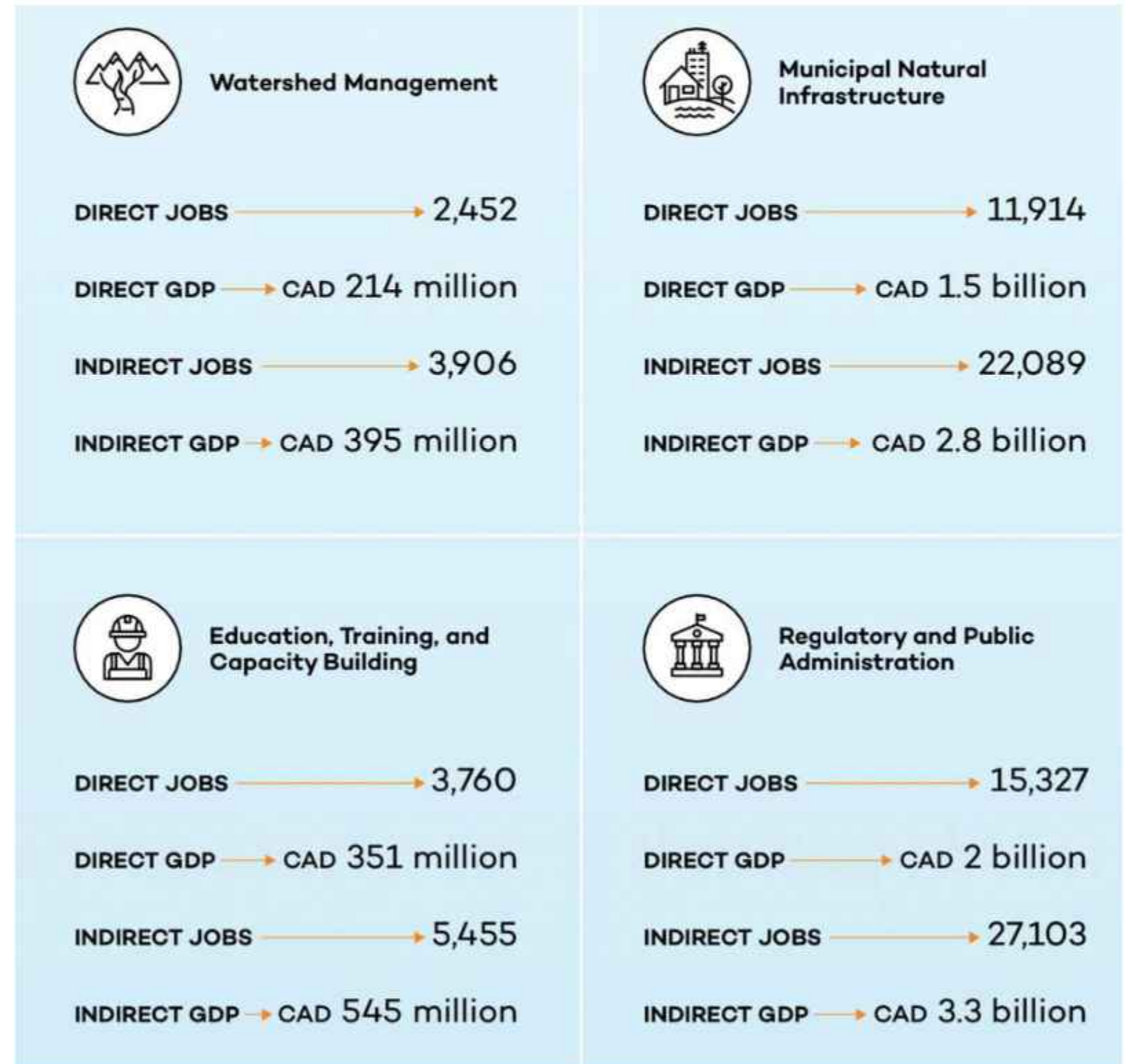



Registration Is Now Open! Advancing Natural Infrastructure Forum

NIWS and our partners at the Natural Assets Initiative and WaterSMART Solutions are pleased to announce the **Advancing Natural Infrastructure 2024 Forum**, taking place February 21 and 22 in Calgary, Alberta.

