



Food and Agriculture Organization  
of the United Nations

>> FAO Statistics Division

## The FAOSTAT Emissions Data

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# Rationale

- Provide global knowledge products that enable analysis of food and agriculture trends at regional and world level (e.g., IPCC AR6)
- Disseminate data and tools in support of country QAQC and validation processes for their National Greenhouse gas inventories (NGHGI)
- Enhance capacity of countries to collect, analyse and report data on food and agriculture and food systems, consistently with FAO, UNFCCC and SDG processes

# Defining Food Systems within Food and Agriculture

## Food Systems View



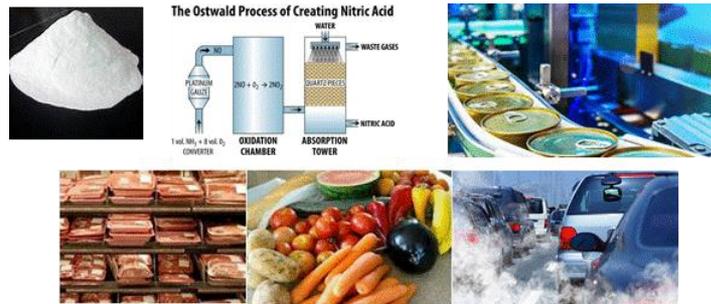
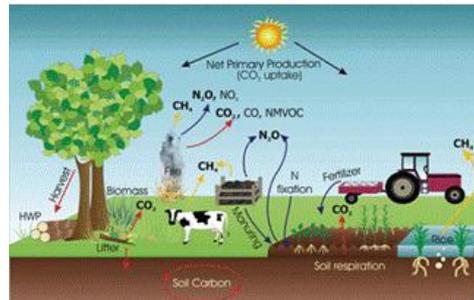
Farm gate



