INTERNATIONAL AGRIFOOD MARKETS AND POLICY

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academic years 2020-2021

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Topic 1

1. Agri-food markets

1.1 Demand and supply of agri-food products

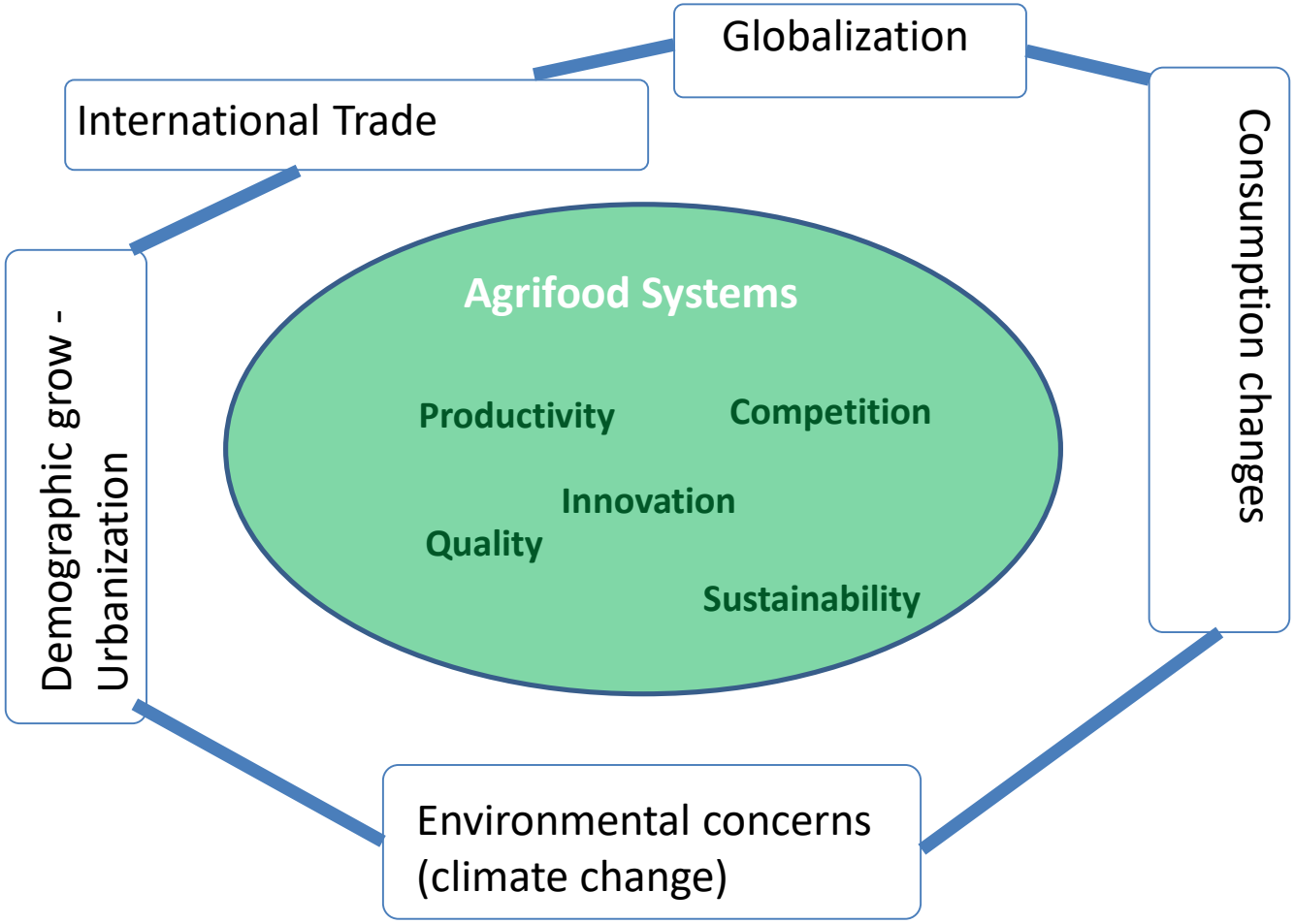
1.2 Market models in agri-food sectors

1.3 Instability and uncertainty in agriculture

1.4 **Agricultural sector in the developed and in developing countries**

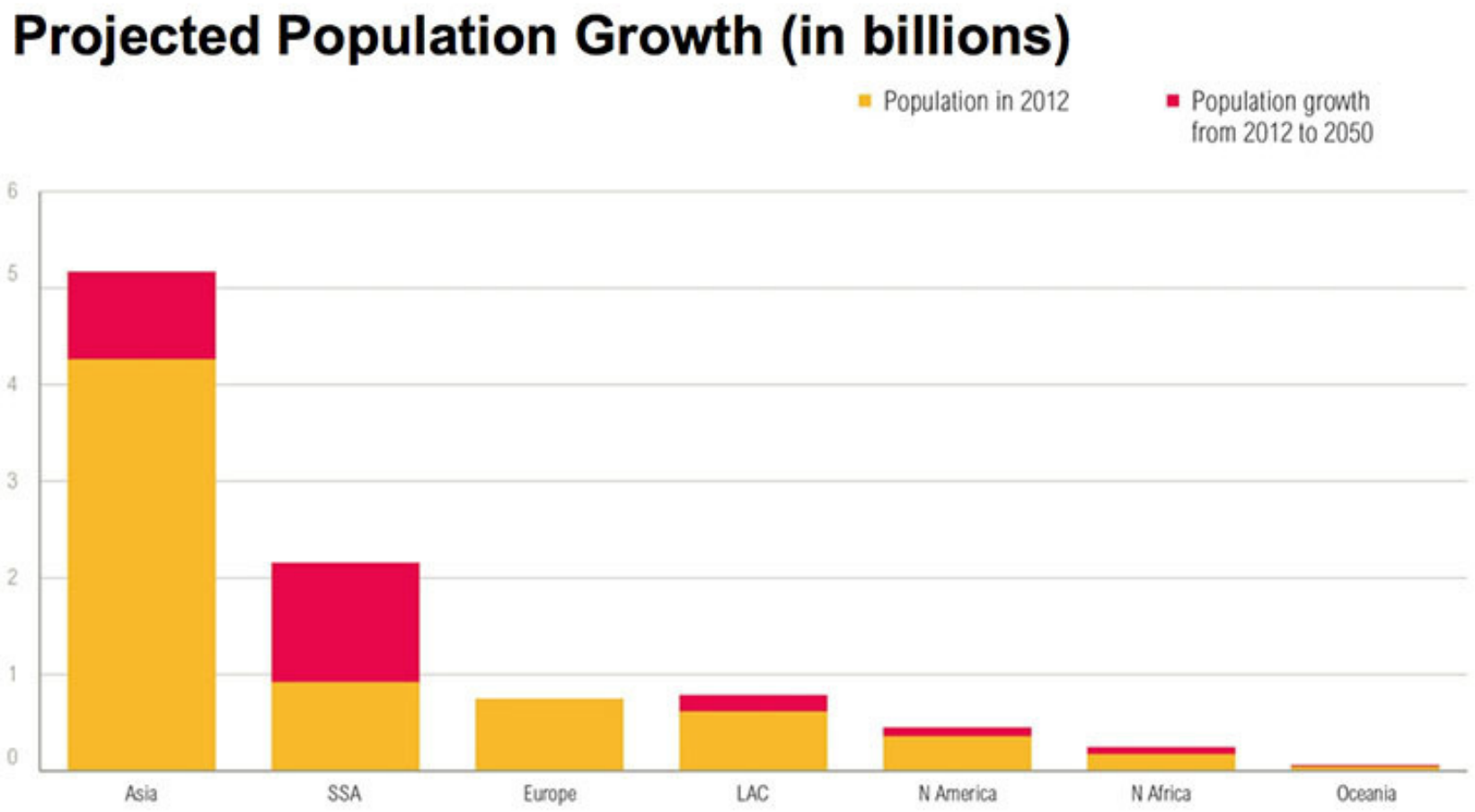
Keyword: Food security – Food safety

- **food security:** is a condition related to the supply of food, and individuals' access to it.
- **food safety:** refers to handling, preparing and storing food in a way to best reduce the risk of individuals becoming sick from foodborne illnesses. Food safety is a global concern that covers a variety of different areas of everyday life.


Globalization
International Trade
Consumption changes
Demographic grow - Urbanization
Agrifood Systems
Productivity
Competition
Innovation
Quality
Sustainability
Environmental concerns (climate change)

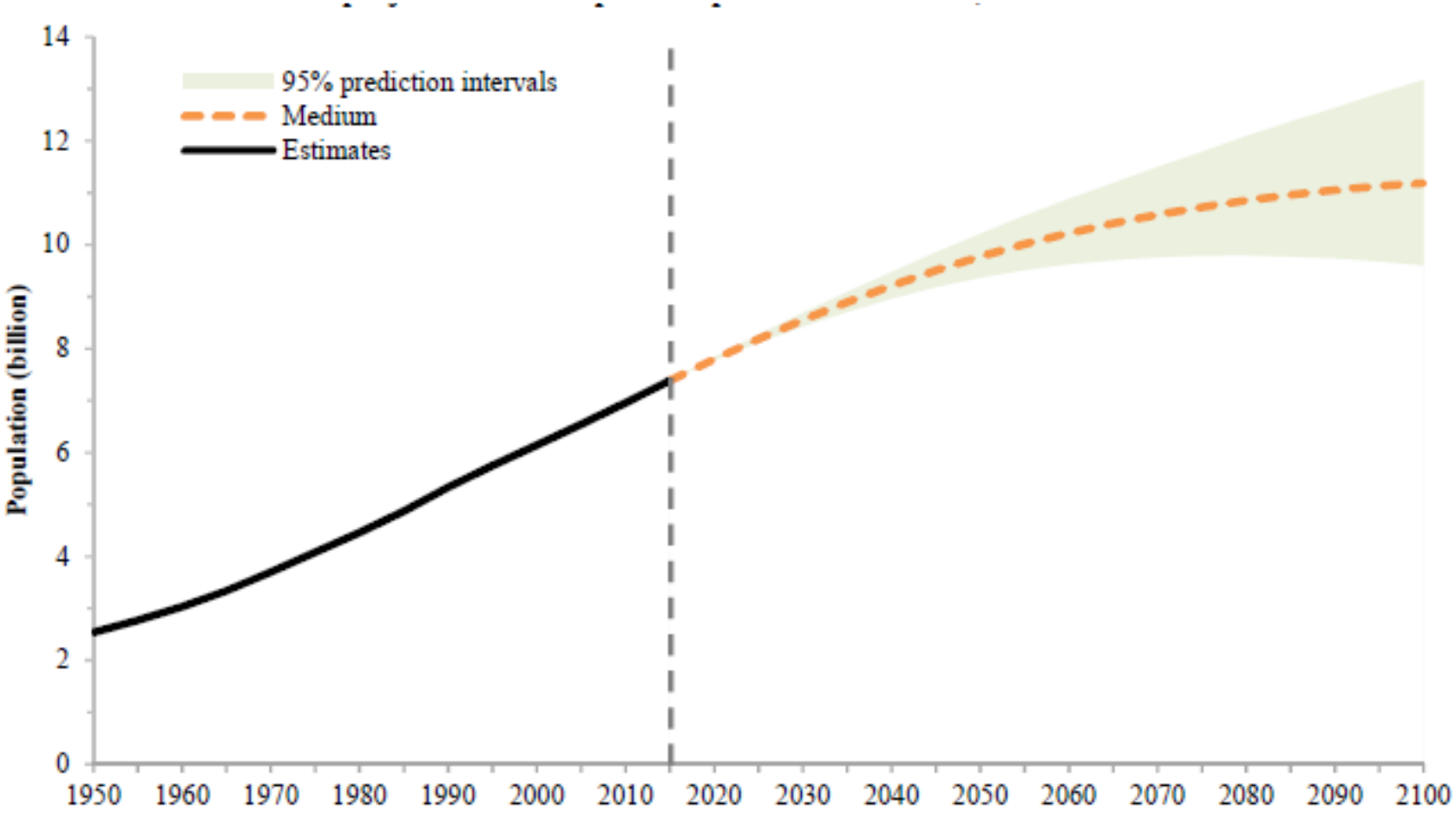
High income countries	Low income countries
Low contribution to GNP	High contribution to GNP
Low contribution to Employment ration (high age of farmers)	High contribution to Employment ration
High relevance of Agrifood Industry, Transport and Logistic	Low relevance of Agrifood Industry, Transport and Logistic
Growing environmental problems	
Growing social and environmental functions of agriculture	
Growing demand of high quality food	Demand of normal/necessary food (quality food in emerging countries)
Quality certification systems - labels	
Food Safety (Food Security)	Food Security and Food Safety

Demographic growth and urbanization



Note: "SSA" = Sub-Saharan Africa, including Sudan. "LAC" = Latin America and Caribbean. "N America" = North America. "N Africa" = Rest of Africa.

