

# The Interconnectedness between the Ecosystems of a Human Body and the Earth

with Rosa Tkacova



## Erickson's Eco Coaching Series

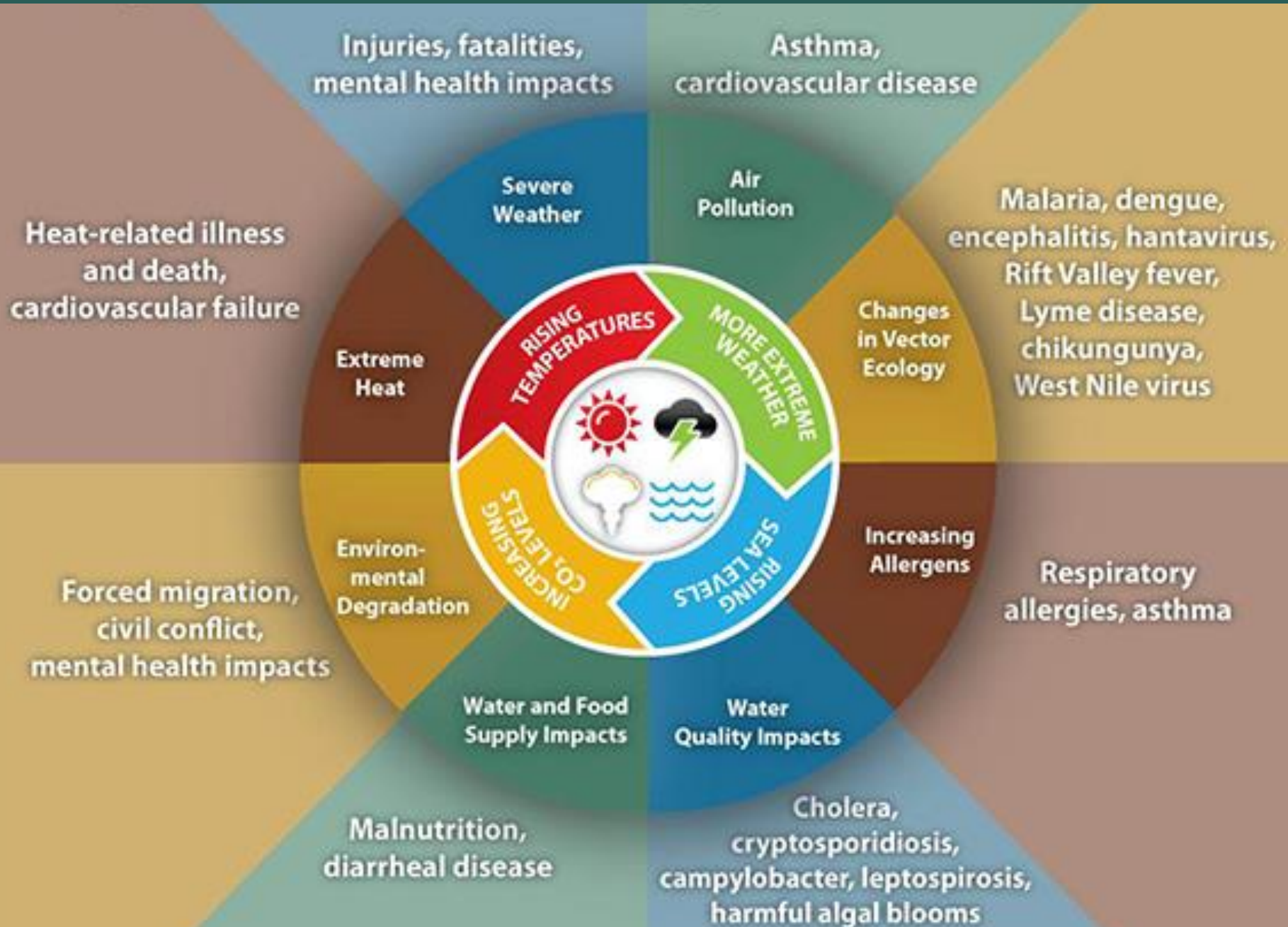


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# The Impact of Climate Change on Human Health



# Ecosystem

Any system or network  
of interconnecting  
and interacting parts

What does the term  
*'Ecosystem  
of human body'*  
mean to you?



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# Ecosystem of Human Body

What does the term  
*'Ecosystem  
of human body'*  
mean to you?

