Beyond Yield:

An Agriculture and Health Framework for the 21st Century

Canadian Association for the Club of Rome
Katie Fettes and Jodi Koberinski, PhD
Canadian Organic Growers | August 26, 2026

Presented by Canadian Organic Growers



Katerynych Family Farm, Richard, Saskatchewan

What is the Focus of Canada's Agricultural Project in the 21st Century?

Presentation overview:

- **Conceptual Foundations of Organic Food Systems**
  "it's in the soil!"
- **21st Century metrics: innovations for food policy**
  new metrics to reflect our updated understanding and context
- **Agriculture and Health Task Force: Making the Case**
  collaborative research to connect food production and human health outcomes, and make visible to policymakers

Takeaway for today:
"**Organic" is a shovel-ready nation-building investment** that addresses multiple policy priorities while offering an established system for baseline practices upon which "regenerative" approaches build.



The New Farm, Creemore, ON

Canadian Organic Growers

National educational charity and Canada’s oldest organic and regenerative association – proudly serving farmers, gardeners, and consumers since 1975.

We work to:

- **Train and support** organic, regenerative and ecological growers and agricultural advisors through education and knowledge sharing
- **Build communities,** networks, and coalitions that connect farmers and stakeholders across the sector
- **Grow markets and the organic sector** by advancing industry development and opportunities for producers
- **Be a voice** for organic growers and consumers, advancing enabling policy at the national, regional, and local levels



