



Plants
for the Future
European Technology Platform



Farming of the Future in the EU context - Challenges and opportunities

PEDRO GALLARDO BARRENA

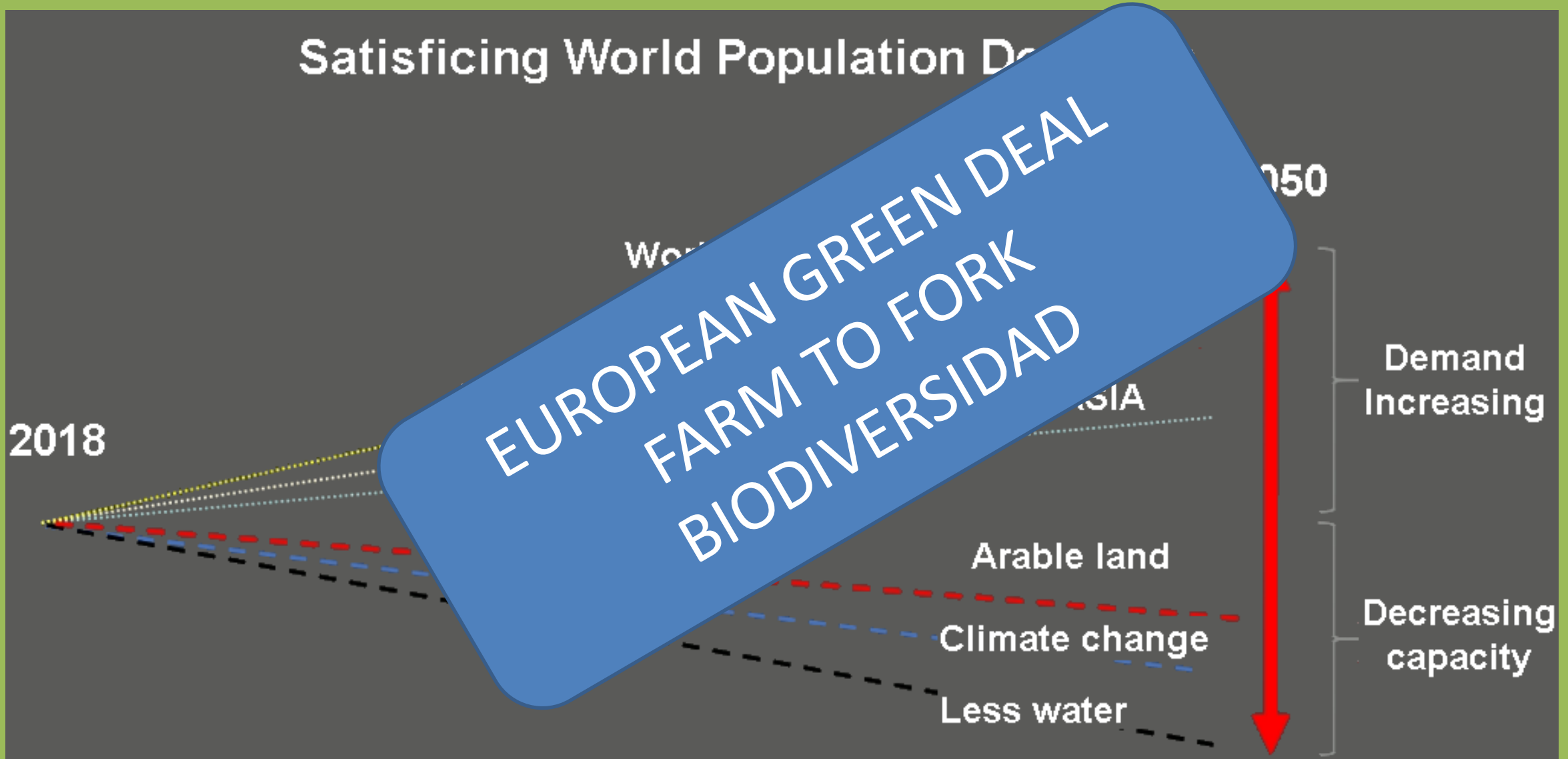
President ASAJA Cádiz

Vicepresidente Copa – Cogeca Vicepresidente

President Cereals Working Party Copa – Cogeca

President Phytosanitary Working Party Copa – Cogeca

Vicepresident – ALAS (Alliance Sustainable Agriculture)



- Climate Change

- Temperature
- Salted soils
- Erosion
- Flood
- Footprint



Farmers
Feeding
the World
(part of the
solution)



- Tool Box

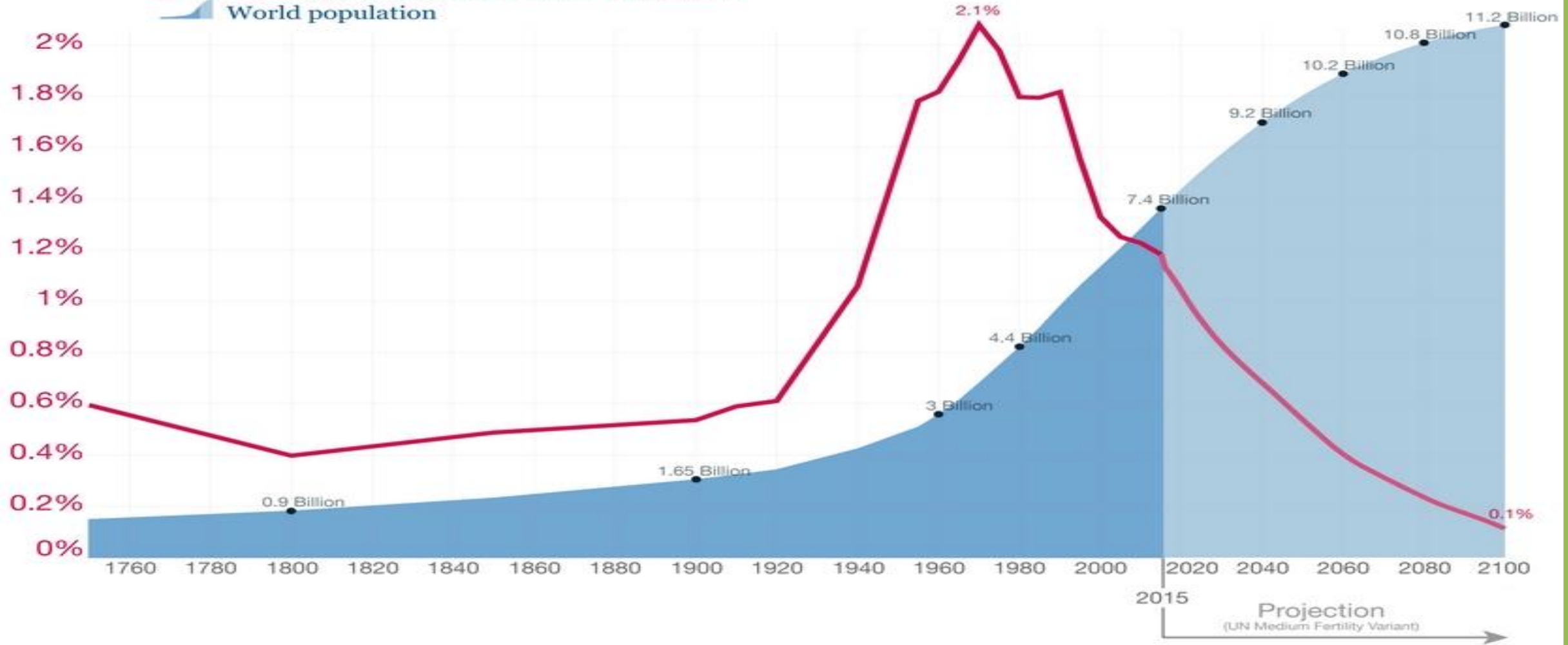
- Seed
- Precision Agriculture
- Plant breeding
- Crispr = technology
- Yields (UN+70%)
- Iberian laboratory



