

Water Innovation Initiative



Western Economic Diversification Canada
Diversification de l'économie de l'Ouest Canada



NRC-NSERC-BDC-WD Prairies Hub Committee

WaterTech, 2010





Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada

NRC-Industrial Research Assistance Program (NRC-IRAP)

What do we provide?



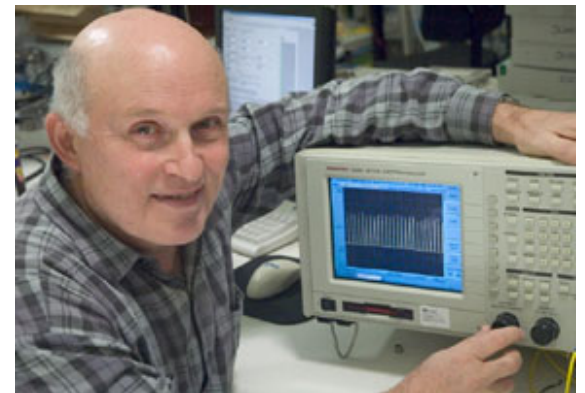
Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada

- **Customized technical and business advisory services** to firms to support and enhance their innovative R&D projects in science and technology.
- **Networking opportunities and linkages** to many other organizations to meet firms developmental needs.
- **Financial assistance** specifically towards specialized labour costs and clients typically co-invest at least 25% of the total project costs.



Médicago, Québec, QC



BTI Photonics, Ottawa, ON

**Small and medium-sized firms with up to 500 employees*

Agenda



Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada

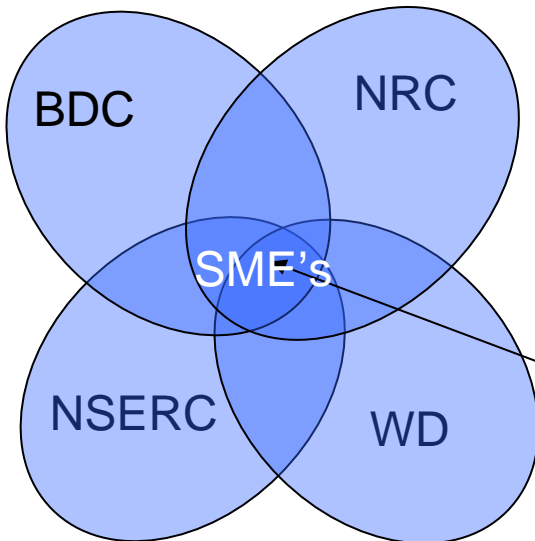
- Quick overview of the NRC-NSERC-BDC-WD collaboration
- Work of the Prairie Hub Committee
- State of water and water innovation activities
- Conclusions and recommendations

BDC-NSERC-NRC-WD Commercialization Opportunities



Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada



Commercialization is a complex process that integrates not only technological innovation but also business development and market insights

BDC-NSERC-NRC-WD
Commercialization
Opportunities

GOAL

A joint strategy to accelerate the commercialization of publicly-funded research that builds upon the individual strengths and complementarity of NRC, NSERC, BDC and WD

The organizations are committed to working together to:



Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada

- Strengthen Canadian SME's ability to use and profit from publicly funded expertise, technology and facilities
- Enhance the exploitation of the results of public sector investment in private sector R&D
- Increase the potential for success of new high-tech start ups

Focus on activities with high impact to support these guiding principles

Commercialization Challenges



Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada

- Increasingly industry is reaching out to universities and government labs to work with them in addressing their research opportunities and challenges.
- Currently it is difficult and time-consuming to pull together the collaborators from different sectors (university, government and industry) and to find appropriate funding sources.
- Lack of access/search tools for industry to identify opportunities and resources in research organizations and universities.
- Industry, through numerous other studies and reports, has echoed this finding and called for government to further de-risk technologies before they are commercialized.

