



Water Related Risks and Opportunities: The view from a Bank

Sandra Odendahl

Director, Corporate Environmental Affairs

Royal Bank of Canada

May 26, 2009



Overview



- About RBC
- Why does a bank care about water
 - Risk Management
 - Corporate Responsibility
 - Opportunities
- Summary and What next



I. About RBC



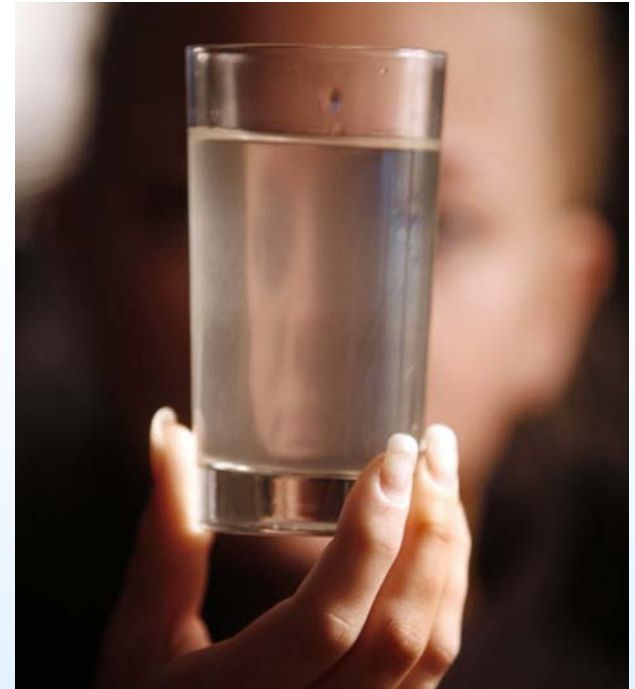
- Assets ~ \$723.9 billion; Market capitalization ~ \$62.8 billion.
- Personal and commercial banking, wealth management, insurance, corporate and investment banking, and transaction processing services
- More than 80,000 employees
- 17 million clients in 50 countries
- 1700 branches





II. Why Does a Bank Care About Water?

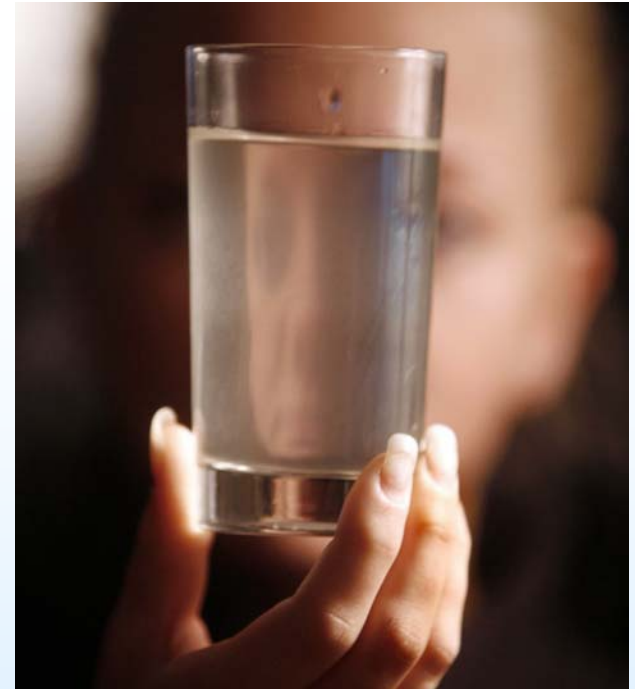
1. Risk Management
2. Corporate Responsibility
3. Business Opportunities





II. Why Does a Bank Care About Water?

1. Risk Management
 - Water-related risks and our clients
2. Corporate Responsibility
3. Business Opportunities

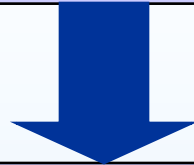




Risk Management Approach in Lending

Sector Assessment

- What sectors are sensitive to Water-related Risks?



Company Assessment

- Risks that result in **increased costs, business interruption or curtailed growth**



Transaction Review

Regional water information



Water isn't **equally** distributed





Water scarcity is regional.....



