



- climate change – a fact?
- consequences for global agriculture
- managing the risks
- public interest & private means

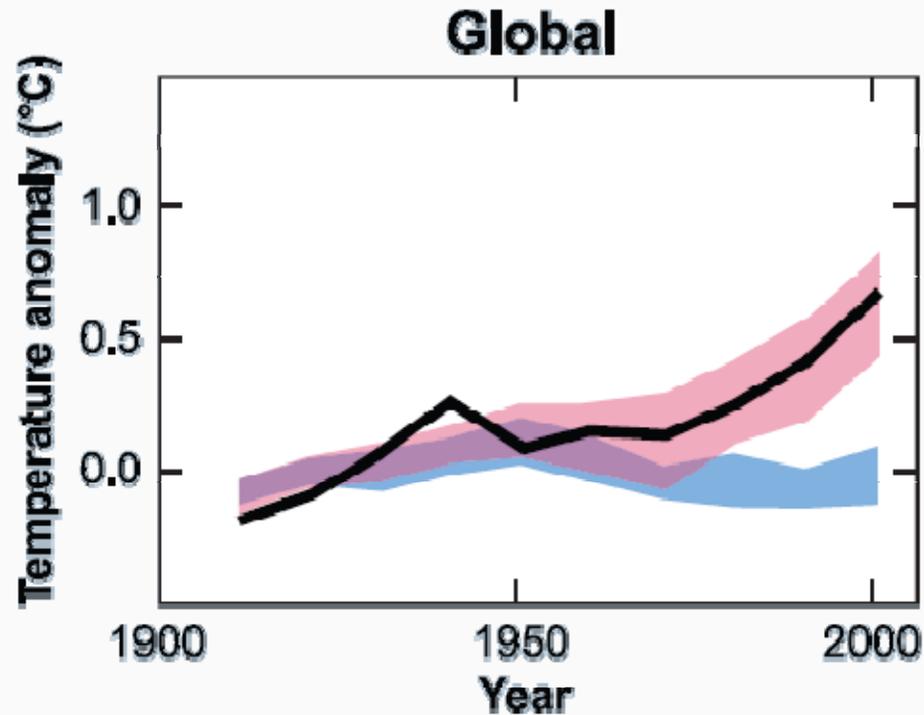
## CLIMATE CHANGE CONCERNS FROM A REINSURER'S PERSPECTIVE

Climate change calls for efficient risk management in agriculture

Lambert Muhr  
Ag Outlook Forum USDA, Feb 19<sup>th</sup>, 2010

# climate change

» status quo



-  models using only natural forcings
-  models using both natural and anthropogenic forcings
-  observations

Source: IPCC, AR4, 2007

we are in it ...