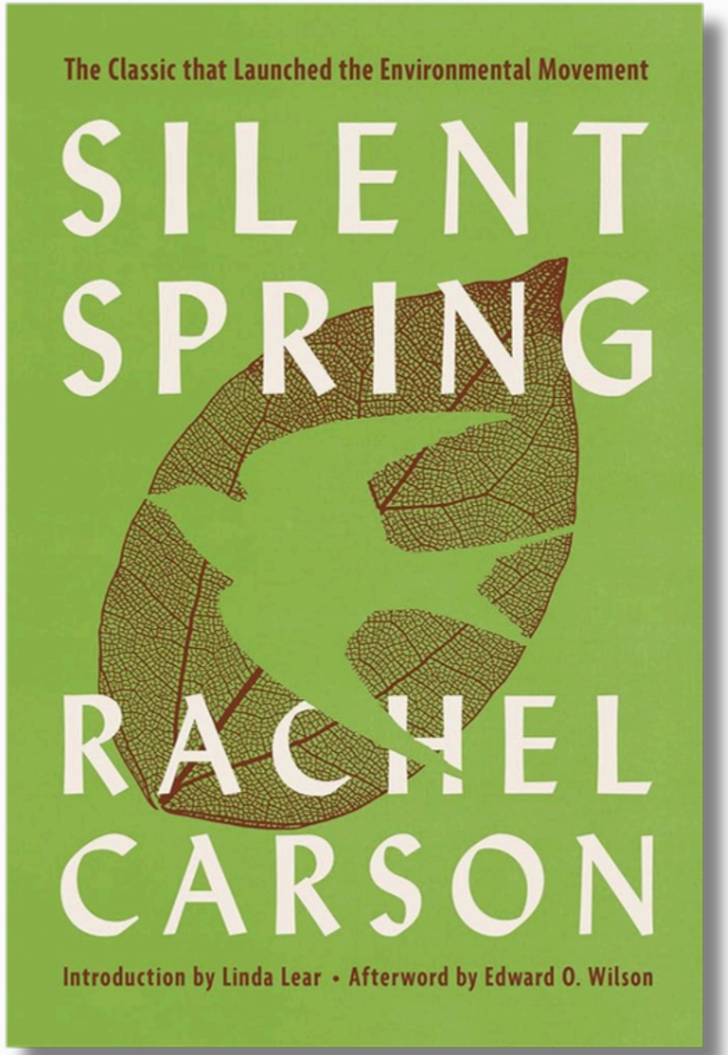
Winter Sun Farm, Bella Coola, BC

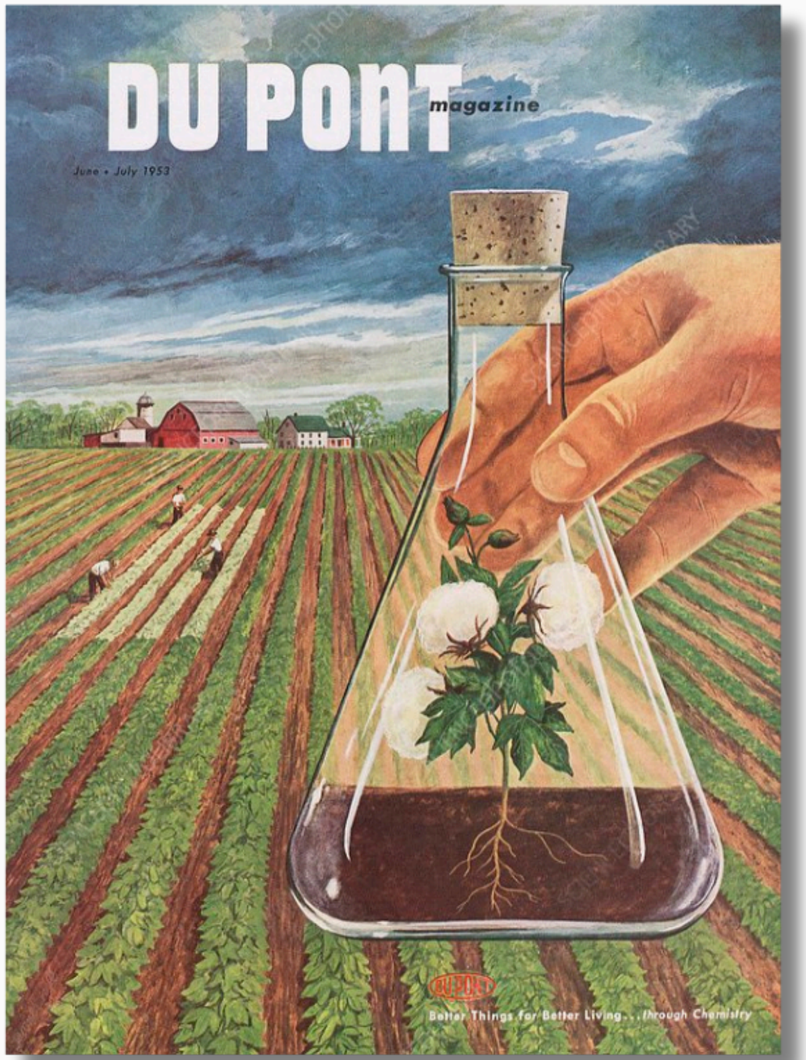


Part 1

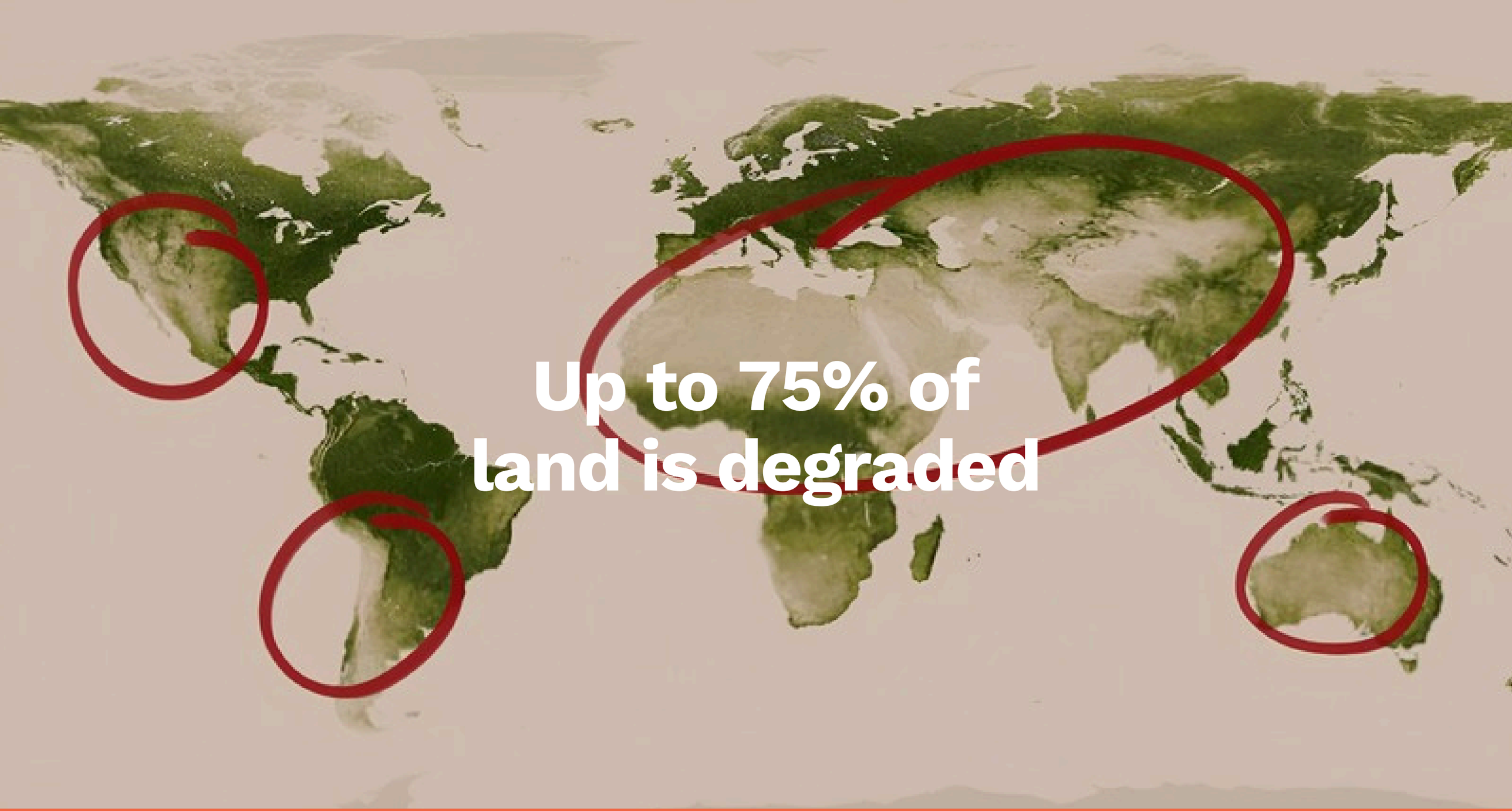
The Conceptual Foundation of Organic Systems

Moose Creek Organic Farm, Oxbow, SK


The Classic that Launched the Environmental Movement
SILENT SPRING
RACHEL CARSON
Introduction by Linda Lear • Afterword by Edward O. Wilson


DU PONT magazine
June • July 1953
Better Things for Better Living . . . through Chemistry

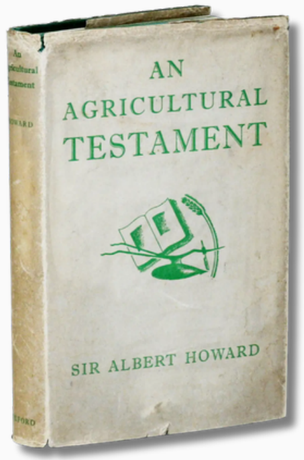

"DDT is good for me-e-e!"
The great expectations held for DDT have been realized. During 1946, exhaustive scientific tests have shown that, when properly used, DDT kills a host of destructive insect pests, and is a benefactor of all humanity.
Pennsalt produces DDT and its products in all standard forms and is now one of the country's largest producers of this amazing insecticide. Today, everyone can enjoy added comfort, health and safety through the insect-killing powers of Pennsalt DDT products . . . and DDT is only one of Pennsalt's many chemical products which benefit industry, farm and home.
GOOD FOR STEERS—Beef grows meatier nowadays . . . for it's a scientific fact that—compared to untreated cattle—beef-steers gain up to 50 pounds extra when protected from horn flies and many other pests with DDT insecticides.
Knox Out FOR THE HOME—helps to make healthier, more comfortable homes . . . protects your family from dangerous insect pests. Use Knox-Out DDT Powders and Sprays as directed . . . then watch the bugs "bite the dust"!
Knox Out FOR DAIRIES—Up to 20% more milk . . . more butter . . . more cheese . . . tests prove greater milk production when dairy cows are protected from the annoyance of many insects with DDT insecticides like Knox-Out Stock and Barn Spray.
GOOD FOR FRUITS—Bigger apples, juicier fruits that are free from unsightly worms . . . all benefits resulting from DDT dusts and sprays.
GOOD FOR ROW CROPS—25 more barrels of potatoes per acre . . . actual DDT tests have shown crop increases like this! DDT dusts and sprays help truck farmers pass these gains along to you.
Knox Out FOR INDUSTRY—Food processing plants, laundries, dry cleaning plants, hotels . . . dozens of industries gain effective bug control, more pleasant work conditions with Pennsalt DDT products.
PENN SALT
CHEMICALS
97 Years' Service to Industry • Farm • Home
PENNSYLVANIA SALT MANUFACTURING COMPANY
WIDENER BUILDING, PHILADELPHIA 7, PA.