Human Cells ( $3.0 \cdot 10^{13}$ )  
Fluids



**Balance = Homeostasis**



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# Interactions



**Human Cells ( $3.0 \cdot 10^{13}$ )  
Fluids**



**Microbiome**



**$3.8 \cdot 10^{13}$  bacteria**

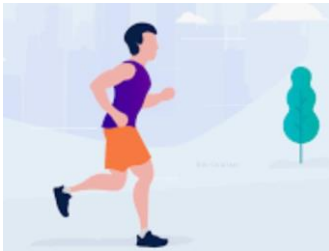
**Balance = Homeostasis**



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# Everyday Choices to Keep Balance



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# Food Choices for Individual Health

## Canada's Food Guide

Government Canada

## US Report 'Best Diets 2020'

A panel of nationally recognized experts in diet, nutrition, obesity, food psychology, diabetes and heart disease

European Society  
for **Hypertension**

American Cancer Society  
Guidelines on Nutrition  
and Physical Activity  
for **Cancer Prevention**

## Preference of Plant-Based Food

American Heart  
Association/  
American College  
of **Cardiology**  
lifestyle guidelines

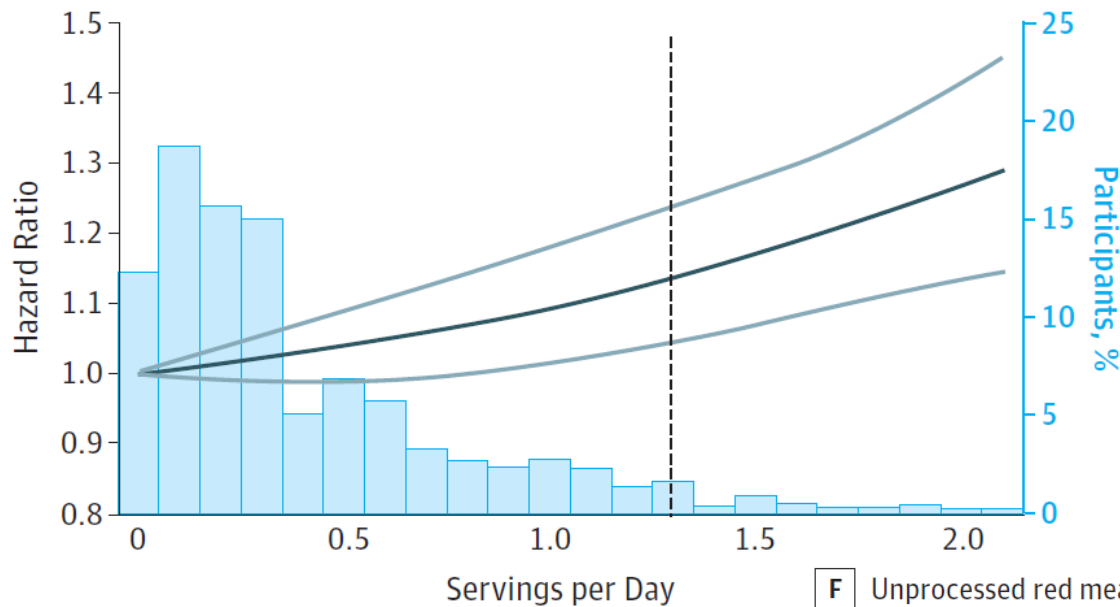
European Respiratory Society  
Recommendations for  
**Respiratory Health**

Clinical Practice  
Guidelines for  
**Diabetes**  
Canada

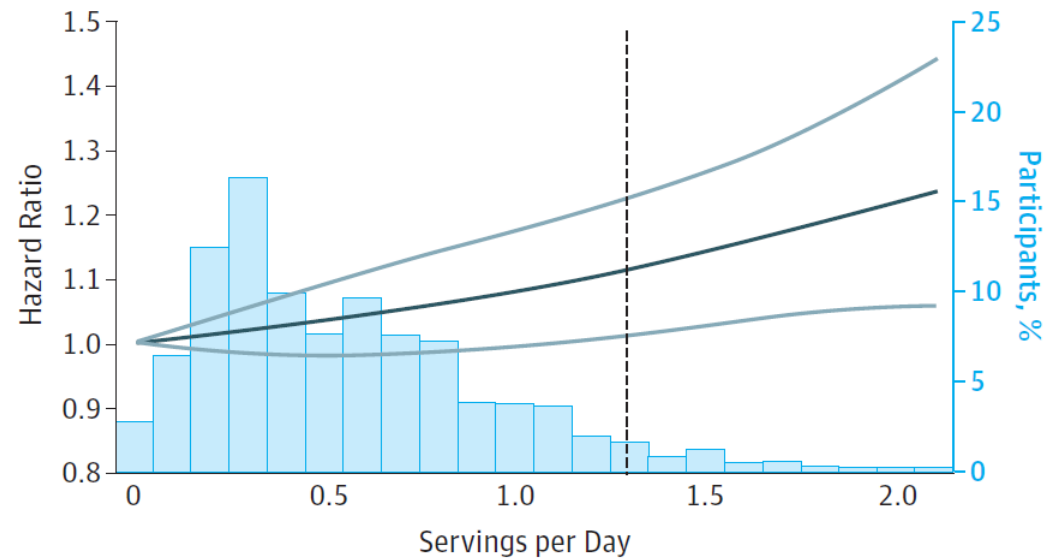


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**E** Processed meat intake and all-cause mortality