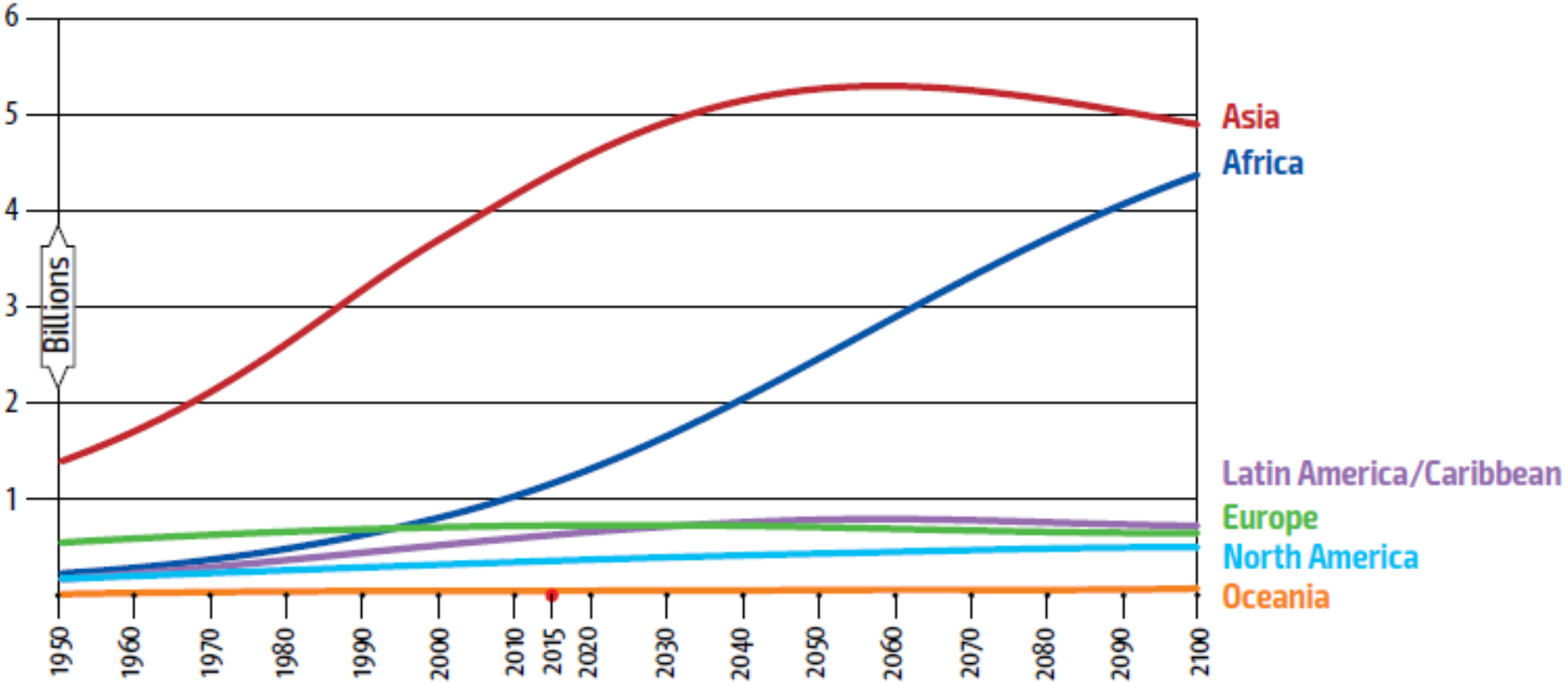
Demographic growth and urbanization



Source: United Nations, Department of Economic and Social Affairs, Population Division (2017). *World Population Prospects: The 2017 Revision*. New York: United Nations.

Demographic growth and urbanization

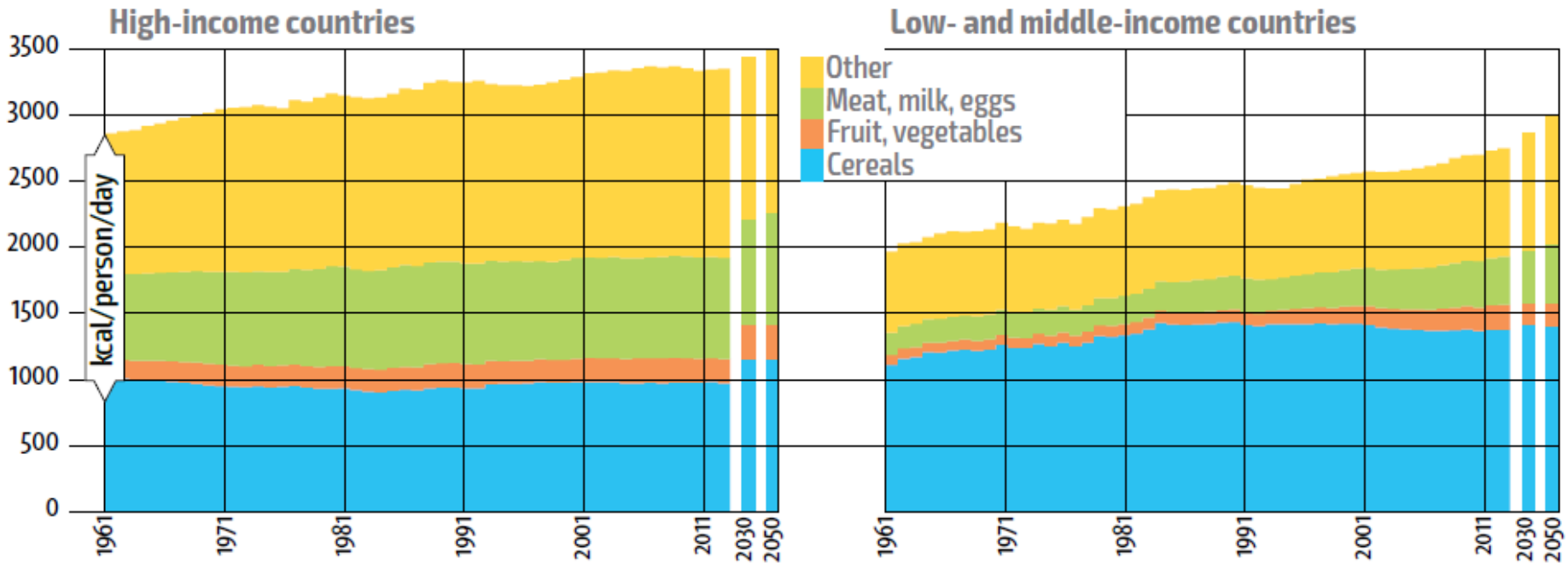
Population growth to 2100, by region (medium variant)



Source: UN, 2015.