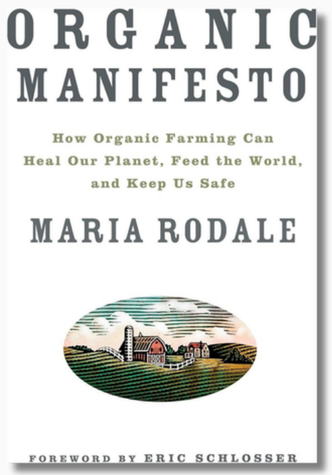

Up to 75% of
land is degraded

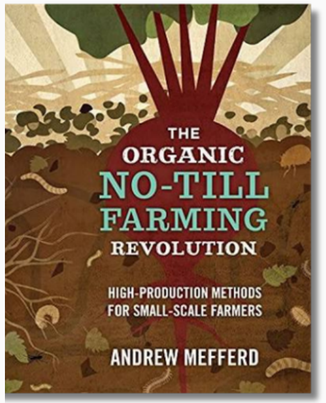
From the Beginning: Soil Regeneration



Historical photo: Sundog Organic Farm








COG
CANADIAN ORGANIC GROWERS
CULTIVONS BIOLOGIQUE CANADA
THE FOUNDATION?
HEALTHY SOIL
KISS the GROUND


COG
Canadian Organic Growers
Cultivons Biologique Canada

Barriers to Change

CANADIAN ORGANIC GROWERS
CULTIVONS BIOLOGIQUE CANADA



Financial, technical, social, cultural barriers to adoption



Entrenched features of the dominant modern food system



Connecting agriculture and health could be a lever of change

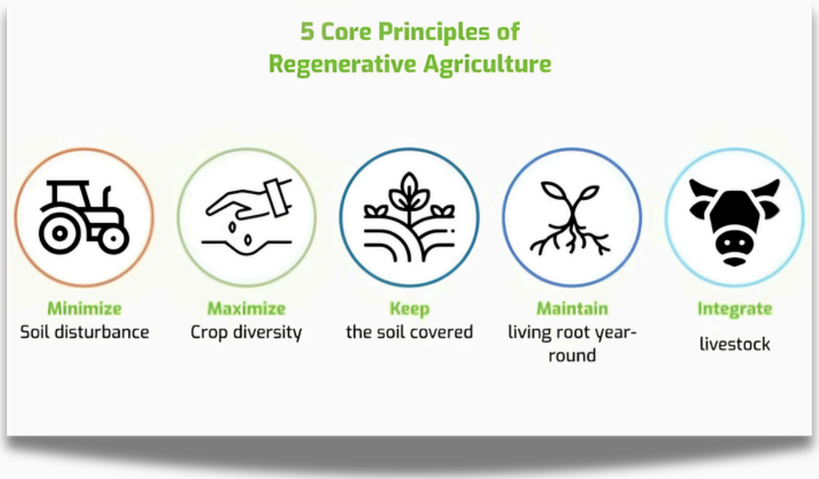


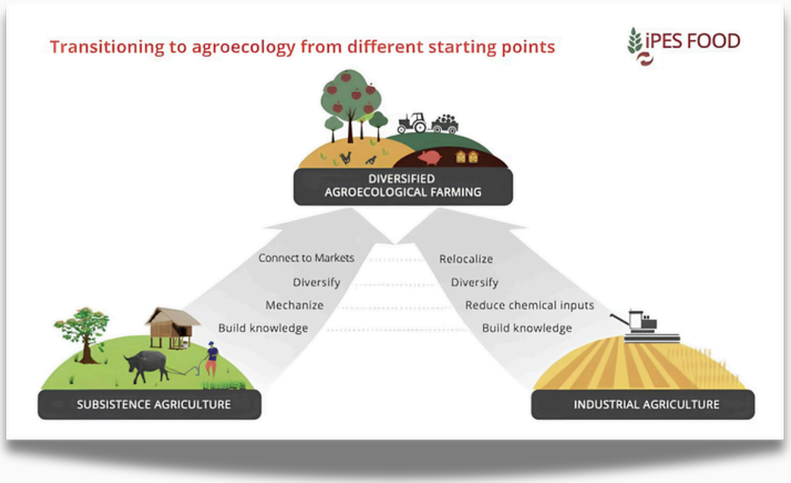
Part 2

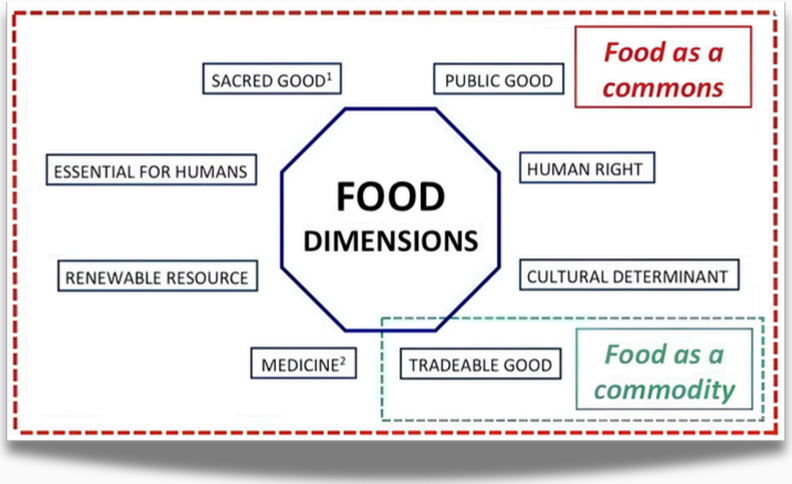
21st Century Metrics: Innovations for Food Policy

Upland Organics, Wood Mountain, SK

21st Century Frameworks





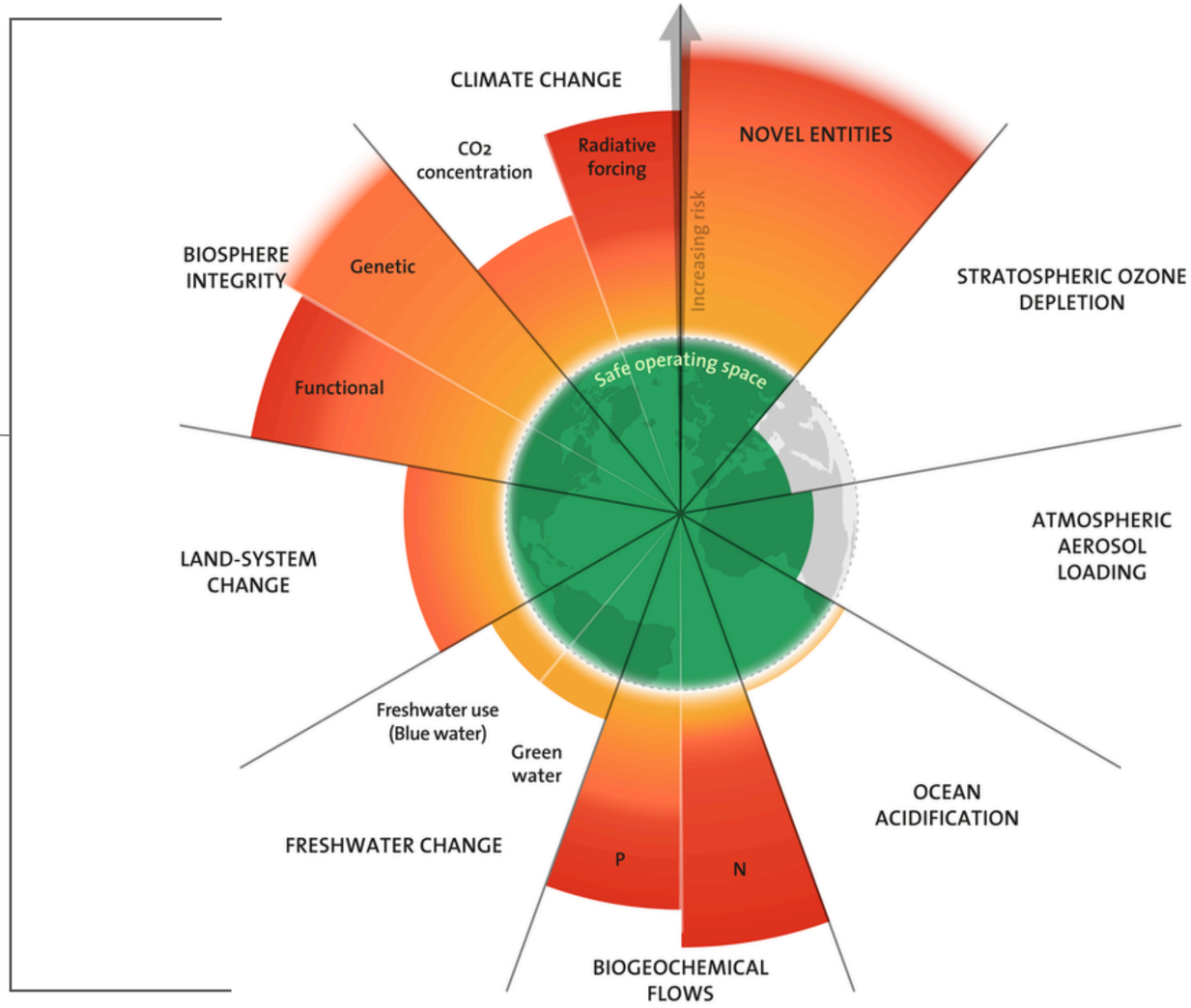




“…If we want to bring about the thoroughgoing restructuring of systems that we know is necessary to solve the world’s gravest problems – poverty, pollution and war – the first step is thinking differently”

7 of 9 Planetary Boundaries Now Breached

Many Related to Food Production



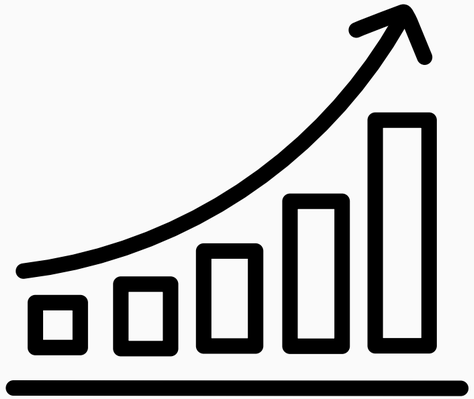
Source: Stockholm Resilience Centre, 2025

