



# Soils Technical Working Group Draft Recommendations


Minister's Advisory Group on Regenerative Agriculture and Agri-Tech

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Agriculture  
and Food

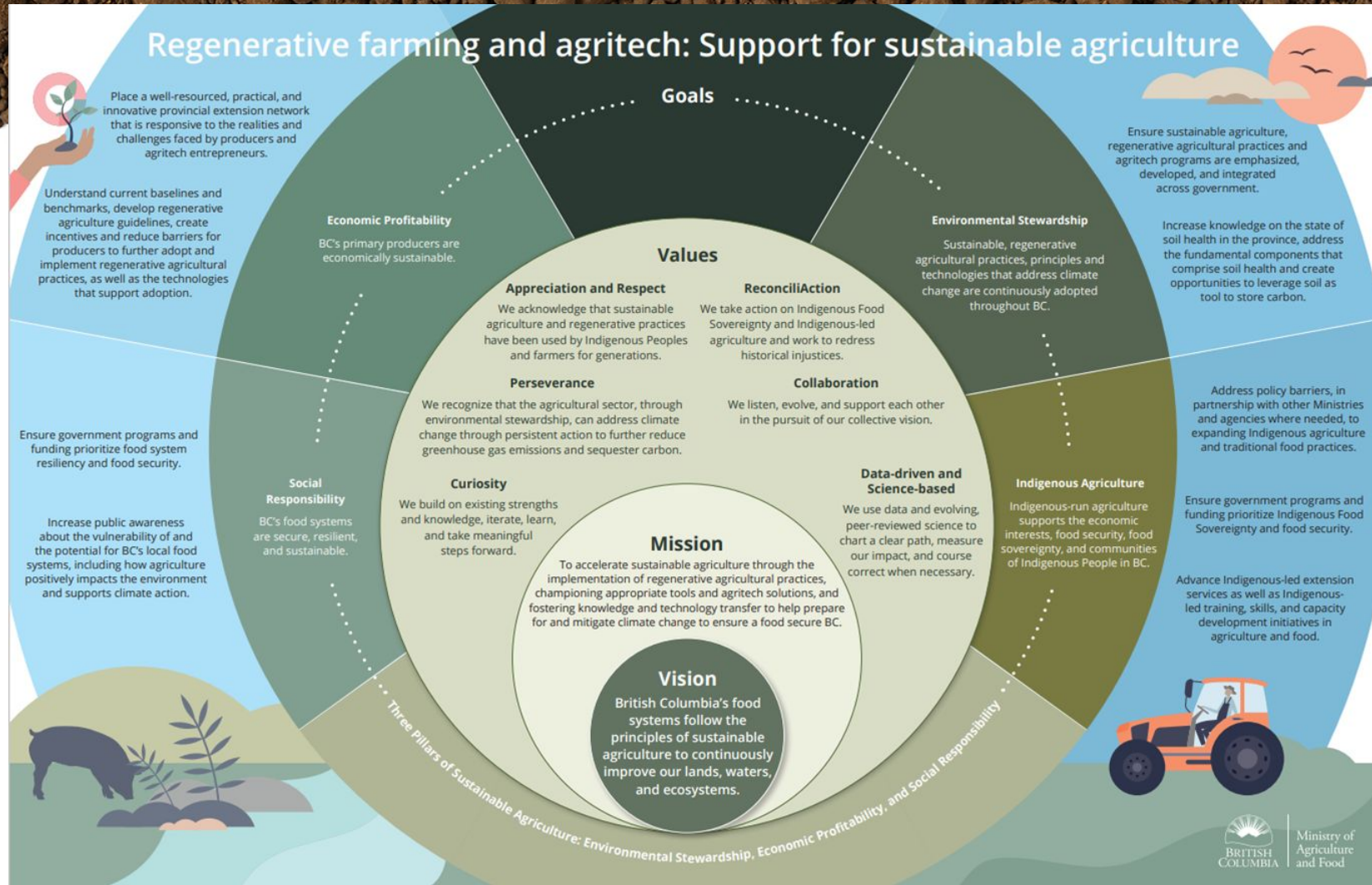
# Minister's Advisory Group on Regenerative Agriculture and Agri-Tech (MAGRAA)