Register for your [free ticket now](#) to join us in person in Calgary for the event. Only 100 spots are available.

Natural Infrastructure and Prairie Prosperity IISD, November 2023



NAM in the Prairies + Arctic

Approximately **85** Guardians programs nationally

Approximately **29** Guardians programs in Prairies +
Arctic

Source: [Indigenous Guardians Map](#)

“In many remote communities, employment opportunities can be few and far between - but Guardians programs are helping to bridge the gap by creating meaningful jobs for community members, particularly young people. Guardians have shown a **3 to 1** return investment in economic and social benefits.”

- Indigenous Leadership Initiative

Prairies + Arctic leadership in Indigenous Protected and Conserved Areas (IPCAs)

Established IPCAs:

3 in Northwest Territories

IPCAs in Development:

3 Alberta

1 Saskatchewan

2 Manitoba

NAM = Nature + Tech + TEK



Food and agriculture: regenerative agriculture, precision farming, nutrient management and biofertilizers, soil health monitoring, integrated pest management, sustainable livestock management, plant biotechnology.



Land and forest: agroforestry, sustainable forest management, precision forestry, bio-geo-engineering.



Ocean: sustainable blue economy (fisheries, aquaculture), algae production.



Water conservation and management: smart irrigation systems, wastewater treatment, water purification technologies.



Biodiversity and nature restoration: protection and restoration of wildlife, forests, grasslands, peatlands, oceans, coastal zones (mangroves, wetlands, seagrasses, coral reefs).



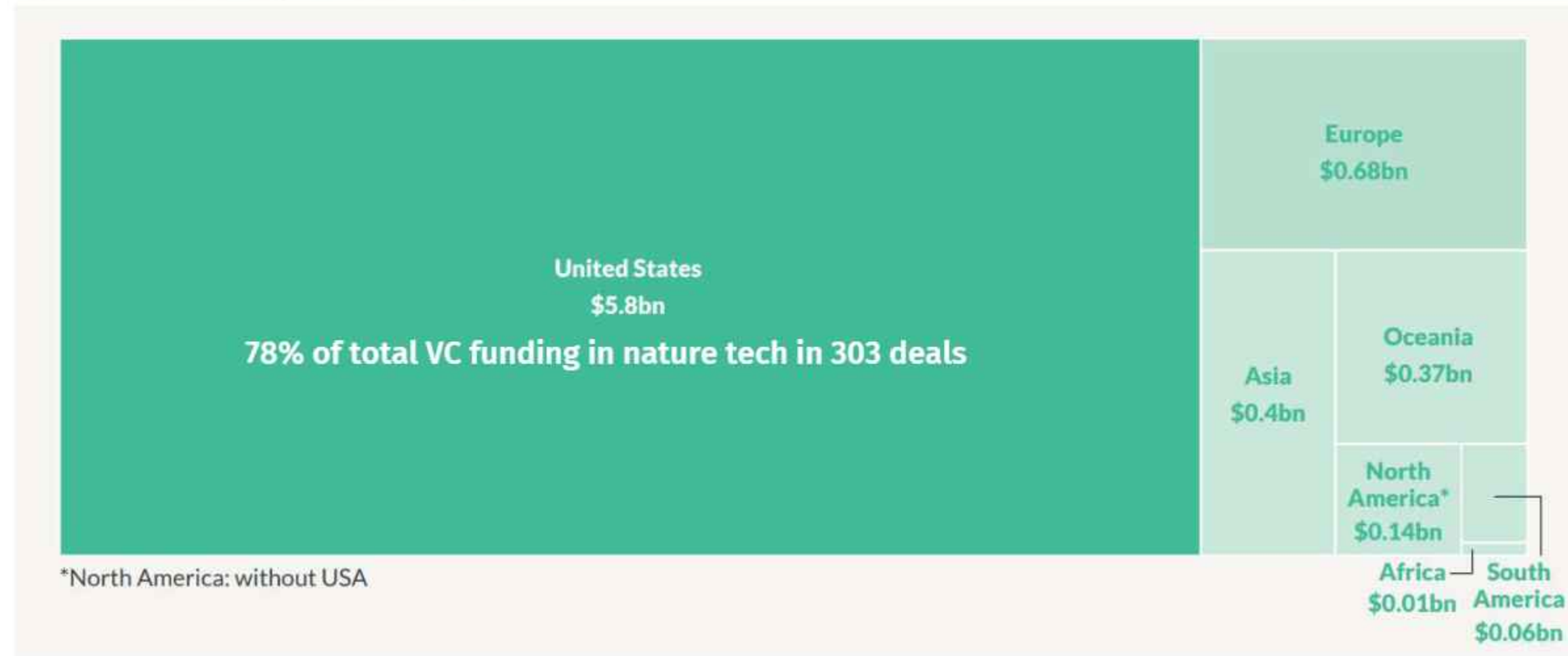
MRV and biodiversity credits: biodiversity data collection and monitoring, digital MRV for carbon and biodiversity, biodiversity credit exchange.



