2026 August - this presentation was compiled by ICDA SFS Toolkit Advisory Team members
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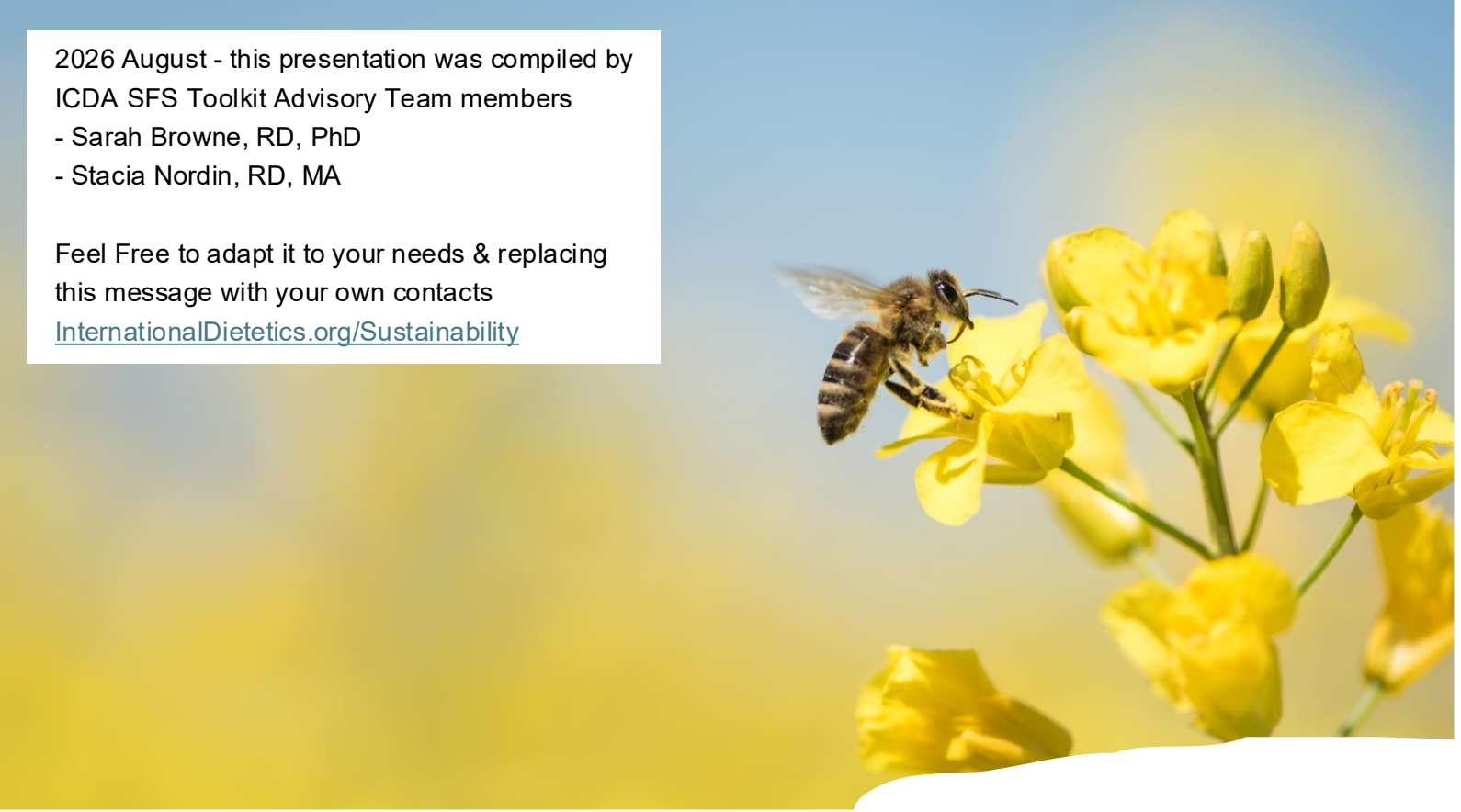
- Stacia Nordin, RD, MA

Feel Free to adapt it to your needs & replacing this message with your own contacts
InternationalDietetics.org/Sustainability