**F** Unprocessed red meat intake and all-cause mortality

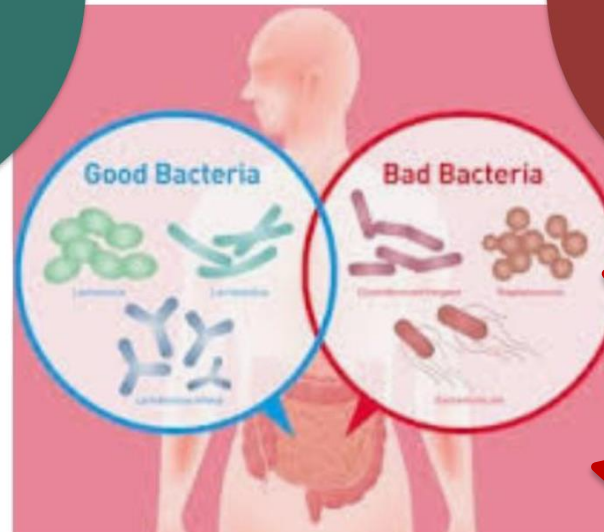


Zhong et al.,  
**JAMA Feb 2020**



**Preference  
Of  
Plant-Based  
Food**

**Preference  
of  
Animal-Based  
Food**



**Physical & Mental  
Health**

**New Metaphor  
'Just Enough'**



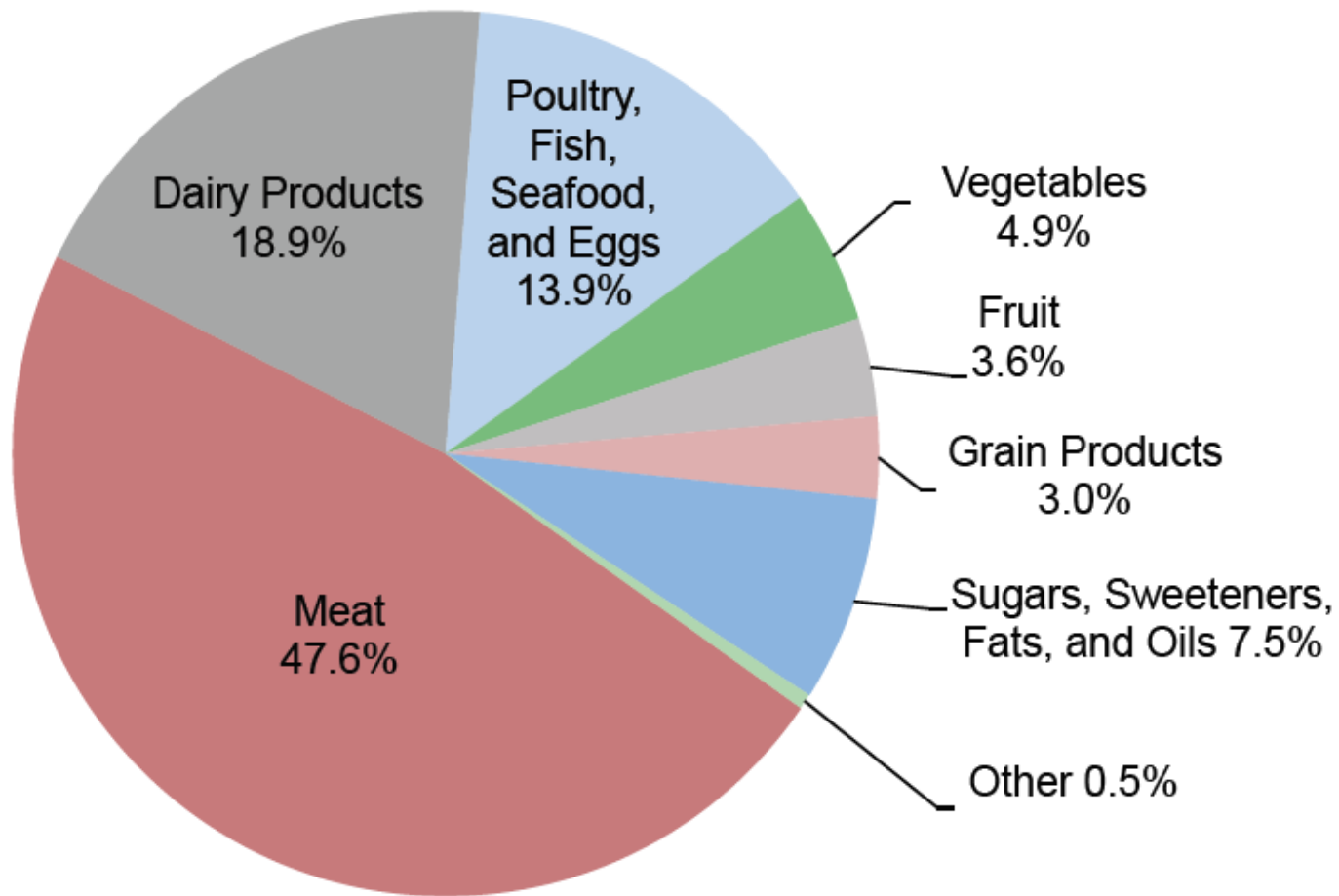
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# Food, Transportation & the Ecosystem of the Earth



## What Is the Link?

# Carbon Footprint of Food



Center for Sustainable Systems, University of Michigan. 2018. "Carbon Footprint Factsheet." Pub. No. CSS09-05.

