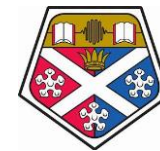# FOOD ACTIVISM IN THE SCHOOL YARD: BUILDING CAPACITY FOR SUSTAINABLE FOOD SYSTEMS IN SCOTLAND

Glasgow, 2nd March 2020
Ramshorn Theatre

#FoodActivism

Welcome

Introducing the team

- Laura Colucci-Gray
- Claire Cassidy
- Donald Gray
- Kirsten Darling
- Stephen Day
- Kirsten Leask
- Laura Nisbet
- Bob Donald
- Sharon Hunter

What is food...?

- A chemical compound which makes the stuff of our bodies

- Central component of human survival, society and culture;

- A product of the intimate *relationships* between humans and the Earth.

- It reminds us that the Earth provides what **we stand on, feed and depend upon.**

… why does it matter now?

Competition for land, water, energy – the trident of sustainability

"Agricultural production is limited by the increasing scarcity and diminishing quality of land and water resources. Climate change is increasingly affecting yields and rural livelihoods, while agriculture continues to emit greenhouse gases (GHGs)".

(FAO, Alternative pathways to 2050. Rome: 2018)

Growing concerns about the quantity and quality of the food we eat:

"Persistent poverty, inequality and unemployment constrain access to food and hamper the achievement of food security and nutrition goals"

(FAO, *Alternative pathways to 2050. Rome: 2018)*

Growth of diet-related diseases

"requiring to address the "triple burden" of malnutrition: undernourishment, micronutrient deficiencies, and overweight and obesity, especially in younger children"

(Astrup & Bügel, *Int J Obes* **43,** 219–232 (2019); Public Health England, 2019).

Food Waste

"food is discarded at every point along the food chain: on farms and fishing boats, during processing and distribution, in retail stores, in restaurants and at home"

("U.S. Food Waste Challenge: FAQ's." *USDA*, June 2013. https://www.usda.gov/oce/foodwaste/faqs.htm

Key Messages:

- **Environmental sustainability** and **food security** go hand in hand;

- **But** food security is not only about greater production; it is linked to **power and inequality**, ruling over the uses (and abuses) of the land;

Food activism: An opportunity to:

Interrupt the pattern of unsustainable consumption of food.

Give communities 'a voice' on what matters to them. **Food sovereignty:** ''when food is of, by, and for the people'' (Robert, 2008)

Engage in *food activism* by re-connecting people's habits and behaviours with concerns for the land, and with the origins of food;
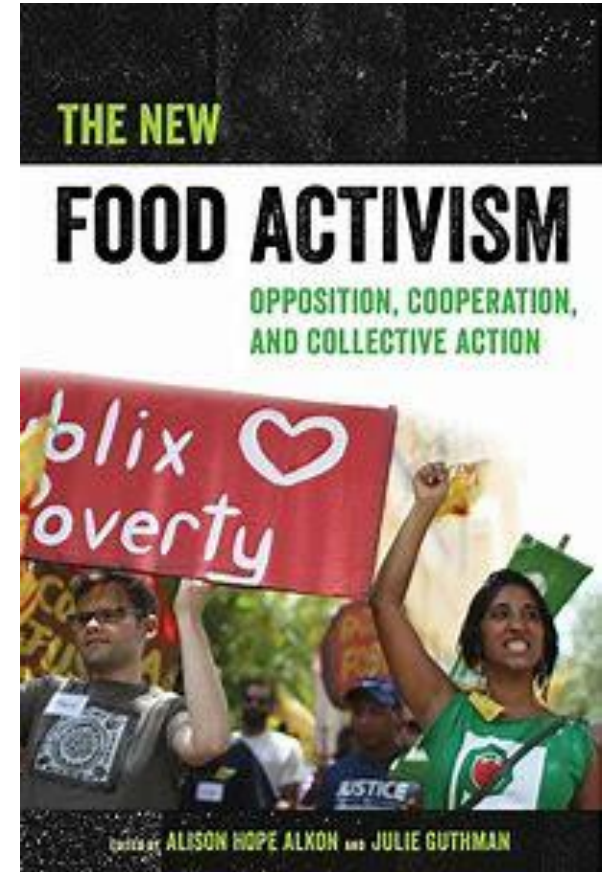
Food activism…and school gardens

Addressing food production alongside a re-thinking of the means and purposes of education:

- To acquire awareness of the origins and distribution of food;
- To support mental heath and wellbeing;
- To gain a 'voice' and make decisions about what matters for people;
- To make 'real' decisions about the different uses of the soil;
- To build the knowledge and skills that - for many centuries - have guaranteed human survival within a changing world.

Nury, E. et la., 2017; Ohly, H., et al., 2016; Passy, R., Morris, M., & Reed, F. (2010); Gray et al., 2020.

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Office of the State Superintendent of Education

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Monday to Friday, 8:30 a

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WASHINGTON STATE
UNIVERSITY

⌂ Home

IPM

What is IPM?

Why IPM?

Adopt IPM in Schools

School IPM Policies

Workshops & Training

Washington Laws & Best Practices

Hire a Professional

School Gardens

Other IPM Resources

Pest Management

About Us

INTEGRATED PEST MANAGEMENT
School IPM

School Gardens

School Gardening provides students a living laboratory where they can observe, discover, experiment, and learn from real life experiences. It encourages students to become active participants in the learning process.

Project Scoping

Planning for a school garden is crucial for a successful project. Ask yourself:

- *What is the goal of the garden?*
- *What kinds of plants are appropriate for our location?*
- *What is the orientation of the proposed garden site in relation to the sun and wind?*
- *Who will maintain the garden and how will it be maintained?*
- *What will be your water source, and just as important, how is water drained from your site?*

LEARN MORE...

- [School Garden Activities and Education](#)
- [Guide for Creating School Gardens as Outdoor Classrooms (pdf)](#)
- [Choosing the Right Plants for Your Site](#)
- [So You Want to Start a School Garden? (pdf)](#)

For more information about the OSSE School Gardens Program, please watch this [short video](#)⧉, review the [School Gardens Program Annual Report](#), or contact Sam Ullery at Sam.Ullery@dc.gov✉.

Opportunities for Scotland?

National Performance Framework

Find information on Scotland's National Performance Framework and how Scotland is performing against it.

What it is

How it works

National Outcomes

Measuring progress

Scotland's Wellbeing report

Sustainable Development Goals

Resources

News and updates

Purpo

The framework is for all of Scotland. We aim to:

- create a more successful country
- give opportunities to all people living in Scotland
- increase the wellbeing of people living in Scotland
- create sustainable and inclusive growth
- reduce inequalities and give equal importance to economic, environmental and social progress

Values

The values guide our approach, to:

- treat all our people with kindness, dignity and compassion
- respect the rule of law
- act in an open and transparent way

Community Empowerment (Scotland) Act 2015

To **give new rights to community bodies** and new duties to public sector authorities.

The aspirations of the Act:

- greater participation in local democracy
- increased confidence and skills among local people
- more people volunteering in their communities
- greater satisfaction with quality of life in the neighbourhood
- delivery of better, more responsive services and better outcomes for communities.

Extracts from the Act

Part 4: Community Rights to buy Land

Part 6: Community rights to lease land from the Forestry Commission Scotland to grow trees and use/or sell the wood.

Part 9: Local Authorities to give access to community groups to land for food growing (including hospitals and schools).

Our aim…

The long term ambition of this project is to build a **strategy framework** seeking to **develop capacity in the school and the community** to support children and young people to develop sustainable approaches to food production and waste, while making a direct contribution to climate justice, equity and well-being.

… and the key tasks:

Workshop 1:

Raise awareness of the ecological, cultural, economic and social dimensions of food as a global sustainability issue, **and how to support young people as responsible producers and consumers**.

Specifically, we will:

- consider the opportunities offered by real and lived examples of food gardening;

- discuss their place in Scottish education; and

- identify questions which will need to be addressed for future developments.

Workshops 2&3; Aberdeen: 10.03.2020; Edinburgh: 24.03.2020

Engage young people in philosophical inquiry to identify and extend opportunities for teaching, learning and assessment **about food activism and sustainability in the school gardens**.

Specifically, we will:

- engage young people in discussion about the practical and ethical issues raised by 'food activism' in schools; and

- gain young people's experiences and perspectives on the process of production and consumption of food (from soil to fork)

Final event, 10.09.2020

- Generate a **shared action plan** for scaling-up school gardens for use across policy, research and practice.

Specifically, we will:

- evaluate aspirations, opportunities and constraints;
- identify short term and longer terms partnerships and collaborations; and
- share materials and resources for teaching, planning and assessment.

Outline of the day

11.05– 11.45	**Keynote:** Food as a global issue: debating political, ecological and ethical aspects - Sarah-Jane Conrad
11.45 - 11.55	**Case-study 1:** The experience of food gardens in Laos - Ramsey Affifi
11.55 – 12.05	**Questions from the audience**
12.05 – 12.35	**Policy landscape** and opportunities in Scotland (Irina Martin; Kirsten Leask Stephen Day)
12.35 – 1.15	**LUNCH**
1.15 – 1.45	**Activity 1**: What does a school garden look like?
1.45 – 2.00	**Case-study 2**: The Aberdeen School Garden Project (Bob Donald & Donald Gray)
	(Comfort break)
2.15 – 2.45	**Activity 2**: Design, plan and enact a food growing garden in your schools.
2.45 – 3.15	**Plenary and reflections**: "What do I want to see happening after today…"
3.15 – 3.30	**Evaluation and Close**

