

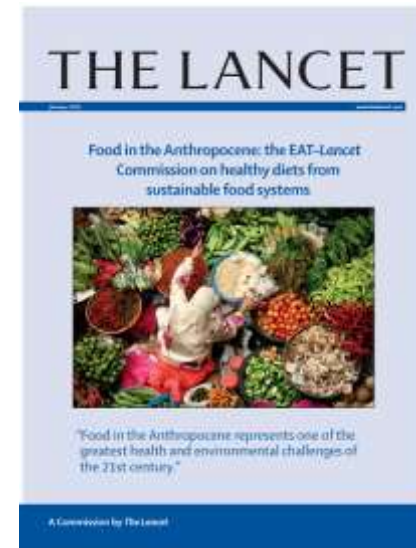


nederlandse zuivel organisatie

Dairy, sustainable diets and lifestyle

Dr. Stephan Peters – NZO

Less animal – more plant-based?



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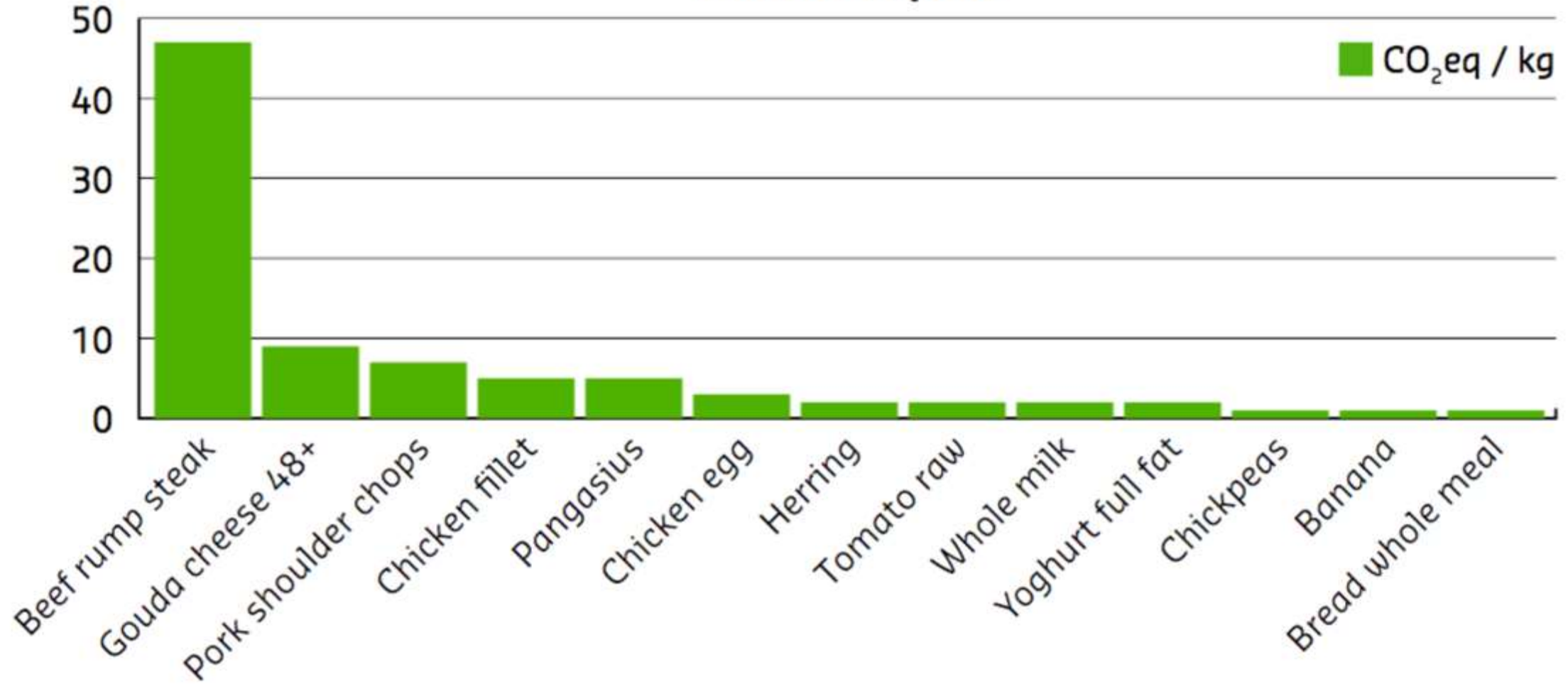
Is there a place for animal products in healthy and sustainable diets?

- Sustainable diet = less animal, more plant-based diet
- Nutritional consequences of a plant-based food transition
- Optimeal®: a model for optimising healthy and sustainable diets
- Food rules to eat more sustainable
- **FAO definition of a sustainable food system/diet**
- **Sustainable lifestyle – actions to undertake**

