



the case for a plant-rich
diet

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my position

- I am not a vegetarian
- I am not being paid for my participation in this talk
- I have a long-standing interest in sustainable systems for food and energy production



the current food system

- too many unhealthy choices
- unsustainable (globally & locally)
- lacks enough plant foods (especially legumes, nuts, seeds, wholegrains & vegetables)
- limited range of animal foods (dominated by beef, lamb, pork, chicken, cows' milk)
- high consumption of ultra-processed foods
- high levels of food waste



what we need

World Health Organisation, the IPCC and others recommend

we bias our diets towards

plant foods

and reduce highly processed foods

for health & sustainability



Dietitians Australia position paper

- a National Food and Nutrition Strategy which honours Indigenous knowledges on food systems
- integration of sustainability principles in Australia's dietary guidelines
- reorientation of our food environment to prioritise access to healthy and sustainable foods
- investment in capacity building activities to equip the current and future nutrition and dietetics workforce

Barbour L, Bicknell E, Brimblecombe J, et al. Dietitians Australia position statement on healthy and sustainable diets. *Nut/Diet*. 2022;79(1):6-27

THE LANCET

January, 2019

www.thelancet.com

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



“Food in the Anthropocene represents one of the greatest health and environmental challenges of the 21st century.”



EAT-Lancet commission

37 experts in health, nutrition, environmental sustainability, food systems & governance from 16 countries

funding

the Wellcome Trust, Children's Investment Foundation, authors' employers

no industry funding



EAT-Lancet - why?

future situation (2050)

- world population expected to reach almost 10 billion
- sustainable food production **for all** will require big changes
- ↑ consumption of animal foods & ↑ use of resources to produce junk foods are unsustainable



EAT-Lancet - major issues

- reduction in greenhouse gas emissions
- reduction of gaps in crop yields (by 75%)
- changes in nitrogen & phosphorus fertilisers
- recycling of phosphorus
- much more efficient water use
- fundamental shift in production priorities

**this is a global problem
& requires global solutions**



EAT-Lancet - what?

planetary health diet involves

- flexible food choices within parameters (more in some areas, less in others)
- local production where possible with greater biodiversity, better soil health
- social/cultural application to allow for variety in choice of foods (eg types of fats)



EAT-Lancet - what?

major changes recommended

- more legumes, nuts, fruit, vegetables (by 100% in some areas)
- red meat needs to ↓ in high income areas, ↑ for women & children in low income areas
- much less added sugar, processed meats, refined grains, junk foods



EAT-Lancet - for whom?

plant-based & adaptable for

- vegetarian choices
- vegan choices
- omnivore choices
- flexitarian choices

EAT-Lancet - menu

food	range (g)	mid-range(g)
whole grains (raw weight)	0-232	116
potatoes/starchy veg	0-100	50
vegetables	200-600	400
fruit	100-300	200
milk, cheese, yoghurt	0-500	250
beef, lamb	0-14	7
and/or pork	0-14	7
chicken/poultry	0-58	29
eggs	0-25	13
fish & seafood	0-100	50

can exchange chicken, fish, eggs, plant protein

EAT-Lancet - menu (cont)

food	range (g)	mid-range(g)
legumes, dry weight	0-100	50
soy products	0-50	25
peanuts	0-75	38
tree nuts	25	25
palm oil	0-7	3.5
unsaturated oils	20-80	50
lard or tallow (some areas only)	0-5	2.5
added sugars	0-30	15

can exchange legumes, soy, peanuts, nuts

oils include olive, soy, canola, sunflower, peanut



EAT-Lancet - criticisms

- from low carb/keto enthusiasts
- claims the diet doesn't meet nutritional needs
- claims that 'plant-based' means 'vegan'



EAT-Lancet - critics claimed

the diet lacks*

- vitamins B12, A, D, K
- sodium, potassium, calcium, iron
- omega 3 fatty acids

<https://www.zoeharcombe.com/2019/01/the-eat-lancet-diet-is-nutritionally-deficient/>

<https://www.zoeharcombe.com/2019/03/letter-to-the-lancet-re-eat/>



EAT-Lancet - my analysis

✓✓ omnivore choices

✓✓ lacto-ovo vegetarian choices

✓ vegan choices*

✓ RDIs (vits B12 & A, Ca^{++} , Fe^{++}) & AIs (vit K, K^+)

low in sodium is correct (but assumes no added salt)