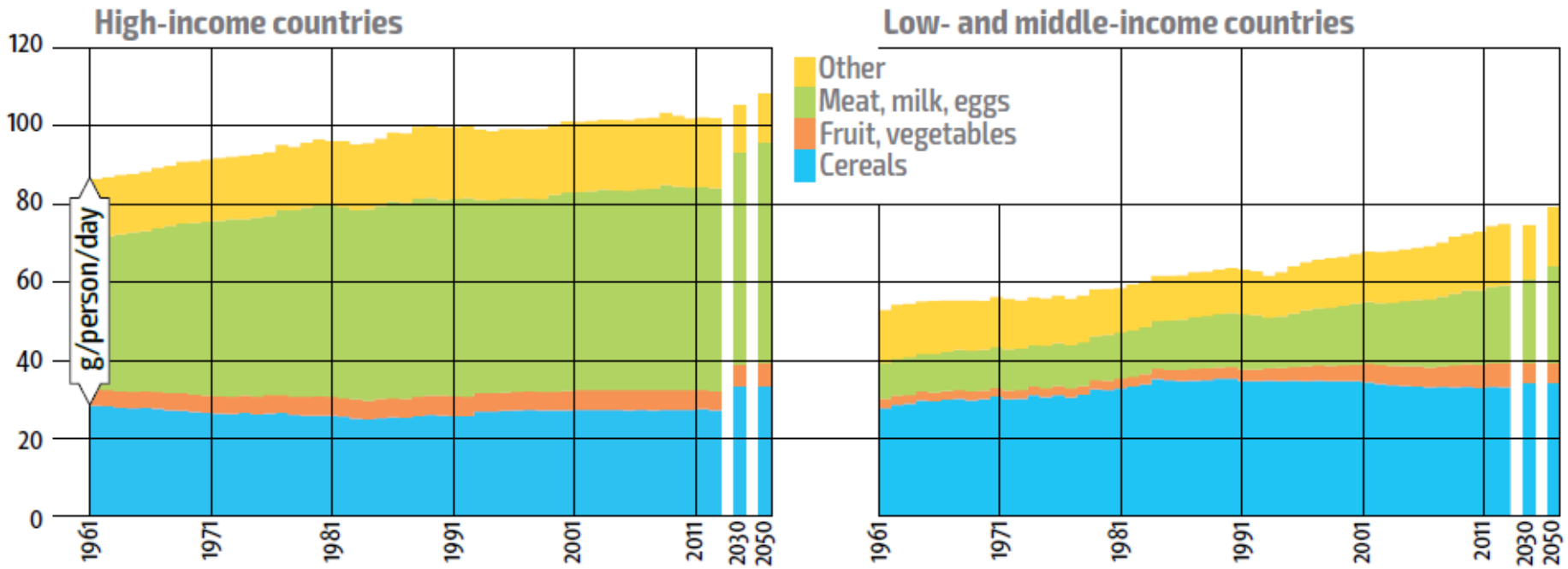
Demographic growth and urbanization

Per capita calorie intake by source, 1961–2050



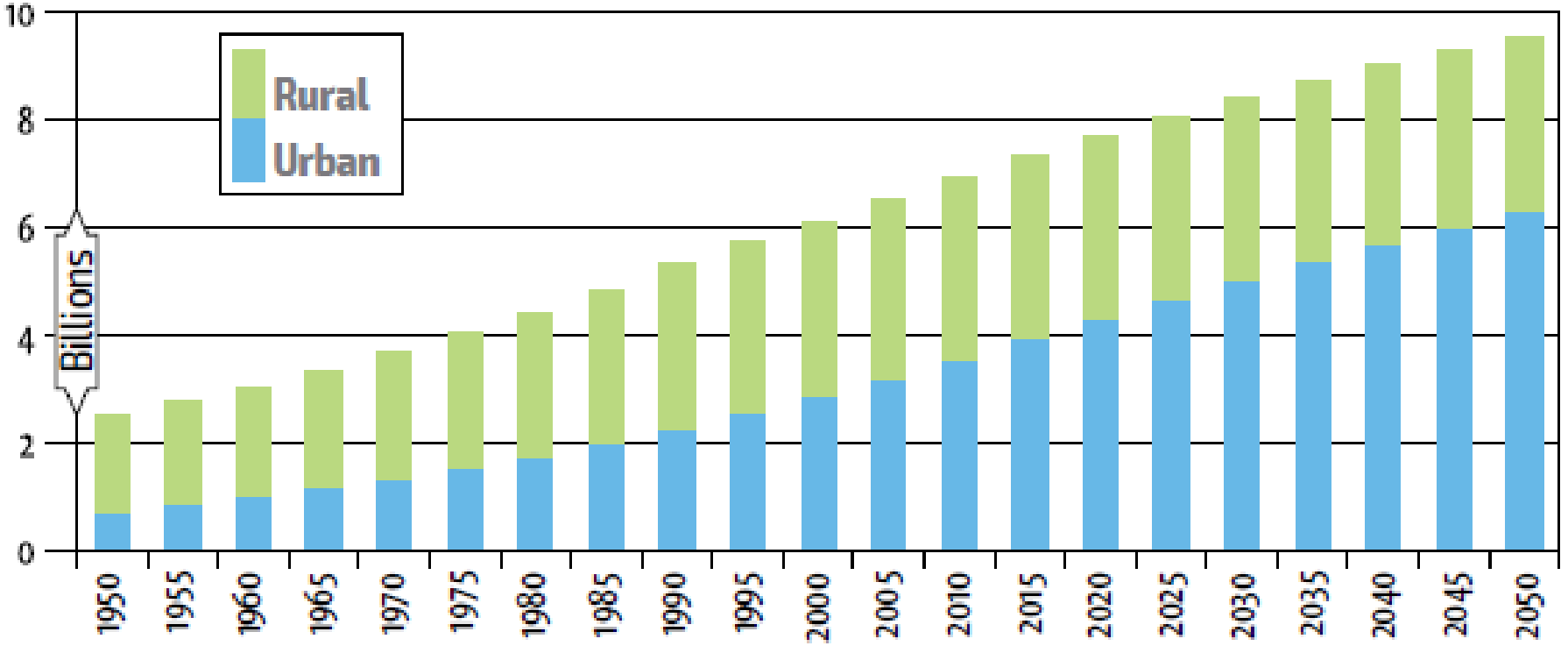
Demographic growth and urbanization

Per capita protein intake by source, 1961–2050



Demographic growth and urbanization

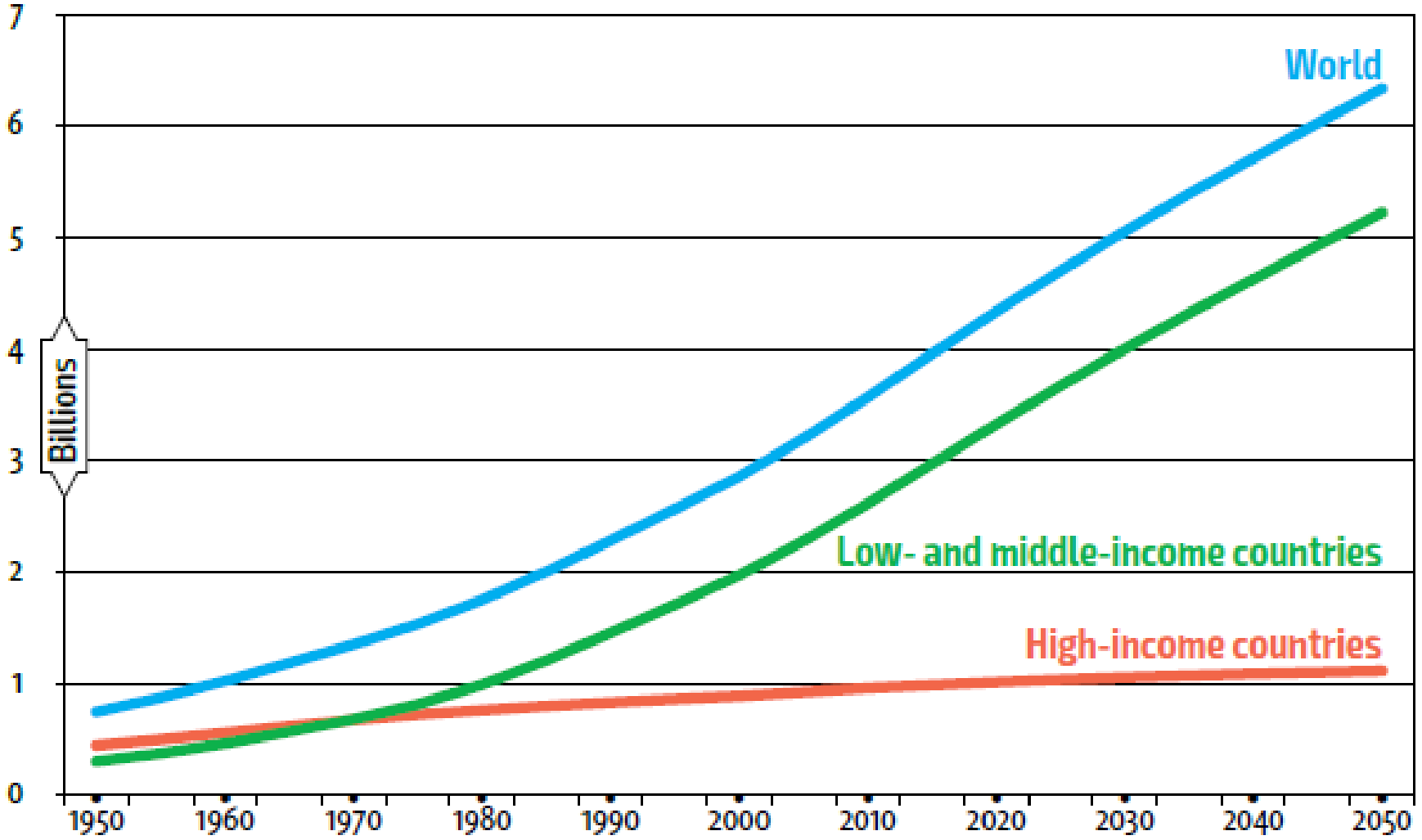
Growth in global urban and rural populations to 2050



Source: UN, 2015.

Demographic growth and urbanization

Urbanization trends, by region



Source: UN, 2015.

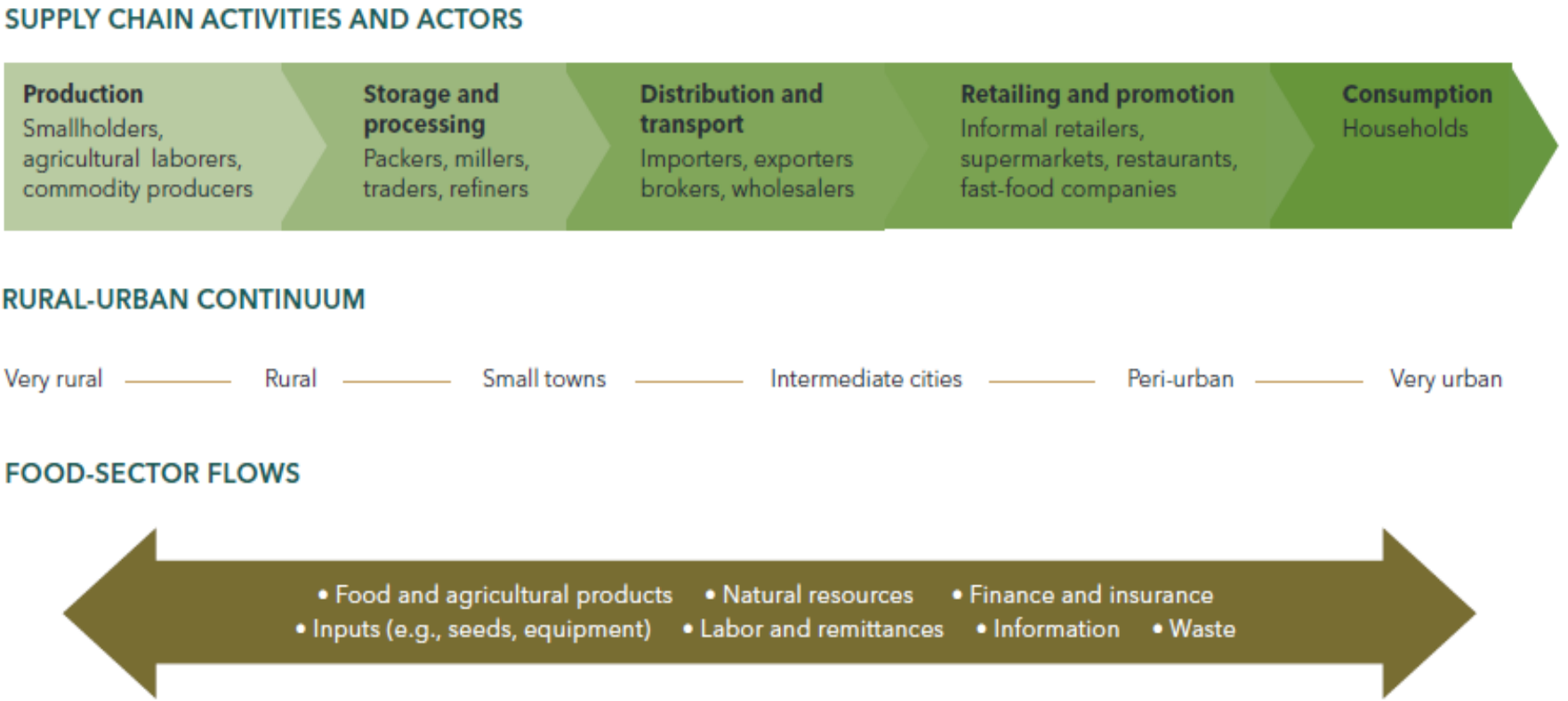
Demographic growth and urbanization

Global Consumption of Meat and Milk Products

REGION	LIVESTOCK (KCAL/PERSON/DAY)			BEEF AND MUTTON (KCAL/PERSON/DAY)		
	2006	2050	% CHANGE	2006	2050	% CHANGE
European Union	864	925	7%	80	75	-6%
Canada & USA	907	887	-2%	117	95	-19%
China	561	820	46%	41	89	116%
Brazil	606	803	33%	151	173	15%
Former Soviet Union	601	768	28%	118	156	32%
Other OECD	529	674	27%	64	84	31%
Latin America (ex. Brazil)	475	628	32%	59	86	45%
Middle East and North Africa	303	416	37%	59	86	45%
Asia (ex. China, India)	233	400	72%	24	43	79%
India	184	357	94%	8	19	138%
Sub-Saharan Africa	144	185	29%	41	51	26%
World	**413**	**506**	**23%**	**50**	**65**	**30%**