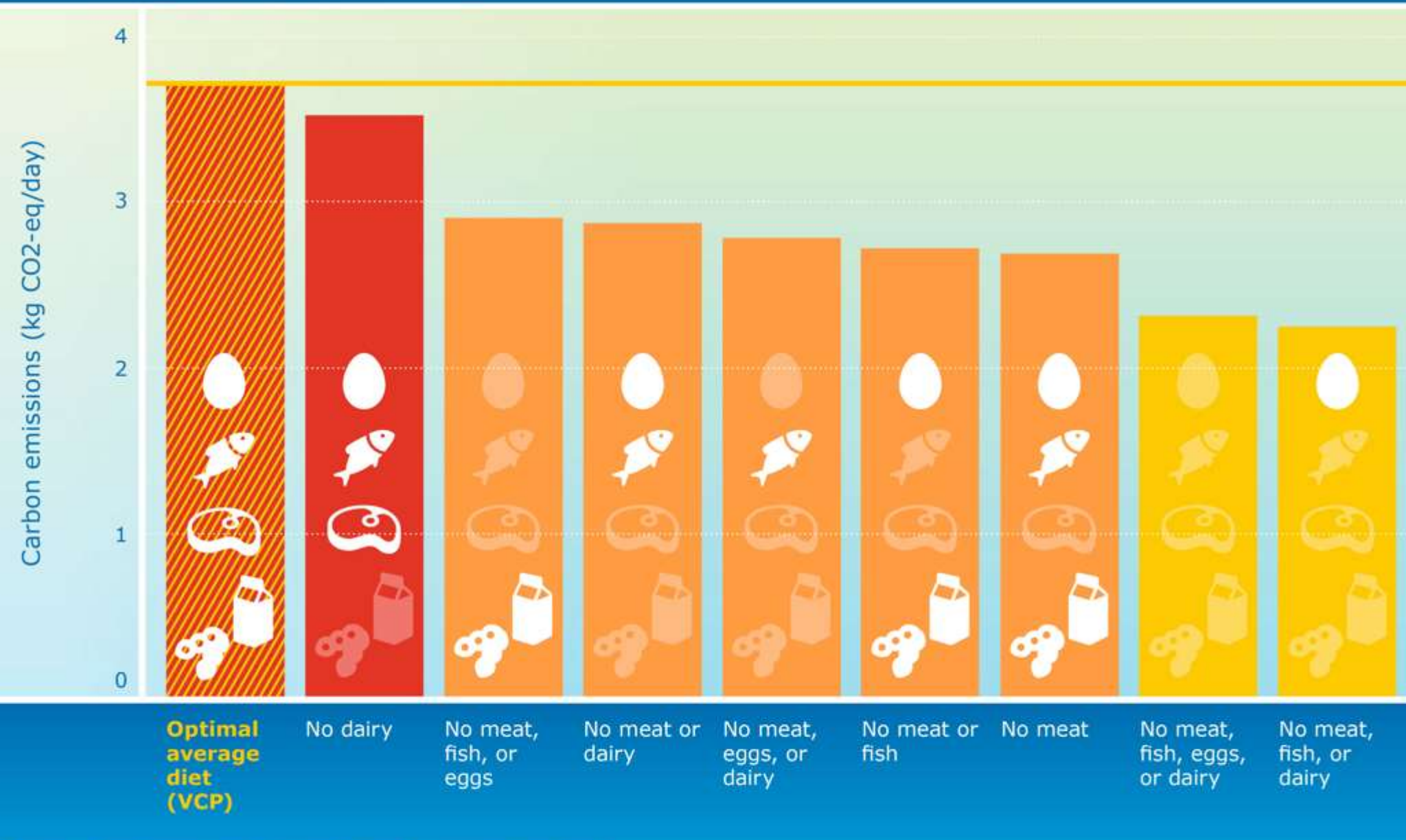
LCA



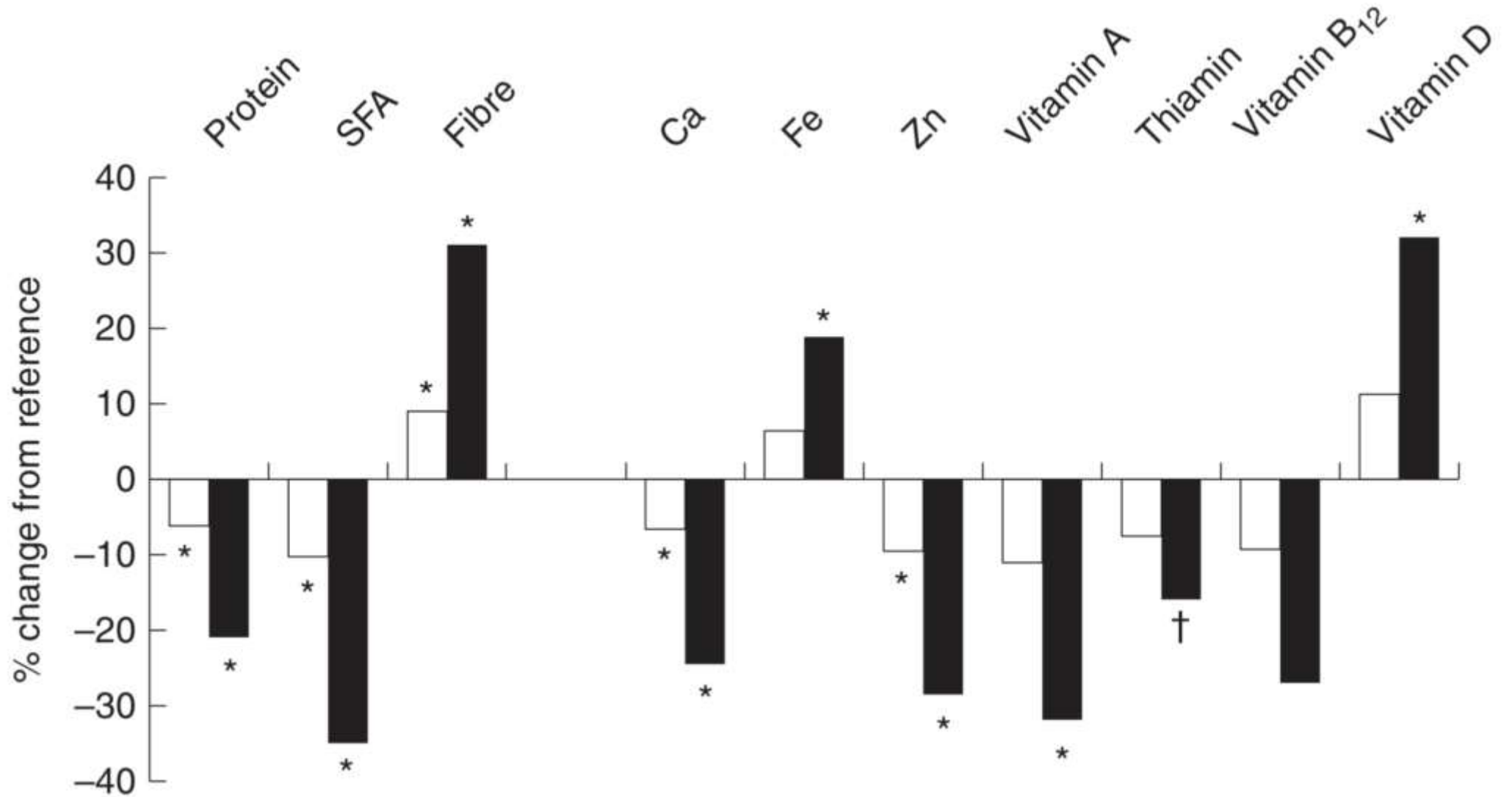
Carbon footprint



EFFECTS ON CARBON EMISSIONS FROM LIMITING ANIMAL-BASED FOOD GROUPS IN OPTIMALISED DIETS COMPARED TO THE AVERAGE DIET



Source: calculations with Optimeal® done by www.nutrisoft.nl





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NUTRI *soft*
nutritional software solutions



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CARBON FOOTPRINT OF VEGETARIAN DIETS WITH AVERAGE, EXOTIC OR LOCAL FRUITS AND VEGETABLES