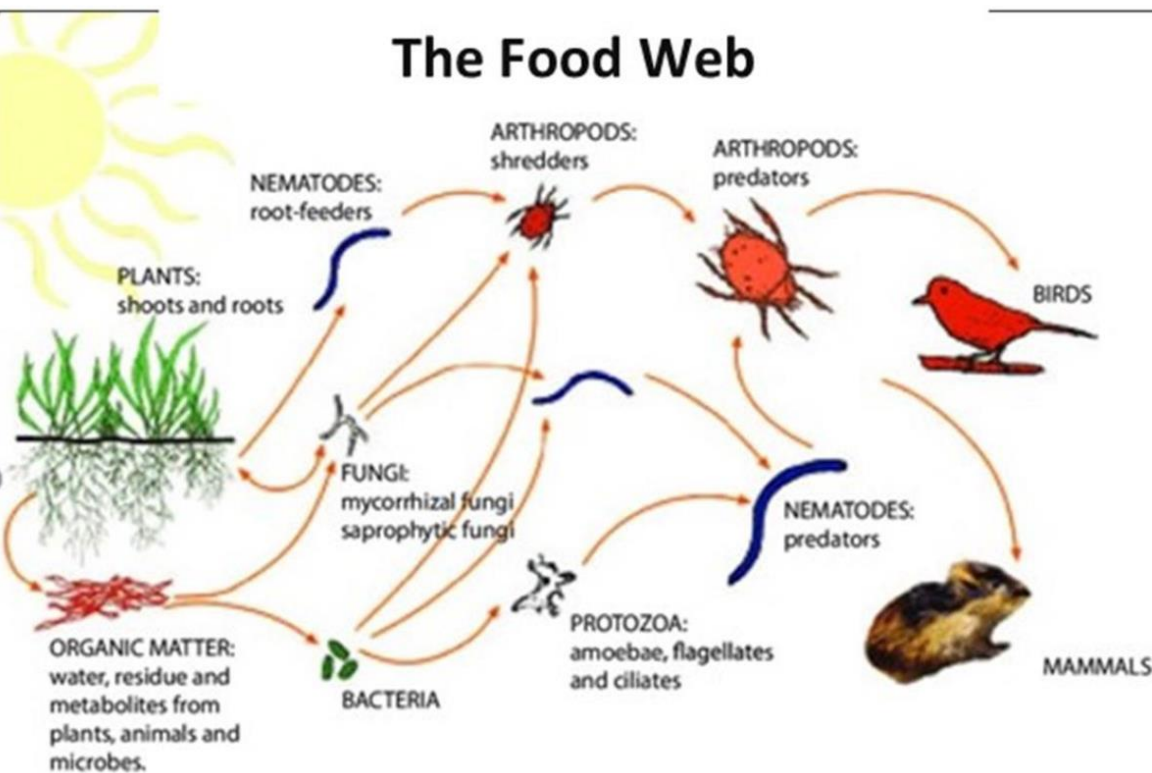




# The Mineral Cycle of Life-Sustaining Nutrients

Christopher Cooke

- The movement of minerals or nutrients including carbon, nitrogen and other essential nutrients.
- Affects all forms of life (micro-organisms, plants, animals, and humans).