Demographic growth and urbanization

Food from small farms to big cities



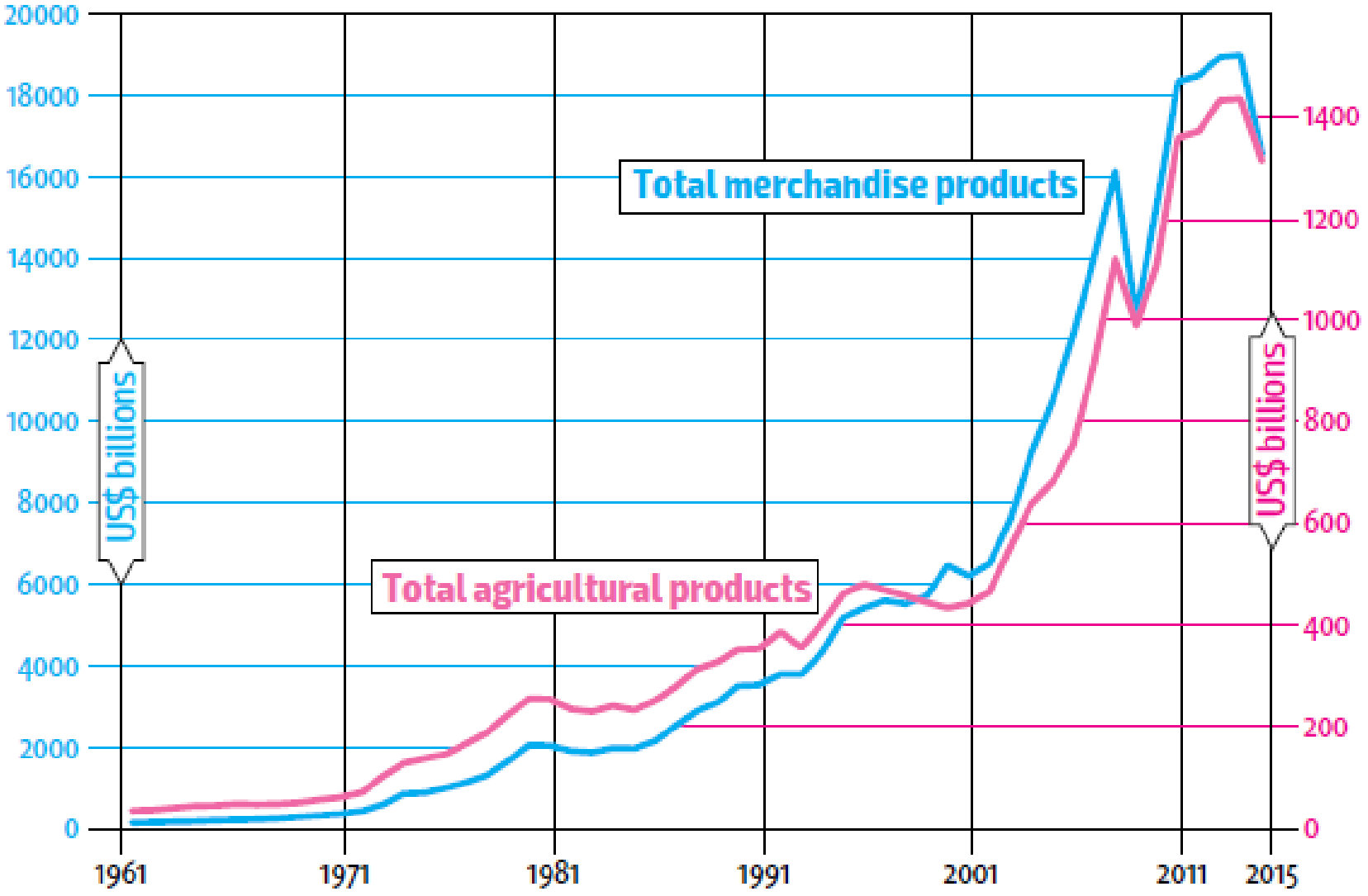
Source: Adapted from J. von Braun, "Rural-Urban Linkages for Growth, Employment, and Poverty Reduction," presented at the Fifth International Conference on the Ethiopian Economy, Ethiopian Economics Association, Addis Ababa, June 7–9, 2007.

Demographic growth and urbanization

- Increase in agricultural production and agricultural productivity.
- Growing distance between the places of consumption and the place of production.
- Increase in international trade.
- Increase in the transport of goods (investments in transport, logistics, food security).
- Risks of greater environmental impact.
- Information asymmetries (between producer and consumer).

Agri-food international Trade

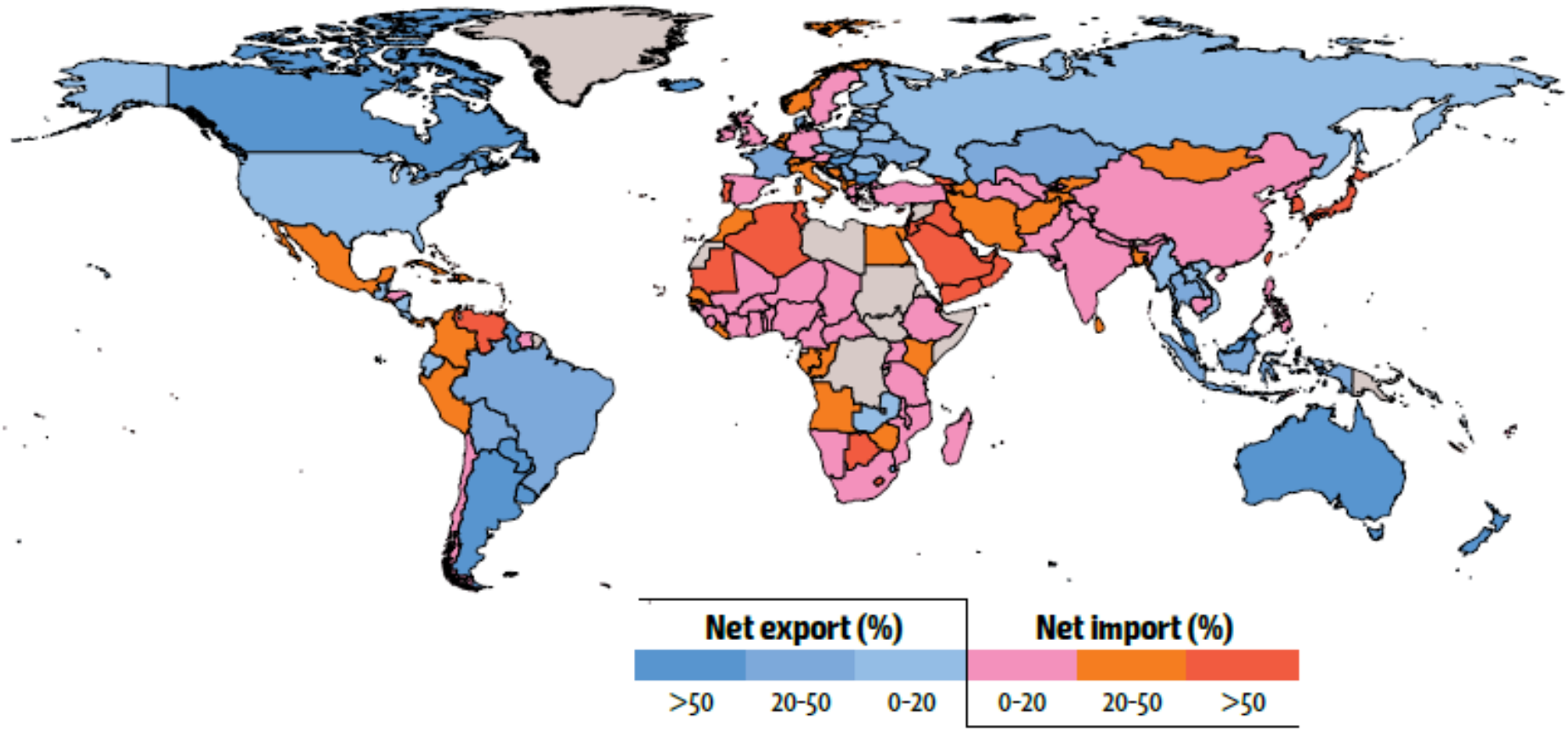
Total and agricultural international trade volume, 1961–2015



Source: Data from 1961–2013 are based on FAO, 2016a; data for 2014 and 2015 are based on ITC, 2016.

Agri-food international Trade

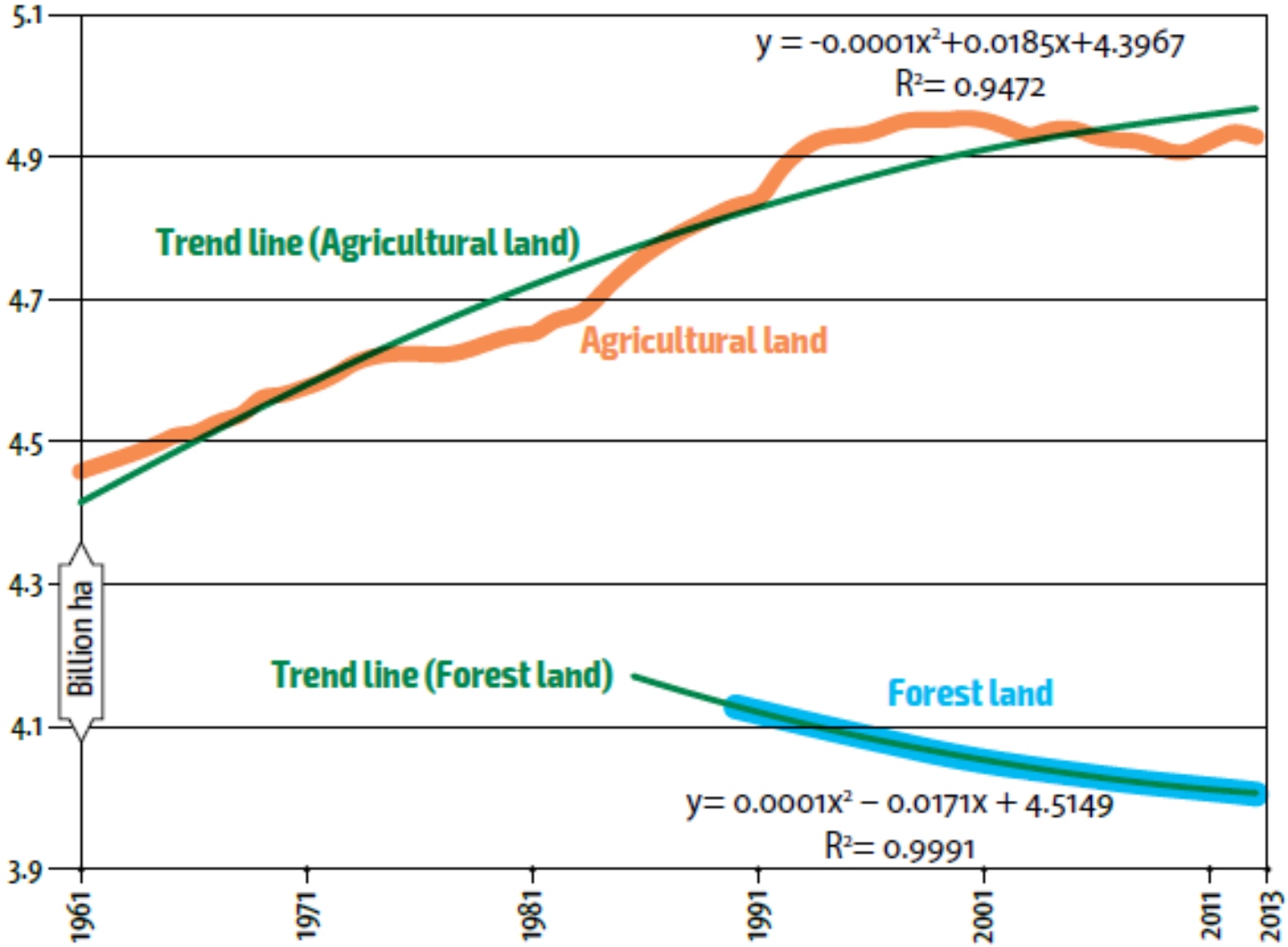
Percentage of net food imports in domestic food supply in total calories



Source: FAO Global Perspectives Studies, using 2011 food balance sheets from FAO, 2016a.

