



ENVIRONMENTAL IMPLICATIONS OF LIVESTOCK PRODUCTION

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A Global Resource Crisis

- Climate change
- Resource scarcity
 - Land scarcity
 - Water scarcity
 - Nitrogen and Phosphorus cycles
 - Energy crisis – peak oil
- Mass extinction – rapid loss of biodiversity

Livestock and Environment

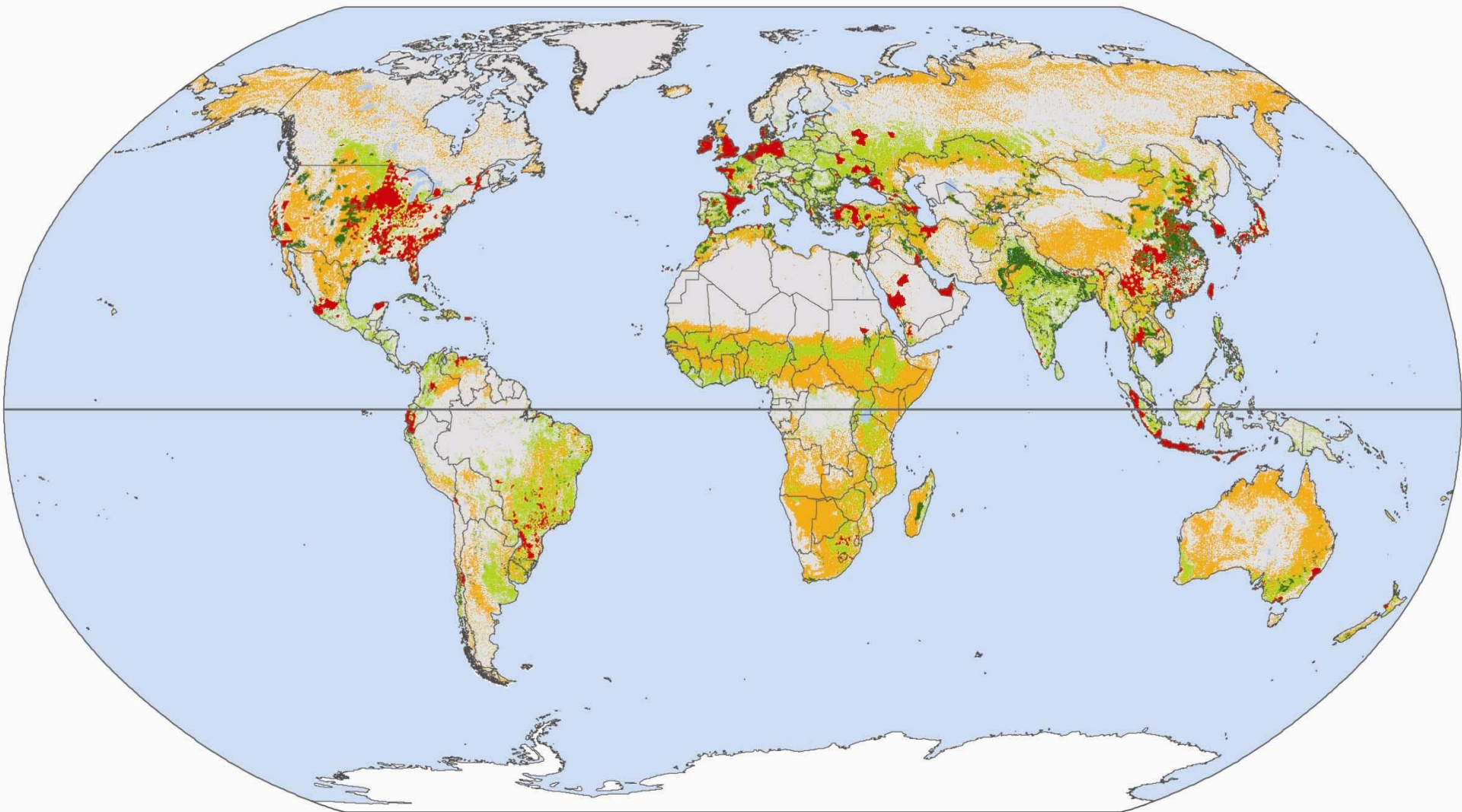
Pollution

Land degradation
/biodiversity loss

Greenhouse gas
emissions

- 26 % of all land is grazed; 35 % of all crop land is for feed
- Have contributed to 20% of degrading of rangelands
- Livestock use 15% of global agriculture water, some with pollution
- Pose a threat to bio-diversity in 306 of the 825 eco-regions
- are major source of greenhouse gas: 14.5% of anthropogenic emissions (FAO, 2013)