Region	Country	Water Use km3/yr	Renew. Water km3/year	Use as a % of renewable supply
Africa	Congo	0.36	832	0.04
	Algeria	6.07	14	43.40
North America	Canada	44.72	3300	1.36
	USA	477	3069	15.54
	Mexico	78.22	457	17.12
South America	Brazil	59.3	8233	0.72
	Uruguay	3.15	139	2.27
Asia	China	549.76	2830	19.43
	Thailand	82.75	410	20.18
	Israel	2.05	2	120.60

Reference: The Pacific Institute "Total Renewable Freshwater Supply, by Country (2006 Update)" <http://www.worldwater.org/data.html>

Unfortunately, national averages don't help if you are in a sub-region with little or no water



.....but also sub-regional, and local

- Renewable water supply varies by watershed and sub-watershed
- Water use varies within a region

.....So.....

- Average availability of water and average water use for a country, province, state, etc are not useful indicators of water stress
- Need watershed or river basin data

Water Issues are Local



Differences Between Oil and Water

Characteristic	Oil	Water
Finite Resource?	Yes	Yes, but practically unlimited at a cost
Renewable?	No	Yes overall, but maybe locally non-renewable.
Consumed in Use?	Yes. Chemically converted into heat, CO2 and other	No. Water is not “consumed” from the hydrologic cycle
Fixed stocks?	Yes. Oil is withdrawn from fixed stocks	Some. Water cycle renews natural flows
Long distance Transportability?	Yes. Economically viable	No. Not economically viable
Substitutes?	Yes. Energy from oil can be supplied by other fuels	Some. Not substitutable for many purposes



Sectors vulnerable to WrRs



1. Water Infrastructure
 - Dams, water utilities
2. Major Users of water
 - Agriculture, food and beverage, hydro power generation, steel, etc
3. Suppliers of equipment, materials and services to Water users
4. Water quality sensitive sectors
 - Sectors requiring specific input water quality (mineral water bottlers, semi-conductors manufacturers),
 - Sectors with large pollution loads in effluent
5. Sectors with water sensitive supply chain or customers
 - Eg: Food and beverage requires irrigated agriculture, aluminum requires hydroelectric power
 - Demand for swimming pools, washing machines, boats may “dry up” in water scarce situation

WrRs are highly location specific, so Sector analysis is not enough

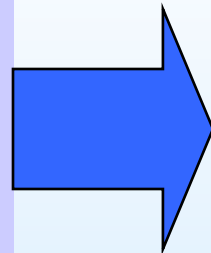


Water-Related Risks for Companies

Risk Framework

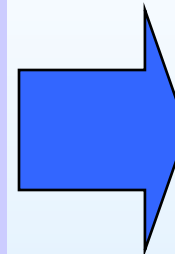
Water Risk Drivers

- Supply scarcity
- Poor water quality
- Flooding
- Access concerns



Water Risks

- (Physical)
- Political
- Regulatory
- Reputation



\$ Impacts

1. Business Interruption
2. Increased costs
3. Limits to growth



Water-Related Risks for Companies

What Are the Risks?

