



Food and Agriculture Organization
of the United Nations



MARRAKECH COP22|CMP12
UN CLIMATE CHANGE CONFERENCE 2016

WATER SCARCITY, AGRICULTURE, FOOD SYSTEMS AND CLIMATE CHANGE

Olcay Ünver
Land & Water Division
Food and Agriculture Organization – FAO



Food and Agriculture
Organization of the
United Nations

Trends: on the rise

Population: over 9 billion by 2050 (UN)

Food demand: 49% by 2050 (FAO)

Water demand: 50% by 2050 (OECD)

Demand-availability gap: %40 by 2030
(WRG2030)

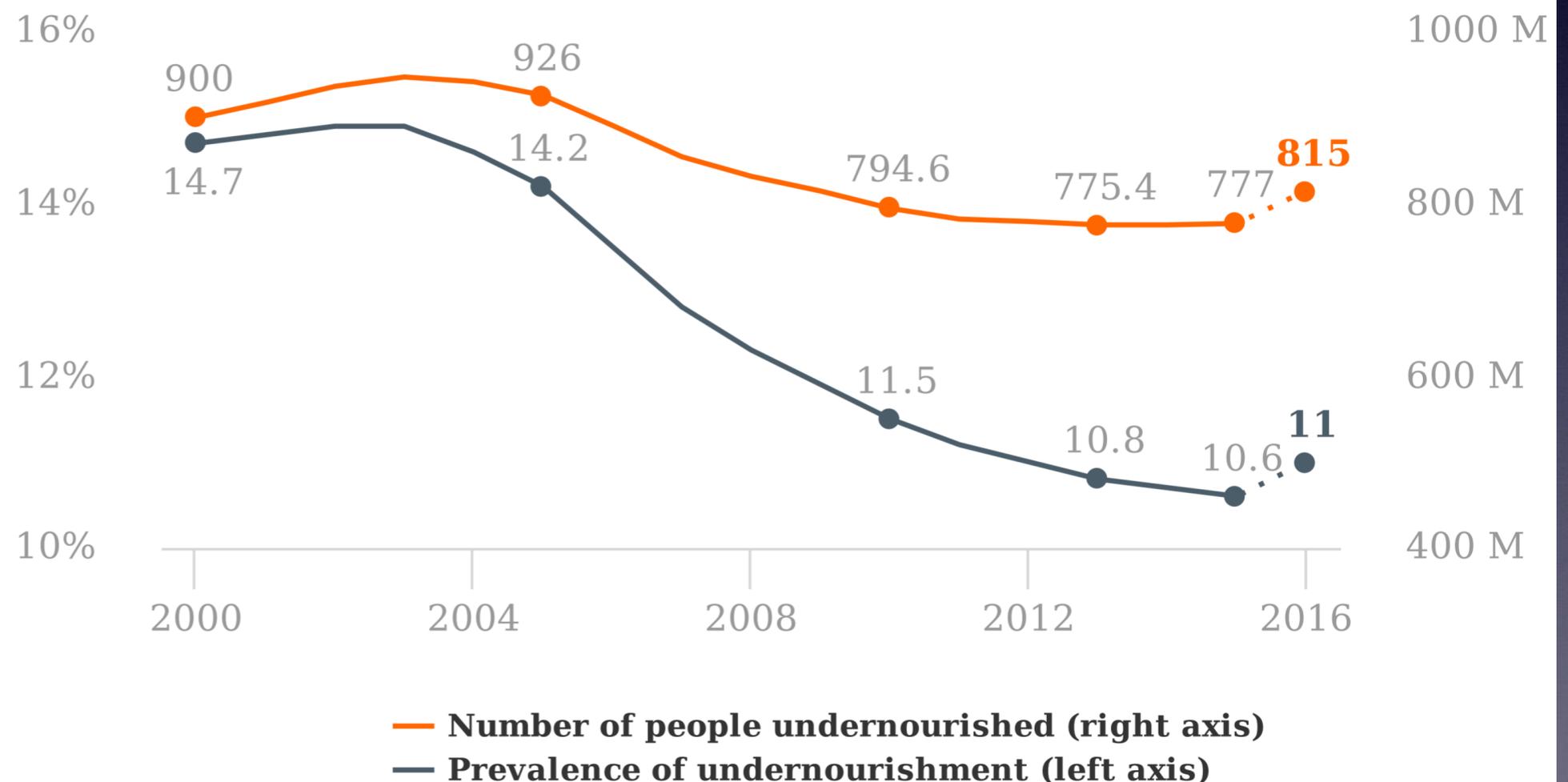
Irrigation: 11% by 2050 (FAO)

