



Centrum pro otázky
životního prostředí
Univerzita Karlova v Praze

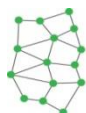


Food systems and sustainability

International Spring School on Sustainable Development
Týnec nad Sázavou, Czech Republic
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MOSUR
MEZIOBOROVÁ SÍŤ
UDRŽITELNÉHO ROZVOJE
OP VK CZ.1.07/2.4.00/17/0130



INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ



Environment Center
Charles University
in Prague

Germany – 380 € per week



(Menzel, 2005)

Ecuador – 23 € per week



(Menzel, 2005)

Chad (Sudan) – 0.95 € per week



(Menzel, 2005)

US, North Carolina – 265 € per week



(Menzel, 2005)

Overnourishment

- too many macronutrients
- often micronutrient deficiencies
- overweight or obese



Undernourishment

- macronutrient and micronutrient deficiencies



Hidden hunger

- enough macronutrients
- chronic micronutrient deficiencies

Double or Tripple Health Burden

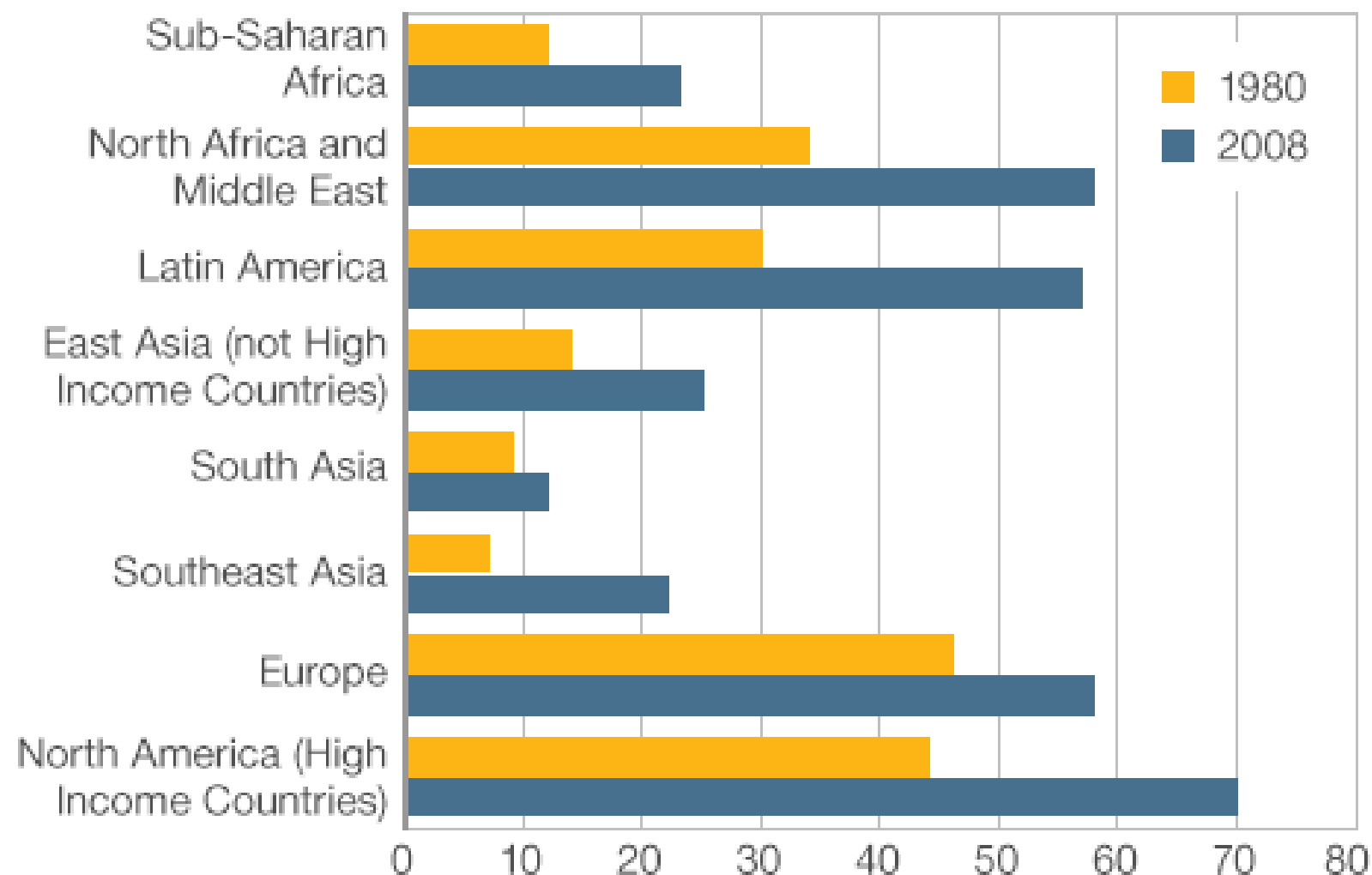
Overnourishment

1.4 Billion people on the Earth are overweight or obese

29.2 Million deaths / y

obesity **nearly doubled** between 1980 and 2008

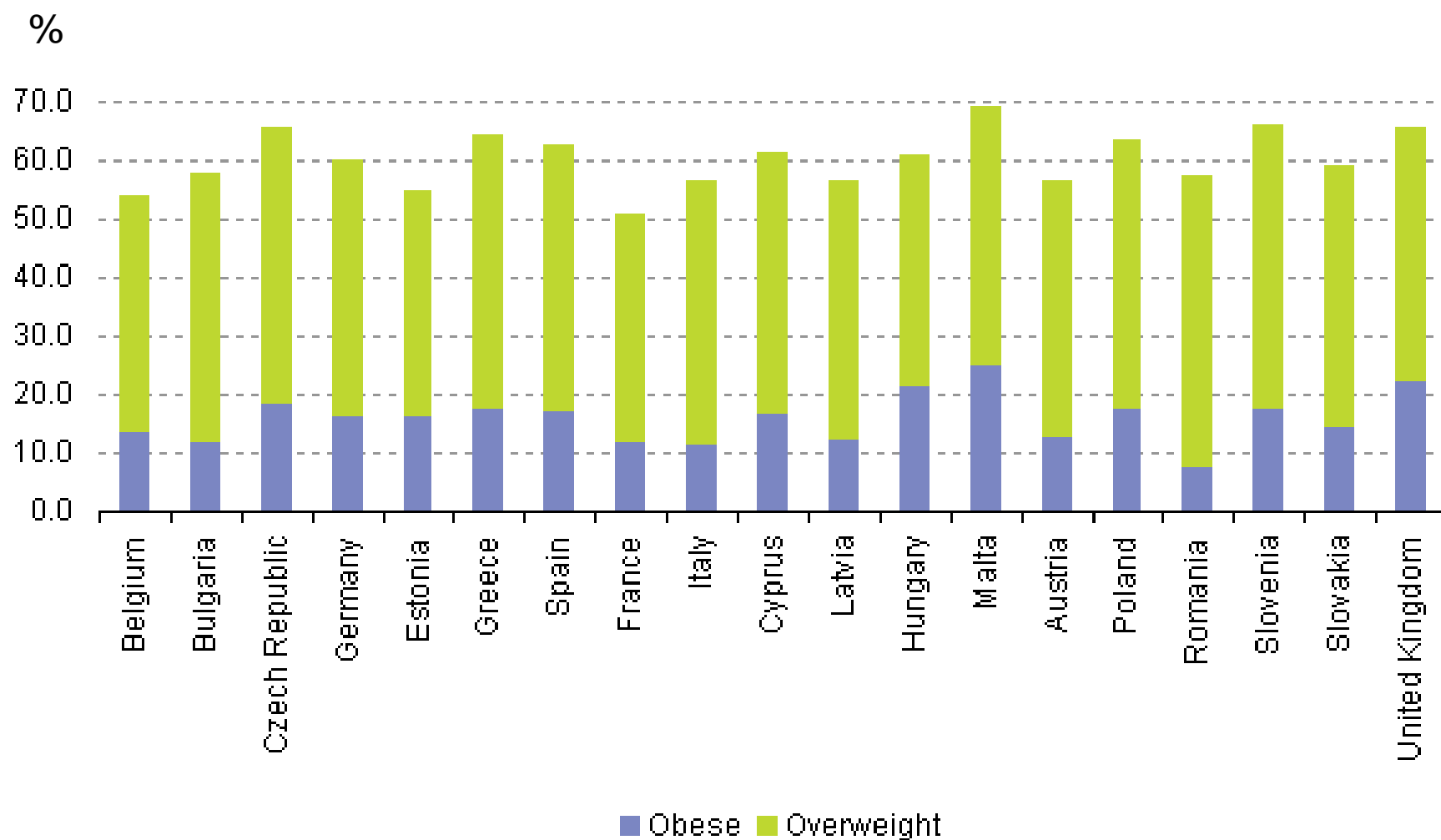
Percentage of overweight and obese adults with BMI greater than 25, by region



Source: Overseas Development Institute

Overnourishment

More than half the EU population is overweight or obese...



Source: Eurostat, 2008

Why are so many people overweight or obese?

- overeating – too high calories intake
- little physical exercise
- urbanization
- sedentary life styles
- changing roles of women
- pharmaceuticals
- advertisements

Why do we like this?



Conditioned hypereating

**Sugar
Salt
Fat
Flavour**

**Hyper Palatable
Food**

**Taste
Sight
Texture
Smell**

Conditioned hypereating

- Loss of control over what you eat - depression - seek short term rewards
