

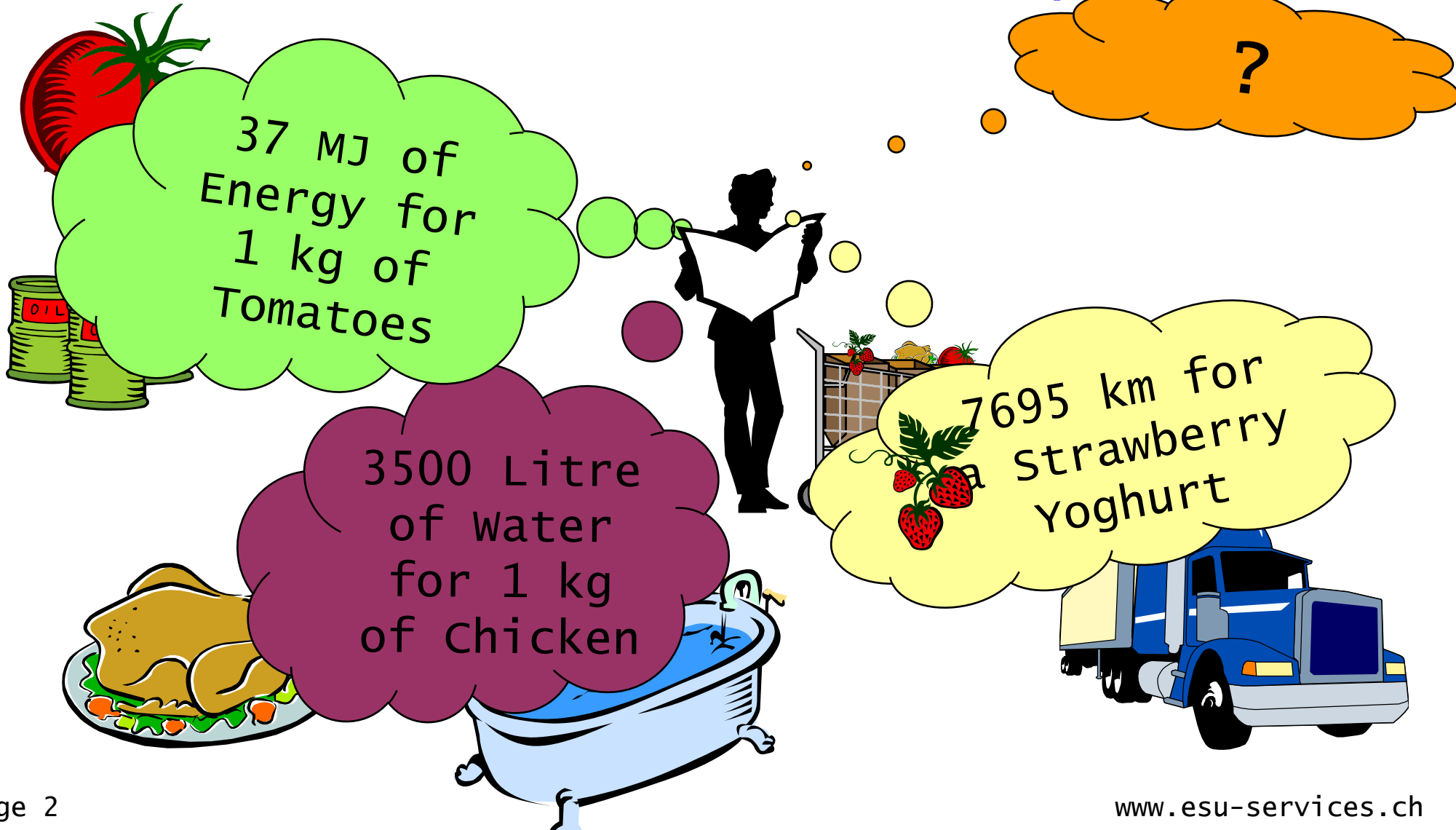
Environmentally friendly food consumption: What does this mean?