Also on the rise: hunger



Food and Agriculture
Organization of the
United Nations

The number of people undernourished in the world has been on the rise since 2014, reaching an estimated 815 million in 2016



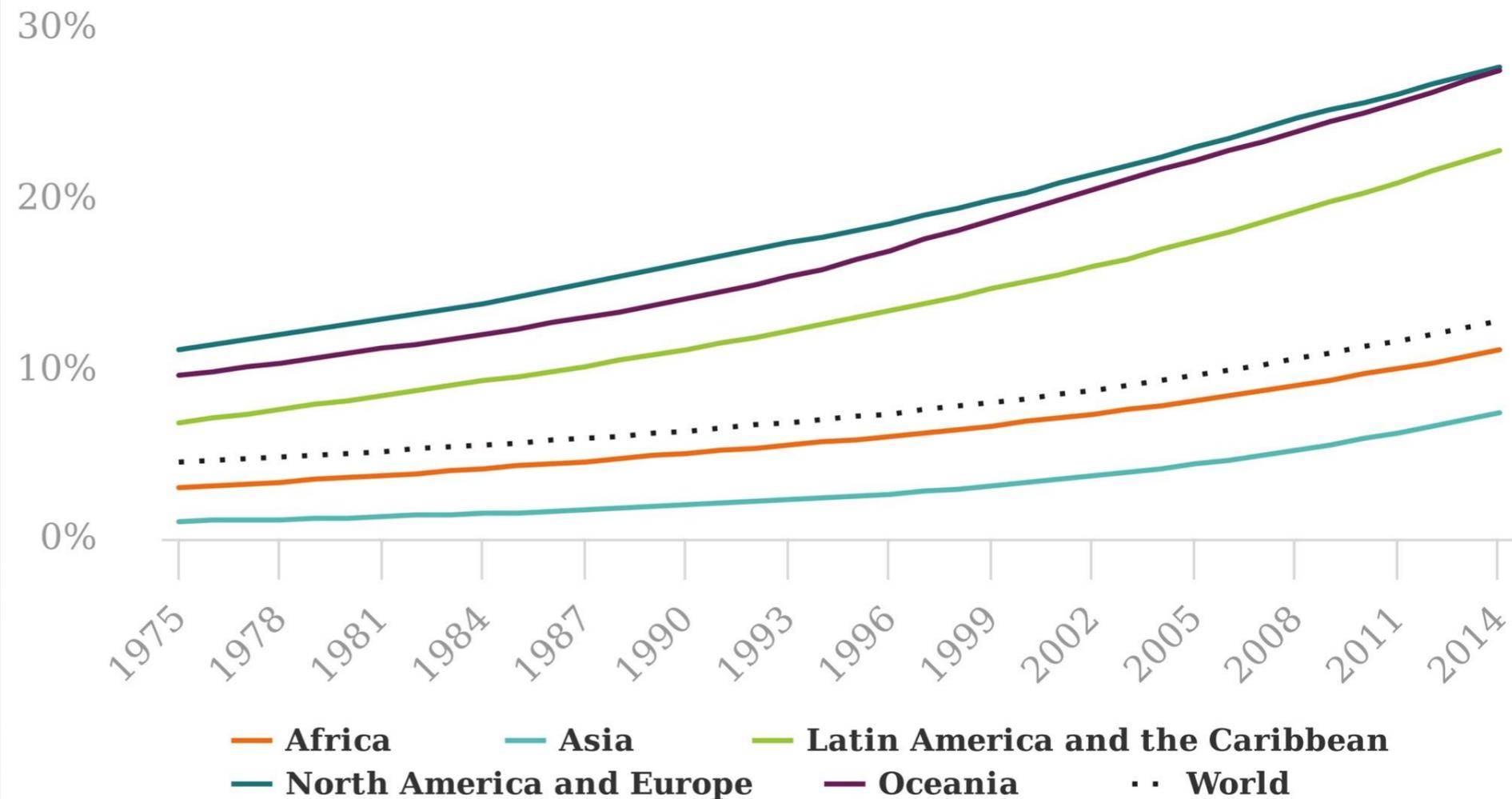
NOTE: Prevalence and number of undernourished people in the world, 2000-2016. Figures for 2016 are projected estimates. SOURCE: FAO.