- Correlation between obesity and socioeconomic status
- Urbanization, sedentary life styles, changing roles of women, pharmaceuticals



Conditioned hypereating

**Food Scientists engineering
hyperpalatable Foods**

**Consumer: Preference Acceptance
Needs**

Ease of Access: Physical, Monetary

Why are so many people overweight or obese?

- overeating – too high calories intake
- little physical exercise
- urbanization
- sedentary life styles
- changing roles of women
- pharmaceuticals
- advertisements

Let's go outside and move!



Undernourishment

1/8



One in eight people
goes to sleep

HUNGRY EVERY DAY

925 Mio.

Source: FAO, 2012 (WFP)

Fighting Hunger Worldwide



Hunger Map 2011



World Food Programme

wfp.org

| Category | 1 | 2 | 3 | 4 | 5 | |
|----------------|---------------|----------|----------------|-----------------|-----------|-----------------|
| Undernourished | <5% | 5-9% | 10-19% | 20-34% | ≥35% | Incomplete data |
| Description | Extremely low | Very low | Moderately low | Moderately high | Very high | |

Source: *The State of Food Insecurity in the World 2010*, Food and Agriculture Organization of the United Nations. Please note that the SIF 2010 data in some cases dates back to 2009 so may not always reflect the present-day situation in individual countries.

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The designations employed and the presentation of material in this map do not imply the expression of any opinion whatsoever of WFP concerning the legal or constitutional status of any country, territory or sea area, or concerning the delimitation of frontiers.

* The Line of Control in Jammu and Kashmir agreed upon by India and Pakistan is represented approximately by a dotted line. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