Commercialization Challenges



Western Economic Diversification Canada
Diversification de l'économie de l'Ouest Canada

- Myriad of commercialization programs in Canada (federal and provincial) are challenging for SMEs to navigate – and the programs are not always easy to differentiate
- Industry finds the IP policy landscape within academic and research institutions to be a disincentive to collaboration and commercialization
- Market pull is a more effective means of transferring technologies to the private sector; we want to stimulate more “pull”
- Industry has identified the need for research results and technology to be beyond the proof-of-concept phase and for greater use of demonstration projects to facilitate the uptake of new research ideas and technologies by business.

Why a Water Innovation Initiative?



Western Economic
Diversification Canada

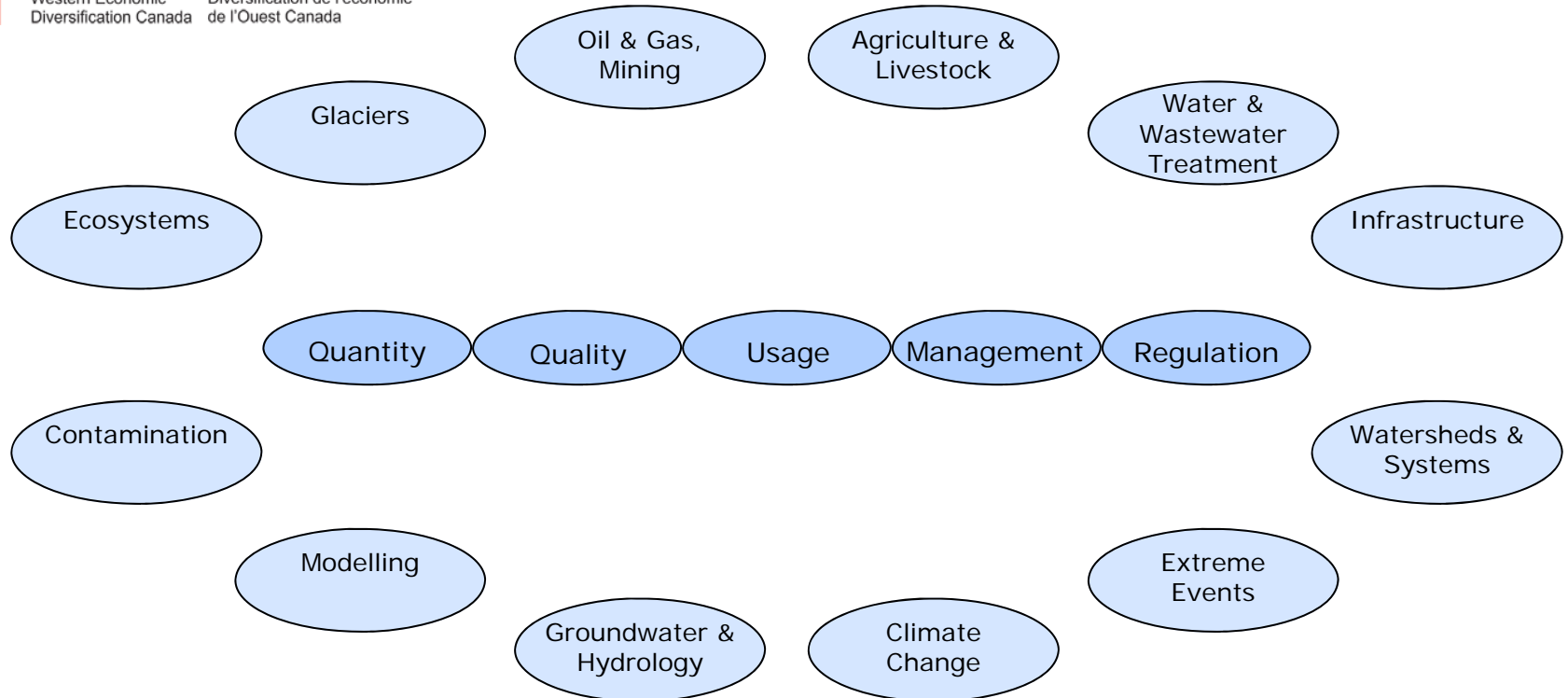
Diversification de l'économie
de l'Ouest Canada