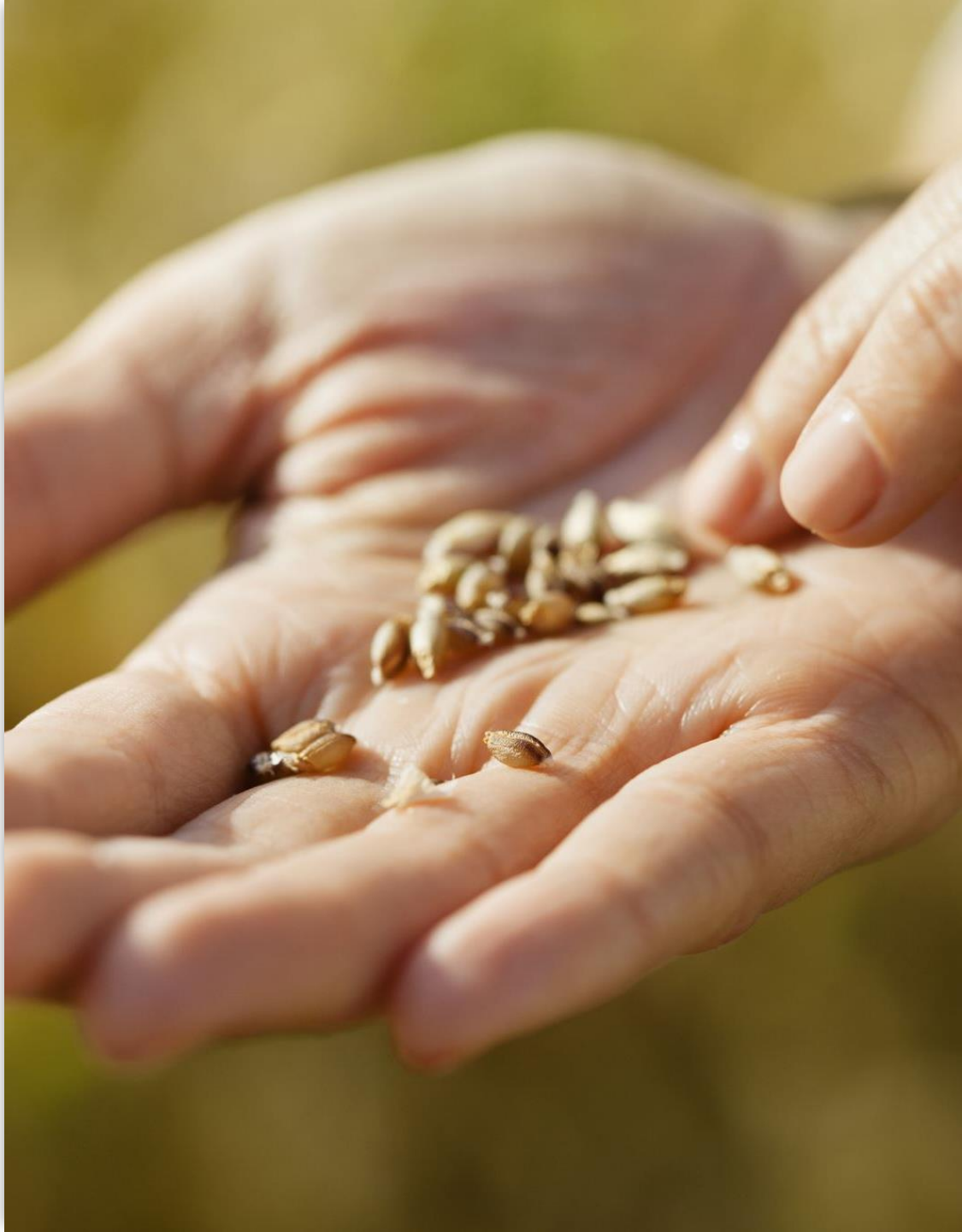


Sustainable Food Systems for Planetary Health

An Introduction

Overview

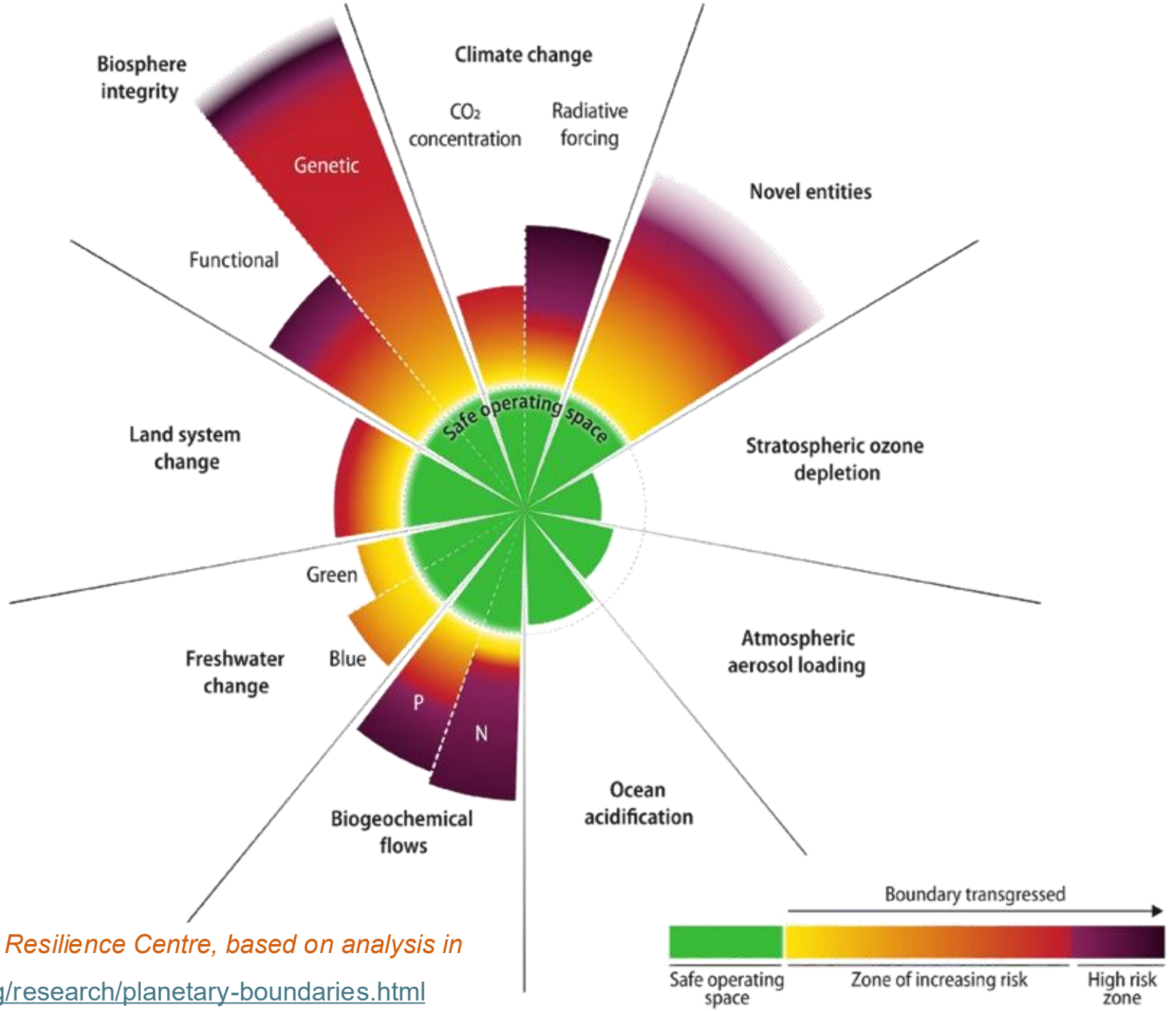
- Food system introduction
- Where do dietitians fit?
- Define healthy, sustainable diets
- Understanding food system transformation
  - How
  - Why
- Dietetic action case studies
- Resources & References



Planetary Boundaries Framework

- Identifies nine processes that are critical for maintaining the stability and resilience of **Earth System as a whole.**

- All 9 are heavily perturbed by human activity on Earth.



Status of Planetary Boundaries 2023; Azote for Stockholm Resilience Centre, based on analysis in Richardson et al 2023 https://www.stockholmresilience.org/research/planetary-boundaries.html

Climate Science

Intergovernmental panel on climate change (IPCC)

- Unequivocal evidence for the impact of human activity on planetary boundaries and global warming
- Need to radically cut global emissions to minimise global temperature rises

Temperature rises:

- Increases in heat-related deaths by 370% by 2030
- Lead to major disruptions to food production
- Significant increases in food insecurity

Food system and global emissions

- IPCC estimates that between 21-37% of global emissions arise from food production, processing and waste activities
- Food production uses up half of the Earth's habitable land
- **Agriculture and land use contribute to >70% of food systems emissions,** while remaining contributors are food supply chain activities
- **Chemical pollution** (fertilisers, pesticides, insecticides) has devastating impacts on soil biodiversity and integrity, water quality and aquatic life, and the health of food workers.

Sustainable food systems

Sustainable diets must be

- ❑ Nutritionally adequate and safe,
- ❑ Of low environmental impact, protecting natural resources and biodiversity,
- ❑ Culturally acceptable,
- ❑ Accessible, economically fair, and affordable.