Our World
in Data

World population growth, 1750-2100

Annual growth rate of the world population
World population



Data sources: Up to 2015 OurWorldInData series based on UN and HYDE. Projections for 2015 to 2100: UN Population Division (2015) – Medium Variant. The data visualization is taken from OurWorldinData.org. There you find the raw data and more visualizations on this topic.

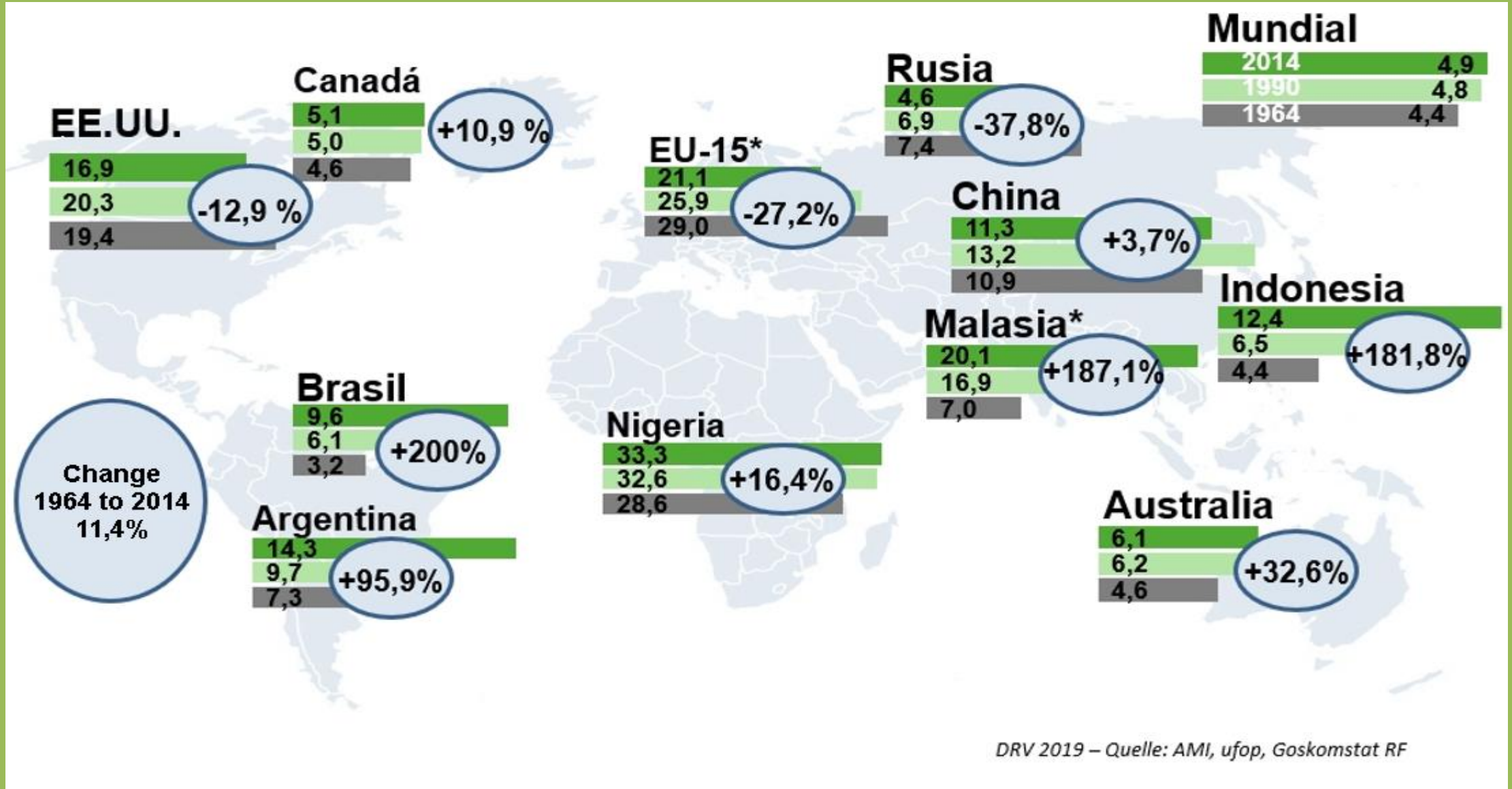
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World Population (regions) 2017, 2030, 2050, 2100 According to the average projection variant