- 1) There is a need and demand for water related research and technology development in Canada
- 2) There is a Global Market opportunity for innovative technologies and processes
- 3) There are many challenges to overcome (i.e. difficult to pull together collaborators and find funding,)



Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada



Water an Opportunity for Innovation

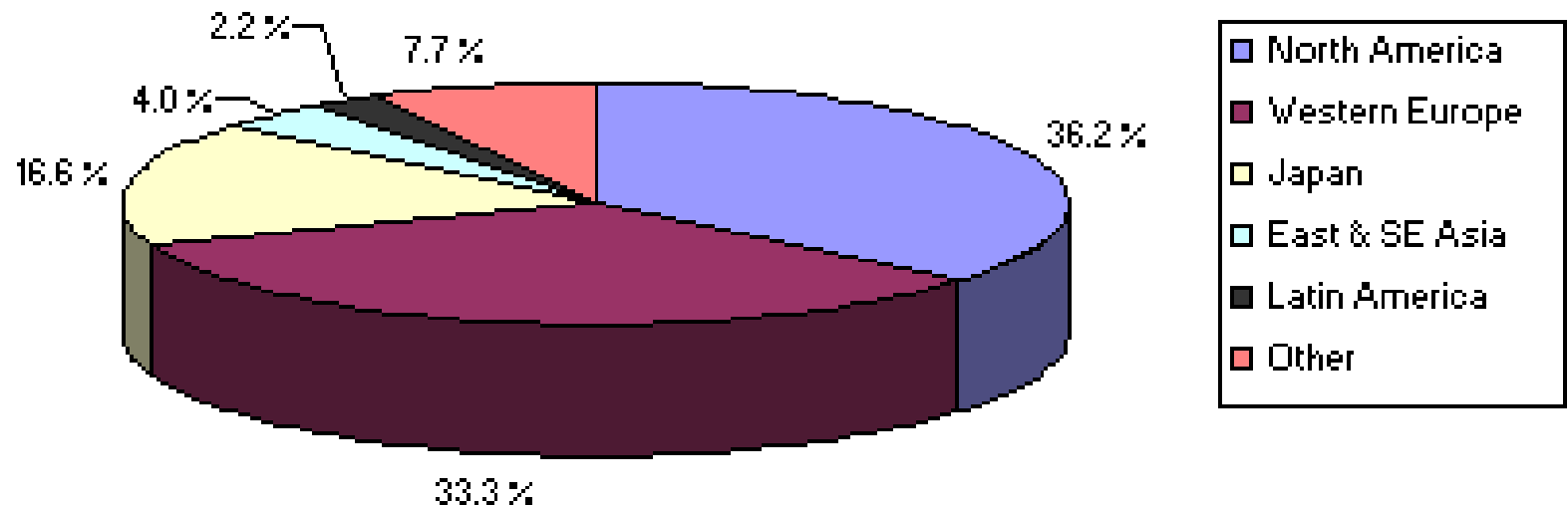
Global Water and wastewater treatment market expected to be \$682 billion dollars in 2010



Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada

Diagram 1 — Global Water/Wastewater Market Share
Forecasted by Region, 2010



Source: Global Environmental Markets & the UK Environmental Industry:
Opportunities to 2010, JEMU, 2002

Why a Water Research Document?



Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada

- Identified as a key cross-cutting priority by the Prairies Hub Committee
- Environmental Scan required for water research in the Prairies:
 - In all three sectors: academic, industrial and governmental
 - To develop a representative inventory of activities
 - To identify key players and stakeholders
 - To identify priorities, strengths, gaps and overlaps