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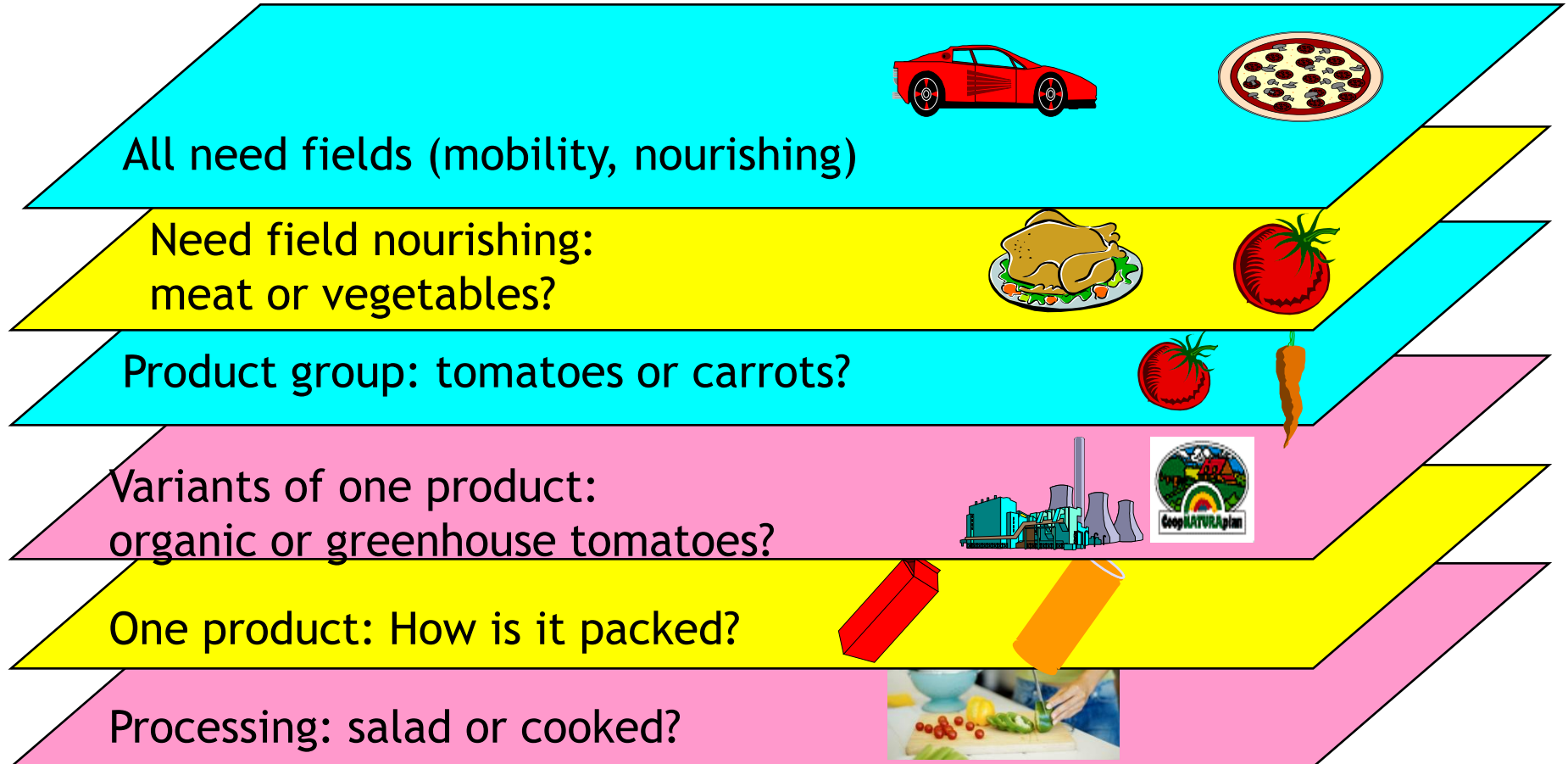
Food and Environmental Impacts



