Taking action on the evidence: the three IPCC Special Reports together

Richard Betts @richardabetts
E. Food demand
Increases in production are linked to consumption changes.

CHANGE in % rel. to 1961 and 1975
1. Population
2. Prevalence of overweight + obese
3. Total calories per capita
4. Prevalence of underweight

F. Desertification and land degradation
Land-use change, land-use intensification and climate change have contributed to desertification and land degradation.

CHANGE in % rel. to 1961 and 1970
1. Population in areas experiencing desertification
2. Dryland areas in drought annually
3. Inland wetland extent
Global mean surface air temperature
change relative to 1986–2005
Global total net CO₂ emissions

In pathways limiting global warming to 1.5°C with no or limited overshoot as well as in pathways with a higher overshoot, CO₂ emissions are reduced to net zero globally around 2050.

Global mean sea level change relative to 1986–2005
Global total net CO₂ emissions

Billion tonnes of CO₂/yr

In pathways limiting global warming to 1.5°C with no or limited overshoot as well as in pathways with a higher overshoot, CO₂ emissions are reduced to net zero globally around 2050.

Four illustrative model pathways

Global mean sea level
change relative to 1986–2005

SSP1 Sustainability-focused
Change in Land from 2010 (Mkm²)

SSP5 Resource intensive
Change in Land from 2010 (Mkm²)
Climate action on short and long timescales

Increasing need for adaptation action to address existing risks

Growing commitment to long-term impacts, e.g., sea level rise

Limiting global warming to 1.5°C requires urgent mitigation
- net emissions will need to become negative

Negative emissions need use of land
- synergies and trade-offs with other land uses
Taking action on the evidence: the three IPCC Special Reports together