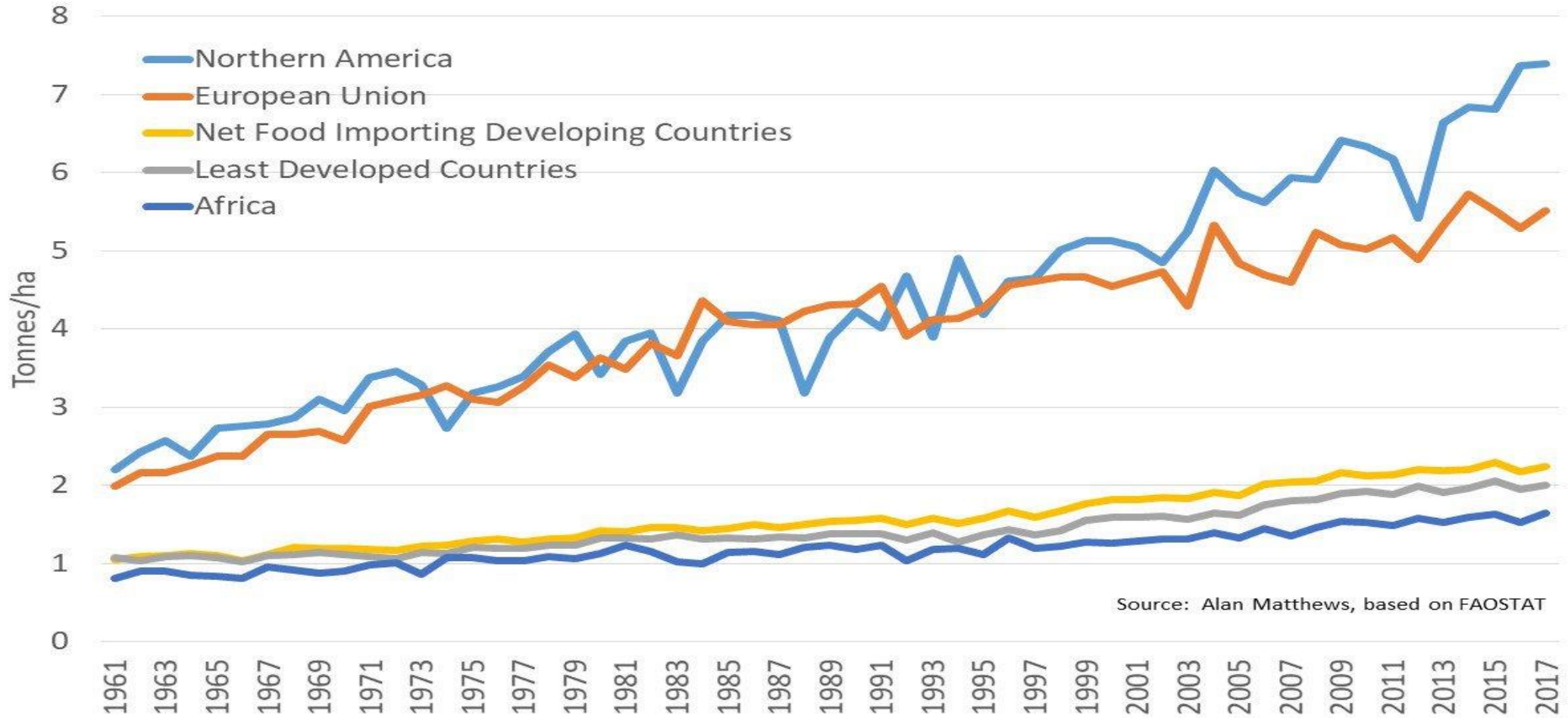
REGION	2017	%	2030	2050	2100	%
Africa	1.256	17%	1.704	2.528	4.468	40%
Asia	4.504	60%	4.947	5.257	4.780	43%
Europe	742	10%	739	716	653	6%
South America	646	9%	718	780	712	6%
North America	361	5%	395	435	499	4%
Oceania	41	1%	48	57	72	1%
Total World	7.550	100%	8.551	9.773	11.184	100%

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



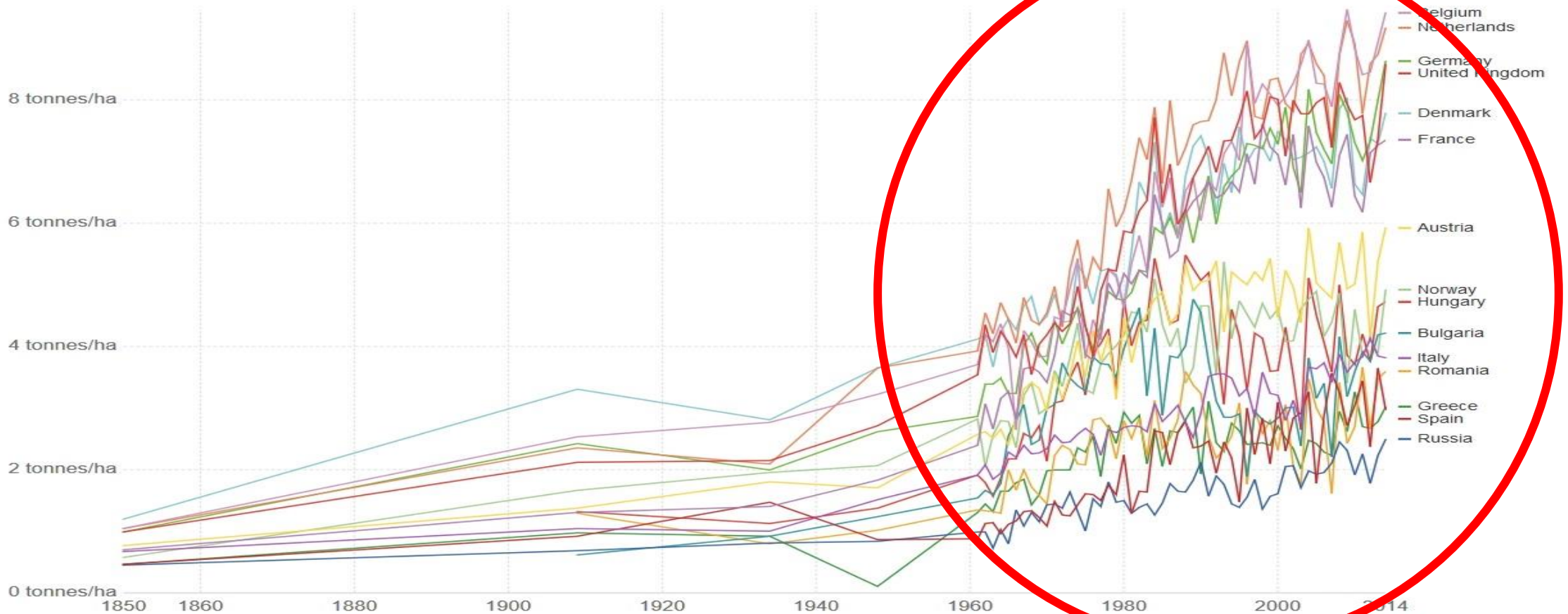


Cereal yields by selected world regions, 1961-2017



Long-term wheat yields in Europe

Wheat yields across selected countries in Europe, measured in tonnes per hectare.