Contents

- Environmental impacts of food consumption
- Conclusions concerning food purchases from the consumers point of view
- Public interest
- Open research questions

Which questions to be answered? Levels of Consumer Decision Making (DML)



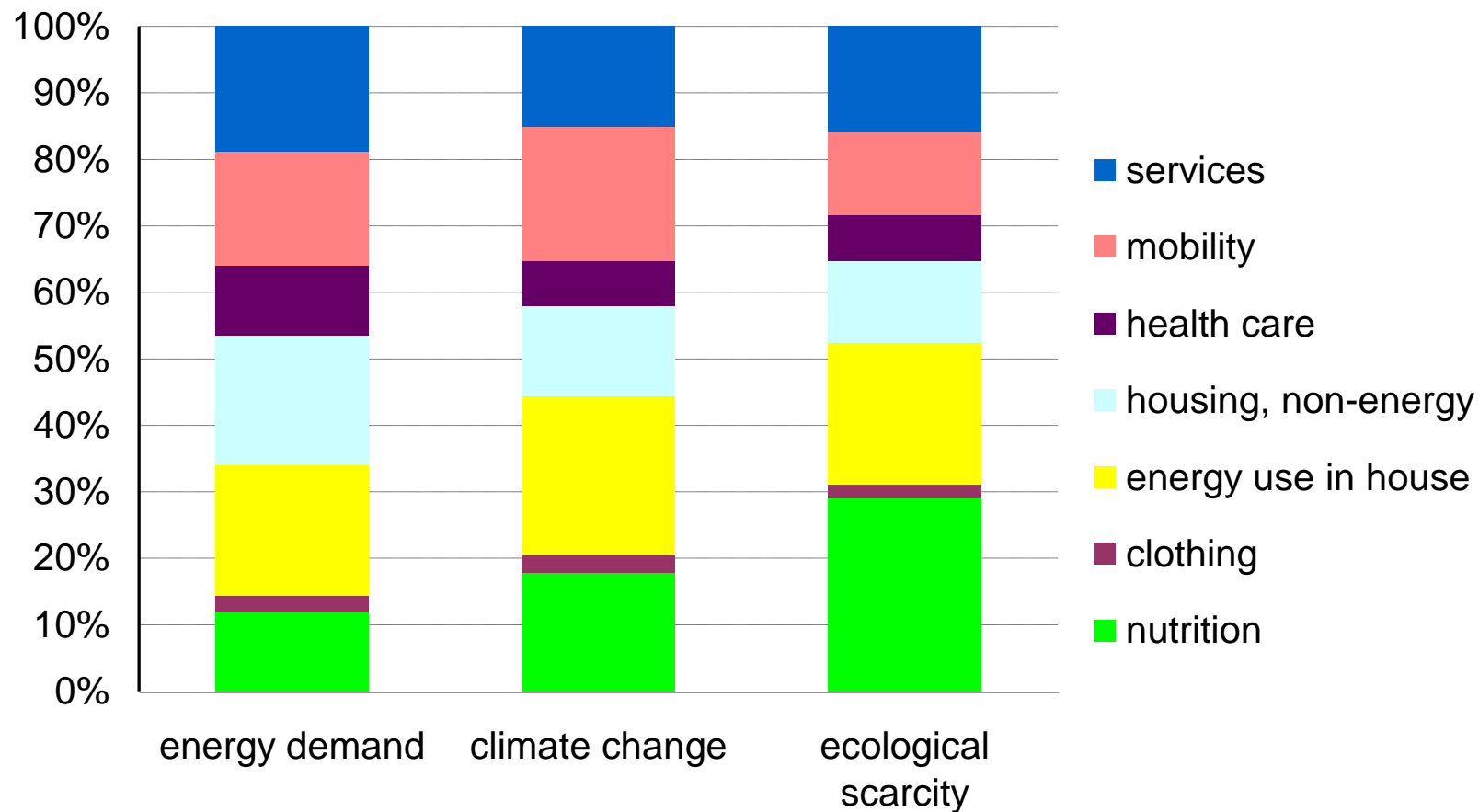
➤ It is possible to address different types of questions, but not with one analysis