Environmental problems

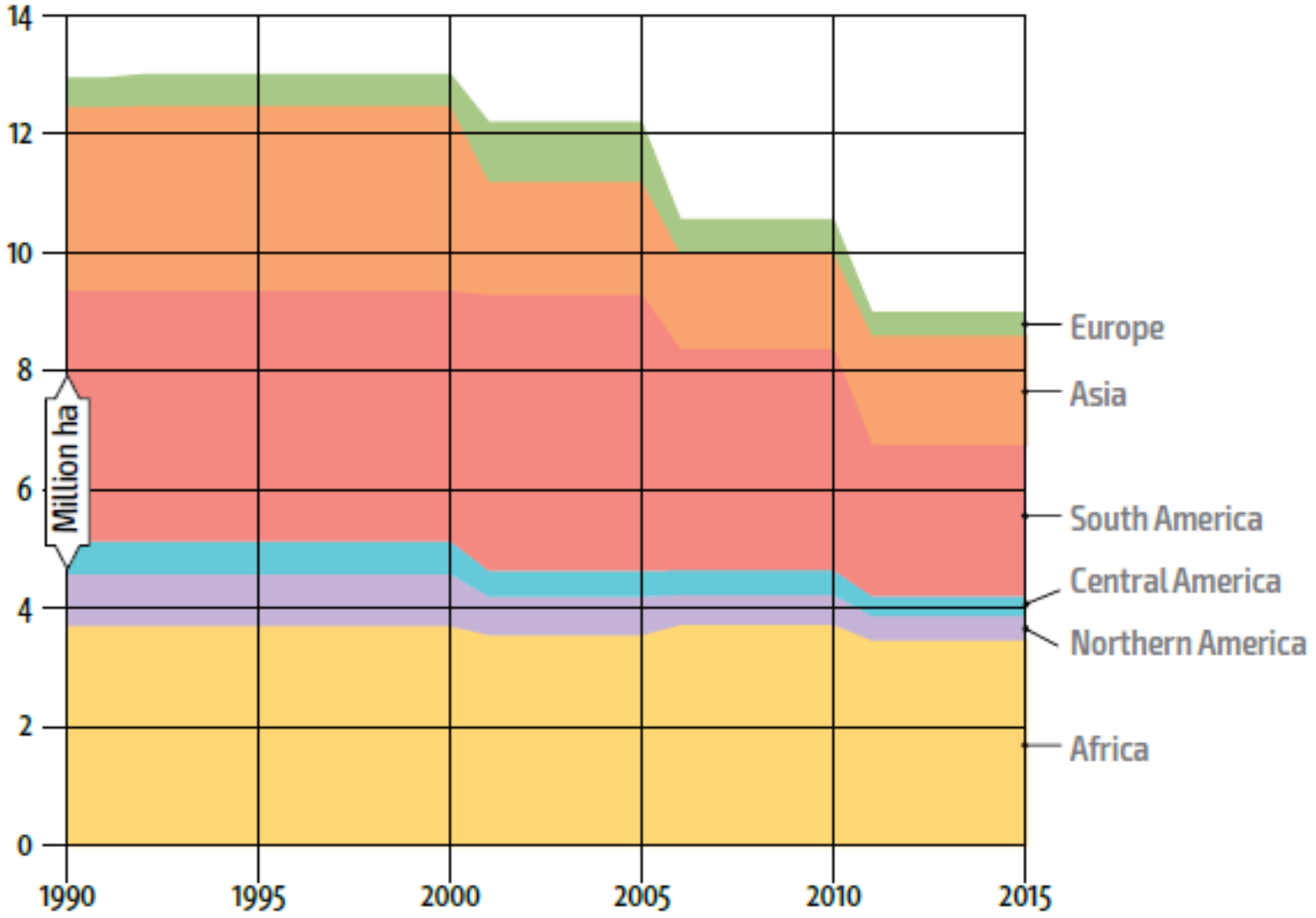
Agricultural and forest land use 1961–2013



Source: FAO Global Perspectives Studies calculations based on FAO, 2016b.

Environmental problems

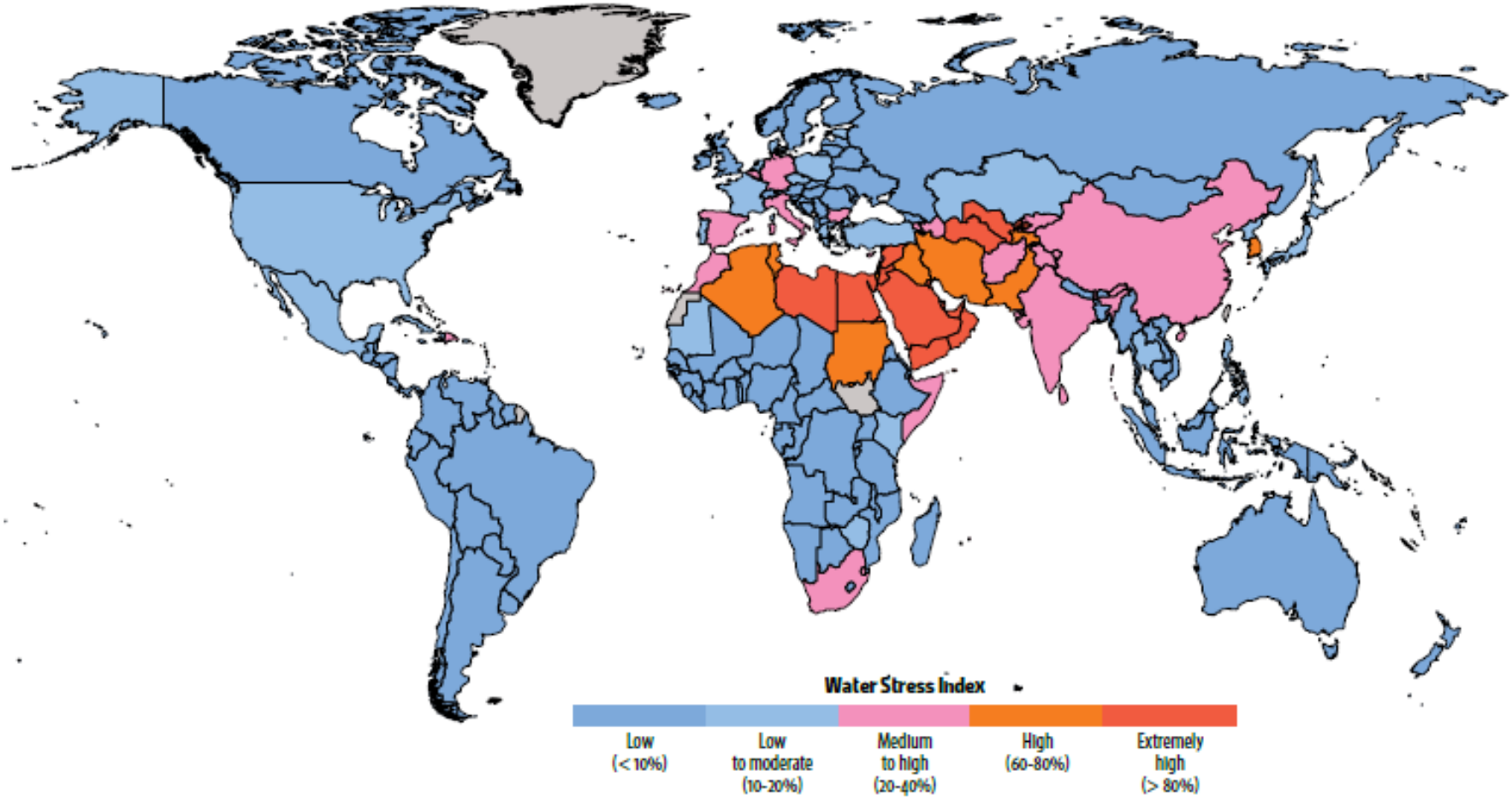
Net forests conversion, by region, 1990–2015



Source: FAO, 2016b.

Environmental problems

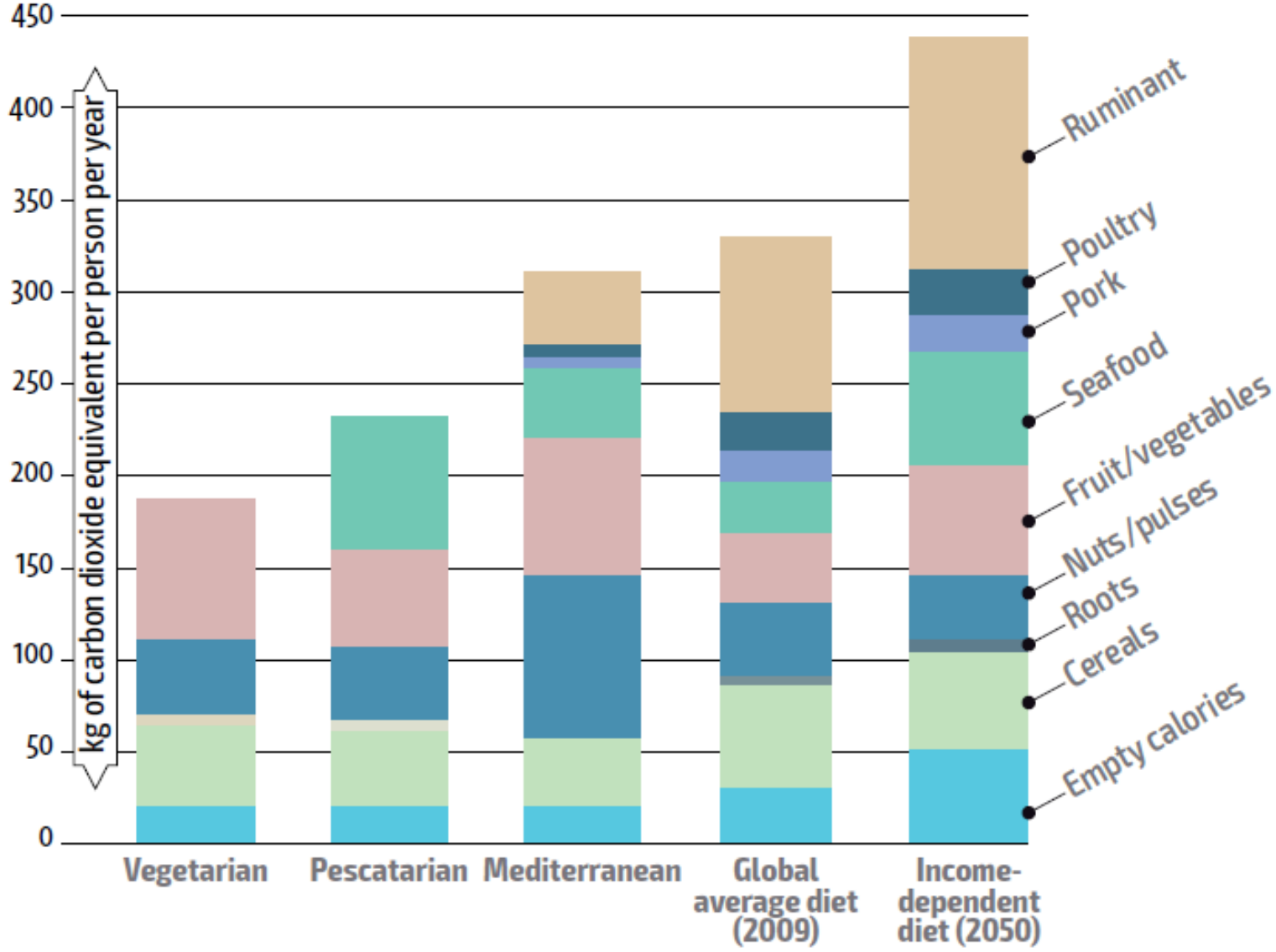
Freshwater withdrawals as a percentage of total renewable resources