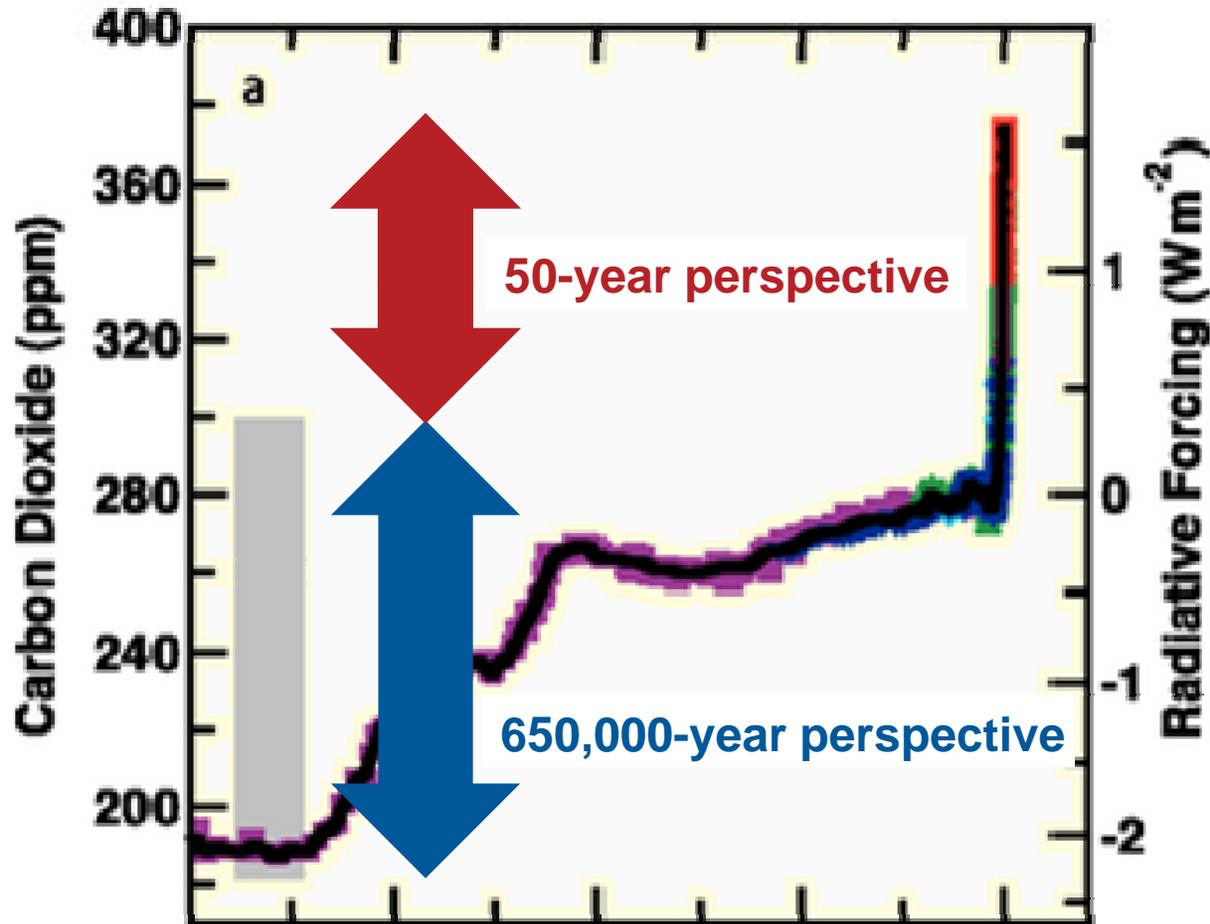
- +0.74°C in the last 100 years

we are behind it ...