Humans Require over 90 essential nutrients

## 90 Essential Nutrients

- 60 Minerals
- 2-3 Essential Fatty Acids
- 16 Vitamins
- 12 Amino Acids

<http://www.youngevity.com/index.cfm/90-for-life/#sthash.9pPd1Gcb.dpuf>



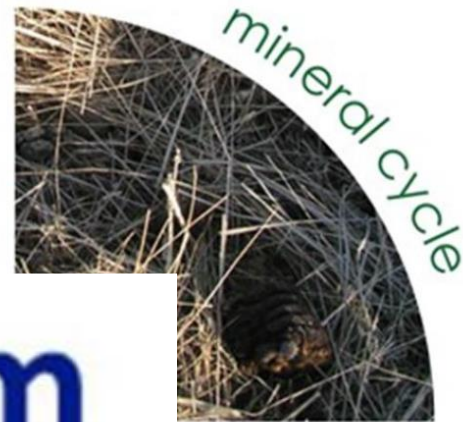




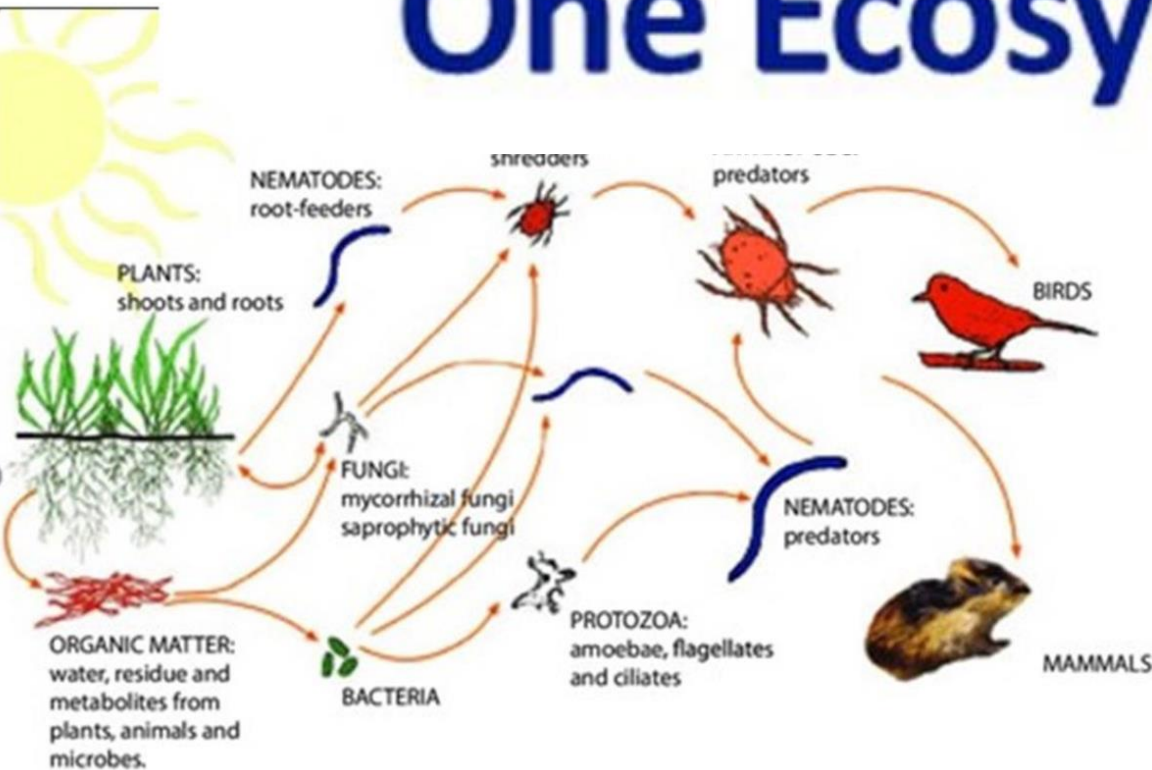
# The Mineral Cycle of Life-Sustaining Nutrients

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## One Ecosystem



Humans Require over 90 essential nutrients

### 90 Essential Nutrients

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- 16 Vitamins
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<http://www.youngevity.com/index.cfm/90-for-life/#sthash.9pPd1Gcb.dpuf>



# What is Ecological Nutrition?



**Nature, 2018**

## Options for keeping the food system within environmental limits

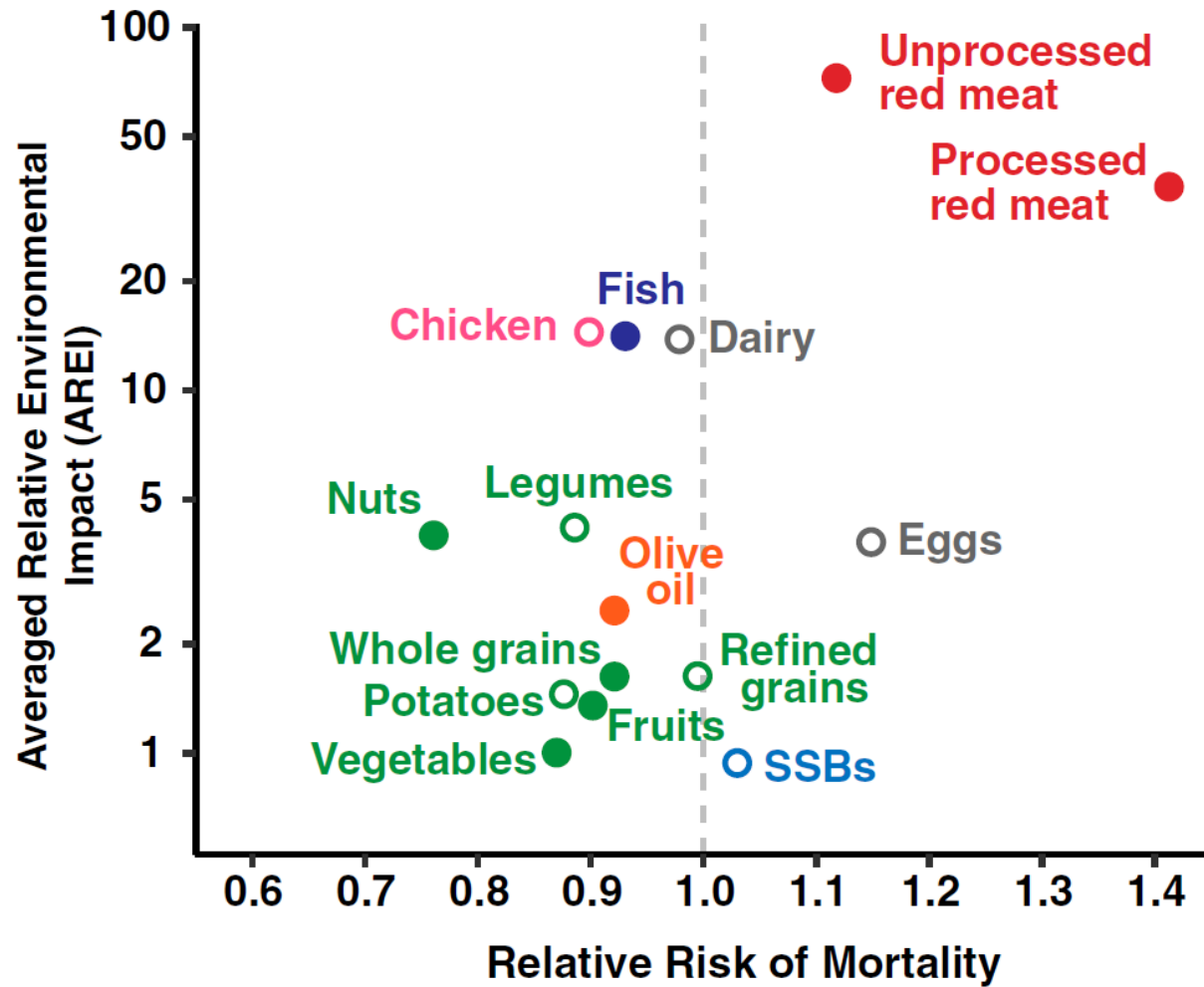
Marco Springmann<sup>1,2\*</sup>, Michael Clark<sup>3</sup>, Daniel Mason-D'Croz<sup>4,5</sup>, Keith Wiebe<sup>4</sup>, Benjamin Leon Bodirsky<sup>6</sup>, Luis Lassaletta<sup>7</sup>,