4,5
4
3,5
3
2,5
2
1,5
1
0,5
0

Average
vegetarian



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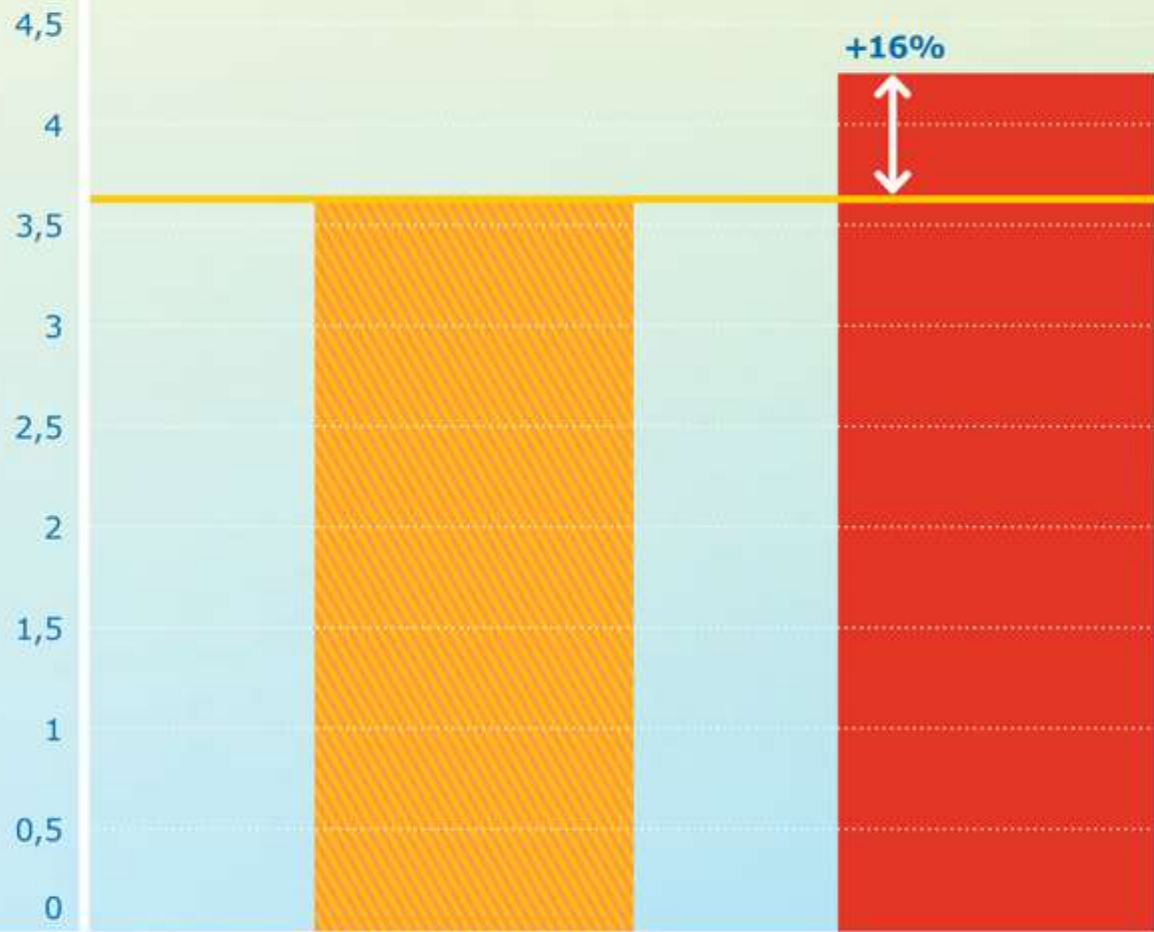


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CARBON FOOTPRINT OF VEGETARIAN DIETS WITH AVERAGE, EXOTIC OR LOCAL FRUITS AND VEGETABLES



Average
vegetarian

Exotic



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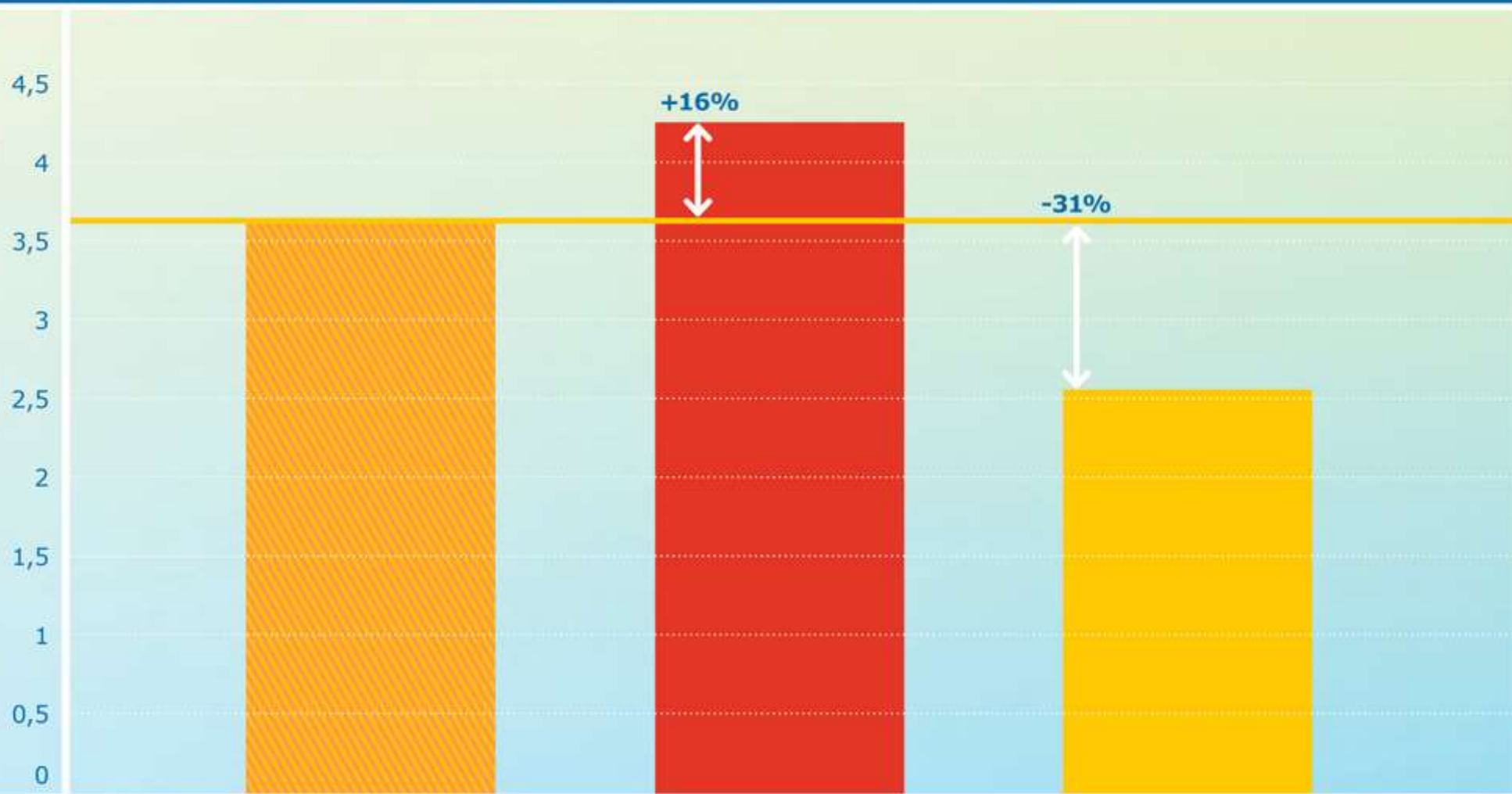


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CARBON FOOTPRINT OF VEGETARIAN DIETS WITH AVERAGE, EXOTIC OR LOCAL FRUITS AND VEGETABLES



