

# Saskatchewan's Climate Resilience Measurement Framework

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# PRESENTATION OUTLINE

## 1. The Province of Saskatchewan

## 2. Background

*Why and how the Framework was developed*

## 3. The Framework

*Resilience Measures and Targets*

## 4. Reporting Approach

## 5. Summary

### Saskatchewan's Climate Resilience Measurement Framework



#### *A Prairie Resilience Commitment*

The Government of Saskatchewan launched *Prairie Resilience: A Made-in-Saskatchewan Climate Change Strategy* in December 2017. The comprehensive climate change strategy is designed to make Saskatchewan more resilient to the climatic, economic and policy impacts of climate change. The strategy focuses on the principles of readiness and resilience to support the province and its people, reduce greenhouse gas (GHG) emissions, and prepare for changing conditions – such as extreme weather, drought or wildfire.

*Prairie Resilience* commits the provincial government to “track and report across all areas of focus to convey progress in making our province more resilient to climate change.” The Climate Resilience Measurement Framework includes 25 indicators in five key areas, to measure progress in the face of a changing global climate.

[saskatchewan.ca/climate-change](https://saskatchewan.ca/climate-change)



# THE PROVINCE OF SASKATCHEWAN

Saskatchewan has a growing agricultural and resource-based economy.

## ***Agriculture***

40% of Canada's cultivated farmland in SK.

SK is an important grain-producing region - world's top exporter of lentils and dried peas.

## ***Forestry***

Over half of SK (34 M ha) is forested (11.7 M ha commercial forest zone).

## ***Energy:***

SK produces >1/3 of Canada's primary energy (including oil & natural gas).

## ***Mining:***

SK has the largest potash industry in the world and >22% of the world's primary uranium production in 2016.

# BACKGROUND

- *Prairie Resilience: A Made-in-Saskatchewan Climate Change Strategy* was released in December 2017.

**Resilience is the ability to cope with, adapt to and recover from stress and change.**

- Resilience is the over-arching focus of the province's climate change strategy.
- *Prairie Resilience* was designed to make Saskatchewan more resilient to the climatic, economic and policy impacts of climate change.

# ***Prairie Resilience***

Prairie Resilience includes 40+ commitments in 5 key areas:

- Natural systems
- Physical infrastructure
- Economic sustainability
- Community preparedness
- **Measuring, monitoring and reporting (Industry Reporting and Government Reporting)**

- *Prairie Resilience* (and the Framework) is a provincial government-wide initiative.
- There are 14 Government of SK ministries and Crowns involved.

# How is climate resilience measured?

- Climate resilience is multi-dimensional.
- Saskatchewan's Framework was informed by a “capital asset” approach.  
*(5 major forms of capital: Natural, Physical, Economic, Social, and Human)*
- The Framework includes five key areas with multiple measures.
- Each measure has a quantitative target and will be reported on annually.

# Selecting Measures

## Considerations:

- Measures of resilience rather than climate change impacts
- Inclusion of measures across five areas
- Data availability and resources for tracking and reporting
- Informed by sectoral experts and stakeholders

# Engagement

Timeline	Details
December 2017	Prairie Resilience was released.
February and March 2018	A total of 6 plenary sessions (multi-stakeholder groups) held in Saskatoon and in Regina
July 2018	Plenary Session (multi-disciplinary) held with over 100 stakeholders participating in person and/or online.
July to September 2018	First Nations and Métis Engagement on provincial climate change strategy, including the Framework
August to September 2018	Bi-lateral meetings with stakeholders (academics, eNGOs, business and municipal organizations)
November 2018	Release of Saskatchewan's Climate Resilience Measurement Framework
2019	Framework Implementation and First Progress Report