Distribution of livestock production systems



Livestock production systems

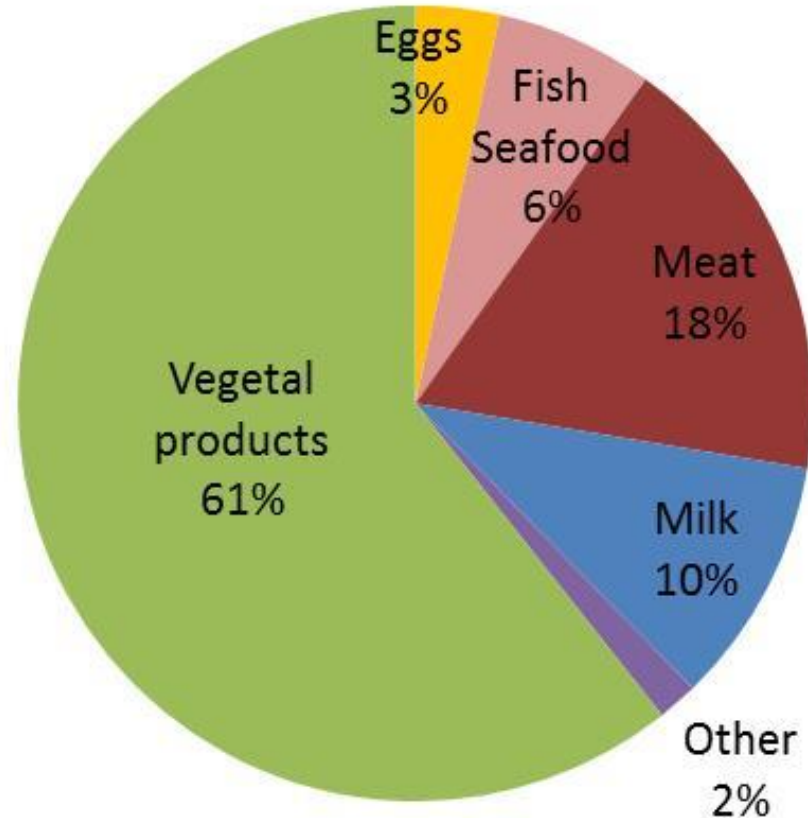
■ Mixed, irrigated
■ Mixed, rainfed

■ Grazing
■ Other type

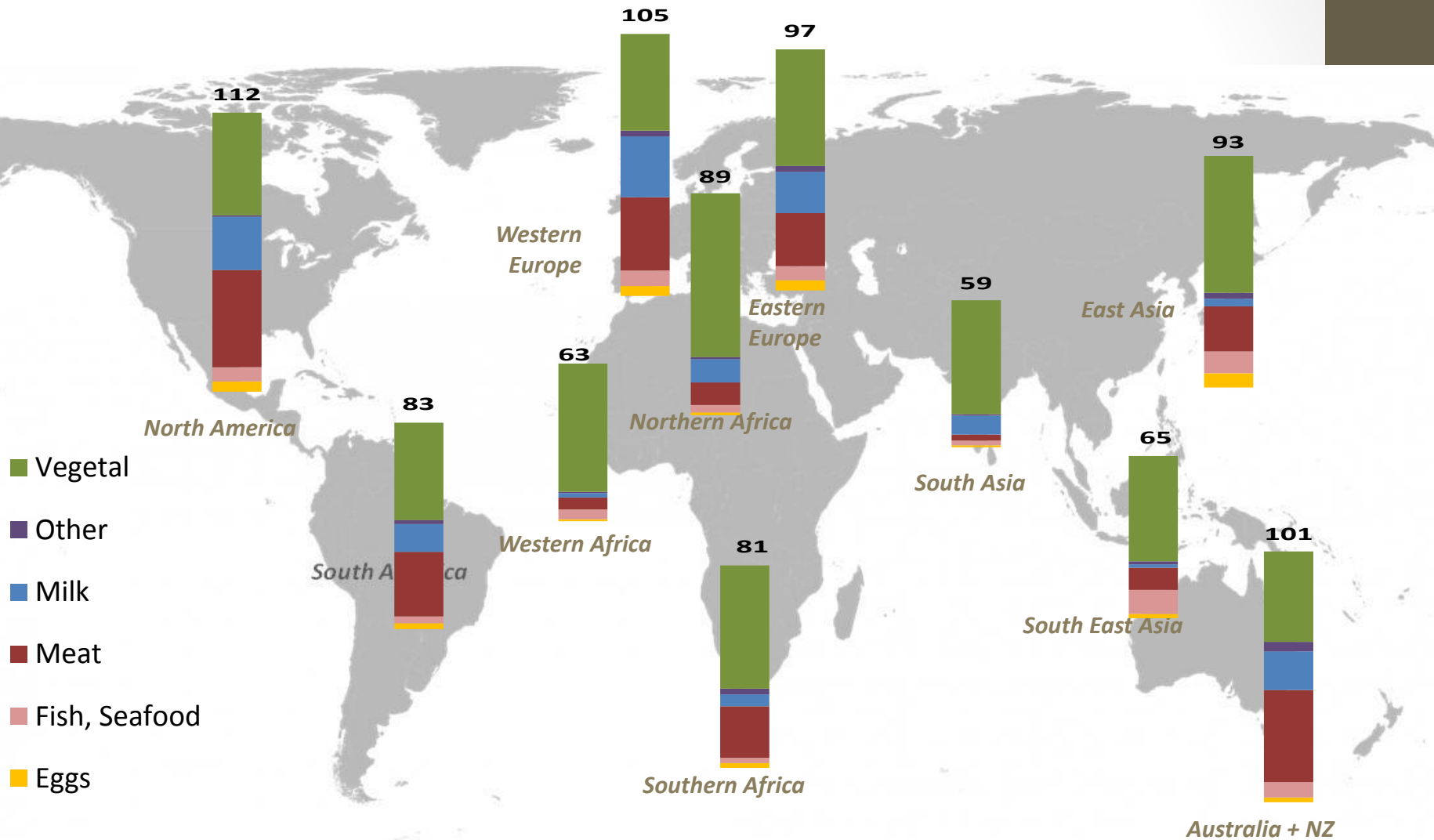