** A dispute exists between the governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

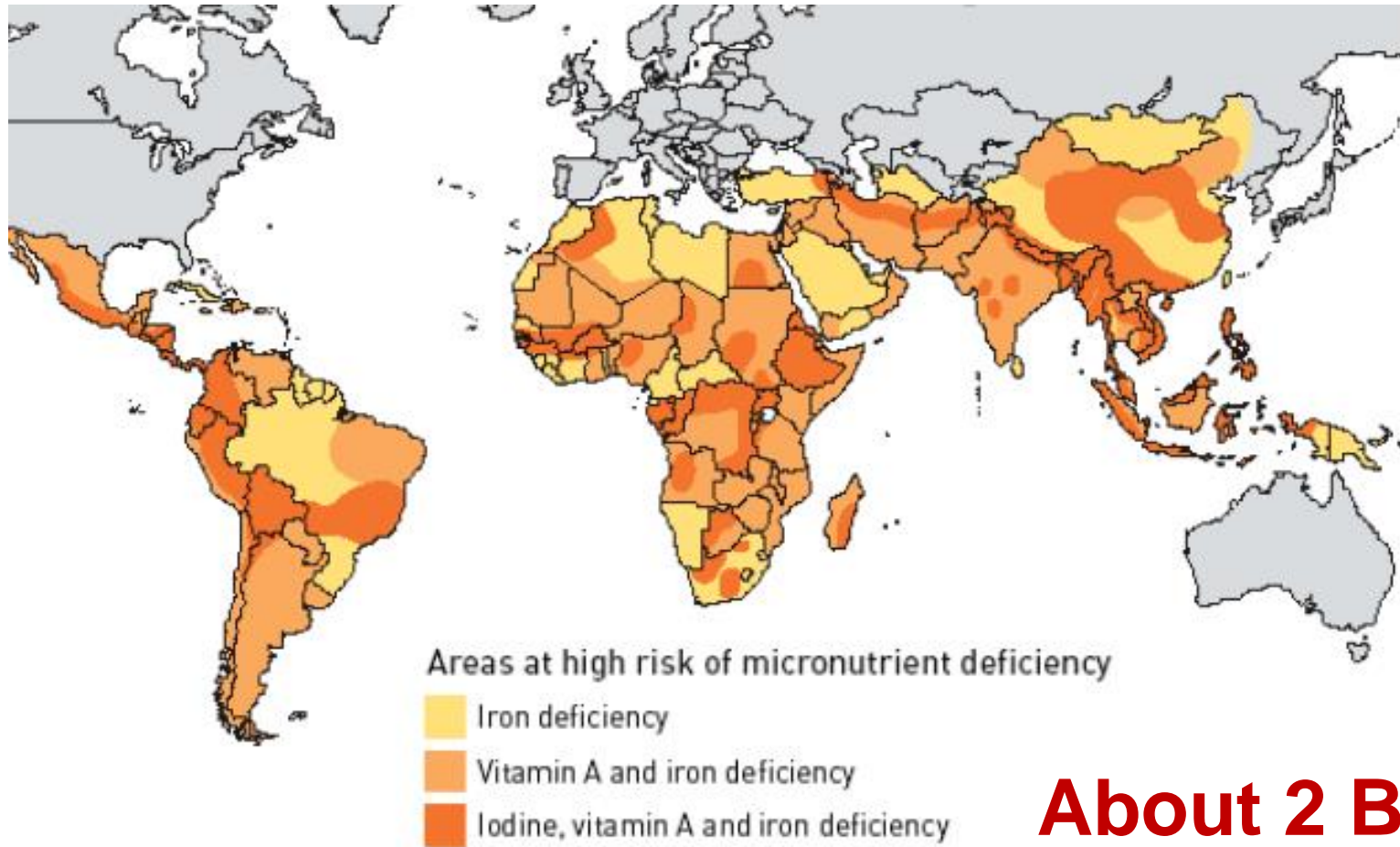
Undernourishment and children

Nutrition in 2 minutes video

<http://www.wfp.org/stories/what-need-know-about-hunger-2012>



Hidden hunger



About 2 Billion

Health Burden Interventions



Education and
Diet Change



Fortification



Supplementation

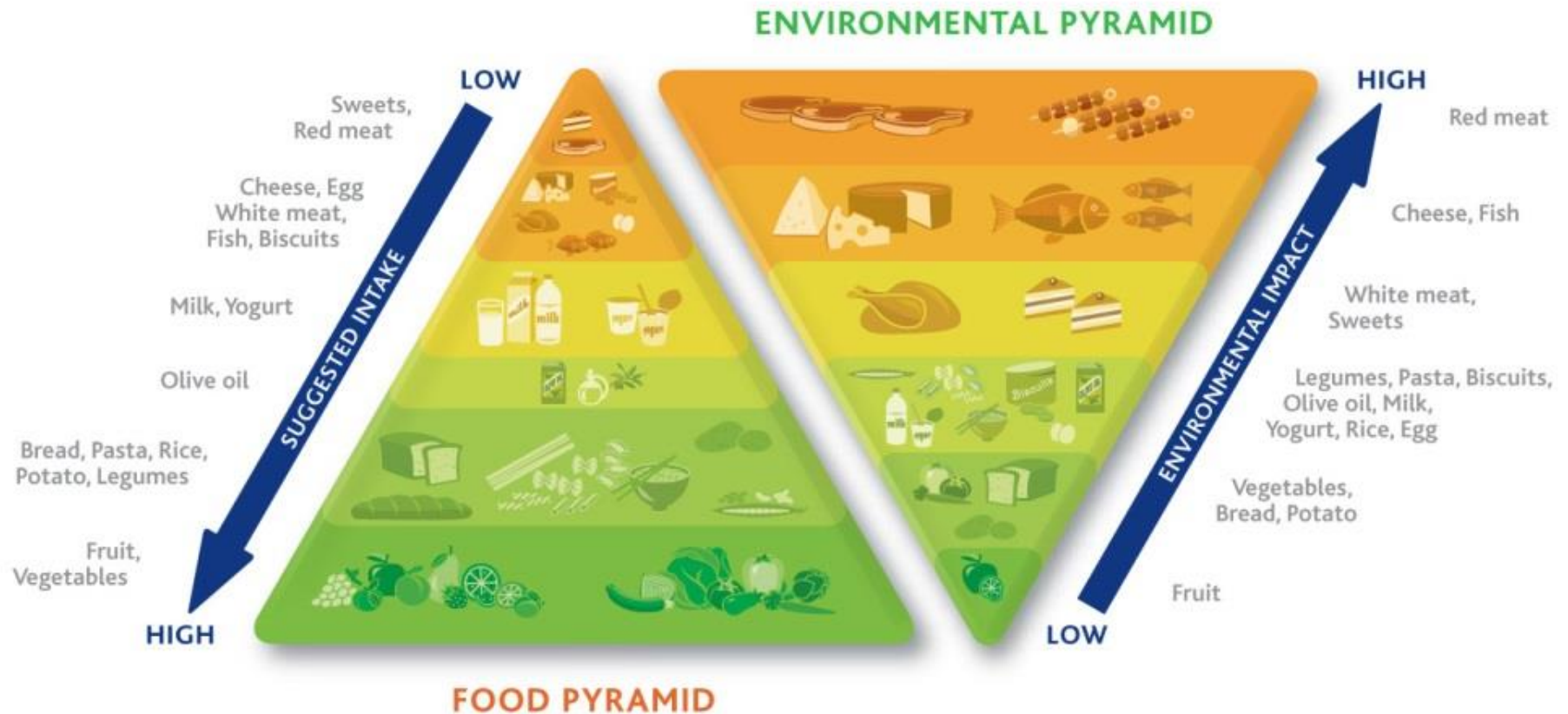


Biofortification