Land use change



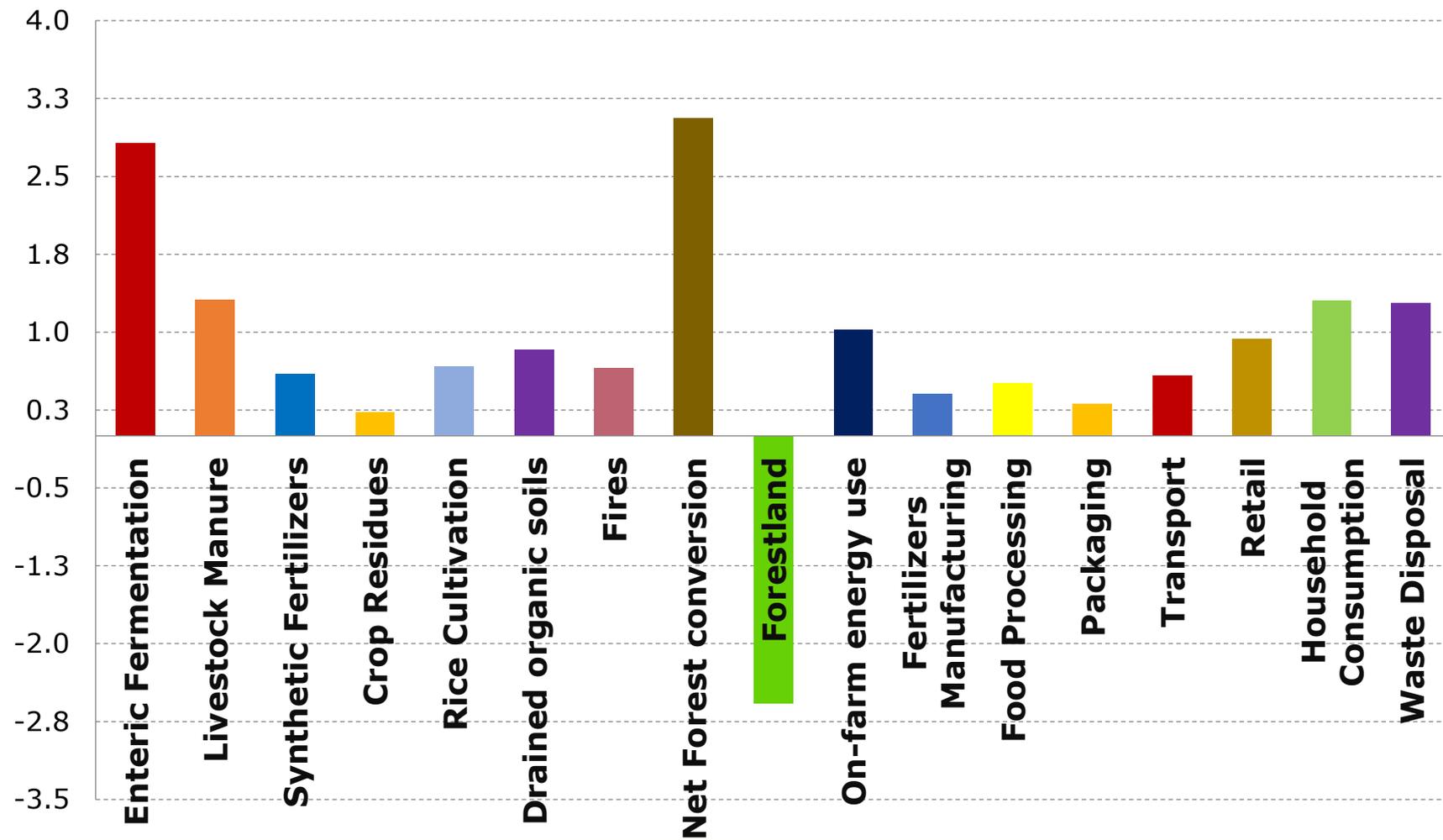
Pre- and post-production



# FAOSTAT Emissions Shares Domain stats

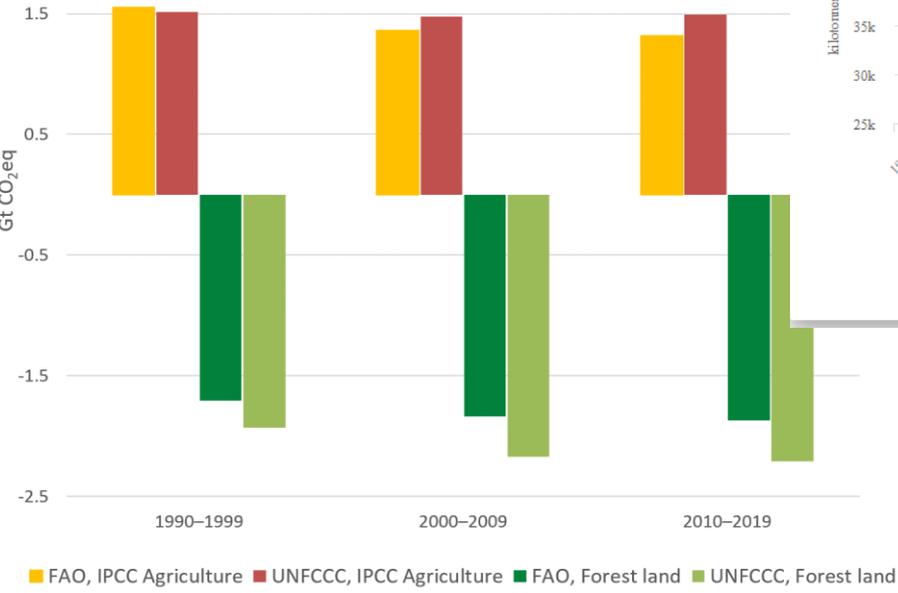
	Emissions and Shares
<b>Greenhouse gas</b>	CO <sub>2</sub> ; N <sub>2</sub> O; CH <sub>4</sub> ; F-gases
<b>Spatial Coverage</b>	194 Countries and 36 Territories
<b>Temporal Coverage</b>	1990-2019
<b>Thematic Coverage</b>	All IPCC sectors, all food system processes

