

Fresh Water-Related Indicators in Canada: An Inventory and Analysis

PROGRAM ON
WATER GOVERNANCE

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We present a comparative analysis and comprehensive inventory of fresh water-related indicators in Canada, the first of its kind.

Rationale: The number of fresh water-related indicators in Canada has proliferated over the past decade.

However, no systematic comparative analysis of these indicators has been conducted, nor are they centralized or standardized.

Method

Since no comprehensive list of fresh water indicators in Canada exists, an extensive inventory was compiled, derived from:

- government reports
- internet searches
- a web-based survey of 100 water practitioners across Canada (2008)
- telephone interviews with water managers and policy makers (2009)

The indicator research occurred between June 2008 and March 2009.

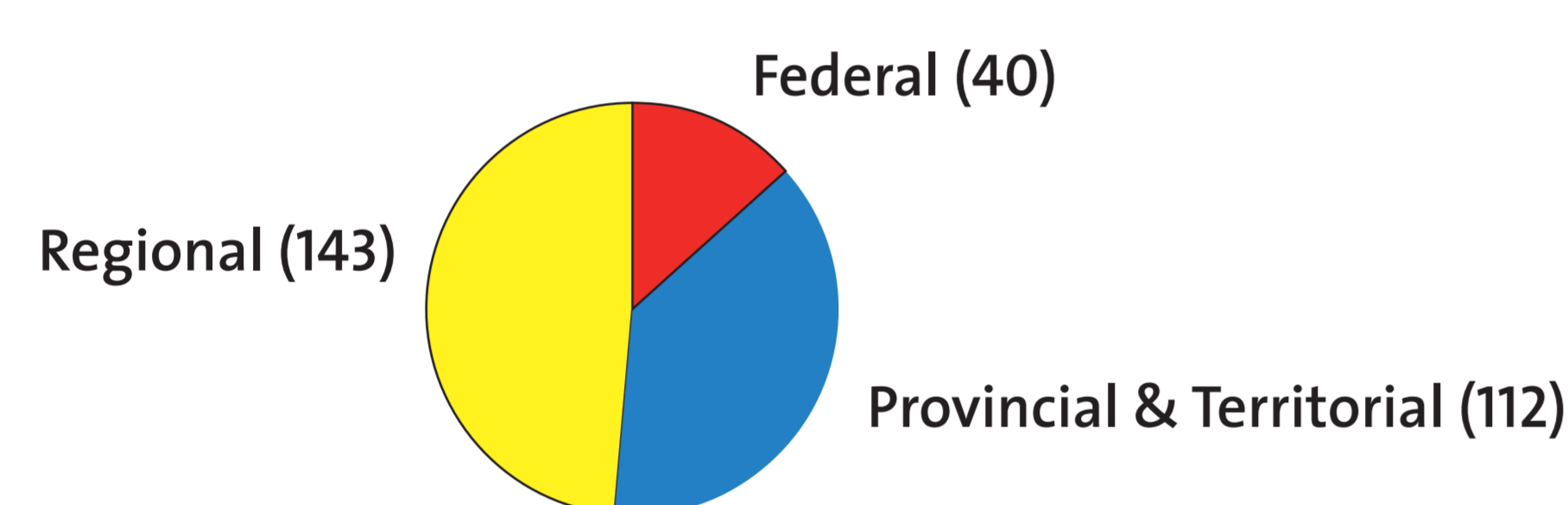
The inventory focuses on indicators developed at the federal and provincial levels and was analyzed with respect to jurisdictional scale (federal and provincial), method, and topic/issue of focus.

Results 1

We found 365 Canadian freshwater related indicators.

- 40 Federal Level
- 112 Provincial Level
- 143 Regional Level (i.e. large-scale watershed)
- > 70 Community Level (these findings were not comprehensive we recommend further study at this scale)