Dr. Sarah-Jane Conrad
PH Bern, Switzerland

© Olivier Riesen

Food as a global issue

Debating political, ecological and ethical aspects

Dr. Sarah-Jane Conrad

School of Education, Berne University

PH Bern

Kate Raworth's Doughnut Modell
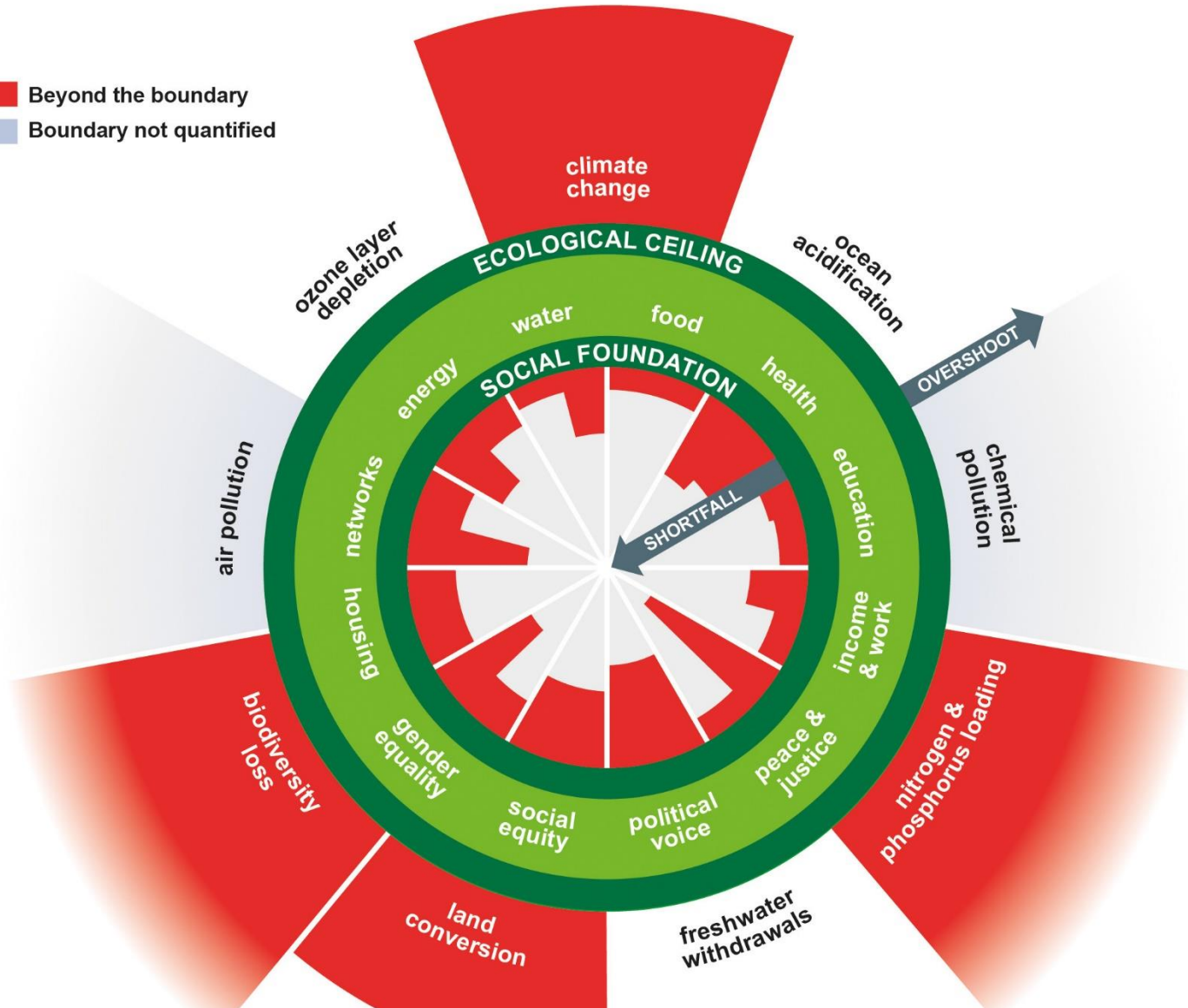
© Wals Arjen

© Shutterstock
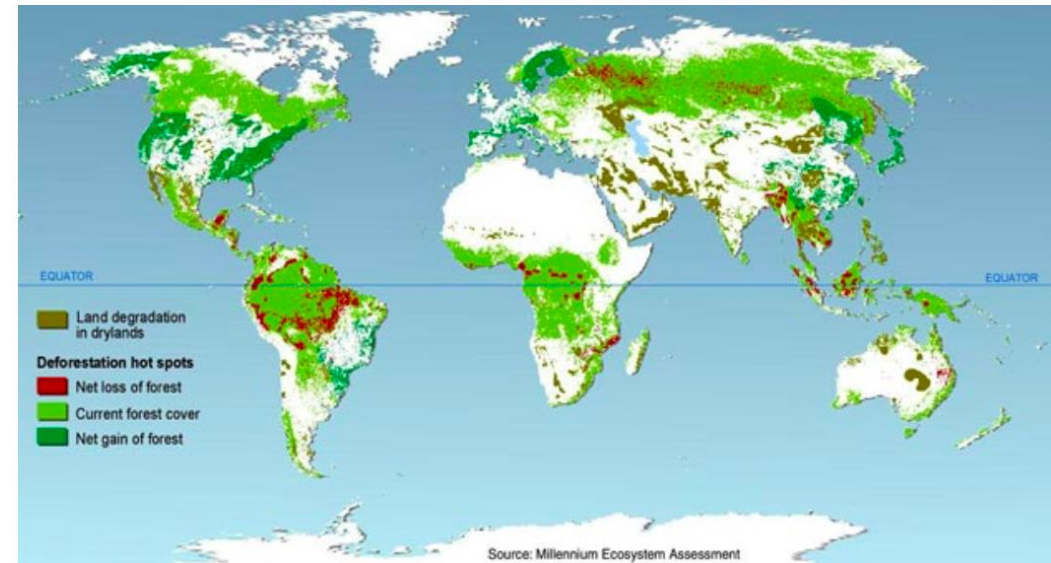
Wicked problems

The Biocapacity: what the earth offers

and what we take

GRAZING LAND
The area of grassland used, in addition to crop feeds, to raise livestock for meat, dairy, hide and wool products.

CROPLAND
The area required to produce food and fiber for human consumption, feed for livestock, oil crops and rubber.

FISHING GROUNDS*
The area of marine and inland waters used to harvest fish and other seafood.

FOREST LAND
FOR PRODUCTS
The area of forest required to support the harvest of fuel wood, pulp and timber products.

FOR SEQUESTRATION
The forest area required to sequester human-produced CO₂ emissions, primarily from fossil fuels burning, that are not absorbed by oceans.

BUILT-UP LAND
The biologically productive areas covered by human infrastructure, including transportation, housing and industrial structure.

Fishing Grounds

Grazing Land

Cropland

Forest Land

Built-up land

Green = Countries with biocapacity reserves
Red = Countries with a biocapacity deficit

Hektar - gha), 2012

Staaten mit Biokapazität-Reserven bzw. -Defizit
ökologischer Fußabdruck pro Kopf (globale Hektar - gha)

Staaten mit
Biokapazität-Defizit

Staaten mit
Biokapazität-Reserven

Food: greenhouse gas emissions across the supply chain

Our World in Data

Land Use Change	Farm	Animal Feed	Processing	Transport	Retail	Packaging
Aboveground changes in biomass from deforestation, and belowground changes in soil carbon	Methane emissions from cows, methane from rice, emissions from fertilizers, manure, and farm machinery	On-farm emissions from crop production and its processing into feed for livestock	Emissions from energy use in the process of converting raw agricultural products into final food items	Emissions from energy use in the transport of food items in-country and internationally	Emissions from energy use in refrigeration and other retail processes	Emissions from the production of packaging materials, material transport and end-of-life disposal

Transport emissions are very small for most food products

Food	value
Beef (beef herd)	60
Lamb & Mutton	24
Cheese	21
Beef (dairy herd)	21
Chocolate	19
Coffee	17
Prawns (farmed)	12
Palm Oil	8
Pig Meat	7
Poultry Meat	6
Olive Oil	6
Fish (farmed)	5
Eggs	4.5
Rice	4
Fish (wild catch)	3
Milk	3
Cane Sugar	3
Groundnuts	2.5
Wheat & Rye	1.4
Tomatoes	1.4
Maize (Corn)	1.0
Cassava	1.0
Soymilk	0.9
Peas	0.9
Bananas	0.7
Root Vegetables	0.4
Apples	0.4
Citrus Fruit	0.3
Nuts	0.3

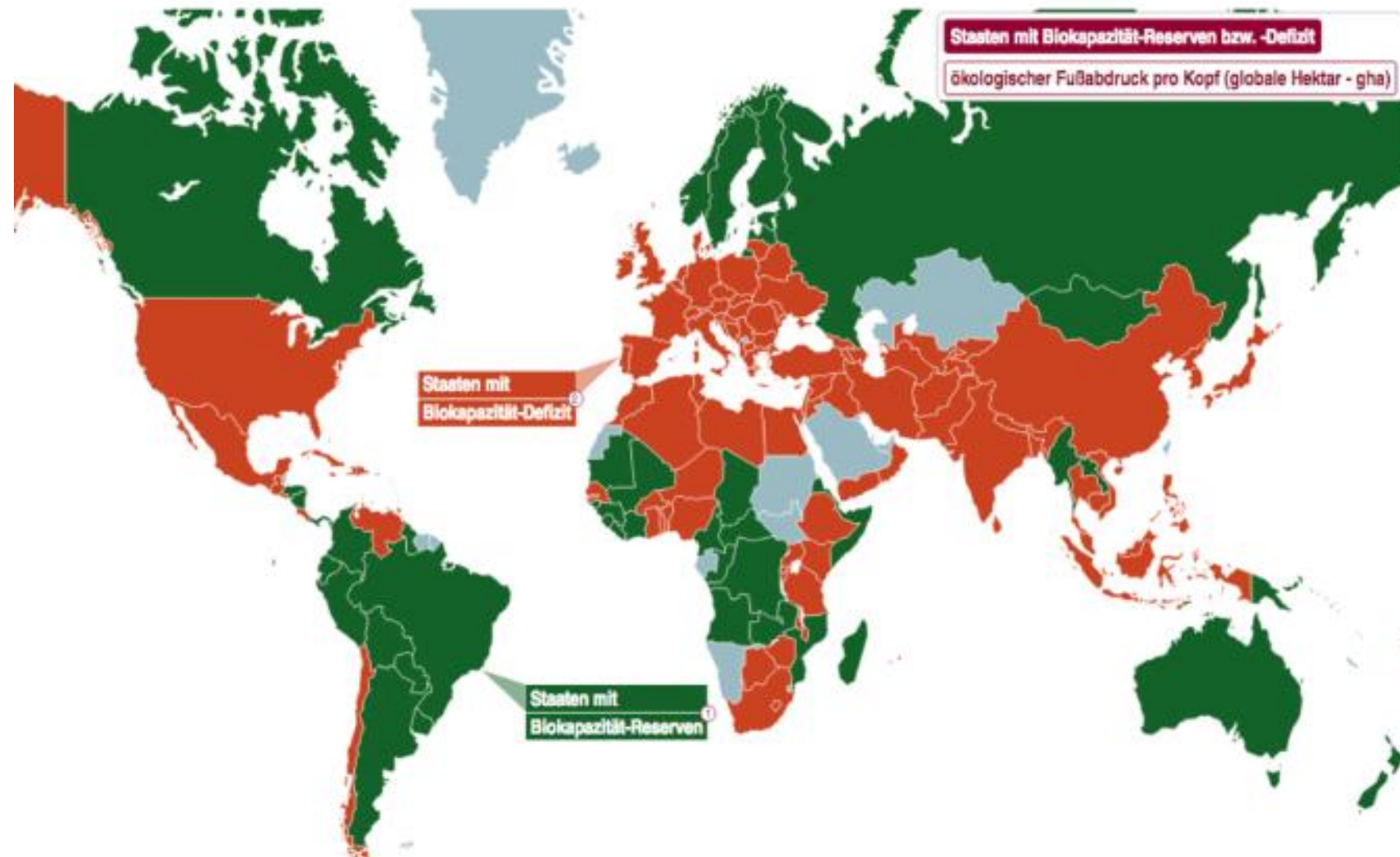Methane production from cows, and land conversion for grazing and animal feed means beef from dedicated beef herds has a very high carbon footprint.