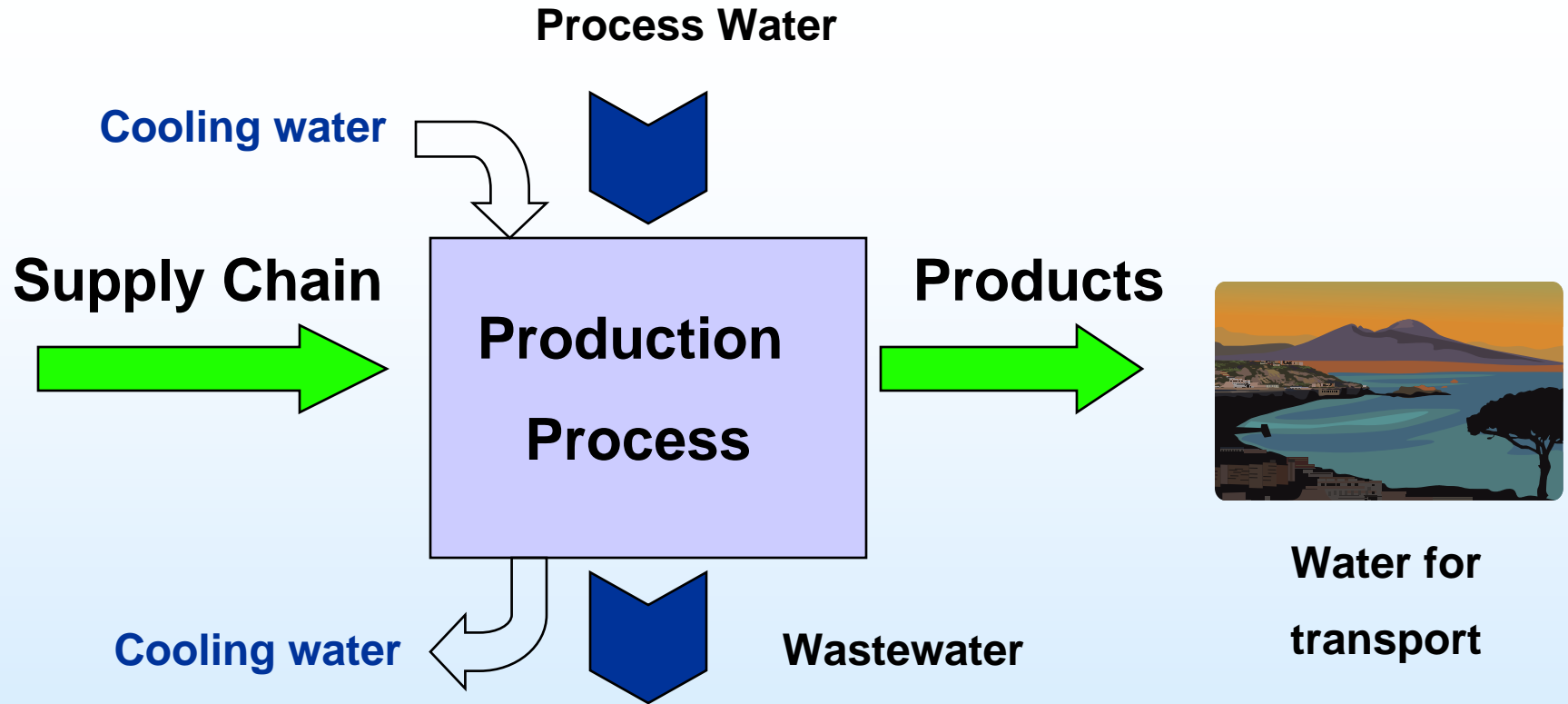


- **Physical Risk**
 - Unanticipated water shortages
 - Unanticipated contamination of intake water
- **Political Risk**
 - Expropriation of privately owned utility
 - Revocation of water rights or contracts
 - Changes to taxation
- **Regulatory Risk**
 - Water withdrawal caps
 - Changes to water permit availability and cost
 - Changes to effluent standards
 - Effluent discharge permit availability
 - Changes to water tariffs
- **Reputational Risk**
 - Community opposition to industrial water taking



Water-Related Risks for Companies

Assessing WrRs for a Company or Facility





Water Risk Assessment of Companies

Inputs and Supply Chain

- Can the company demonstrate secure access to water?
- Does the company know which parts of its supply chain are most vulnerable to water risks?
- Are any of the company's operations in a water-stressed area?
- Are water-withdrawal caps in place or planned where the company's facilities operate?
- Does the company have contingency plans to respond to water supply disruptions?
- Does the company have a track record of positive community relations?



Water Risk Assessment of Companies: Process

- If facilities are in a water-stressed area, is the company investing in water efficiency measures?
- What is the company's water cost as a % of cost of goods sold?
- What is the company's net water use as a % of water availability?
- Is the company materially in compliance with effluent regulations?
- Are significant changes to effluent regulations anticipated?
- What is the company's record regarding spills over the past 5 years?



Water Risk Assessment of companies: Products

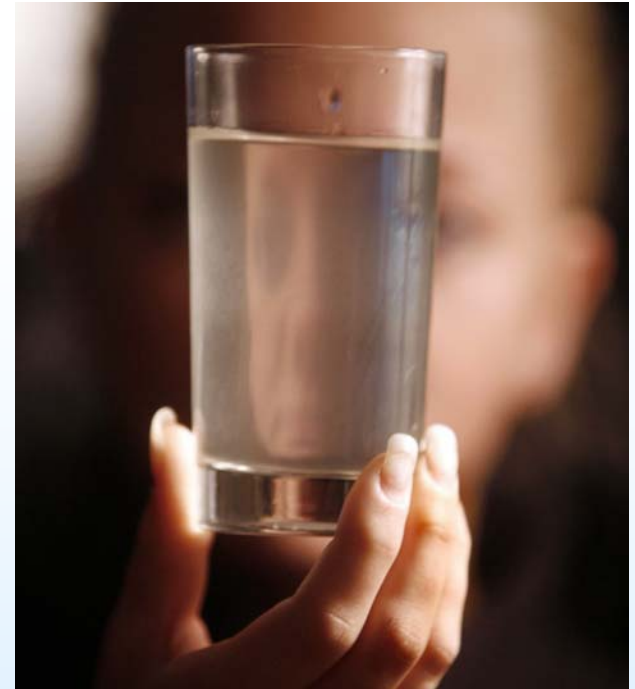
- Is a significant amount of water needed to use the product or service?
 - If so, is water scarcity an issue in the company's markets?
- Is water required to transport the products?
 - If so, are there concerns associated with the use of water for transportation?

