

UNITED NATIONS EXPERT GROUP MEETING ON  
POPULATION, FOOD SECURITY, NUTRITION  
AND SUSTAINABLE DEVELOPMENT

Growth and consumption trends, projections of food and agriculture  
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**Food and Agriculture Organization  
of the United Nations**

*Will global food and agricultural systems be able to feed humanity sustainably and satisfactorily in the future, while also accommodating additional non-food agricultural demand?*



## Challenges for food stability and availability

1. Sustainably improving agricultural productivity to meet increasing demand
2. Ensuring a sustainable natural resource base
3. Addressing climate change and intensification of natural hazards
4. Preventing transboundary and emerging agriculture and food system threats



## Challenges for access and utilization

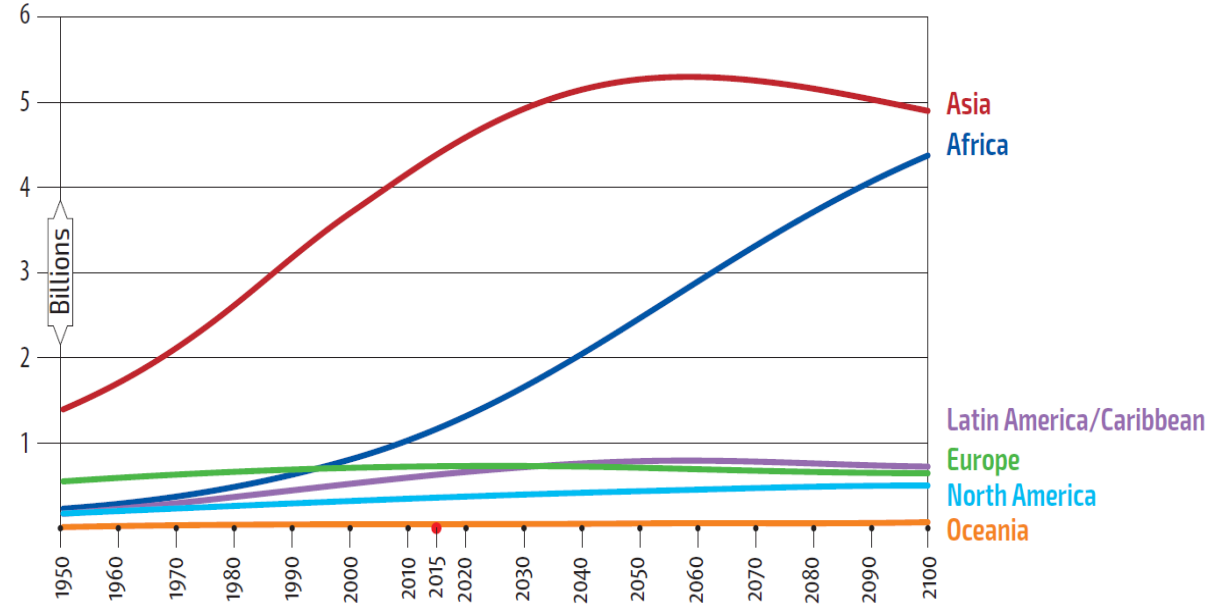
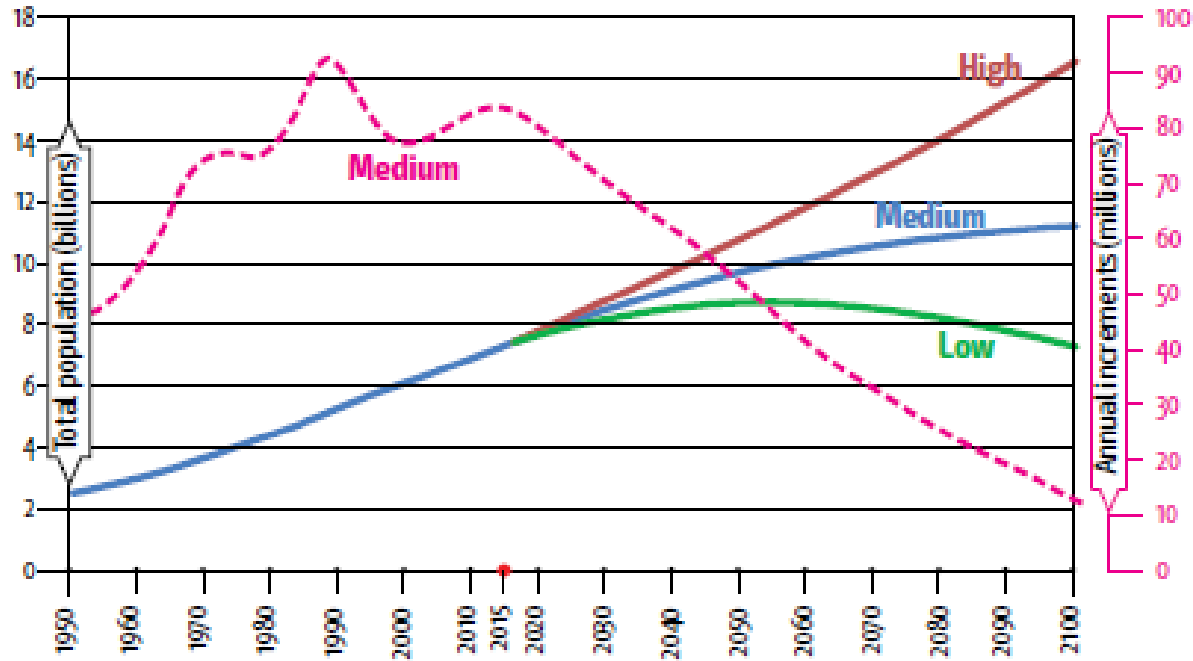
5. Eradicating extreme poverty and reducing inequality
6. Ending hunger and all forms of malnutrition
7. Improving income earning opportunities in rural areas and addressing the root causes of migration
8. Building resilience to protracted crises, disasters and conflicts

## Systemic challenges

9. Making food systems more efficient, inclusive and resilient
10. Addressing the need for coherent and effective national and international governance