Dairy co-products means beef from dairy herds has a lower carbon footprint than dedicated beef herds.

Pigs and poultry are non-ruminant livestock so do not produce methane. They have significantly lower emissions than beef and lamb.

Flooded rice produces methane, which dominates on-farm emissions.

'Farm' emissions for wild fish refers to fuel used by fishing vessels.

Methane production from cows means dairy milk has significantly higher emissions than plant-based milks.

CO_2 emissions from most plant-based products are as much as 10-50 times lower than most animal-based products.

Factors such as transport distance, retail, packaging, or specific farm methods are often small compared to importance of food type.

Nuts have a negative land use change figure because nut trees are currently replacing croplands; carbon is stored in the trees.

Greenhouse gas emissions per kilogram of food product
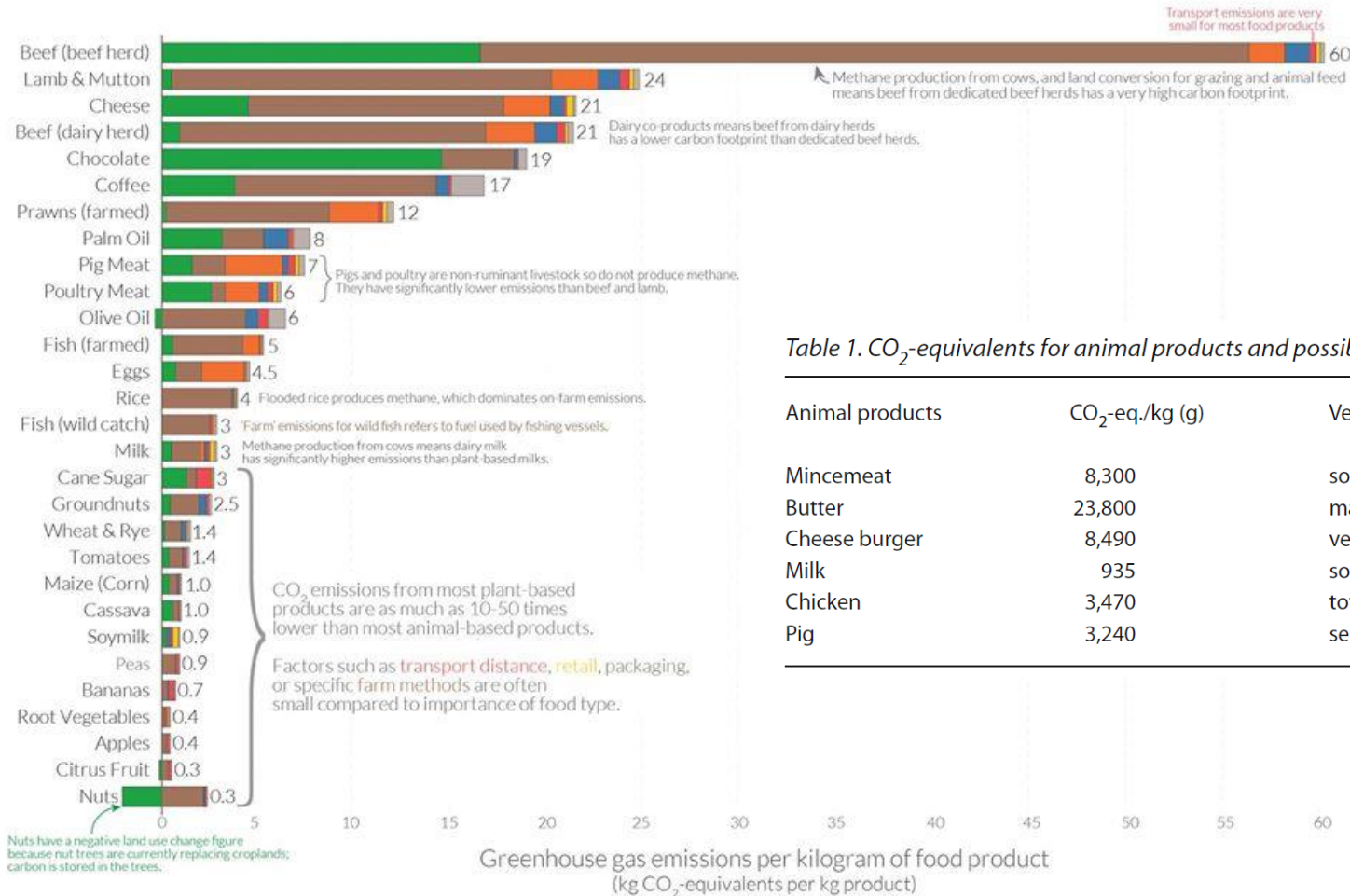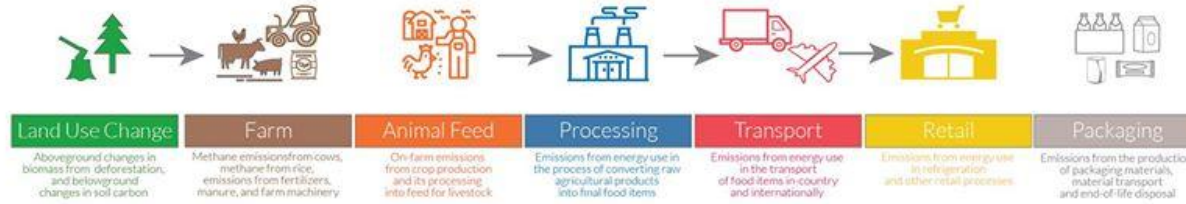(kg CO_2-equivalents per kg product)

Table 1. CO_2-equivalents for animal products and possible vegan alternatives (www.eaternity.ch and SERI).

Animal products	CO_2-eq./kg (g)	Vegan products	CO_2-eq./kg (g)
Mincemeat	8,300	soya granulate	830
Butter	23,800	margarine	752
Cheese burger	8,490	vegan burger	1,600
Milk	935	soya milk	600
Chicken	3,470	tofu	1,700
Pig	3,240	seitan	500

Note: Greenhouse gas emissions are given as global average values based on data across 38,700 commercially viable farms in 119 countries.
Data source: Poore and Nemecek (2018). Reducing food's environmental impacts through producers and consumers. Science. Images sourced from the Noun Project.
OurWorldinData.org – Research and data to make progress against the world's largest problems. Licensed under CC-BY by the author Hannah Ritchie.

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© Jens Etzselsberger
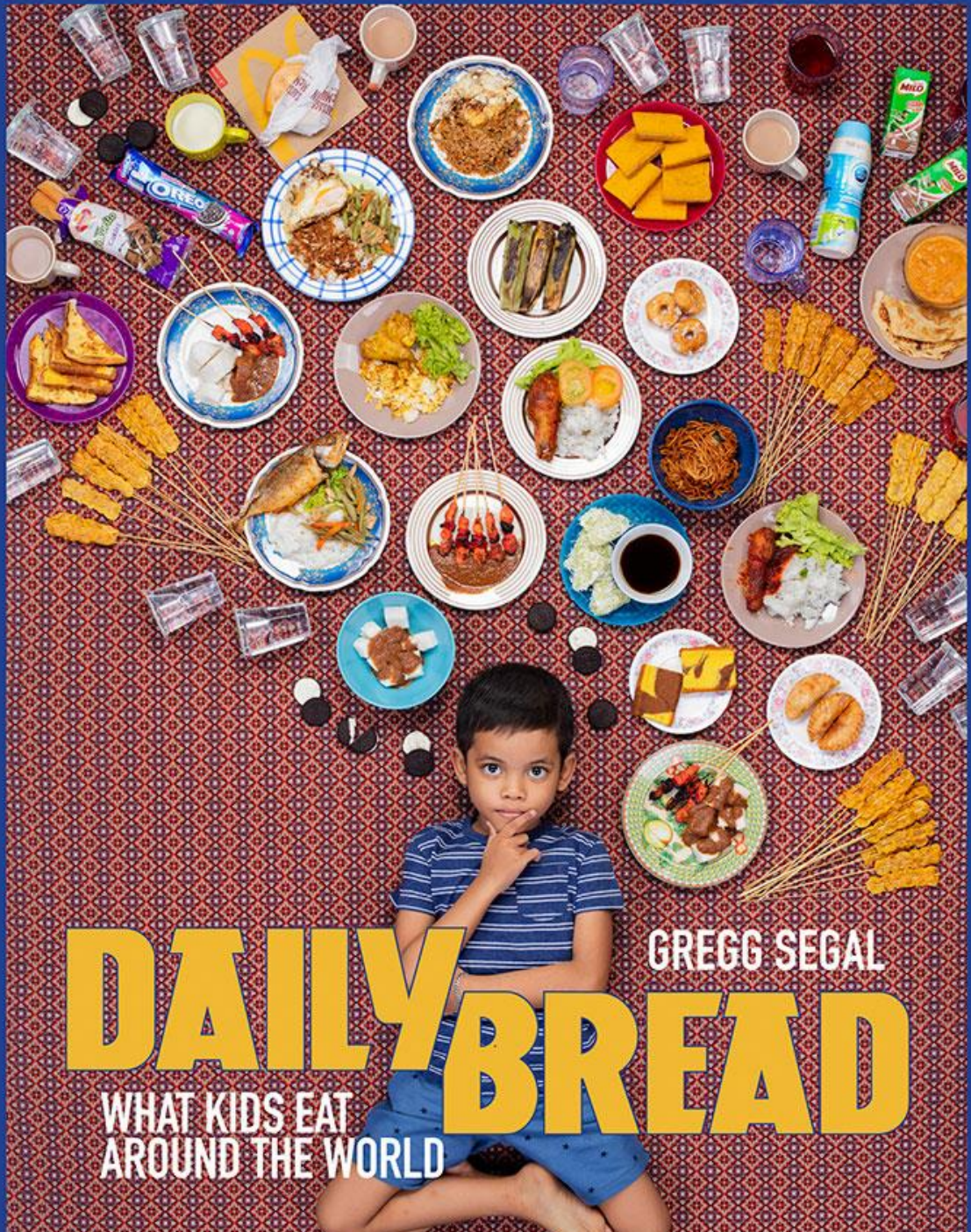
DAILY BREAD