# Gt CO<sub>2</sub>e emissions/removals

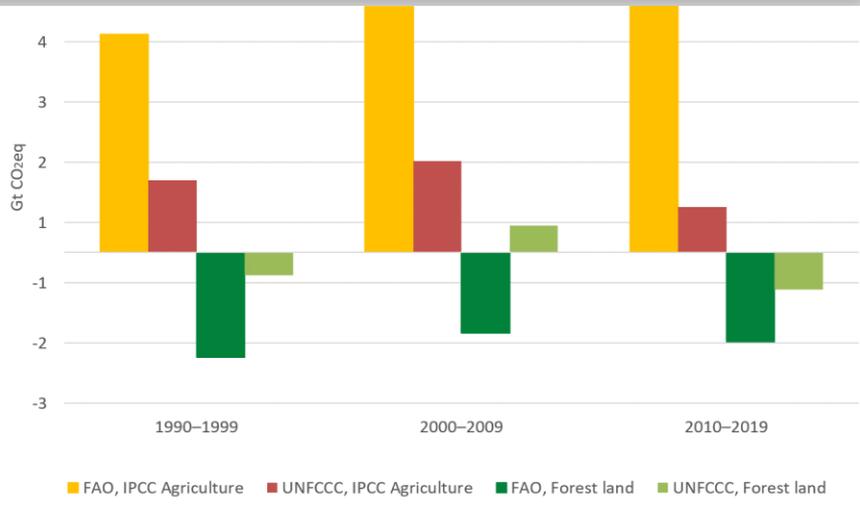
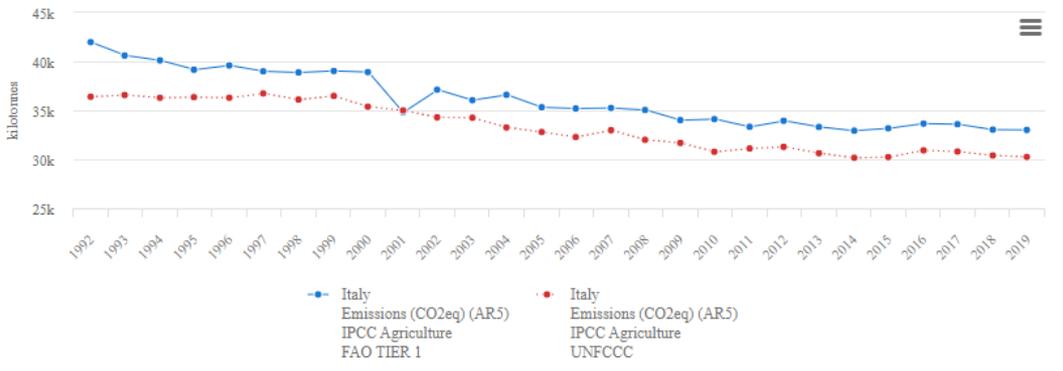


# Comparing Global Numbers FAO/UNFCCC

## Annex I



Emissions (CO<sub>2</sub>eq (AR5)) IPCC Agriculture + (Total)  
1992 - 2019



Source: FAOSTAT, 2021.

Source: FAOSTAT, 2021.