# Trends: Population dynamics, global and by region



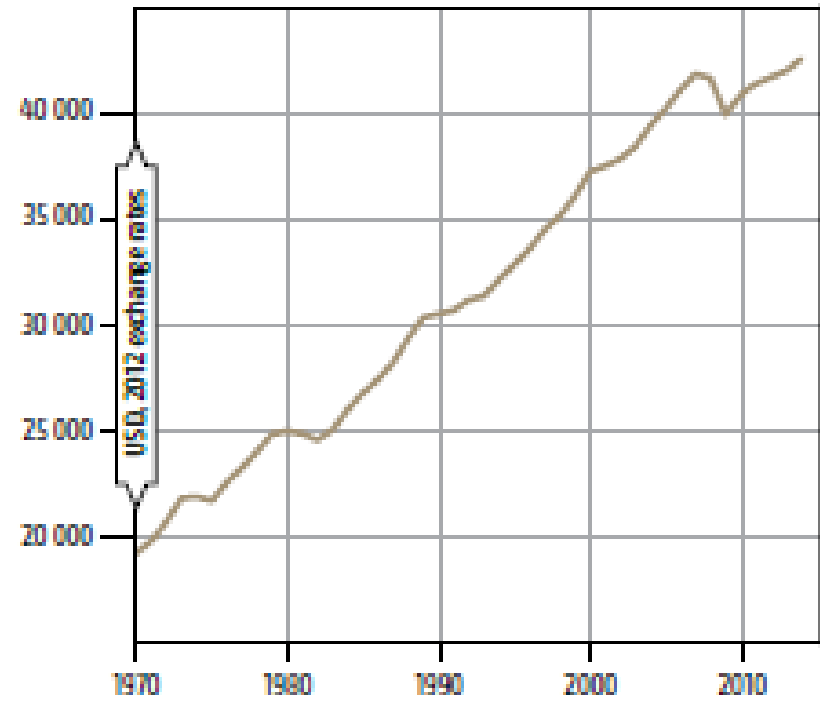
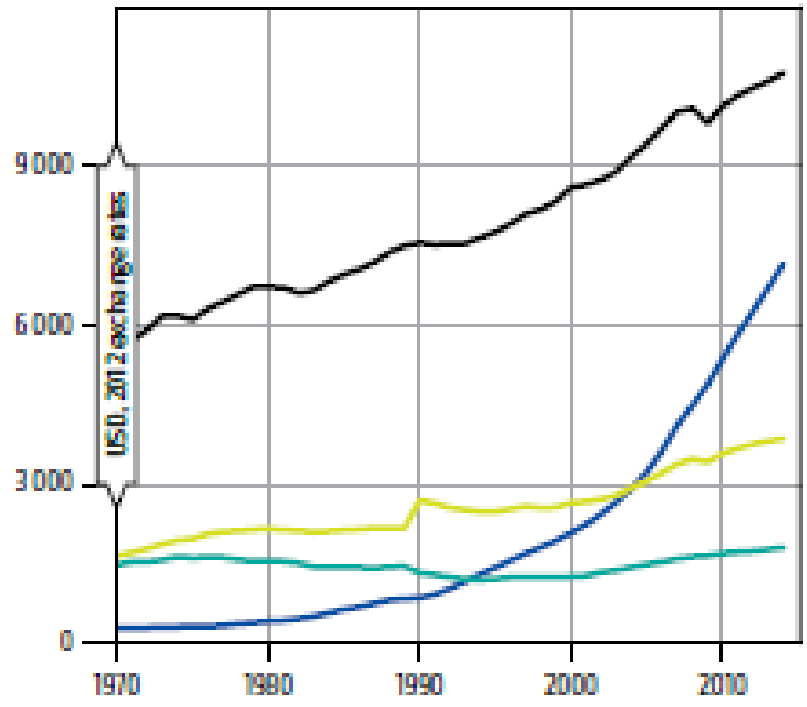
Source: UN, 2015.

Source: FAO, 2017, based on UNPD



# Trends: Per capita income (GDP)

## a) Monetary values



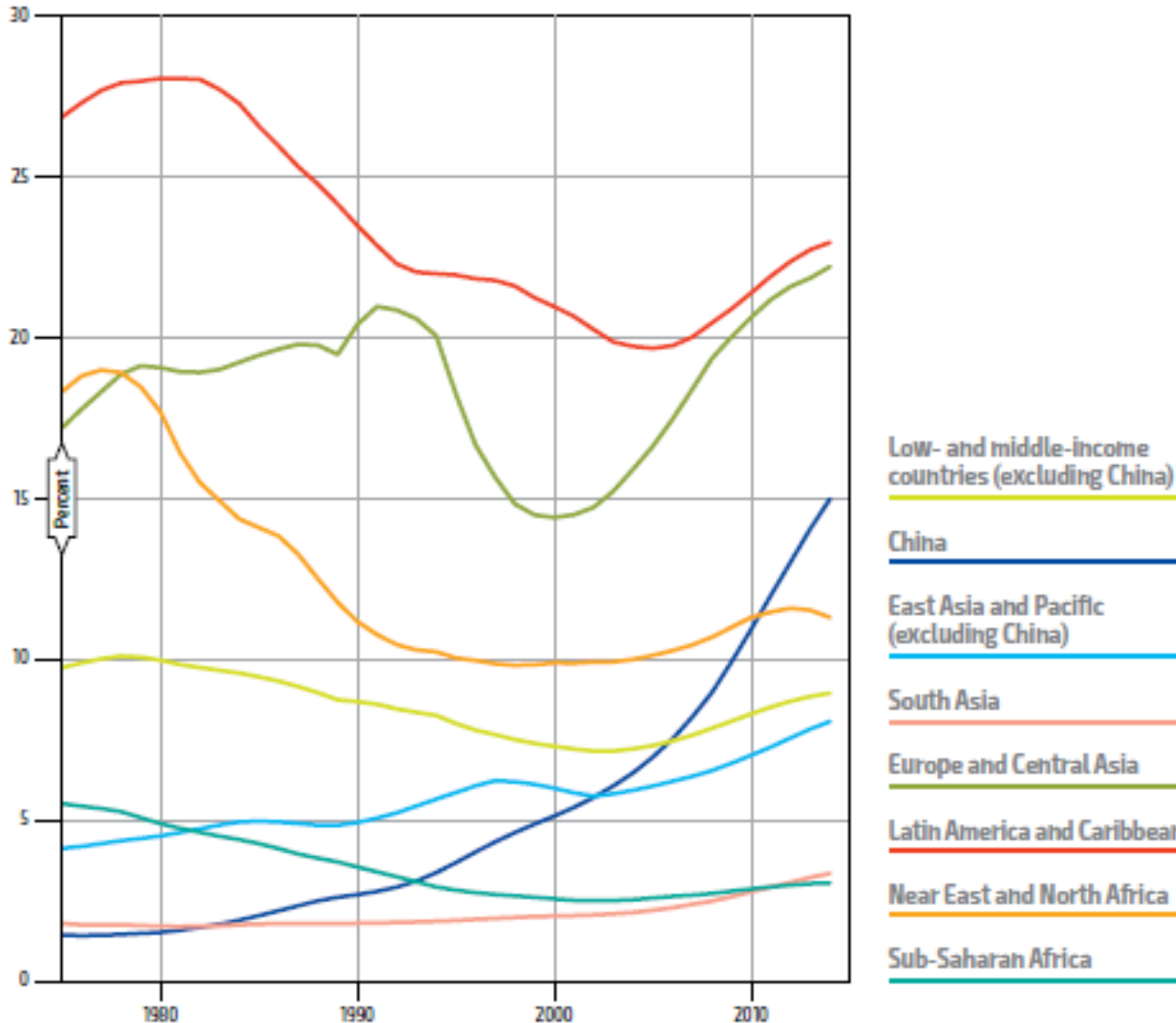
- World
- High-income countries
- Low- and middle-income countries (excluding China)
- China
- Sub-Saharan Africa