Average vegetarian

Exotic

Local



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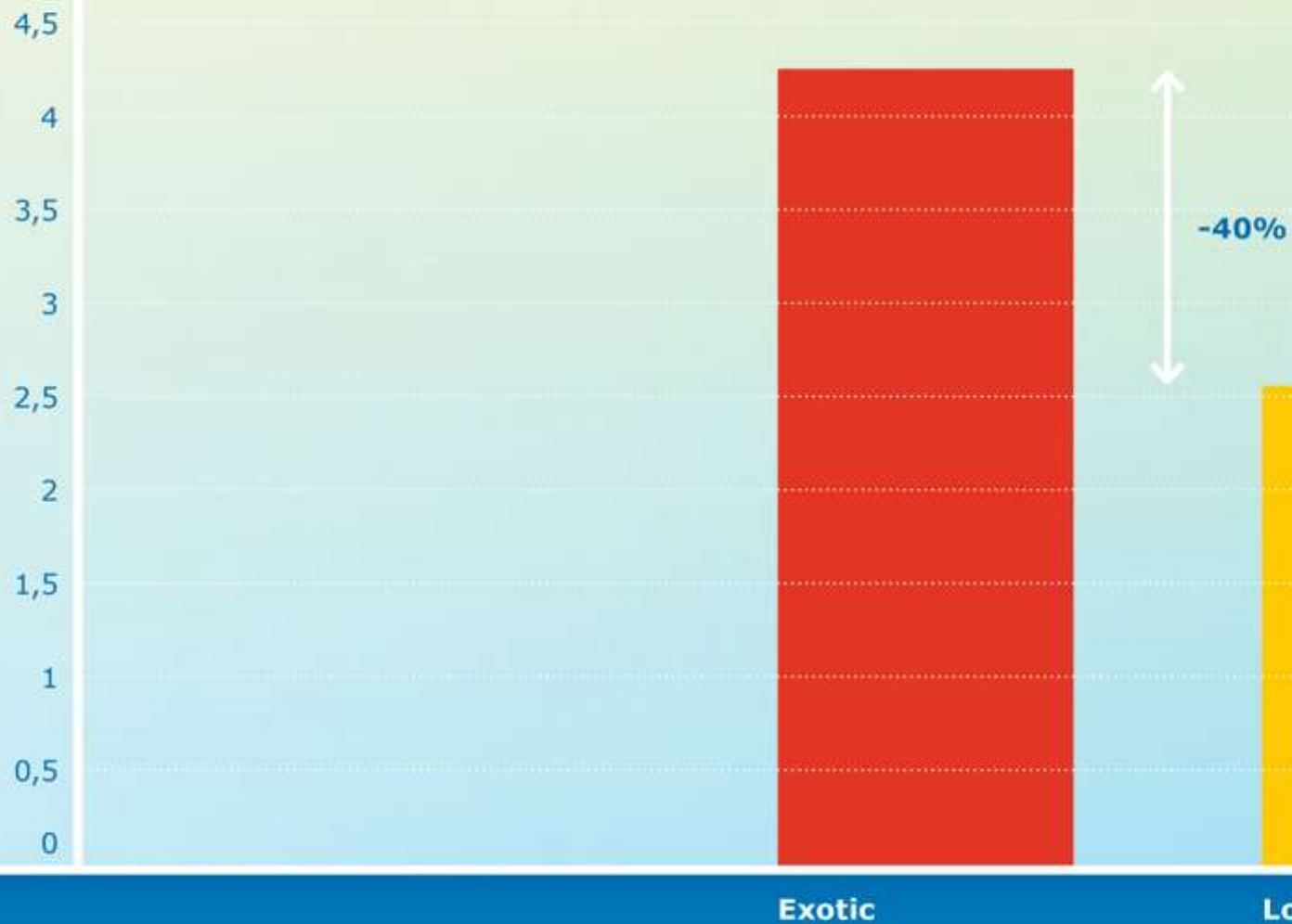


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Source: calculations with Optimeal® done by www.nutrisoft.nl

CARBON FOOTPRINT OF VEGETARIAN DIETS WITH AVERAGE, EXOTIC OR LOCAL FRUITS AND VEGETABLES



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Sustainable and healthy diet: Conclusions (Dutch situation)

- Eat less calories and according to food-based dietary guidelines
 - Eat less confectionary products and other extras
 - Eat less red meat (especially imported red meat)
 - Eat more whole grain products
 - Eat vegetables and fruits according to recommendations and as local as possible
 - Keep dairy intake at current level
 - Drink less softdrinks and alcoholic beverages
- EAT A LESS ANIMAL AND MORE PLANT-BASED DIET IS NOT THE RIGHT PARADIGMA
DECREASING ENVIRONMENTAL FOOTPRINT**



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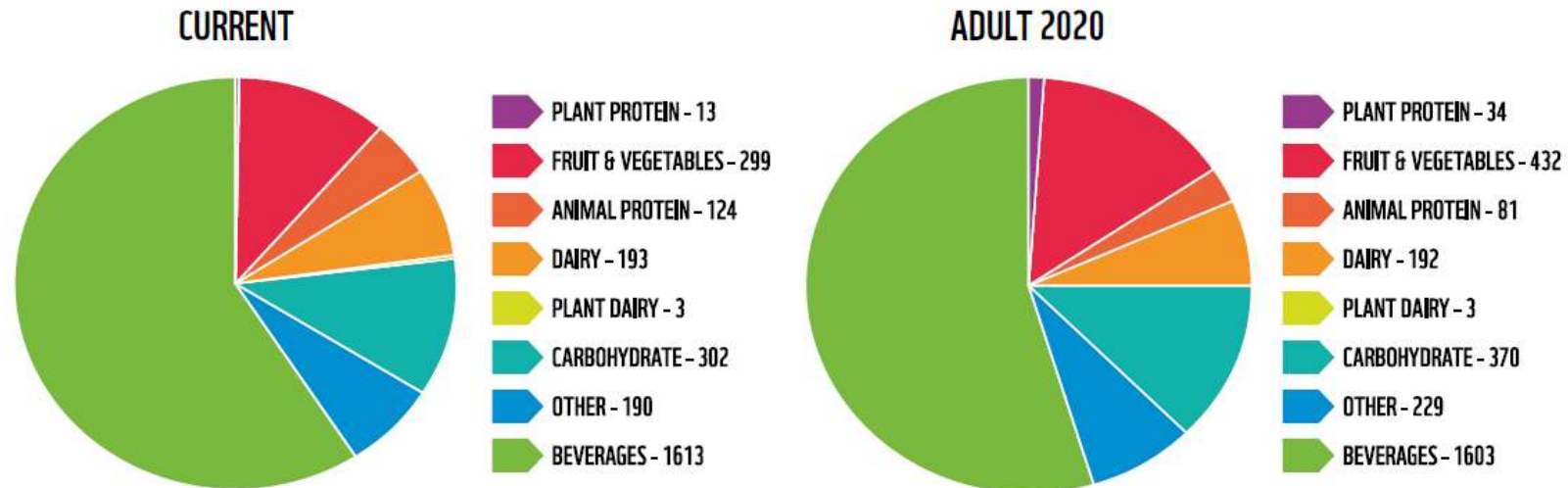
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Optimeal©

“Dietary changes needed by 2020 (and 2030) in order to keep the average global temperature rise well below 2 degrees”

The Livewell Plates for UK adults: diet that is sustainable – looking at carbon, water and land – affordable and in line food preferences in the UK.