Also on the rise: obesity



Food and Agriculture
Organization of the
United Nations

Adult obesity is rising everywhere at an accelerated pace



NOTES: Prevalence of obesity in adults 18 years and over, 1975-2014.

SOURCE: WHO/NCD-RisC and WHO Global Health Observatory Data Repository, 2017.



Food and Agriculture
Organization of the
United Nations

A degraded resource base

One third of all soils have been degraded.

Half of the topsoil on the planet has been lost in
last 150 years

The widespread insect biomass decline is alarming

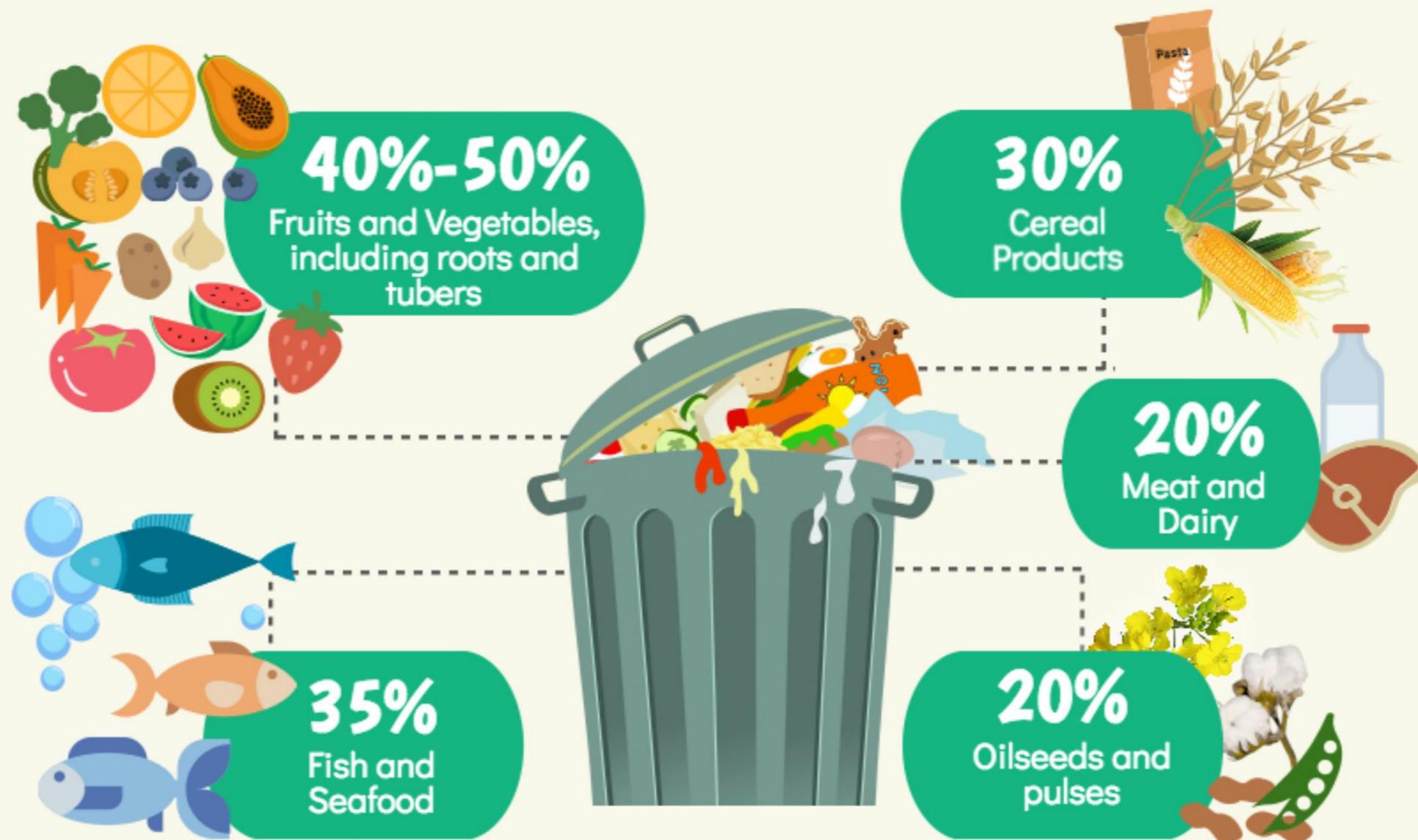


Huge losses in food value chain

Annual loss and waste along the food chain

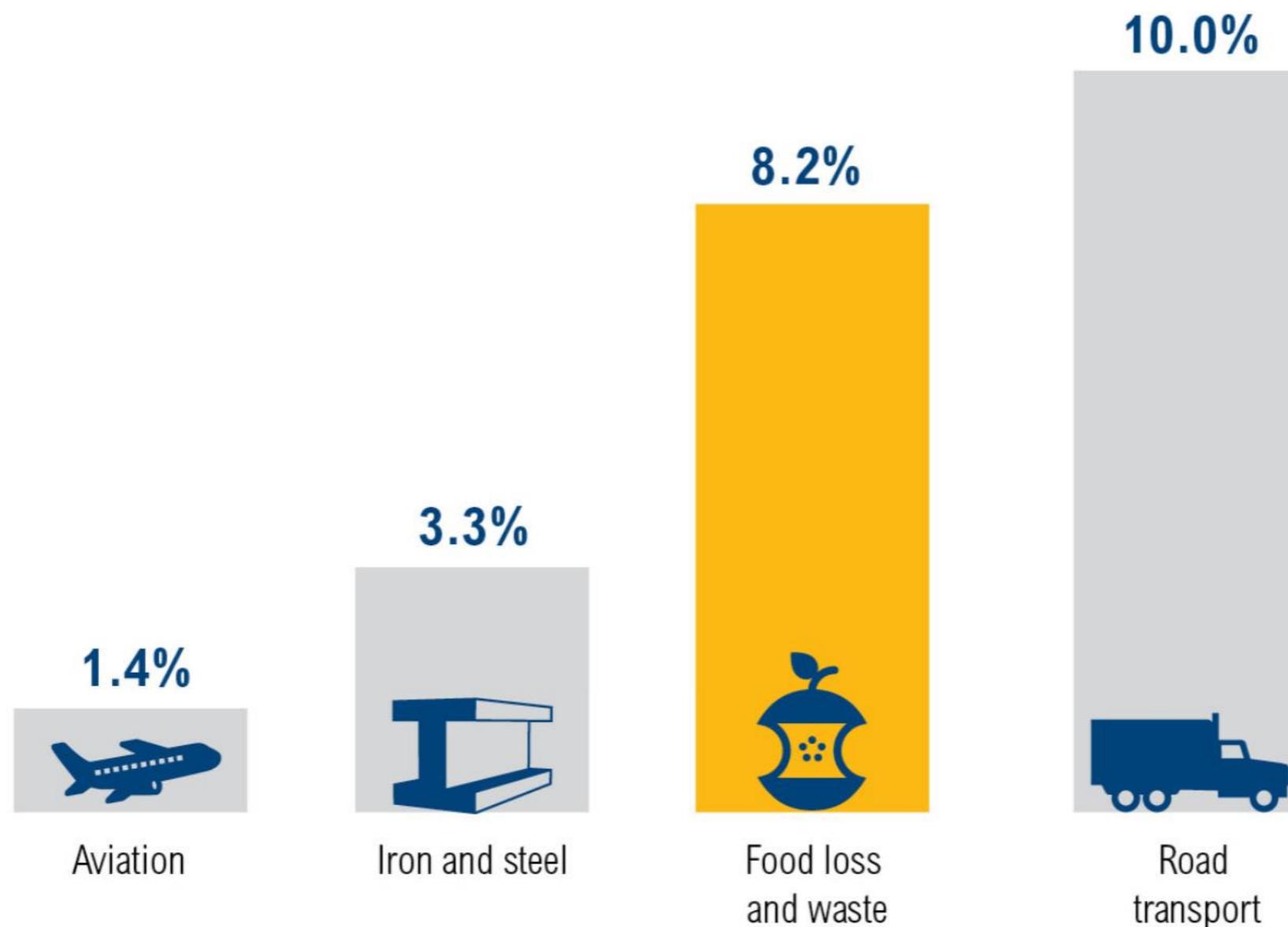
(occurring during harvest, post-harvest, distribution, processing and/or distribution)