Source: FAO, 2018. FOFA 2050, based on data from UN 2016.



# Trends: Inequality and others

a) Per capita income in low- and middle-income countries as percentage of high-income countries

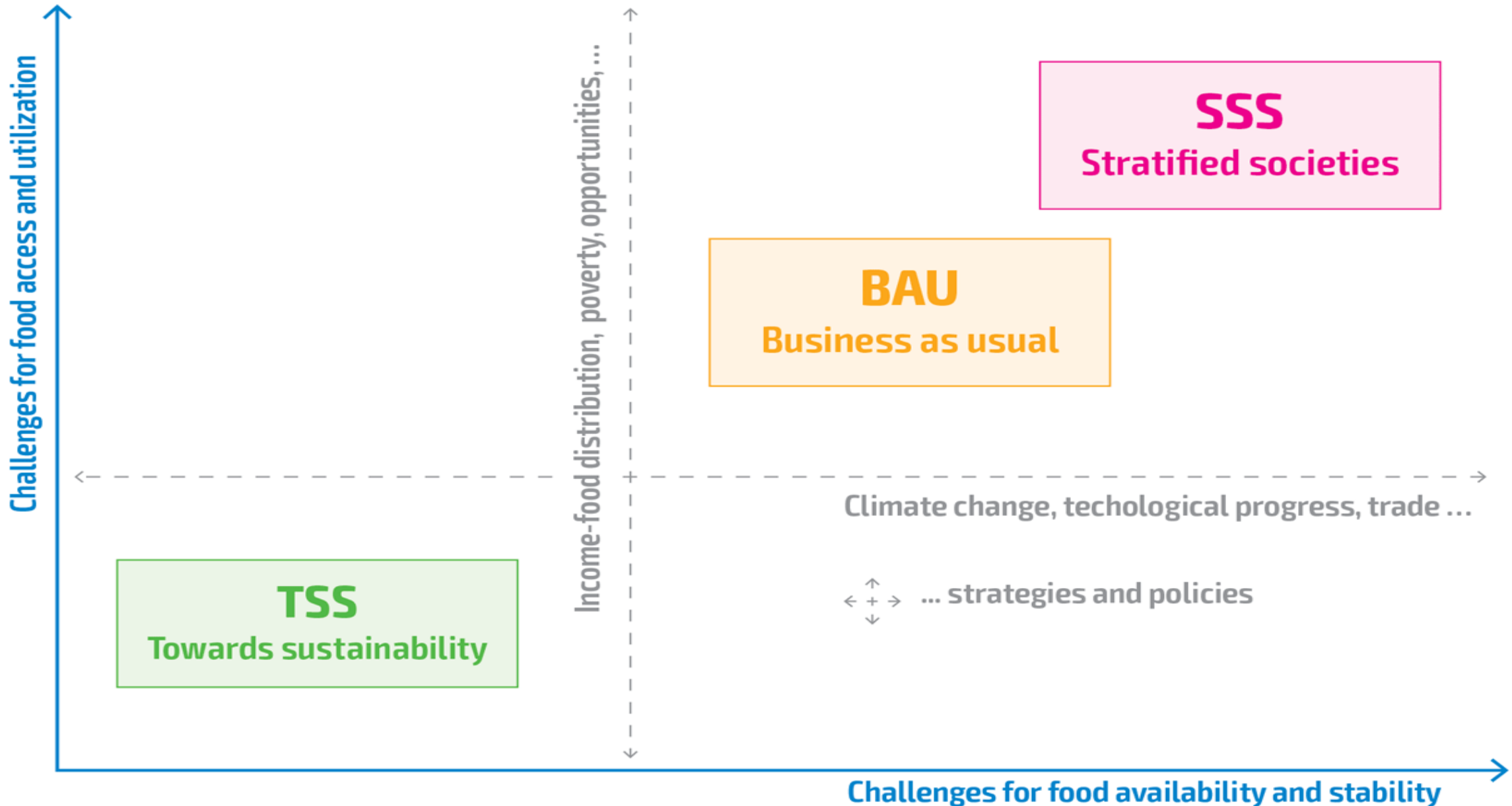


- Technical progress
- Climate change
- Resource degradation
- Shifts in consumer preferences
- Geo-political instability
- Conflicts
- ....

**Source:** FAO, 2018. FOFA 2050, based on data from UN 2016.



# Challenges space for food security, nutrition and sustainable agriculture





## The three FOFA 2050 scenarios in a nutshell

	<b>Business as usual (BAU)</b>	<b>Towards Sustainab. (TSS)</b>	<b>Stratified societies (SSS)</b>
<b>Economic growth (per capita)</b>	Moderate (1.3% per year to 2050) but uneven.	As BAU globally, but favoring LMIC	Sustained but skewed against Sub-S. Africa
<b>International governance/conflicts</b>	Limited progress. Conflicts increase	Towards more just and peaceful societies	Inequality and resource grab boost conflicts
<b>Human development</b>	LIC progress is limited in basic services	Universal access to basic services almost ensured	Very skewed within and between countries
<b>Energy, GHG emission</b>	Fossil fuels prevail and GHG unabated at best	Circular economies, fossils fuels/GHG limited	Fossil fuel-based growth boosts GHG emissions
<b>Land and water use</b>	Arable land and land degradation expand	Limited expansion due to innovative technology	Strong increase, degrad. and deforestation
<b>Agricultural innovation</b>	Some innovation but not evenly distributed	Innovative technology due to investment in RD	Limited, labour saving but no resource-saving
<b>Welfare and inequality</b>	Persistent poverty and inequality, little FSN progress	Less poverty and inequality and more FSN	More poverty and inequality and less FSN

Source: FAO, 2018. The future of food and agriculture – Alternative pathways to 2050. Rome.