Results must be combined with other assessments including broader environmental risk, quality of management, financial analysis, legal review, etc



II. Why Does a Bank Care About Water?

1. Risk Management
2. Corporate Responsibility
 - The Blue Water Project
3. Business Opportunities





Our Environmental Blueprint



3 Goals:

- i. Reduce the intensity of our environmental footprint
- ii. Promote environmentally responsible business activities
- iii. Offer environmental products and services

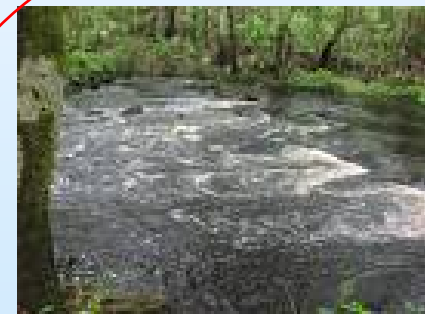
3 Priority issues:



Climate Change



Forests/Biodiversity



Water



RBC Blue Water Project



- Launched in October 2007
- Our “Signature” environmental donations cause
- Water Commitments
 - \$50 million in grants over 10 years to support watershed protection and access to clean drinking water.
 - Create awareness for employees and clients about the value of water.
 - Encourage and support water-tech sector and water services businesses.



Blue Water Project Grants



\$50 million over 10 years from RBC Foundation

VISIONARY GRANTS

- Global organizations
- vision, foresight and innovation
- for programs around the world related to watershed preservation, access to safe drinking water, and education and awareness.

LEADERSHIP GRANTS

- \$25,000 to \$500,000
- watershed protection and/or access to safe drinking water
- for regional, national or trans-border organizations
- any of the countries in which RBC is located.

COMMUNITY ACTION GRANTS

- \$1,000 to \$5,000
- focused on watershed protection
- available to local or community organizations
- Canada, the US or the Caribbean

Application guidelines and information: rbc.com/bluewater



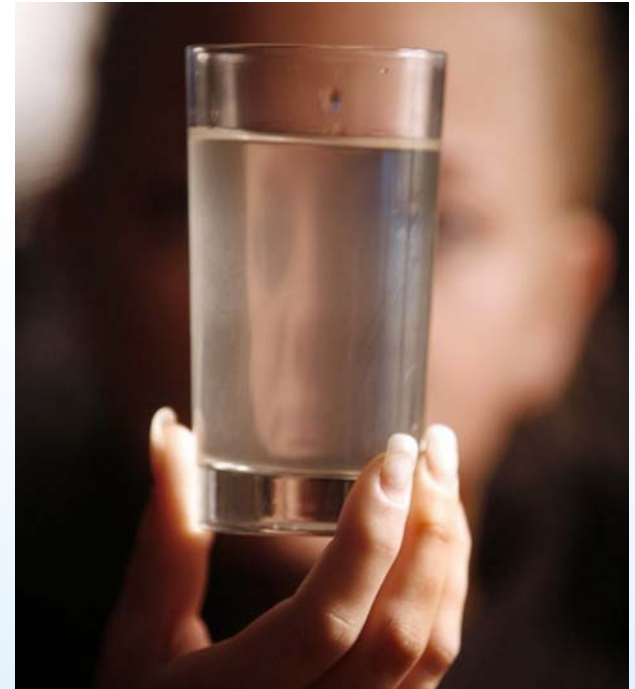
- Capacity Building
 - Number of service/ training opportunities provided to community members, and type
 - Number of staff who received training in relation to this programs
- Watershed improvements
 - Area of wetlands created, restored or rehabilitated
- Clean drinking water impacts
 - Number of households with improved drinking water quality
 - Number of households with more reliable supply of clean water
- Community Impacts
 - Number of economic opportunities created in your community (new jobs created, businesses started, etc)
 - Number of people attending project events