source: FAO



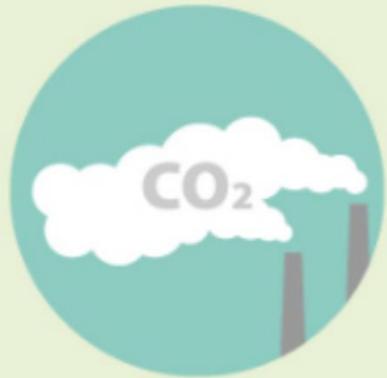


Greenhouse Gas Emissions from Food Loss and Waste Approach the Levels from Road Transport





Environmental impact of food loss and waste



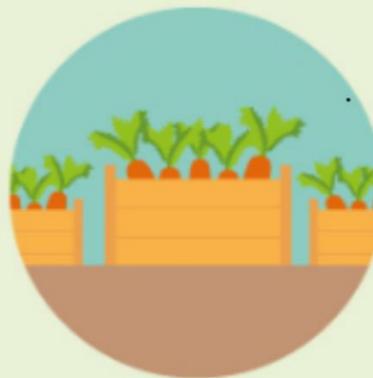
Food loss and waste is responsible for about **8%** of global **greenhouse gas (GHG) emissions**



Volume of **water** used to produce lost or wasted food is equivalent to three times the volume of **Lake Geneva**