## The foresight process in FOFA 2050 (simplified)

### **Narratives and assumptions**

- Per capita income
- Technical progress
- Climate change
- Population
- Consumer preferences
- ....

### **Analysis**

- scenario comparisons
- Qualitative assessments
- Strategic options

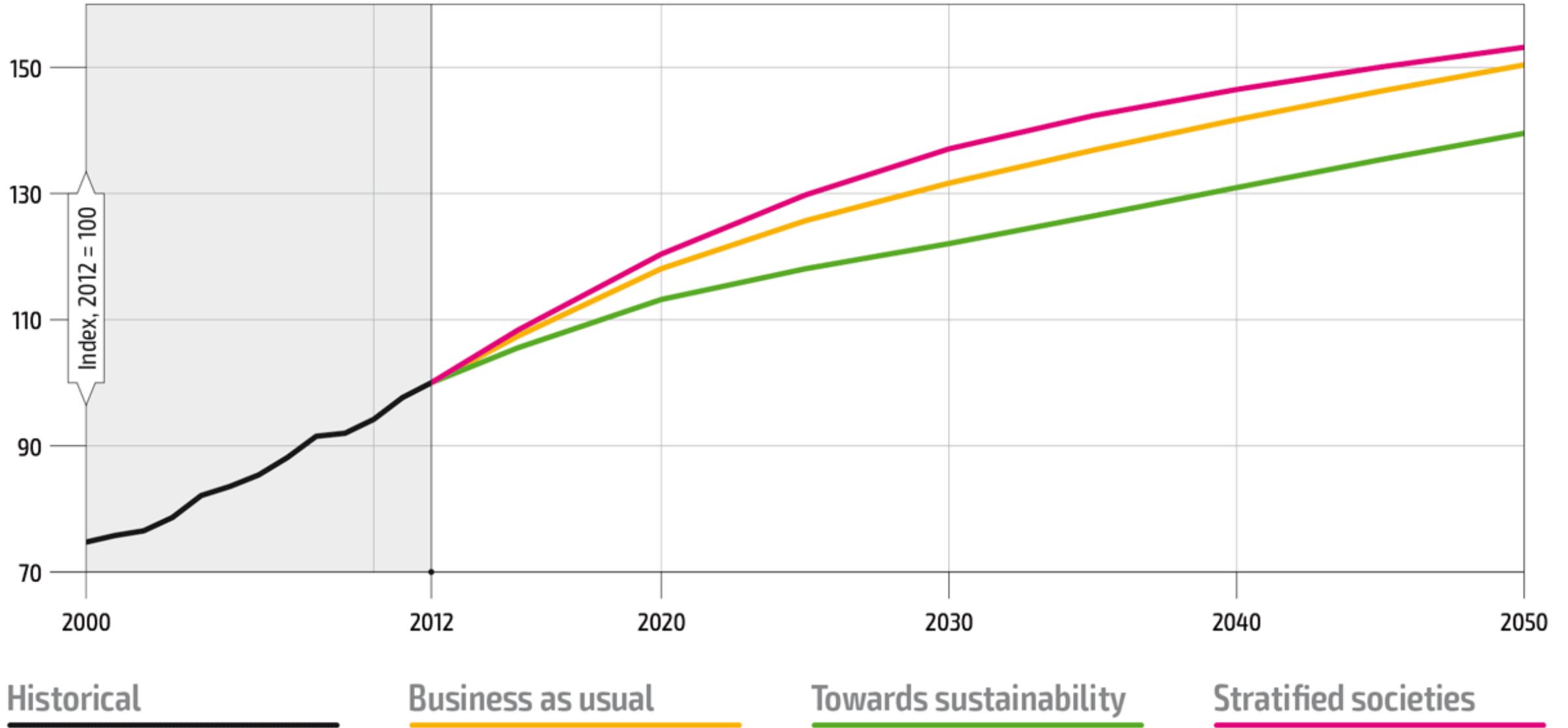
### **Quantitative projections**

- Per capita food consumption
- Total food uses
- Non-food uses
- Agricultural production
- Net trade
- Land use
- Food security and nutrition indicators
- Agricultural GHG emission
- ...