FAO, 2012

Dietitians-Nutritionists' Vision of Sustainable Food Systems

Dietitians-Nutritionists around the world envision *sustainable food systems as ones that nourish all people, now and into the future, with sufficient, nutritious, affordable, tasty, diverse, and culturally appropriate food. Such food systems support people's physical and mental health while respecting the integrity of ecological and social systems.*

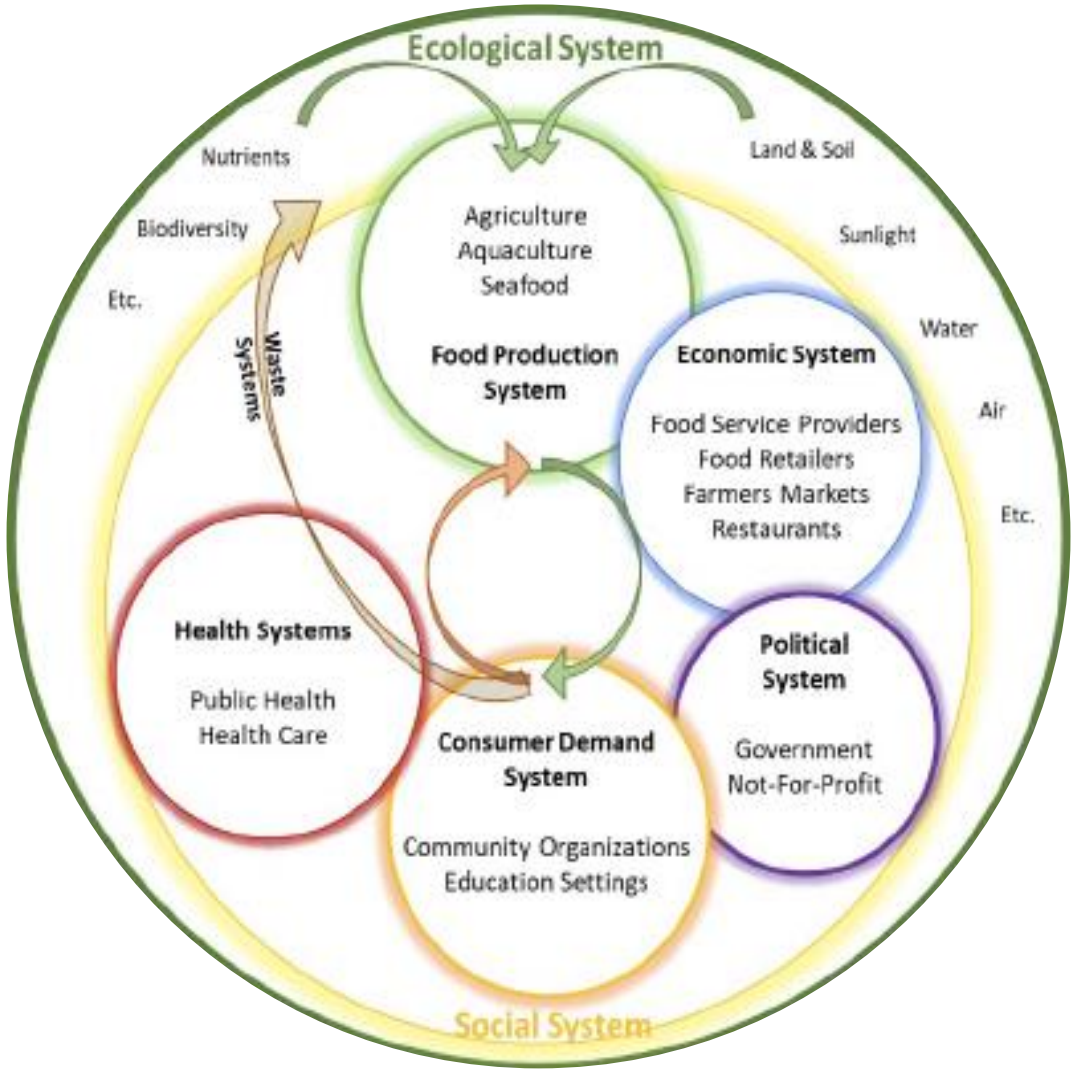
International Confederation of Dietetics Associations

SUSTAINABLE FOOD IS . . . .
ECOLOGICALLY RESPONSIBLE
Low greenhouse gas emissions
Soil and water quality is maintained or improved
Biodiversity and ecosystems are protected and preserved
Livestock are treated humanely
FAIR AND ACCESSIBLE
Farmers, fishers & food workers have a livable income
CO-OP
MEDICO
All people have access to a basic, affordable, nutritious diet
People live with dignity in sustainable rural communities
Promotes justice and fair trade in countries in the global south
SUSTAINABLE EATING FOR A BETTER WORLD
LOCAL
FRESH VEG
CORN
APPLES
Provides high quality and freshness
FARMERS MARKET
Minimizes food miles traveled and green-house gas emissions
V CKI & SONS
Supports local farms, fishers, producers, businesses and community development
HEALTHY
Healthy Food is a key foundation for healthy humans
NO WASTE
COUNTY LANDFILL
STOP HERE
Packaging and waste kept out of landfills
Fewer resources used to meet needs
Reusing keeps materials in circulation

3 pillars of addressing the food system

1. Food production practices that protect planetary health
2. Reducing food loss and waste in all its forms
3. Equitable transition to sustainable diets at scale

Adapted: Nourish Food Systems Map



Diverse Roles of Dietitians & Nutritionists

- **Health systems** – to include breadth of nutrition services from health promotion, clinical dietetics & institutional food service
- **Consumer demand** – food security, literacy, culture
- **Political** – government, health advocacy, NGOs, policy
- **Economic** – food service, industry, retailers, marketing, innovation, menus
- **Food supply** – agriculture, aquaculture, seafood, food production, innovation, marketing

Goodridge L., Carlsson L., Callaghan E. (2022) Mapping the roles of nutrition and dietetics professionals in sustainable food systems and exploring opportunities for strategic collaboration. *Perspectives in Practice,* DOI: 10.3148/cjdpr-2022-008

International Confederation of Dietetics Associations' (ICDA) Sustainable Food System Toolkit

The ICDA SFS toolkit is for & by ICDA members from
50 Nutrition & Dietetic Associations who represent 60 nations.
InternationalDietetics.org/Sustainability

Anyone, anywhere, is welcome to use & contribute.