- man-made forcings >90%

# climate change

» logic



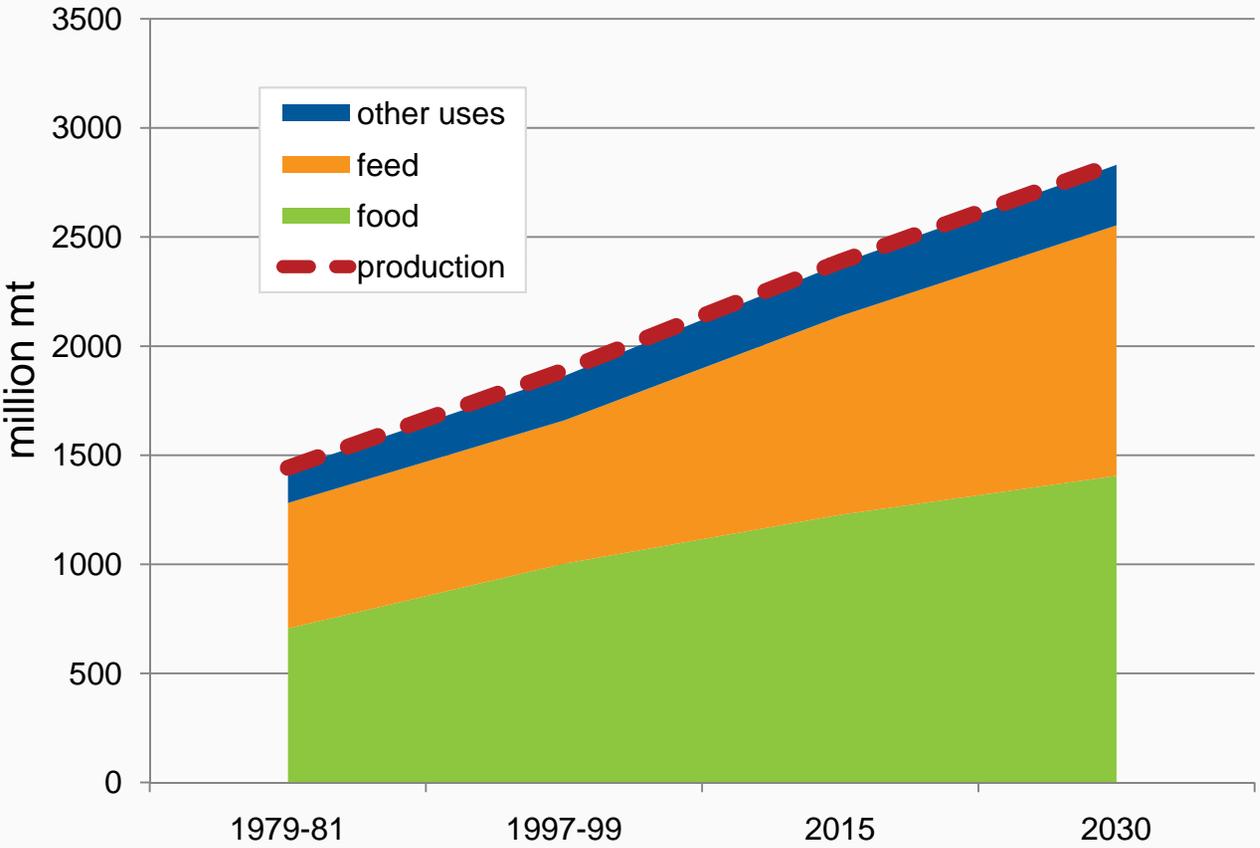
Source: IPCC, AR4, 2007

how would we know ...

- first we observe,
- then we reason.

# consequences for global agriculture

» do we have to worry?



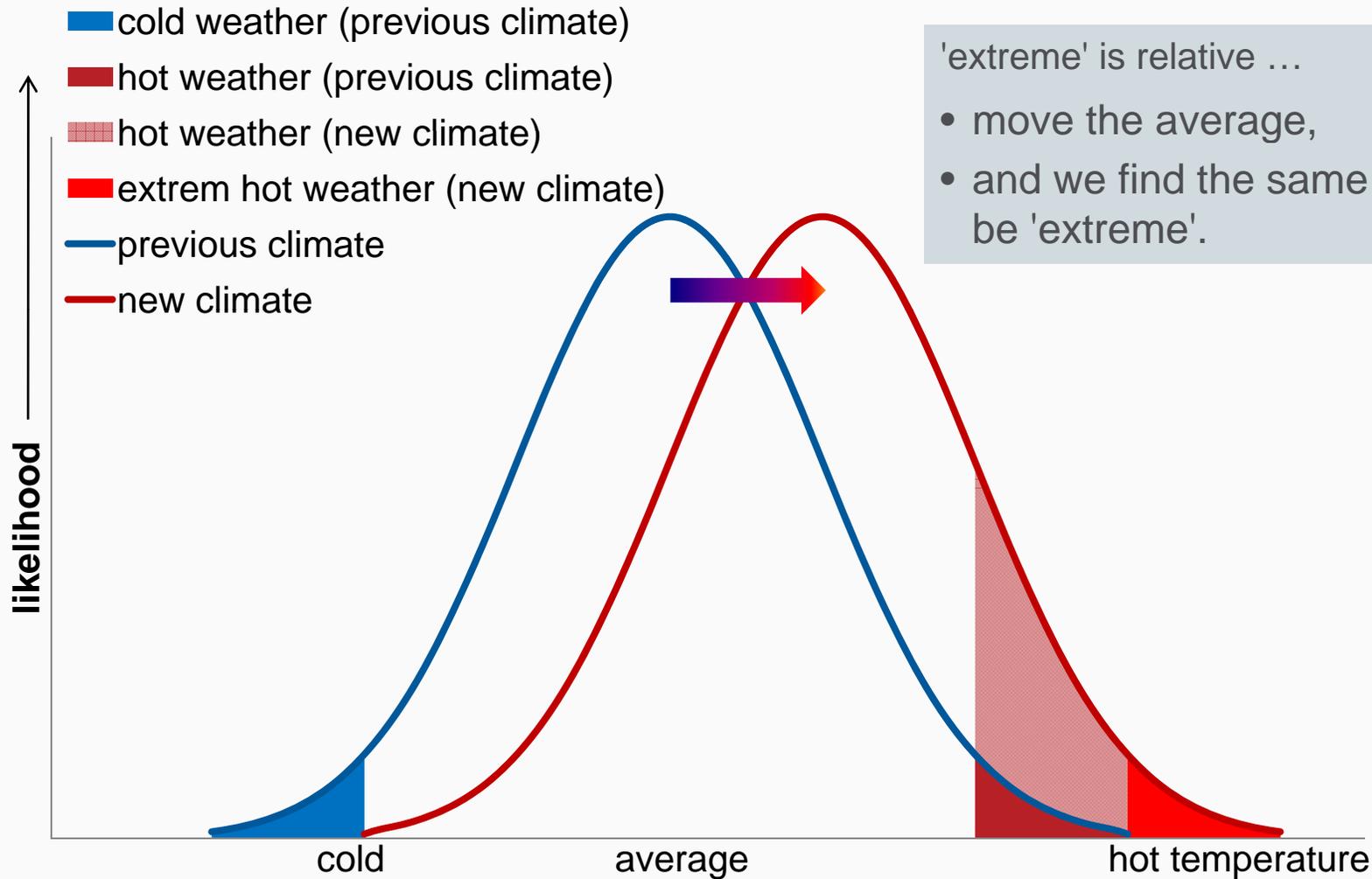
OECD/FAO's view ...