GREGG SEGAL

WHAT KIDS EAT
AROUND THE WORLD

Introduction to the 2030 Agenda:
A New Agenda for a Sustainable World

17 SDG and the 5 Ps

Basic Human Needs

Nutrition & Basic Medical Care

Water & Sanitation

Shelter

Personal Safety

Foundations of Wellbeing

Access to Basic Knowledge

Access to Information & Communications

Health & Wellness

Environmental Quality

Opportunity

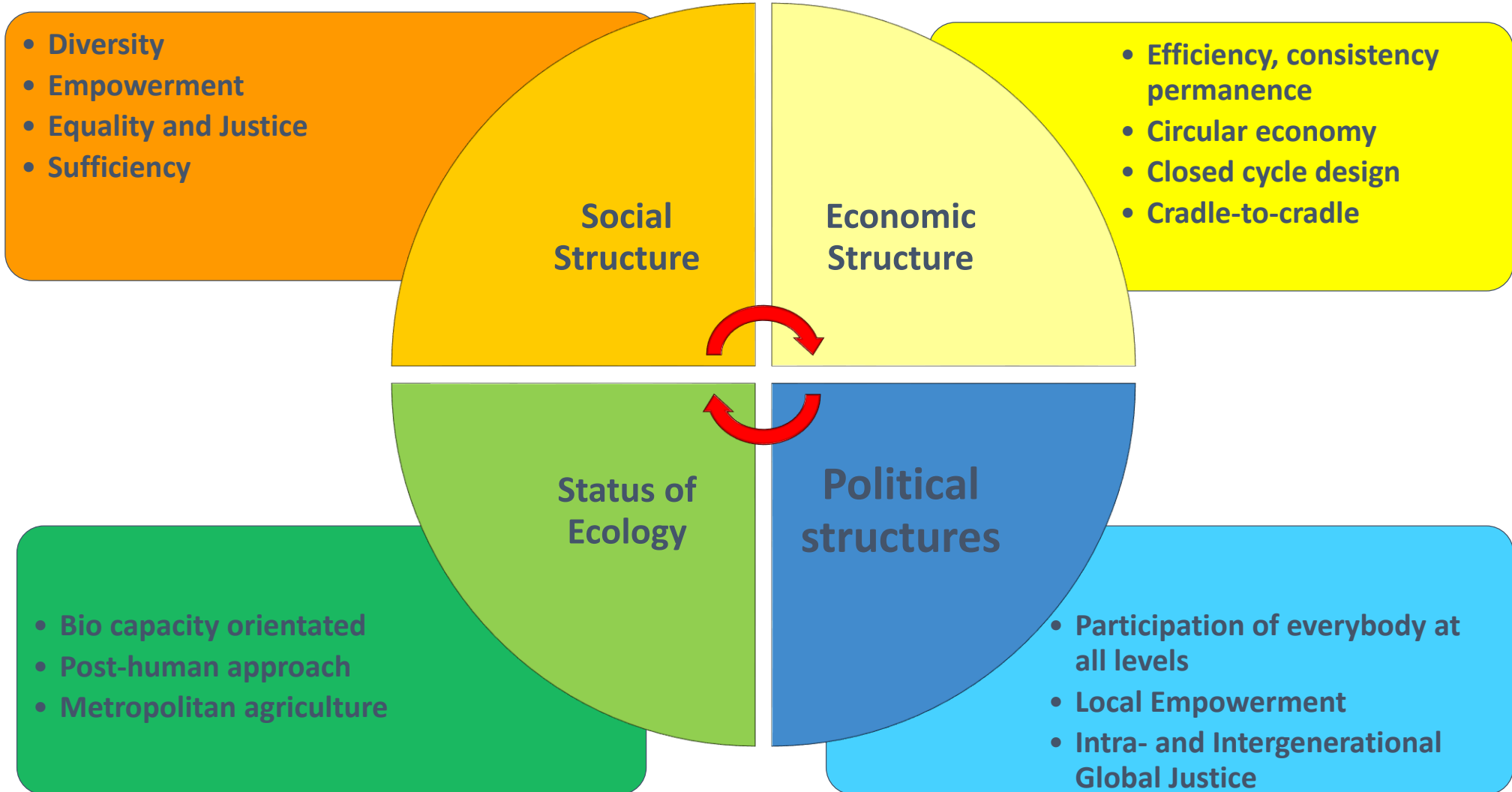### Personal Rights

Personal Freedom & Choice

Inclusiveness

Access to Advanced Education

Incremental Transitions
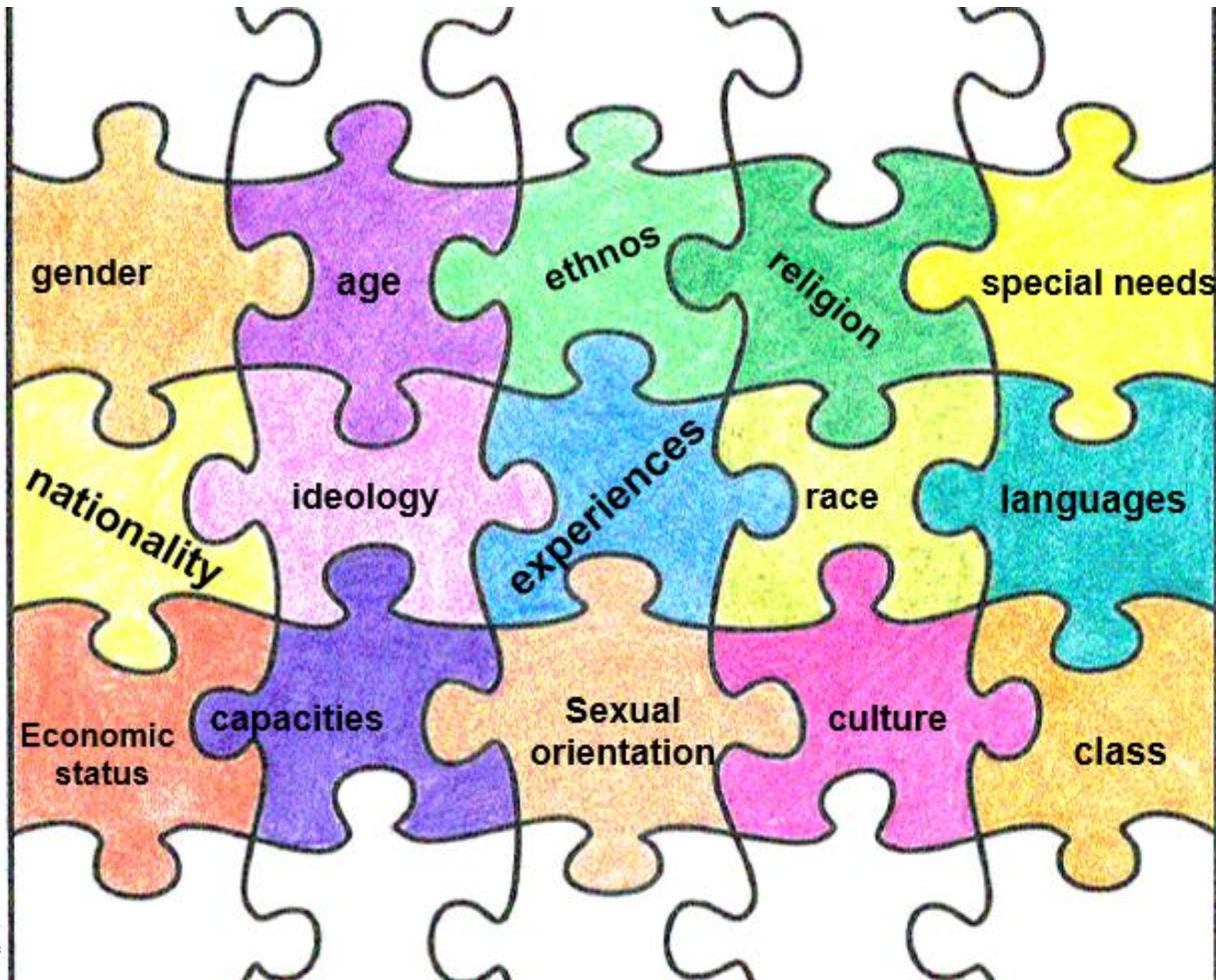
- **Diversity**
- **Empowerment**
- **Equality and Justice**
- **Sufficiency**

Social Structure

Economic Structure

- **Efficiency, consistency permanence**
- **Circular economy**
- **Closed cycle design**
- **Cradle-to-cradle**

Status of Ecology

Political structures

- **Bio capacity orientated**
- **Post-human approach**
- **Metropolitan agriculture**

- **Participation of everybody at all levels**
- **Local Empowerment**
- **Intra- and Intergenerational Global Justice**

School Garden project in Bern

© Olivier Riesen

Bildung für Nachhaltige Entwicklung

Leitidee Nachhaltige Entwicklung

Nachhaltige Entwicklung

Nachhaltige Entwicklung ist eine Leitidee für die Entwicklung der Gesellschaft. Sie beinhaltet die Zielvorstellung, dass für die Befriedigung der materiellen und immateriellen Grundbedürfnisse aller Menschen heute und in Zukunft eine solidarische Gesellschaft und wirtschaftliches Wohlergehen notwendig sind. Zur Umsetzung dieser Idee bedarf es vielfältiger politischer, ökonomischer, ökologischer, sozialer und kultureller Entwicklungen. Gerechtigkeit, politische Teilhabe und die Erhaltung der natürlichen Lebensgrundlagen sind wesentliche Bedingungen einer Nachhaltigen Entwicklung. Diese kann nicht für ein Land allein gedacht werden, sondern muss immer auch in einem globalen Zusammenhang gesehen werden. Wie eine Nachhaltige Entwicklung gefördert werden kann, hängt von den jeweiligen ökonomischen, ökologischen, sozialen und kulturellen Verhältnissen in einem Land ab und muss gesellschaftlich ausgehandelt werden. Nachhaltige Entwicklung kann nur gelingen, wenn sich Frauen und Männer, Junge und Alte an den Entscheidungsprozessen und an der Umsetzung der Entscheidungen beteiligen können.