Food pyramid - Health

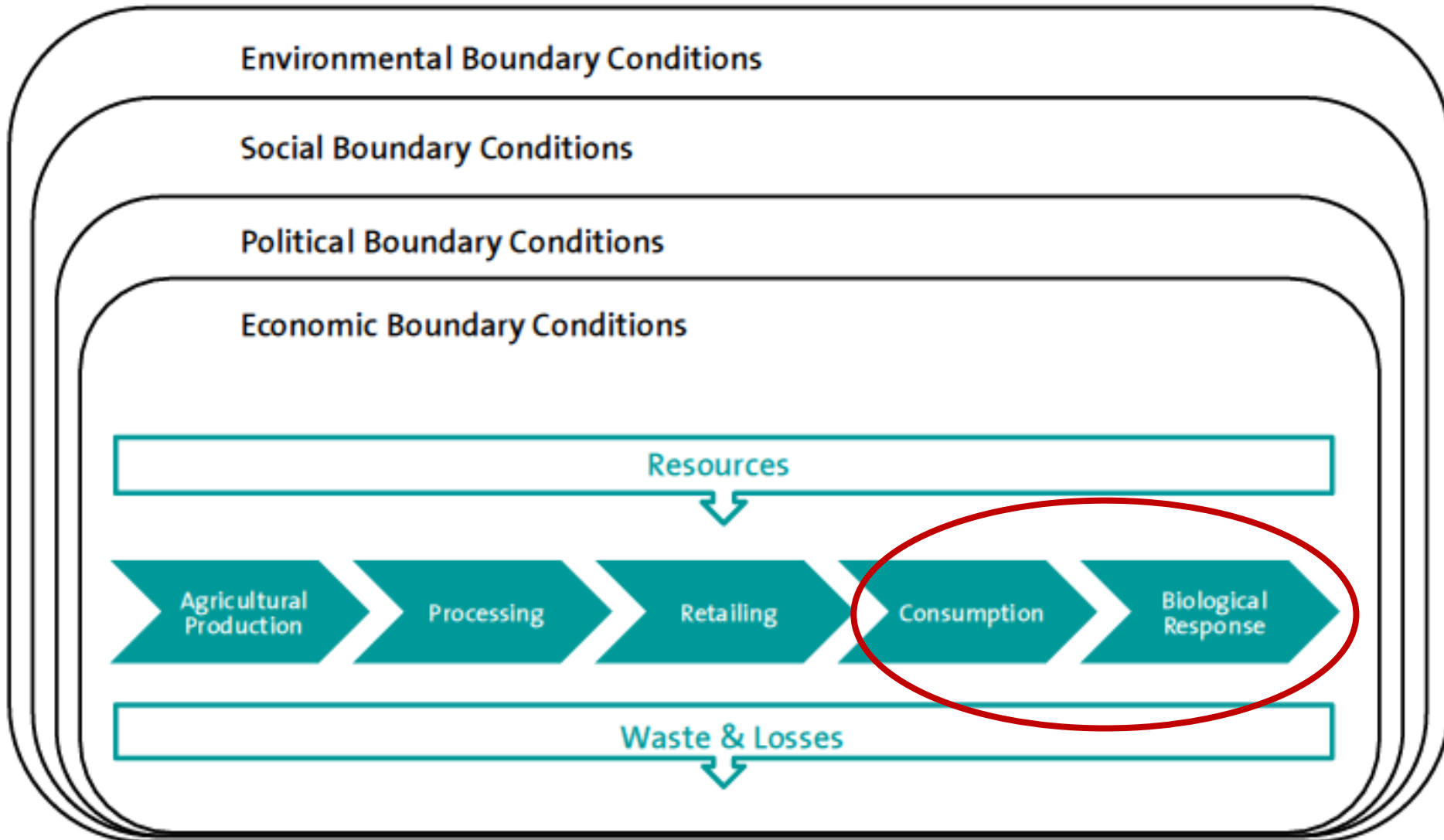


Double Pyramid – Health & Environment

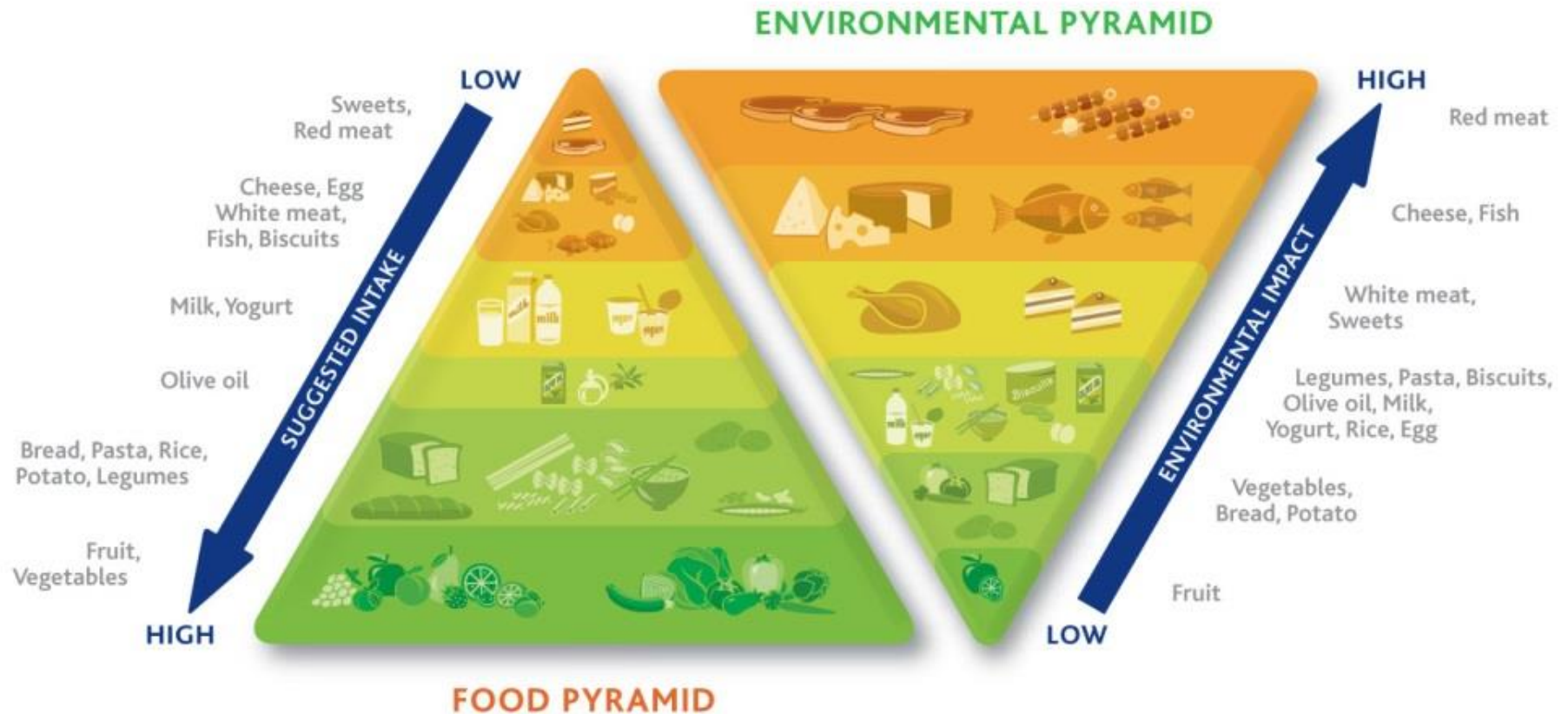


Source: Barilla Center for Food and Nutrition, 2012

The World Food System



Double Pyramid – Health & Environment



Source: Barilla Center for Food and Nutrition, 2012

Snack time!



Environmental problems?

Biodiversity loss

Rainforest clearing

GHGs emissions

...



Social problems?