■ Areas dominated by landless production
■ Boreal and arctic climates

— National boundaries

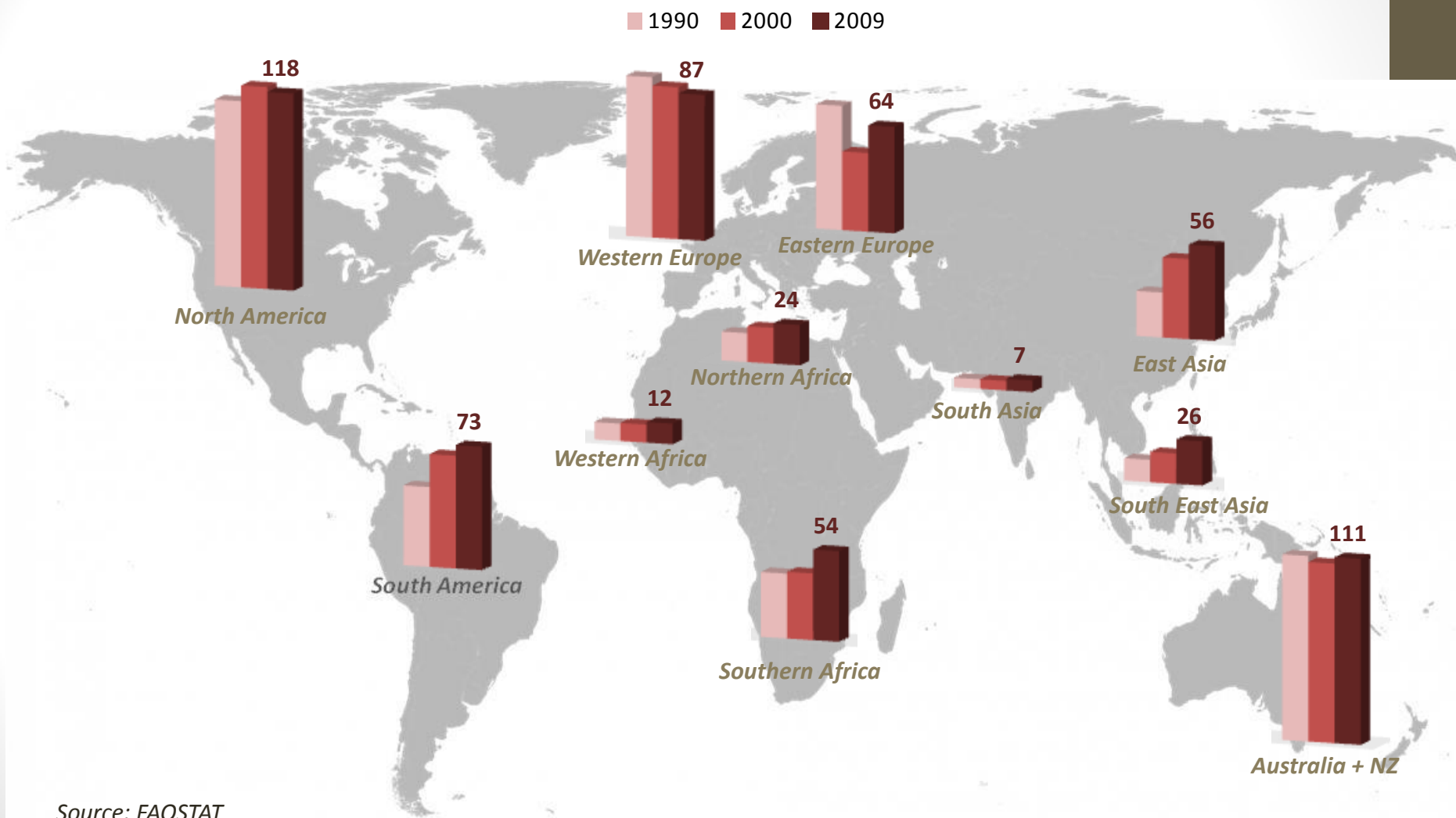
Livestock provides 31% of total protein supply