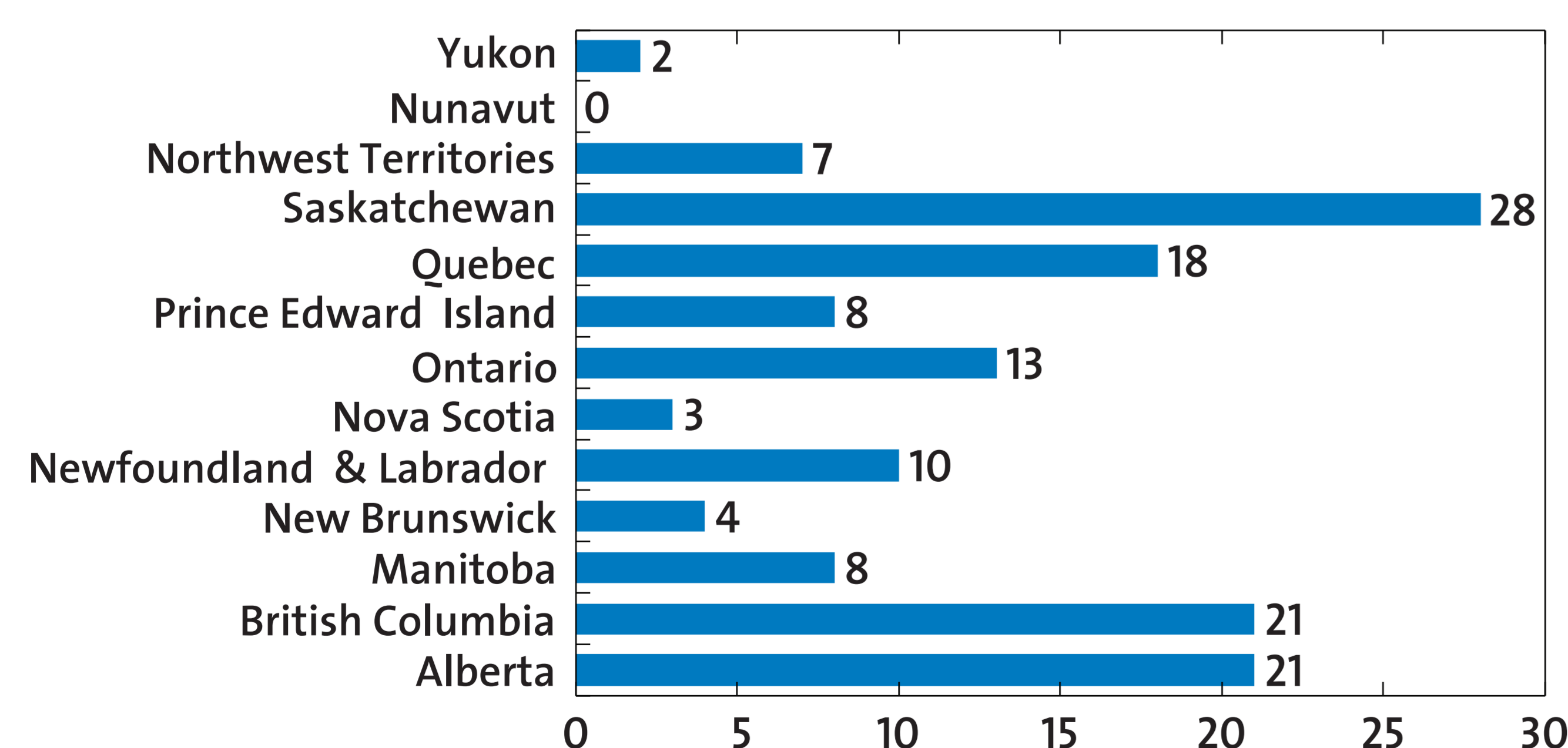
Number of water-related indicators by government level



Results 2

Currently in Canada, there are a large number of indicators focusing on a narrow range of issues. Our findings suggest that certain types of indicators and topics are under-represented, that important gaps and overlaps exist, and that indicators are not sufficiently adapted to the needs of decision-makers.

Number of water-related indicators developed by Provincial / Territorial government