And Heavy Costs for Human Health



45%

of Canadian adults live with at least one chronic disease



$190B

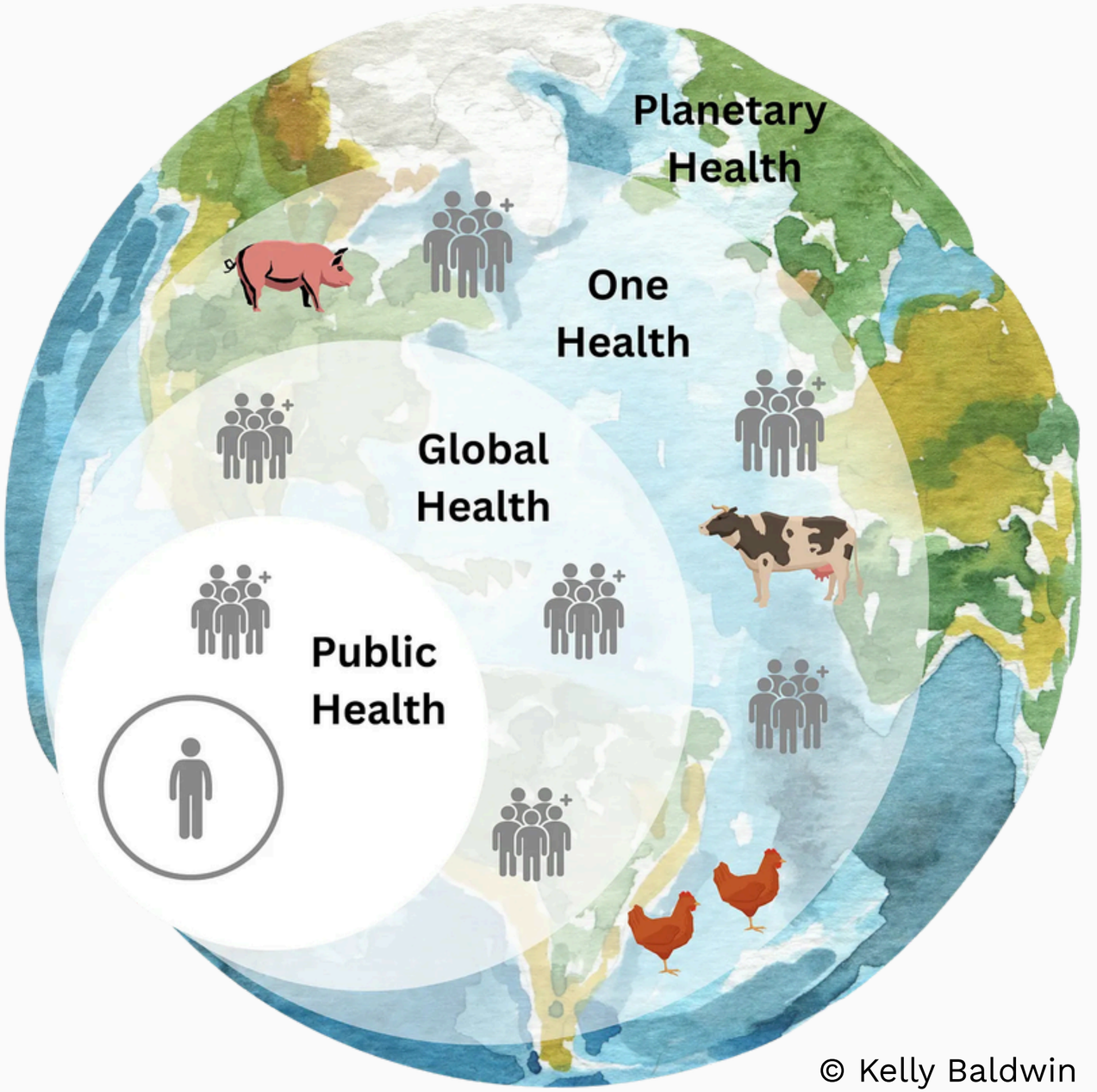
annual cost to the Canadian economy



60%

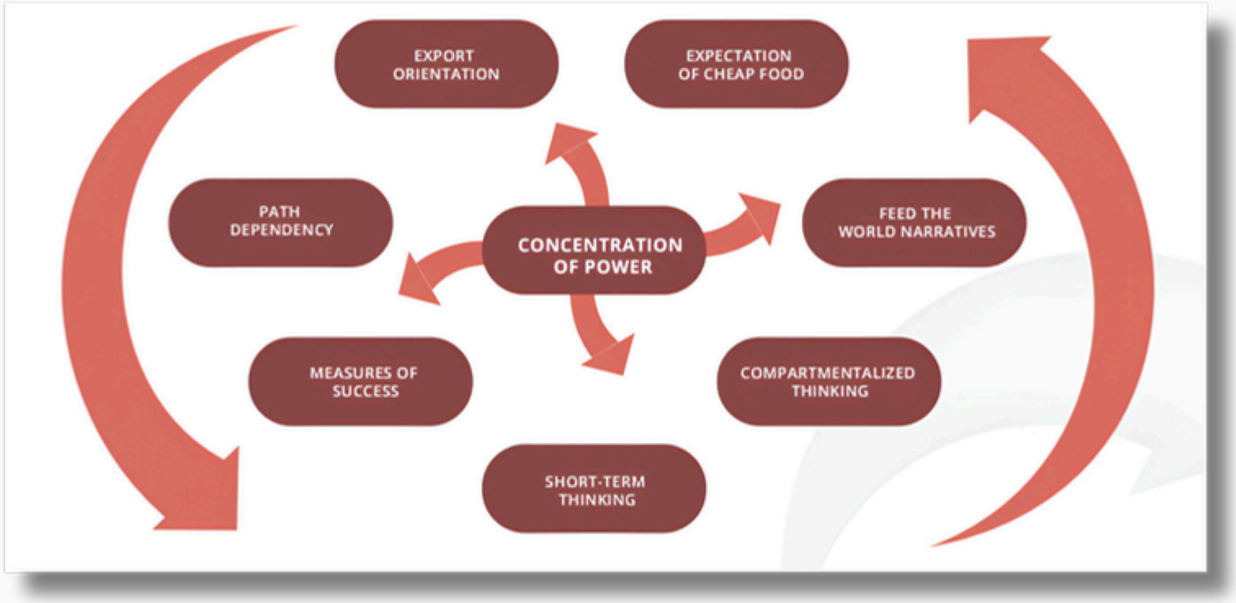
of annual healthcare spending on chronic disease



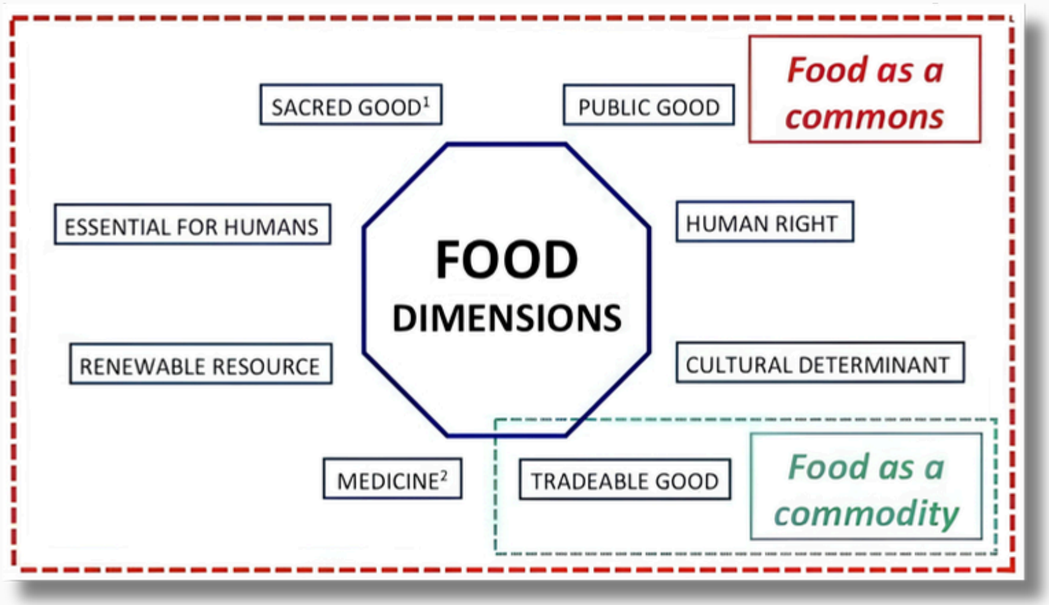


© Kelly Baldwin Heid 2023

IPES-Food's Eight Key Lock-ins of Industrial Food Systems (2016)



Vivero Pol's 8 Food Dimensions: Food as Commons (2017)