Which Life cycle impact assessment (LCIA)

	environmental impacts	carbon footprint (kg CO2-eq)	ecological footprint (m2a)	ecological scarcity 2006 (UBP)
resources	abiotic resources, incl. water	∅	∅	√
	nuclear energy	∅	∅	√
	fossil energy	∅	∅	√
	land occupation	∅	√	√
	land transformation	∅	∅	∅
emissions	climate change	√	√	√
	ozone depletion	∅	∅	√
	toxicity	∅	∅	√
	summer smog	∅	∅	√
	acidification	∅	∅	√
	nutrification	∅	∅	√
	endocrine disruptors	∅	∅	√
	noise, odour, litter	∅	∅	∅
	ionising radiation	∅	∅	√
	waste (incl. radioactive waste)	∅	∅	√

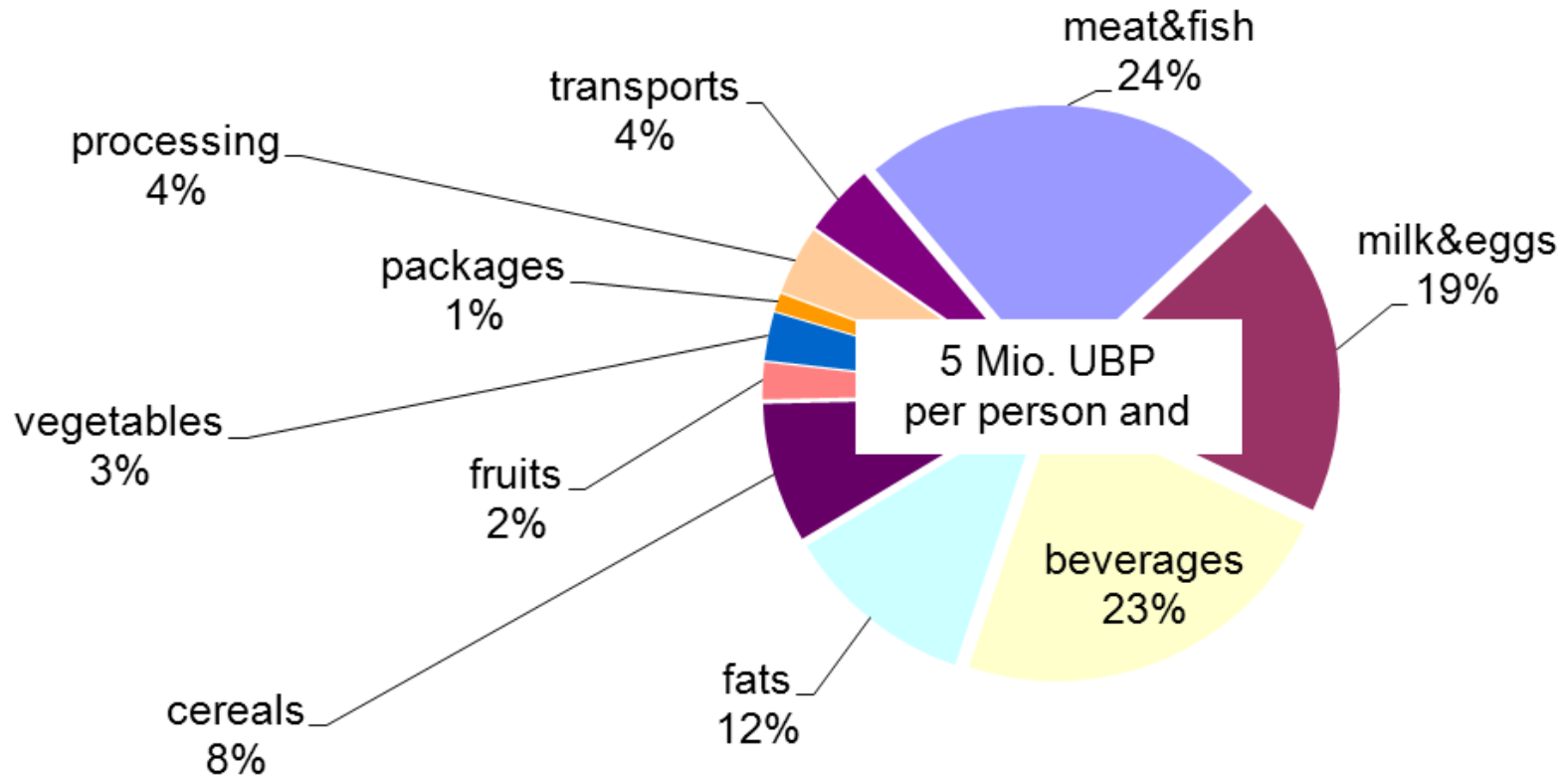
- It is necessary to apply LCIA methods that cover a range of environmental impacts
- For this presentation we use the eco-points