- we increase yields,
- plough more land,
- while need less.

Source: FAO/OECD, 2009

# consequences for global and US agriculture

» climate matters, but weather does more



'extreme' is relative ...

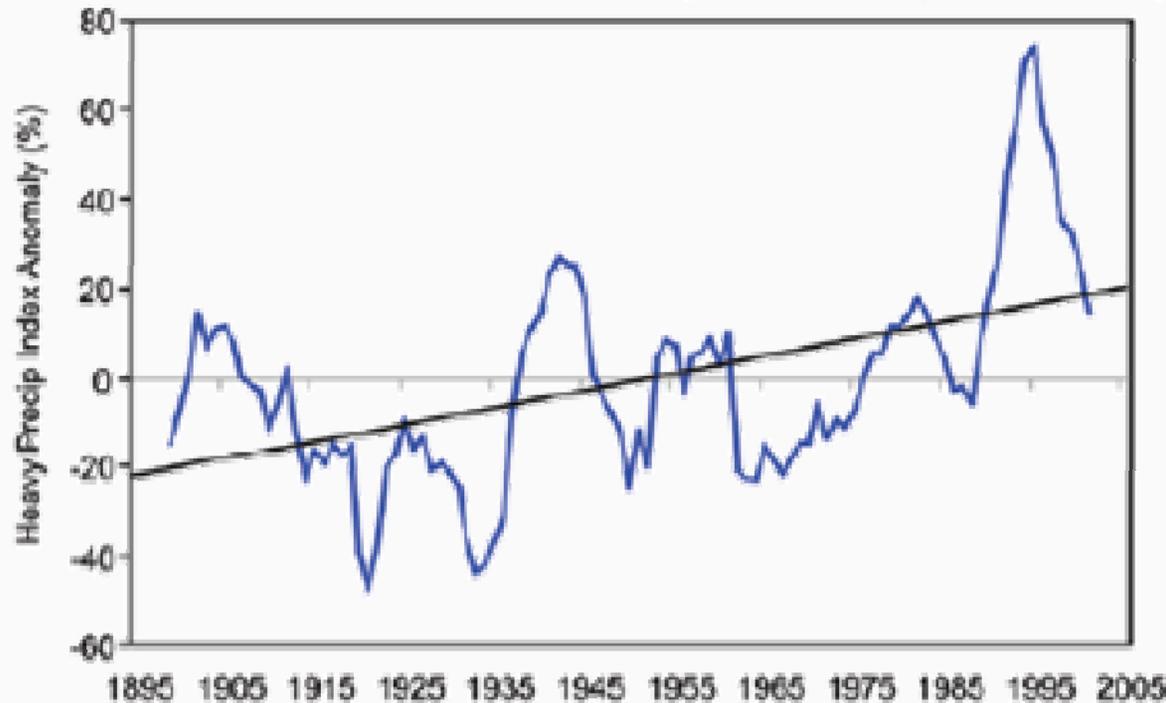
- move the average,
- and we find the same odds to be 'extreme'.