Provides the required amount of calories as well as meeting all national nutrient requirements and the food-based dietary requirements of the Eatwell Guide.



AND HERE'S WHAT WE SHOULD BE EATING EVERY DAY

FRUIT AND VEGETABLES

Fruits **200g**

Vegetables **300g**

Including **100g** of dark green vegetables (cabbage, broccoli etc) AND **100g** red and orange vegetables (peppers, carrots)

SOURCE: Lancet

SUGAR

Added sugar and artificial sweeteners **31g**

FAT
Olive oil, sunflower oil
52g

Plant-sourced PROTEIN

Soy foods **25g**

Lentils or peas **50g** Nuts **50g**

Beef or lamb (16th of a burger) **7g**



Eggs (fifth of an egg) **13g**



28g

Fish (two thirds of a fish finger)

Animal-sourced PROTEIN

Pork **7g** (quarter of a rasher of bacon)



Poultry (15 chicken nuggets) **29g**



CARBOHYDRATE

Whole grains **232g**

Two slices of wholemeal toast

Rice **60g** Pasta **80g**

Starchy vegetables (potatoes)

50g



DAIRY

(half a pint of milk) **250g**



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ARE WE SAVING THE WORLD BY CHANGING
WHAT IS ON OUR PLATE?



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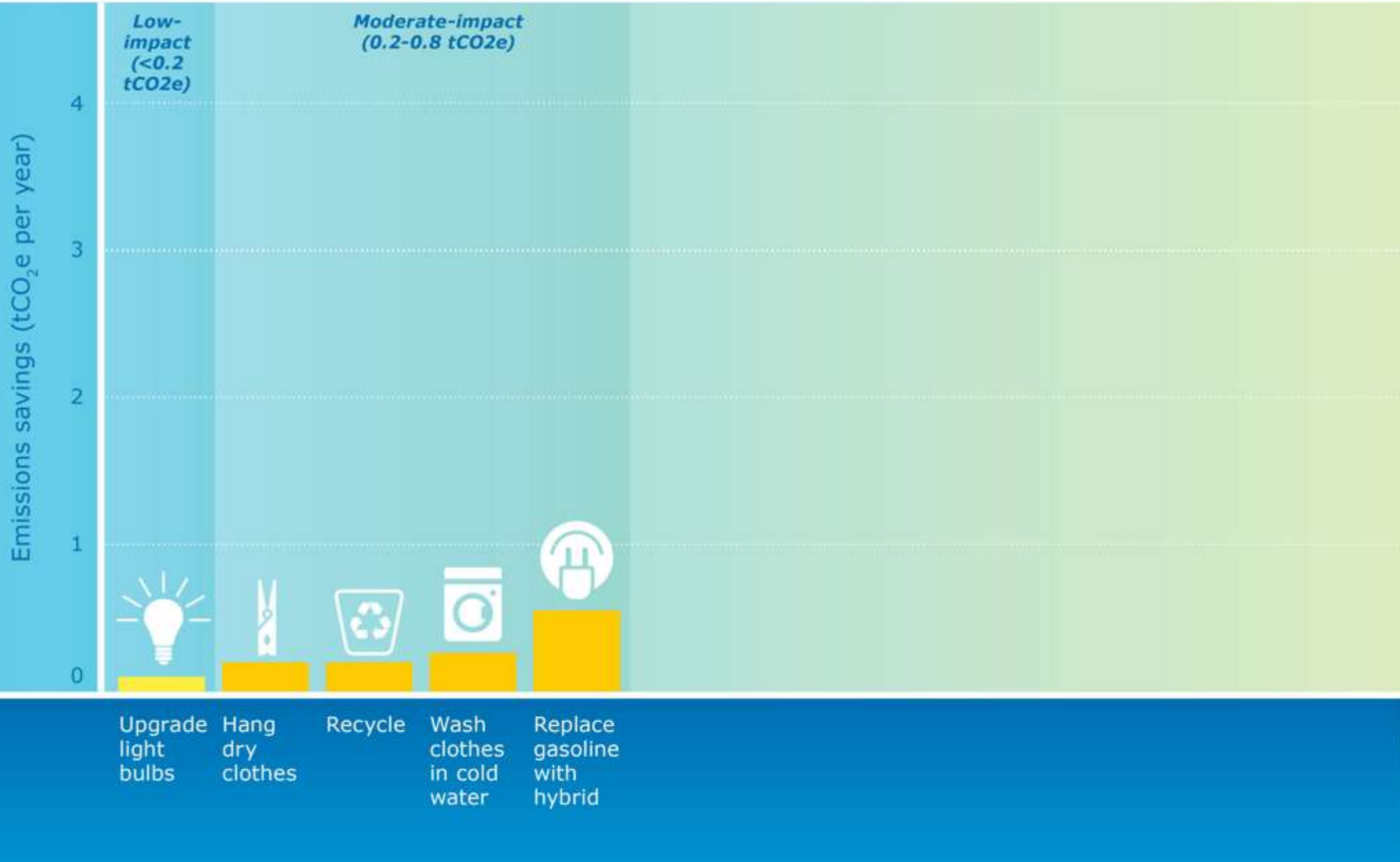


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A COMPARISON OF THE EMISSIONS REDUCTIONS FROM VARIOUS INDIVIDUAL ACTIONS