Nachhaltige Entwicklung wird oft mit drei Kreisen für die Zieldimensionen Umwelt, Wirtschaft und Gesellschaft dargestellt, ergänzt mit den beiden Achsen Zeit (Vergangenheit Gegenwart Zukunft) und Raum (lokal global). Damit kommt zum Ausdruck, dass

- politische, ökonomische, ökologische, soziale und kulturelle Prozesse vernetzt sind;
- das heutige Handeln Auswirkungen auf die Zukunft hat;
- Wechselwirkungen bestehen zwischen lokalem und globalem Handeln.

Abbildung 3: Drei-Dimensionen-Schema Nachhaltige Entwicklung

Raum
lokal-global

Gesellschaft

Zeit

Umwelt

Wirtschaft
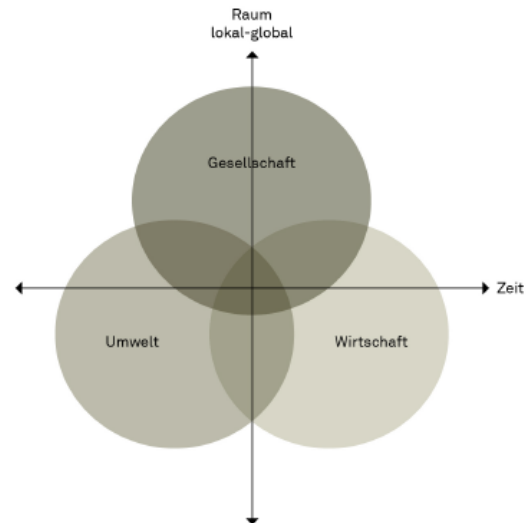
Politics, Democracy, Human rights

Natural Environment, Resources

Gender and Equality

Health

Global Development and Peace

Cultural Identity & intercultural communication

Economy and consumerism

Thank you for listening

My thanks go to

- *Marco Adamina (School of Education, Berne CH)*
- *Anne-Marie Gafner (School of Education, Berne CH)*
- *Klaus Petrus (journalist, photographer CH)*
- *Olivier Riesen (School of Education, Berne CH)*
- *tier-im-fokus (animal rights organisation CH)*
- *Arjen Wals (Wageningen University NL)*

who have all hugely influenced my presentation

Case study one

Ramsey Affifi

University of Edinburgh

Nourish Scotland

Irina Martin

FOOD ACTIVISM IN THE SCHOOL YARD: BUILDING CAPACITY FOR SUSTAINABLE FOOD SYSTEMS IN SCOTLAND
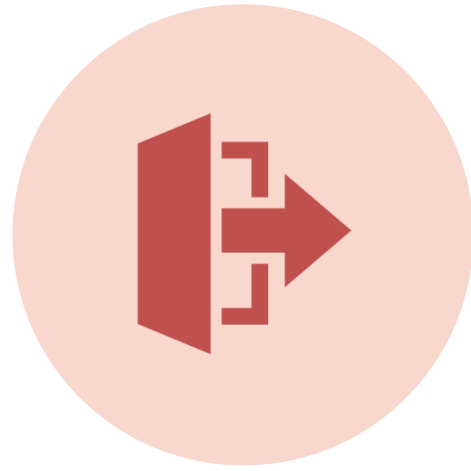
AN OPPORTUNITY FOR CHANGE
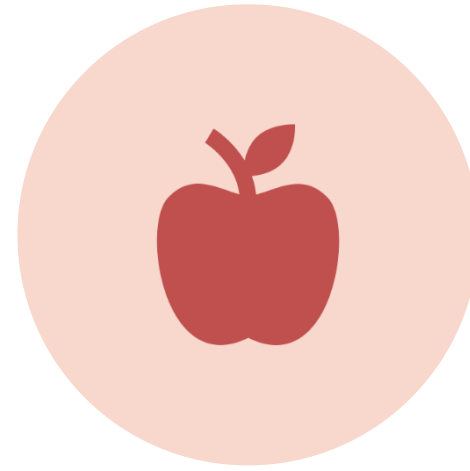
HEALTHY FOOD CONNECTIONS = HEALTHY COMMUNITIES

About Nourish
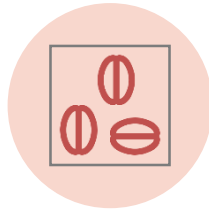
Working for a fairer and more sustainable food system.

Public Health

Inequality and food poverty

Climate change and environment
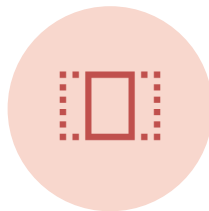
Building the local food economy

Current focus: Good Food Nation Bill, right to food

Urgent need to change our Food System – we can all make a difference, especially children

⚠ Be aware of problems

🥑 Obesity among children, advertising of junk food, food poverty, disconnection with nature and where food comes from, the environmental impact.

🌍 These are global food issues

Woodlands Community Garden

2010
Derelict space rescued by the community and transformed into a community garden

Community Garden
Providing an outdoor space for learning and sharing

Children at the heart and building partnerships with local schools and family centres

KALE FEST
A Celebration of Kale

Sunday 20th November
Stories, Music, Films, Food
2pm Woodlands Community Garden
3.30-6pm Centre for Contemporary Arts
www.woodlandscommunitygarden.org.uk
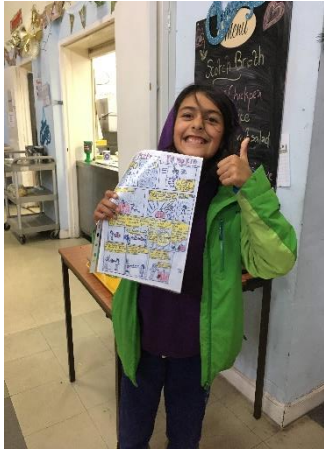
RHUBARBFEST

CCA, Sunday 25th June, 3-6pm
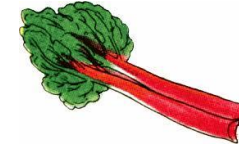
An afternoon celebrating everything rhubarb.
Food, films, talks and cookery demonstrations
Enter our great rhubarb recipe challenge
Tickets £5 cca.glasgow.com   More info 0141 332 2656

Fun ways to involve and engage children with growing, cooking, eating and sharing vegetables

Everyone can be part of change – we just need some space, mud and helping hands

Gardens in schools can become the tool to:

- Connect back with nature
- Know where food comes from
- Find out how food affects the environment
- Learn the impact of our choices
- And the importance of eating food in season
- Learn how to grow and cook vegetables
- Improve general health and wellbeing

From abstraction to application

Joining the dots between policy and practice

Kirsten Leask

Regional Centres of Expertise on Education for Sustainable Development

RCEs around the world

www.rcenetwork.org

1. A vision for the planet and for Scotland
2. A vision for learning
3. A vision for learners

1. A vision for the planet and for Scotland

lfsscotland.org
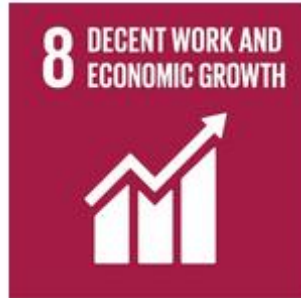
A vision for the planet

A vision for the planet

Graphics by Jerker Lokrantz/Azote
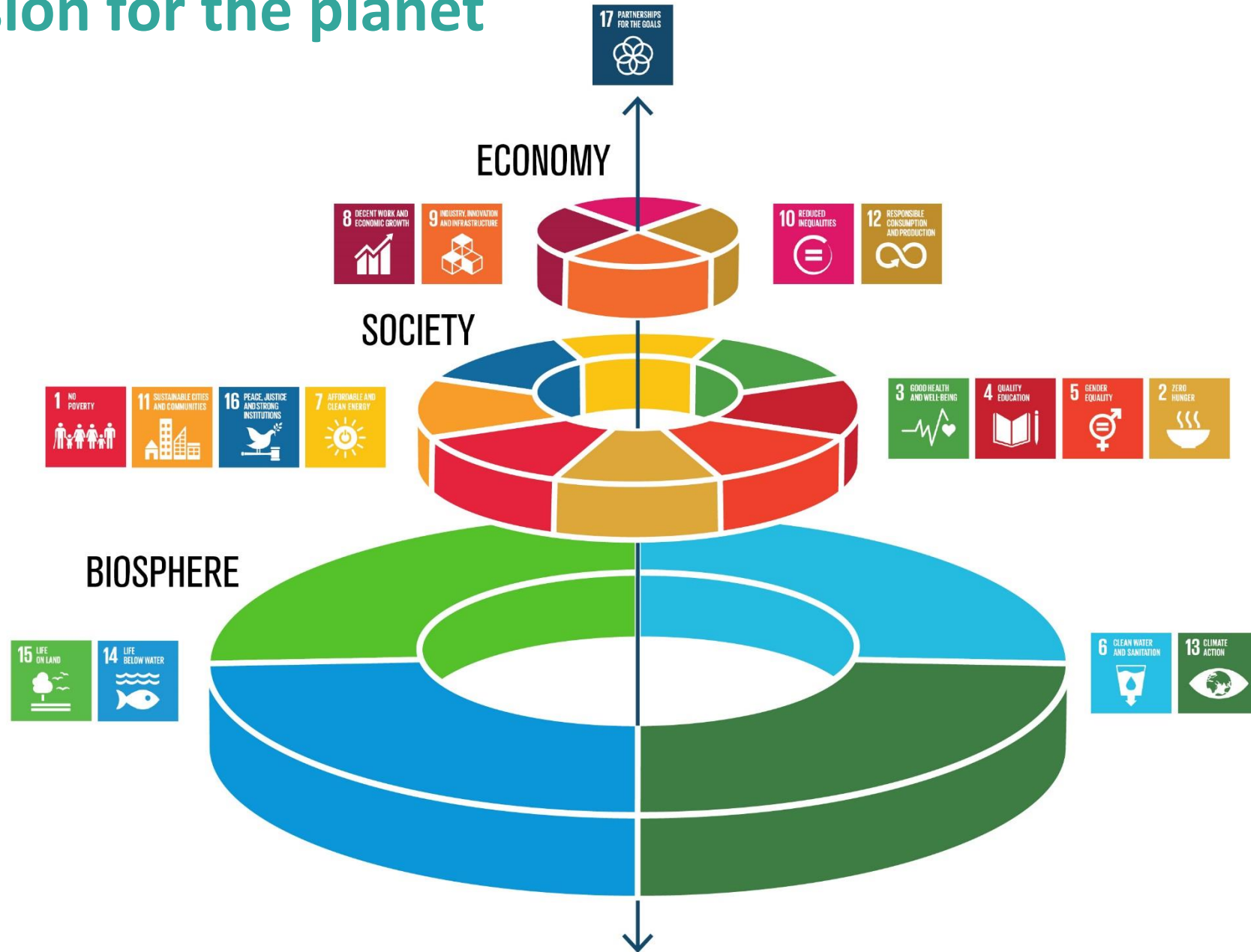
A vision for Scotland

- The SDGs are a core element of the Scottish Government's [National Performance Framework](#) across all policy areas.