Overall importance of nutrition in total consumption of households



- Nutrition causes about 30% of environmental impacts of consumption
- Carbon footprint and energy underestimates agricultural impacts

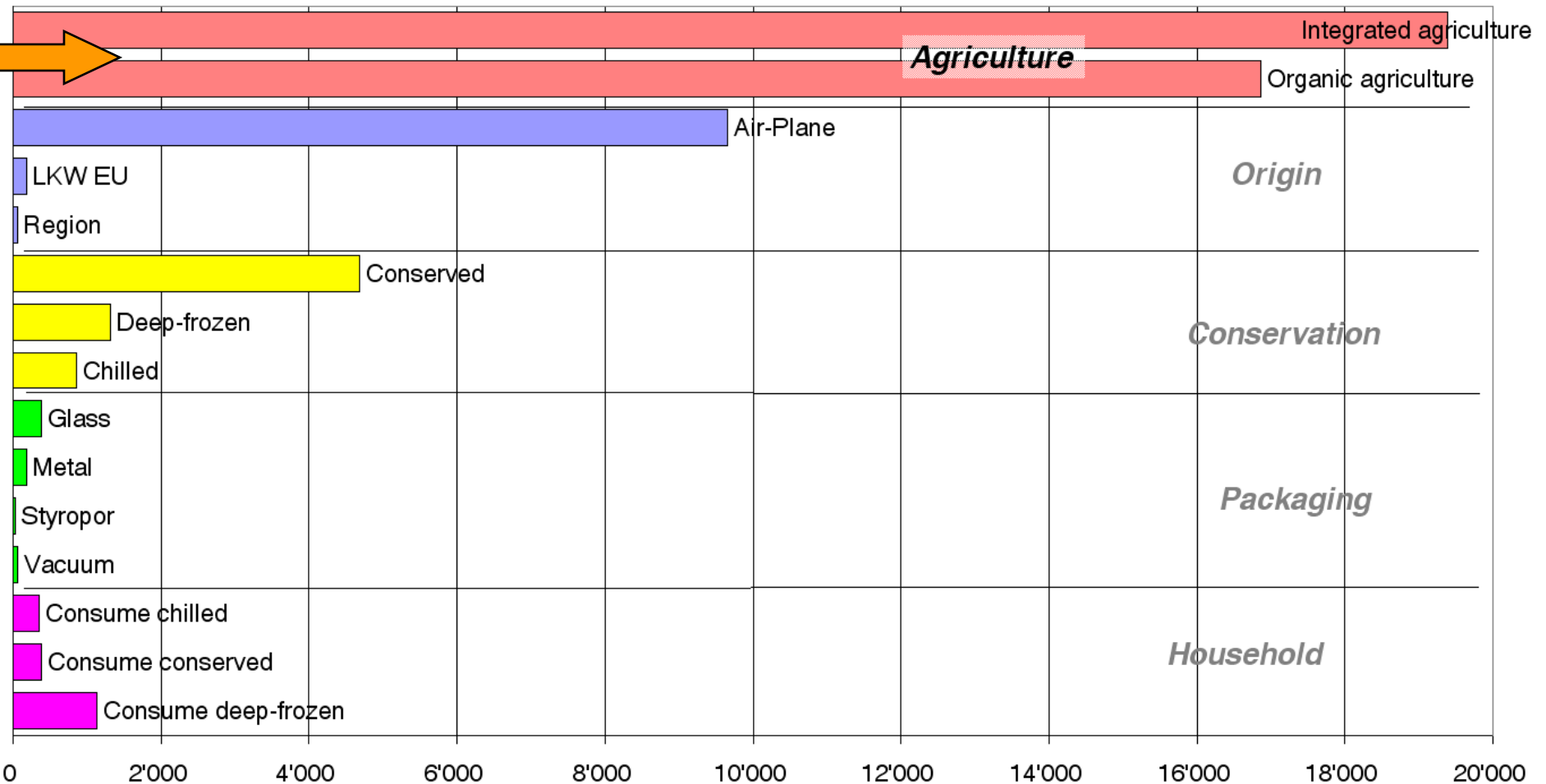
Share of product groups