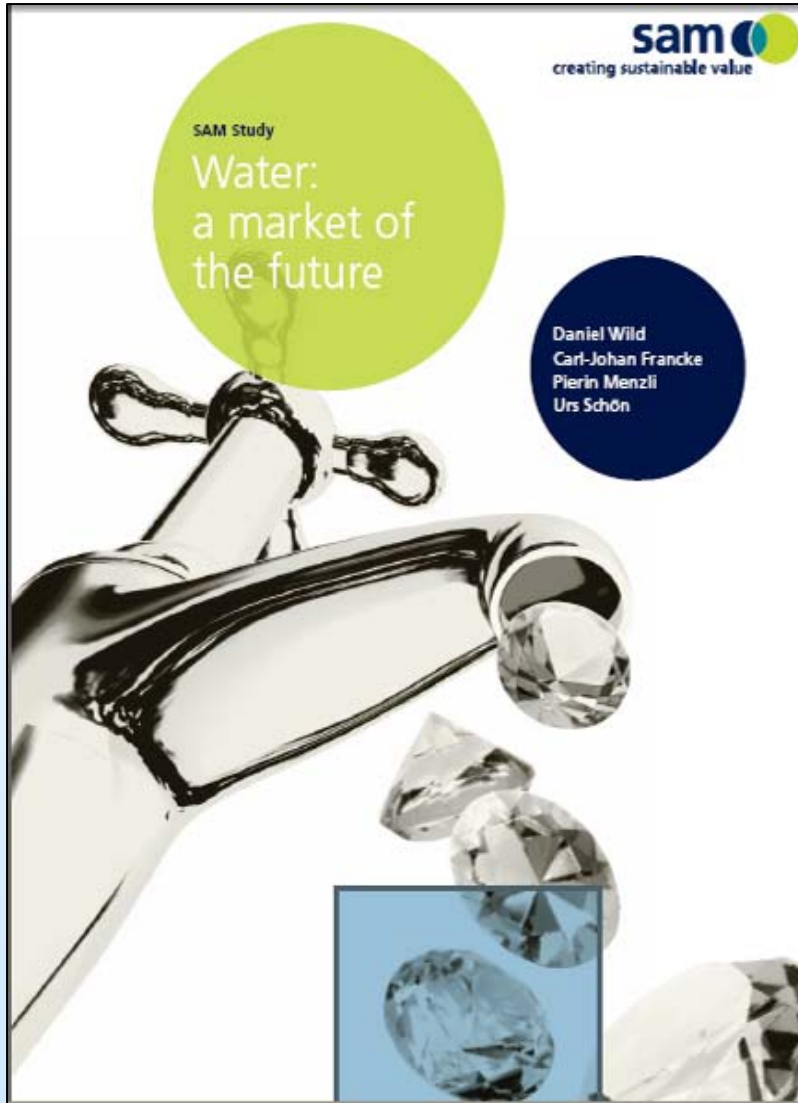
**June 2009 Blue Water Leadership Grant Applications
currently under review**



II. Why Does a Bank Care About Water?

1. Risk Management
2. Corporate Responsibility
3. **Business Opportunities**
 - Lending, project finance, asset management and investment banking





Water industry is growing

- **\$400 to \$500 billion US (currently)**
- **\$1.6 trillion US in the next ten years**
- **\$22.6 trillion in the next 25 years**



Opportunities worldwide



Investment clusters
with “promising
potential”

- Distribution and management
- Advanced water treatment
- Demand-side efficiency

In the US:

- **\$1 trillion** should be spent during the next 20 years upgrading existing infrastructure, with **\$277 - \$480** billion for repairing and improving drinking water

In Asia:

- **\$400** billion should be spent to bring dam capacity up to U.S. levels.



III. Summary and What's Next

- Water issues are global, regional and local
- Water issues give rise to risks to companies in many sectors, depending where they are located
- RBC is interested in water for 3 reasons: risk, opportunity, corporate citizenship
- Coming soon:
 - Incorporating water related risk analysis in Corporate lending risk policy
 - Next round of Blue Water leadership grants will be announced in June 2009
 - Exploring how to support innovators in the water area



What's Next

Imagine H2O Innovator's Challenge

- \$50,000 USD for business plans promising the greatest breakthroughs in water efficiency plus
 - √ business and legal support
 - √ access to a network of partners, customers and financiers
- 2010 competition: water efficiency in agriculture, commercial, industrial or residential applications.
- Entry window opens in September, 2009
- Winners will be announced in early 2010

www.imagineh2o.org



Thank You!

Questions?

sandra.odendahl@rbc.com

www.rbc.com/environment