Joining the dots #1: National policy coherence

2. A vision for learning

Who are we? Who do we want to be?

"Our vision is of a flourishing Scotland where sustainable and socially-just practices are the norm.... and our roles and responsibilities within a globally-interdependent world are recognized.
Learners are educated through their landscape and understand their environment, culture and heritage; and develop a sense of place and belonging to their local, national and global community, with a deep connection to the natural world.
Here, learners will understand the significance of their choices, now and in the future."

The Report of the One Planet Schools Working Group (November 2012)

lfsscotland.org

Beyond salt, fat and sugar

In Scotland…

- The food and drink industry employs 1 in 5 people
- Food and drink are our biggest exports.
- 1 in 4 children live in poverty
- One of the lowest life expectancies in Europe
- 65% of adults & 28% of children are overweight
- 1 in 3 of us has experienced mental ill-health
- Social isolation and loneliness is an issue
- Food production supports some of our most fragile rural communities
- Food production has a huge impact on biodiversity, soils and land use
- Litter and marine plastics are a major concern
- Climate change affects us all: agriculture, general transportation, food waste.

lfsscotland.org
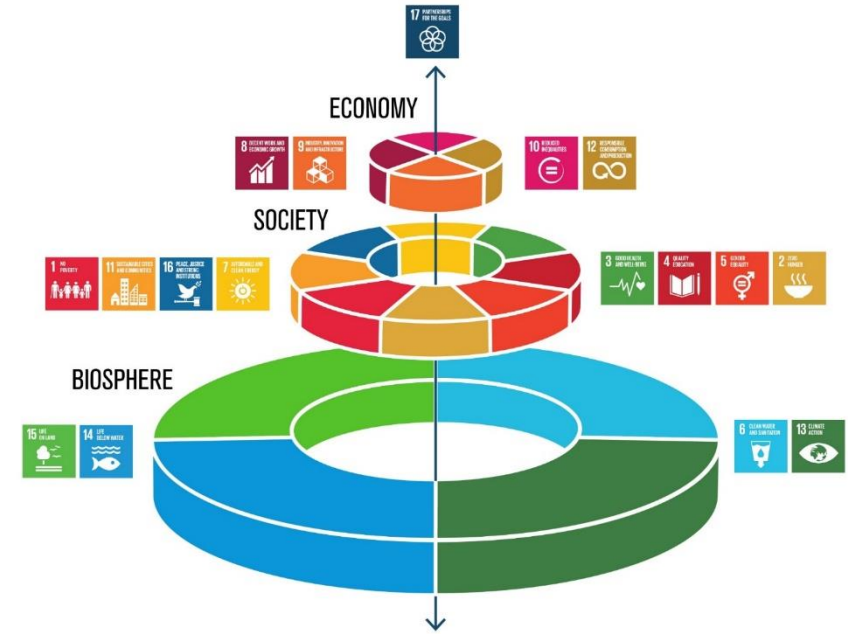
A global vision for learning

Ensure inclusive and quality education for all and promote life-long learning.

4.7 "By 2030, ensure that **all learners** acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development."

- Knowledge
- Skills
- Values

A Scottish vision for learning

In Scotland, Learning for Sustainability takes a strategic national approach:

- An entitlement for all learners

- A whole-setting approach.

- Embedded in whole-school self-evaluation.

- Central to the national Professional Standards for all teachers.

- Woven throughout the Scottish curriculum.

- Includes school buildings, grounds and policies

Vision 2030+
Concluding report of the Learning for
Sustainability National Implementation Group
March 2016

A Scottish vision for learning

"Learning for sustainability (LfS) is an approach to life and learning which enables learners, educators, schools and their wider communities to build a socially-just, sustainable and equitable society.

An effective whole-setting and community approach to LfS weaves together global citizenship, sustainable development education and outdoor learning to create coherent, rewarding and transformative learning experiences."

Education Scotland

embedded in the curriculum

international education

ethos

equality and fairness

values-based

understanding interdependence

improving attainment and achievement

outdoor learning

resilience

critical thinking

health and wellbeing

sustainable energy and water use

local to global

eradicating poverty and inequity

responsible use of our planet's resources

play

children's rights

skills for work

links between environment, society and economy

creativity

contact with nature

problem solving

school linking

fair trade

learning for sustainability

respect

peace and conflict

learning for a better world

identity and heritage

social justice

engaging with democracy

human rights

addressing discrimination and prejudice

sustainable buildings and grounds

discussing controversial issues

sustainable development education

learners as leaders

protecting biodiversity

developing political literacy

tackling climate change

growing food

global citizenship

ethical issues

culture

community partnerships

systems thinking

social and cultural diversity

cooperative, collaborative and active learning

waste reduction and recycling

Joining the dots #2: policy coherence across learning

Learning for Sustainability SCOTLAND
Ag Ionnsachadh airson Seasmhachd ALBA

National Improvement Framework

Developing the Young Workforce

STEM strategy

Food-related learning

Getting it Right for Every Child

Learning for Sustainability

Skills for Learning, Life and Work /BTC 4

How Good is Our School?

lfsscotland.org

Adding value to everyday learning

HEALTH AND WELLBEING

- Rationing and the impact on physical health.
- Designing a healthy menu based on ration principles.
- The emotional and mental impact of food shortages—how did it feel to eat on rations or go hungry?

RME

- The ethics and impact of the war on the way people ate across the nations involved and immediate post-war food issues.

LANGUAGES

- Looking behind the slogans: e.g. 'Dig for Victory' – creative writing opportunities.
- Writing from the perspective of a refugee: how it felt to be hungry and homeless.
- Creating a menu in a language used by one of the other countries involved in the war.

NUMERACY

- Budgeting on a week's rations.
- Weighing and measuring a ration and working out recipes based on rations; for a single person, a family – or an army.

THE TOPIC: World War Two

TECHNOLOGIES

- Changes in farming technology as a result of the war.
- Designing and using wartime farming and food production technology e.g. hand mincer/open-air cooking.
- Preparing, cooking and serving a menu on rations, and creative use of left-overs.

ENTERPRISE

- Holding a Wartime Café and war effort fundraiser – complete with music, wartime foods, costumes, and a tea dance!

EXPRESSIVE ARTS

- Designing your own wartime Ministry of Food posters, or packaging labels.

LEARNING FOR SUSTAINABILITY

- Changes in farming practices as a result of the war and their impact today.
- The impact of food production during and after the war on our urban and rural landscapes.
- Comparing the diets and food customs of the nations involved in the war.
- Foraging for foods and cooking outdoors with wartime technology.

SCIENCES

- Digging for Victory: nutritional content of food grown then and methods used compared to today.
- The processing, preserving and transportation of food.

SOCIAL STUDIES

- Changes in farming methods during and as a result of the war and their impact.
- How were armies fed and supplied?
- Speaking with those who were there: what was it like to eat during the war?
- The importance of the convoys and other food transportation systems for soldiers and civilians.

Learning for life: relevant, meaningful, inclusive

Learning for Sustainability SCOTLAND
Ag Ionnsachadh airson Seasmhachd ALBA

THE TASK: To design and market a sustainable, healthy, food product.

EXPRESSIVE ARTS
- **Design packaging logos** and an advertising campaign.
- **Compose** an advertising jingle.
- **Write** an advertisement script and film/act in same.

SCIENCES
- **Investigate** the possibility of using renewable energies to power production.
- **Investigate optimal ingredient production methods using a range of soils or other growing media.**

MATHEMATICS
- **Manage** the advertising and marketing budget.
- **Calculate** the design and production costs.
- **Manage** the income and outgoings.

LANGUAGES
- **Write advertising slogans and** a marketing strategy.
- **Translate** the ingredients list and slogans into foreign languages for a global marketing campaign.

RELIGIOUS AND MORAL EDUCATION
- **Investigate running** a business as a social enterprise with proceeds going to a good cause.
- **Ensure only ethical** and sustainable ingredients are used.
- **Investigate planet-friendly packaging options.**

HEALTH AND WELLBEING
- Investigate the nutritional content of ingredients and design a healthy recipe: incorporating mental, emotional and cognitive well-being as well as physical.

SOCIAL STUDIES
- **Ensure that sustainable and ethical farming practices are used to produce the chosen ingredients, and that subsequent production methods comply with this strategy too.**
- **Use their knowledge of the local area to suggest possible marketing targets or suitable locations for sales.**
- **Investigate and compare various media platforms to decide on the most suitable ones for advertising the product.**
- **Use** business acumen to establish a successful sales strategy.

TECHNOLOGIES
- **Compare and contrast traditional** and modern production methods. Design a product that can be cooked outdoors and indoors.
- **Investigate the use of ICT for marketing and sales purposes, and set up systems to handle customer data.**
- **Experiment with graphics to produce eye-catching marketing strategies.**
- **Establish a product development kitchen to trial and test products prior to sale.**
- **Design and produce sustainable packaging.**

3. A vision for learners

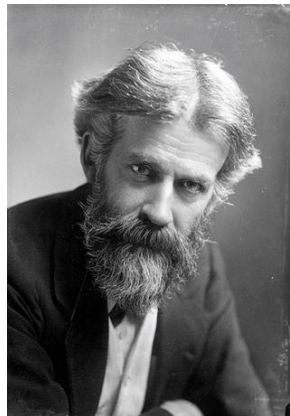# Learning for the 21st century: hearts, hands and heads

Affective

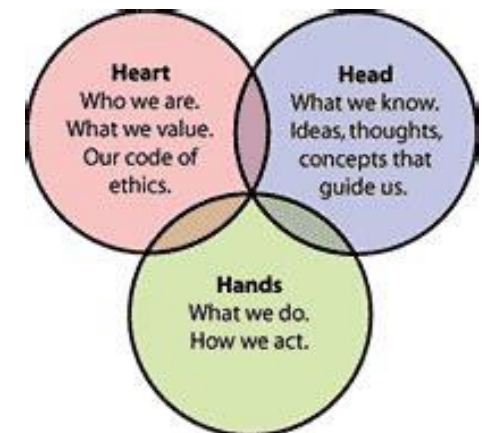Engaging curiosity and our sense of wonder

Experiential

Working directly with a subject: hands-on.