5 Core Principles of Regenerative Agriculture



Minimize
Soil disturbance

Maximize
Crop diversity

Keep
the soil covered

Maintain
living root year-round

Integrate
livestock



Part 3

Agriculture and Health Task Force

Strattons Farm, Annapolis, NS

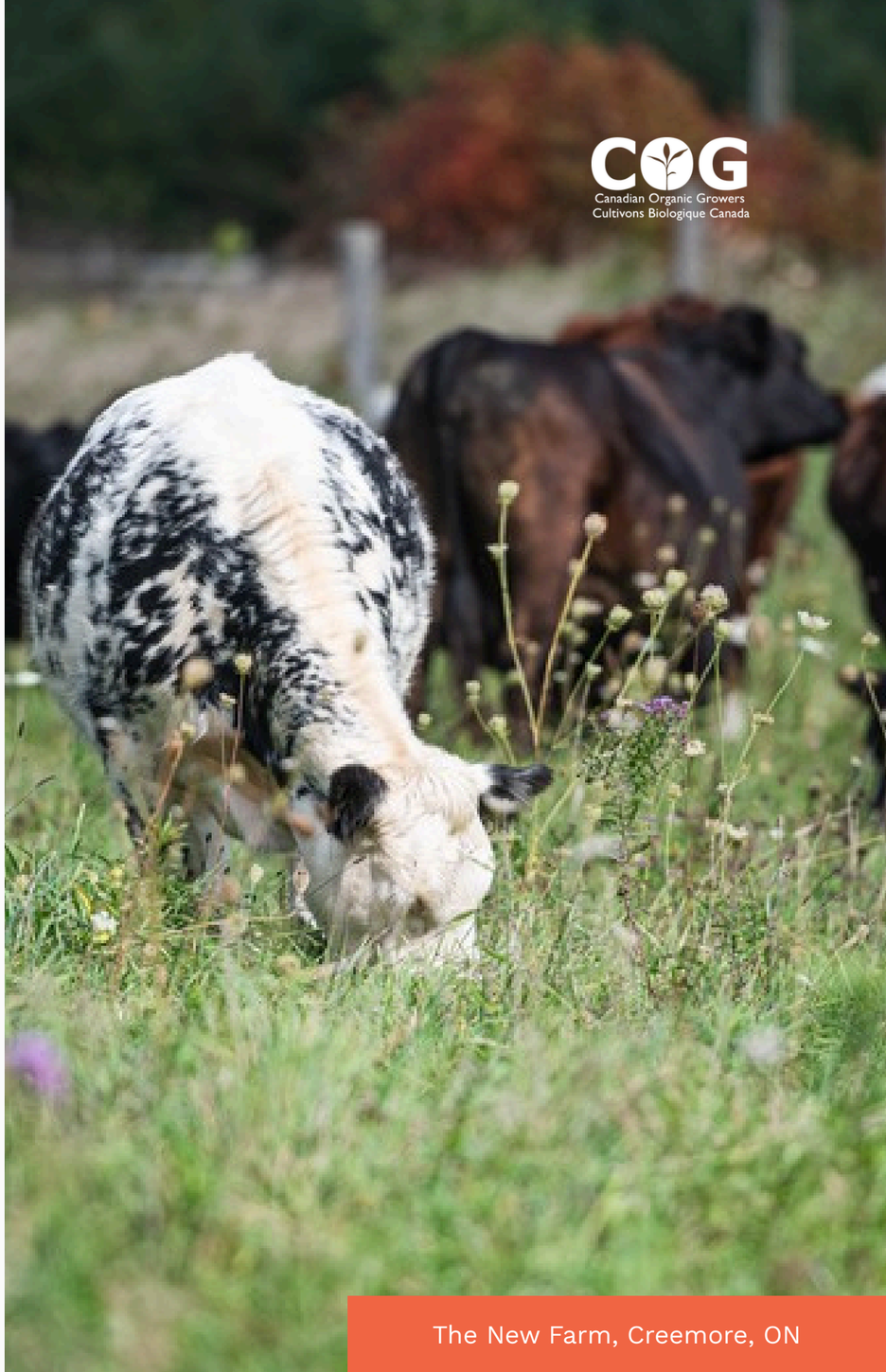
Agriculture and Health Task Force
A New Framework

As agricultural policies are developed aiming to address human health outcomes, **there is a need for an honest assessment of the connections and conceptual linkages between the way we grow our food, fibre, and fuel and impacts on our health.**

These pathways influence human health through both minimizing harm and maximizing benefit. Evidence exists but remains fragmented across disciplines, connections are often indirect/systemic.

This project addresses that need by bringing together researchers, farmers, health, and policy experts to:

- Assess current evidence on linkages between agricultural production and human health;
- Develop a Canadian framework to integrate agriculture and health policy and;
- Advance improved human health through agriculture.



The New Farm, Creemore, ON

Agriculture and Health Task Force Steering Committee

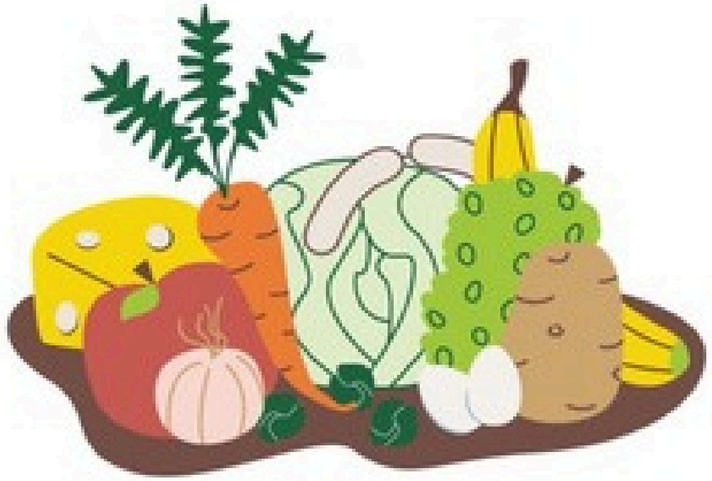
Building a Canadian framework connecting agricultural production systems to human health, and translating the evidence into priorities for research, policy, investment, and practice.

Bringing together expertise across farming, agroecology, soil science, public health, healthcare, policy, and food systems.

- **Gillian Flies, Co-Chair** - Farmer & Executive Director, The New Farm Centre
- **Dr. Brent Elsey, Co-Chair** - Coordinator, Agrifood Working Group, Canadian Association of Physicians for the Environment
- **Dr. Jonathan Lundgren** - Founder & ED, Ecdysis Foundation; CEO, Blue Dasher Farm
- **Dr. Bruce Lanphear** - Public Health Physician & Professor, Simon Fraser University
- **Dr. Stephan van Vliet** - Director, Center for Human Nutrition Studies, Utah State University
- **Dan Kittredge** - Founder & ED, Bionutrient Food Association and Bionutrient Institute
- **Sarah Seng** - Development Director, Bionutrient Food Association and Bionutrient Institute
- **Dr. Jessica Chiartas** - Research Manager, Centre for Sustainable Food Systems, UBC; Co-Founder & Lead Scientist, RegenScore


COG
Canadian Organic Growers
Cultivons Biologique Canada
“Let food be thy medicine and medicine be thy food”
~ Hippocrates

PRINCIPLES OF ORGANIC



HEALTH



ECOLOGY



FAIRNESS



CARE

By: IFOAM Europe

ORGANIC AGRICULTURE

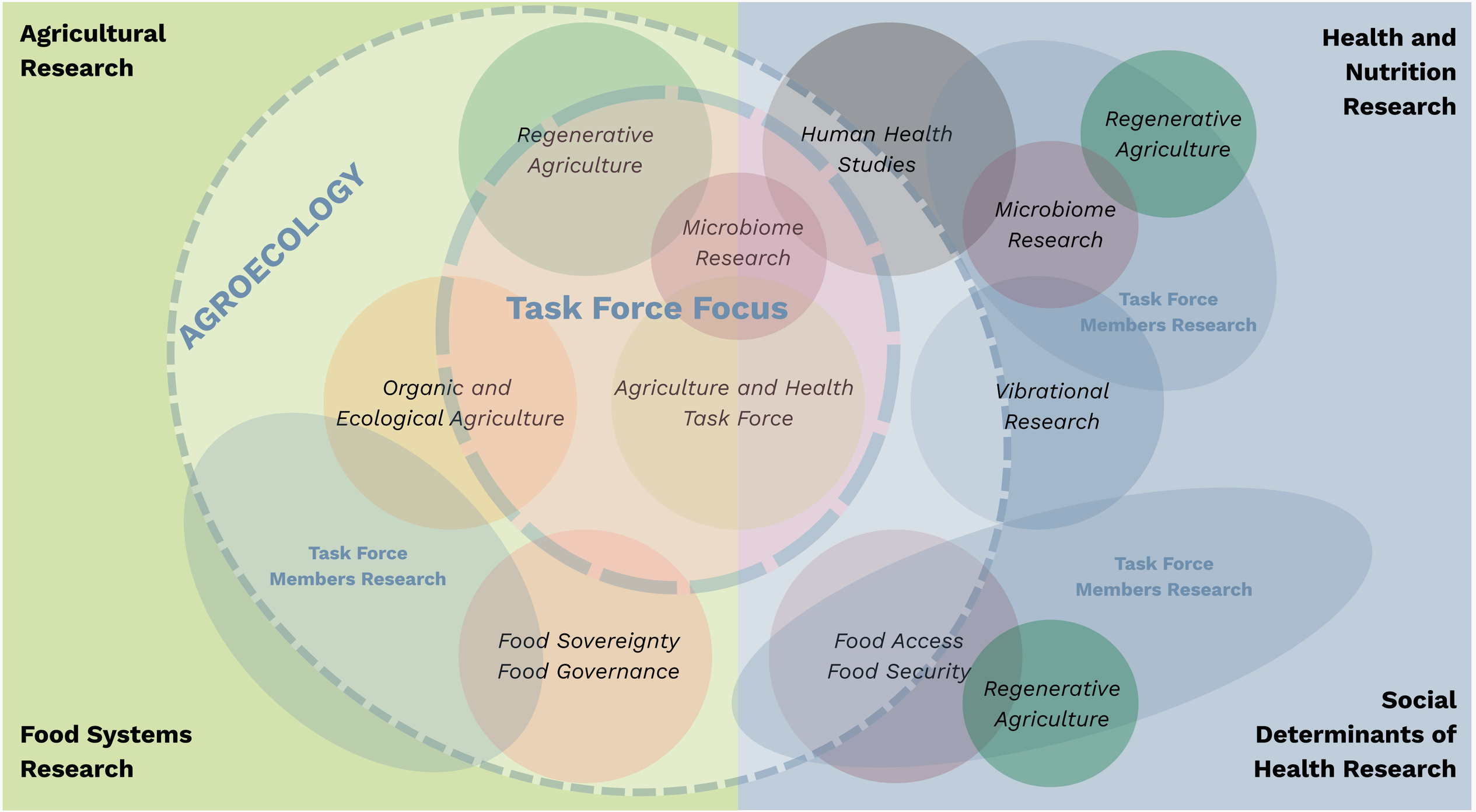
VS

REGENERATIVE AGRICULTURE

- Four Founding Principles of Organic Agriculture
- Clear Standards and Regulation
- Trusted Brand