Follow ICDA on:

LinkedIn: https://www.linkedin.com/company/internationaldietetics

Instagram: https://www.instagram.com/icda_internationaldietetics

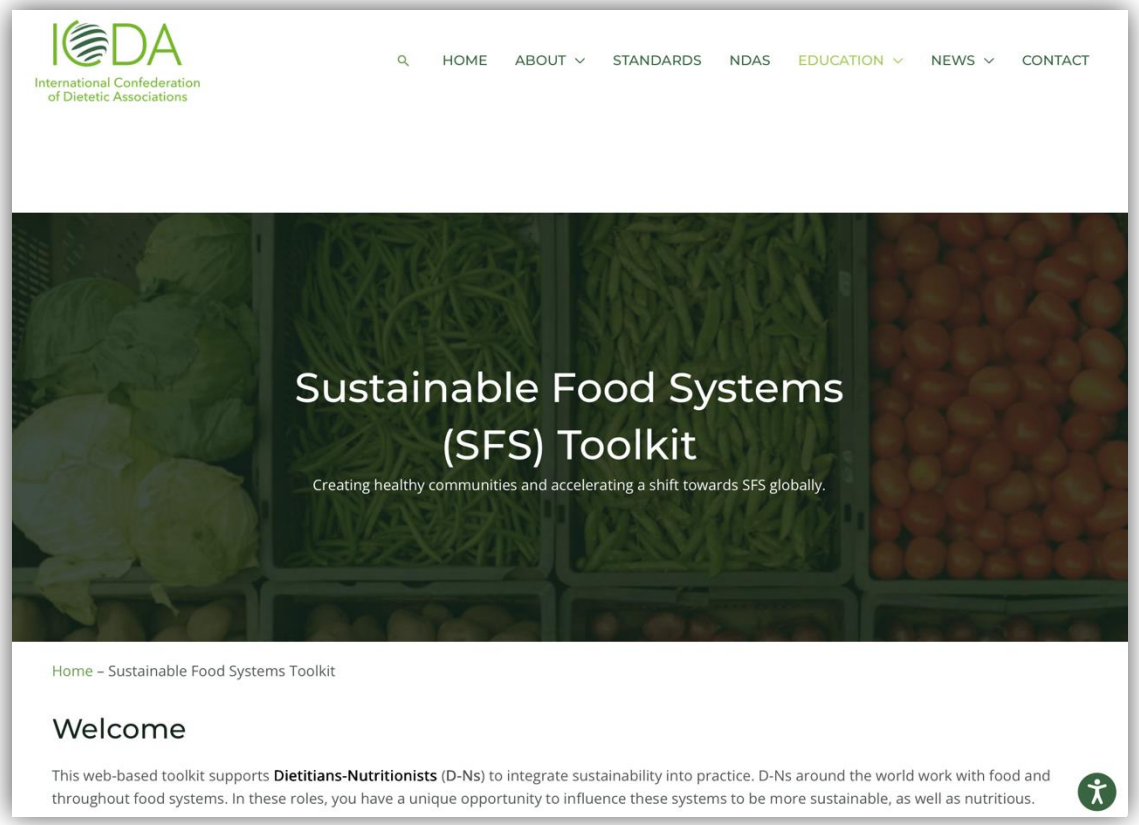
YouTube: https://www.youtube.com/@ICDAengaged

Nutritionists for Sustainability group

This is not ICDA, but many of us are in ICDA!

WhatsApp: https://forms.gle/VWwTzgeCvAbpk5LT6

LinkedIn: https://www.linkedin.com/groups/13059833



Leadership for SFS in NDAs https://internationaldietetics.org/sustainability/national-nutrition-and-dietetic-associations-ndas/

1 - Existing NDA SFS Position Papers

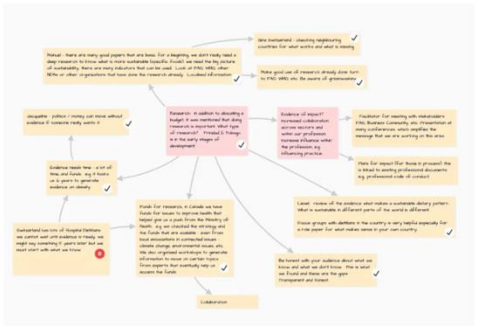
National Nutrition and Dietetics Associations (NDAs) are leading the integration of Sustainable Food Systems (SFS) into modern nutrition and dietetics practice. The table below highlights NDAs that have developed SFS position papers. It also identifies NDAs with active SFS networks, committees, or working groups. If you would like to connect with a specific NDA, you may do so through the ICDA NDA page.

NDA	SFS Network?	Position Paper
Australia	Yes	– Healthy and sustainable diets – Position statement and briefing paper (DA, 2022 Mar) – Food Systems and Environmental Sustainability Role Statement (DA, 2021)
Canada	Yes	– The Role of Dietitians in Sustainable Food Systems and Sustainable Diets (DC, 2020)
Europe	No	– Position Statement: Sustainable Dietary Patterns (EFAD, 2021) – Farm to Fork strategy for a fair, healthy, and environmentally-friendly food system (EU, 2020)
Germany	Yes	– German Nutrition Society (DGE): DGE position statement on a more sustainable diet (2021)
Italy	No	– Position statement: The role of dietitians in food sustainability (ANDID, 2010)(ASAND)
Switzerland	Yes	– Role of nutrition advice in Switzerland in the sustainable nutrition system (2025) (in German and French)
Trinidad & Tobago	No	– TTANDi 2025 Position Paper on Sustainable Food Systems (2025)
		– Cultivating SFS: A framework for action (AND, 2022)

2 - Developing NDA SFS Positions

In March 2024, the #ICDAsfsToolkit hosted a peer-to-peer learning session on developing (NDA position statements and other guidance. The learning session focused on discussion and questions in two sessions that spanned different time zones.

Before attending, participants listened to recordings and read the presentations that ICDA SFS Toolkit Advisors had prepared to explain their experience with developing SFS positions/guides. They shared a wide variety of lessons from different countries and situations, ranging from advanced SFS positions that have been implemented for several years and are helping others, to those who are in the process of developing a paper or are just starting to think about it.



Sticky Studio was utilized during the session for people to add their questions directly or to voice their experiences and be added to the document by the ICDA moderators. This allowed us to draw connections between the points.

Download a summary report for the key points from the discussion.

3 - Sustainability in Dietetics Education for NDAs

See the page on Teaching Sustainable Food Systems with Dietetics & Nutrition Students (ICDA 2023, 2025) for the event Global Networking Event on Sustainable Food Systems in Nutrition & Dietetics Education (2023 Jun 7-8).