Source: Long-term wheat yields - FAO (2017) & Bayliss-Smith (1984)

OurWorldInData.org/yields-and-land-use-in-agriculture/ • CC BY-SA

Source: Wheat (FAO (2017) & Bayliss-Smith (1984))

CHART

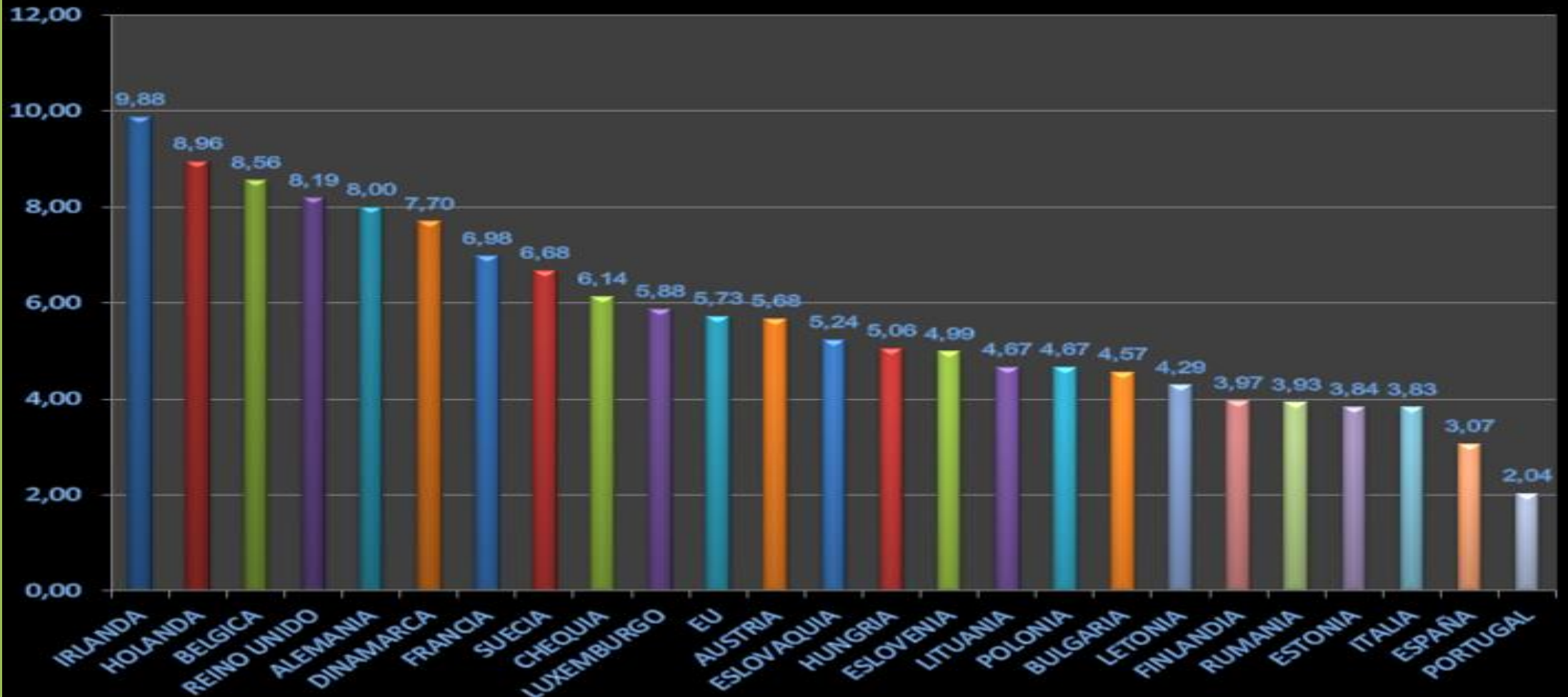
DATA

SOURCES



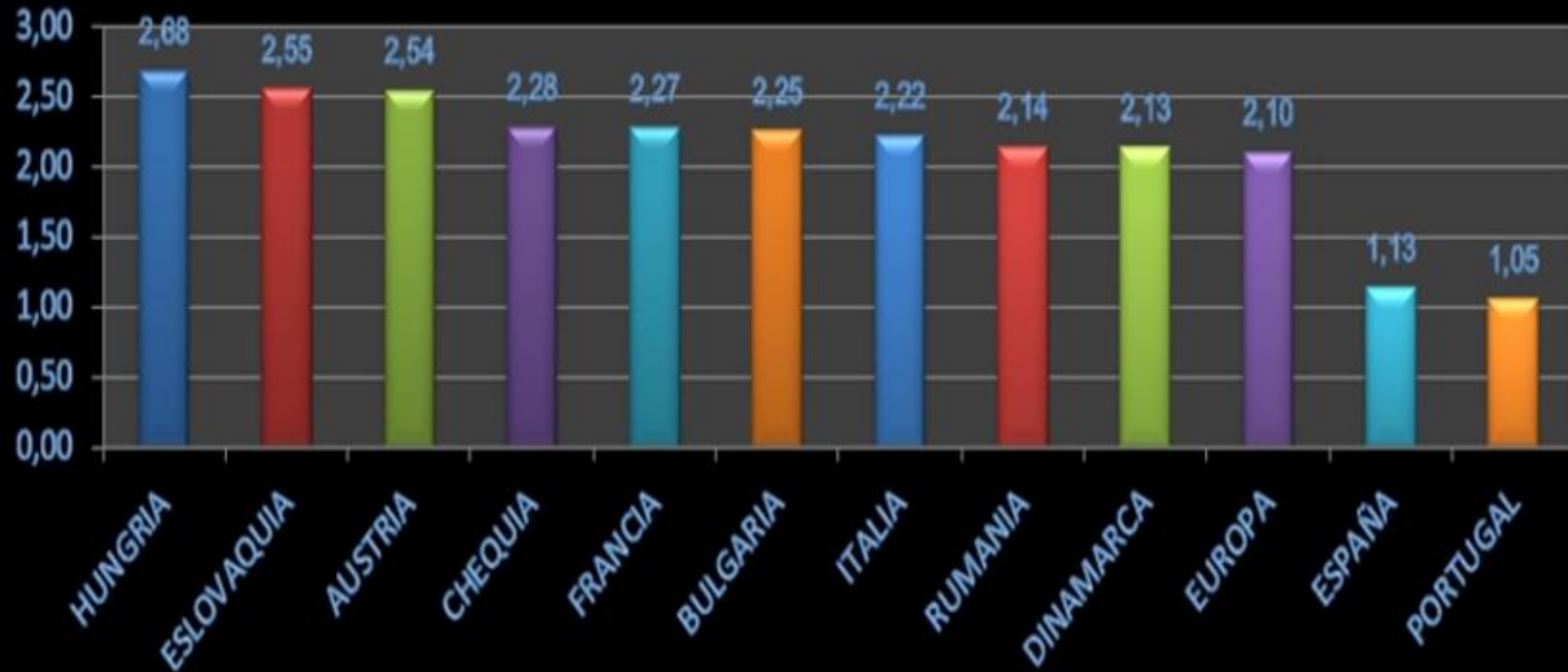