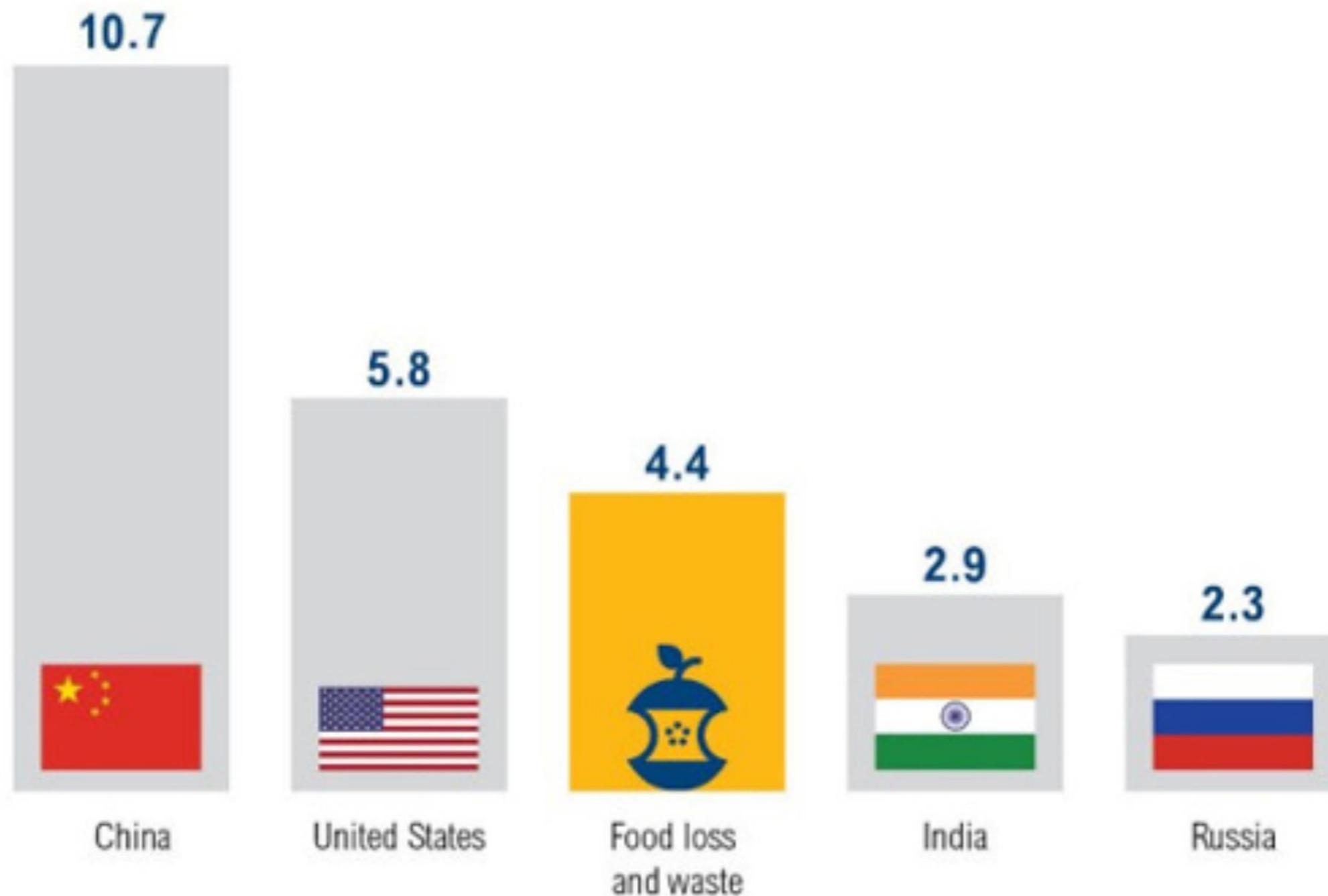
Nearly **30%** of the world's **agricultural land** is currently occupied to produce food that is ultimately never consumed



If food use and **distribution** is better managed, **14%** of all **GHG emissions** from **agriculture** could be avoided by 2050



If Food Loss and Waste Were its own Country, it Would Be the Third-Largest Greenhouse Gas Emitter





Food and Agriculture
Organization of the
United Nations

Water and agriculture as part of the solution

70% of global withdrawals

24% GHG emissions

Strong mitigation and adaptation potential

Water linkages to crop production, livestock,
aquaculture/fisheries, forestry

Opportunities in production, processing and
consumption.



Reason for optimism

- Sustainable Development Goals
- Paris Climate Accord
- CoP (UNCCD, CBD...) and other commitments

