



FutureDirections
international

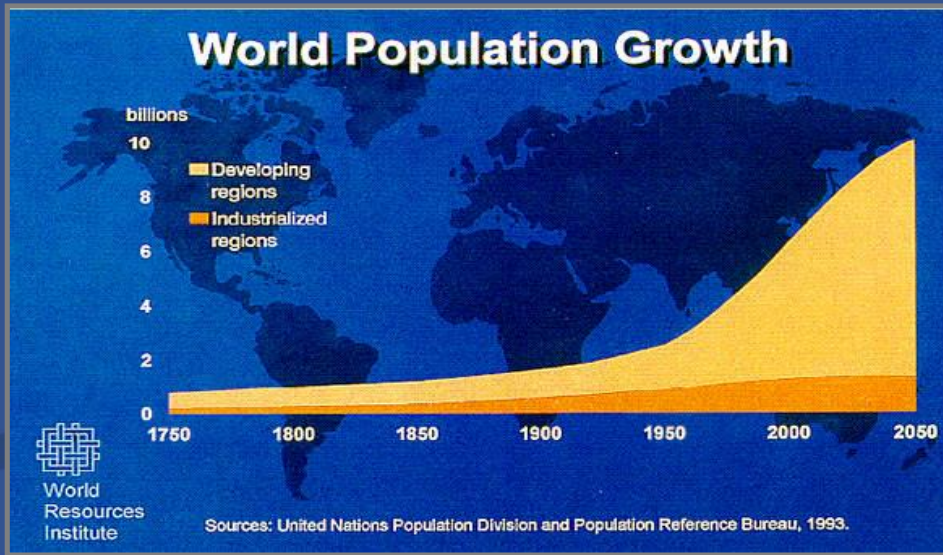


The Future: A Changing World with Different Threats



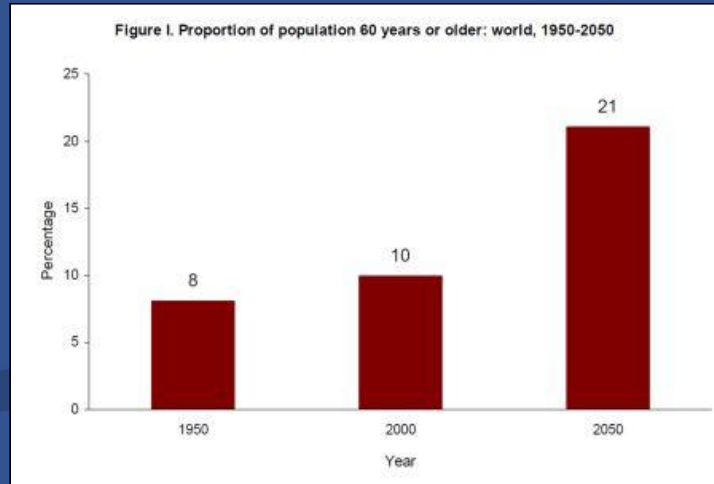
- Global Demographic Challenges
- The Impact of Food, Water and Soil Security
 - Climate Change
- The Global Rise of Inequality
- The Technology Revolution

World Population Growth



Demographic Fatigue







Food, Water and Soil



**Water is the core of sustainable
development**

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Status of water systems:

- Severely overexploited
- Contaminated
- Disputed
- Subject to leakage
- Evaporation

**FAO estimate that we need a 20%
increase by 2050**



Annual water usage

**1385 tonnes per person – based
on 2800 per American and 1000
per Indian or Chinese**

UNESCO Warning:

**One month per year acute stress
for 5 billion people by 2050**

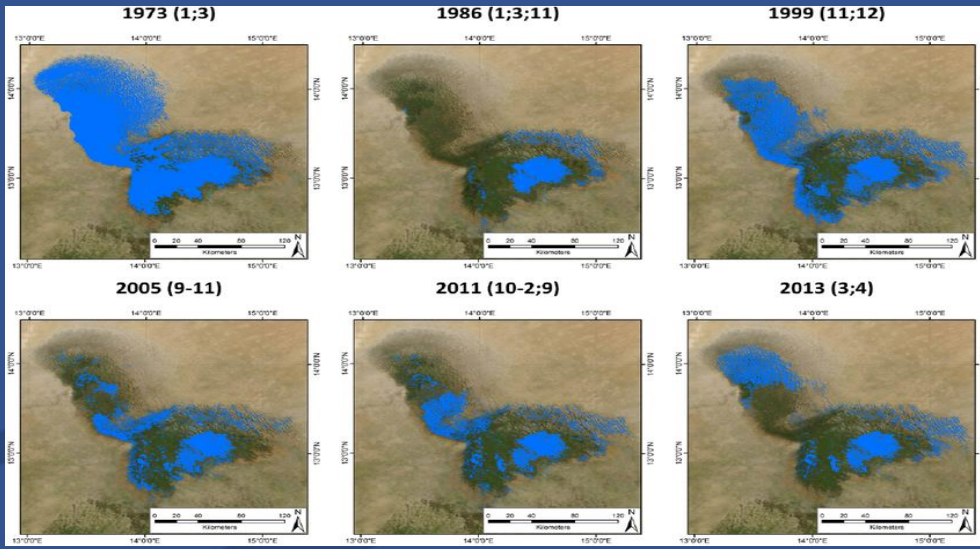




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World's lakes and Inland Seas

- Damming of feeder rivers
- Over- extraction of water
- Climate Change





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Out of Sight, Out of Mind



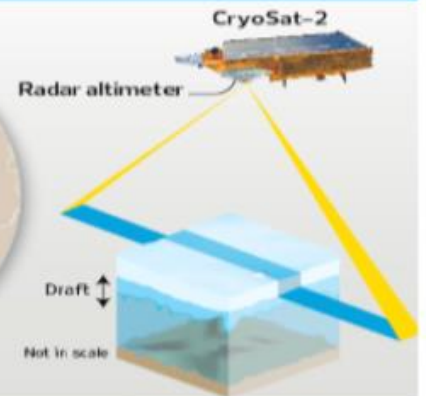
By 2050, 1.8 billion people will be in regions where there is no groundwater and most will probably be forced to move.

SHRINKING ICE CAPS



The Arctic sea ice cover reaches its minimum in September. The remaining ice is called the perennial ice cover. CryoSat determines variations in its thickness so total ice volume can be worked out

SOURCES: ESA, NSIDC RIST



Large-scale, involuntary migration

2015

International
Year of Soils



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75 percent of the world's land areas are degraded with some 3.2 billion people at risk

We have 60 years of top soil left



**“The destructive human jawbone is
devouring the earth and this is not a
wise strategy for our long-term survival”**

Julian Cribb

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Land under crops may have to increase by 70m ha by 2050 (FAO) while farm land is declining (49.4m sq. km in 2000 to 48.6 sq. km in 2015)

Humanity now depends on a
shrinking resource to create an
expanding food supply



“Years of variable food yield and volatile commodity prices, together with the certainty that food demand will increase substantially by the middle of the century, suggest increasing global instability and human suffering, with the possibility of widespread conflict. Political turmoil, social unrest, civil war and terrorism are all likely”

“We need to inform food consumers and impress relevant decision makers that land and water systems, underpinning many of our food producing system's worldwide are being stressed to unprecedented levels of demand and that climate change is expected to exacerbate these stresses.”



Climate Change

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Climate change is occurring, is very likely caused by human activities and poses risks for a broad range of human and natural systems.



- 5-15% crop reductions
- 3-10% increase in rainfall, resulting in flooding in selected areas
- 5-10% decrease in certain streams
- 200%-400% increase in areas burnt by wildfires

Global Inequality



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Technological Change





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