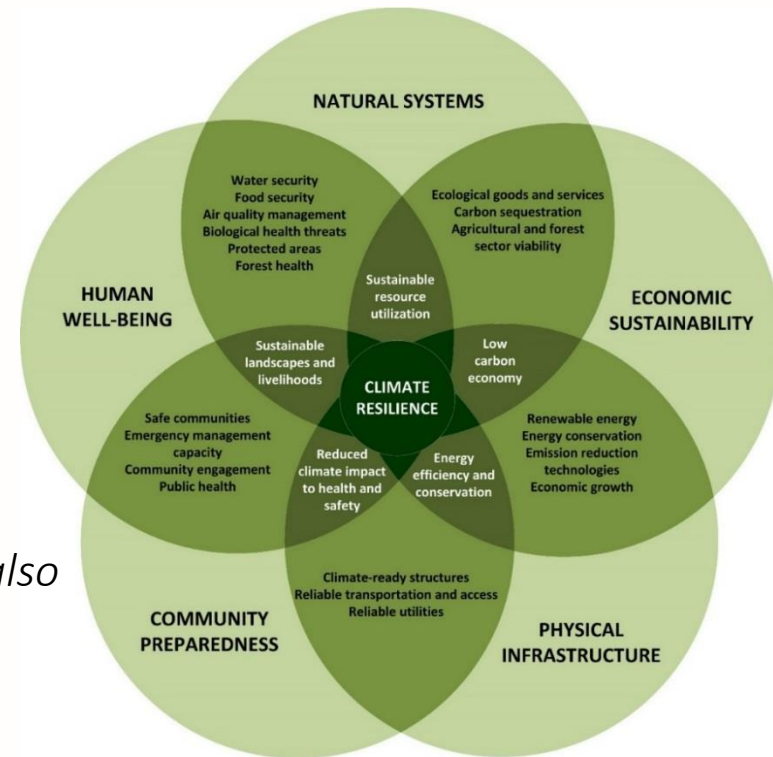


# THE FRAMEWORK

- ***Saskatchewan's Climate Resilience Measurement Framework (the Framework)*** was released in November 2018.
- The five key areas are interconnected and promote resilience through interactions that benefit each other.