- Seven Principles of Regenerative Agriculture
- Varying Definition and Minimal Regulation
- Growing Movement

#OrganicClimateSolutions


Agricultural Research
Health and Nutrition Research
AGROECOLOGY
Regenerative Agriculture
Human Health Studies
Regenerative Agriculture
Microbiome Research
Microbiome Research
Task Force Focus
Task Force Members Research
Organic and Ecological Agriculture
Agriculture and Health Task Force
Vibrational Research
Task Force Members Research
Task Force Members Research
Food Sovereignty Food Governance
Food Access Food Security
Regenerative Agriculture
Food Systems Research
Social Determinants of Health Research

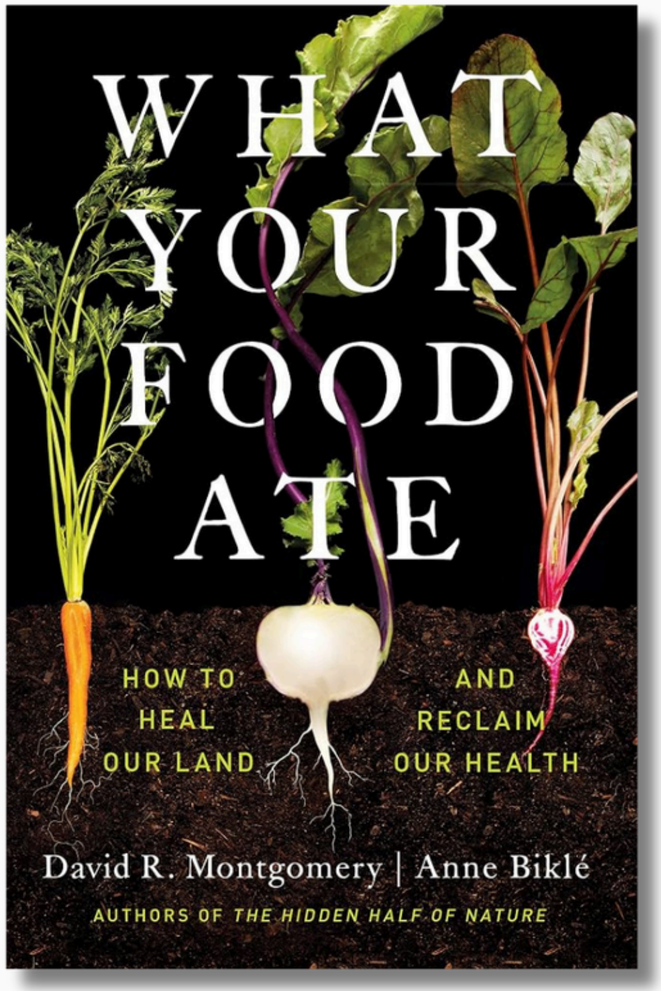
Minimizing harm

- Exposure to pesticides and environmental contaminants in human food systems/ ecological systems
- Impacts on farmers and farmworkers from exposure (physical, mental wellbeing)
- Impacts on surrounding communities (air, water quality)



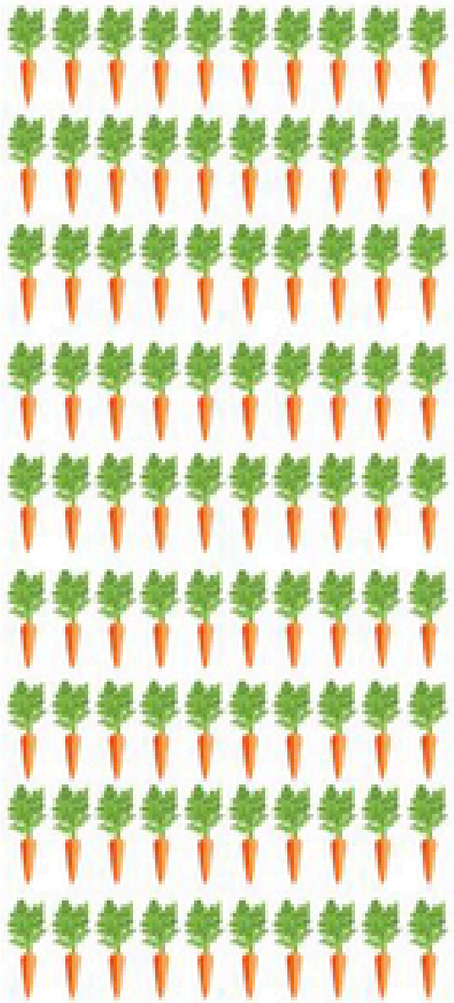
Maximizing benefit





SIGNIFICANT MINERAL VARIATIONS IN OUR FOOD SUPPLY

CARROT POLYPHENOLS (N = 532)





“Nutrient Density”