Cognitive:

Reflecting and learning from the experience

'For in that order they develop' – *Patrick Geddes, 1919*

Heart
Who we are.
What we value.
Our code of ethics.

Head
What we know.
Ideas, thoughts, concepts that guide us.

Hands
What we do.
How we act.

Learning for
Sustainability
SCOTLAND

Ag Ionnsachadh airson
Seasmhachd ALBA

"The first supermarket supposedly appeared on the (American) landscape in 1946. That is not very long ago. Until then, where was all the food? Dear folks, the food was in homes, gardens, local fields, and forests. It was near kitchens, near tables, near bedsides. It was in the pantry, the cellar, the back yard."

Joel Salatin

Fair trade
International trade
Malnutrition
Local economies
Genetically-modified
Ethics of food waste
Biofuels
Learning for Sustainability
Feeding the world
Corporate dominance
Politics
Soil degradation
Role of big business
Global food system
Health and Well-being
UN Sustainable Development Goals
Flooding
Water use
Intensive farming systems
Deforestation
Over-fishing
Reliance on fossil fuels
Biodiversity
Drought
Food security
Organic
Food distribution
Climate change
Inequality
The Rights of the Child
Land rights

2. Growing & rearing my own food/understanding how my food gets to me

Global systems
Fair trade
Routine antibiotic use
Nutritional quality
Preservatives
Microwaves
Intensive farming systems
Processing
Leftovers
Artificial fertilisers
Transporting our food
Supermarkets
Pesticides and herbicides
Reliance on fossil fuels
Ethics of food waste
Growing, catching and rearing
Takeaways
Locally-produced
Consumer choice
Sustainably-produced
Impact on biodiversity
Seasonal
Packaging
Plastic waste
Freshly-prepared
Buying & selling
Social interaction
Animal welfare
Additives
Preparing food
Zero waste
Ethically-sourced
Water use
Farmers' markets
Aquaculture
Ready meals

"We live not by the jingling of our coin, but the fullness of our harvests."

Patrick Geddes

3. Preparing & cooking my own food/ creating confident consumers

"Health inequalities are the biggest issue facing Scotland just now, because not only are health inequalities a problem but health inequalities are really a manifestation of social inequality. Social complexity – social disintegration – drives things like criminality, it drives things like poor educational attainment, it drives a whole range of things that we would want to see different in Scotland. The more attention we can get paid to the drivers of that situation, the better." *Sir Harry Burns, former Chief Medical Officer for Scotland*

Body image Emotional health Farming systems & nutrients

Locally-sourced Cognitive ability Food & mood

Five-a-day Confusing jargon Marketing

Corporate dominance

Heritage crops Good food choices Supermarkets

Choice & availability

Loss of variety & choice Allergens

Salt, fat, sugar…and what else? Pesticides Seasonal

Additives Sponsorship deals Health & well-being

Understanding the labels Junk food Advertising

Obesity Herbicides Fairtrade

Ethical & sustainable Celebrity endorsements Hype

Jingles & logos Animal welfare What's really in my food?

4. Sharing & celebrating my food/food culture: past, present, near and far.

Wild foods

Food industry & jobs

What's on your plate?

Celebrations

Traditional technologies

Impact on language

Food waste

How do you eat?

Hunter-gatherers

Access to food

Place names

Sugar trade

The Clearances

Sustainable future

Fast food

Railways

Sharing food

Food skills

New Scots

Impact on landscape

Seasonality

Forage

Indigenous crops

Dining ambience

Industrial Revolution

Tea clippers

New technologies

Feasts & famines

Canals

Supermarkets

School dinners

Distribution

Native breeds

Local specialities

Local & seasonal

Slow food

Slavery

International politics

Nomadic

Food histories

Herring fishing

Global food cultures

Traditional remedies

International trade

Customs & traditions

Adaptation

"Laughter is brightest where food is best."

Irish proverb

'Citizens-in-waiting' no more

...changes will need to be political, social and economic, but in all regards these need to be informed by accurate information and critical thinking skills that lead to understanding of the complex interdisciplinary nature of the problems we, and the planet, face.

We need to encourage, respect and cherish the capacity to care and act - whatever age our citizens are – and from the early-years to 18 (and I would argue in Further and Higher Education too). That is a central role of education."

Professor Peter Higgins, University of Edinburgh, March 2019

Take-aways…

- **What are you doing already?**

- **How will you embed food-related learning in your practice?**

- **How will you embed food-related learning in your personal life?**

- **How will you encourage/enable others to do the same?**

Issues and tensions when teaching climate change in the classroom

Dr Stephen Day

Head of Division (Education)

School of Education and Social Sciences, UWS

A. The issues teachers need to be aware of when teaching about climate change?

- Handling the **_complexity_** of the scientific concepts and the forms that data take, in relation to climate change and global warming.
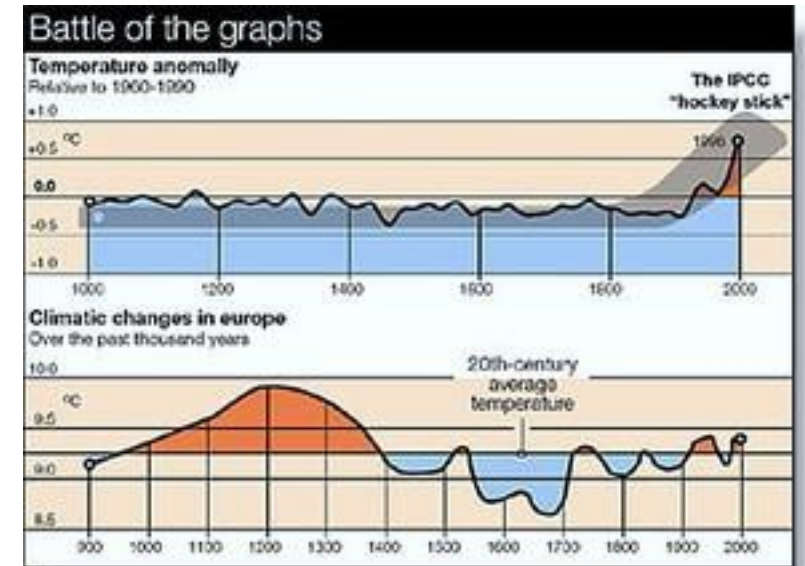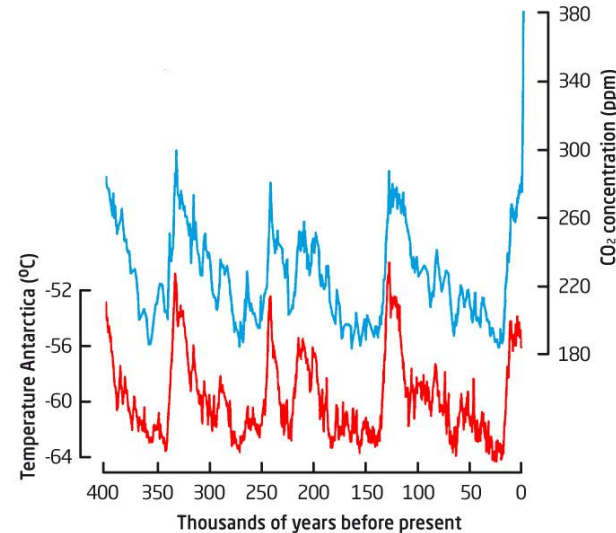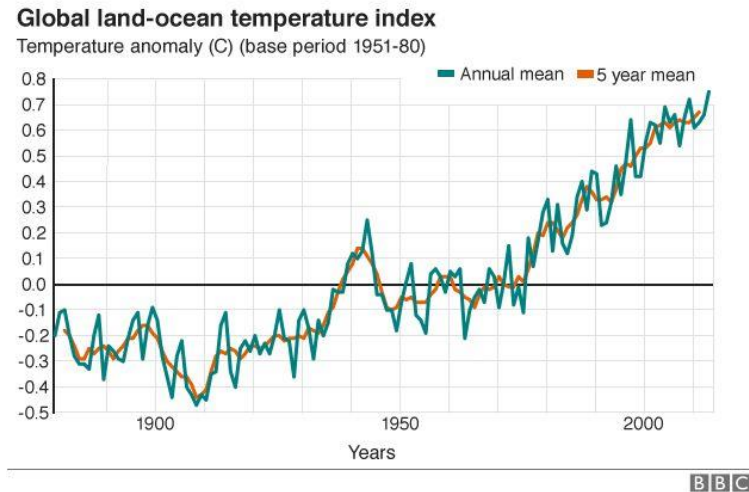
A. The issues teachers need to be aware of when teaching about climate change?

- Handling the ***complexity*** of the ***multiple perspectives*** which often stem from different groups that hold reasonable yet contradictory points of view regarding the underlying cause or impacts of climate change and global warming.
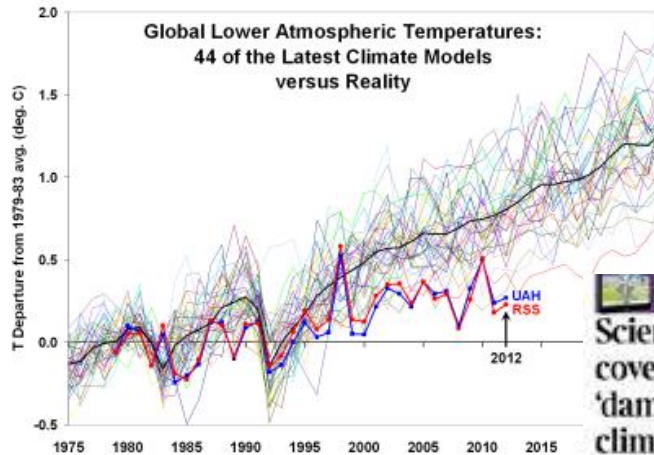
A. The issues teachers need to be aware of when teaching about climate change?

- Dealing with the competing values that are embodied or espoused by different groups.