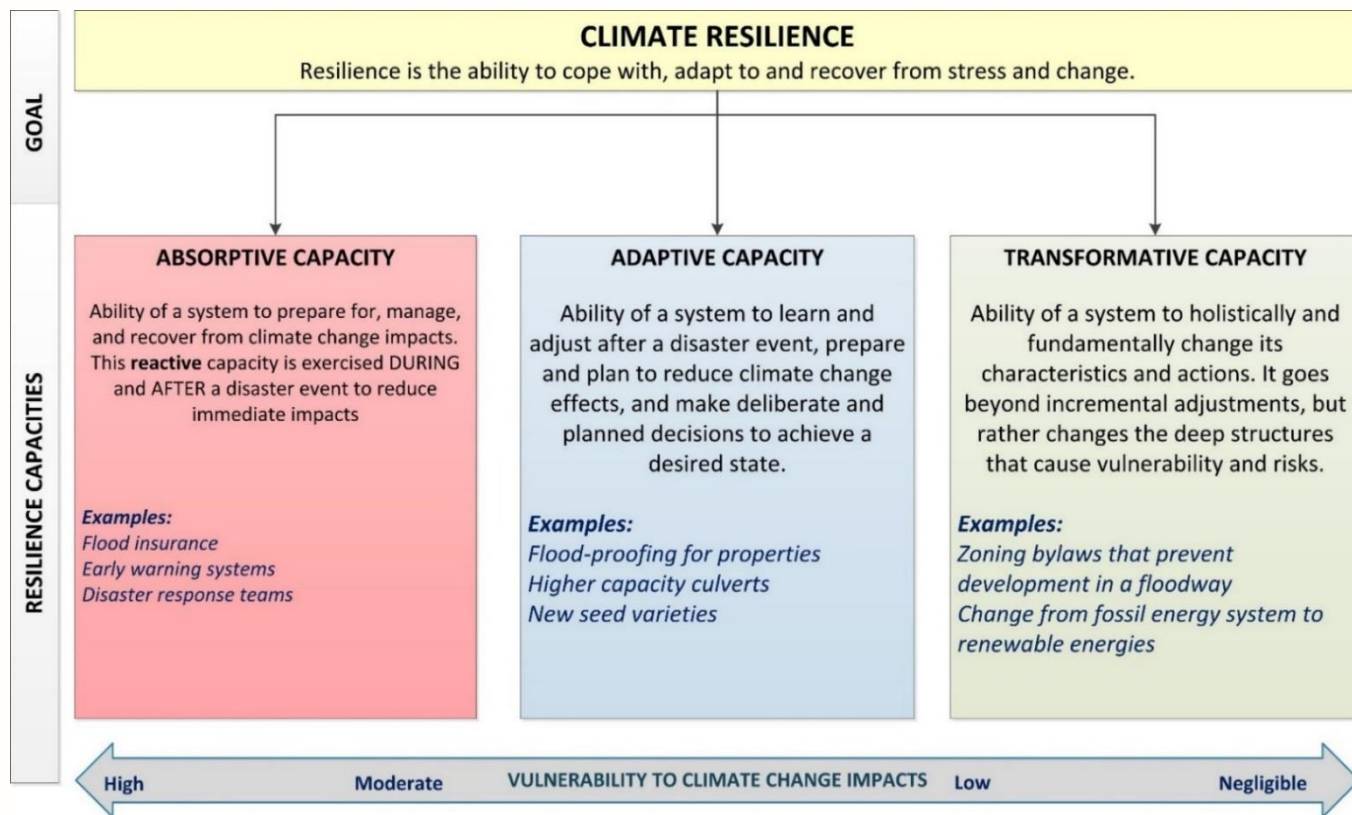
## *Examples:*

- *Responsible management of natural resources sustains habitats for plants and animals while also providing ecological goods and services that supports the economy and quality of life.*
- *Economic sustainability increases human wellbeing.*








**Five key areas of focus**

# Types of Resilience Capacities



The Framework aims to strengthen all types capacities, with more focus on adaptive and transformative capacities.

# Resilience Measures

Natural Systems	Physical Infrastructure	Economic Sustainability	Community Preparedness	Human Well-Being
				
<p>M1. Total area of agricultural land under permanent cover in Saskatchewan</p> <p>M2. Total amount of soil organic matter sequestered in cultivated land</p> <p>M3. Percentage of agricultural land area with 4R nutrient stewardship plan</p> <p>M4. Number of Forest Management Plans that incorporate Values, Objectives, Indicators, and Targets (VOITs) related to forest age class distribution for the licence area</p> <p>M5. Total protected areas in Saskatchewan</p>	<p>M6. Total number of provincial culverts on the national highway system meeting new provincial flood standard</p> <p>M7. Renewable energy generation capacity</p> <p>M8. Total GHG emissions from electricity sector</p> <p>M9. Total amount of energy savings from SaskPower's Energy Efficiency, Conservation and Self-Generation Program</p> <p>M10. Area of SaskPower power line right-of-ways widened</p> <p>M11. Total energy consumption for government-owned buildings</p> <p>M12. Total GHG emissions from government-owned buildings</p>	<p>M13. Total GHG emissions from gas produced in association with oil</p> <p>M14. Emissions intensity of Saskatchewan's economy (GHGs per unit of GDP)</p> <p>M15. Realized net farm income</p> <p>M16. Percentage of cultivated land in different types of crops</p> <p>M17. Incorporation of natural forest disturbance patterns in provincial forest harvest design</p>	<p>M18. Floodplain mapping completed for communities identified as being at risk of flooding</p> <p>M19. Number of communities with a standardized and ratified emergency preparedness plan</p> <p>M20. Number of wildfire operational pre-plans completed for "at risk" northern communities</p> <p>M21. Total Crown land with wildfire fuel management work completed</p>	<p>M22. Number of communities reliant on water supplies vulnerable to drought</p> <p>M23. Average municipal water consumption per capita and total municipal water consumption</p> <p>M24. Number of communities (with suitable habitat) where active surveillance for West Nile virus and other mosquito-borne diseases occurs</p> <p>M25. Number of active surveys at suitable habitat sites for Lyme disease and other tick-borne diseases</p>

# Example: Natural Systems

## Measure 2: Total amount of soil organic matter (SOM) sequestered in Saskatchewan's cultivated land

**Description:** This measures the amount of soil organic matter that is sequestered in Saskatchewan's cultivated lands as a result of various agricultural practices such as changes in tillage practices, and conversion of cropland to forage. This is a measure of adaptive capacity.