* vegan choices need B12 supplement & Ca^{++}

† no RDI for vit D, but available from sun on skin

‡ no RDIs for omega 3s, but available from seafood, or from plant sources (linseeds, walnuts, canola, chia, soy)



EAT-Lancet - analysis

energy from:	protein	fat	carbo- hydrate
omnivore	16%	38%	48%
lacto-ovo vegetarian	17%	35%	48%
vegan	16%	37%	47%



EAT-Lancet - criticisms

“doesn't meet nutritional needs” assumed

- only 1 type of grain (rice), 1 fruit (apple), only 3 vegetables, only 1 type of dry bean/lentil, soy only analysed as defatted soy meal, freshwater fish
- that lacto-ovo vegetarians would choose same levels of vegetables, fruit, legumes, nuts, milk, eggs
- that vegans would choose same levels of vegetables, fruit, legumes, nuts



EAT-Lancet - criticisms

“plant-based = vegan”

- pushed by low carb/keto enthusiasts
- pushed by large meat producers
- those claiming EAT-Lancet is designed for highly-processed meat alternatives
- example of thinking only in extremes



EAT-Lancet

essential messages

- there are many healthy ways to eat
- EAT-Lancet takes a global & flexible perspective
- the way foods are produced matters (biodiversity, farming methods, soil)
- sustainability will vary in different areas
- food cultures are important



EAT-Lancet - is it the answer?

great support & detailed information in:

World Resources Institute report - A menu of solutions to feed nearly 10 billion people by 2050 (564 pages)

Authors: Tim Searchinger (Princeton University), Richard Waite, Craig Hanson, Janet Ranganathan (all WRI)

July 2019

World Resources Institute

5 course menu to feed nearly 10 billion by 2050 in ways that help combat poverty, allow the world to meet climate goals & reduce pressure on the broader environment

<https://research.wri.org/wrr-food>





World Resources Institute

Menu

1. ↓ growth in demand for particular foods & other agricultural products
2. ↑ food production without expanding agricultural land
3. protect & restore natural eco-systems
4. ↑ sustainable fish production
5. ↓ GHG emissions from agricultural production



flexibility important

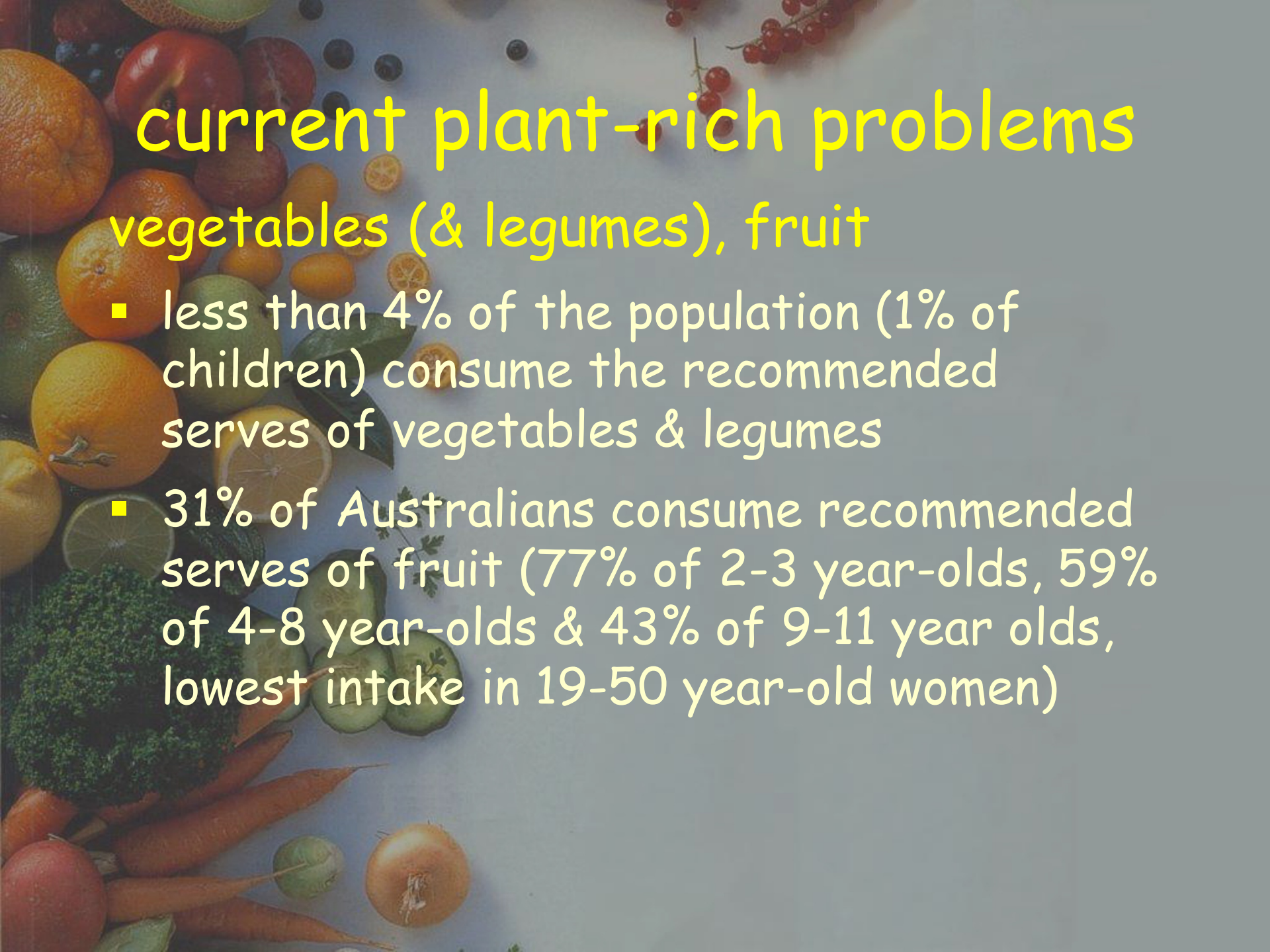
- plant-rich diets mean less emphasis on animal products
- 'less' does not necessarily mean 'none'
- globally, not everyone may need 'less' & distribution of animal foods may need to be more equitable on a global scale
- need changes in the types of animal foods, emphasising sustainable farming methods



