

An aerial photograph of a rural landscape. The top half shows a large green field with several parallel tracks from a tractor. A winding river flows from the top right towards the center. Below the river, a road runs horizontally. The bottom half of the image is dominated by a large yellow field, likely rapeseed, with similar tractor tracks. In the bottom right corner, there is a brown field, possibly a recently plowed field.

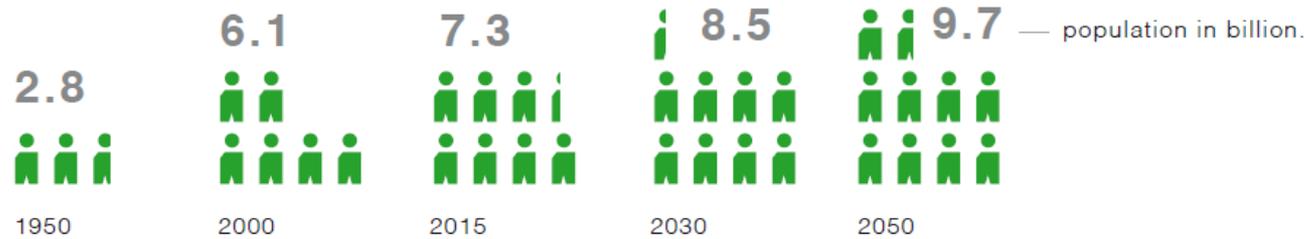
Innovation and social transformation for agriculture in 2030

Hubertus Paetow

ABIM 2017, 25.10.2017

More people, less agricultural land => strong demand!

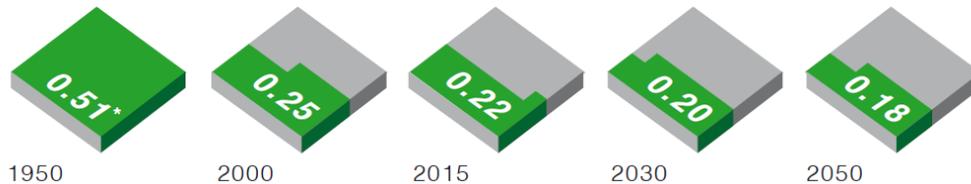
DEVELOPMENT OF THE WORLD POPULATION



Source: FAO

1. The world population is increasing. In 2030, the worldwide agricultural sector will need to supply 8.5 billion people, which corresponds to a **16% increase** compared to 2015.

DEVELOPMENT OF THE AVAILABLE AGRICULTURAL LAND



Arable land (ha/person)

Source: FAO

3. Simultaneously, the agricultural land available per capita is decreasing. In 2030 there will be **10% less agricultural land** available compared with 2015.

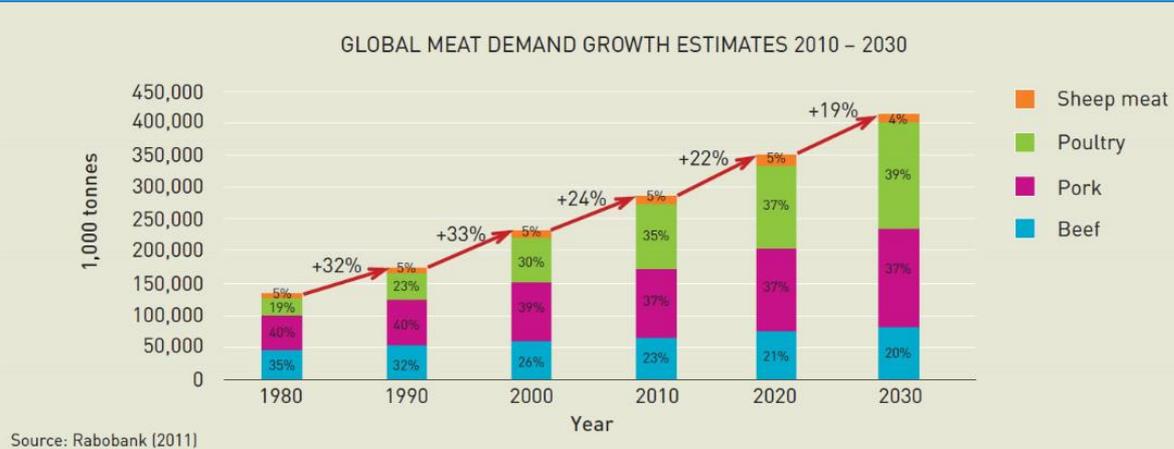
DEVELOPMENT OF THE DEMAND FOR AGRICULTURAL PRODUCTS