### How the measure contributes to resilience:

- SOM improves soil quality through increased water infiltration and retention, soil stability and nutrient retention, which eventually lead to higher agricultural productivity.
- Soil organic carbon, the carbon component of soil organic matter, represents the carbon dioxide (CO<sub>2</sub>) sequestered in the soil.

### What is the target for this measure?

Maintain sequestration at 5.60 million tonnes SOM per year

# Example: Physical Infrastructure

## Measure 7: Saskatchewan's renewable energy generation capacity

**Description:** This measures the amount of electrical generation capacity by SaskPower (or purchased by SaskPower) from renewable sources. This is a measure of transformative capacity.

### How the measure contributes to resilience:

- Increasing Saskatchewan's renewable energy generation capacity lowers the province's GHG emissions.
- Increased diversification of energy sources also increases resilience.

### What is the target for this measure?

By 2030, 40% to 50% of electrical generation capacity from renewable energy sources

# Example: Economic Sustainability

## Measure 14: Emissions intensity of Saskatchewan's economy (GHGs/unit GDP)

**Description:** This measure helps us understand the province's exposure to CO<sub>2</sub>e reduction policies, and to determine if CO<sub>2</sub>e reductions are a result of efficiency gains or loss of production. This is a measure of transformative capacity.

### **How the measure contributes to resilience:**

Balancing Saskatchewan's economic growth with the commitment to reduce the province's GHG emissions ensures that the province is able to grow and prosper, and that people's jobs and livelihoods are supported.

### **What is the target for this measure?**

Continued decrease in the emission intensity of Saskatchewan's economy

# Example: Community Preparedness

## Measure 20: Number of wildfire pre-plans completed for “at-risk” northern communities

**Description:** This measures the number of “at-risk” communities in Saskatchewan's Wildland-Urban Interface (WUI) that have Community Operational Pre-Plans. These communities are rated with moderate to high risk of wildfire. This is a measure of absorptive capacity.

### How the measure contributes to resilience:

- Wildfire risk assessment and planning enables communities to identify hazards and prioritize efforts to address higher risks and more vulnerable areas/populations well in advance of wildfire impacts to the area.
- The operational pre-plans help with wildfire suppression delivery when communities are threatened by wildfire.

### What is the target for this measure?

By 2030, all 86 “at-risk” SK communities have wildfire operational pre-plans completed.

# Example: Human Well-Being

## Measure 24: Number of communities (with suitable habitat) where active surveillance for West Nile Virus and other mosquito-borne diseases occur.

**Description:** This measures Saskatchewan's monitoring capacity for West Nile Virus and other mosquito-borne diseases. This is a measure of absorptive capacity.

### How the measure contributes to resilience:

- Establishing surveillance sites helps the province monitor the risks of these illnesses, which allows the provision of better information to the public and for adaptive measures to control the population of insect vectors.

**What is the target for this measure?**

By 2020, increase to 20 communities.