200 Carrots = 1 Carrot

0-.99

27-27.99

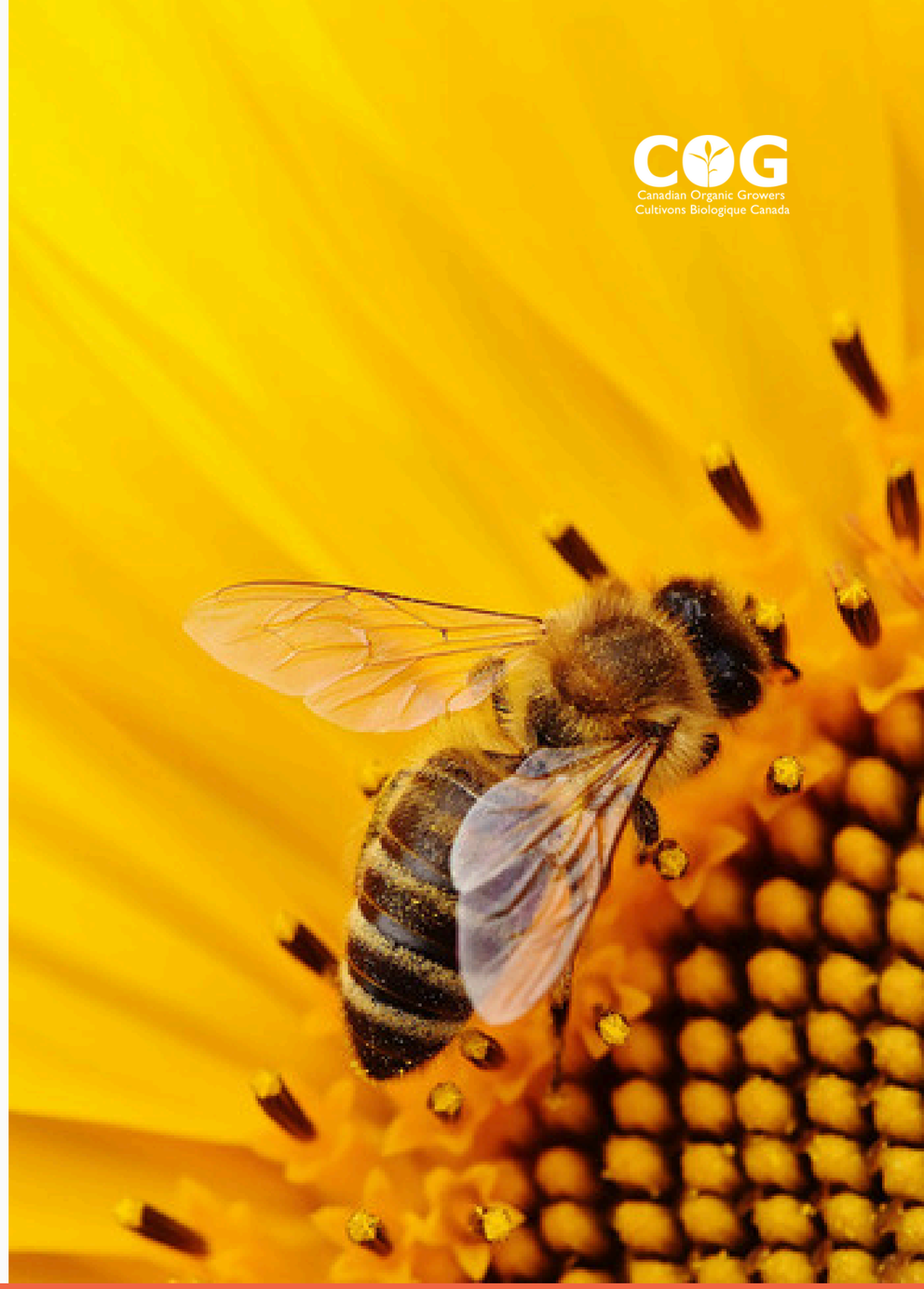
BIONUTRIENT FOOD ASSOCIATION

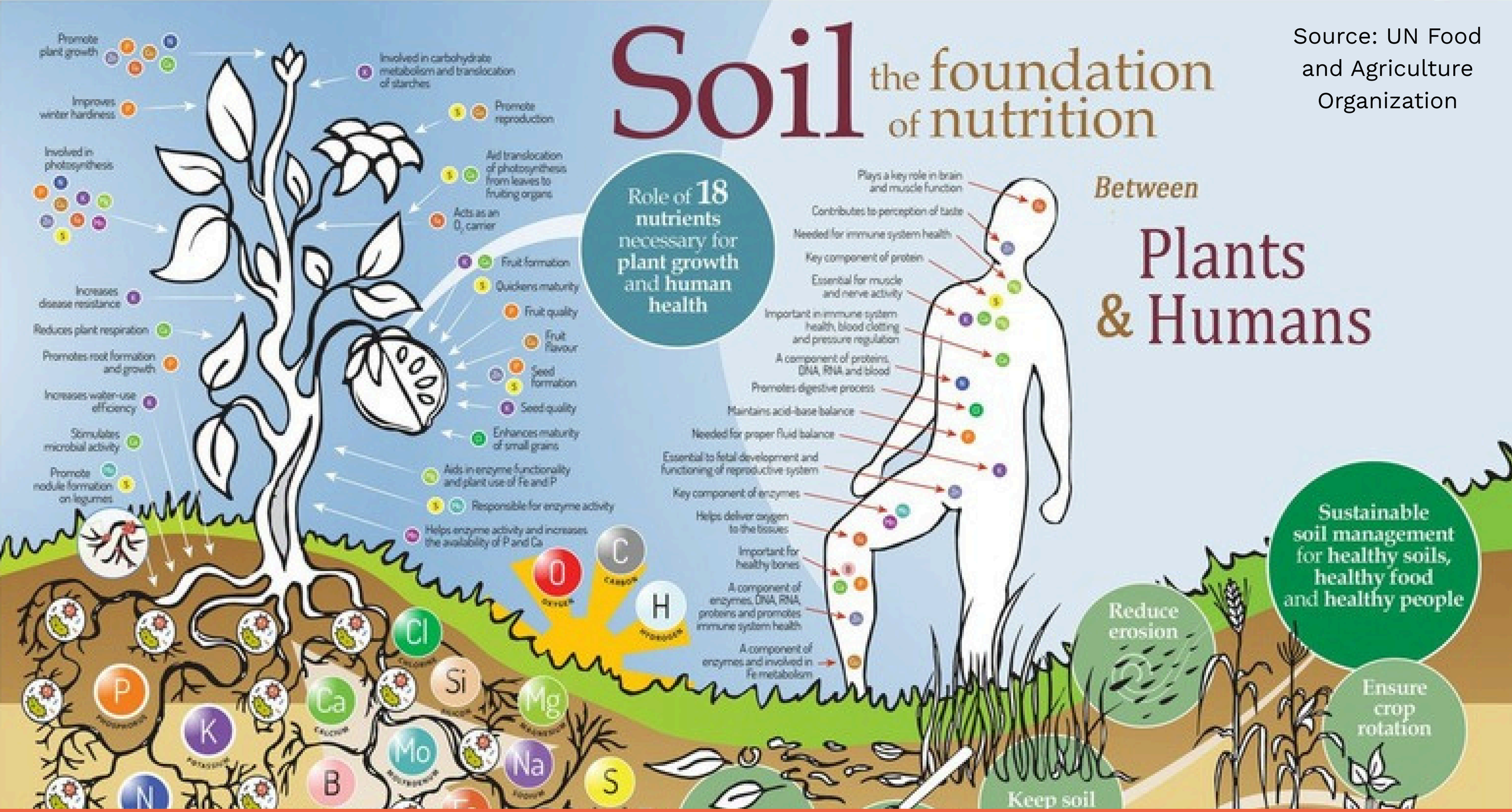
Indicator to Health Outcome Connection

Our Task Force is exploring a shared hypothesis that **soil biodiversity and on-farm flora and fauna biodiversity** may be among the strongest indicators of agricultural production systems capable of producing healthier foods.

Exploring pathways including:

- Exposure and environmental pathways
- Food quality and nutritional quality
- Farmer and farmworker health
- Microbiomes




Soil the foundation of nutrition
Source: UN Food and Agriculture Organization
Role of 18 nutrients necessary for plant growth and human health
Between
Plants & Humans
Promote plant growth
Improves winter hardiness
Involved in photosynthesis
Increases disease resistance
Reduces plant respiration
Promotes root formation and growth
Increases water-use efficiency
Stimulates microbial activity
Promote nodule formation on legumes
Involved in carbohydrate metabolism and translocation of starches
Promote reproduction
Aid translocation of photosynthesis from leaves to fruiting organs
Acts as an O2 carrier
Fruit formation
Quickens maturity
Fruit quality
Fruit flavour
Seed formation
Seed quality
Enhances maturity of small grains
Aids in enzyme functionality and plant use of Fe and P
Responsible for enzyme activity
Helps enzyme activity and increases the availability of P and Ca
Plays a key role in brain and muscle function
Contributes to perception of taste
Needed for immune system health
Key component of protein
Essential for muscle and nerve activity
Important in immune system health, blood clotting and pressure regulation
A component of proteins, DNA, RNA and blood
Promotes digestive process
Maintains acid-base balance
Needed for proper fluid balance
Essential to fetal development and functioning of reproductive system
Key component of enzymes
Helps deliver oxygen to the tissues
Important for healthy bones
A component of enzymes, DNA, RNA, proteins and promotes immune system health
A component of enzymes and involved in Fe metabolism
O Oxygen
C Carbon
H Hydrogen
P Phosphorus
K Potassium
N Nitrogen
Ca Calcium
B Boron
Cl Chlorine
Si Silicon
Mo Molybdenum
Mg Magnesium
Na Sodium
S
Sustainable soil management for healthy soils, healthy food and healthy people
Reduce erosion
Ensure crop rotation
Keep soil

Policy Context: Deregulation and Opportunity for Health Policy

- **Bill C-30** gave Cabinet new powers to modify - and in some cases reinstate - pesticide registrations on “economic” and “food security” grounds, fundamentally altering the policy environment for protecting Canadians from harmful agricultural chemicals and additives.

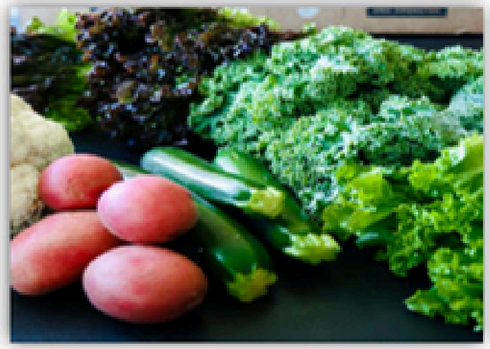
- **Bill C-31** would remove the current requirement that registered pesticides undergo comprehensive scientific re-evaluations every 15 years with public input.



Change Is Already Happening

What is Recipe4Health?