plant-rich choices

legumes, nuts, seeds

- currently placed as 'minor' choices within the food group commonly referred to as the 'meat' or 'protein' food group
- abundance of evidence that there's no problem getting protein from plant sources provided we choose a variety of healthy plant foods throughout the day



current plant-rich problems

vegetables (& legumes), fruit

- less than 4% of the population (1% of children) consume the recommended serves of vegetables & legumes
- 31% of Australians consume recommended serves of fruit (77% of 2-3 year-olds, 59% of 4-8 year-olds & 43% of 9-11 year olds, lowest intake in 19-50 year-old women)



more sustainable choices

dairy products

- assumed to be the only source of calcium, although supply 42% of daily intake
- ~25% of calcium comes from grains & cereal-based dishes
- absorption of calcium from vegetables varies - highest for Asian style greens
- plant-based milk substitutes suitable if calcium fortified (at least 100 mg/100 mL)



more sustainable choices

fish and seafood

- health benefits apply to 1-2 seafood meals/week (150g), especially when seafood replaces the intake of less healthy foods*
- most sustainable type varies (source, capture)
- Switch the fish guide (goodfish.badfish.com.au)
- Australia's Sustainable Seafood Online Guide (free APP developed by Australian Marine Conservation Society)

* Rimm EB et al. AHA Science Advisory, Circulation. 2018. 138:e35-e47



more sustainable choices

meat

- rabbit (most sustainable)
- quail
- kangaroo
- goat
- chicken
- pork
- lamb
- beef (least sustainable in most areas)

(data adapted from Our World in Data, 2020)



red meat & the environment

- supported by many studies, IPCC lists strong evidence of high GHGs from global production of meat
- meat & dairy foods responsible for 14.5% of global emissions (FAO data).
- in Australia, meat is responsible for 12% of our GHGs, but 70% of all emissions from agriculture*
- animal emissions ↓ in Australia (↓ numbers, methane programs in cattle) but wrong to 'dismiss' methane
- land clearing & loss of biodiversity, water use, lot feeding & red meat exports (70%) are major issues