Source: FAO, 2016a.

Environmental problems

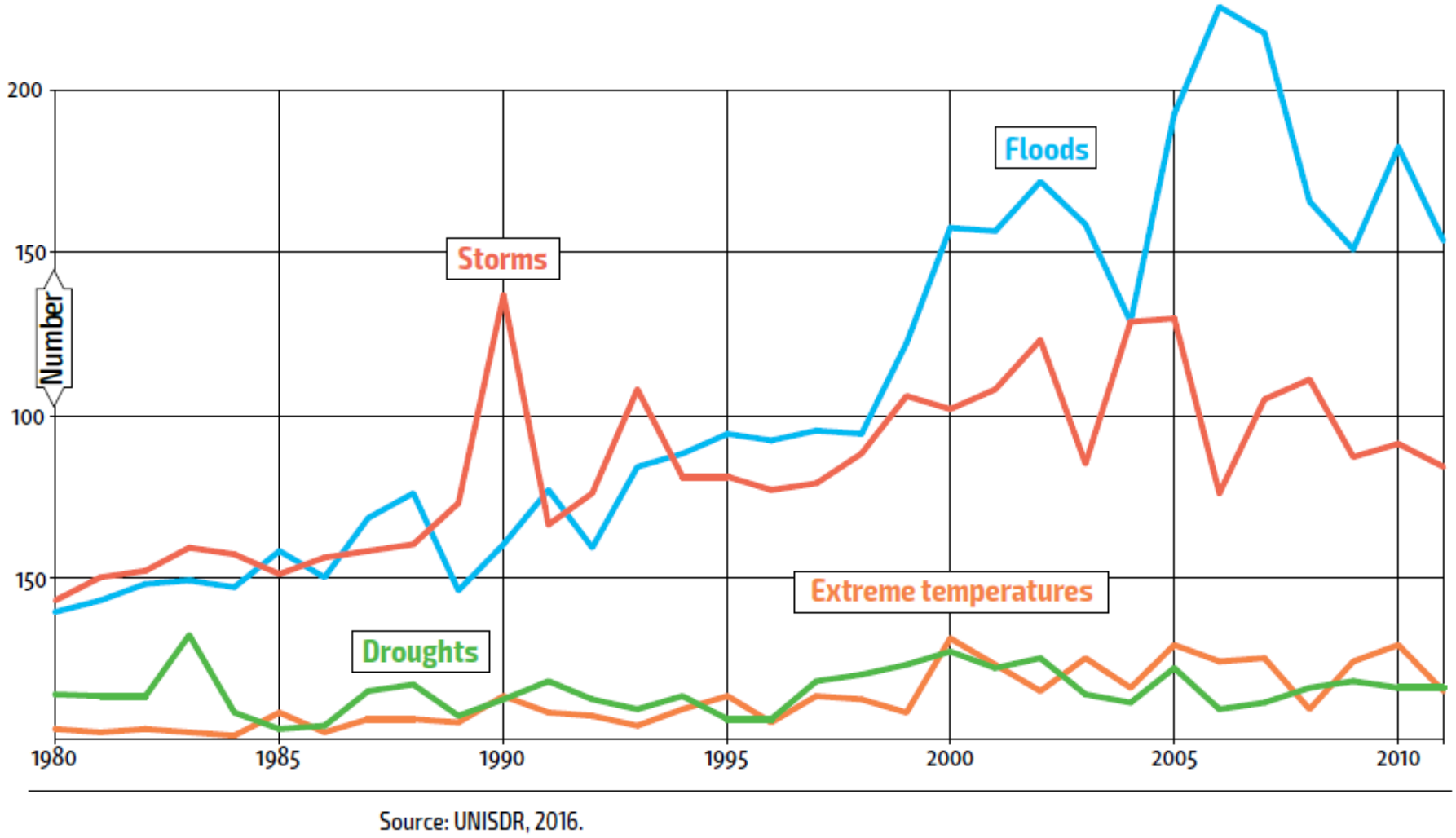
Greenhouse gas emissions by diet type



Source: IFPRI, 2015.

Environmental problems

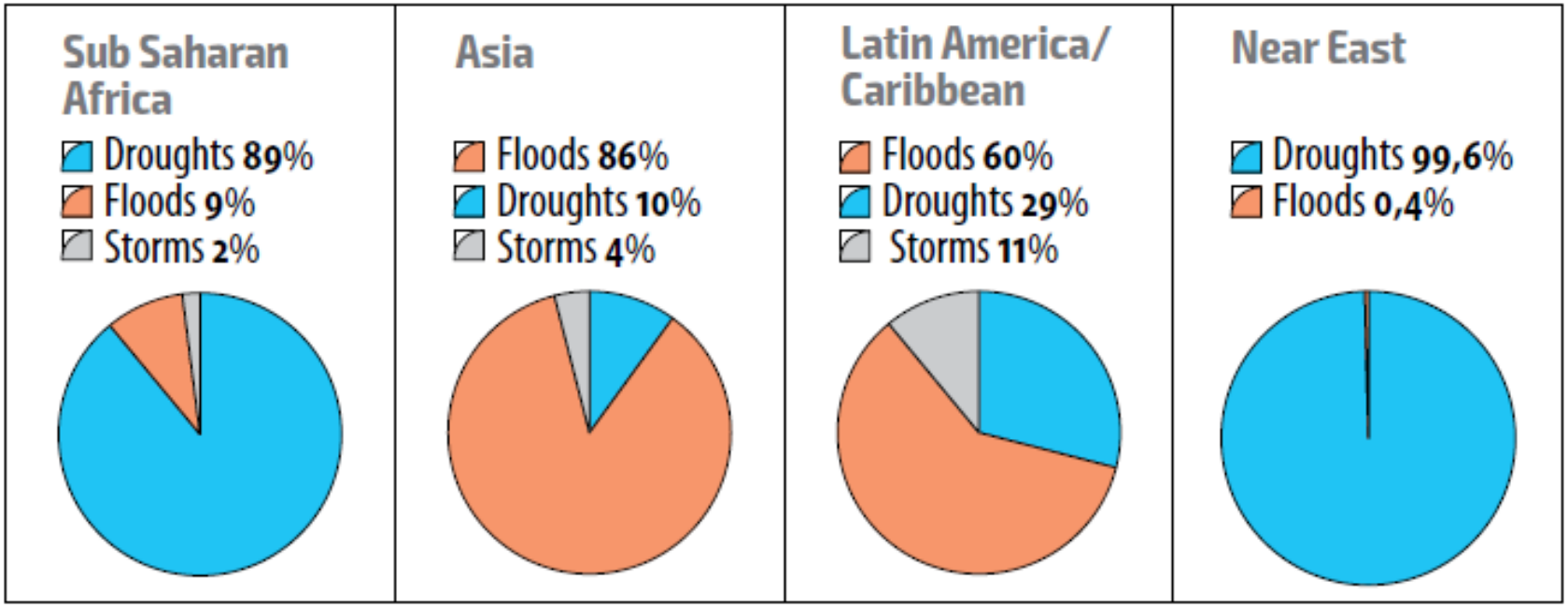
Climate-related disasters, 1980–2011



Source: UNISDR, 2016.

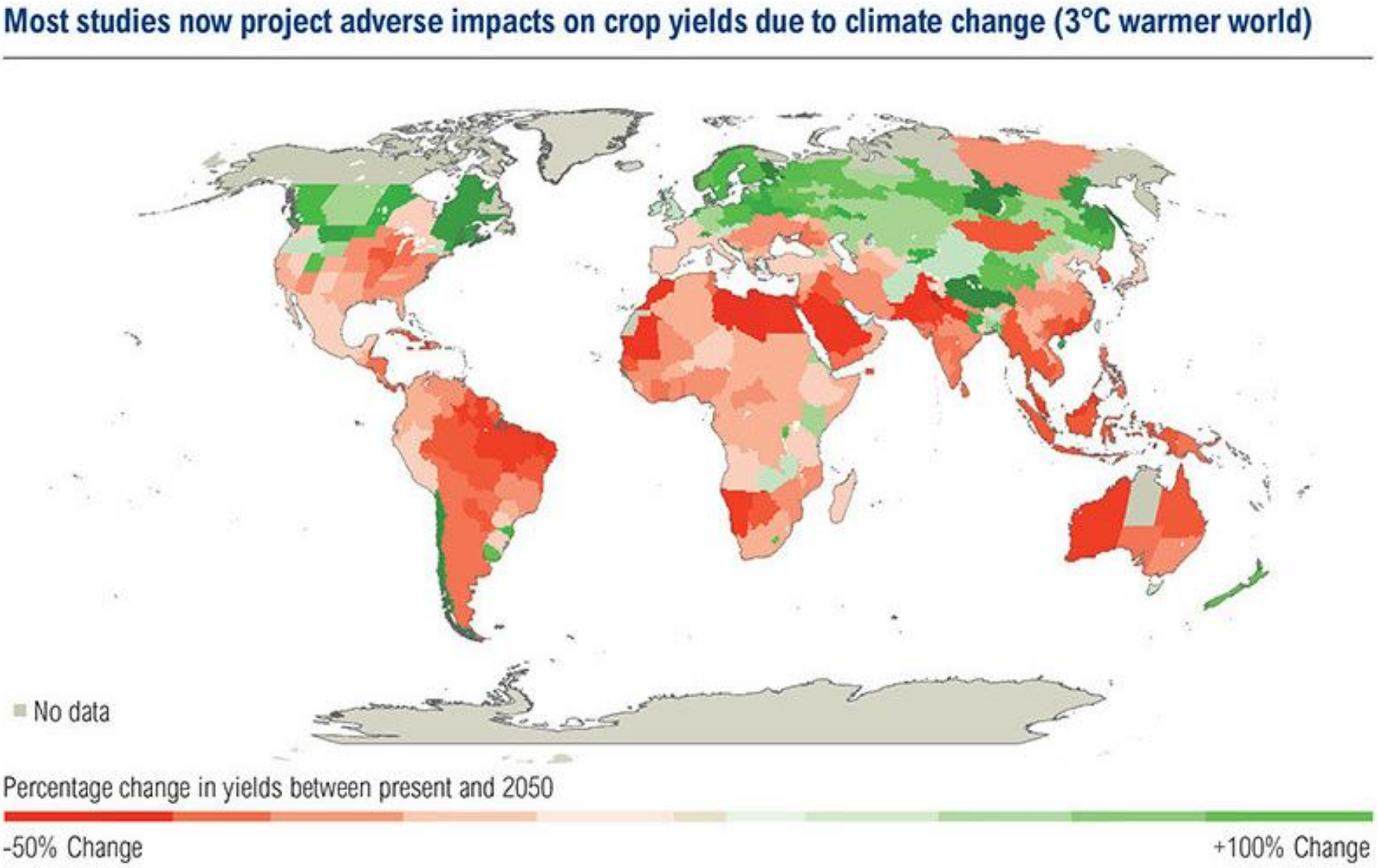
Environmental problems

Agricultural production losses after medium- to large-scale disasters in developing countries, by cause and region, 2003–2013



