

Challenge Dialogue Progress Summary: Exploring Natural Asset Management Capacities and Practices in Canada

This is a summary of progress on research engaging a multi-stakeholder/rights holder group in a survey process (Challenge Paper questionnaire) and a subsequent virtual dialogue (Challenge Dialogue conversation) to explore and respond to a proposed set of Natural Asset Management (NAM) norms, identify core competencies, and explore user needs related to NAM training. Working with the Municipal Natural Assets Initiative (MNAI), this work builds on the efforts of the Adaptation Learning Network project led by Dr. Robin Cox and the Resilience By Design lab at (RRU).

Participants responded to a Challenge Dialogue which has been framed by a statement regarding a potential future end-state, namely, that for there to be Canada-wide municipal natural asset management (NAM), *natural assets will be appreciated alongside built assets as integral to municipal infrastructure*, and that *local governments want to initiate NAM with the help of existing firms and organizations*. The statement also added that *widespread capacity to deliver NAM will depend on the availability of trained professionals working from norms, standards and certifications that makes their practices effective, comparable, and replicable*. This is a summary of the progress report in assessing the responses to these statements.

Challenge Dialogue participants were invited who were engaged directly with natural asset management projects, capacity building or advocacy. Links to the Challenge Dialogue were also posted to social media. In accordance with the ethics approval for this project by Royal Roads University, a project funder, no personal identifying information was recorded for the 55 unique participants, where 36 completed all input requests. The responses were analysed thematically in reference to each input request and the findings in this report will inform a small workshop to develop actionable next steps.

Key messages emerging from Challenge Dialogue

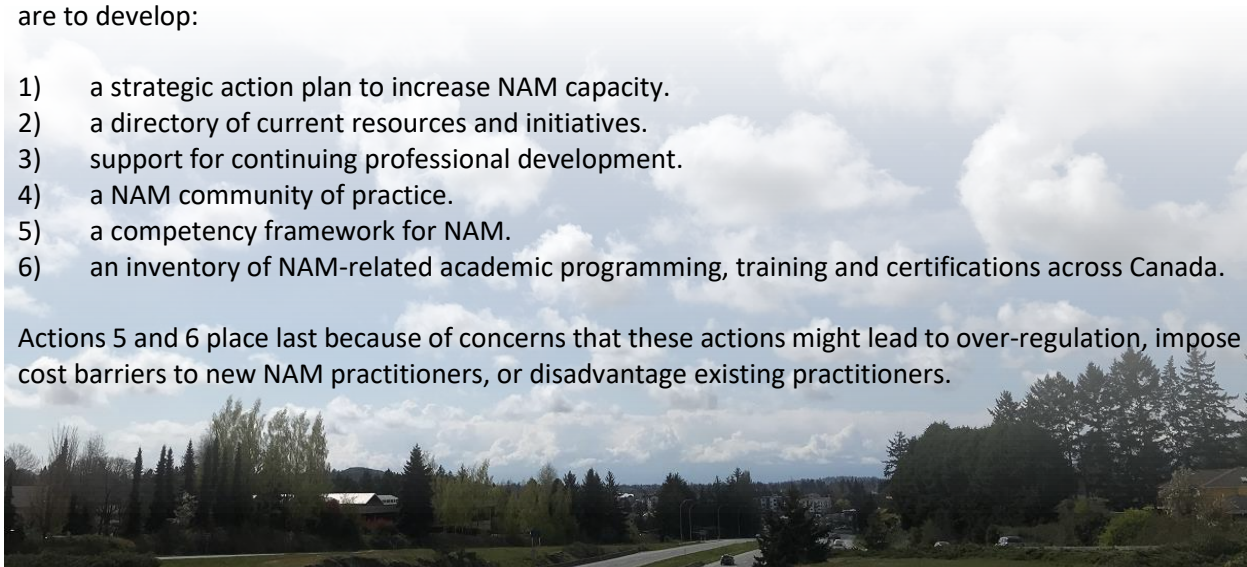
- Building leadership and capacity to implement NAM across Canada needs a two-pronged approach to both educate those new to NAM and to upskill asset managers, engineers and service delivery planners wishing to integrate NAM into their professional practice.
- Four main activities guide NAM capacity building:
 - promoting policies that value natural assets' service delivery
 - improving NAM technical and evaluation methods
 - integrating a consideration of Indigenous knowledges and diverse worldviews in training and practice
 - protecting natural assets
- Knowledge needs for NAM are both technical, to improve measurement, evaluation, and application of management practices, and cultural, where a whole-of-society effort requires a culture change within local governments, Indigenous governments (e.g., First Nations) and Indigenous knowledges keepers and communities from project conception.
- The expected increase in demand for NAM capabilities is driven by municipal needs for service delivery, climate resilience, the financial benefits of lower costs and efficiencies in using built and natural asset systems together, and the social, ecological, cultural and other benefits associated with greater valuing of natural asset systems.
- Course material addressing NAM is absent or lacking in most civil engineering and environmental science programs, with most courses referenced as under consideration or being developed.
- While not all skills relevant to NAM need to be embedded in a single position or individual, a long-term commitment to collaborate within and across organizations is needed to develop shared understandings across the range of NAM skills.
- The financial sector was specifically highlighted as an area that would benefit from special training, especially related to NAM inventories and environmental, social and governance (ESG) valuation and reporting.
- In addition to needing a business case and strategic plans, NAM requires a values statement that addresses the need to incorporate Indigenous knowledges and consider non-economic values (e.g., cultural, social, ecological).