WHEAT YIELDS BY COUNTRIES (5 years average JRC may 2018)



SUNFLOWERS YIELDS (Europe)

5 years average by JRC 2018



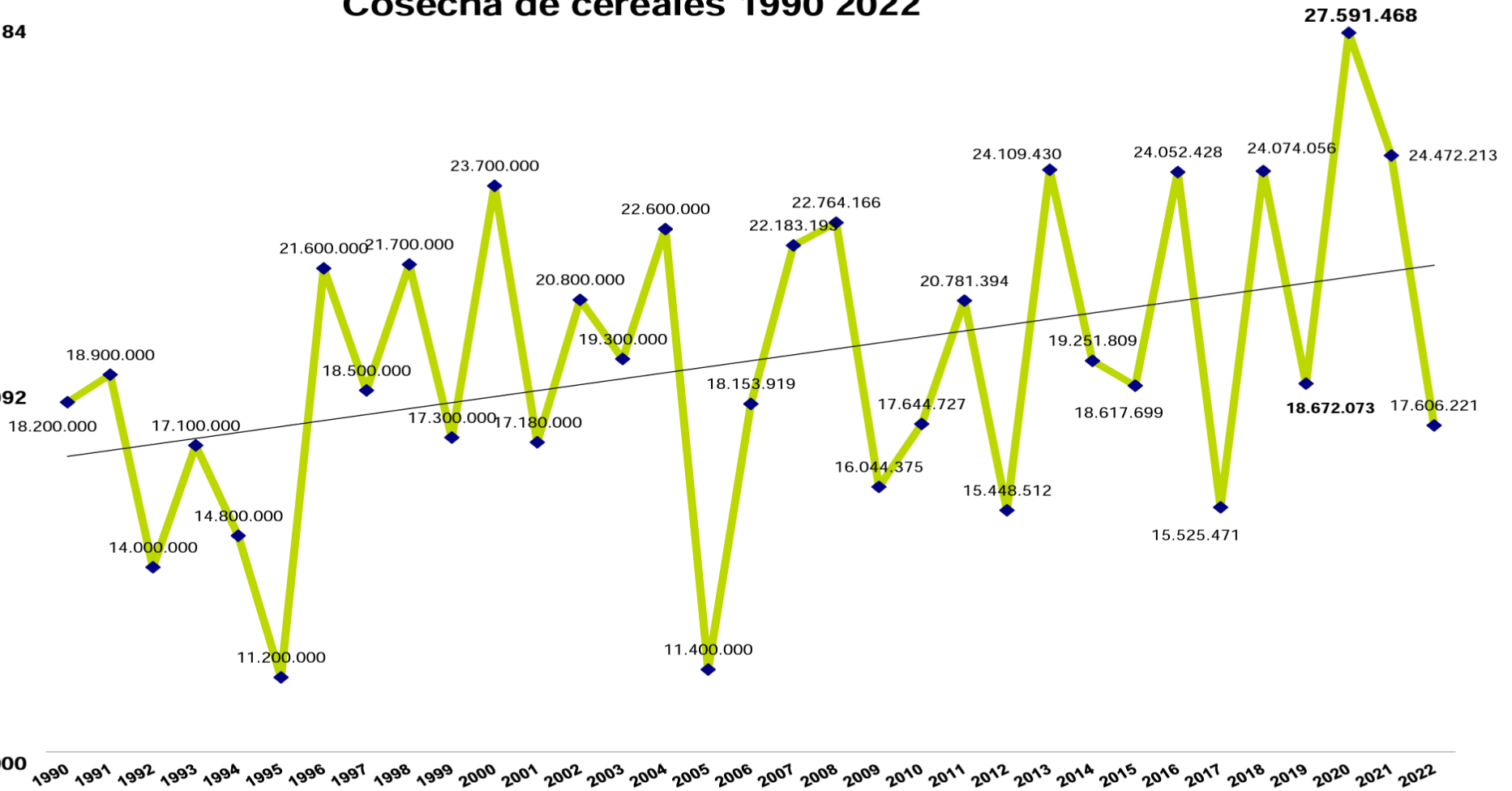


Cosecha de cereales 1990 2022

27.604.184

18.302.092

9.000.000



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With adequate tools we can produce potatoes in Mars