- Animal products (meat, milk, eggs) are most important
- Luxury beverages like wine, coffee, alcoholics cannot be neglected

Environmental impacts of meat purchases

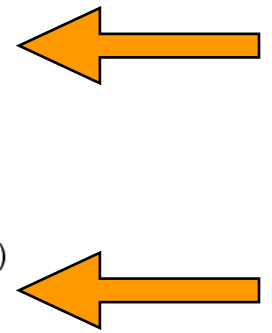
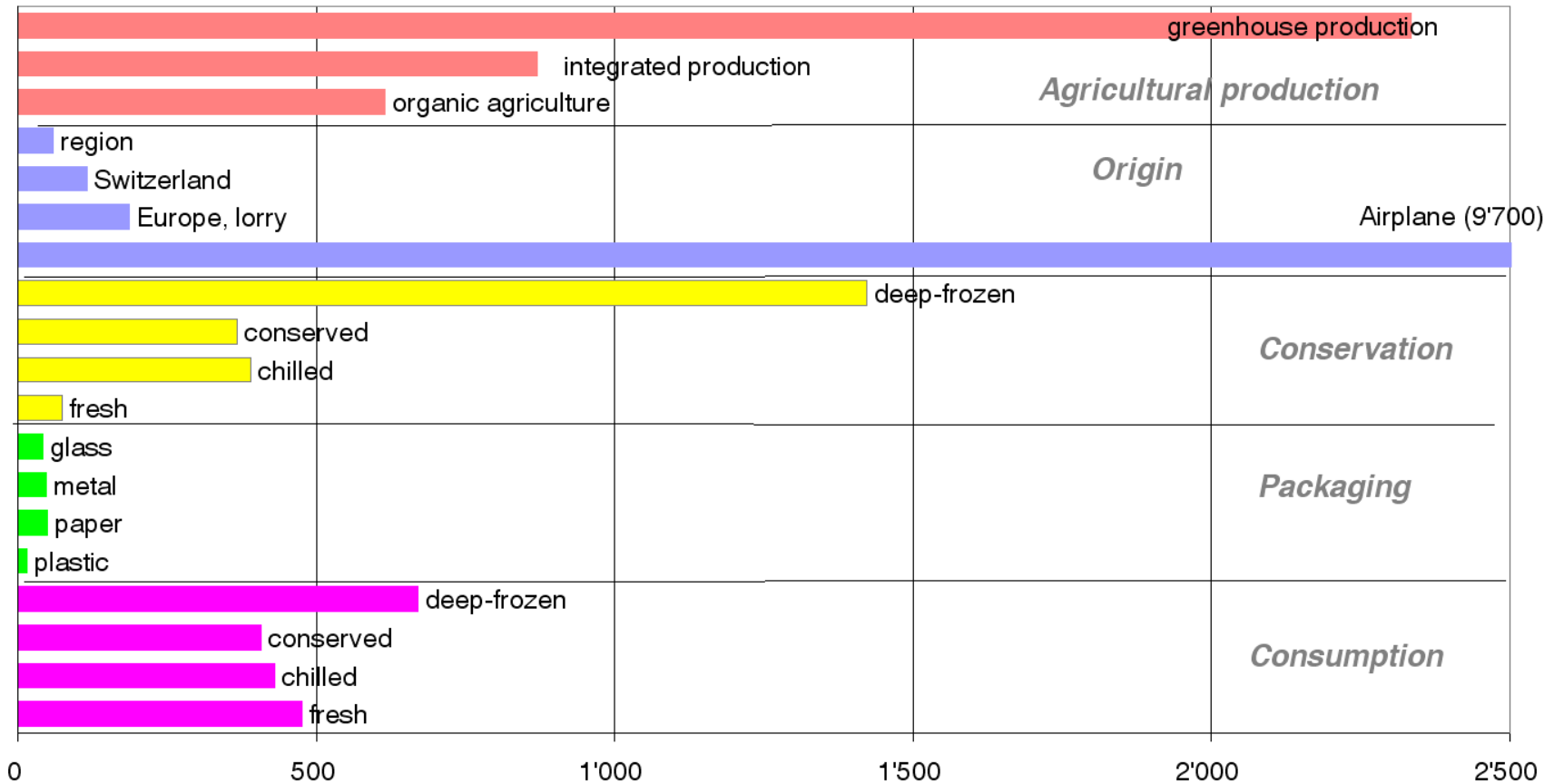
eco-points 06 per kg of meat purchased in the shop