**To understand what needs to be done
to stimulate water related innovation**

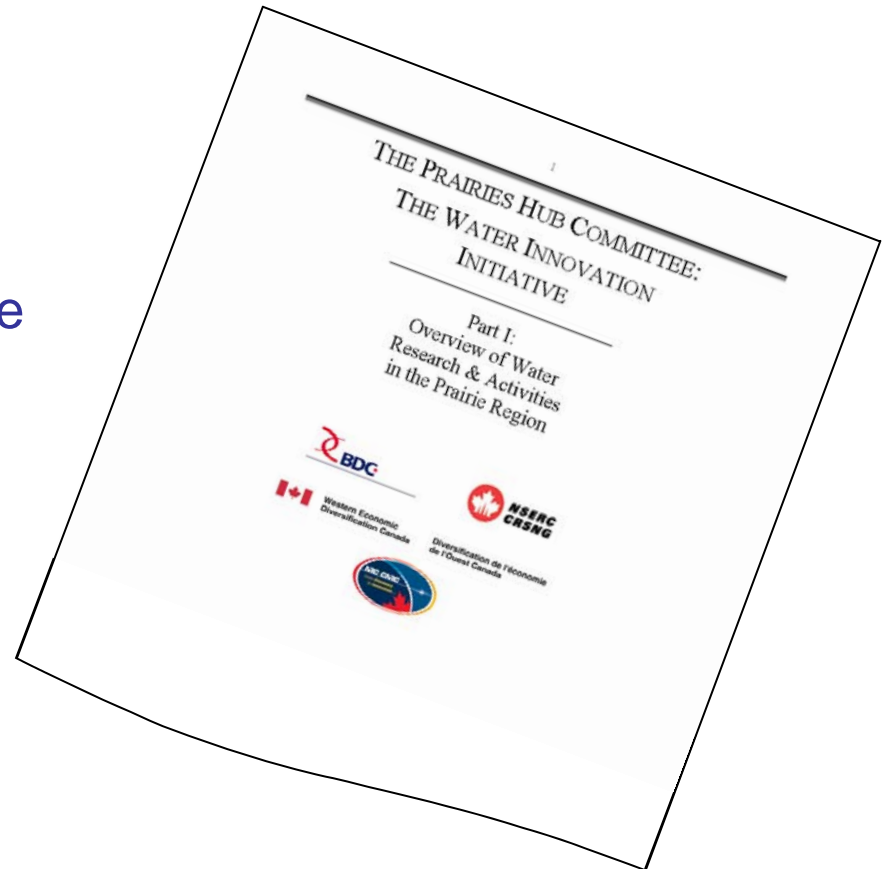
Part 1: Overview of Water Research & Activities in the Prairie Region



Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada

- The first document is a summary of the water activities occurring within the Prairie region, with an emphasis on research
- It is broken down into several categories



Part 1: Overview of Water Research & Activities in the Prairie Region



Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada

- Part 1 subsections:
 - Academic Research
 - College Programs
 - Government Research
 - Not-for-profits and NGOs
 - Industry
 - Research Groups
 - Events
 - Water Related Activities and Organizations

Part 1: Overview of Water Research & Activities in the Prairie Region



Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada



Part 1: Overview of Water Research & Activities in the Prairie Region



Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada

But...

- number of gaps between researchers, individual groups and organizations – the water research ecosystem appears to be “fragmented”

Part 2: Priorities, Needs and Gaps Analysis



Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada

- Part 2 of the Water Innovation Initiative document will provide an action plan for the Hub Committee
- Includes:
 - Interviews with key stakeholders
 - Priorities and Themes
 - Pan-Prairie Gaps & Overlaps

Present Themes and Priorities



Western Economic Diversification Canada
Diversification de l'économie de l'Ouest Canada

- **Academic:**
 - Water quality and quantity
 - Modeling
 - Resources & systems
 - Hydrology & groundwater
 - Wastewater treatment & infrastructure