Protein per capita consumption (g/cap/day)



Meat per capita consumption (kg/cap/yr)



Source: FAOSTAT

Drivers of consumption and future trends

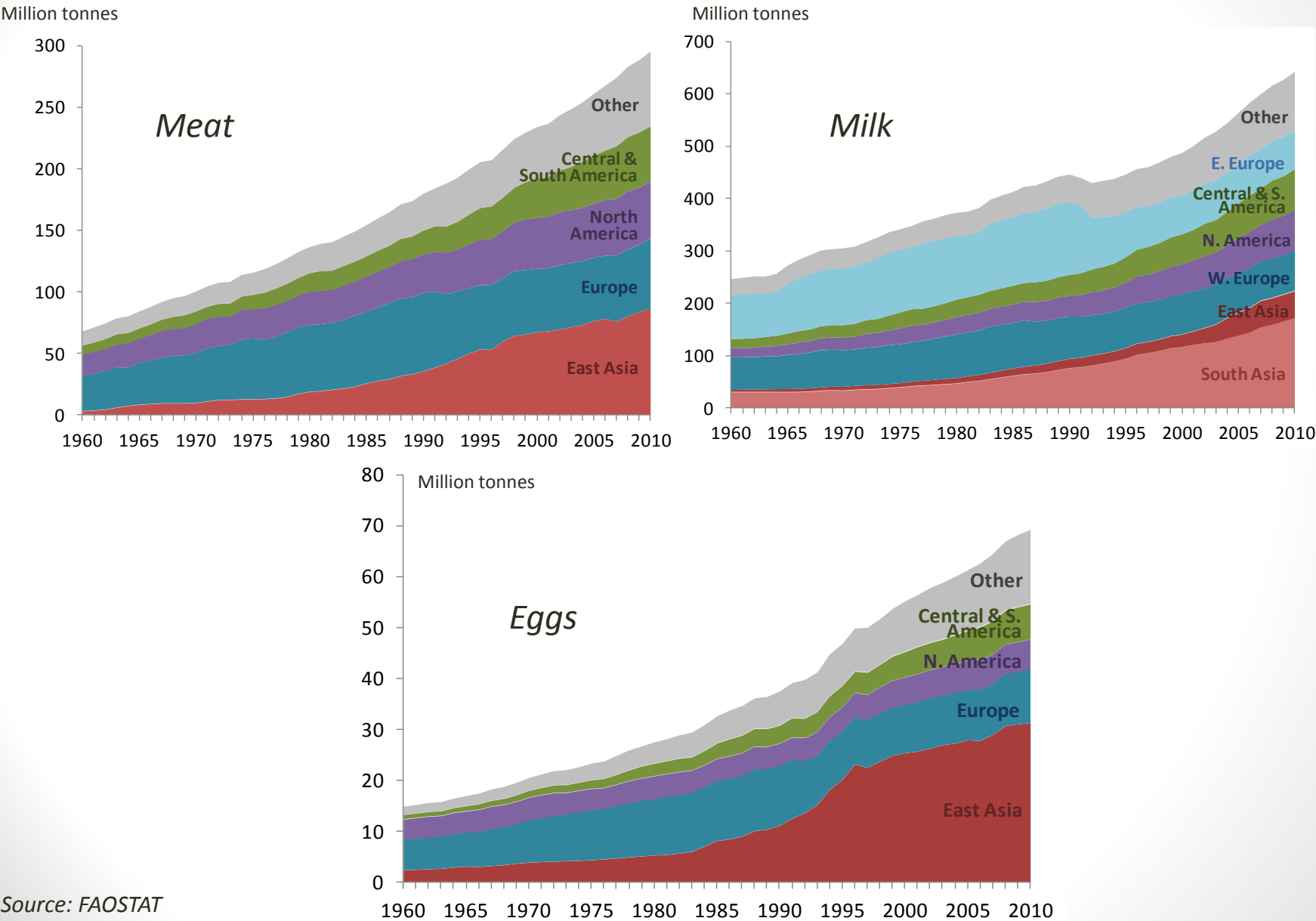
World demand for livestock food products since 1990:

Milk +30% Meat +60% Eggs + 80%

+70% by 2050

- Population growth : +30% since 1990
+30% or 9.6 billion people by 2050
- Income growth : +1.5%/year since 1980, +5 to 7%/ year in Asia
+2%/year by 2050
- Urbanization: 20% in 1900, 40% in 1990, >50% in 2010
70% of urban people in 2050

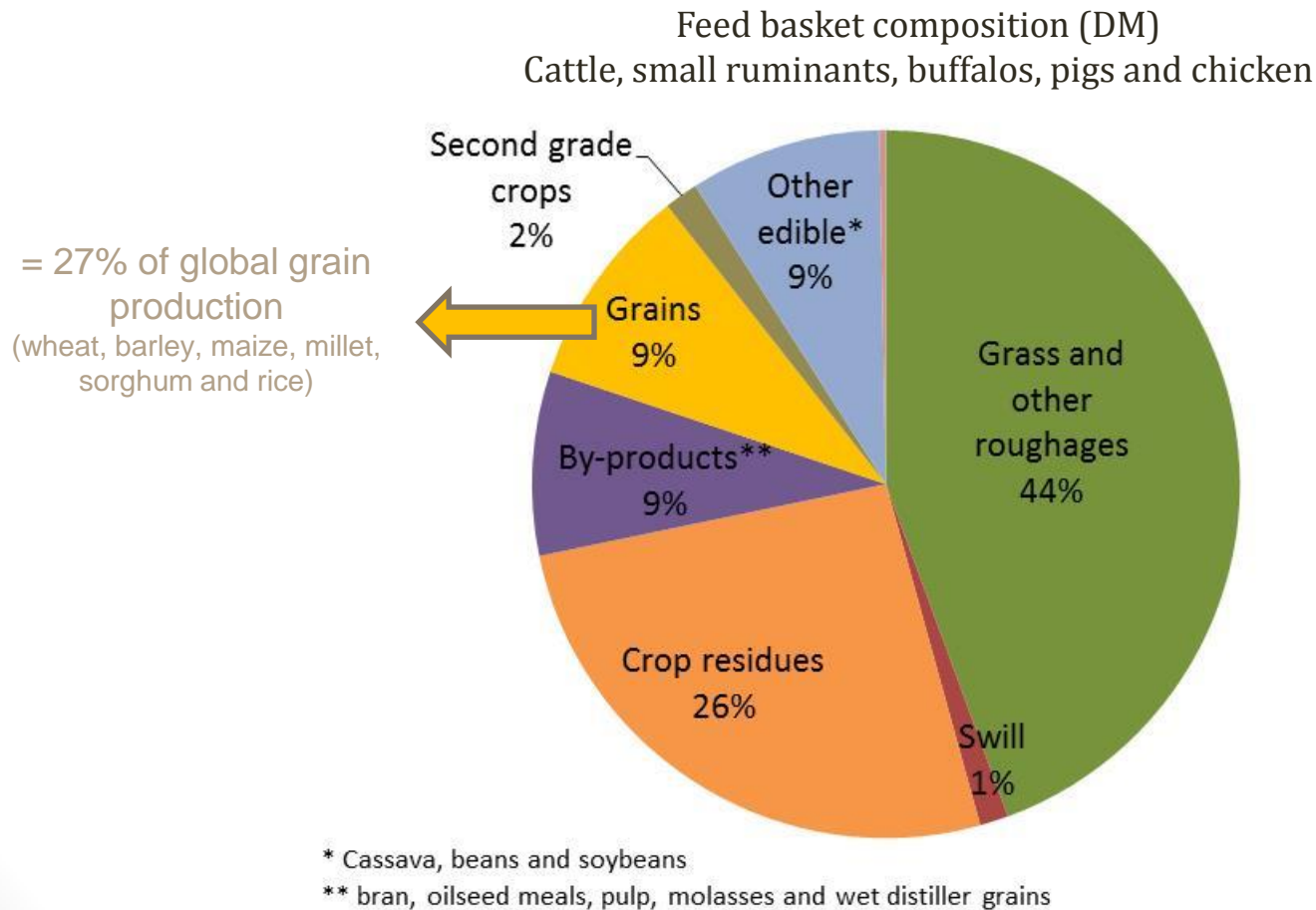
World production



Food security and nutrition

- Livestock products supply about 13% of calories consumed worldwide and 20% in developed countries.
- They supply around 30% of total protein consumption worldwide and more than 40% in developed countries.
- They provide critical nutrients to vulnerable groups
- Livestock can increase the world's edible protein balance by converting protein found in forage into forms digestible by humans

Livestock transforms non edible resources into edible products



Income and employment

- Supports the livelihood of about 800 millions poor, of which 25% in sub-Saharan Africa and 45% in South Asia
- Contributes about 40% to agricultural GDP. This share rises with income and level of development and is above 50% for most OECD countries
- Past annual growth of 3.5%, expected to rise to 4% in 2020 in developing countries