Initial Actions

Six actions for moving NAM forward as a professional practice were proposed to Challenge Dialogue participants. All six gained over 80% approval from participants. In order of support received, the actions are to develop:

- 1) a strategic action plan to increase NAM capacity.
- 2) a directory of current resources and initiatives.
- 3) support for continuing professional development.
- 4) a NAM community of practice.
- 5) a competency framework for NAM.
- 6) an inventory of NAM-related academic programming, training and certifications across Canada.

Actions 5 and 6 place last because of concerns that these actions might lead to over-regulation, impose cost barriers to new NAM practitioners, or disadvantage existing practitioners.



Overview of Challenge Dialogue Comments by Participants

Opportunities for Building Capacity for NAM

Education & Upskilling: Challenge Dialogue participant support for building capacity to implement NAM across Canada emphasised both education of new NAM practitioners and upskilling opportunities for current asset managers and service delivery planners. Building leadership was also seen as needing a similar two-pronged approach by increasing municipal work placements for new graduates of engineering, planning and asset management programs with significant NAM components, while supporting the influence of senior positions. It was also recognised that not all NAM skills need to be embedded in one position or individual, rather that the range of needed skills should be developed across multiple positions within an organisation.

Targeted Educational Initiatives: A priority for capacity building is to start with including content specific to managing natural assets in post-secondary courses that educate future engineering and planning leaders. While a few first-year civil engineering and environmental science courses include significant material on natural assets, most comments referenced courses that were being considered or are under development. There was concern that without more specific requirements or regulation, practice notes guidelines such as those developed by Engineering and Geoscientists BC form only a first step in increasing the uptake of NAM in professional practice.

Communities of Practice: While university and other post-secondary programs were seen as vital to new NAM practitioners, a NAM community of practice (CoP) was seen as more useful to those already managing assets. The entity, *Natural Infrastructure New Brunswick* was mentioned as hosting a formal CoP which fosters use of nature-based solution (NBS) approaches to adapt to climate change. There was general interest in strengthening existing CoPs in related fields (e.g., asset management, engineering) to be more focused on NAM and there was also mixed support for formalizing a NAM CoP.

Policy: In stating what NAM needs to achieve the stated desired end state, Challenge Dialogue responses were united through the goals of promoting policies that value natural assets for services to the community, improving NAM technical and evaluation methods, protecting natural assets, and integrating considerations of Indigenous knowledges and diverse worldviews in training and practice. Implementing NAM was seen as beneficial to asset management overall, partly through the emphasis on well-defined sustainable service delivery and as replacement for grey infrastructure as it ages.



Photo by Providence Doucet on Unsplash

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Potential Barriers to Building Capacity for NAM

Financial & Economic: Financial benefits to society from NAM included cost-effectively increasing human health and wellbeing, reduction of legal and financial risks, and support for biodiversity. However, viewing ecosystems in terms of the services they provide requires thoughtful and sensitive communication to account for a perspective that representing ecosystem value as the sum of the goods and services it provides can dismiss the value of it as a whole.

The economic question was important both in terms of how implementing NAM is to be financed, and the inherent valuation of natural asset benefits. There was concern for the lack of municipal capacity due to scarce resources and the challenge of how to sustain and resource the whole concept over time.

Special training was recommended for the financial sector, especially related to ESG valuation and reporting. Potential financial metrics to assess benefits from NAM include evaluating grey infrastructure alternatives compared with both NA services delivery costs and the advantages of delivering multiple NA co-benefits.

Additionally, concern was expressed about the limited resources (financial and time) of local governments, and the dominance within municipalities of a reactive rather proactive approach to addressing issues. Both these issues may make the proactive approach of NAM difficult to integrate into municipal planning processes. Participants suggested that small steps are needed that take into consideration where municipalities are currently, given the collaborative visioning and planning necessary to implement NAM. However, NAM extends well beyond municipal boundaries and the consensus was that in the long-term NAM should be integrated into asset management plans for all organizations that are required to undertake asset management.

Terminology: While mention of NAM has become more common within professional and local government studies and planning, these references generally remain incidental unless a NAM project is underway. Non-standardized terminology creates potential barriers to collaborations related to NAM.

Long-term commitment: Collaborations related to NAM are made further challenging because of the long-term commitment necessary for developing shared understandings and actions. It was suggested that NAM principles influence traditional asset management rather than conform to its limitations, with the ultimate success measure being the evolution of the natural capital.



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