Food + Health Coaching
to treat, prevent, and reverse chronic conditions and food/nutrition insecurity



FOOD – Produce Boxes

Local
Organic
Regenerative
BIPOC led farms

12 weekly doorstep deliveries



HEALTH COACHING

Move
Nourish
Connect
Be

6-12 weekly sessions

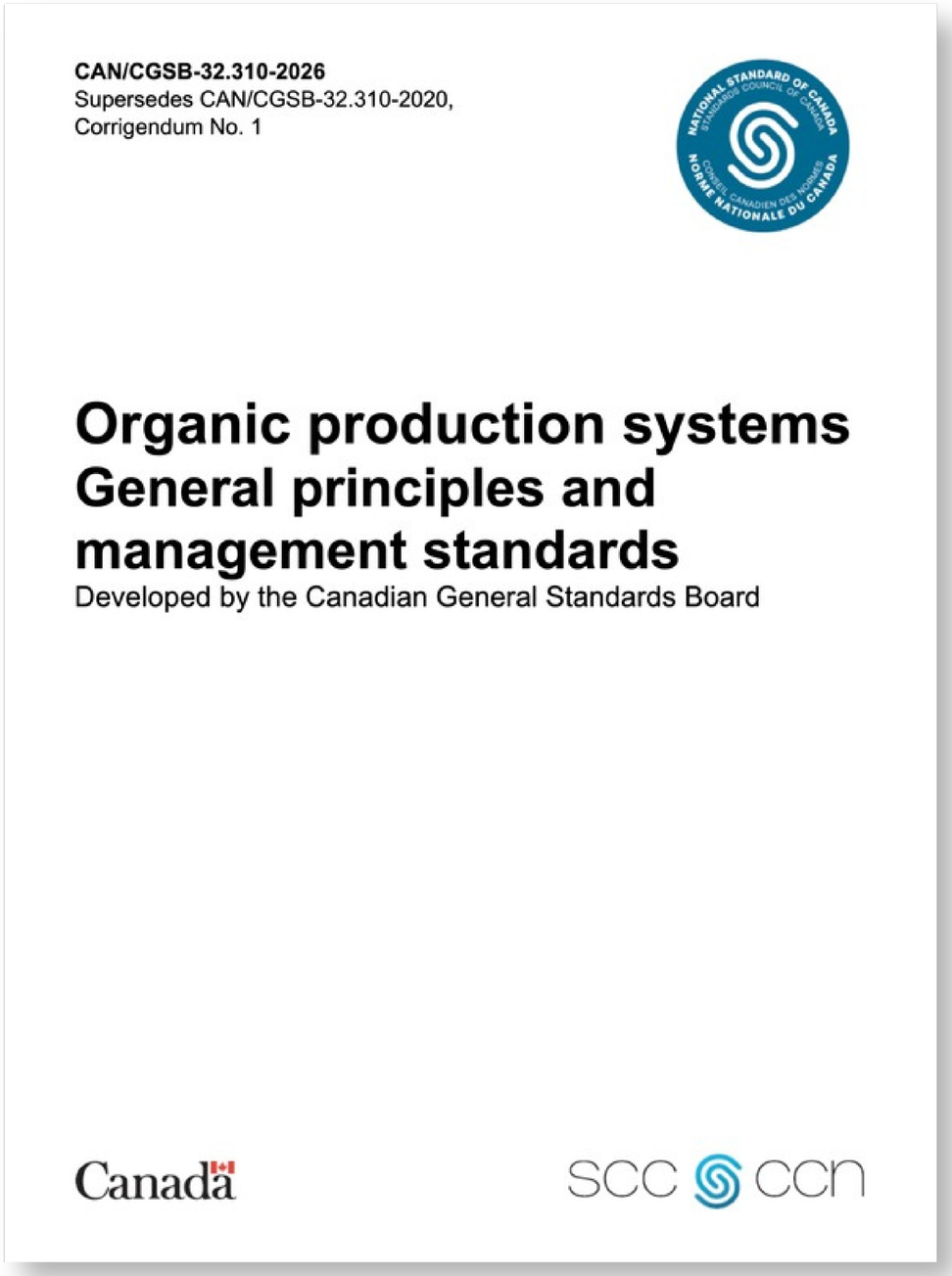
H³E (Health Cubed Equity) co-benefits:

- Human *Health*
- Economic *Health*
- Ecological *Health*
- Equity

Organic in Canada:
An Established System

"Organic production is a holistic system designed to **optimize the productivity and fitness of diverse communities within the agro-ecosystem, including soil organisms, plants, livestock and people.** The principal goal of organic production is to develop operations that are sustainable and harmonious with the environment."

– *Canadian Organic Standards*
CAN/CGSB-32.310-2026



A Shovel-Ready Policy Opportunity

“Organic certification is a shovel ready solution for regulating benefit-of-practice claims connected to soil and human health.” - COG over 50+ years of organic advocacy

The Organic Action Plan offers short-term roadmaps toward uplifting Canadian producers to meet growing demand for socioecologically sustaining and “healthy” foods.

The Agriculture and Health Task Force will collate the data and evidence to support adoption of federal, national, provincial, and personal food policies that reflect our 21st Century understanding of the role food production plays in personal and societal well-being.

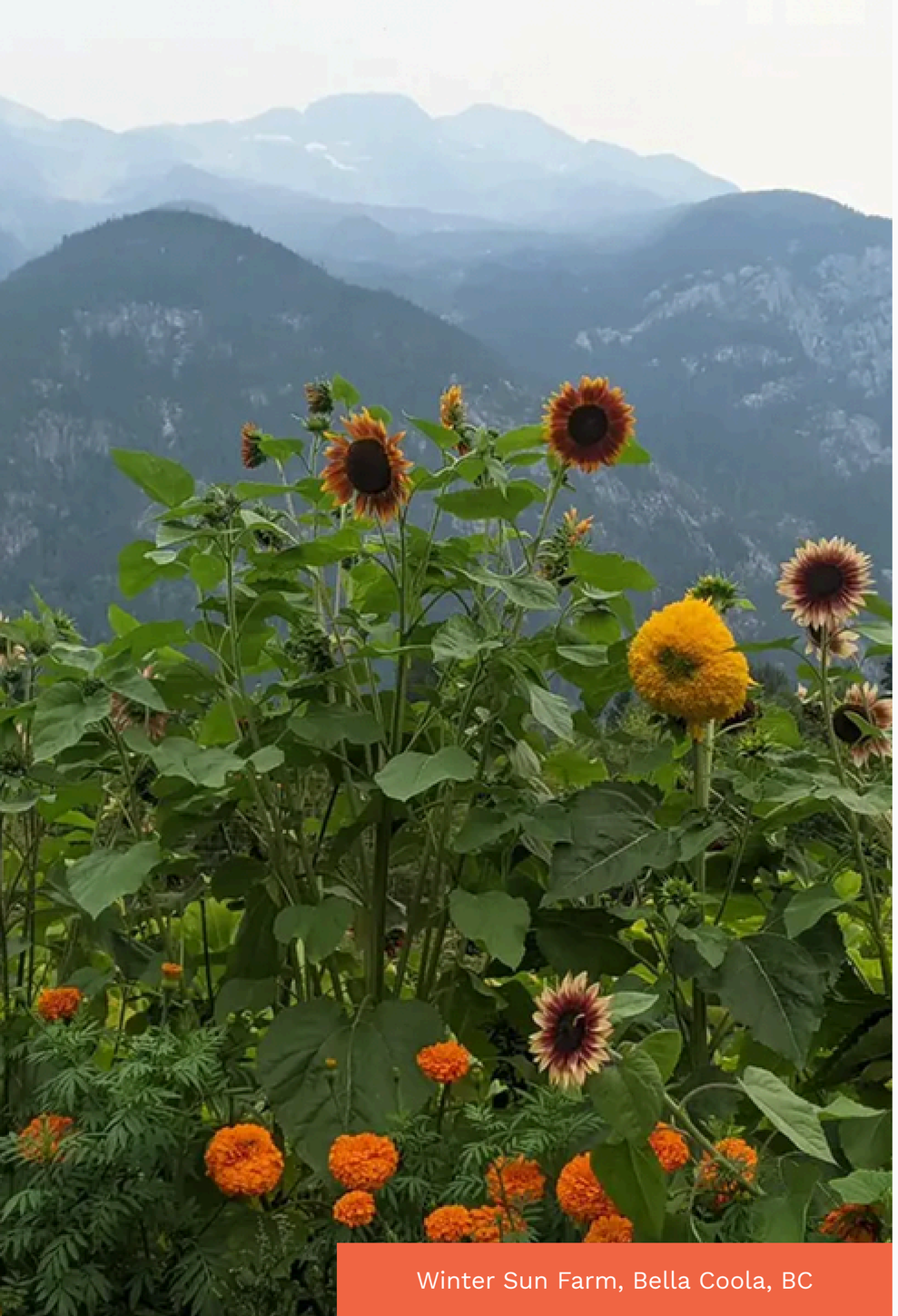


DeRuyck's Top of the Hill Farm, Treherne, MB

What can YOU do?

- Know your farmer, know your food
- Build bridges across agriculture, health and environment
- Advocate for policy changes
- Contribute to the Agriculture and Health Task Force





Winter Sun Farm, Bella Coola, BC

Thank you, merci!

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