**Lancet, 2019**

## Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems

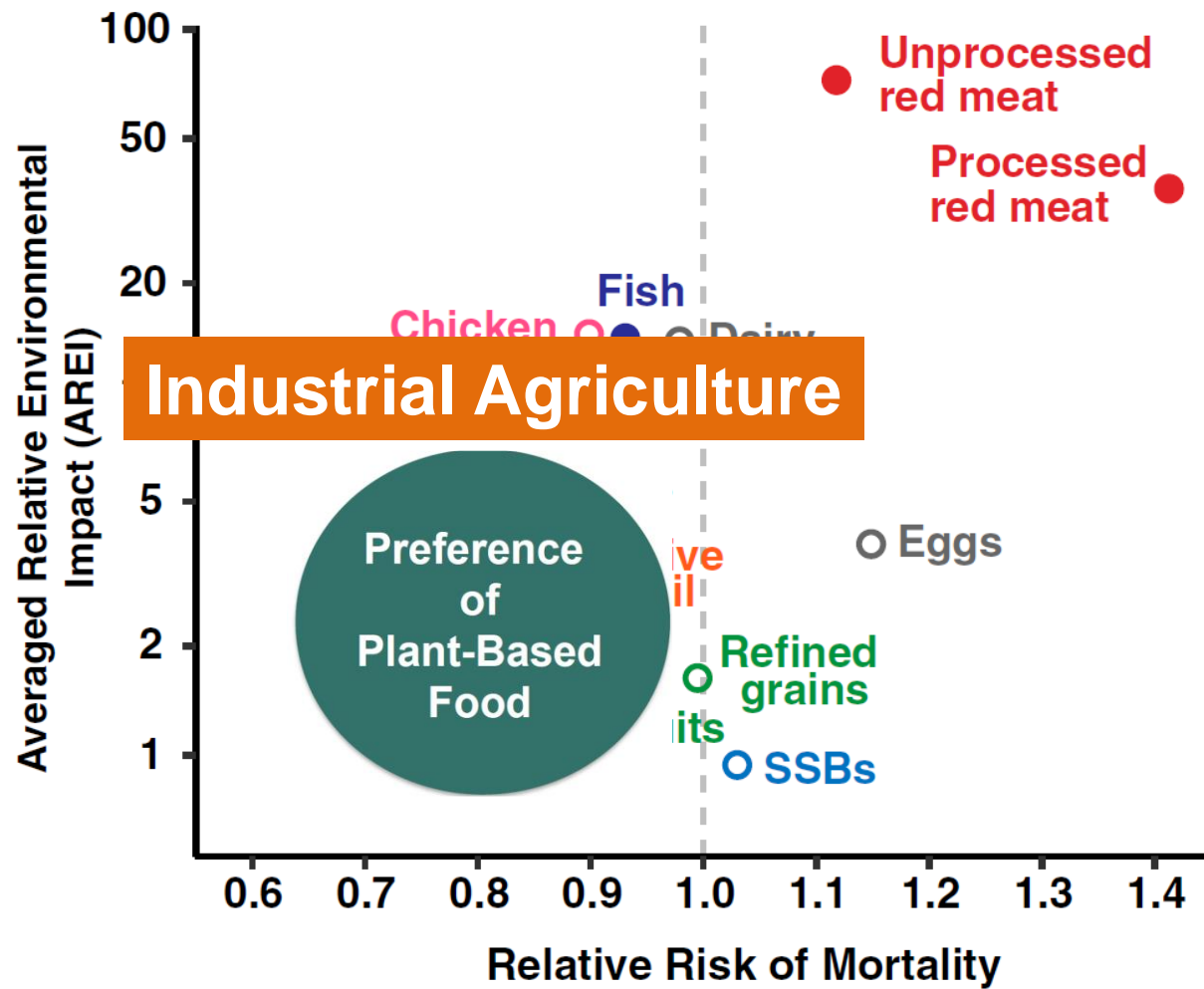
Walter Willett, Johan Rockström, Brent Loken, Marco Springmann, Tim Lang, Sonja Vermeulen, Tara Garnett, David Tilman, Fabrice DeClerck, Amanda