A. The issues teachers need to be aware of when teaching about climate change?

- Recognising the limits of our understanding and the need for ***on-going inquiry.***

- Supporting pupils' *awareness of* and ability *to recognise* bias in all forms of information – developing rational ***scepticism.***

- Helping pupils to understand that climate change is a problem of sustainability that <u>*requires more*</u> from us than simply reducing carbon emissions or our carbon footprint

- <u>*Rather,*</u> it requires us to change our mindset (values, attitudes and beliefs), our way of living (food consumption, recycling and waste management) and our level of consumption of our planet's natural resources (building materials, farming practices, land exploitation etc...).

B. The main tensions to be negotiated when teaching about climate change and global warming?

- Defining climate change and global warming in relation to popular perception.

- Uncovering and challenging misconceptions regarding the greenhouse effect and greenhouse gases.

- Explaining that science does not work through consensus but through hypothesising, experimental investigation and evidence.

B. The main tensions to be negotiated when teaching about climate change and global warming?

- Supporting the co-development of a functional level of scientific and political literacy in a manner that does not suborn one over the other.

- Uncovering and challenging pupils' confirmation bias in a supportive and productive way.

Some 'food' for thought

The need to teach climate change in an open and balanced way has never been more important.

- *How do school pupils use their developing scientific and political literacy to inform their personal choices, behaviours and attitudes?*

- *How do we encourage pupils to engage and, more importantly, act politically in a responsible way in response to their learning about climate change?*

LUNCH
12.35 – 1.15

Task 1 (10 minutes): using a **GREEN** marker, sketch / draw what a school garden looks like from your perspective. You might think about a school garden you know, or you might have an image in your mind of the school garden that you would like to create. In this task there are no limitations – anything is possible. Feel free to discuss your ideas with the people around you.
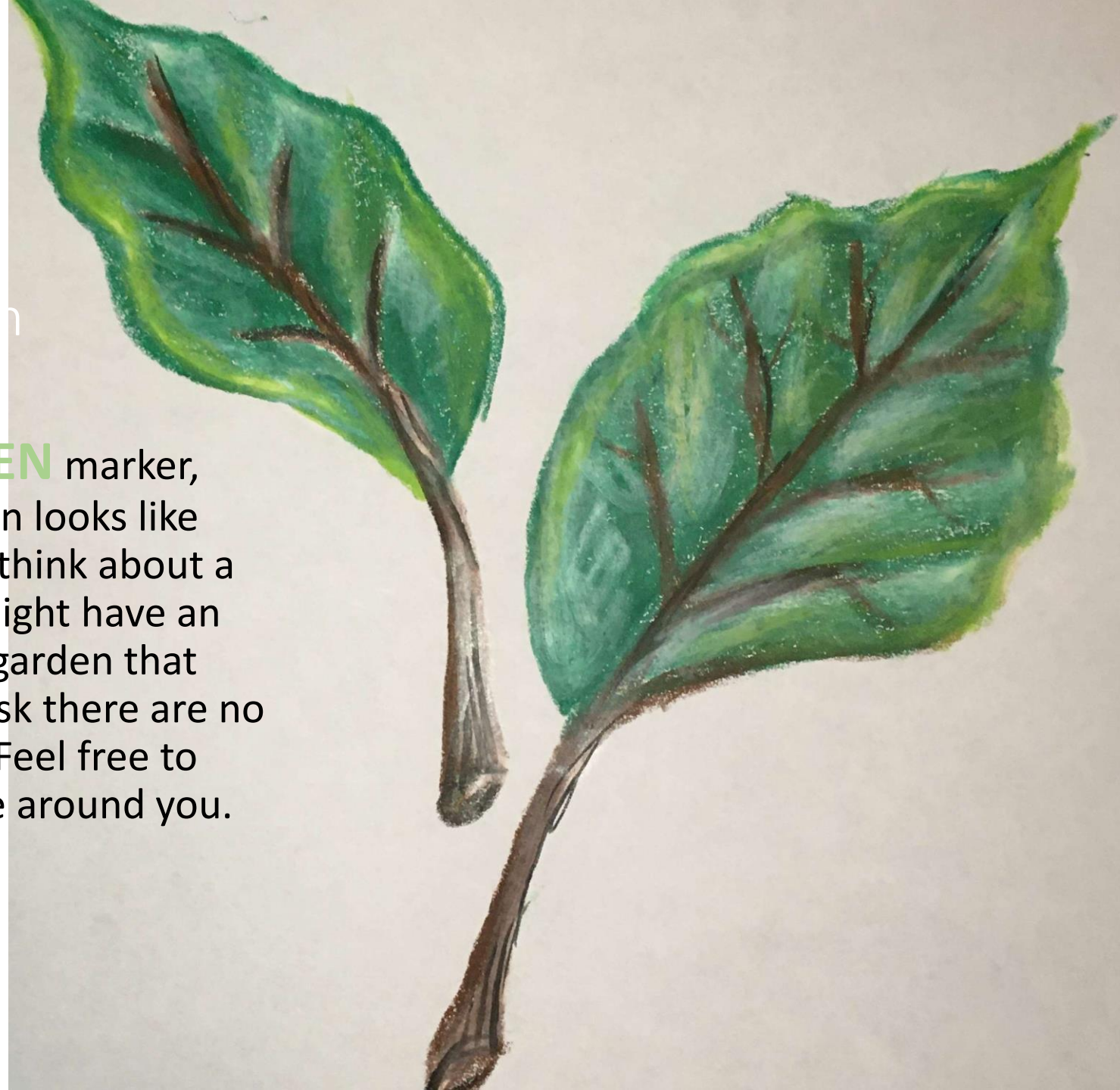
Task 2 (10 minutes): An invitation to *re*-consider your garden...by drawing on the **'Framework of Participation'** (Black-Hawkins, Florian &Rouse, 2007)*. Make any changes to your original garden using a **RED** marker as you engage with the questions below:

Participation and diversity (human + bio-diversity)

- Who is recognised and accepted as an *active participant* in the garden? and by whom?
- (The assumption is that human and bio-diversity need to exist and should be harnessed to create an inclusive and rich learning environment).

Participation and access (...to the physical space + learning opportunities available)

- Who is given access to the garden? Who is denied access, and by whom or what?
- (The assumption is that participation and access may be affected by visible or invisible barriers).

Participation and collaboration

- Who (pupils / adults / community members) teaches whom? Who learns from whom?
- Do the 'timetable' and spaces available promote collaboration across diverse groups of people?

Participation and achievement

- What kind of learning is valued in the garden – is it an environment where **all learners** can experience challenge?

*Black-Hawkins, K., Florian, L. & Rouse, M. (2007) *Achievement and Inclusion in Schools.* London: Routledge

Case study two

One Seed Forward

Bob Donald
and
Donald Gray

Woodside School

Bramblebrae Primary School

Tullos Primary School

Blackhall School (Edinburgh)

Constructing a raised bed

A Well-integrated School Garden.

Who? What? and How?

Impact of Garden-Based Learning on Academic Outcomes in Schools: Synthesis of Research

Williams, D. R., & Dixon, P. S. (2013, *Review of Educational Research, 83*(2), 211–235.

The synthesis results showed a **preponderance of positive impacts** on direct academic outcomes …Indirect academic outcomes were also measured with social development surfacing most frequently and positively.

The Effects of School Gardens on Children's Science Knowledge

Wells et al (2015) International Journal of Science Education, 2015 Vol. 37, No. 17, 2858–2878,

"among children in the garden intervention, **science knowledge increased** from baseline to follow-up more than among control group children."

A Systematic Review Of The Health And Well-being Impacts Of School Gardening

Ohly et al. BMC Public Health (2016) 16:286

qualitative research was better quality and ascribed **a range of health and well-being impacts** to school gardens

Can learning in informal settings mitigate disadvantage and promote urban sustainability? School gardens in Washington, DC

Fisher-Maltese et al (2018) Int Rev Educ (2018) 64:295–312

MORE RESEARCH NEEDED

Food Growing in Schools Taskforce-Report

▶ Key Findings:

▶ The most effective food growing schools achieve significant learning, skills, health and well-being outcomes for children and young people.

▶ Food growing in schools has a positive impact on the schools, communities, organisations and businesses involved.

▶ Many schools grow food, but only some do so in a way that achieves the maximum benefits for all involved.

Food Growing in Schools Taskfor...

Report, March 2012

According to Burt et al* there are four domains to a well-integrated school garden:

- Resources and Support; (R&S)

- Pupil (Student) Experience; (PE)

- School Community; (SC)

- Physical Garden. (PG)

Use the elements of each of these provided on the cards to discuss how such a well integrated school garden might be established, integrated, and sustained in schools.

*Burt, K.G., Koch, P. and Contento, I. (2017) Development of the GREEN (Garden Resources, Education, and Environment Nexus) Tool: An Evidence-Based Model for School Garden Integration. J Acad Nutr Diet. 2017;117:1517-1527.

Resources and Support (R&S)

- Consider the cards for resources and support (R&S).
- Who has a contribution to make to this?
- Who should take responsibility for this?
- Which networks/organisations can be involved?
- How can the structure be organised in the school to enable integration and sustainability?
- What links might there be with PE, SC and PG

School Community (SC)

- Consider the cards for the School Community (SC).
- Consider how volunteers and community can be involved?
- Who can you look to for support?
- Who has responsibility for policies that impact on this?
- Identify appropriate stakeholders and policy-makers who may have a contribution to make to this.
- How might this be co-ordinated?
- What links might there be with R&S, PE and PG

Pupil Experience (PE)

Consider the aspects of pupil experience cards (PE)

- How can these elements be encouraged?
- Who should take responsibility?
- Where can you find support and ideas?
- How much time is feasible?
- What are the constraints? How might constraints be overcome?
- What links might there be with R&S, SC and PG?

Physical Garden (PG)

Consider the aspects of physical garden cards (PE). Refer to some of the photographs of school gardens provided.

- What kinds of gardens are there?

- What will be required to put a garden in place?

- Who is responsible for planning and establishing a garden?

- What resources/support is required?

- Who can help with care and upkeep (e.g. during holidays)?

- What is needed at different levels – school, community, authority, policy?

PLENARY

There are many opportunities currently to embed growing into everyday planning. However, as many schools can testify, school gardens can come and go. A significant 'activist' component is involved in this process:

- As teachers, we need to make a case for this learning to be valuable;
- As parents, we need to make a case for such learning to be desirable;
- As politicians we need to make a case for this learning to be necessary;
- As researchers we need to make a case for this learning to be visible;
- As community volunteers we need to make a case for this learning to be sustainable.