Funding Proactive Restoration of Wetlands on Agricultural Land

TO INCREASE MUNICIPAL FLOOD RESILIENCE

JURISDICTIONAL CHALLENGES TO CLIMATE RESILIENCE

The City of Windsor in Ontario is currently the highest per capita loss area for flooding in Canada. Why? There are several reasons. Subdivisions were built directly on drained wetlands. It rains frequently, and there are often sudden, intense downpours. Also, 95% of the wetlands upstream have been drained for agricultural purposes. Consequently, Windsor is prone to high runoff both in spring and during extreme precipitation events.

Windsor is disadvantaged in that it cannot regulate land-use management upstream of the city. Much of this land is in private hands and used for agricultural purposes. And although many landowners have fields that are unproductive or fallow, they are not incented to put these to uses that could protect their downstream neighbours.
LEVERAGING INSURANCE FRAMEWORKS TO PROTECT NATURE WHEREVER NATURE PROTECTS US

An insurance-based framework can be structured to make the necessary linkages across jurisdictions. As illustrated in the graphic below, such a framework can incent the proactive restoration and conservation of wetlands that would act as storage basins and reduce the pace of spring runoff.

A NATURE-BASED INSURANCE SOLUTION CAN BE STRUCTURED BY CONSIDERING FIVE KEY COMPONENTS:

- WHAT ASSET IS BEING PROTECTED?
- WHAT IS THE PERIL THE ASSET NEEDS PROTECTION FROM?
- WHAT NATURAL ASSET PROVIDES RESILIENCE?
- WHO BENEFITS FROM PROTECTION, AND WHO SHOULD PAY FOR IT?
- WHO IS BEING PAID AND BY WHAT MECHANISM?

In the case of Windsor or a similar community surrounded by private agricultural lands, the components could look something like this:

- PUBLIC INFRASTRUCTURE
- SPRING FLOODING
- WETLANDS ON PRIVATE AGRICULTURAL LAND
- MUNICIPALITY OF WINDSOR
- LANDOWNERS COMPENSATED THROUGH AN INSURANCE CONTRACT THAT ALSO PROVIDES FINANCIAL RESILIENCE TO WINDSOR

HERE IS HOW IT COULD WORK.

The municipality takes out a parametric or indemnity policy to protect its public infrastructure thereby transferring part of its risk to the insurer. A parametric policy is a type of insurance policy that pays out based on a catastrophic trigger such as a specific measurement of river flow rate, river level, amount of precipitation or wind speed. Funds can be used at the discretion of the municipality and are usually paid within two weeks of an event. An indemnity policy compensates for specific damage to the asset at an agreed-upon value, and requires a confirmed assessment of loss before payments can be made.

The insurer prices the policy in a manner that incents resilience investment over the course of the policy term. A trust fund is established (or some other pooled fund mechanism) to hold the fund and manage the resilience activities. To lower its assumed risk, the insurer can also contribute to risk management and resilience building activities.
Currently, public infrastructure losses due to flooding are backstopped by provincial and federal disaster financial assistance (DFA) programs (85% of the funds these programs pay out are for public infrastructure losses). Therefore, these governments hold a portion of the risk for flood events. To lower their portion of risk, these governments could also pay into the trust fund. (Payments may come from programs other than DFA). The result is a trust fund capitalized by a range of public and private interests. This is called a “blended finance” solution.

**RESILIENCE ACTIONS FUNDED BY AN INSURANCE-BASED PARTNERSHIP**

The trust fund is first used to pay for studies into local hydrology and how/where wetlands may maximize resilience and other co-benefits. The fund can then pay for the restoration and conservation of wetlands on private lands and to compensate landowners for the use of their land. Compensation payments could be directed through ALUS Canada or another intermediary according to the resilience value associated with the wetland and a schedule of milestones or targets for restoration and conservation. Ideally, this process would also be a source of local job creation.

Upon policy renewal, the pricing of the insurance contract would take into account the lower risk resulting from the restoration of wetlands and any other measures taken by the municipality. A new round of investment into the trust fund (recapitalization) could take place at that time. A multi-year policy (3-5 year) is recommended, to encourage the longer-term commitment of all parties.

**COMBINING EFFORTS FOR GREATER SCALE AND IMPACT**

A variant of this model could leverage a watershed approach. Should several municipalities within a watershed wish to collaborate, they would enjoy the benefits of risk diversification. Several municipalities could collaborate in taking out an insurance contract together, which would be priced lower on average than it would for any single municipality, as long as their risk is not correlated. Since flooding would not affect every municipality simultaneously or to the same extent (due to river hydrology or local rainfall distribution), the flood risk would be spread out over multiple locations. In addition, by taking a watershed perspective, municipalities have a broader range of options for siting restored wetlands, maximizing their value and broadening the distribution of compensation to landowners in the area.

The watershed approach allows the municipalities to pool their premiums within the trust fund. The trust fund could be the actual policyholder – as per the pioneering approach used by the public and private sector stakeholders in Quintana Roo, Mexico to protect the local coral reef. This approach also addresses free-rider issues and allows smaller economies to participate in a solution they may not otherwise be able to afford. For further details, see the accompanying background document: *Nature-Based Insurance for Watershed Protection*. 