Child labour

Human slavery

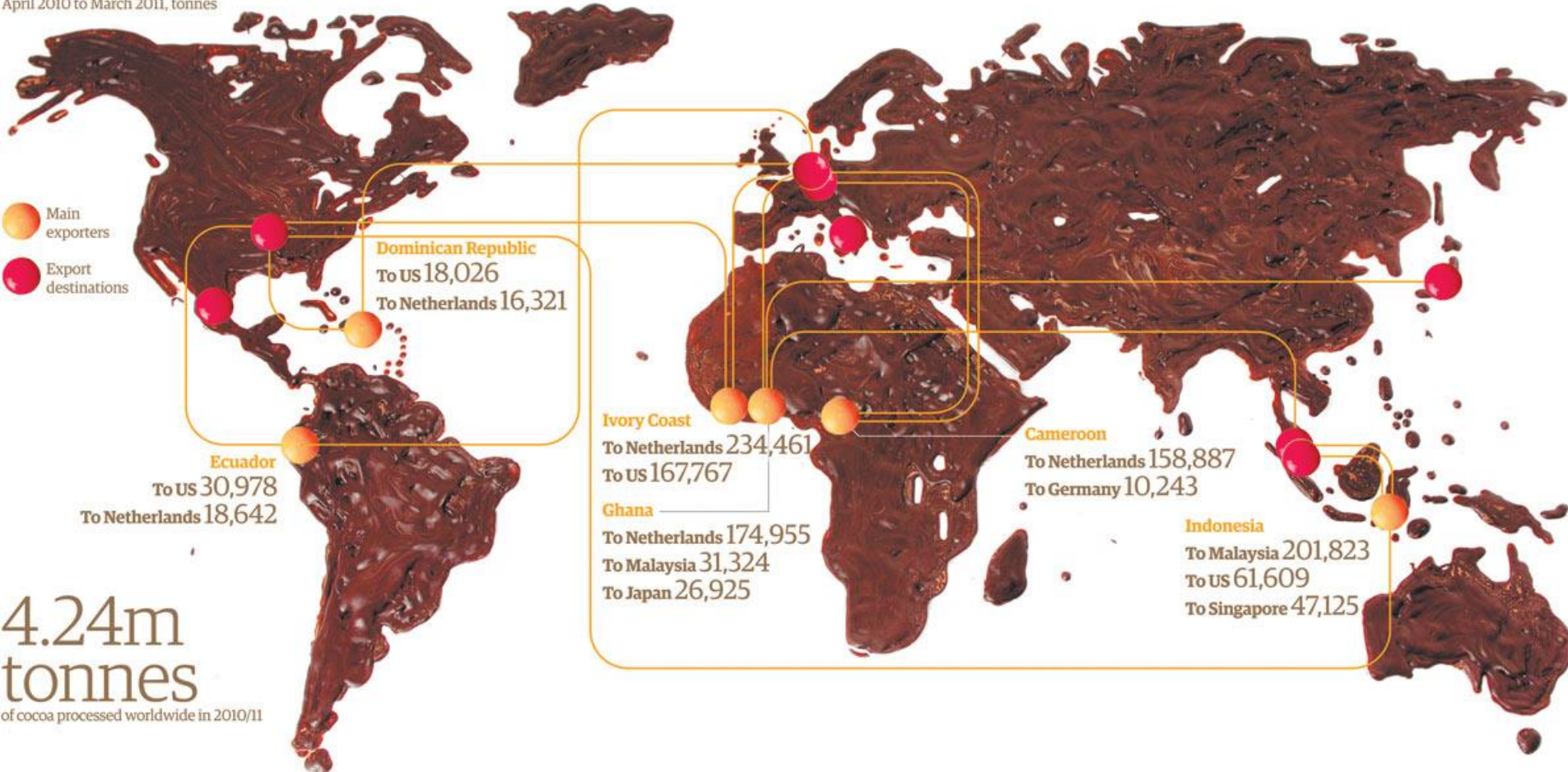
Farmers giving up – moving to cities

...