Voluntary Guidelines for Sustainable Soil Management



itps
INTERGOVERNMENTAL TECHNICAL PANEL ON SOILS



GLOBAL INITIATIVE ON FOOD LOSS AND WASTE REDUCTION



save FOOD
solutions for a world where

2014

GLOBAL FOOD LOSSES AND FOOD WASTE

EXTENT, CAUSES AND PREVENTION

RESILIENT LIVELIHOODS

DISASTER RISK REDUCTION FOR FOOD AND NUTRITION SECURITY

2013 EDITION



FAO WATER REPORTS

38

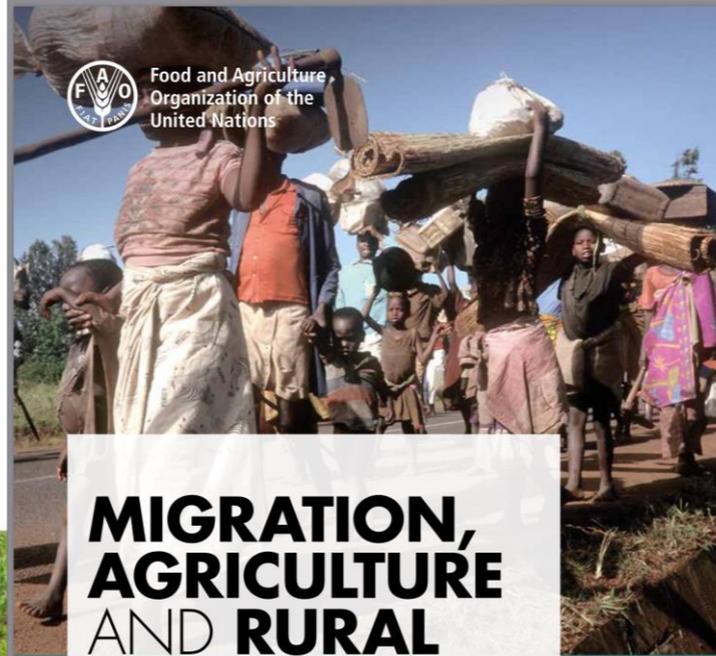
FAO STRATEGY ON CLIMATE CHANGE

ROME, JULY 2017



MIGRATION, AGRICULTURE AND RURAL DEVELOPMENT

Addressing the root causes of migration and harnessing its potential for development



MAINSTREAMING ECOSYSTEM SERVICES, BIODIVERSITY, AGRICULTURE AND MANAGED FORESTS IN EAST AFRICA

TECHNICAL GUIDANCE DOCUMENT

BIODIVERSITY & ECOSYSTEM SERVICES

Coping with water scarcity An action framework for agriculture and food security





Food and Agriculture Organization
of the United Nations



MARRAKECH COP22 | CMP12
CONFERENCE 2016

GLOBAL FRAMEWORK ON WATER SCARCITY IN AGRICULTURE (WASAG)





Food and Agriculture Organization of the United Nations

October 2016

Endorsed by the Summit of Water Ministers at the **Second World Irrigation Forum** in Chiang Mai,



November 2016

The **Global Framework on Water Scarcity** was officially launched during the **UNCCC COP22** in



January 2017

Endorsed by 83 Ministers of Agriculture during the 9th Berlin Agriculture Ministers' Conference at the **Global Forum for Food and Agriculture (GFFA)**, and the **G20 Agriculture Ministers' Declaration 2017** in Bonn,



G20 GERMANY 2017
HAMBURG

September 2017

Endorsed by the **UNCCD COP 13** as a knowledge-sharing partnership to help countries develop their drought preparedness





Food and Agriculture
Organization of the
United Nations

WASAG Working Groups

- ✓ **Water and Migration**
- ✓ **Drought Management**
- ✓ **Financing Mechanisms**
- ✓ **New: Water and Nutrition**



- ✓ **More than 150 projects going on** Around 150 existing projects identified
- ✓ **Work plan with 50+ project proposals**
- ✓ **Engagement with different relevant sectors**
- ✓ **International Seminar on Drought Preparedness:
19 June 2017, Rome**
- ✓ **Presented at**
- ✓ **WWW2017 Stockholm, August**
- ✓ **UNCCD's COP 13 Ordos, China,
September**
- ✓ **COP23, Bonn, November**



Food and Agriculture Organization
of the United Nations



MARRAKECH COP22|CMP12
UN CLIMATE CHANGE CONFERENCE 2016

WATER SCARCITY, AGRICULTURE, FOOD SYSTEMS AND CLIMATE CHANGE

Olcay Ünver
Land & Water Division
Food and Agriculture Organization – FAO