# Multiple health and environmental impacts of foods



Clark MA,  
PNAS 2019

# Multiple health and environmental impacts of foods



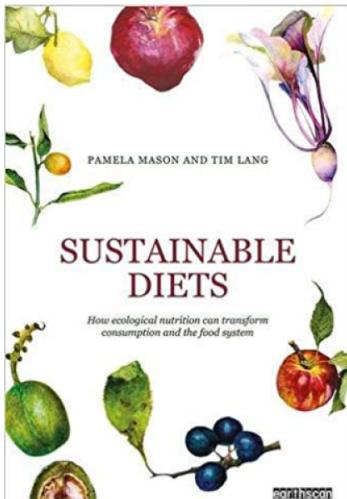
Clark MA,  
PNAS 2019



# Ecological Nutrition

## Reviews

Future of Food: Journal on Food, Agriculture  
and Society, 6 (1)



## Sustainable diets: How ecological nutrition can transform consumption and the food system

A review by Jessica Lucinda Amprako

2017

Industrial Agriculture



Ecological Agriculture

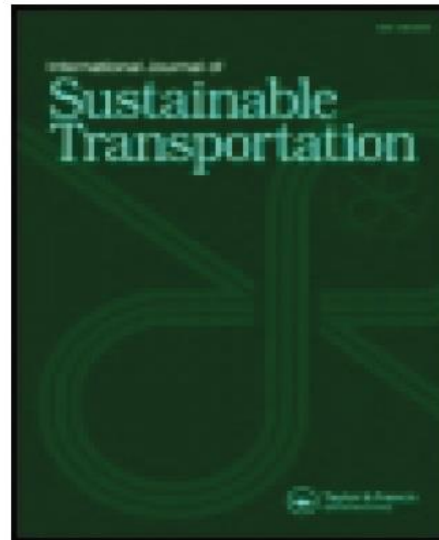


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The 2019 report of The *Lancet* Countdown on health and climate change: ensuring that the health of a child born today is not defined by a changing climate

## Active Transportation = Sustainable Transportation

the health benefits of increasing uptake of active forms of travel (walking and cycling) have been shown through a large number of epidemiological and modelling analyses.



# What Are the Solutions?



**One Ecosystem**

# How to Address the Climate Emergency

*Agreements on:*

**Problems**

**Solutions**

**Implementation**



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# How to Address the Climate Emergency

## ENERGY



**Fossil fuels**  
**Transportation**  
Electricity Generation  
Materials

## FOOD



**Food**  
**Ecological Food Choices**  
**Reduction of Food Waste**  
**Land Use**

## POPULATION



**Population growth**  
Women and Girls

**United Nations  
&  
Climate  
Action**



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# How to Address the Climate Emergency

## ENERGY



**Fossil fuels**  
**Transportation**  
Electricity Generation  
Materials

**Sustainable  
Transportation**

## FOOD



**Food**  
**Ecological Food Choices**  
**Reduction of Food Waste**  
**Land Use**

**Ecological  
Nutrition**

## POPULATION



**Population growth**  
Women and Girls

**Reproductive  
Behavior**



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# How to Address the Climate Emergency

*We may have agreements on:*

**Problems**

**Solutions**

*How do we agree on implementation?  
What is the challenge?*

**Vision**

**Identity**

**Values**

**Capabilities**

**Actions**

**Environment**

**Ecological Nutrition  
Agroecology**

**Sustainable  
Transportation**

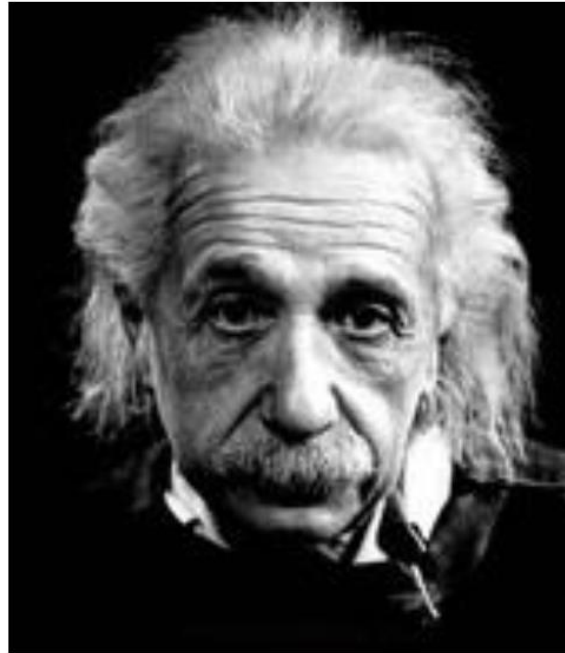
**Reproductive  
Behavior**



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**“A human being is a part of the whole called by us universe, a part limited in time and space.**