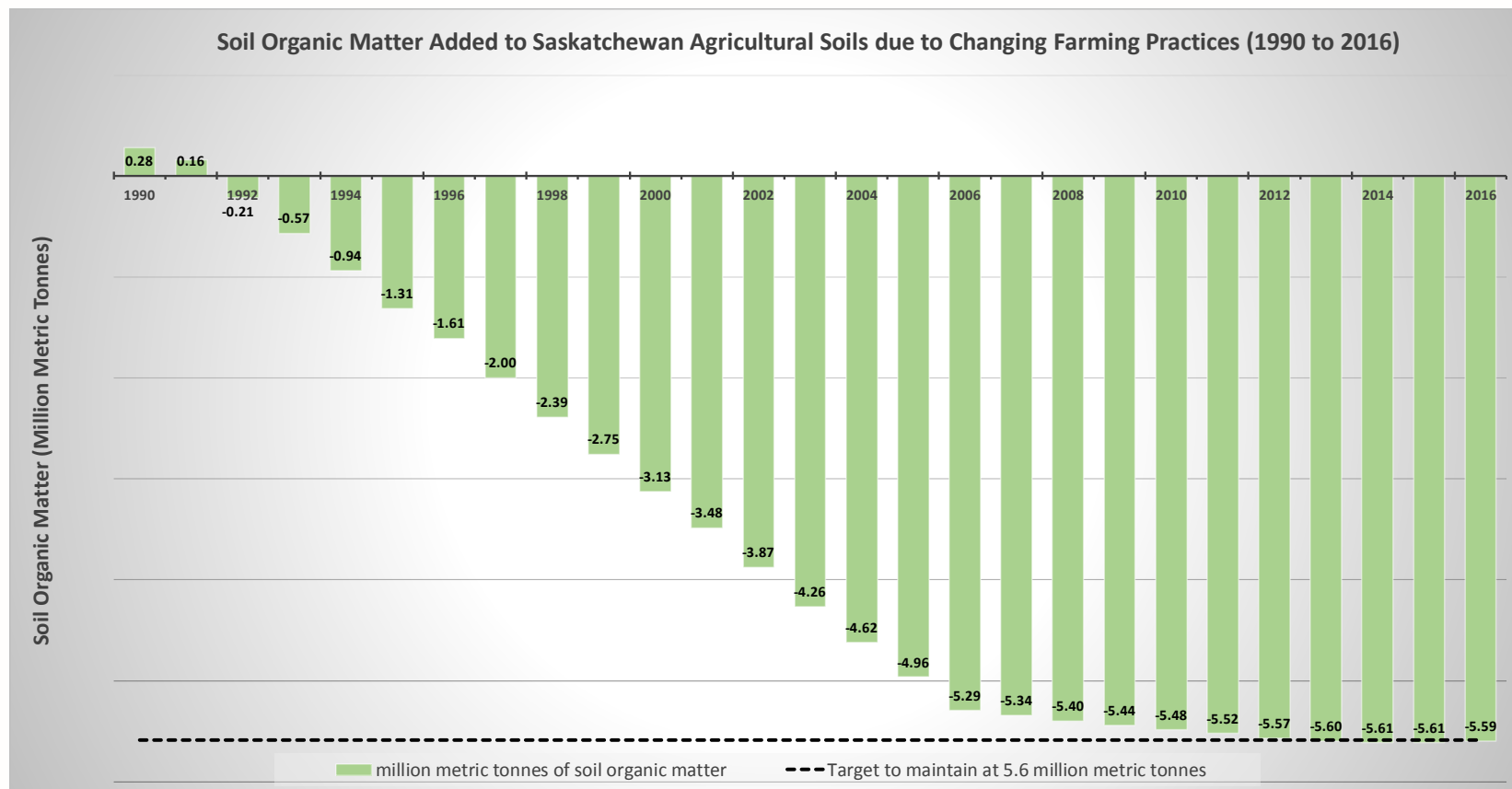


# REPORTING

- Annual reporting has been initiated.
- Individual measures will be reported on.
- Reporting approach:
  - Provide historical trend, if available
  - Provide current status, in relation to target

# Reporting Approach








Annual report presents status of measure in relation to the target.



Source: National Inventory Report, 1990-2016. ECCC

# Reporting Approach

## *Snapshot of progress in increasing the province's resilience*

Measures	Target	Current Status	Trend <div>             Increasing  Good  </div> <div>             Maintained  Fair  </div> <div>             Decreasing  Poor  </div>
Natural Systems			
Total amount of soil organic matter sequestered in cultivated land	Maintain sequestration rate at 5.60 Mt of SOM per year	5.59 Mt of SOM in 2018	Maintained 

# SUMMARY

- Saskatchewan's Climate Resilience Measurement Framework has a broad scope (natural systems, physical infrastructure, economic sustainability, community preparedness and human well-being).
- The Government of Saskatchewan commits to report on all measures annually.
  - *Demonstrates how we are building our resilience to climate change impacts.*
  - *Identifies areas that need improvement.*

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