Farmers adapt to everything



If you have to grow potatoes on Mars, we can make it like Matt Damon on Mars



TOMATO CULTIVATION BETWEEN 1980 AND 2008



for every ton produced, land use was reduced by 52.3%



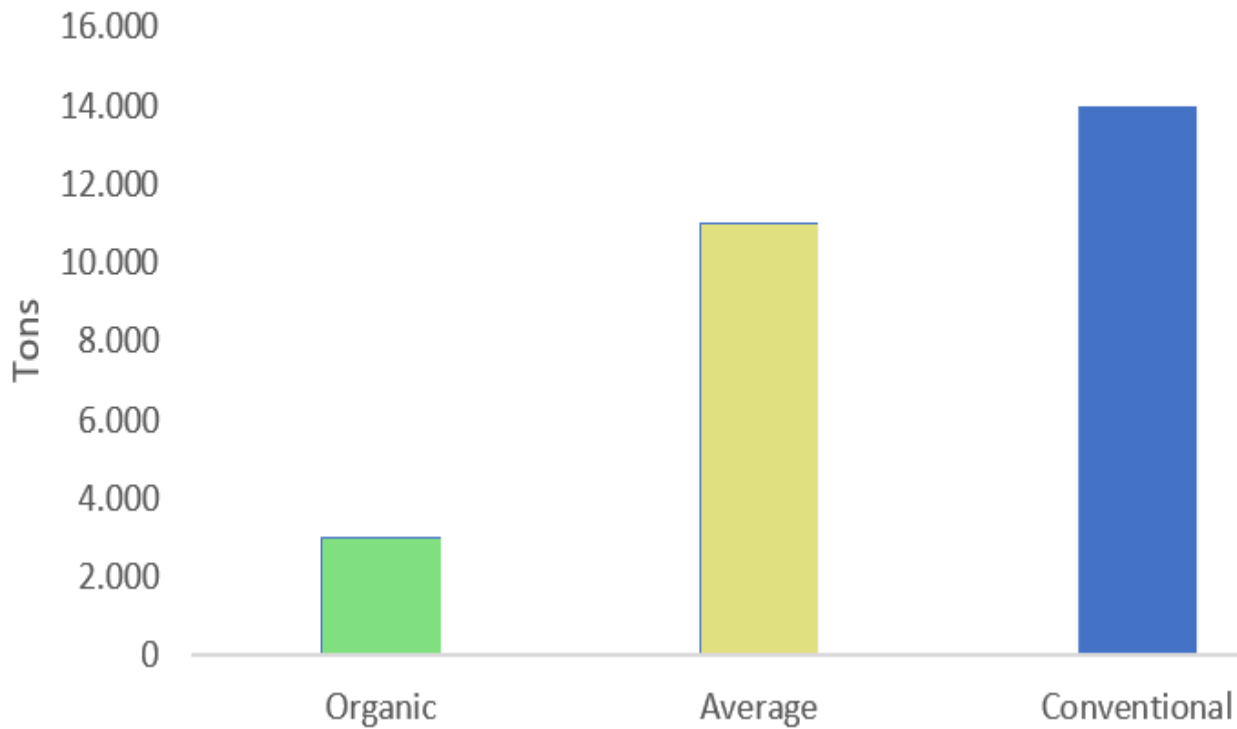
water consumption by 31.0% & 34.2% in the case of irrigation water



energy consumption by 12.5% and soil loss due to erosion by 52.0%.