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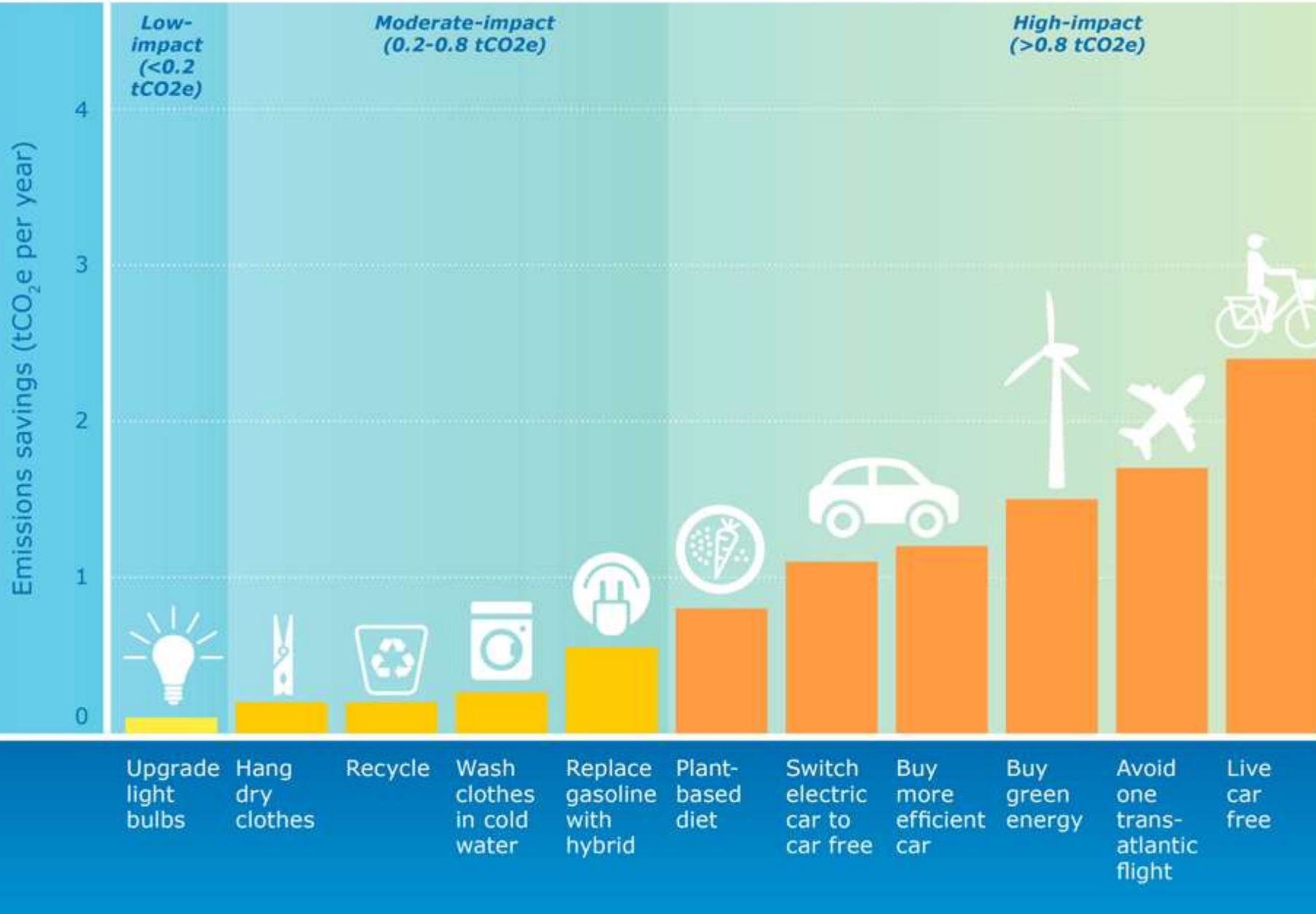
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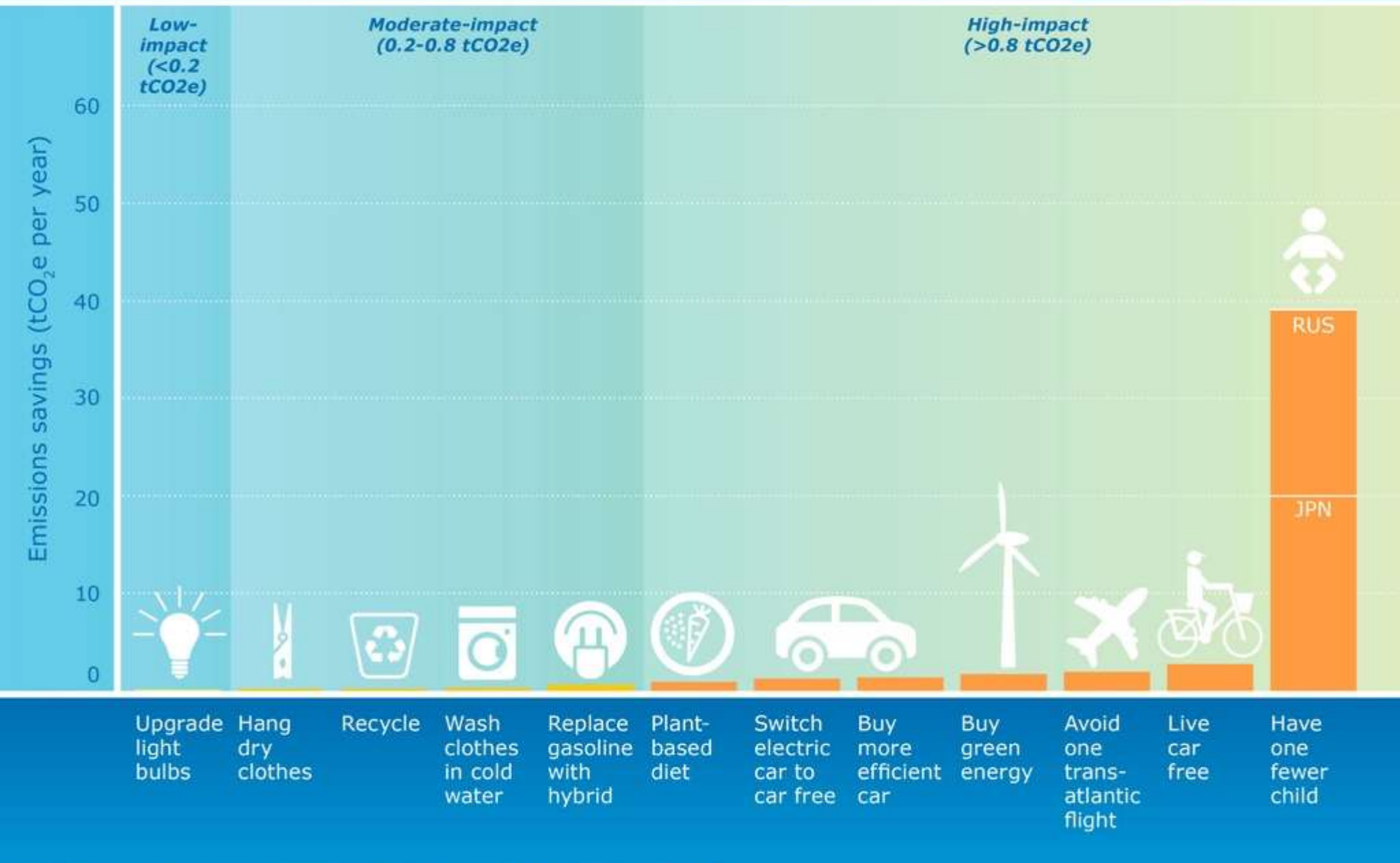
Source: <http://iopscience.iop.org/article/10.1088/1748-9326/aa7541>