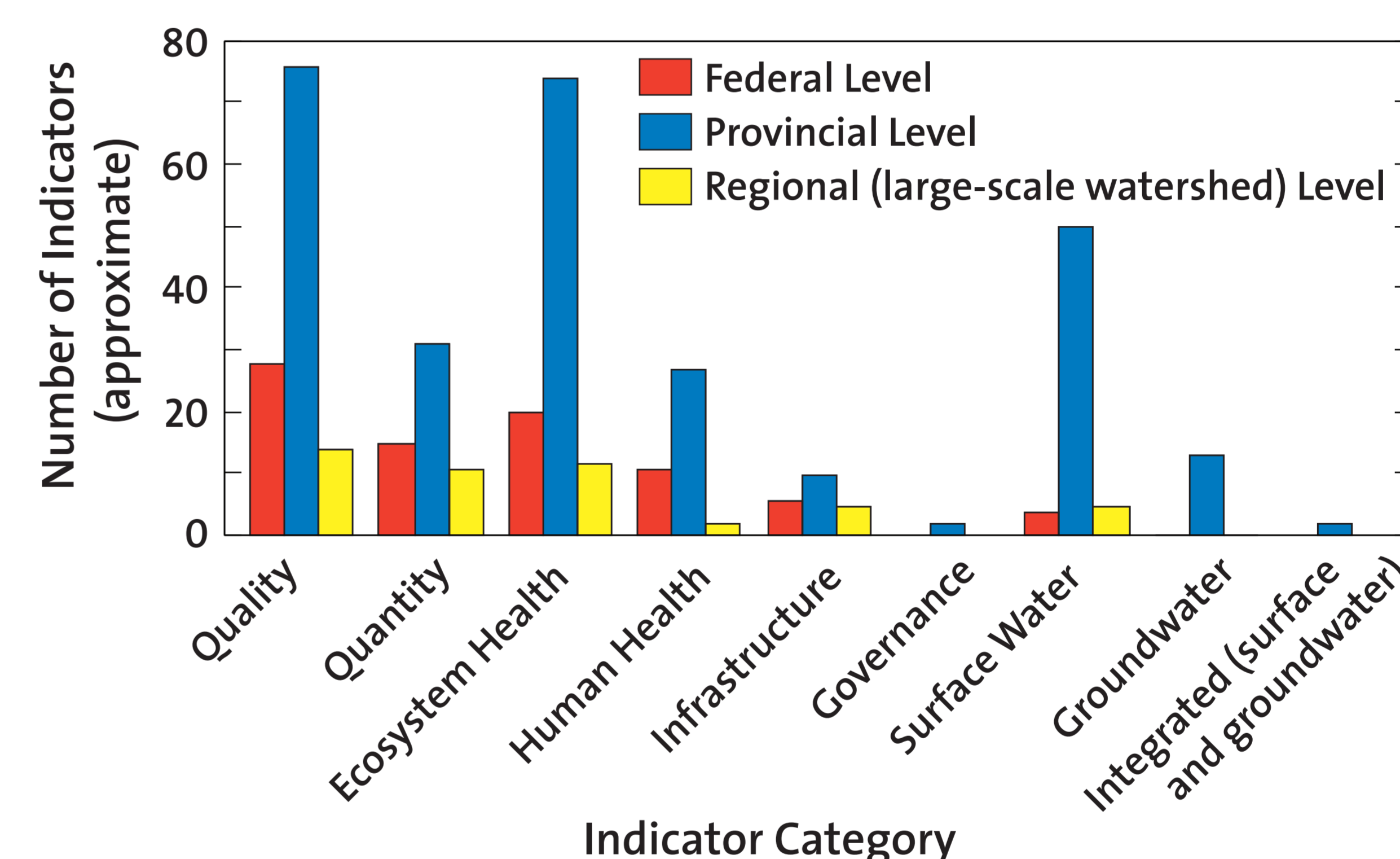
Fragmentation is evident at the provincial and territorial levels, largely attributed to each province or territory being responsible for water (except transboundary) and limited coordination occurring between provinces and territories. The application and use of fresh water-related indicators across the provinces or territories is inconsistent.

Results 3

The inventory was analyzed using five topics: resources (water quantity), ecosystem health, human health, infrastructure and governance. The following observations can be made regarding federal and provincial/territorial fresh water-related indicators:

- Water quality indicators dominate over water quantity indicators.
- There are significantly more ecosystem health indicators than human health indicators.
- Surface water indicators dominate over groundwater indicators.
- There are only a few integrated (surface and groundwater) indicators.
- Infrastructure indicators are limited in number and in scope (the main focus is level of wastewater treatment; few indicators reflect the condition of supply infrastructure)
- Governance indicators are sparse and poorly developed.
- Overall, indicators are narrowly focused (i.e. indicators do not enable decision-makers to assess the broader picture such as conflicting demands or land-water management practices).

Water-related indicators in Canada



Conclusions

- The current indicator landscape is too complex and indicator information is exceedingly hard to locate, apply and compare (particularly between jurisdictions)
- These indicators are not being widely or consistently used by water managers.
- The absence of a coordinated pan-Canadian approach in the development and application of indicators has resulted in certain indicators being duplicated, whilst insufficient attention is given to the development of indicators in other key areas.
- Indicator development has focused largely on water quality (ecosystem and human health), whilst quantity, infrastructure and governance indicators are inchoate.

Acknowledgements

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