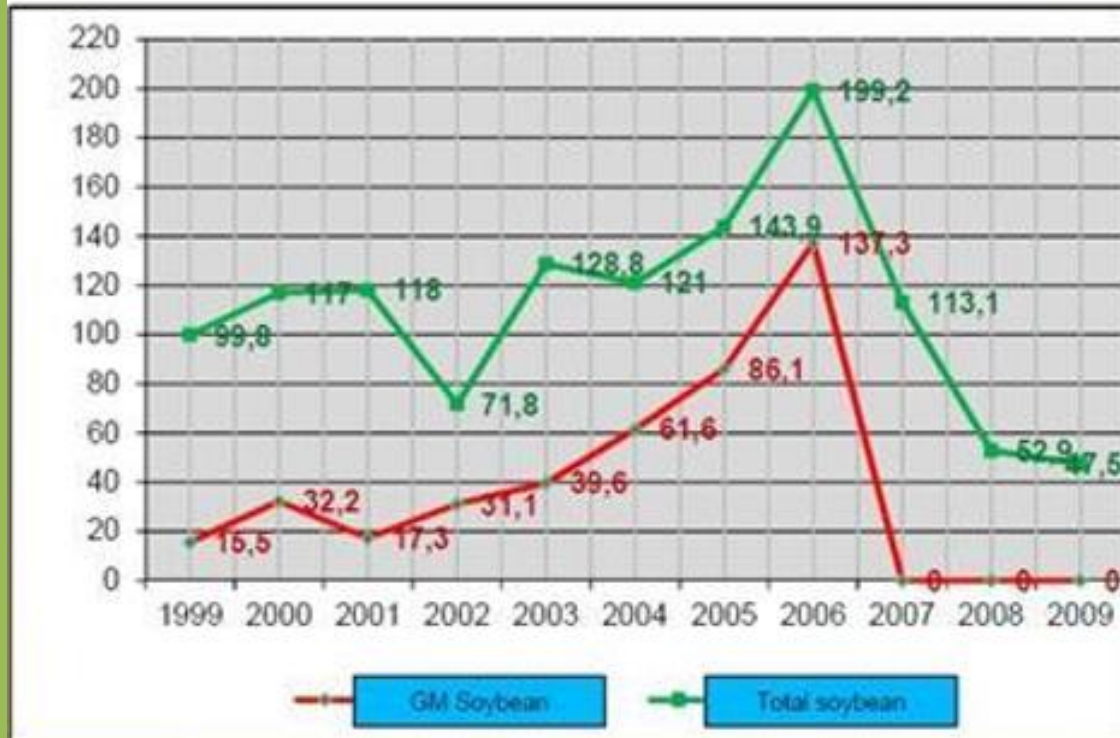
FREEDOM OF CHOICE – CORN – MAIZE

Corn / Maize

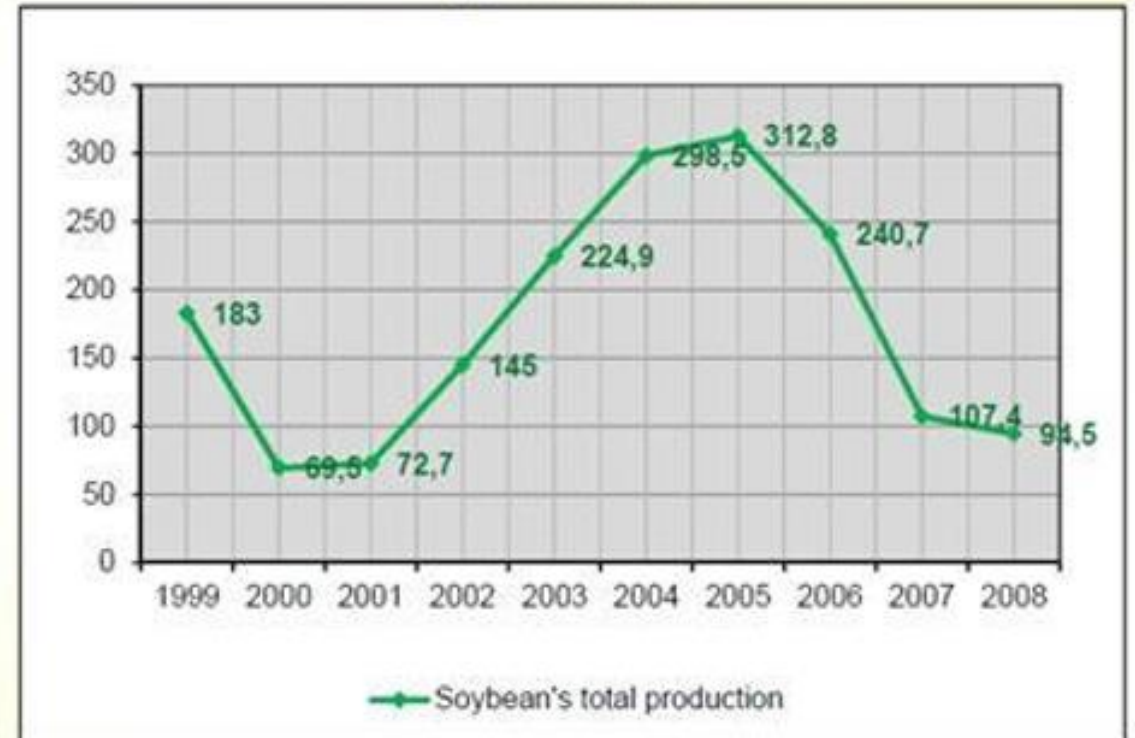


ROMANIA

The evolution of the soybeans cultivated area



The evolution of the soybeans total production



Tractors
Reduced
Nitrogen
95% from
2000

HOUSEHOLD
FEED EXPENSES:
1960 55%
2018 15%

Greenhouse
emissions
reduced
-24%
since 1990

Increase
of
productivity
+9%
since 2005

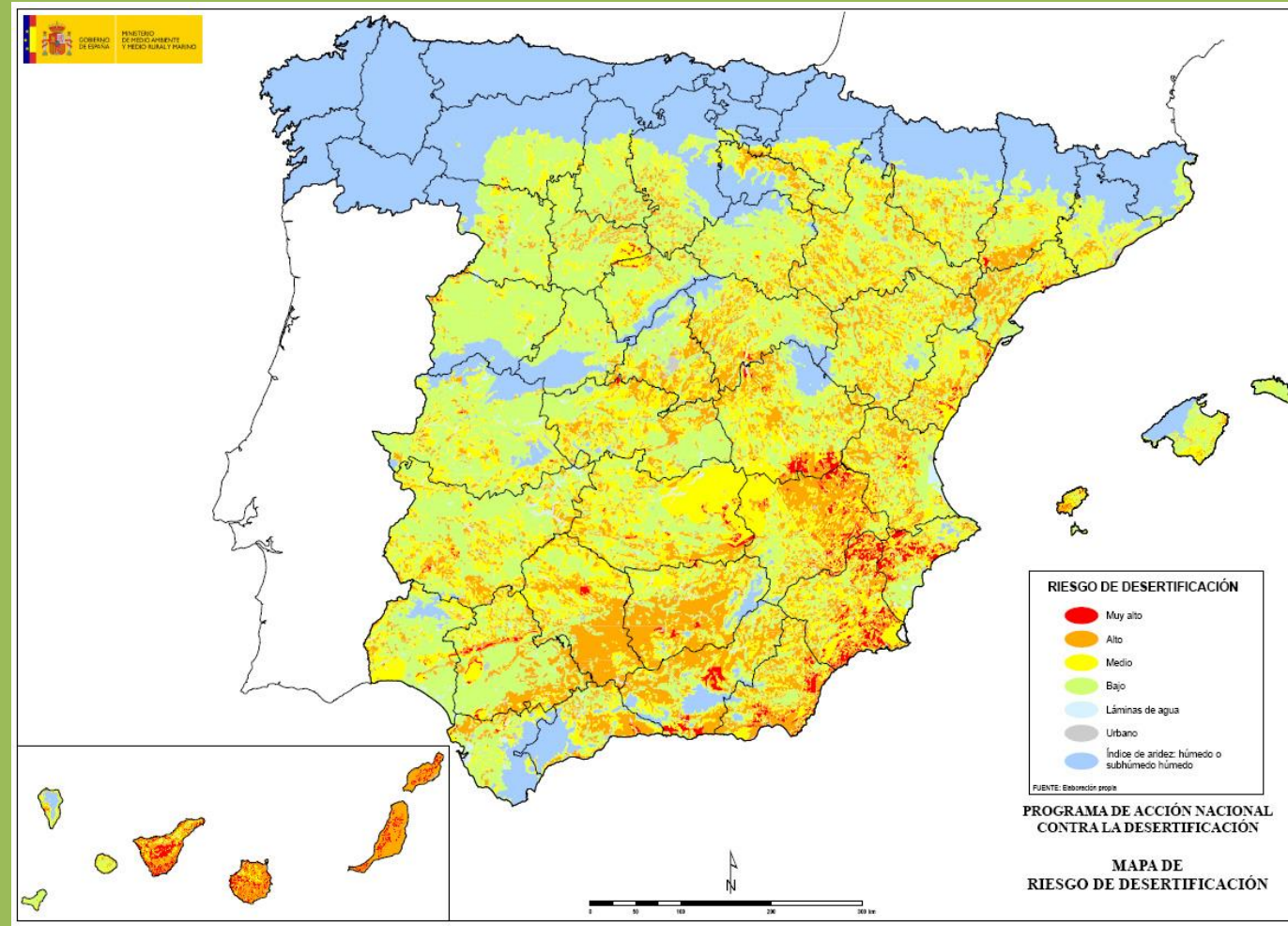
El cambio climático reducirá un 50% la producción del secano en el sur de Europa en 2050

Según un estudio de la Agencia Europea de Medio Ambiente (AEMA)