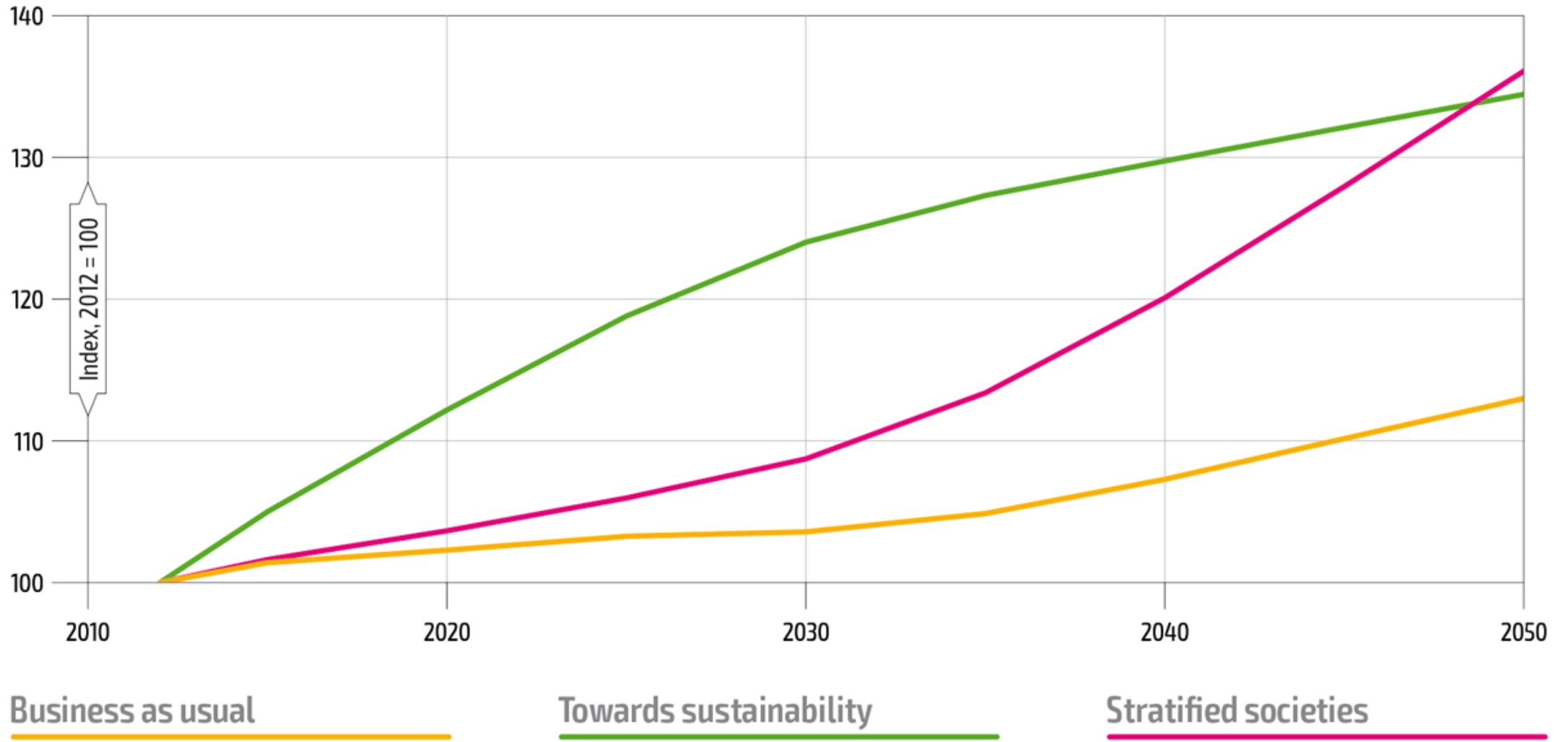
# Gross agricultural output



Source: FAO, 2018. The future of food and agriculture – Alternative pathways to 2050. Rome.



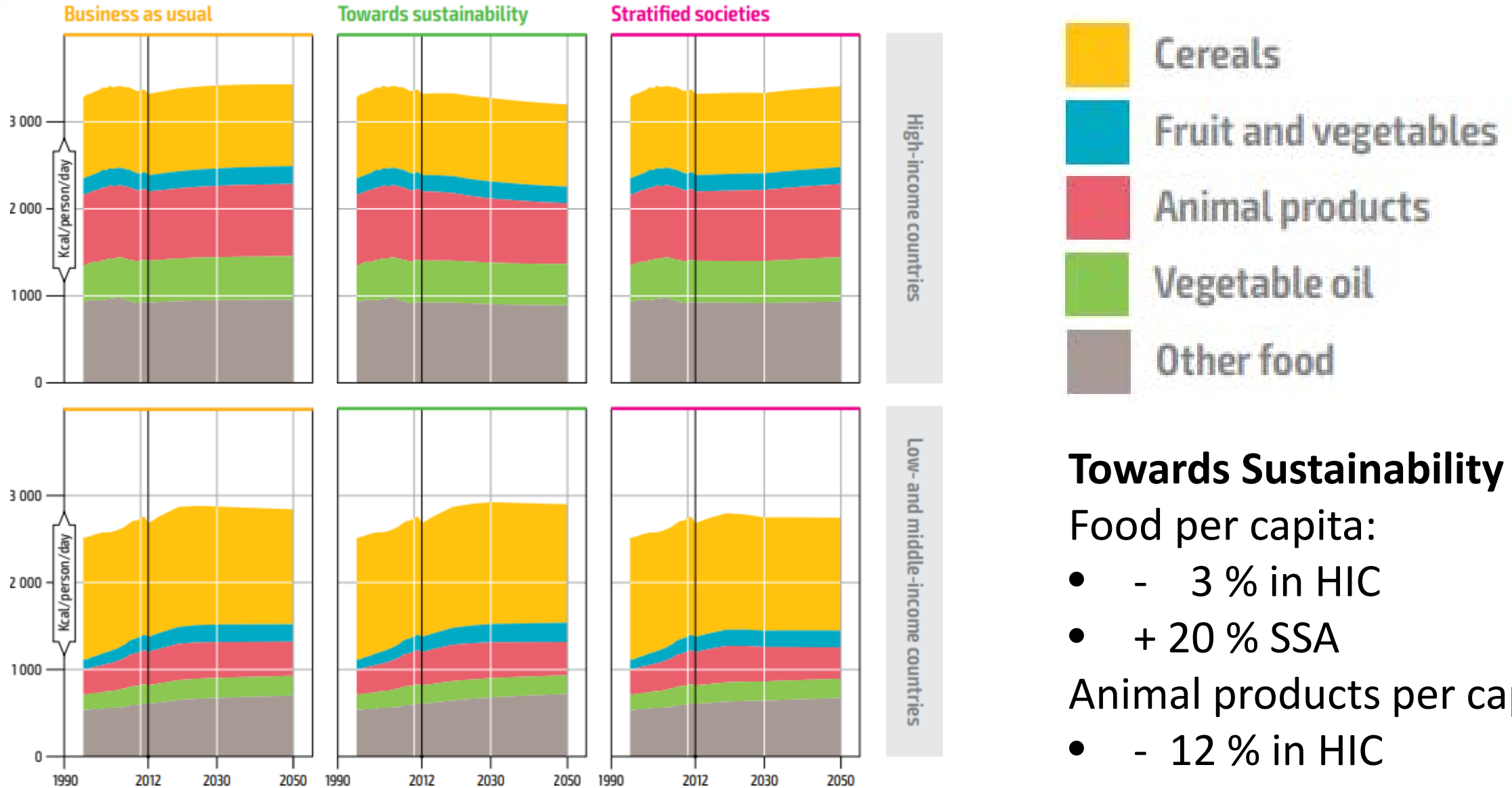
# Global Agricultural Producer Price Index



Source: FAO, 2018. The future of food and agriculture – Alternative pathways to 2050. Rome.