# consequences for global and US agriculture

## » winners & losers (1)

Increase in the Occurrence of Periods of Heavy Rainfall Lasting at Least 90 Days



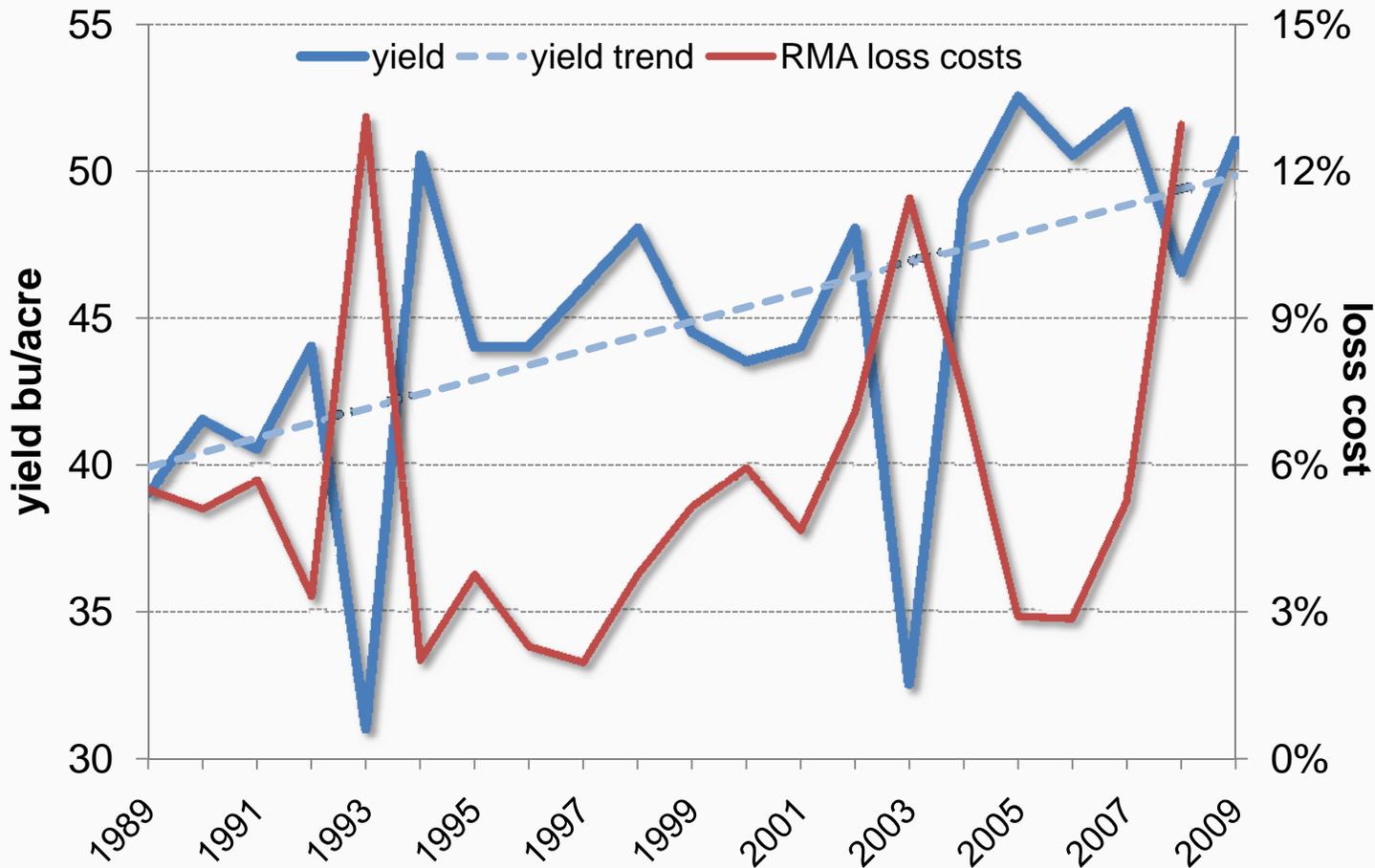
another bad news is ...

- extremes cause instability everywhere,
- mainly it's about anomalies of water supply or frost.