➤ Agricultural production dominates total impacts of meat products

Impacts of vegetable purchases

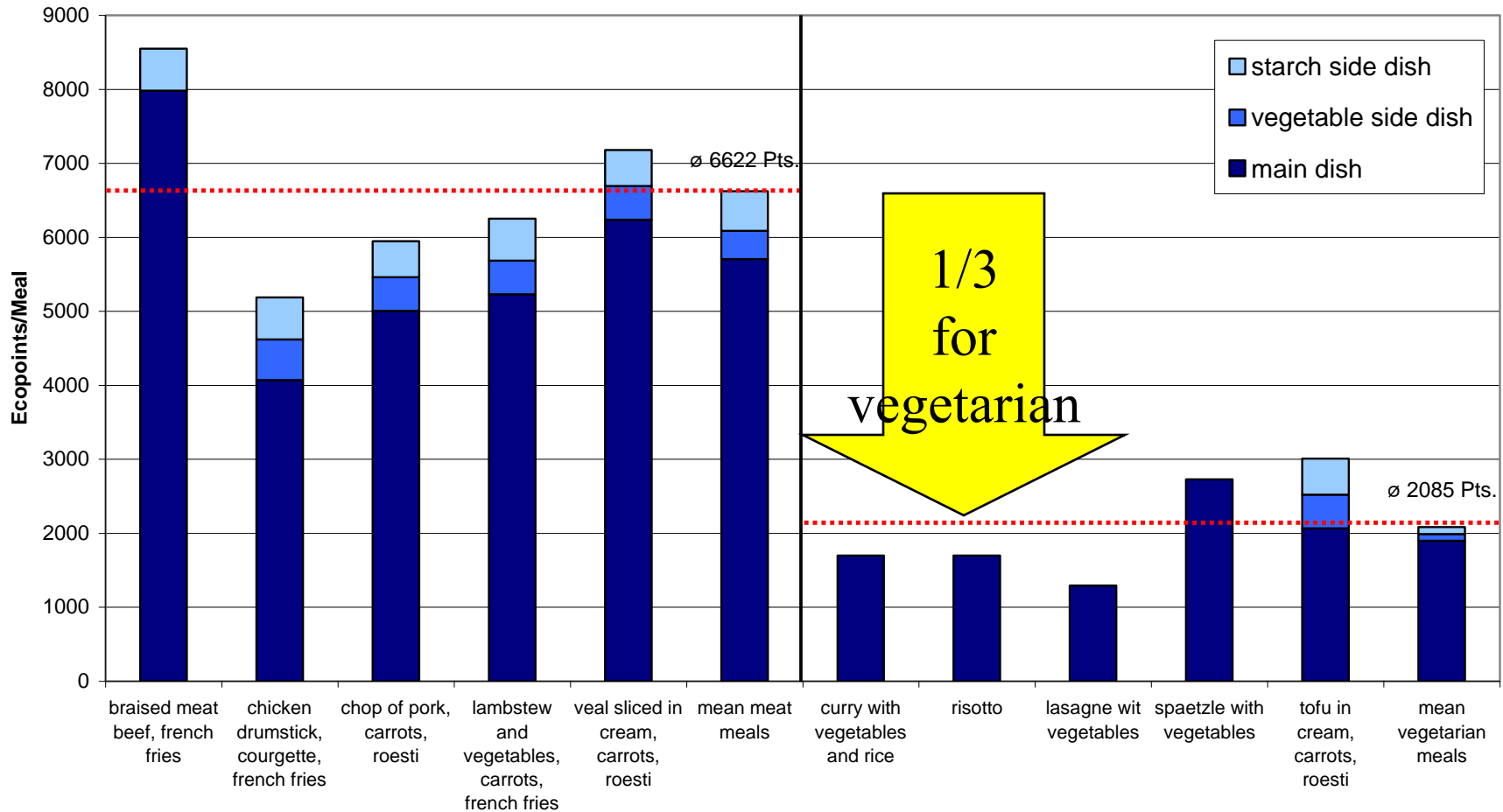
eco-points 06 per kg of vegetables purchased