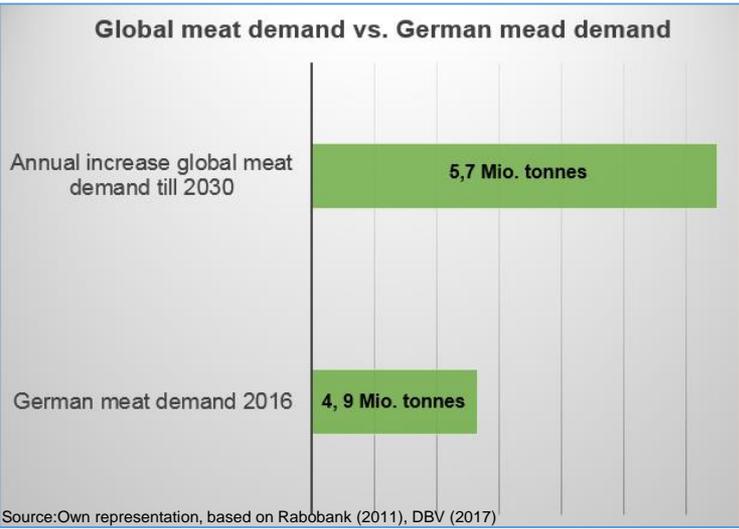
Source: FAO

2. Demand will thus grow. By 2030, it will be necessary to produce **8% more cereals**, **19% more pig meat**, **17% more poultry meat** and **10% more dairy products**. In 2030 we need between **8% and 19% more foodstuff** than today.

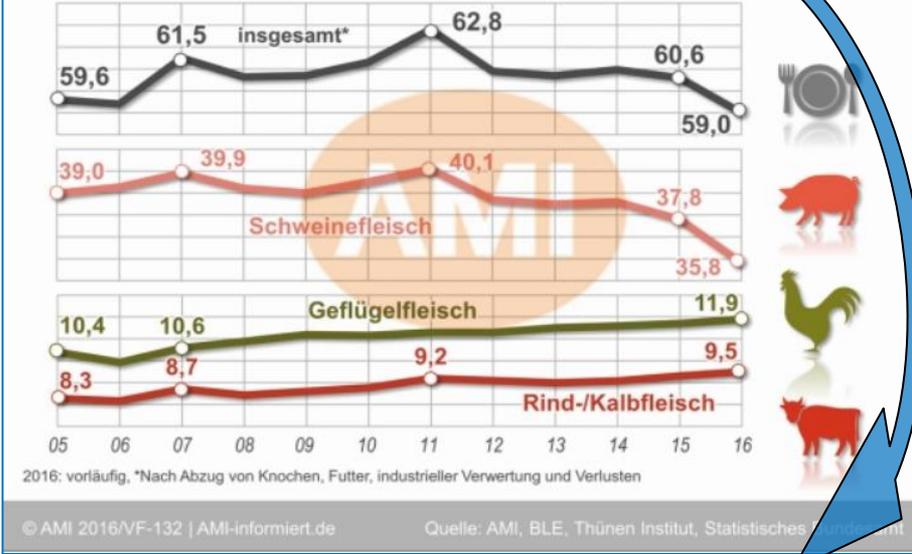
Change in dietary habits – meat consumption



1. By 2030, global meat demand is expected to rise to more than 400 million tonnes.



3. The global increase in meat demand about 5.7 million t/p.a. exceeds the annual meat demand in Germany about 4.93 million t /p.a.



2. Per-capita consumption of meat in Germany in kg/p.a. is decreasing.

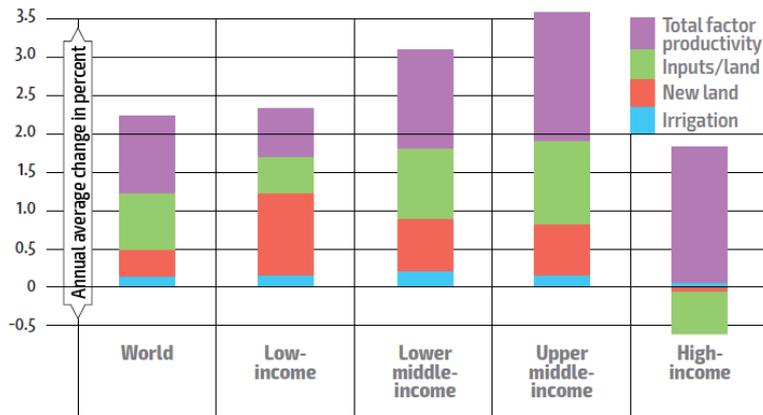


Development of stocks and yields



1. Global wheat supplies 2017/2018 – building of stocks is continuing.

Figure 5.2 Sources of growth in agricultural production, by country income group, 1961–2010



3. While output in low-income countries has increased mainly through the expansion of agricultural areas, over the last decade TFP growth has increased significantly.