*The advisory group will provide strategic advice to government on opportunities to promote innovation, technology, adoption, and regenerative practices that will increase the productivity, profitability, and sustainability of B.C.'s food system.*

# MAGRAA Strategic Framework

Strategic framework released January, 2023



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# 5 MAGRAA Technical Working Groups


Established to  
advise on:

- Defining Agri-Tech
- Extension Services
- Incentives
- Regenerative  
Agriculture Standards
- Soil Health

# Soil TWG: Scope & Purpose

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- Soil Health is a foundational component of regenerative practices
  - Understanding impacts on soil health is required for identifying, promoting & adopting regenerative practices
  - Current lack of consensus on assessing soil health & lacking site & crop specific evidence for the diversity of production in BC
  - Develop a high-level set of recommendations for a provincial monitoring & evaluation strategy for soil health.
  - Recommendations as guidance for developing prioritized actions & projects that are required to effectively monitor & evaluate soil health from farm to regional scales.

# Soil TWG: 5 Draft Recommendations

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1. Soil Health Baseline
  2. Monitoring & Evaluation
  3. Data Management & Sharing
  4. Visualization & Dissemination
  5. Long-term Support

# 1. Soil Health Baseline

## Identified Needs:

- Very little data provincially defining the status or trajectory of soil health. Producers do not have any benchmarks to compare to.
- Limited provincial data that can be used for measuring the regenerative nature of new & alternative practices on soil health.
- Data that does exist has limited potential for broad comparison across regions or over time.
- Absence of provincial soil health assessment protocol.

# 1. Soil Health Baseline

## Recommended Actions

- Identify and agree to a set of soil health indicators.
  - Establish a Soil Health Working group focused on developing tiered soil health indicators that are tiered in terms of cost, effort, and accuracy. (2023-24)
  - Foster the adoption of standard research practices by establishing and publishing sampling and analysis protocols for soil health indicators. Work with commercial labs to offer these analytical services via an inclusive soil health indicator package. (2023-2024)
- Launch a series of projects at various scales to develop a provincial baseline of soil health indicators.
  - Require a minimum of soil health baseline sampling for the adoption of any provincially funded BMP projects. (2023-24)
  - Develop regional sampling projects to target key land uses and commodities on agricultural lands and digitally map these indicators by region (2024-27)
  - Ensure there are sufficient, effective, timely and affordable soil testing options accessible to farmers across BC.



## 2. Monitoring & Evaluation

### Identified Needs:

- Little data linking soil health indicators with measurable changes in agricultural or environmental outcomes.
- Limited regional data showing how different practices impact soil health status.
- Producers do not fully understand the value of soil health for either short- or long-term production benefits & resiliency or the benefits to (i) soil biodiversity, (ii) the environment, and (iii) plant, animal, and human health.
- Society is not recognizing the benefits that producers are providing in terms of enhanced ecological functioning of their land.
- The relationship between soil health & climate mitigation has not been effectively quantified for most BMPs.

## 2. Monitoring & Evaluation

### Recommended Actions

- The Soil Health Working group engages with producers to identify and prioritize soil health outcomes that they are interested in quantifying.
- Develop a prioritization of regions, commodity groups and BMPs to evaluate. (2023-24)
- Develop and launch a series of research and demonstration projects for that prioritized list. The projects would quantify soil health changes and outcomes particularly related to climate mitigation. (2024-29)



# 3. Data Management & Sharing



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## Identified Needs:

- Data that does exist is not widely shared & is largely inaccessible by researchers or the government.
- There are no common protocols for developing & sharing datasets.
- Responsibilities of data maintenance, quality assurance & analysis are unclear.