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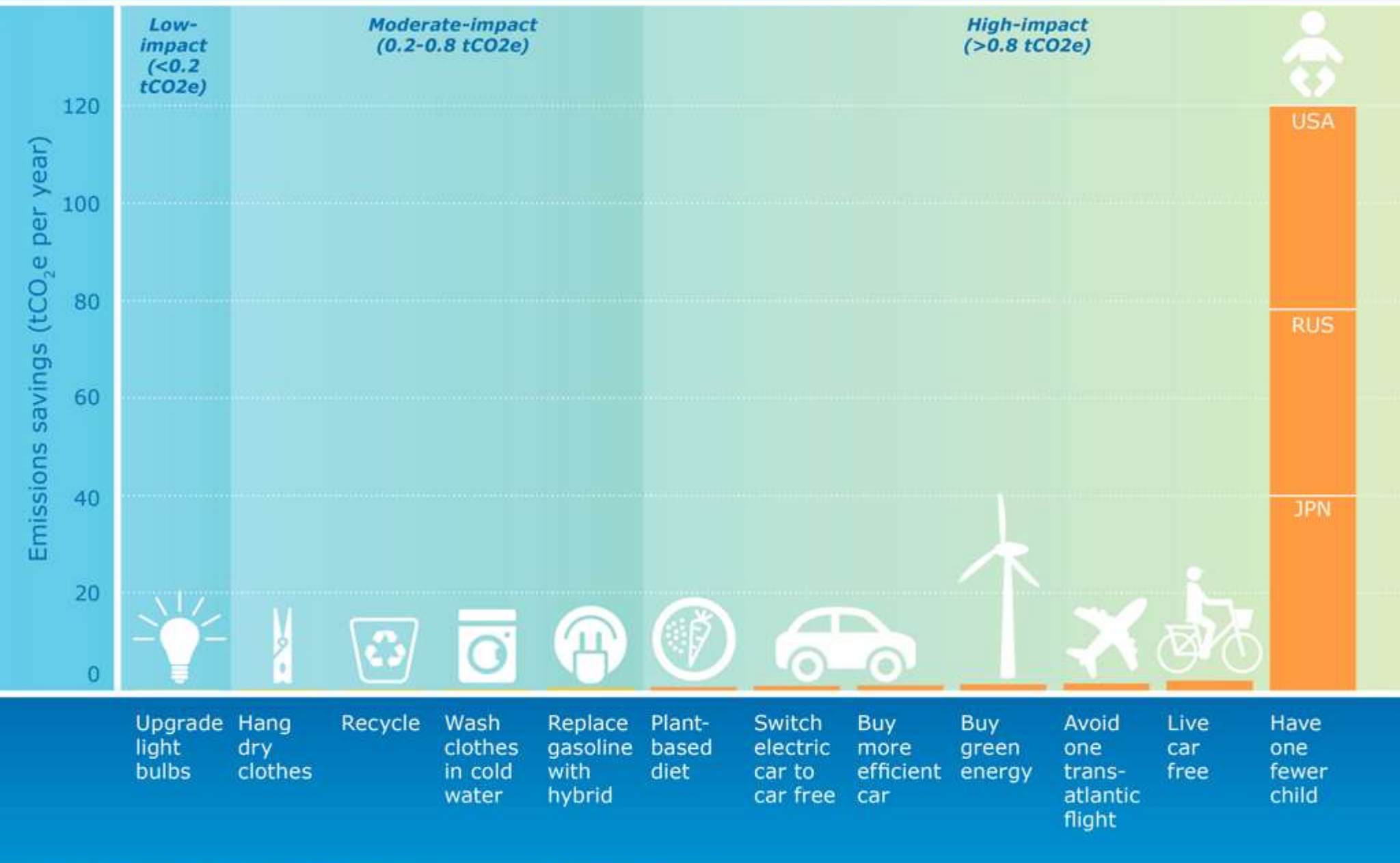
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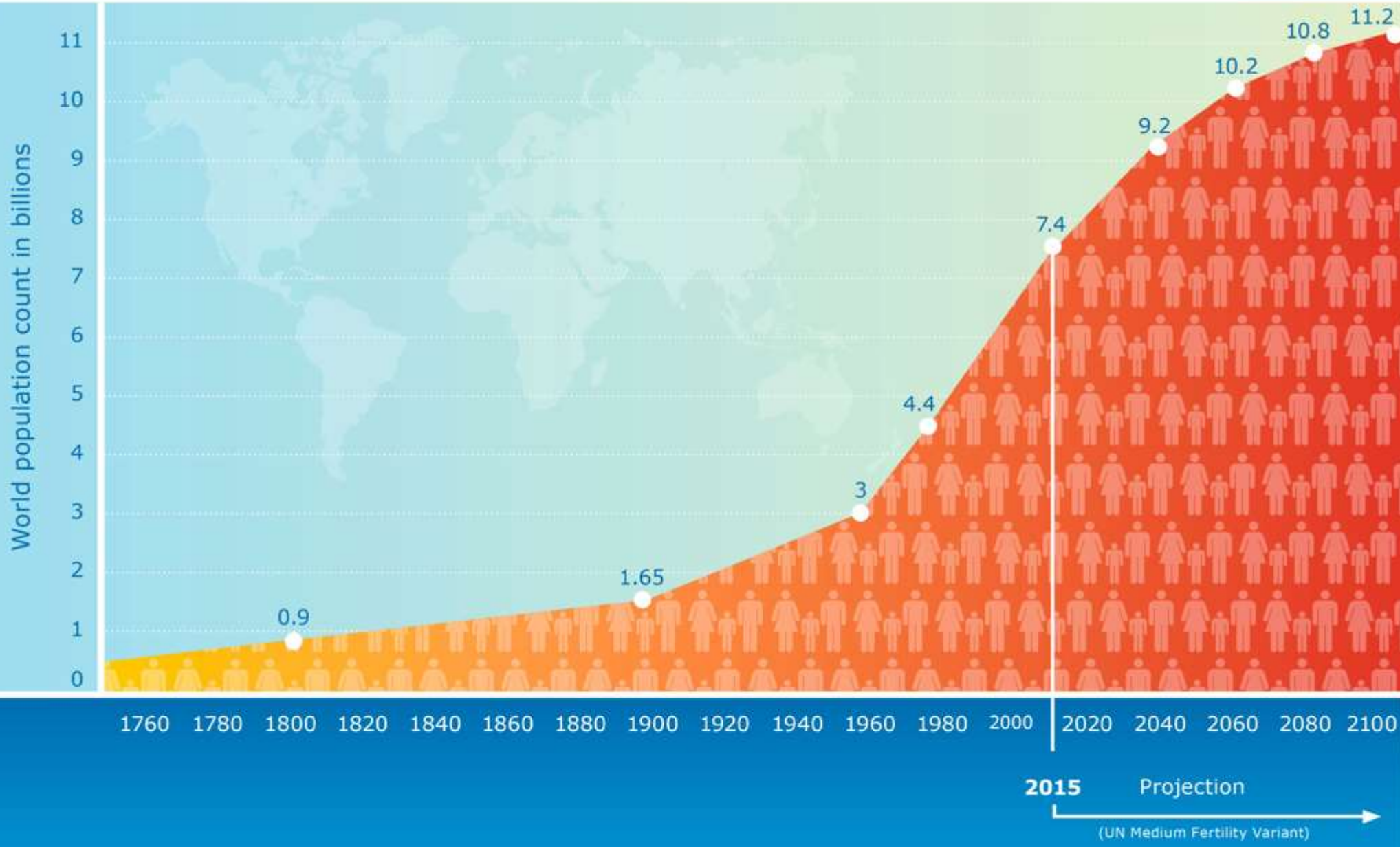
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WORLD POPULATION GROWTH, 1750-2100