**Our task must be to free ourselves  
by widening our circle of compassion  
to embrace all living creatures  
and the whole of nature in its beauty.”**

**Transformation**

**Solution-Focused  
Ecology Coaching**

**Vision**

**Binding the 'I' with the  
'WE' & the 'Planet Earth'  
Perspective**

**Identity**

**Values**

**Capabilities**

**Ecological Nutrition  
Agroecology**

**Actions**

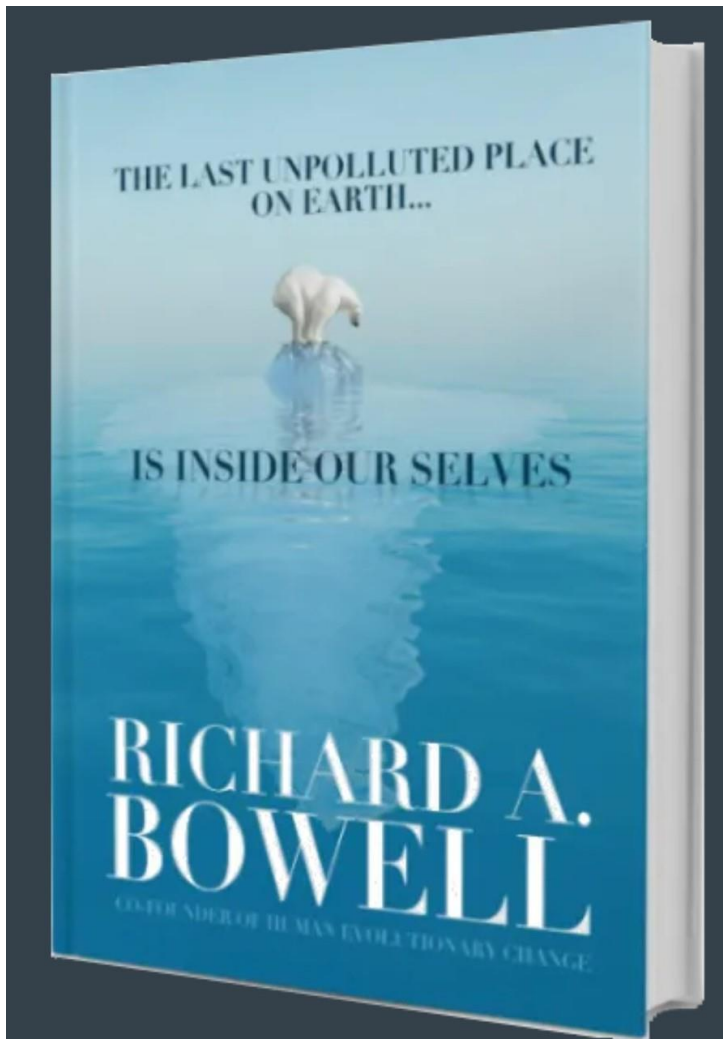
**Sustainable  
Transportation**

**Reproductive  
Behavior**

**Environment**



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***‘The transformation work  
needs to be available to  
as many people as possible.***

***It is a human race issue.’***

**Which action steps may you consider for  
yourself towards  
ecological nutrition  
ecological transportation?**

**What and whom can you impact  
in your personal life?**

**What and whom can you impact  
as a coach and/or as a leader?**



# Insight

# Value

A word cloud featuring the phrase "thank you" in various languages and scripts. The central text "thank you" is the largest and most prominent. Surrounding it are numerous other expressions of gratitude, including:

- danke (German)
- teşekkür ederim (Turkish)
- gracias (Spanish)
- bedankt (Dutch)
- dziękuję (Polish)
- obrigado (Portuguese)
- sukriya (Arabic)
- terima kasih (Indonesian)
- 고맙습니다 (Korean)
- ti благодарам (Serbian)
- ngiyabonga (Xhosa)
- આભાર (Gujarati)
- маурну (Mongolian)
- дзякуй (Belarusian)
- бажралаа (Buryat)
- hvala (Croatian)
- maururu (Māori)
- moichhakkeram (Tamil)
- go raibh maith agat (Irish Gaelic)
- хвала (Ukrainian)
- дзякусьмо (Belarusian)
- eskerrik asko (Basque)
- dankewol (Afrikaans)
- shukriya (Arabic)
- dhanyवाद (Hindi)
- kop khun krap (Lao)
- taiku (Lao)
- toda (Hindi)
- euχαριστώ (Greek)
- salamat (Tagalog)
- sagolun (Hindi)
- sohodi (Hindi)
- oikuji (Hindi)
- merci (French)
- kan sah tamada (Malay)
- salamat (Tagalog)
- ti благодарам (Serbian)
- xiexie (Chinese)
- danke (German)
- 格雷西 (Chinese)
- marji (Hindi)
- barka (Arabic)
- walalin laci (Hausa)
- misatra (Hindi)
- tapadh leat (Irish Gaelic)
- maalo (Hindi)
- gna asant (Hindi)
- oijere dieuf (Hindi)
- moichhakkeram (Tamil)
- shukriya (Arabic)
- dhanyवाद (Hindi)
- kop khun krap (Lao)
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