* Ratnasiri S, Bandara J (2017) Changing patterns of meat consumption and greenhouse gas emissions in Australia: Will kangaroo meat make a difference? PLoS ONE 12(2): e0170130. doi:10.1371/journal.pone.0170130



translation to dietary guidelines

consider foods, systems & sustainability

- more emphasis on healthy plant-rich foods
- if food groups retained, change the order
- change the order **within** food groups: plant-rich foods first (eg legumes, nuts, seeds, then seafood, eggs, poultry, lean red meat)
- give more detail (eg name specific products: types of legumes, nuts, most sustainable seafood and meats) + practical information



practical tips

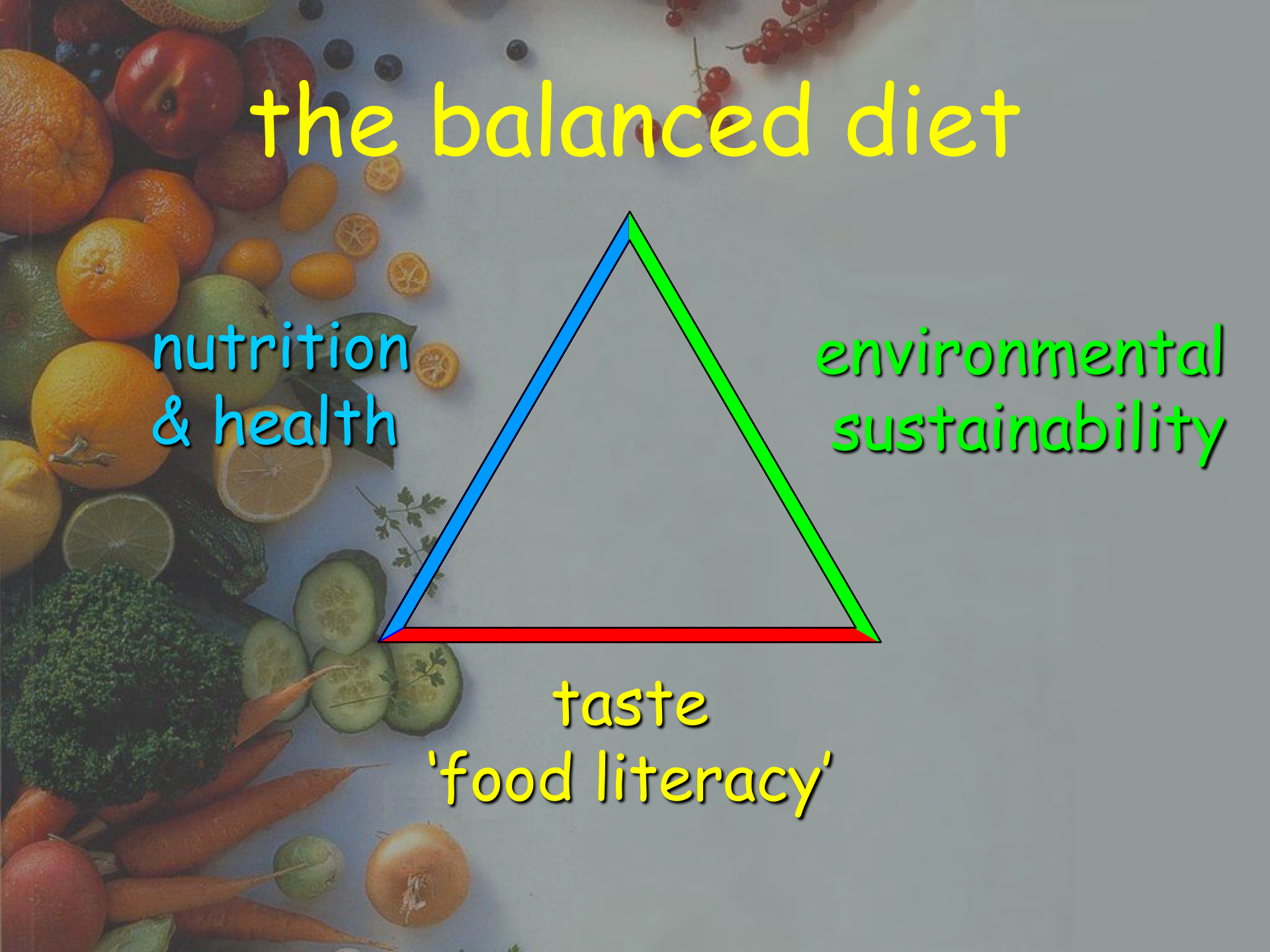
- buy only what we need, use tap water
- sustainable packaging
- choose legumes (recipes), greater variety of vegetables, grains, nuts and fruit
- fresh, local/home grown, where possible
- more sustainable farming
- smaller portions of sustainable animal foods, including fish, ?insects
- home-cooked rather than take-away
- fewer UPFs, junk foods, packaged drinks