- All characteristics are important for plant products
- Air transports and heated greenhouse cause highest burdens for vegetables/fruits

Canteen Meals:

comparison of vegetarian and meat based recipes



➤ Vegetarian meals have considerable lower impacts

Conclusions for Consumers

- Eat vegetarian. Consumption of fish, meat and animal products should be reduced to 2 portions a 180 g a week
- Air transported products should be avoided
- Buy seasonal. Less products from heated greenhouse should be bought
- Reduce luxury products like wine, coffee and chocolate
- Consider energy in private transportation and the household
- Reduce wastage and overconsumption

Influencing consumers behaviour with LCA

- Knowledge is available for consumers
- LCA studies sometimes confusing if no clear result
- Lower options for reducing environmental impacts compared to other fields like mobility and housing
- People tend to follow the easy things and not the important things, e.g. recycling of packages instead reducing meat consumption

➤ Stress the points that are really important and not what is scientifically surprising

Public interest on LCA studies of food

- High public interest allows to teach life cycle thinking
- Many people mix health aspects and environmental aspects when looking at food
- Sensations, even if wrong, are more interesting than confirmation of former research
- Detailed comparisons should be more interesting for producers and distributors than for consumers

What we know

- LCA covering a range of environmental impacts is necessary, Carbon footprinting might be misleading
- Reduction of animal products is the main issue
- There is always an exception from the general rule

Outlook and open research questions

- Good models to address regional variation and specific types of emissions in agriculture
- More research on processed food and outdoor consumption is necessary (eating home is a phase out model)
- Level of sustainable meat consumption
- More LCA research on food ingredients like flavours
- More data on wastage in all stages and its inclusion in LCA are needed

Granted,
my car consumes a lot ...
But, Your Californian
asparagus needs also 5
liters per kg (in
Switzerland)!



Today I can enjoy the
Local asparagus,
But it took me 950
liters of oil to travel
18'777 km to California!



- Information about our studies www.esu-services.ch/publications/food/
- Calculate the impacts of Your food consumption www.ulme.ethz.ch