05/09/2019



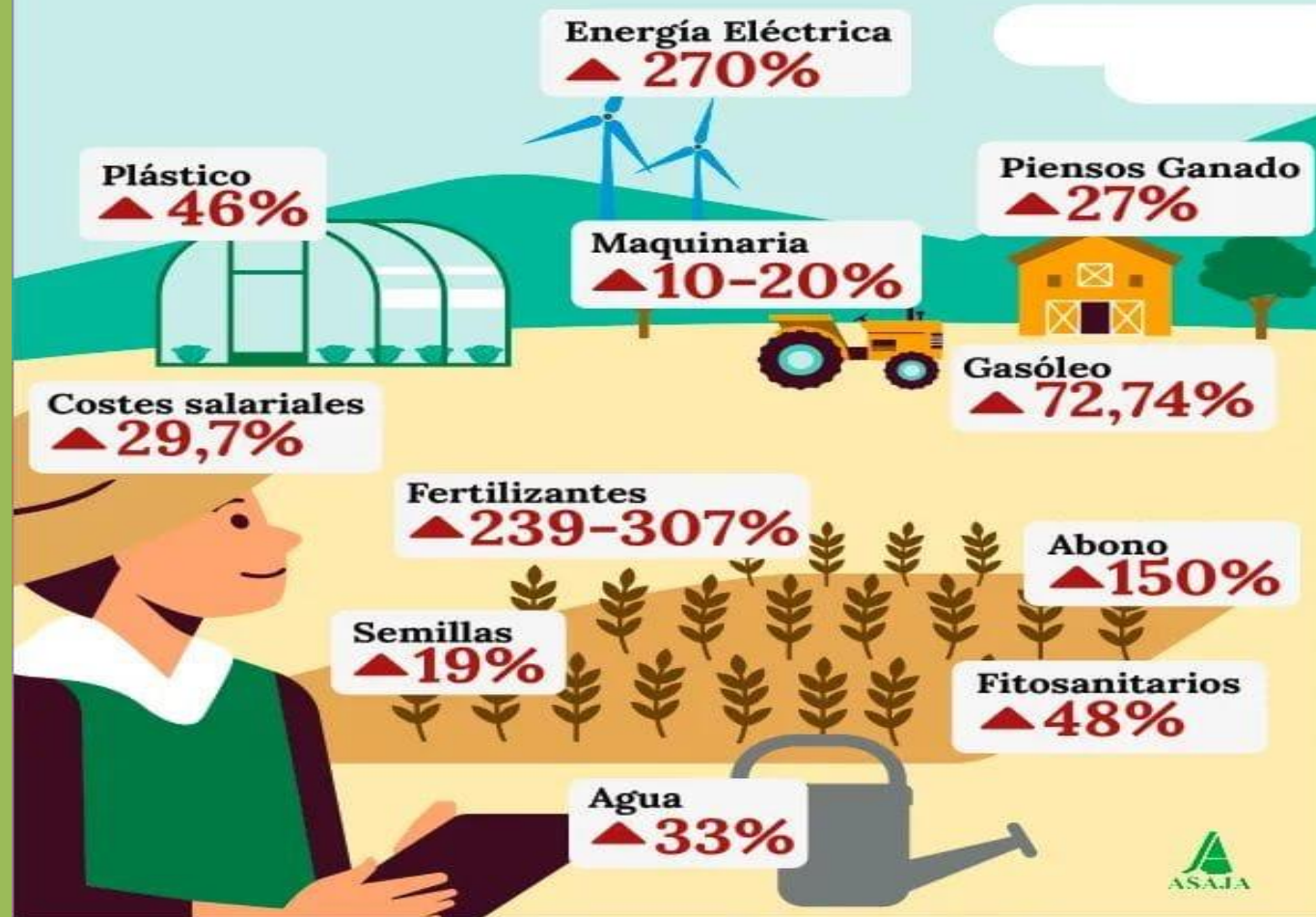
Foto de la Agencia Europea de Medio Ambiente (AEMA)



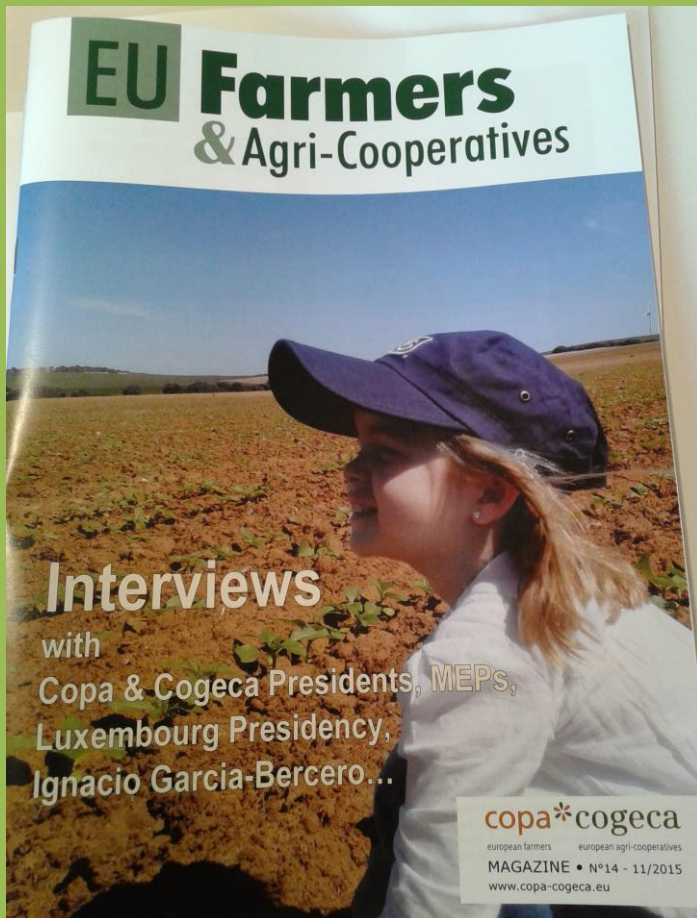
EROSION in Spain



El incremento de los costes de producción, asfixia al sector



COMMUNICATION





**In memory of Professor Klaus Ammann
Fellow at Royal Society of Biology**



THANK YOU



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<https://www.asaja.com>

Pedro GALLARDO BARRENA

President ASAJA Cádiz

President Cereals ASAJA Nacional

Vicepresident ALAS (Allian

Vicepresident COPA-COGECA

President Cereals Working Group COPA-COGECA

President Phytosanitary question Working Group COPA-COGECA