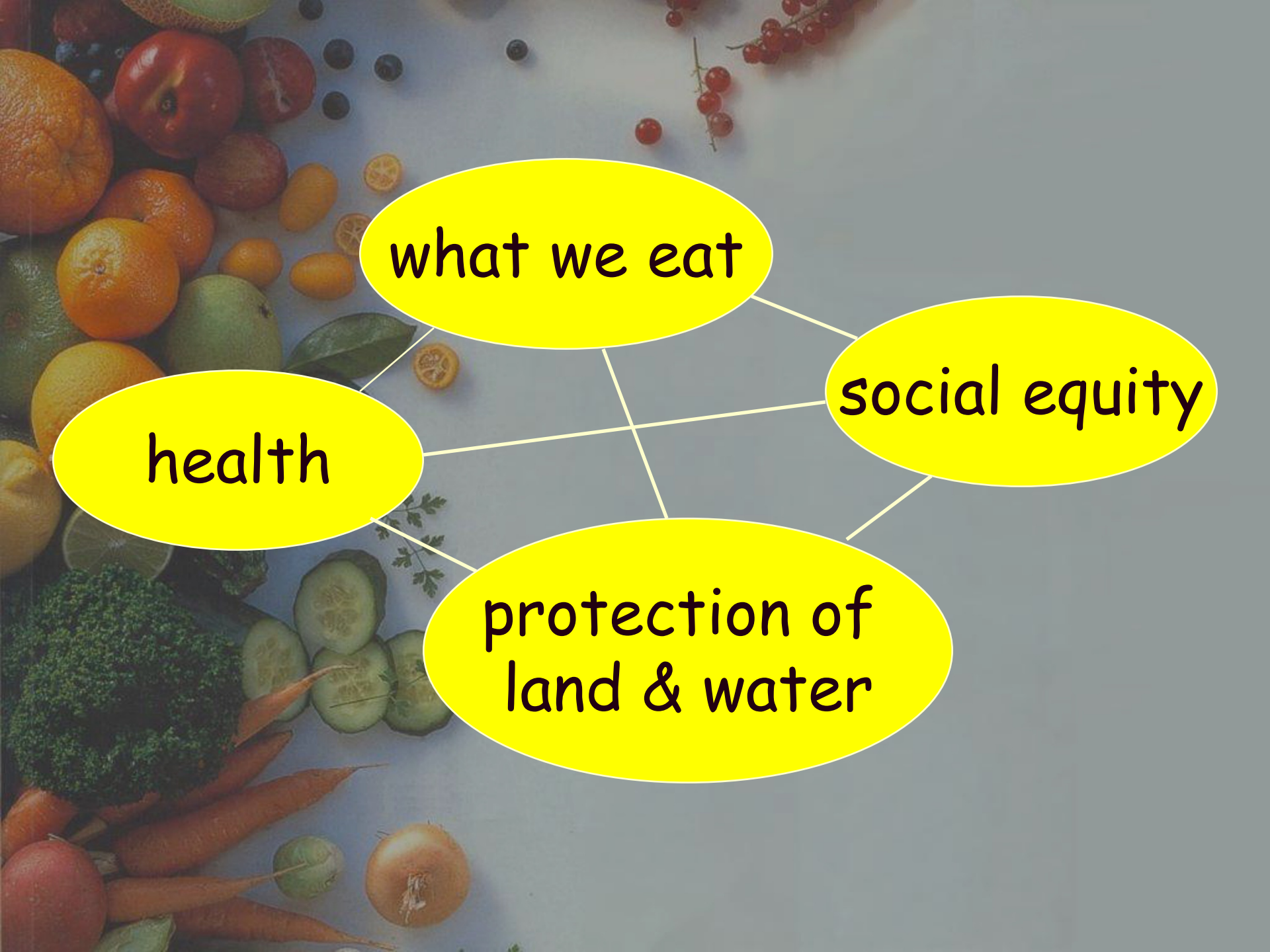
the balanced diet

nutrition
& health

environmental
sustainability

taste
'food literacy'





what we eat

social equity

health

protection of
land & water