# Per capita dietary energy consumption (all food items)



## Towards Sustainability 2050

Food per capita:

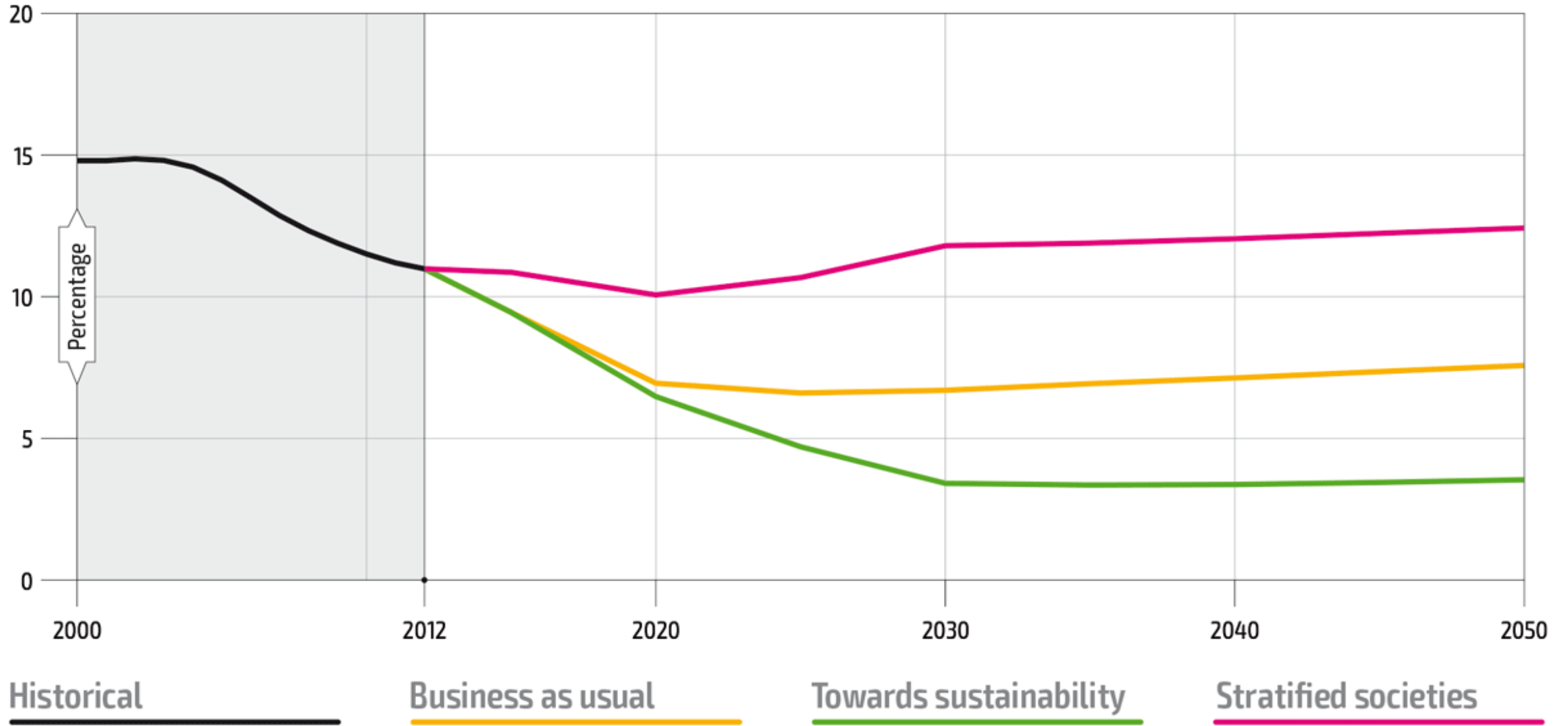
- - 3 % in HIC
- + 20 % SSA

Animal products per capita:

- - 12 % in HIC
- + 30 % in SSA



# Prevalence of undernourishment (PoU)

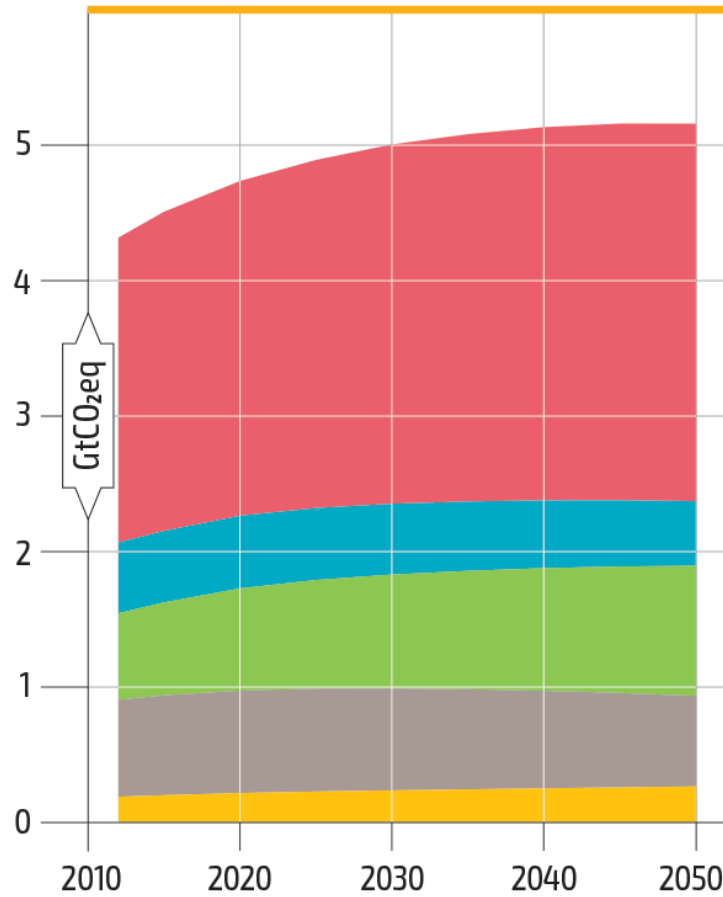


Source: FAO, 2018. The future of food and agriculture – Alternative pathways to 2050. Rome.