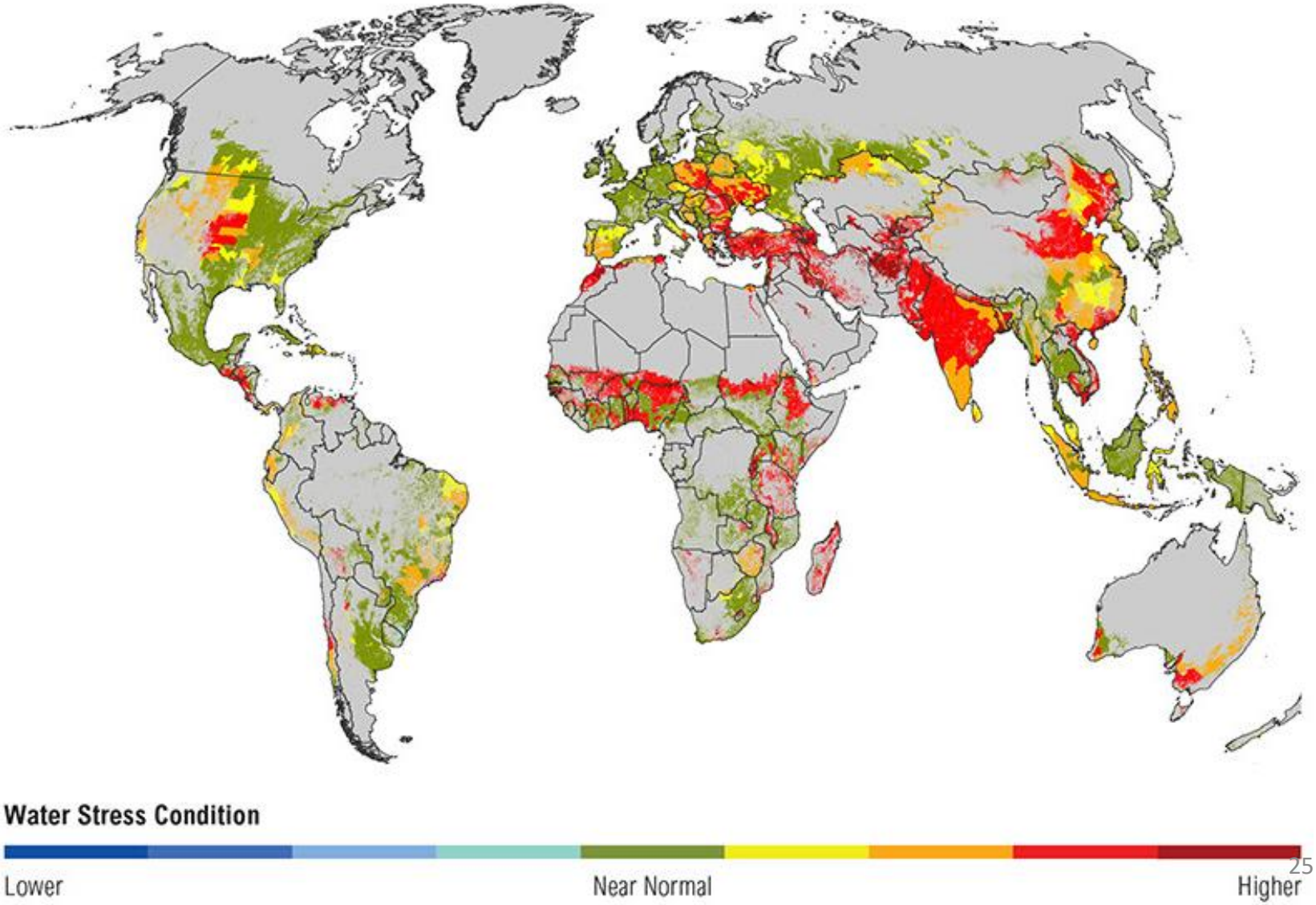
Source: FAO, 2015.

Environmental problems



Environmental problems

Water stress will increase in many agricultural areas by 2025 due to growing water use and higher temperatures (based on IPCC scenario A1B)



Sustainable development

- Sustainable development is the organizing principle for meeting human development goals while at the same time sustaining the ability of natural systems to provide the natural resources and ecosystem services upon which the economy and society depend.
- The desired result is a state of society where living conditions and resource use continue to meet human needs without undermining the integrity and stability of the natural system and sustainable development can be classified as development that meet the needs of the present without compromising the ability of the future generation.

Sustainable development

- The modern concept of sustainable development is derived mostly from the 1987 Brundtland Report.
- As the concept developed, it has shifted to focus more on economic development, social development and environmental protection for future generations.
- Formerly known as the World Commission on Environment and Development (WCED), the mission of the Brundtland Commission is to unite countries to pursue sustainable development together.

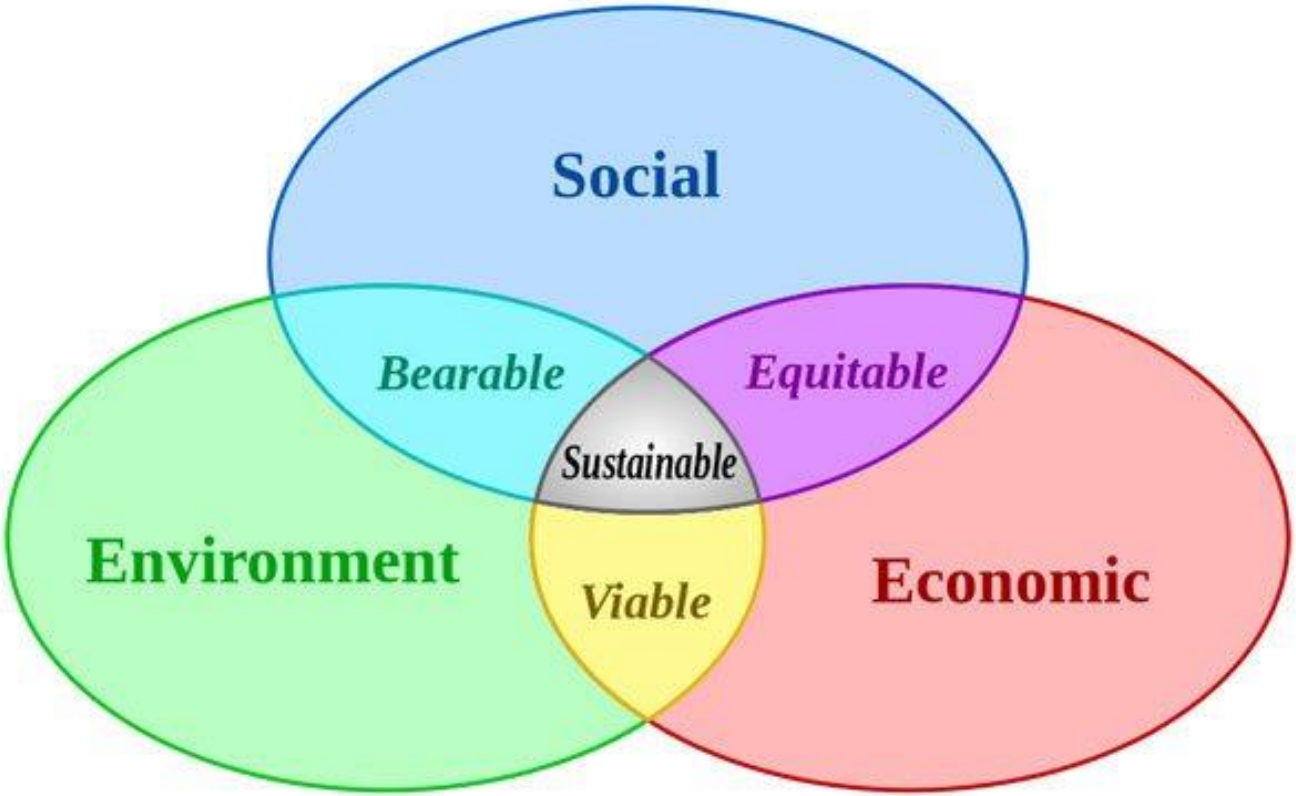
Sustainable development

- Gro Harlem Brundtland was the former Prime Minister of Norway and was chosen due to her strong background in the sciences and public health.
- At the time, the UN General Assembly realized that there was a heavy deterioration of the human environment and natural resources.