Source: Ourworldindata.org

 **SUSTAINABLE DEVELOPMENT GOALS**

1 NO POVERTY 	2 ZERO HUNGER 	3 GOOD HEALTH AND WELL-BEING 	4 QUALITY EDUCATION 	5 GENDER EQUALITY 	6 CLEAN WATER AND SANITATION 
7 AFFORDABLE AND CLEAN ENERGY 	8 DECENT WORK AND ECONOMIC GROWTH 	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 	10 REDUCED INEQUALITIES 	11 SUSTAINABLE CITIES AND COMMUNITIES 	12 RESPONSIBLE CONSUMPTION AND PRODUCTION 
13 CLIMATE ACTION 	14 LIFE BELOW WATER 	15 LIFE ON LAND 	16 PEACE, JUSTICE AND STRONG INSTITUTIONS 	17 PARTNERSHIPS FOR THE GOALS 	

DAIRY AND THE SUSTAINABLE DEVELOPMENT GOALS (SDG'S)

1 NO POVERTY



- Many rural areas rely on dairy production and processing for their income

4 QUALITY EDUCATION



- A healthy diet, of which dairy is key, is vital for a person's learning capacities
- Dairy production provides incomes that can support education

2 ZERO HUNGER



- Dairy products are high in energy, provide high value protein and other essential nutrients
- Animal by-products can be used as fertilizers for crop production
- Production provides incomes that can ensure food security

5 GENDER EQUALITY



- Dairy production provides incomes that can ensure food security

3 GOOD HEALTH AND WELL-BEING



- Dairy products provide essential nutrients, especially for adolescents, pregnant women and the elderly
- European dairy sector also ensures the good health and well-being of its animals

6 CLEAN WATER AND SANITATION



- Dairy livestock can contribute to the protection of water quality through grazing

7 AFFORDABLE AND CLEAN ENERGY



- Dairy production can provide an alternative to fossil fuels, such as the recycling of manure

8 DECENT WORK AND ECONOMIC GROWTH



- The dairy sector contributes €10 Billion annually to the EU trade balance
- With demand set to increase by 60% it is a growing sector

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



- The entire dairy value chain, from production, processing to retail, provide valuable inputs
- There is an increasing amount of innovation in the sector

10 REDUCED INEQUALITIES



- Dairy production is a source of income, creates employment opportunities and provides market participation

11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



- Wastes and losses along the dairy production chain are still relatively high (of 1 l milk, 100ml - 250 ml is wasted, depending on the region)
- The European dairy sector is has been a major stakeholder in food waste reduction initiatives

13 CLIMATE ACTION



- The dairy sector is a significant contributor to global Greenhouse gases emissions (2.7%)
- Roughly 2.4 kg carbon dioxide-eq./kg liquid milk, however only 1.5kg for European milk
- European dairy producers have been the forefront of developing and implementing more environmentally friendly practices

14 LIFE BELOW WATER



15 LIFE ON LAND



- Efficient grazing management can contribute to grassland restoration, carbon sequestration in soils and can reduce deforestation through agroforestry
- Ruminant grazing can turn unusable peripheral land into high quality protein for human consumption

16 PEACE, JUSTICE AND STRONG INSTITUTIONS



17 PARTNERSHIPS FOR THE GOALS



- The dairy sector stakeholders have come together under the Global Dairy Agenda for Action (GDAA) and created the Dairy Sustainability Framework, a roadmap towards greater sustainability in the sector
- Close cooperation with the EU in its sustainability efforts



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- Many rural areas rely on dairy production and processing for their income

2 ZERO HUNGER



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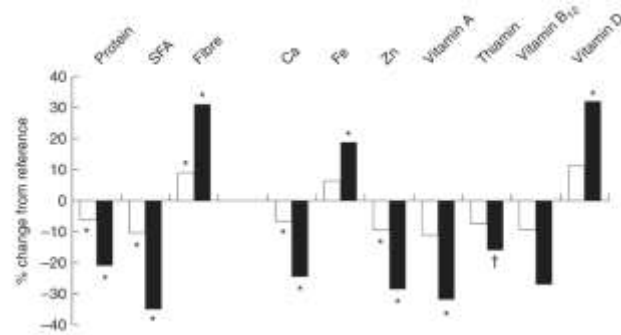
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CONCLUSIONS

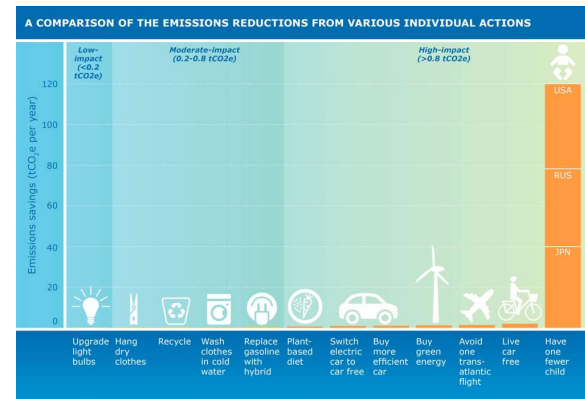
- THE ENVIRONMENTAL FOOTPRINT OF FOODS SHOULD CONSIDER NUTRITIONAL QUALITY
- EAT A LESS ANIMAL AND MORE PLANT-BASED DIET IS NOT THE RIGHT PARADIGMA FOR DECREASING YOUR ENVIRONMENTAL FOOTPRINT
- JUST REPLACING ANIMAL PRODUCTS BY 'ALTERNATIVES' HAS GOT NUTRITIONAL CONSEQUENCES
- TOTAL LIFESTYLE DETERMINES ECOLOGICAL FOOTPRINT
- REALISING THE SDG'S IS NOT POSSIBLE WITHOUT DAIRY IN THE FOOD SYSTEM



Voeding



Thank you!



Source: <http://iopscience.iop.org/article/10.1088/1748-9326/aa7541>



- Twitter @StephanDenHaag
- Researchgate: Stephan Peters

peters@nzo.nl



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FAO: SUSTAINABLE FOOD SYSTEM



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THE GRID OF A SUSTAINABLE FOOD SYSTEM

	Environment	Nutrition	Economic	Socio-cultural
Agriculture	<p>Follow sustainable agricultural practices</p> <p>Enhance resilience of production systems</p> <p>Deploy and maintain diversity</p>	<p>Promote diverse food</p> <p>Produce nutritionally dense product</p>	<p>Deploy affordable cultivation practices</p> <p>Promote self reliance through local produce</p>	<p>Maintain traditional agriculture practices and promote local varieties</p>
Food Production	<p>Reduce impact of production, processing, commercialization</p>	<p>Preserve nutrients throughout the food chain</p>	<p>Strengthen local food systems</p> <p>Produce affordable food</p>	<p>Produce culturally acceptable food</p>
Consumption	<p>Reduce the environmental impact of feeding practices</p>	<p>Promote dietary diversity, food balance and seasonality</p>	<p>Promote access to dietary diversity</p>	<p>Safeguard food traditions and culture</p> <p>Meet local preference & taste</p>

Source: Food and Agricultural Organisation of the United Nations (FAO, 2010)

