

The challenges of feeding a rapidly rising global population in the face of global warming and resource depletion

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Global food environmental impacts

Food is Essential to sustain life

It is also

- the World's largest industry
- the World's largest water user
- the World's largest polluter (33% of GHG emissions)



28% of world's population employed in agriculture



Agriculture uses
70%
of water worldwide.



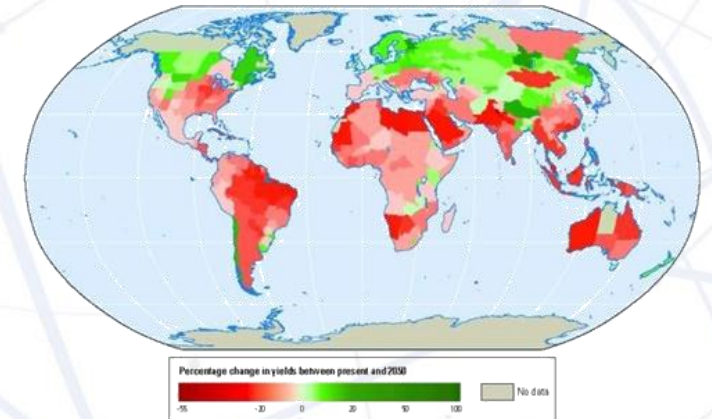
That leaves 30% for everything else:
drinking water
water for cooking
water for industry

www.ceres.org/FoodWaterRisk
#ThirstyFood



Food Security

- 7.4 billion people globally in 2016 of which 1.0 billion are undernourished
- 9.6 billion by 2050 – double food production in half the productive land
- Urbanisation:
 - 2016 50% (in cities)
 - 2050 70%
- Food productivity to reduce in tropical and increase in northern climates – increase transportation
- Global food waste ~1.3 billion tonnes per year (30% of production-can feed 3 billion people)



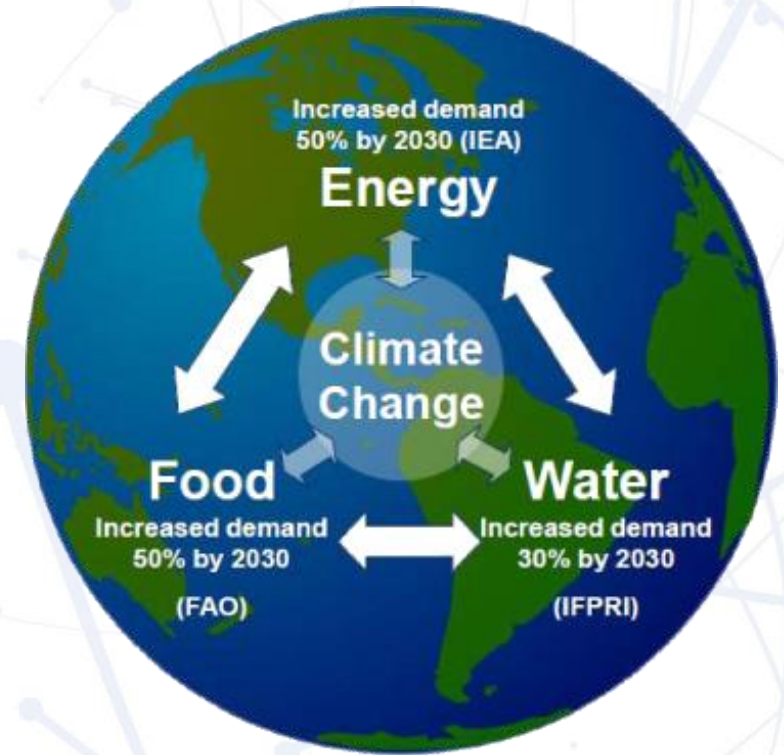
Wheeler & Von Braun (2013)

Food, Energy Water Nexus

- Food, Energy and Water are intimately interlinked- the Nexus
- All 3 impact on and are impacted upon by climate change
- Global warming – Paris Agreement < 2.0 °C by 2100
- Food alone, business as usual ~ 4.0 °C by 2100

A very complex global system and problem

Politics; economics; globalization; equity; nutrition; social sciences; physical sciences; social sciences; natural sciences; agriculture; technology; engineering



Food sustainability challenges-solutions through collaboration?

- Food Challenges:

- How we can produce more with less resources in a socially, ethically and environmentally sustainable way?
- How can we reduce food demand whilst improving nutrition, health, well being?
- How can we improve access, affordability and choice?

Solutions need international collaboration and inter and transdisciplinary thinking and approaches-scientific innovation alongside social change

- How can we collaborate to address some of these challenges?



Thank you