Green supply chain: supply chain traceability, land titling management.

The state of nature tech. Building confidence in a growing market

Figure 7. Funding per geographical region



Source: Crunchbase and Serena



Source: The state of nature tech (2023) Nature4Climate
Serena, MRV Collective et. al

Lessons Learned: 28yrs of Not-Profit Carbon Certification Standards

- TWO Canadian owned not-profit Carbon Certification Standards (CSA Group + province of BC) ~ 60-70 projects
- Verra has 23 Canadian projects registered as of November 2023 - ONE is Indigenous led and on hold
- On average 20% of every dollar transacted for carbon offsets goes to these not-profits

Canada needs nature tech that can uphold our laws, Indigenous laws and build our economy!

Source: The Ever Expanding World of Carbon Certification Standards, Hamerkop - Climate Change and Finance, October 4, 2023

**NAM =
Nature +
Tech +
TEK**



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NATURE MARKET TECH DESIGNED BY AND FOR INDIGENOUS PEOPLES

Protection of FPIC, OCAP, TEK a priority



NATURE MARKET TECH DESIGNED FOR IPLCs

Intellectual property (IP) and rights to ecosystem services,
TEK and FPIC potentially at risk



NAM = Nature + Tech + TEK



How one man fought a patent war over turmeric

SEPTEMBER 1, 2023 - 6:18 PM ET

By Alexi Horowitz-Ghazi, Erika Beras, Molly Messick, Willa Rubin

 25-Minute Listen 



Agung Parameswara/Getty Images

WORST CASE SCENARIO: Instead of using nature tech + TEK to innovate and create equitable climate and biodiversity solutions, we continue to spend time defending human rights and IP infringement increasing inequality in nature tech + TEK.



India wins patent war on hair loss formula

NEW DELHI: India scored an important success when it fully protected its traditional knowledge by stalling a leading UK-based laboratory's move to patent a medicinal composition containing turmeric, pine bark and green tea for treating hair loss. The move comes just days after India foiled a similar attempt by US-based consumer goods giant Colgate-Palmolive from patenting a mouthwash formula containing herbal extracts.

The vigilance of the Traditional Knowledge Digital Library (TKDL) of the Council of Scientific and Industrial Research (CSIR) helped protect the Indian products as the council in its submission to the European Patent Office managed to prove that turmeric, pine bark and green tea were being used as a treatment for hair loss in Indian systems of medicine like Ayurveda and Unani since ancient times.

The UK-based company – Pangaea Laboratories Limited – had filed the patent application in February, 2011. The CSIR-TKDL unit had, however, objected to it and filed evidence on January 13, 2014 once the patent application got published in the European Patent Office website.

Based on India's evidence, the patent application was finally "deemed to be withdrawn" by the applicant on June 29 this year.

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BEST CASE SCENARIO: New innovations, FPIC and human rights upheld and increase equity through nature tech + TEK.



Conservation news



To keep track of salmon migrations in real time, First Nations turn to AI

Spoorthy Raman

2 weeks ago



[Source: Mongabay, Conservation News](#)

Democratizing the NbS Marketplace



Upholding UNDRIP, OCAP and Data Sovereignty requires an open source NbS Platform that is...
Co-Designed.
Co-Owned
Co-Governed.

We are seeking NbS data owners who want to:

- a) Participate in interviews
- b) Co-design the NbS survey
- c) Co-own and Co-govern the NbS Data Platform

Email: Wynona Acco Barron

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Miigwetch - Thank you

Connect with us!

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<https://mnai.ca/>