Figure 5.1 Average annual rate of increase in crop yields

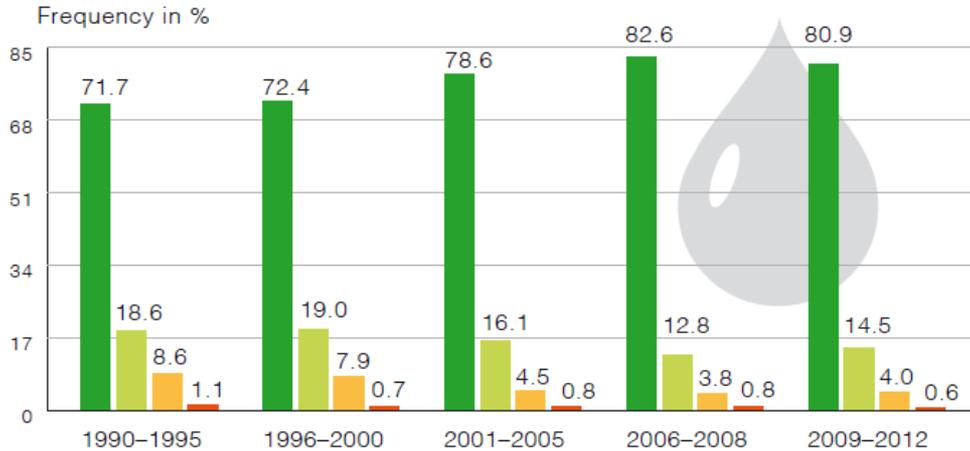


2. In recent decades, increases in yields have been dropping.



Honest assessment

PESTICIDE RESIDUES IN GROUND WATER



Pesticide residues in ground water have dropped significantly. Ever more samples contain no residues.

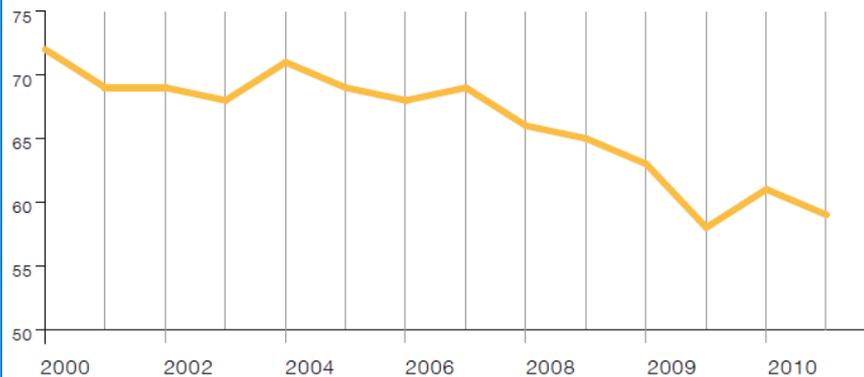
Examination period

- none detected
- detected <= 0.1 µg/l
- detected < 0.1 bis 1.0 µg/l
- detected > 1.0 µg/l

Source: Länderarbeitsgemeinschaft Wasser (LAWA); Federal Environmental Agency (UBA)

DEVELOPMENT OF BIODIVERSITY – MEASURED FOR THE EXAMPLE OF THE BIRD INDICATOR ON FARM LAND

Partial index agricultural land in %



Bird indicator (Index in % of target value 2030) for biodiversity on agricultural land
Source: BfN Sukopp, 2015

PESTICIDE RESIDUES IN FOODS

% of samples altogether



Source: Federal Office of Consumer Protection and Food Safety

Well-stocked toolbox



Source:www.iva.de



Source:www.hatzenbichler.com



Source:www.fendt.com



Source:www.bmbf.de



Source:www.ebay.de



Source:www.badische-zeitung.de



Source: www.leopoldina.org



Source: www.pflanzenschutz-aktuell.de



<https://www.arivado.com>

Recognize signals.



<https://www.impulse.de>

Set the course.



<https://www.dlg.org>

Earn trust.