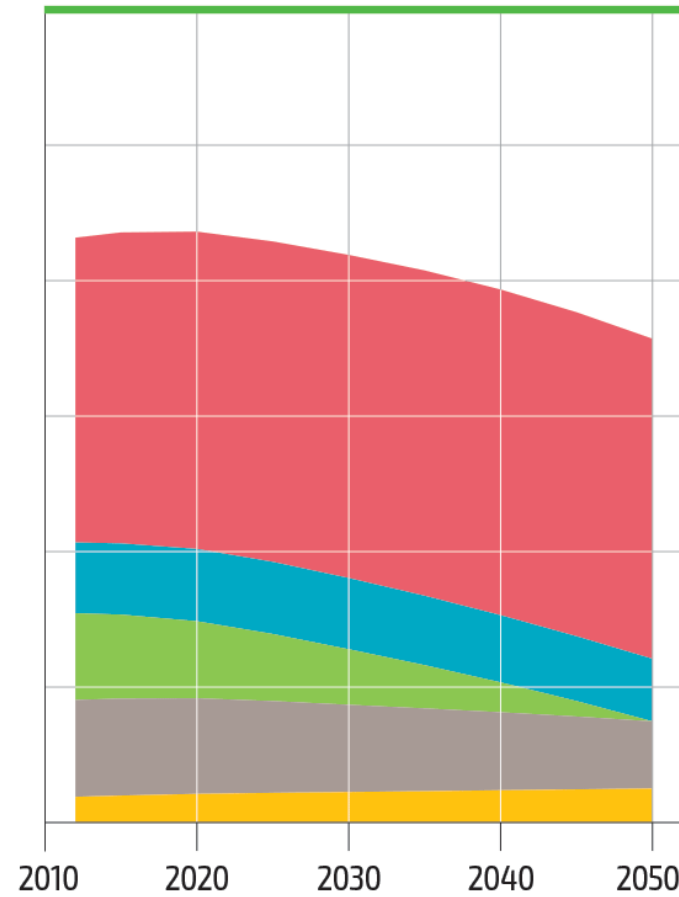


# Green House Gasses emissions

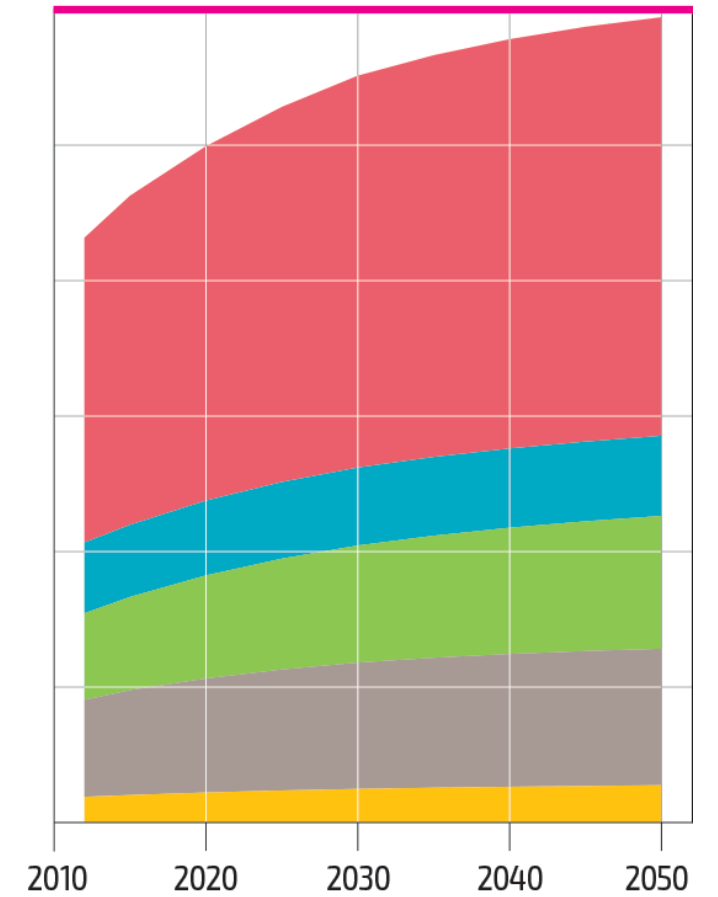
## Business as usual



## Towards sustainability



## Stratified societies



CATEGORIES



Enteric fermentation



Rice



Fertilizer



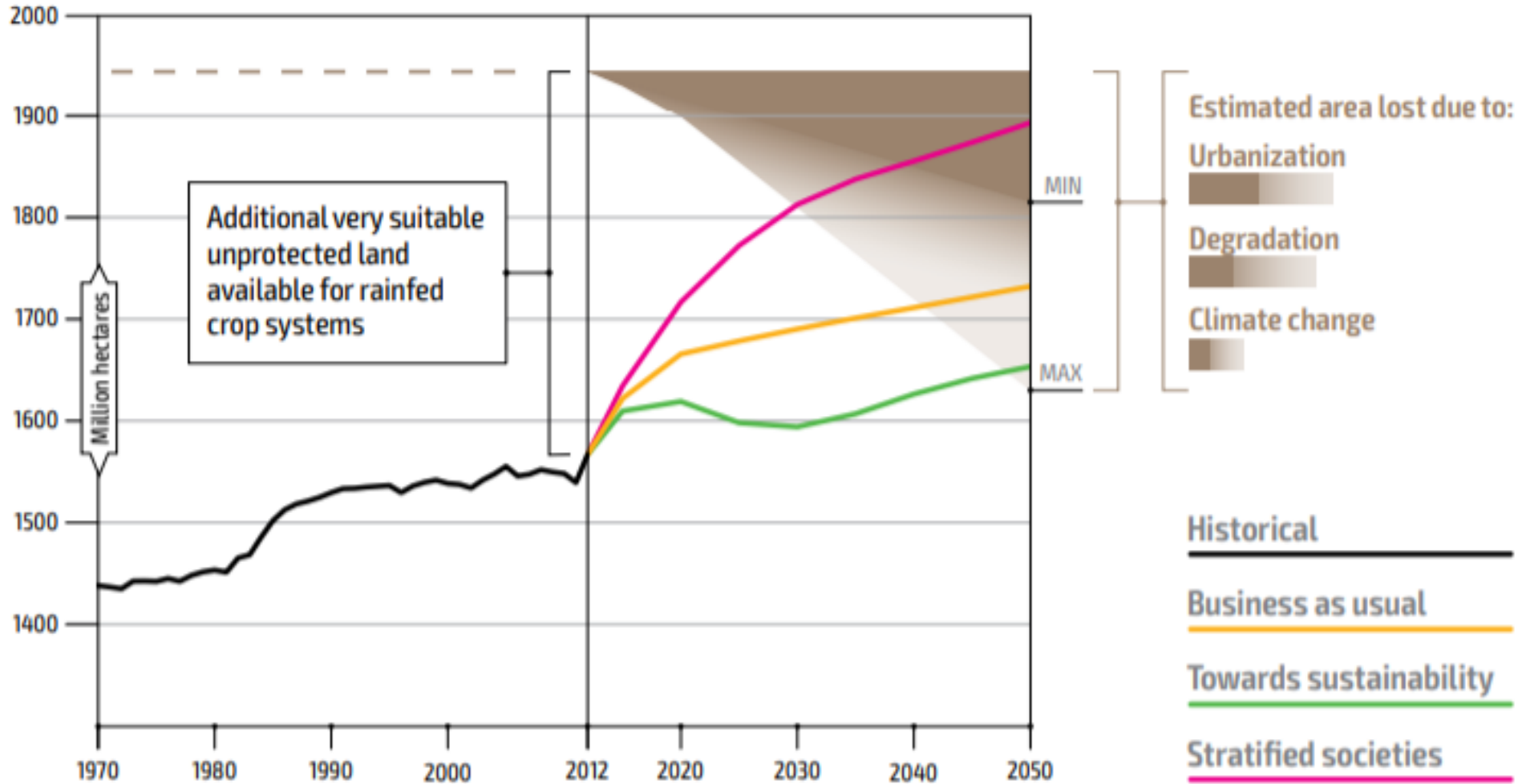
Manure



Crop residue



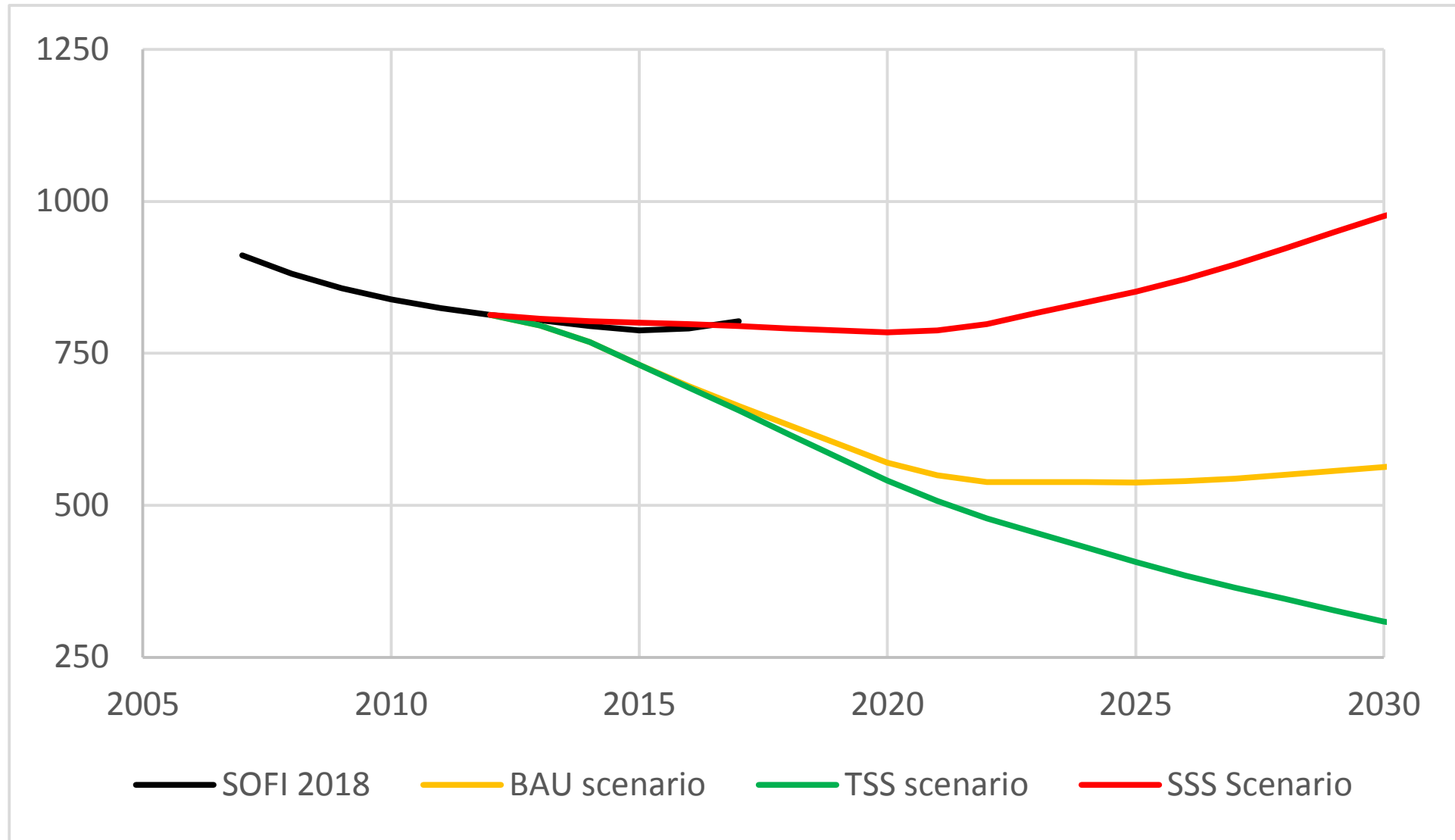
# Land use scenarios to 2050



Source: FAO, 2018. The future of food and agriculture – Alternative pathways to 2050. Rome.



## Where are we going? The NoU so far and pojections to 2030



Source: FAO, 2018. The future of food and agriculture – Alternative pathways to 2050. Rome. And FAO, IFAD, UNICEF, WFP, WHO 2018. The State of Food Security in the World, 2018. Rome





## Take away messages

- Food and agricultural systems are affected by trends that could jeopardize their future. Changing course is critical – “business as usual” is no longer an option.
- A more sustainable future is attainable, but getting there is not a rosy walk: significant investments are needed.
- Raising consumer awareness will help contain the need to unnecessarily expand food production and reduce the multiple burdens of malnutrition...
- but producing more will be unavoidable, and the way forward is doing so with less.
- While moving towards sustainability, food prices might increase significantly... yet environmental sustainability and food security can yet go hand in hand.
- In this vein, a more equitable income distribution is a must... and requires strengthening access to assets for vulnerable groups.
- Food and agricultural sectors are key, but are no longer enough on their own to ensure equitable access to food.



## Long-term foresight at FAO

### FOFA 2050 material

[www.fao.org/publications/fofa](http://www.fao.org/publications/fofa)

- Full report FOFA 2050
- Summary report
- Flyer
- Global country-level database
- Supplementary material

### FAO long-term foresight exercises

[www.fao.org/global-perspectives-studies](http://www.fao.org/global-perspectives-studies)