University College Dublin
Ireland's Global University

Global Networking Event UCD, 2023

UCD School of Public Health, Physiotherapy and Sports Science

EFAD The European Federation of the Associations of Dietitians

Never Ending Food

INDI Irish Nutrition + Dietetic Institute

airfield estate

ACADIA UNIVERSITY
SCHOOL OF NUTRITION AND DIETETICS

ifiad Irish Forum for International Agricultural Development

UCD Institute of Food and Health
Institiúid Bia agus Sláinte UCD

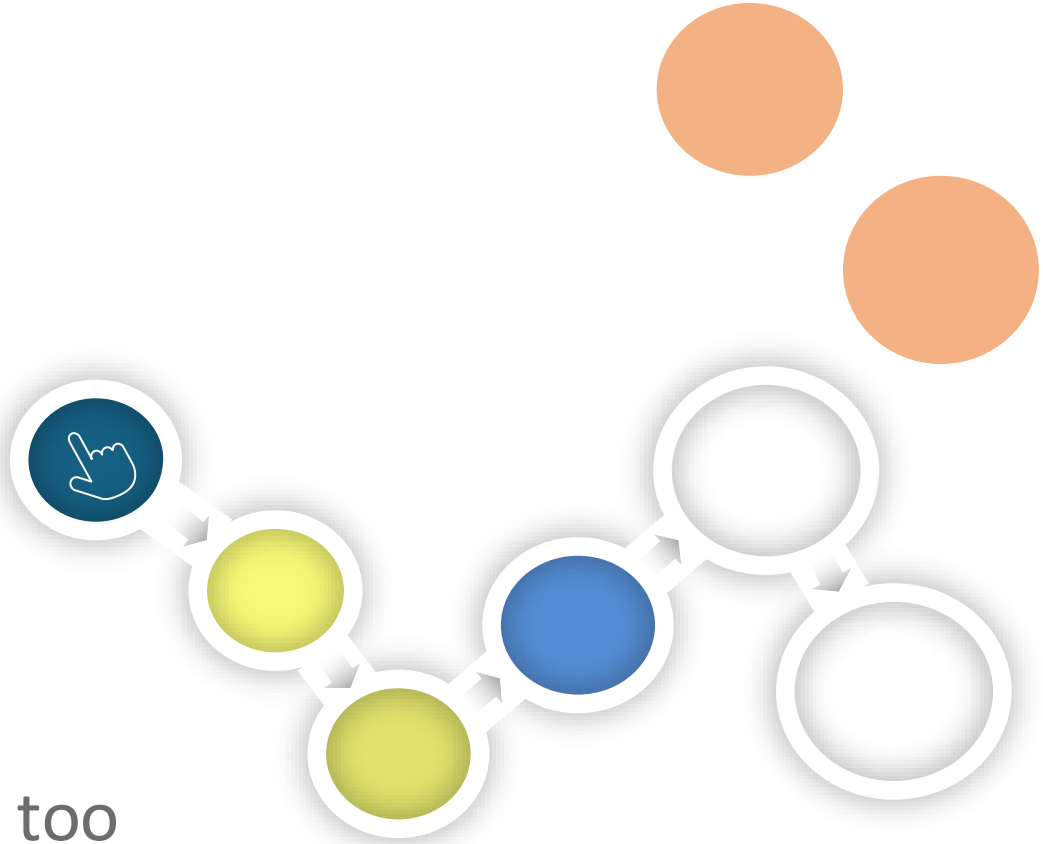
IDA International Confederation of Dietetic Associations
Sustainability
Supporting Sustainability in Nutrition

Student Panel

Student Panel

What makes SFS engaging for students?

- **Real-world examples** in the classroom
- **Repeated exposure** to SFS concepts
- Applying learning on **practical training**
- **Open and honest discussion** about challenges
    - Overwhelming and difficult topic
    - Educators and others can feel discouraged too
- **Learning about uncertainty**
- **Positive stories, knowing where dietitians can be effective**



3 pillars of addressing the food system

1. Food production practices that protect planetary health
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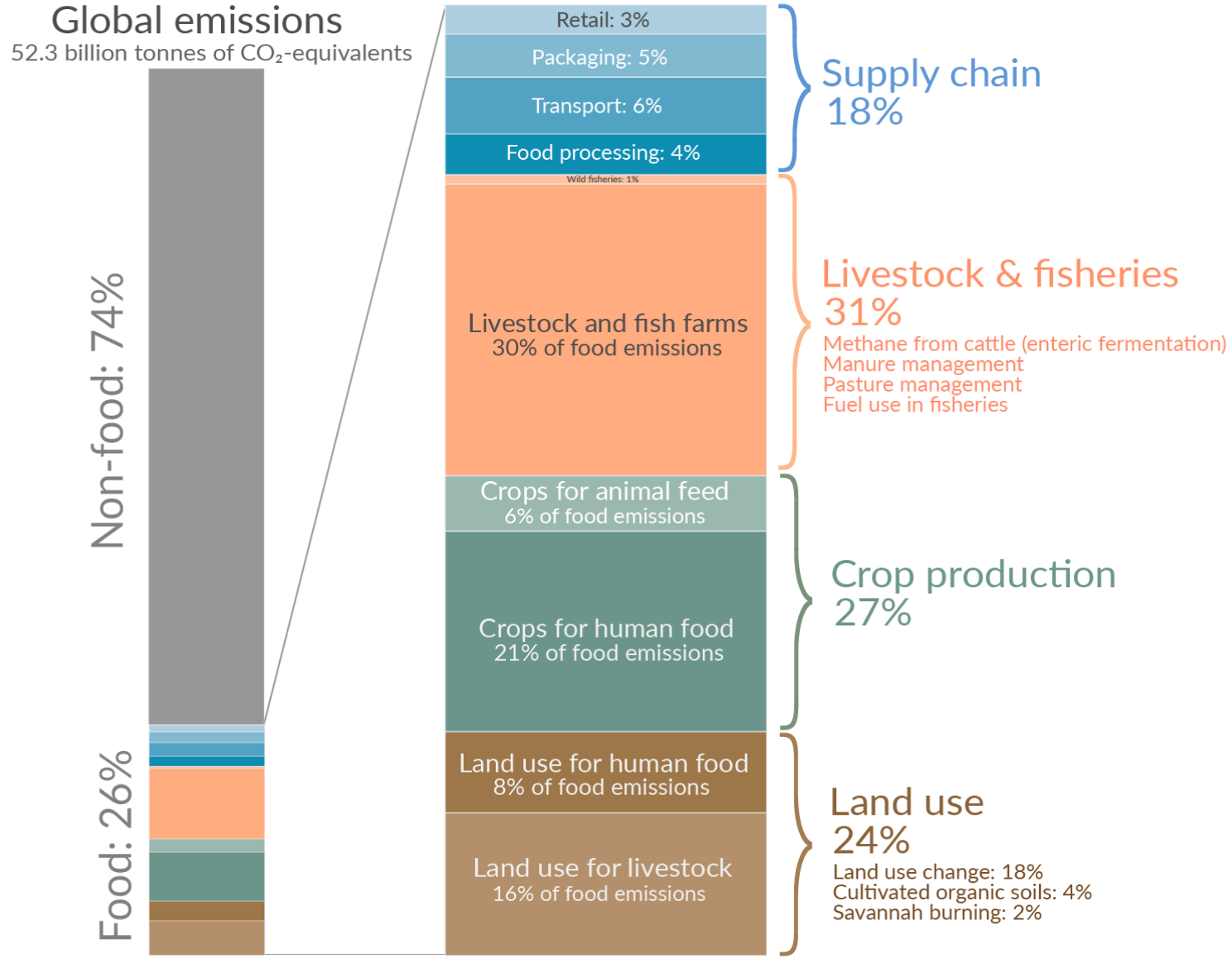
Global greenhouse gas emissions from food production

Our World in Data

Food production practices



Data source: Joseph Poore & Thomas Nemecek (2018). Reducing food's environmental impacts through producers and consumers. Published in *Science*.