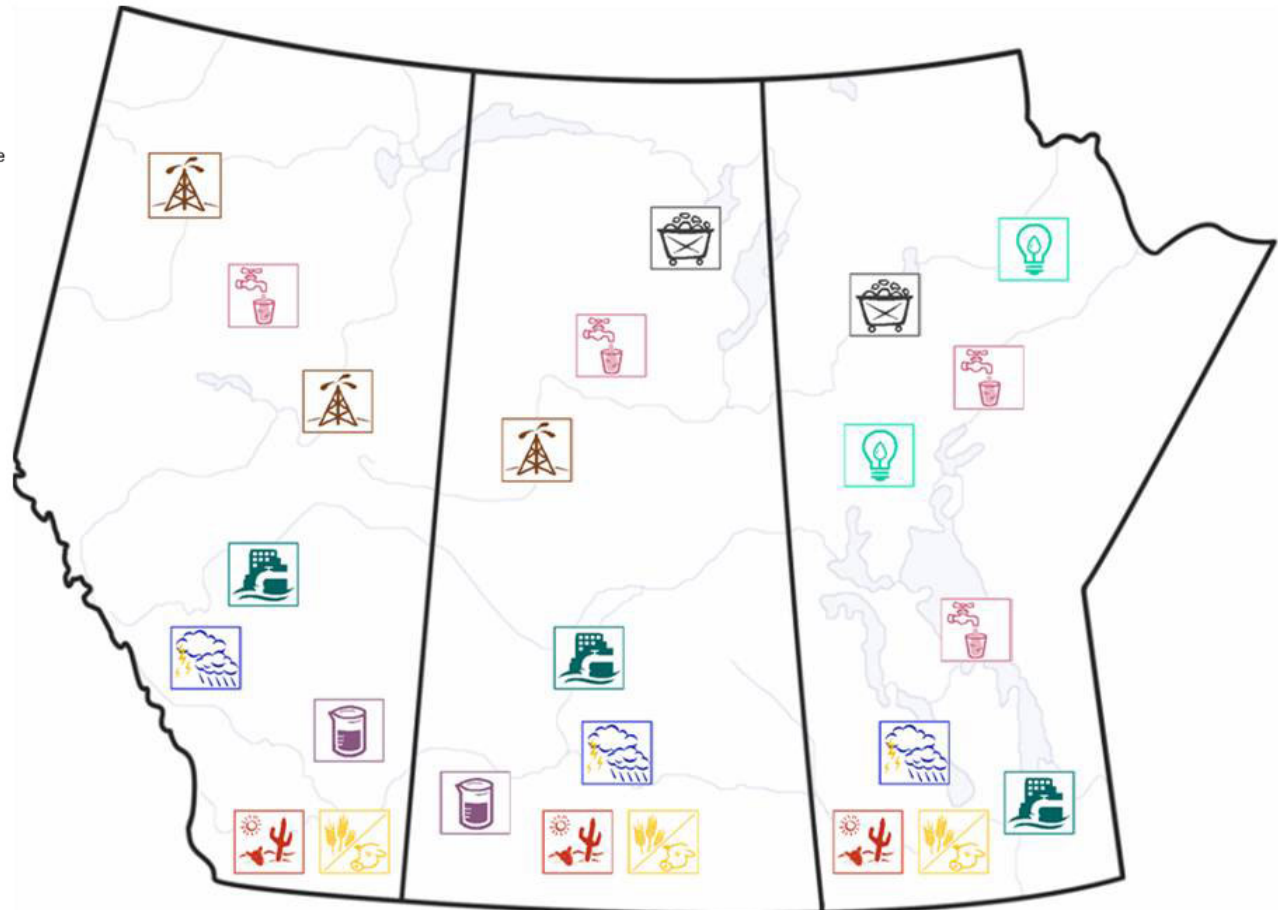
- **Industry:**
 - Treatment and reuse of waste streams from energy, mining, manufacturing and food processing
 - Water treatment for industrial use, municipal wastewater and storm water runoff
 - Rural water and wastewater management
 - In-situ soil and water remediation
 - Water quality testing

What are the issues?



Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada



Legend

Agriculture & Livestock

Drought

Extremes

Hydroelectric Generation

Mining

Oil & Gas

Treatment & Infrastructure

Water Quality

Water Quantity

Needs and Gaps Opportunities for Innovation



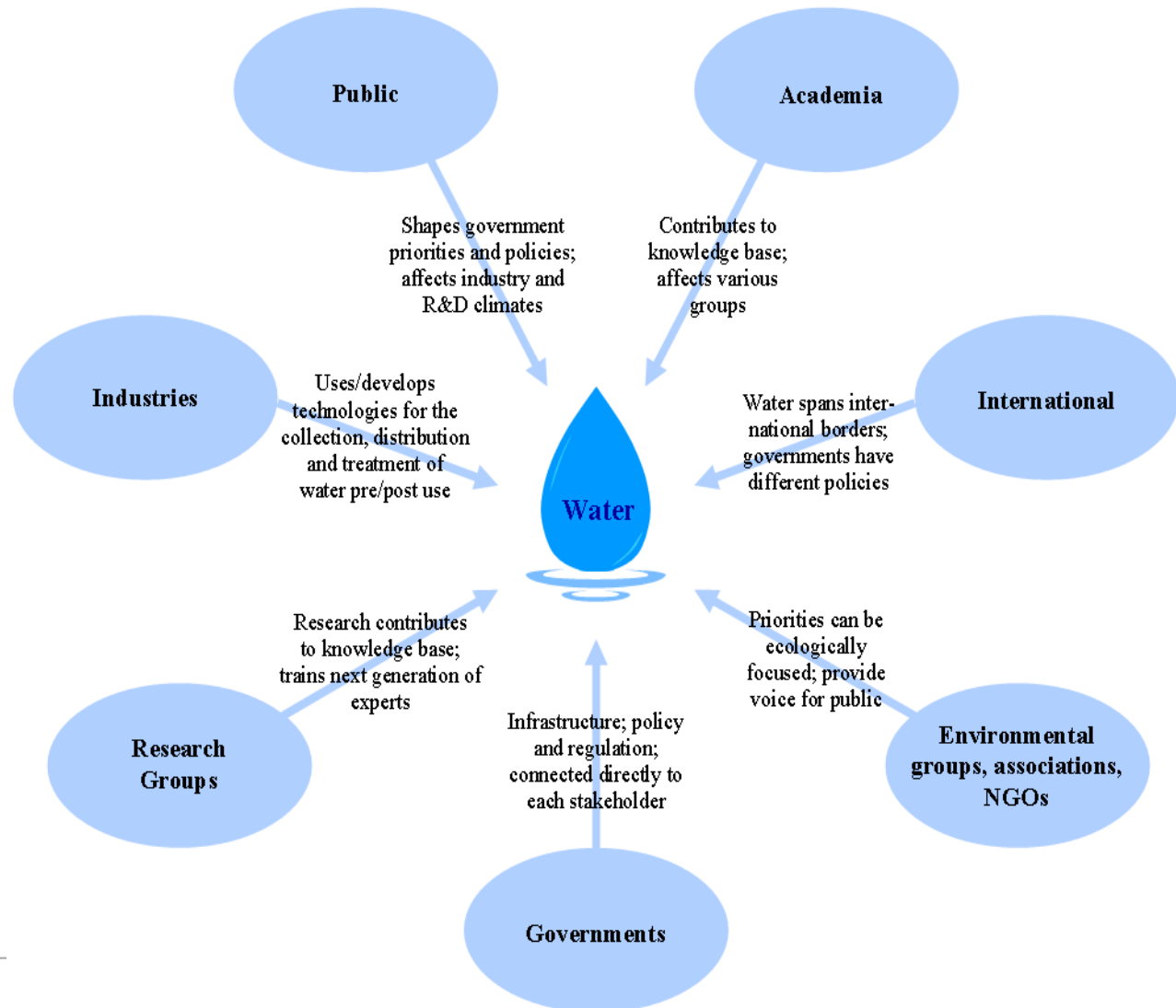
Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada

Three major themes:

- Complexity of water innovation from a holistic systems approach
- Quickly aging and deteriorating water infrastructure
- Bridging science-public policy divide

Find ways to bring a wider spectrum of stakeholders together



Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada

Next Steps



Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada

- ***What are the next steps needed to stimulate innovation in the Canadian water industry?***