LOCAL WATER SECURITY

Date: September 19, 2024

Disclaimer: This briefing note contains the encapsulation of views presented by the speaker and does not exclusively represent the views of the Canadian Association for Security and Intelligence Studies.

KEY EVENTS

On September 19th, 2024, Dr. Corinne Schuster-Wallace presented *Local Water Security*. The presentation was followed by a question-and-answer period with questions from the audience and CASIS Vancouver executives. The key points discussed were:

1. **Insecurity**: Climate-driven water insecurity heightens community risks, exposing people to droughts, floods, and infrastructure breakdowns.
2. **Wicked Problems**: Issues like climate change and water security are complex, interconnected, and lack simple solutions, often complicated by regional demands and limited coordination.
3. **Complex Systems**: Human and natural systems are closely linked, so climate disruptions impact water, health, and economic stability in interconnected ways.
4. **Syndemics**: Environmental stress and social inequities compound health crises, underscoring the need for holistic solutions.

NATURE OF DISCUSSION

Dr. Schuster-Wallace examined how environmental changes, particularly those driven by climate change, contribute to inequities, noting that shifting hydrological patterns, such as precipitation variability and glacial melt, strain both natural and human systems and affect water quality and availability. The speaker also discussed the risks associated with aging centralized water infrastructure. She pointed out the cascading economic, health, and social impacts that arose from water scarcity and the local conflicts that might emerge in such situations. The presentation emphasized the need for adaptive, collaborative water management strategies that involved cross-disciplinary cooperation, community engagement, and tailored, strengths-based policies.

BACKGROUND

Presentation

Climate and hydrological changes are creating a "new normal" of water insecurity, with unpredictable cycles and declining quality that threaten global infrastructure, ecosystems, and livelihoods. Water availability is increasingly volatile due to irregular rainfall and shrinking snow and glacier reserves, challenging everything from drinking water access to agricultural planning. Extreme events, from floods to droughts, mobilize or concentrate contaminants, stressing water treatment systems. Recent years, including record-setting extremes in Canada, highlight these shifts as once-abnormal weather becomes routine. These changes require urgent adaptation, as uncertainty about future water resources demands proactive efforts to secure human and environmental resilience.

Water resource conflicts arise from competing demands across social, economic, and jurisdictional lines, both within and between nations. Regions face complex trade-offs in water allocation for agriculture, power generation, municipal use, and industry, with consequences for infrastructure and community resilience. Extreme weather events and aging infrastructure challenge water access, impacting health, livelihoods, and local economies. Limited water supply can also trigger social tensions and violence, as seen in rural communities and conflict-prone areas. Climate change exacerbates these pressures, particularly in marginalized and Indigenous communities, who bear the brunt of large-scale development projects like hydroelectric dams. Though international treaties often foster water cooperation, local disputes and inequities persist, highlighting the need for collaborative and inclusive water management to mitigate risks and build resilience.

Climate change threatens the predictability, quality, and availability of water, disproportionately impacting underserved communities, particularly those with intersecting identities, such as non-binary genders, women, people living with disabilities, low socio-economic status, Indigenous, Black, and People of Colour. Water inequities manifest in limited access to safe drinking water, insufficient infrastructure, and vulnerability to environmental degradation. Effective solutions must consider cultural values and community needs to ensure that water security measures are both socially and environmentally suitable. This requires blending infrastructure improvements with educational initiatives, risk-informed management, and addressing security risks to water systems. To develop

equitable, responsive solutions, interdisciplinary collaboration and accessible, disaggregated data are essential.

Question and Answer

How can integrating different knowledge systems (such as the indigenous and scientific perspectives) enhance our understanding of water- related health issues in rural and marginalized communities, and what role does this integration play in promoting equitable water resource management?

Braiding Indigenous Knowledge with Western science enhances equitable water management by addressing water-related health issues through holistic perspectives. Indigenous frameworks prioritize mind, body, emotion, and spirit, contrasting with the narrower biomedical approach. Effective water governance should center Indigenous principles, uphold data sovereignty, and foster nation-to-nation dialogue, emphasizing that Indigenous and scientific knowledge can converge and diverge without one superseding the other. This approach supports culturally and ecologically appropriate solutions for communities, creating a framework that respects both traditional values and scientific insight.

What do you believe is the best way to balance maintaining good relationships with Indigenous groups, respecting their land and water rights while navigating growing global political tensions and worry regarding water scarcity?

Building respectful, collaborative relationships with Indigenous groups requires adapting research processes to honor their timelines, priorities, and cultural protocols. Successful collaboration starts with building trust through conversation, which grows into friendships and partnerships. Programs like Global Water Futures highlight the need to align grant deadlines and proposal processes with Indigenous seasonal activities and customs, ensuring fair representation and active involvement from Indigenous partners in water research. Indigenous communities emphasized that research should prioritize community wellness, follow local protocols, provide equitable funding for Traditional Knowledge Holders and community researchers, and respect intellectual property rights. By creating space for Indigenous voices and honoring the OCAP principles of ownership, control, access, and possession, partnerships can better address water rights and stewardship amidst global political challenges.

KEY POINTS OF DISCUSSION

- **Water is changing**: Climate change is altering hydrological cycles, creating unpredictable water availability, declining quality, and extreme events that challenge global infrastructure, ecosystems, and livelihoods.
- **Risks and conflicts**: Competing demands for water across social, economic, and jurisdictional lines fuel resource conflicts, strain aging infrastructure, and can exacerbate social tensions.
- **Underserved communities**: Water insecurity disproportionately impacts Indigenous and low-income communities, necessitating solutions that integrate cultural values, local needs, and equitable access through collaborative, data-driven water management.

FURTHER READING

CASIS-Vancouver. (2021). Water Security as an Emergent Opportunity in Canada. *The Journal of Intelligence, Conflict, and Warfare*, *2*(2), 117–121. https://doi.org/10.21810/jicw.v2i2.1063

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Nath, B. D., Schuster-Wallace, C. J., & Dickson-Anderson, S. E. (2022). Headwater-to-consumer Drinking Water Security Assessment Framework and Associated Indicators for Small Communities in High-income Countries. *Water Resources Management*, *36*. https://doi.org/10.1007/s11269-021-02985-2

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