Licensed under CC-BY by the author Hannah Ritchie (Nov 2022).

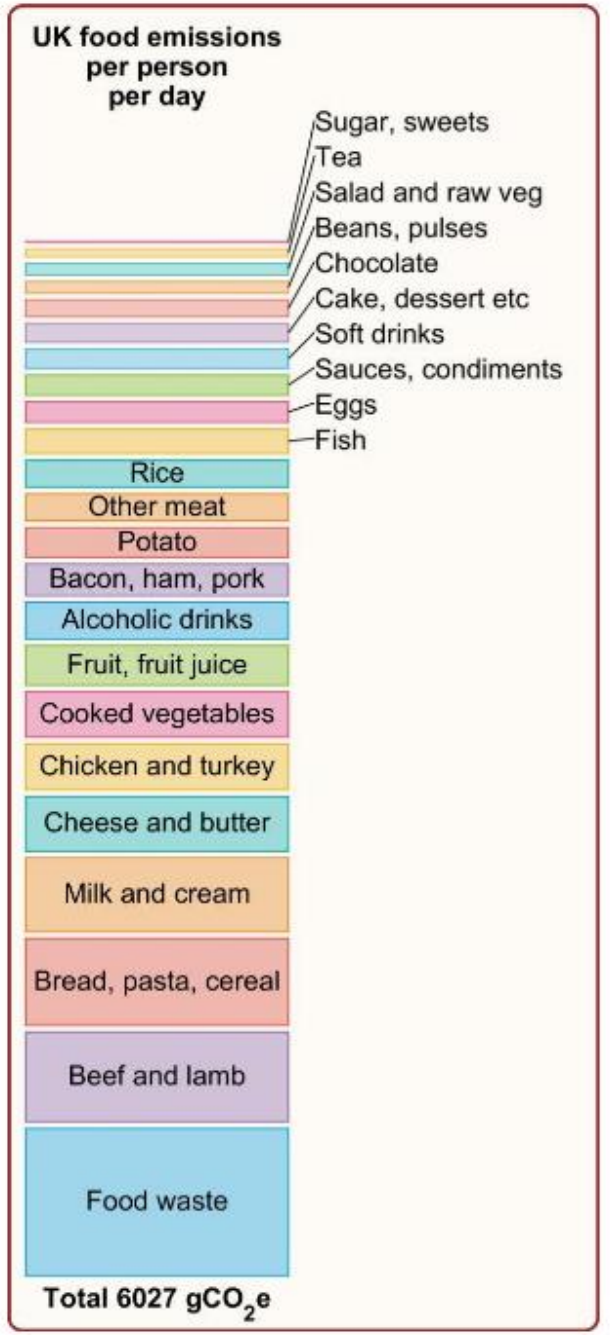
Food waste

⅓ food produced is discarded / thrown away

1g food waste = 3g GHG emissions

Adds 20% to the total emissions from food per day

Source: Food & Climate Change without the Hot Air. Sarah Bridle. Available free via Amazon Kindle



Transitioning to healthy, sustainable diets

Value in national food based dietary guidelines	‘Plant-based’ with focus on wholegrains, fruit & veg, small portions animal based proteins, minimising ultra-processed
Reducing over consumption	
Reducing ‘top shelf’ low nutrient, high energy foods and drinks	
Reducing food waste	
Protein sources	

Considerations

Vulnerable populations

- Infants and children
- Pregnant and lactating women
- Older adults
- Chronic illness
- Disability
- Low-incomes
- Minority groups
- Indigenous people….

Why Change?

- Health inequalities of growing population
- Burden of over-consumption
- Food waste and impact
- Finite and polluted natural resources

Health inequalities of growing population: 9-10 billion by 2050

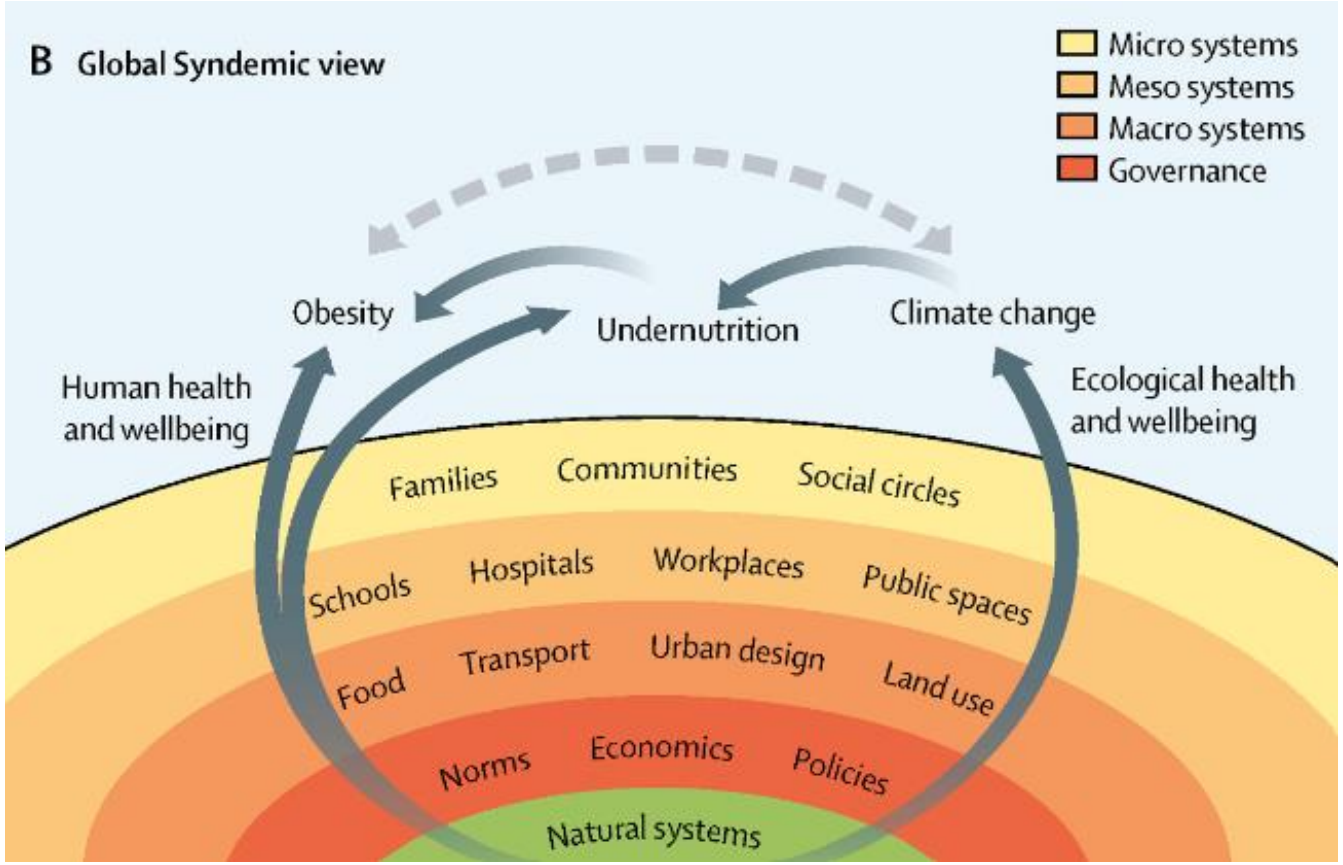
Global 'syndemic' of public health issues - obesity, malnutrition, climate change