Source: CCSP, 2008

# consequences for global and US agriculture

## » winners & losers (2)



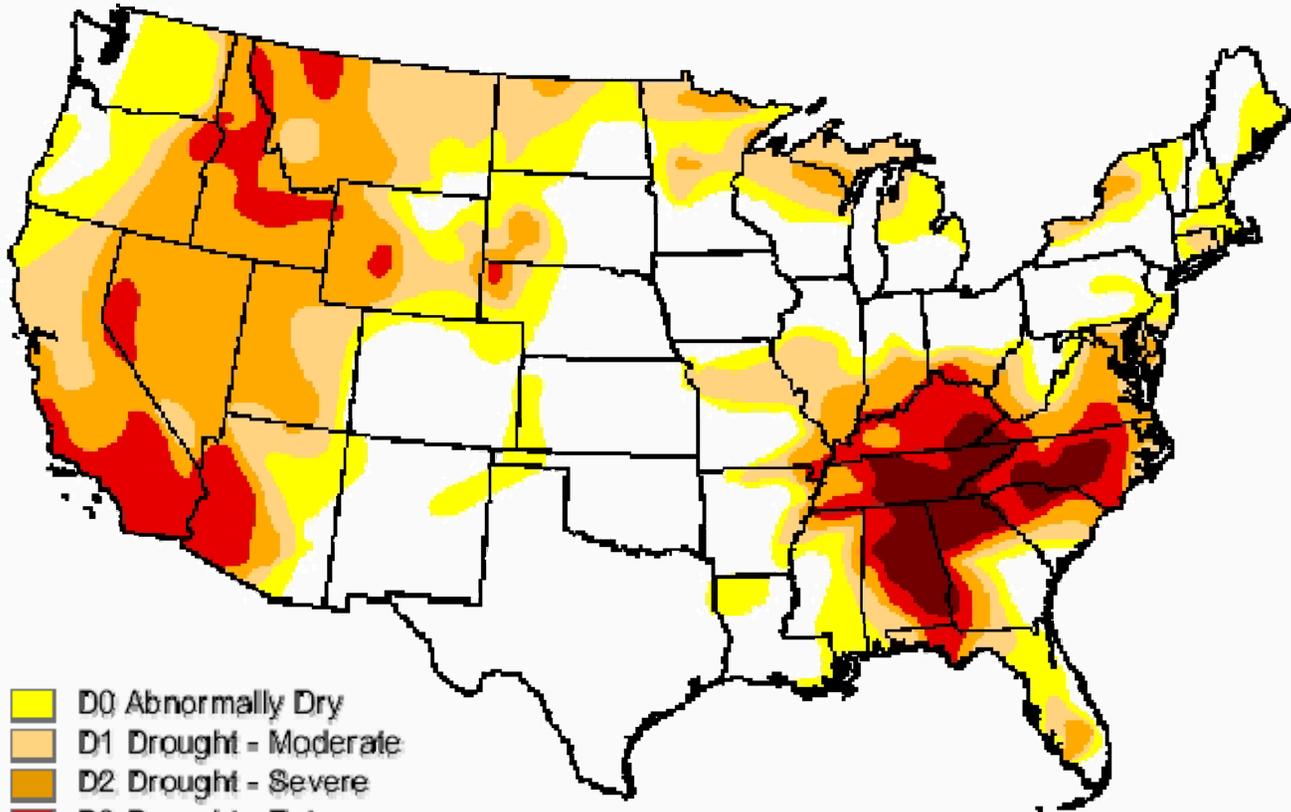
Source: NASS, RMA, 2010

agriculture – a risk-prone industry ...

- e.g. soybean yields in IA,
- mirrored by RMA loss costs.

# consequences for global and US agriculture

» winners & losers (3)