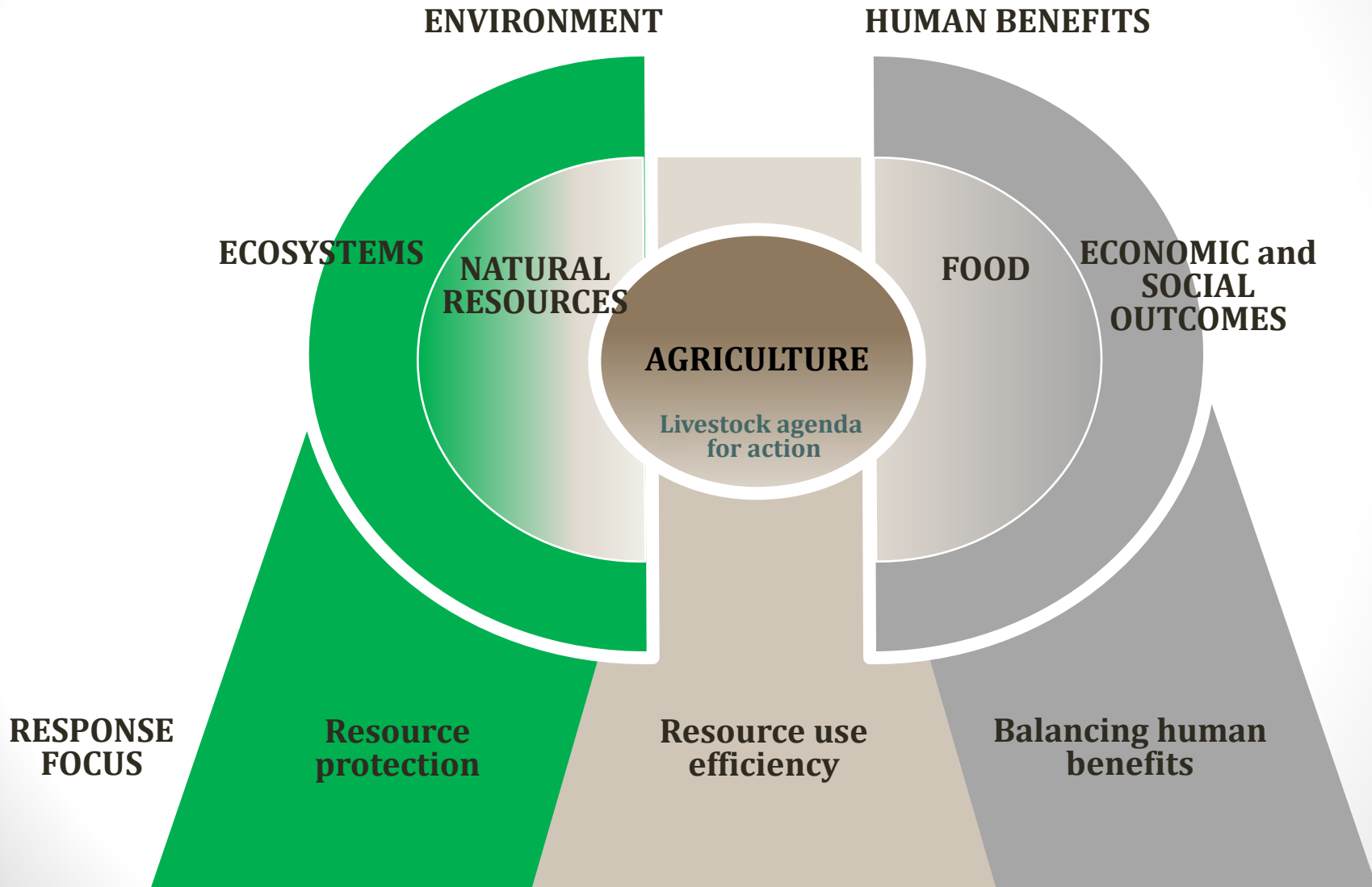
Economic development

- Livestock development plays a significant role in economic growth and poverty reduction
- Growth in demand for agrifood products represents a potential increase of income for livestock producers
- Livestock is a major source of international trade, with 180 billion \$US of exports in 2010, around 17% of all agricultural products export value.

Non-food services

- Livestock is major contributor to crop-production in developing world: fertilization and draught power to cultivate about 40% of arable land
- Provides insurance and ready cash to rural poor as household capital reserve
- Is a source of significant adding value by-products, such as leather, fibers...
- Help territorial expansion
- Core aspect of cultures and religions