Underconsumption and food insecurity

- Undernourished: 820 million people
- Micronutrient deficient: 2 billion people

Overconsumption

- Overconsumption: 2 billion people
- Obesity: 600 million people



Source: Swinburn, Boyd A et al. 2019The Lancet, Volume 393, Issue 10173

Finite & degraded natural resources

Fresh water

- Limited supply in many regions
- Frequently polluted

Land degradation

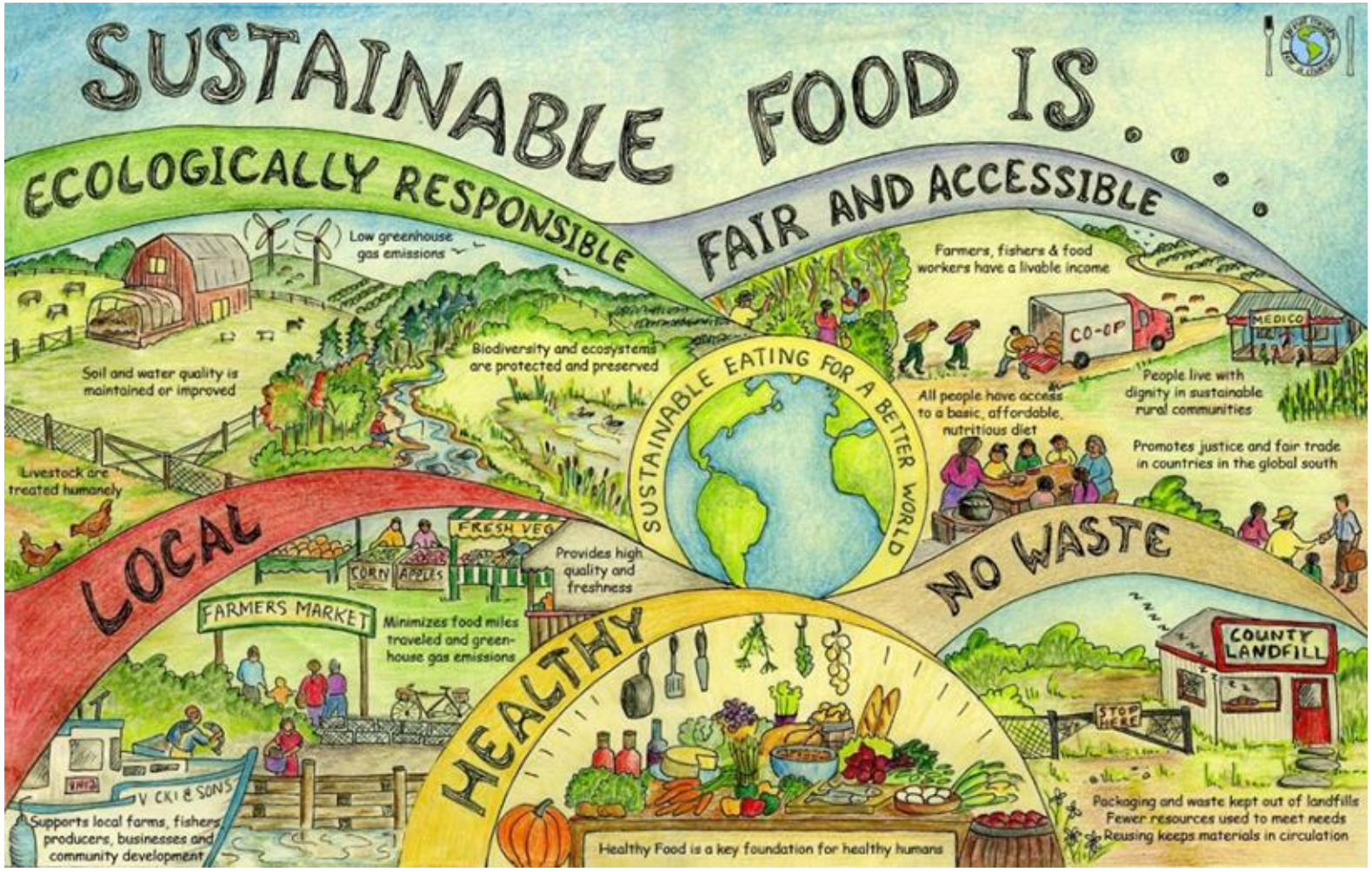
- Deforestation
- Impact of agriculture on soil biodiversity
- Interference with global nitrogen & phosphorus cycles

Biodiversity loss including pollinator declines

Now and into the future

A FUTURE WHERE EVERYONE HAS ENOUGH SAFE, AFFORDABLE, ACCESSIBLE, NUTRITIOUS, DIVERSE, TASTY, CULTURALLY APPROPRIATE FOOD…

Radical change needed!