# Annex I and Non-annex I emissions and shares

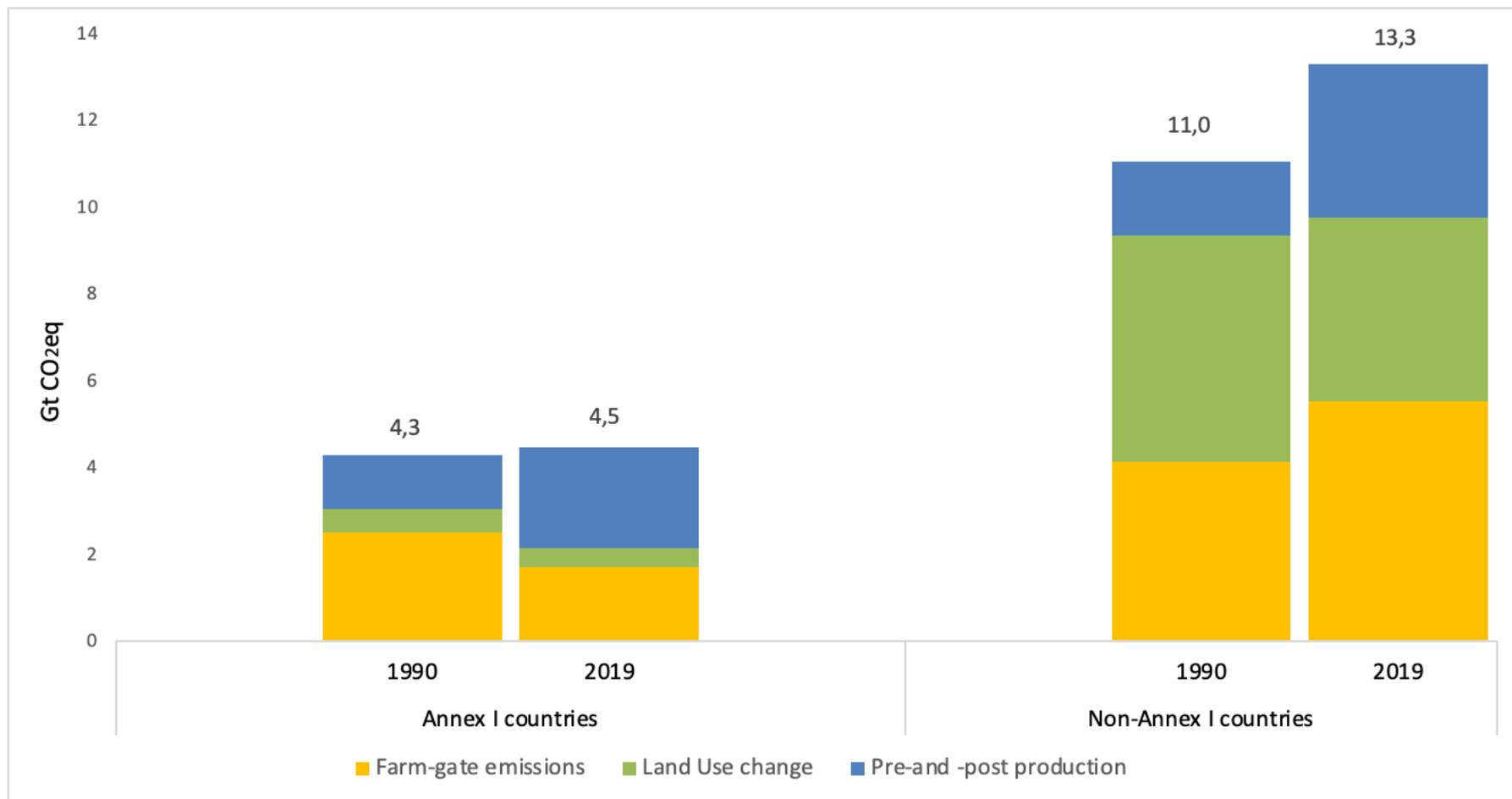
Food shares:

24%

27%

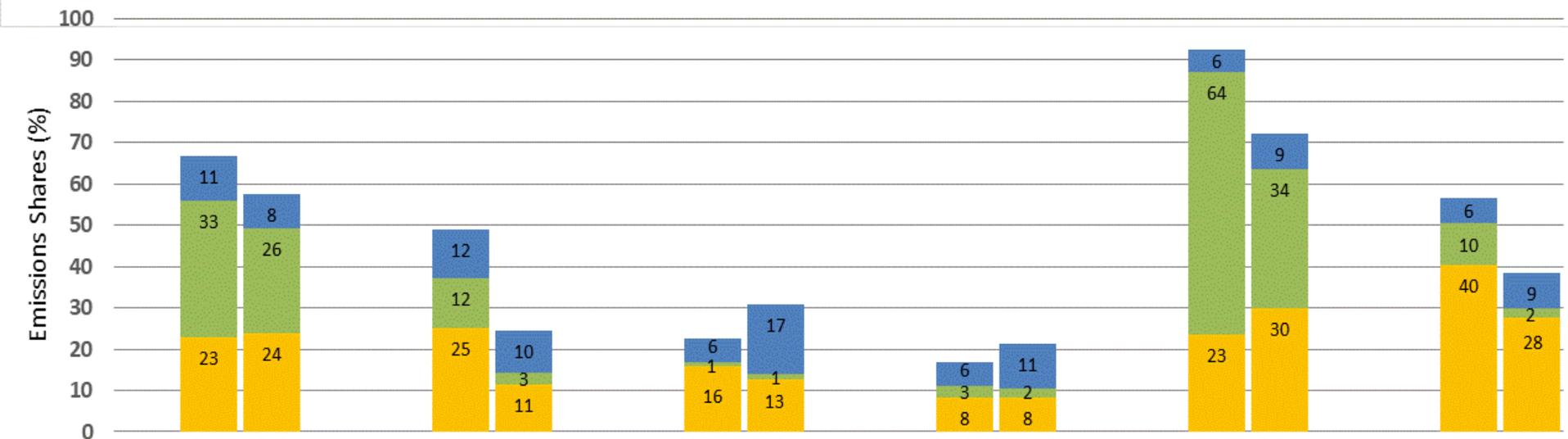
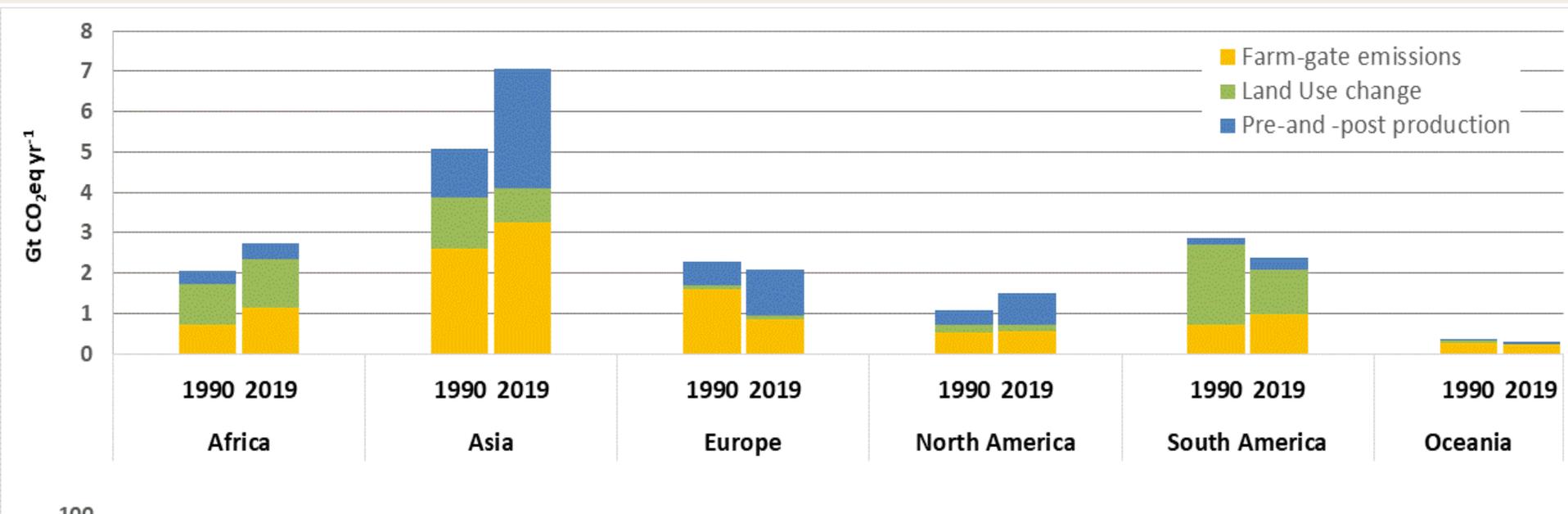
60%