Major trade flows of cocoa beans

April 2010 to March 2011, tonnes

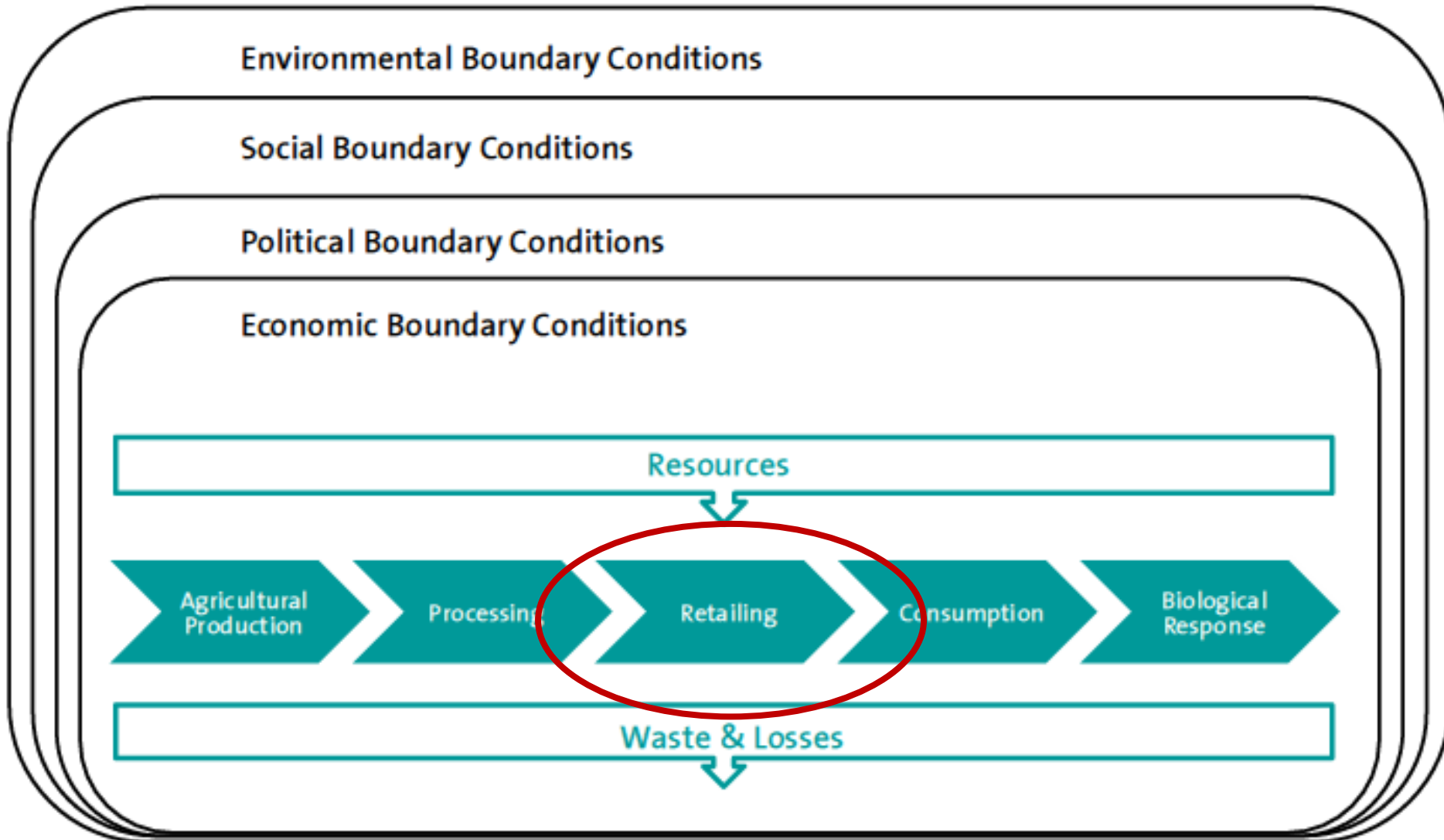


Fairtrade International

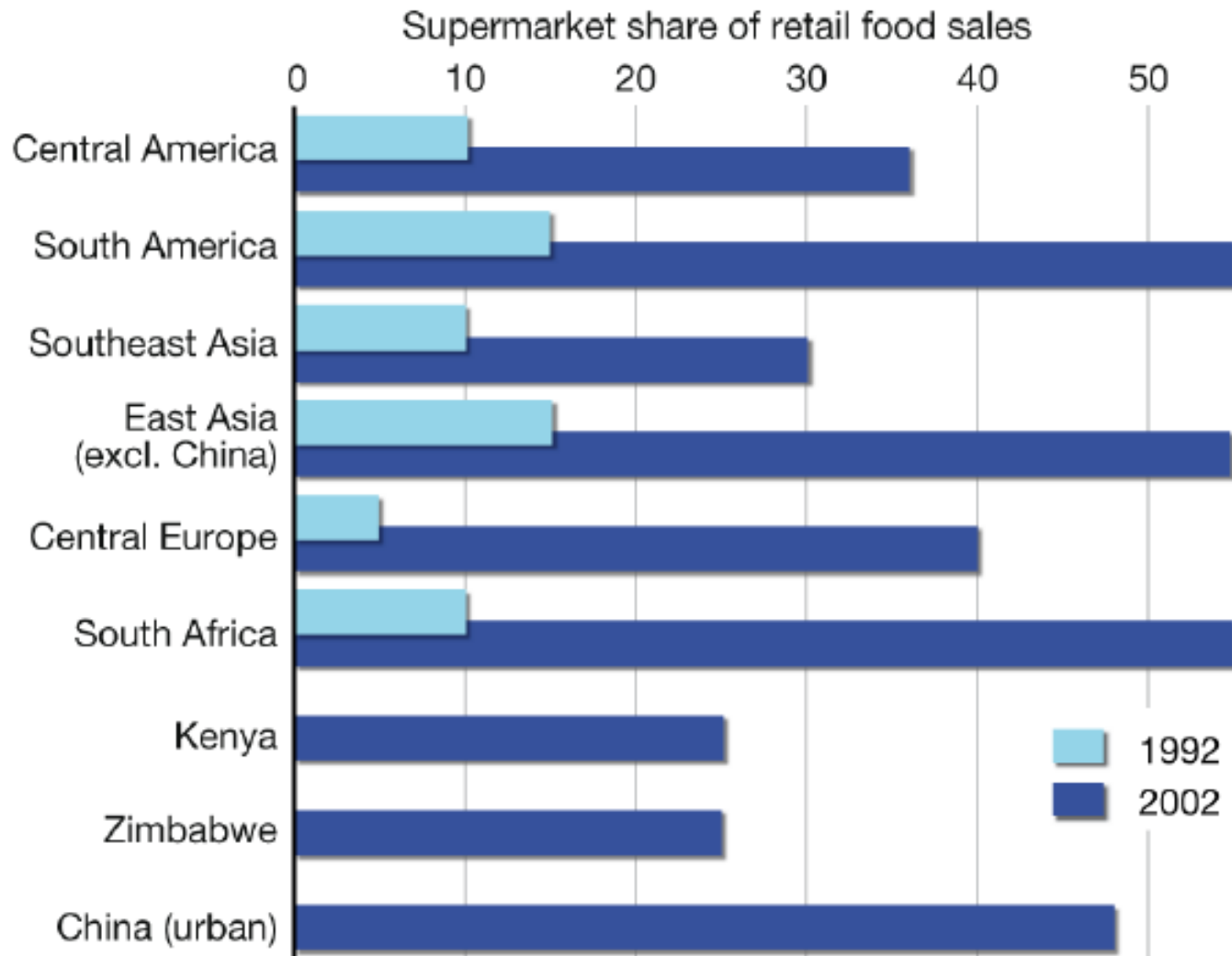
A Charter of Fairtrade Principles



The World Food System

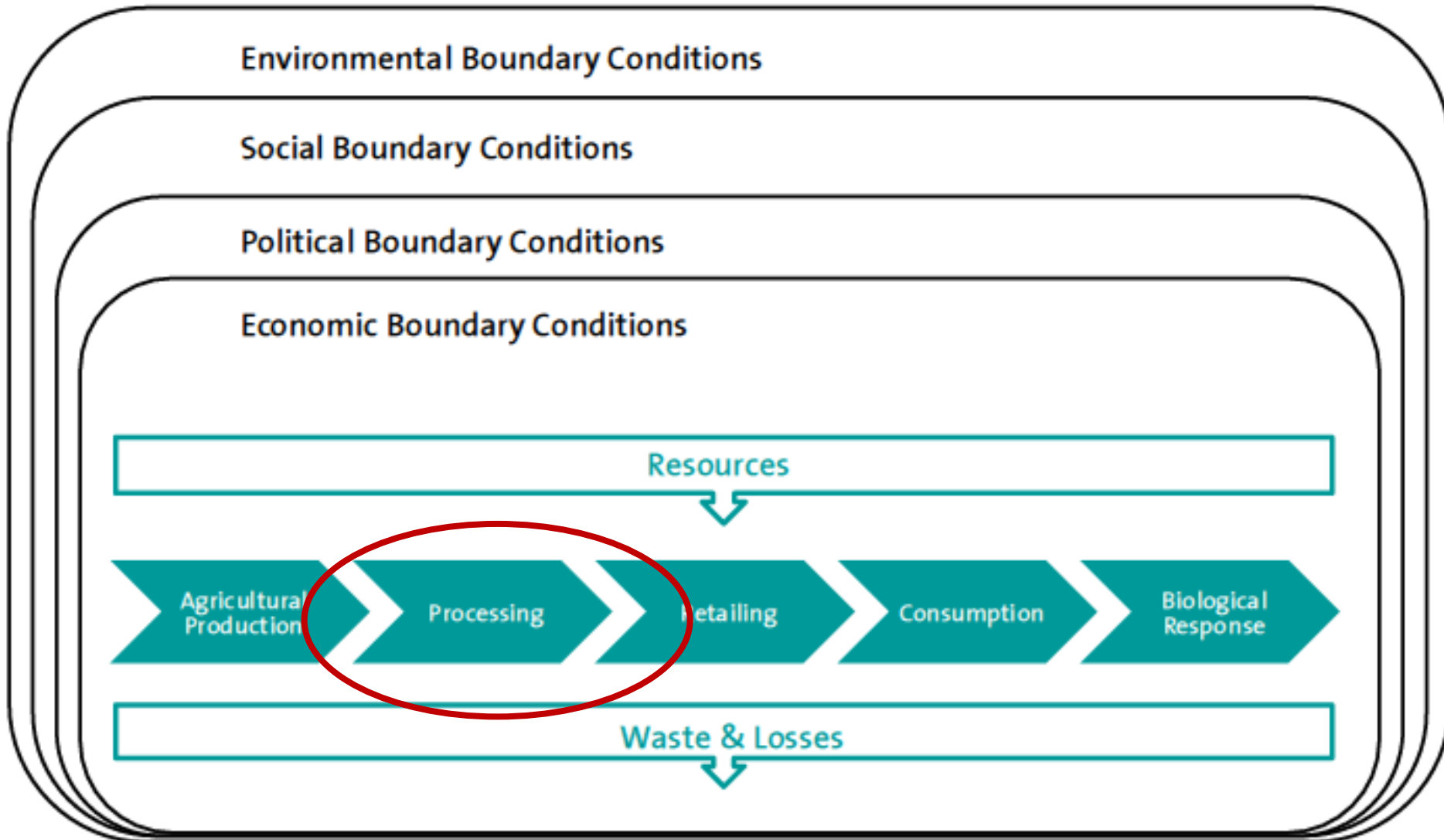


The Role of Supermarkets



Source: FAO 2004

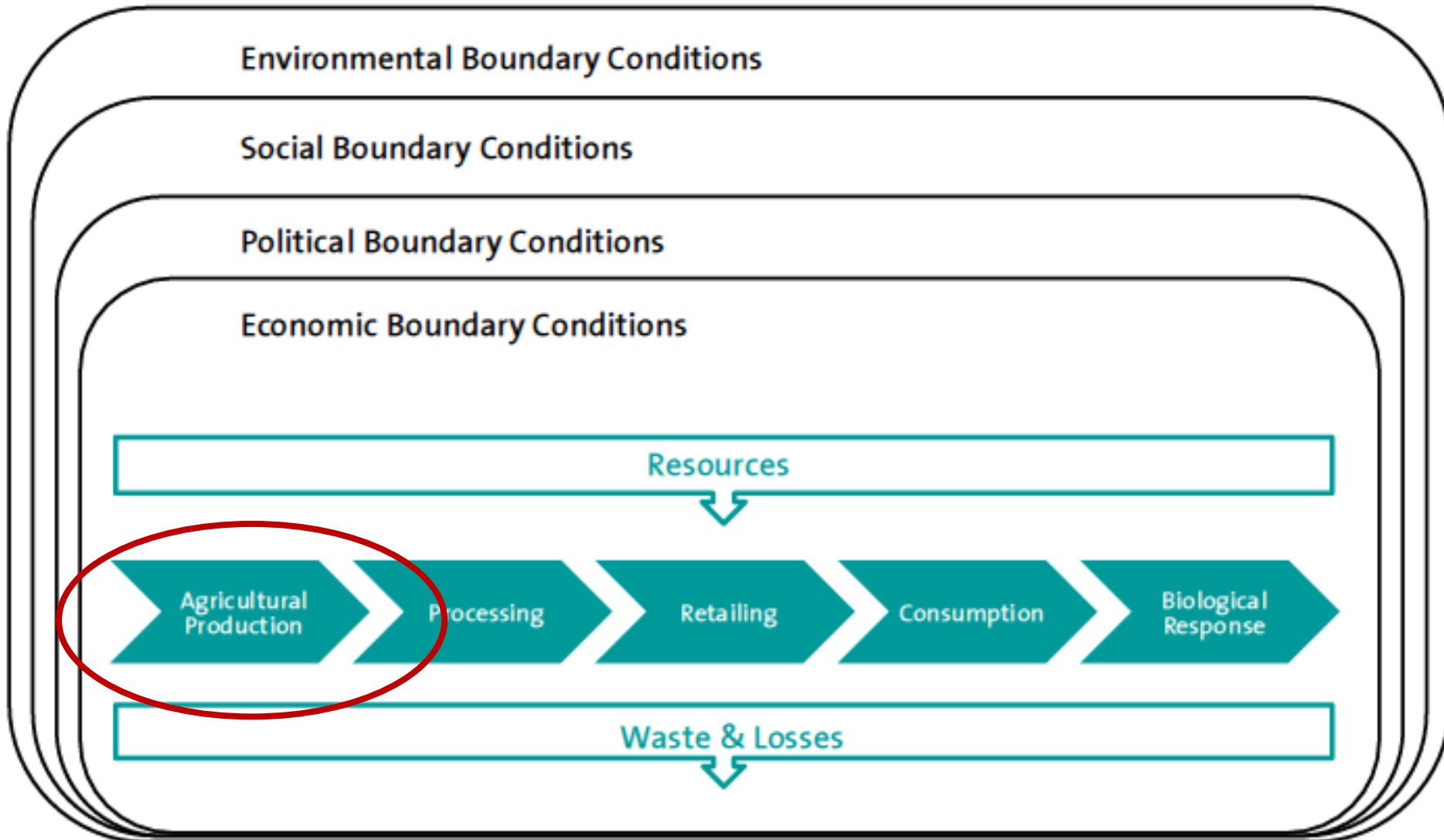
The World Food System



Food Processing

- Preference, Acceptance, Need
- Food Safety
- Product lifetime – waste and loss reduction
- Small scale processing for value adding and income improvement at start of chain

The World Food System



What makes the current agricultural production possible?

- water (irrigation)
- soil
- labour (workers)
- fertilisers (synthetic WWII)
- pesticides
- crops (plants)