‘The Great Food Transformation’

The Lancet Commissions

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 Wood, Malin Jonell, Michael Clark, Line J Gordon, Jessica Fanzo, Corinna Hawkes, Rami Zurayk, Juan A Rivera, Wim De Vries, Lindiwe Majele Sibanda, Ashkan Afshin, Abhishek Chaudhary, Mario Herrero, Rina Agustina, Francesco Branca, Anna Lartey, Shenggen Fan, Beatrice Crona, Elizabeth Fox, Victoria Bignet, Max Troell, Therese Lindahl, Sudhvir Singh, Sarah E Cornell, K Srinath Reddy, Sunita Narain, Sania Nishtar, Christopher J L Murray

Global Recommendations:

- >50% reduction unhealthy foods including sugars and meat
- 100% increase in consumption plant based foods: fruits, vegetables, nuts, legumes
- Dietary changes will improve human health and reduce annual deaths by 20%

Healthy Reference Diet
Eat Lancet, 2019

	Macronutrient intake (possible range), g/day	Caloric intake, kcal/day
Whole grains*		
Rice, wheat, corn, and other†	232 (total gains 0–60% of energy)	811
Tubers or starchy vegetables		
Potatoes and cassava	50 (0–100)	39
Vegetables		
All vegetables	300 (200–600)	..
Dark green vegetables	100	23
Red and orange vegetables	100	30
Other vegetables	100	25
Fruits		
All fruit	200 (100–300)	126
Dairy foods		
Whole milk or derivative equivalents (eg, cheese)	250 (0–500)	153
Protein sources‡		
Beef and lamb	7 (0–14)	15
Pork	7 (0–14)	15
Chicken and other poultry	29 (0–58)	62
Eggs	13 (0–25)	19
Fish§	28 (0–100)	40
Legumes		
Dry beans, lentils, and peas*	50 (0–100)	172
Soy foods	25 (0–50)	112
Peanuts	25 (0–75)	142
Tree nuts	25	149
Added fats		
Palm oil	6·8 (0–6·8)	60
Unsaturated oils¶	40 (20–80)	354
Dairy fats (included in milk)	0	0
Lard or tallow‖	5 (0–5)	36
Added sugars		
All sweeteners	31 (0–31)	120

Global Response to EAT Lancet Report

Focus on GHGE associated with foods.

Inadequate consideration of several important considerations for societal transformation:

- Feasibility and policy implications of operationalising and coordinating such a transformation.
- Local adaptations required, e.g.:
  - Cultural values
  - Consumer preferences
  - Food dependencies
- Global health and well-being.
  - Potential for unintended health consequences
  - Concern regarding micronutrient deficiencies remain
- Unaffordable (bias towards high income countries).
  - Out of reach for those on subsistence diets
  - Ignores access and availability gaps
  - Does not consider livelihood effects of food systems change

How the EAT–*Lancet* Commission on food in the Anthropocene influenced discourse and research on food systems: a systematic review covering the first 2 years post-publication

Tulloch, Ayesha I T et al. The Lancet Global Health, Volume 11, Issue 7, e1125 - e1136: https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(23)00212-7/fulltext

Case Studies

SFS in Dietetics: Case Study 1

University as Setting:
Acadia University, Nova Scotia, Canada

'Acadia Food Plan'

- 1 goal to serve sustainable seafood and avoid 'red listed' seafood as defined by Ocean Wise

Nutrition & Dietetic students participated:

- Researching and communicating evidence to staff and students
- Identifying 'red-listed' seafood on the menus
- Exploring strategies for menu alternatives
- Presenting their work and findings to food service management and dietitian

Outcome:

- Removed atlantic salmon & white shrimp (red-listed)
- Replacing with farmed whiteleg shrimp and giant tiger shrimp

ICDA SFS Toolkit Case Studies: https://pressbooks.atlanticoer-relatlantique.ca/sustainabilityfoodsystemsandhealth/back-matter/case-studies/

SFS in Dietetics: Case Study 2

Sustainable alternatives and adherence to oral nutritional supplements: Iowa State University (ISU)

ISU Medical Nutrition Therapy Capstone

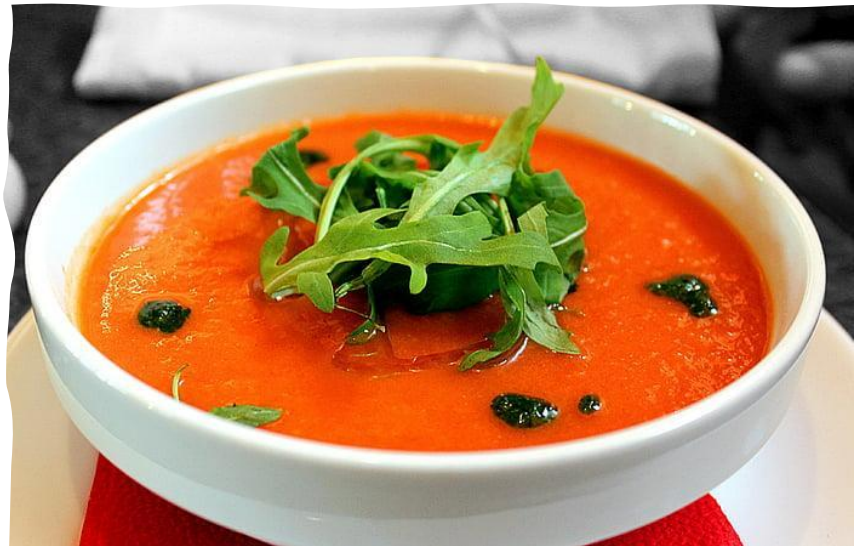
- Deepen understanding of sustainable food and water systems and implement an on-site clinical capstone project

Nutrition & Dietetic students participated:

- Trial 5 ONS offered at healthcare site, rating taste, temperature, appearance and overall acceptability
- Trial new ONS recipes (peanut butter smoothie, protein lemon puff, protein tomato soup)
- Compare satisfaction, nutrition quality and cost between current and new ONS

Outcome:

- Project aligned with ‘food first’ and sustainability goals
- Increased energy and protein compared to pre-made alternatives
- Hypothesised that would reduce waste and cost



SFS in Dietetics: Case Study 3

Activating Leadership in the Community:
Monash University, Australia

Little Food Festival

- Food festival just for kids!
- Annual 2-day event during school holidays
- Focus on well being and sustainability in food enjoyment

Nutrition & Dietetic students volunteer to:

- Facilitate activities
- Participate in the evaluation process
- Undertake analysis of pictorial data from children

Outcome:

- Students are exposed to fun, creative, interesting ways to implement what they learn in class
- Implement professional skills, public education and spend time with colleagues and educators

https://www.littlefoodfestival.com/

https://www.youtube.com/watch?v=tZRKzt6vdEw

Summary

Dietitians are part of the food system transformation, bringing skills and knowledge in socio-cultural, socio-economic and health behaviour factors alongside nutrition science and health.

Transitioning the food system at scale will require bold actions from all sectors and disruption of status quo.

Public need support in these actions (from economic to practical).

Need to consider, advocate for and protect vulnerable groups in this work.

We need to work with other professionals as well as communities.

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