40%

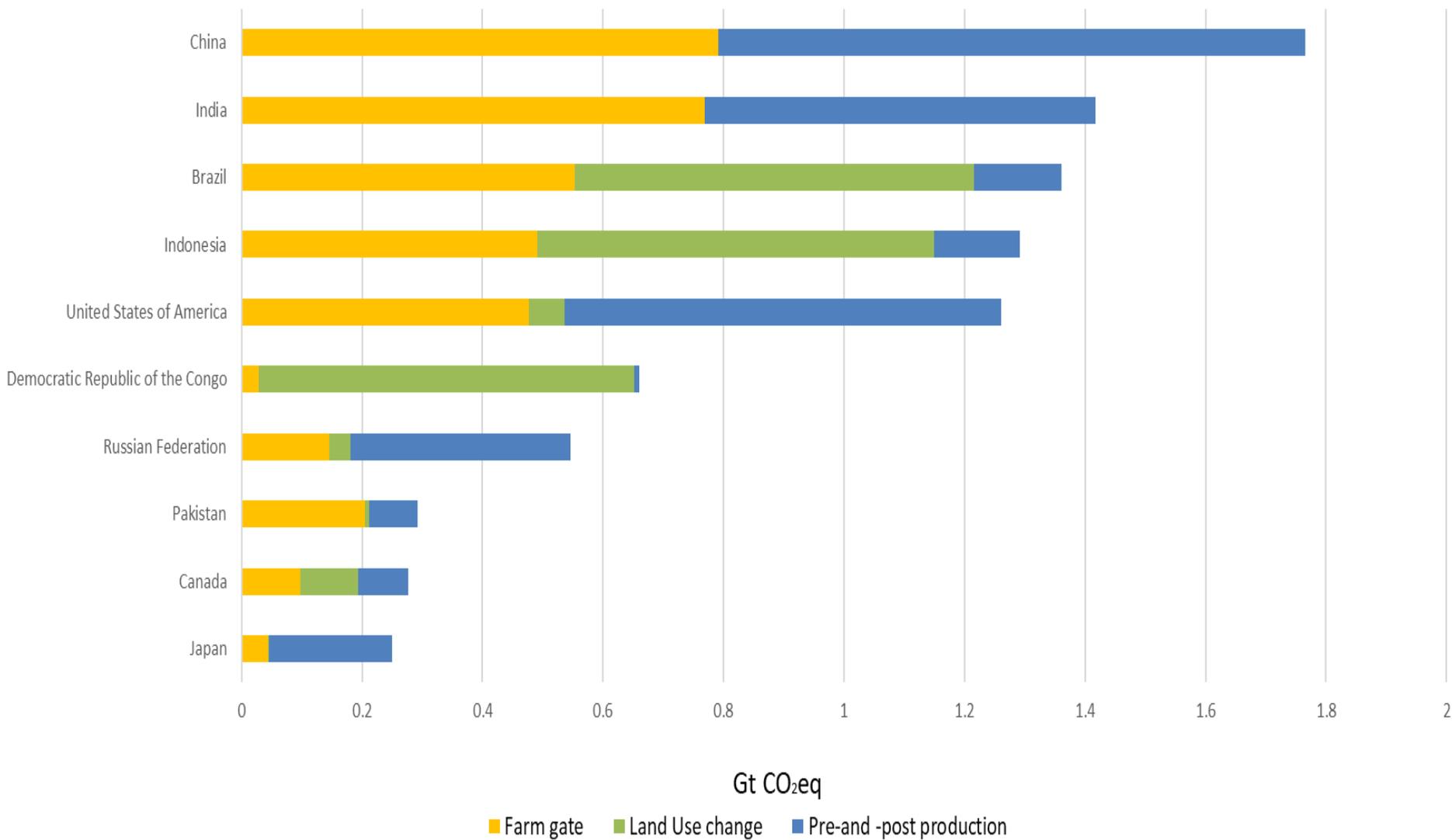


Annex I to the UNFCCC: developed countries; non-Annex I: developing

# Regional trends in emissions shares, 1990-2019



# Top ten countries food systems emissions, 2019





## Concluding Remarks and Discussion Points

- FAOSTAT data contribute to global reporting assessments, including IPCC Assessment Reports
- FAO data can be used as source of data when national data are not available.
- FAOSTAT data are already used by many countries (including EU-27) in climate reporting, in particular to support quality assurance and quality control processes, as recommended by IPCC.
- FAOSTAT has a user friendly data platform freely available to users worldwide.



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# Thank you!

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Source: FAO, 2020





## FAOSTAT Data Briefs:

### GHG AFOLU:

<https://www.fao.org/3/cb5293en/cb5293en.pdf>

### Forest Carbon Fluxes:

<https://www.fao.org/3/cb1578en/cb1578en.pdf>

### Food Systems GHG:

<https://www.fao.org/3/cb7514en/cb7514en.pdf>

### Land use:

<https://www.fao.org/3/cb6033en/cb6033en.pdf>

### Land Use and Cover:

<https://www.fao.org/3/cb2860en/cb2860en.pdf>



# Methods: three steps to quantifying FS emissions

	IPCC (2006) Guidelines: <b>Emissions = EF * AD * fs</b>
<b>AD: Activity Data</b>	FAO, UNSD Energy and Industry, IEA, FAO, World Bank 1990-2019 Examples: fossil fuel use by type in manufacturing, households, waste disposal, etc.
<b>EF: Emission Factors</b>	IPCC (2006), IEA, Examples: grid emission factors, combustion coefficients
<b>Fs = Food Shares</b>	IPCC (2006; 2019), EU-JRC, Literature search from academia and government, FAO sources (2011)

# Comparison to UNFCCC reporting



- Annex I data are complete (legal requirements). Close agreement with FAO



- Non-Annex I data have significant gaps—still good agreement with FAO at individual level



- FAOSTAT emissions database is increasingly used internationally as a useful tool for QA/QC in countries