Response focus



The game changer: resource scarcity

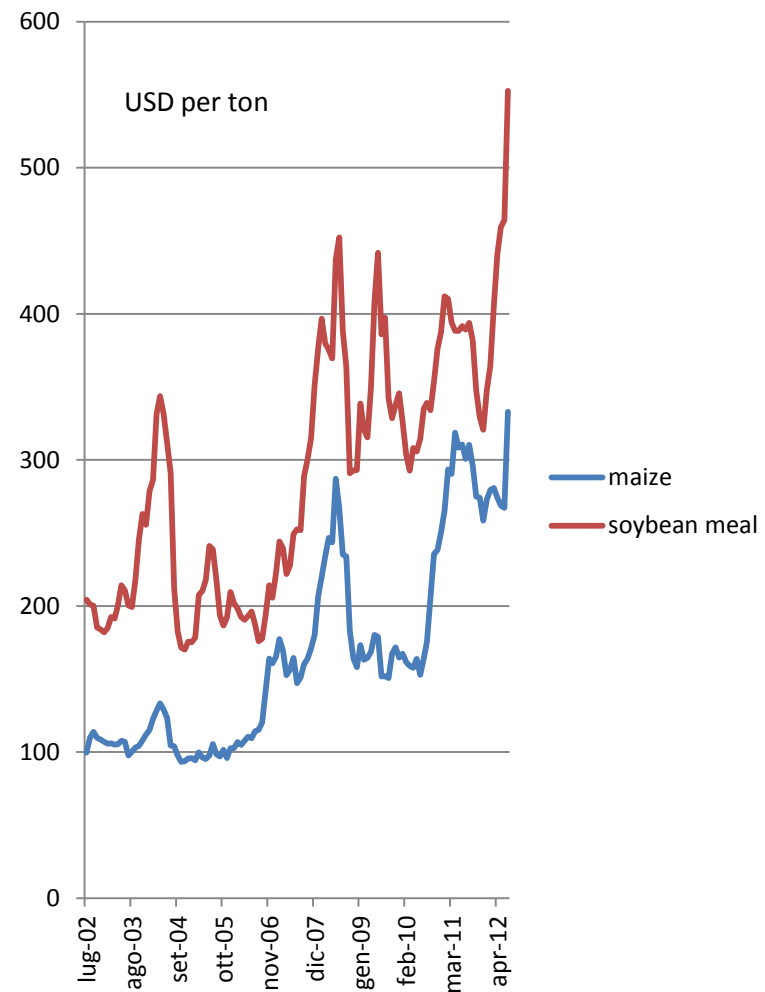
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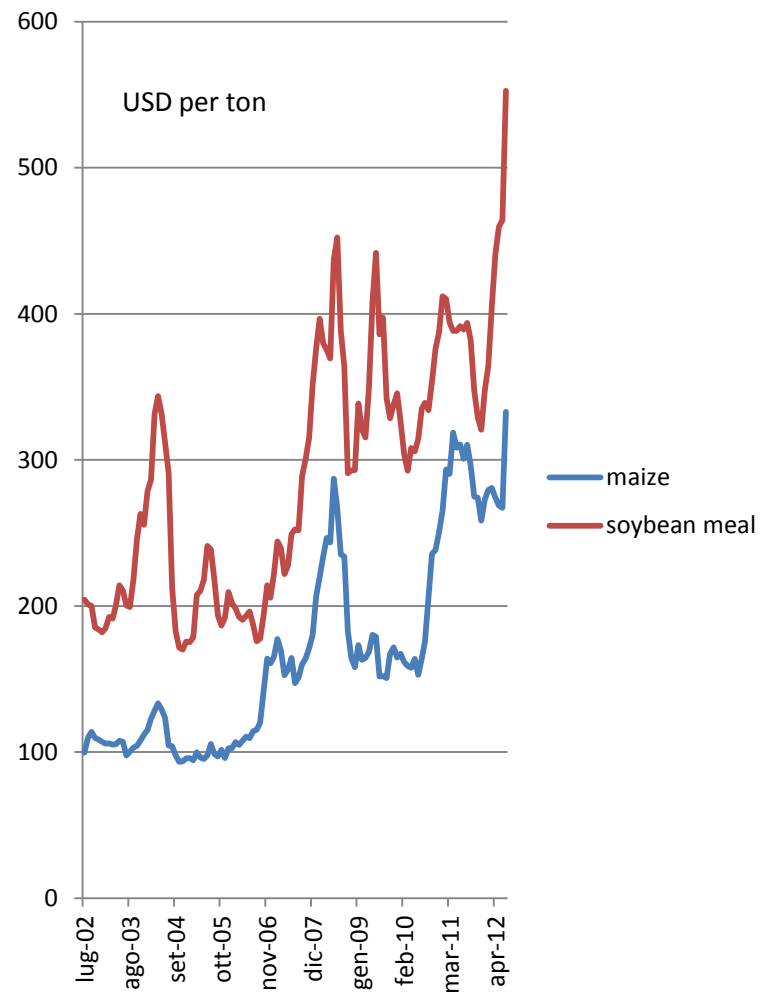
Feed Prices over the last 10 years



The game changer: resource scarcity

- Resource scarcity has become an economic reality – coping with scarcity an economic necessity
- Climate change affects agriculture like no other sector
- Livestock has a large potential to respond

Feed Prices over the last 10 years



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- Restoring value to grassland (payment-based environmental service provision)
- Let the polluter pay (zero discharge of waste)

Improve natural resource use efficiency

- Despite higher resource costs, sector growth will continue
- Huge performance gaps within systems/ species and across countries
- Potential to reduce the sector's environmental burden, and to enhance its role in climate change mitigation, nutrient recycling and biodiversity protection
- Technical solutions are available but policies need to be better aligned

Sustainable Livestock

- Better Policies needed
 - To drive up resource efficiencies and to address externalities
 - To exploit the growth potential for poverty reduction
 - To counter pathogen threats
 - To improve animal welfare
- Better Science needed
 - for a better and integrated understanding of “livestock and human needs”
 - To develop policy and technical options

Livestock, Resources and Poverty

- The poverty question is part of the Livestock-resource equation
- Investments and knowledge to:
 - Enable smallholders/pastoralists to intensify where production potential and markets allow
 - Create markets for environmental services from grazing (carbon, water, biodiversity)
 - Create alternatives to livestock

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- The livestock sector has a large potential to respond to resource scarcity
- Sustainability is not a state but a continuous process of improvement (change of practice) - Interpretation depends on location and context
- There is no solution without simultaneously resolving the social/poverty issue
- Requires political will, dialogue and transparency

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THANK YOU