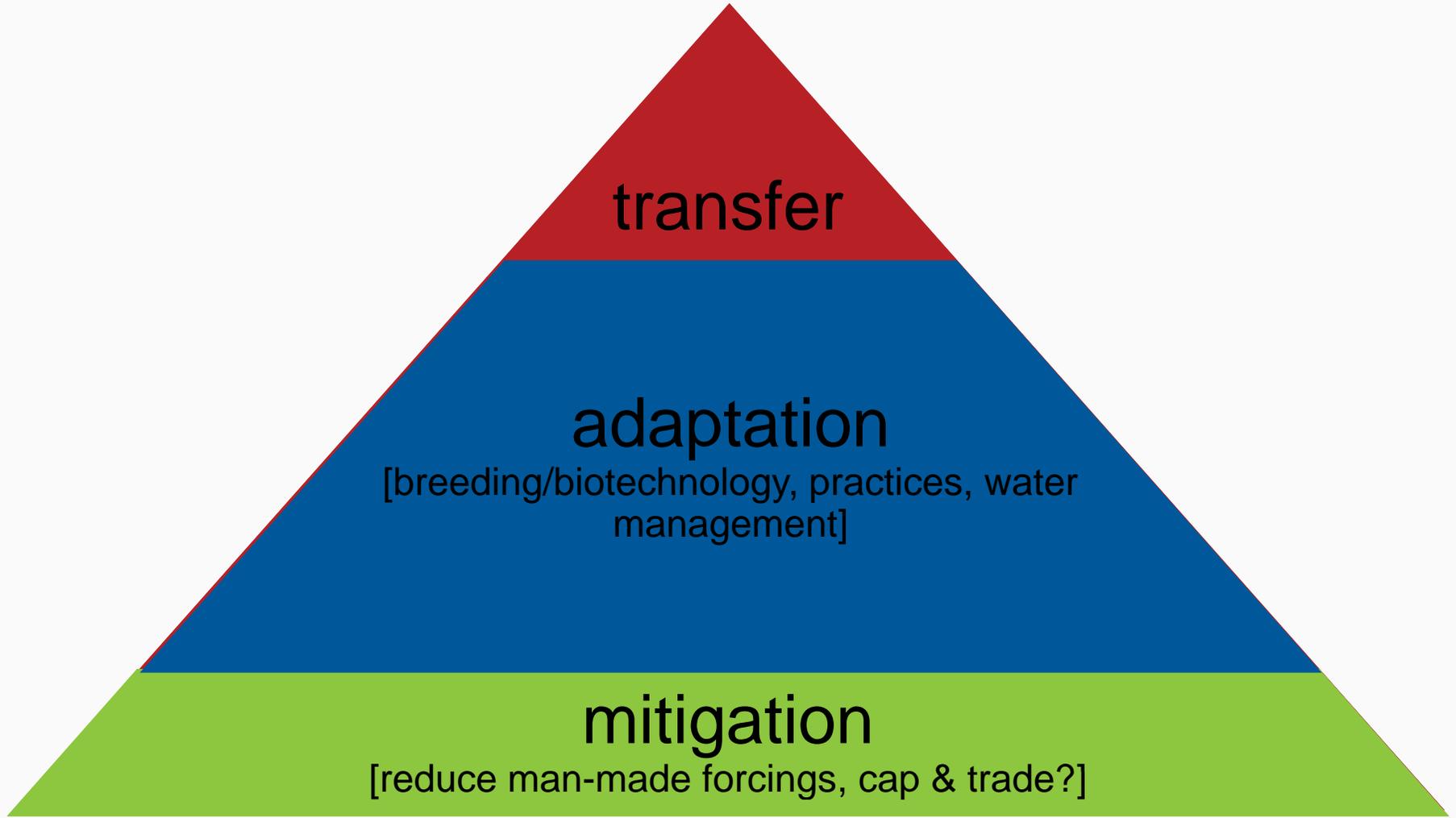
-  D0 Abnormally Dry
-  D1 Drought - Moderate
-  D2 Drought - Severe
-  D3 Drought - Extreme
-  D4 Drought - Exceptional

agriculture – a risk-prone industry ...

e.g. drought conditions in October 2007.

# risk management

» from risk mitigation and adaptation to risk transfer



climate – weather risk

## risk transfer

### » public interest & private means



- public interest: strong agricultural sector, food security, renewable energy supply, sustainable environment, carbon footprint
- USDA assuming its responsibility for the sector through an effective risk management system utilizing private sector resources
- private sector's role is
  - distribute, administer, assess losses, improve
  - taking risk (by providing access to competitive risk capital),
  - providing insurance platforms.
- Munich RE has assimilated the RMA model into 'SystemAgro' and is assisting agricultural sectors worldwide in adopting and adapting 'SystemAgro'

## risk transfer

### » maximize private means

////////////////////////////////////  
to optimize the contribution from private means (agents, insurer, reinsurer)

- make maximum use of private sector's risk capital (include future loss years in public budgets, no obligatory quota share, transfer larger portion of risk (loss and gain)),
- reduce agents' competition for underwriting gains by adjusting rates and limiting agent commissions (rather than redistributing underwriting gains),
- make the system simpler (less complicated risk sharing, less reference prices),
- provide stability of the system (maintain a sufficient level of A&O reimbursements, less frequent changes in SRA, rules).



thank you for your attention !