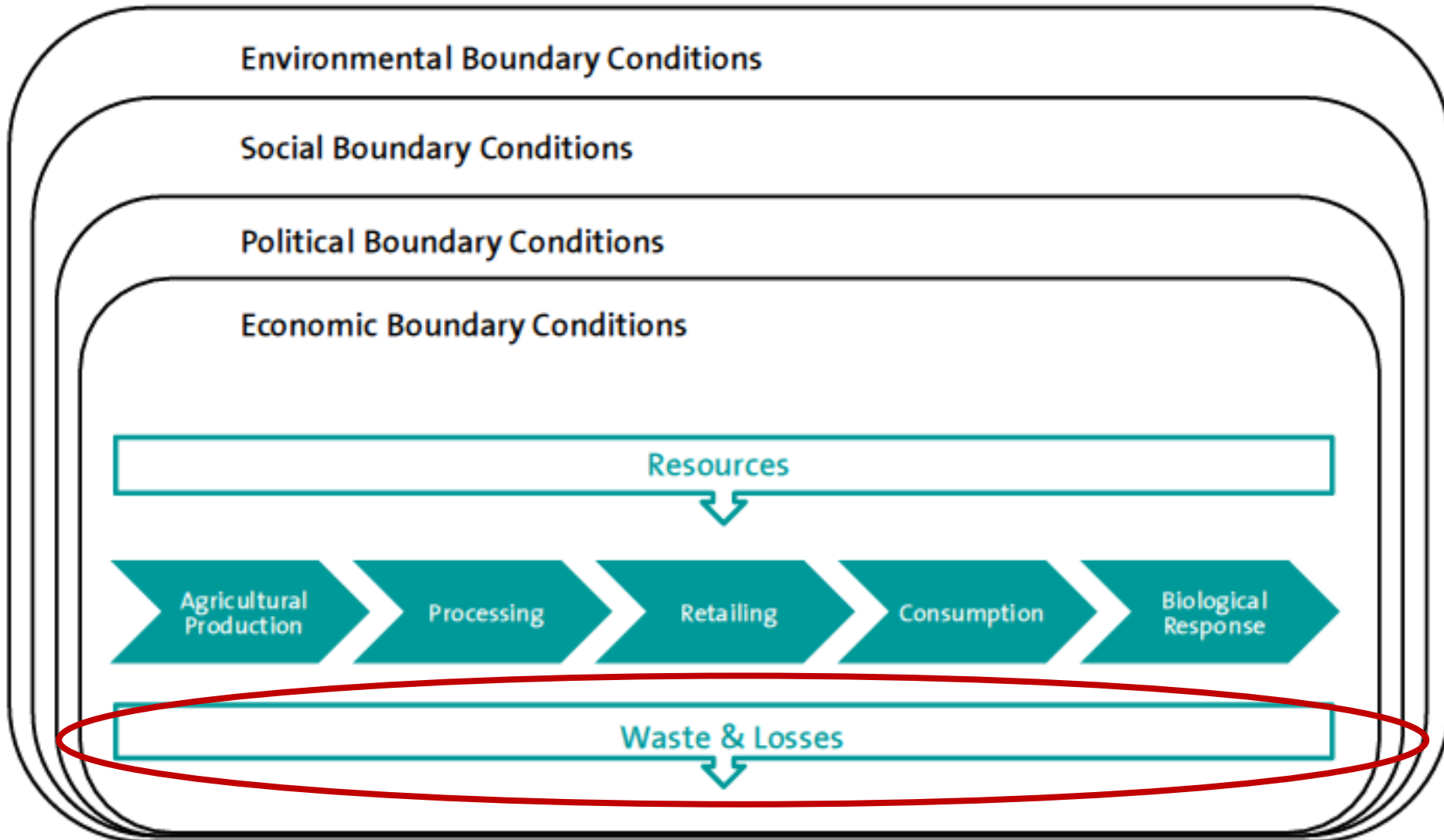
The Face of Farming



1.35 Billion Farmers
1.29 Billion in the South
50% Food produced by women
(In SSA 80-90%)

Source: FAO, The Hunger Project, 2008

The World Food System



Food Waste

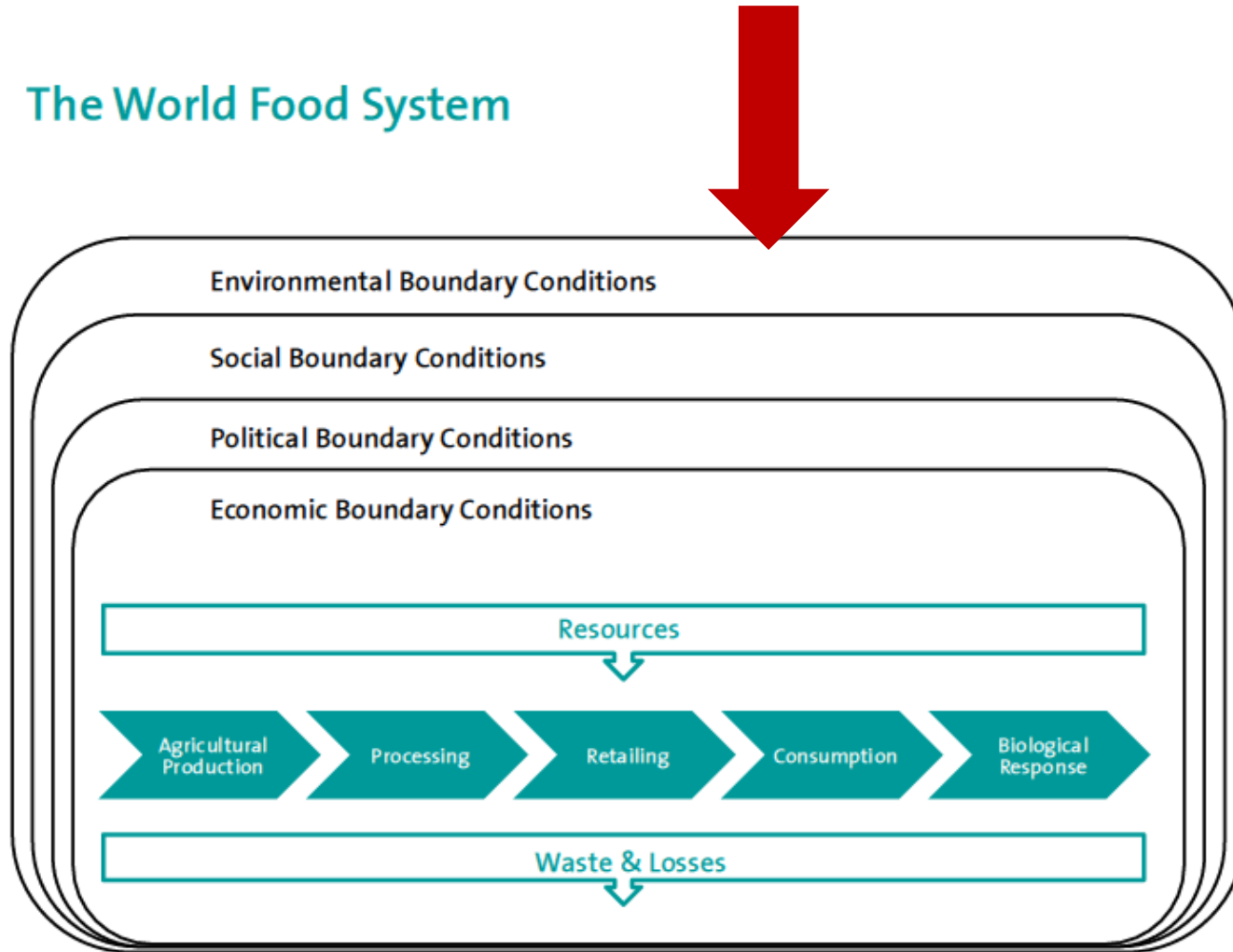
1/3 of all food production world-wide gets lost or wasted in the food production and consumption systems

Food Waste video

<http://www.youtube.com/watch?v=lqfD3p8Fn-g>

Individual eating patterns - acceptance

The World Food System



Insects: A common part of your lunch in a couple of years?



Insect Tasting in Bern, Switzerland for Swiss politicians!

<http://www.srf.ch/player/tv/10vor10/video/insekten-apero-im-bundeshaus?id=d562f964-7702-41ee-88f5-cb33d08e2662>

Thanks for your attention!



Time to catch your dinner in the garden? 😊