Sustainable development

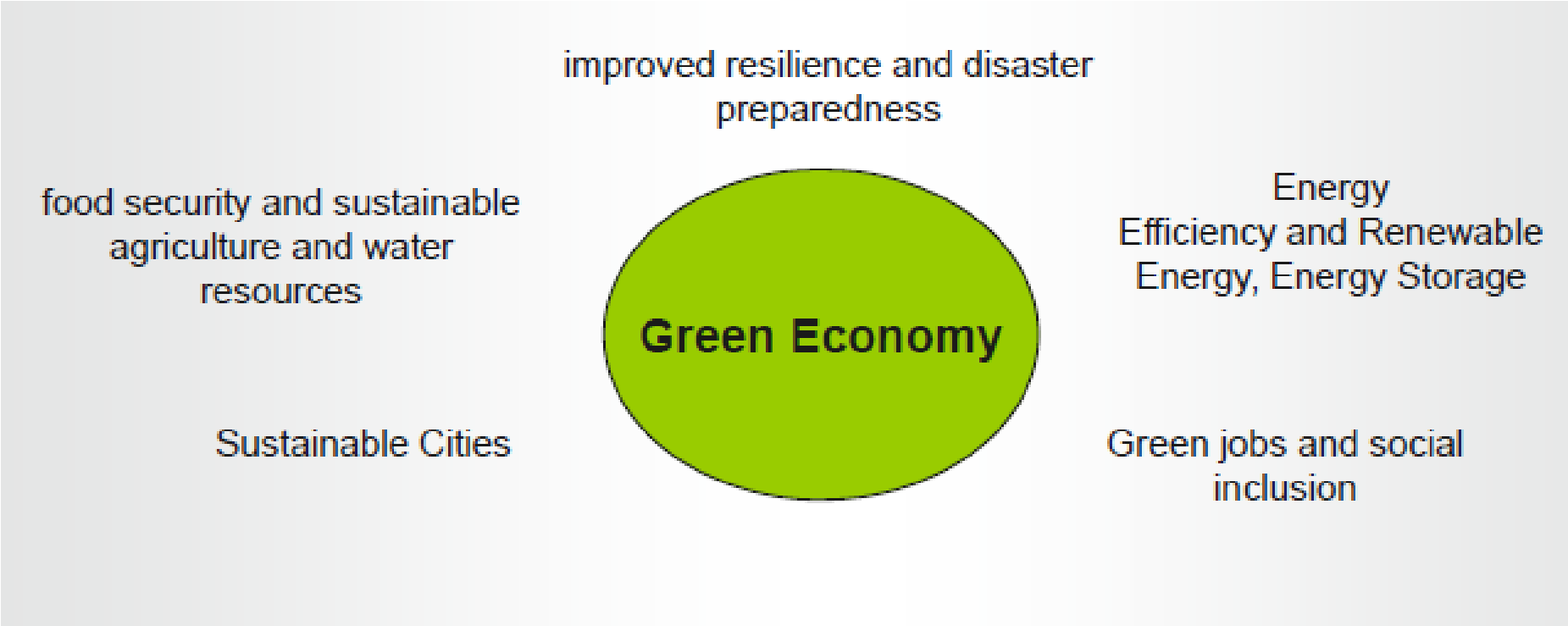
- To rally countries to work and pursue sustainable development together, the UN decided to establish the Brundtland Commission. The Brundtland Commission officially dissolved in December 1987 after releasing Our Common Future, also known as the Brundtland Report, in October 1987, a document which coined, and defined the meaning of the term "Sustainable Development".
- The organization Center for Our Common Future was started in April 1988 to take the place of the Commission.

Sustainable development



Green Economy

Green Economy: a way to sustainable development



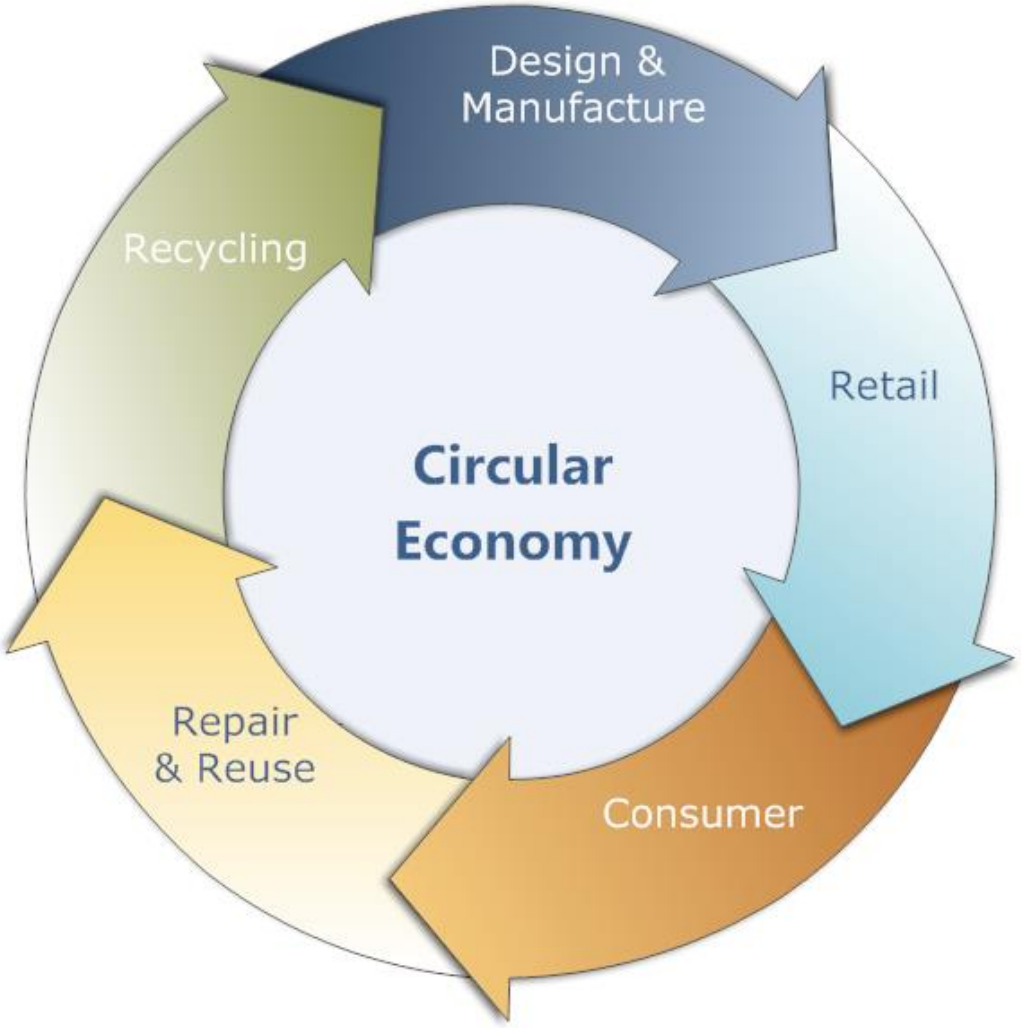
Circular Economy

A circular economy seeks to rebuild capital, whether this is financial, manufactured, human, social or natural.

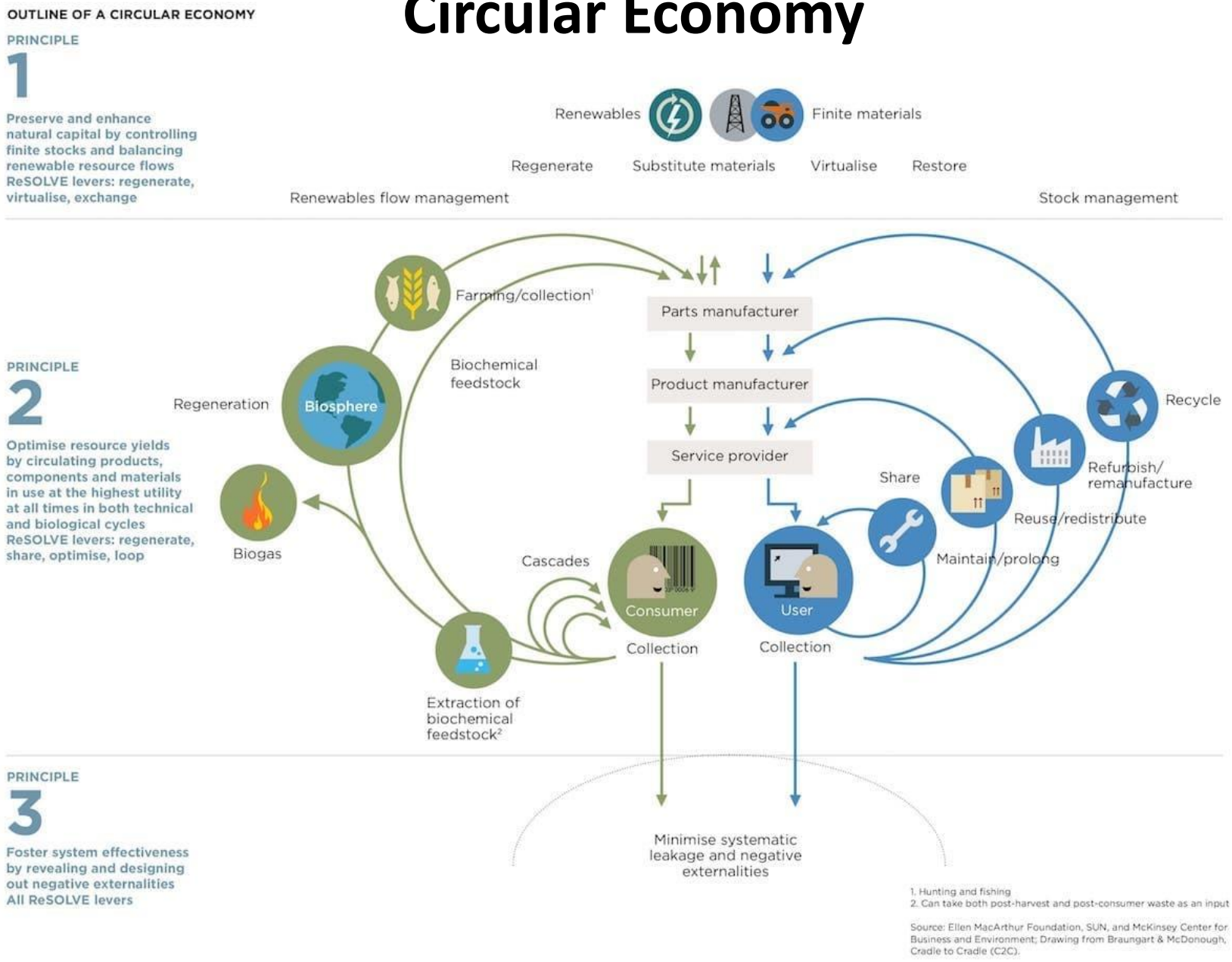
This ensures enhanced flows of goods and services.

The system diagram illustrates the continuous flow of technical and biological materials through the ‘value circle’.

Circular Economy



Circular Economy



Circular Economy

- **The concept of a circular economy**

In a circular economy, economic activity builds and rebuilds overall system health. The concept recognizes the importance of the economy needing to work effectively at all scales – for large and small businesses, for organizations and individuals, globally and locally.

Transitioning to a circular economy does not only amount to adjustments aimed at reducing the negative impacts of the linear economy. Rather, it represents a systemic shift that builds long-term resilience, generates business and economic opportunities, and provides environmental and societal benefits.

Circular Economy

- **Technical and biological cycles**

The model distinguishes between technical and biological cycles.

Consumption happens only in biological cycles, where food and biologically-based materials (such as cotton or wood) are designed to feed back into the system through processes like composting and anaerobic digestion.

These cycles regenerate living systems, such as soil, which provide renewable resources for the economy. Technical cycles recover and restore products, components, and materials through strategies like reuse, repair, remanufacture or (in the last resort) recycling.

Circular Economy

- **Origins of the circular economy concept**

The notion of circularity has deep historical and philosophical origins.

The idea of feedback, of cycles in real-world systems, is ancient and has echoes in various schools of philosophy.

It enjoyed a revival in industrialised countries after World War II when the advent of computer-based studies of non-linear systems unambiguously revealed the complex, interrelated, and therefore unpredictable nature of the world we live in – more akin to a metabolism than a machine.

Circular Economy

- **Origins of the circular economy concept**

With current advances, digital technology has the power to support the transition to a circular economy by radically increasing virtualisation, de-materialisation, transparency, and feedback-driven intelligence.

Circular Economy

- **Circular economy schools of thought**

The circular economy model synthesises several major schools of thought.

They include the functional service economy (performance economy) of Walter Stahel; the Cradle to Cradle design philosophy of William McDonough and Michael Braungart; biomimicry as articulated by Janine Benyus; the industrial ecology of Reid Lifset and Thomas Graedel; natural capitalism by Amory and Hunter Lovins and Paul Hawken; and the blue economy systems approach described by Gunter Pauli.

See also: https://www.ellenmacarthurfoundation.org/circular-economy/concept