# 3. Data Management & Sharing



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## Recommended Actions

- The Soil Health Working group develops data-sharing protocols in coordination with ongoing efforts of BCACARN & the Living Labs Project. Work with national efforts to establish soil data-sharing infrastructure. (2023-24)
- Enhance current data collection capabilities & capacity in the BC Ministry of Agriculture & Food & BCACARN to gather & share data until the national infrastructure is fully operational. (2023-24)



# 4. Visualization & Dissemination



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## Identified Needs:

- Producers need to be able to easily interpret soil health data if it is going to be useful for them operationally.
- Currently there is a large variation in the interpretation of soil health information.
- There is no centralized communication platform.



# 4. Visualization & Dissemination



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## Recommended Actions

- Develop a series of soil health tools:
  - Develop fact sheets based on the results of research & demonstration projects. (2025-30)
  - Create an online regenerative agriculture / soil health dashboard where producers can compare their soil health trajectory to regional benchmarks. (2024-25)
- Create a multi-year extension program to promote & support the adoption of soil health indicators & tools across researchers & producers.
- Extension & outreach initiatives for both producers & agrologists.
- Create a common framework so that soil health data is understood & interpreted in terms of benefits related to (i) biological diversity & function, (ii) environmental quality, & (iii) plant, animal, & human health.

## 5. Long-Term Support

### Identified Needs:

- Without a historic soil health base line, along with coordinated & consistent monitoring, it is likely that changes in many soil health benefits will not be clearly quantifiable over the next five years.
- Providing guidance for maintaining and improving soil health requires a long-term commitment.
- At present, there is very little collaboration on the above identified needs for soil health in B.C. & no permanent organized group to address such needs in the future.
- No current plan to address the province's soil health needs into the future, leaving the province without a collaborative strategy to measure and improve soil health over the long-term.

# 5. Long-Term Support

## Recommended Actions

- Develop support for maintaining the Soil Health Working group in the long-term so that collaborative decisions for a provincial soil health strategy are made as the long-term impacts of management are understood.
- The Soil Health Working group should be facilitated by the Ministry of Agriculture and Food's Resource Management Unit to provide technical support, ensure coordination of activities, alignment with provincial mandates, and transparency.



# Discussion:

## How to improve & what is missing?

## How to implement & achieve these recommendations?



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Recommendation	Actions
1. Soil Health Baseline	<ul style="list-style-type: none"> <li>Identify and agree to a set of soil health indicators.</li> <li>Launch a series of projects at various scales to develop a provincial baseline of soil health indicators.</li> </ul>
2. Monitoring & Evaluation	<ul style="list-style-type: none"> <li>Soil Health Working group identifies &amp; prioritizes soil health outcomes w/farmers</li> <li>Develop a prioritization of regions, commodity groups &amp; BMPs to evaluate.</li> <li>Research &amp; demonstration projects to quantify soil health changes &amp; mitigation outcomes for BMPs.</li> </ul>
3. Data Management & Sharing	<ul style="list-style-type: none"> <li>Soil Health Working group develops data-sharing protocols with BCACARN &amp; the Living Labs Project.</li> <li>Work with national efforts to establish soil data-sharing infrastructure.</li> <li>Enhance data collection capabilities &amp; the capacity of AF &amp; BCACARN to gather &amp; share data.</li> </ul>
4. Visualization & Dissemination	<ul style="list-style-type: none"> <li>Producer &amp; agrologist targeted soil health extension, tools &amp; outreach (i.e. interpretive dashboard)</li> <li>Multi-year extension to promote &amp; support adoption of soil health indicators &amp; tools.</li> <li>Common soil health benefit interpretation framework: (i) biological diversity &amp; function, (ii) environmental quality, &amp; (iii) plant, animal, &amp; human health.</li> </ul>
5. Long-Term Support	<ul style="list-style-type: none"> <li>Support a long-term Soil Health Working group for the collaborative development &amp; implementation of a provincial soil health strategy.               <ul style="list-style-type: none"> <li>Facilitated by AF for technical support, coordination, mandate alignment, &amp; transparency.</li> </ul> </li> </ul>

# Ministry of Agriculture x Living Labs



How can the Ministry of Agriculture and Food work with Living Labs to:

- Validate mitigation potential and co-benefits for bmps
- Measure bmp adoption rates
- Establish baseline soil health
- Facilitate data gathering and sharing
- Collaborate on extension and outreach