SYSTEMAGRO – THE BASIS FOR SUSTAINABLE RISK MANAGEMENT IN AGRICULTURE

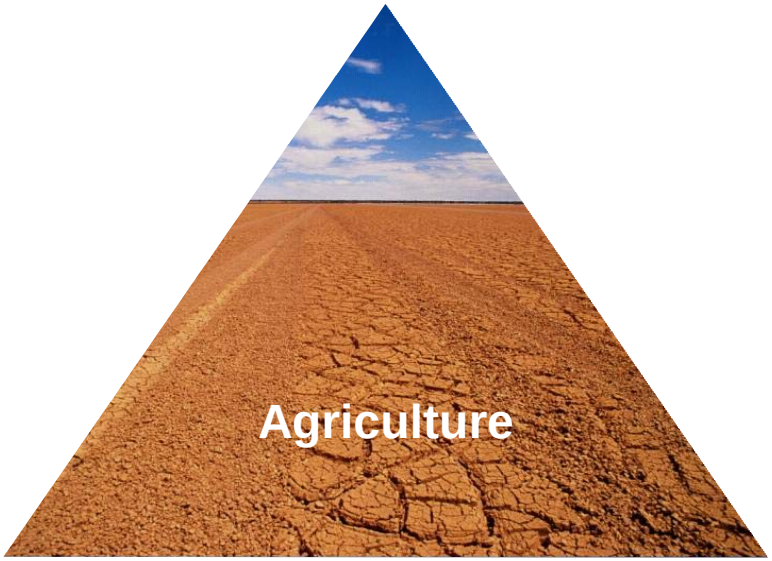
Thomas Blunck
Karl Murr
Munich, 29 June 2010

Munich RE

Challenges in agriculture make risk management more important than ever

Munich RE

Food and energy



Natural hazards and climate change

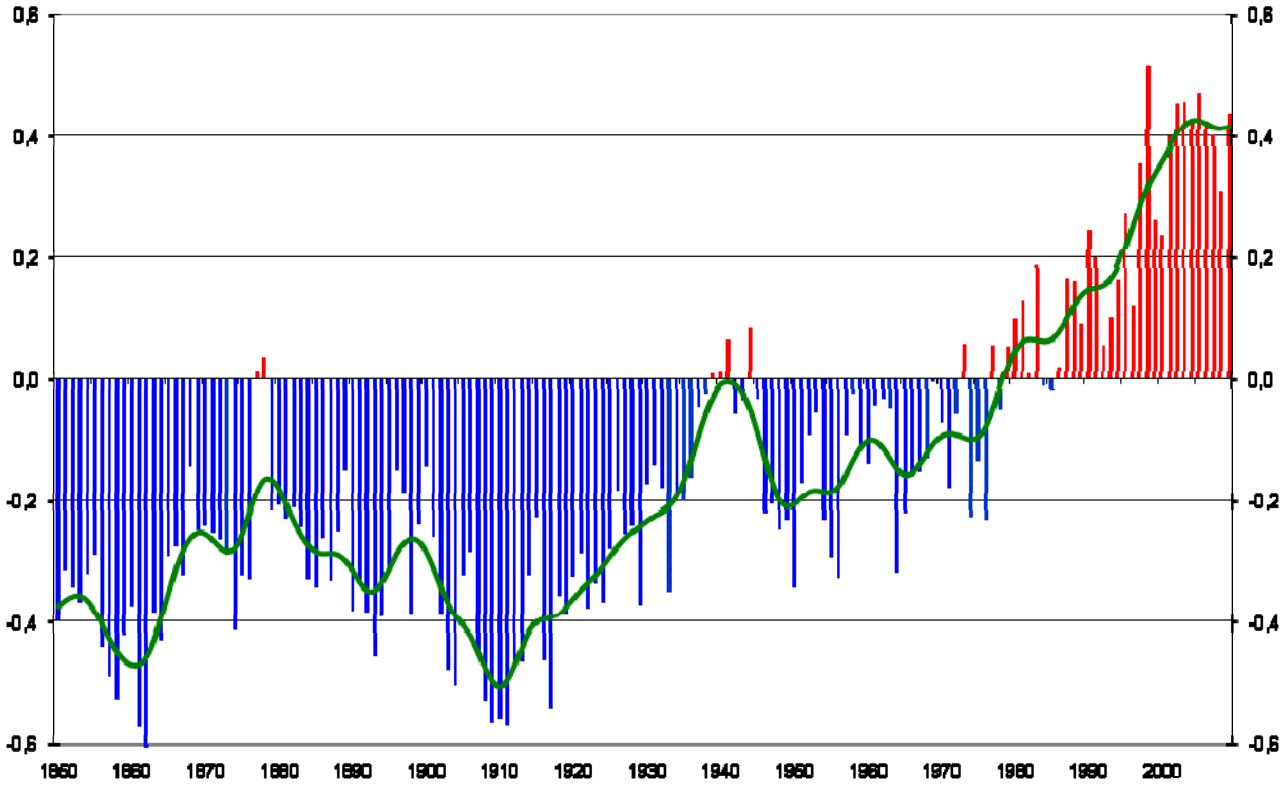
Finance and investments

Climate is changing
Rise in globally averaged temperature

Munich RE

Globally averaged temperature 1850 – 2009

Deviation in temperature from the mean from 1961-1990

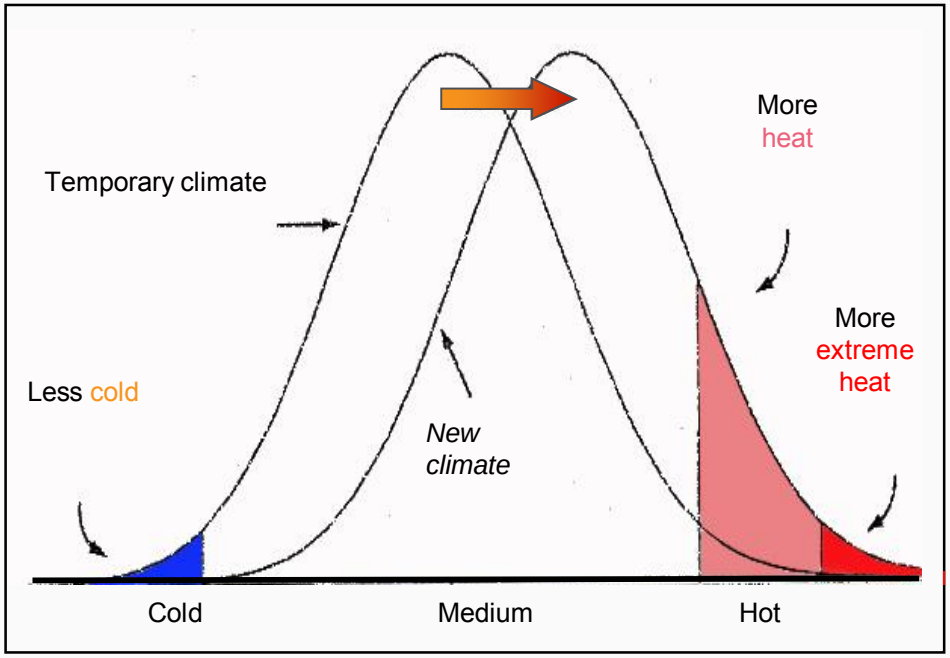


2009: + 0.44 °C
above the annual mean 1961-1990 (14 °C).

More extremes in a warmer climate

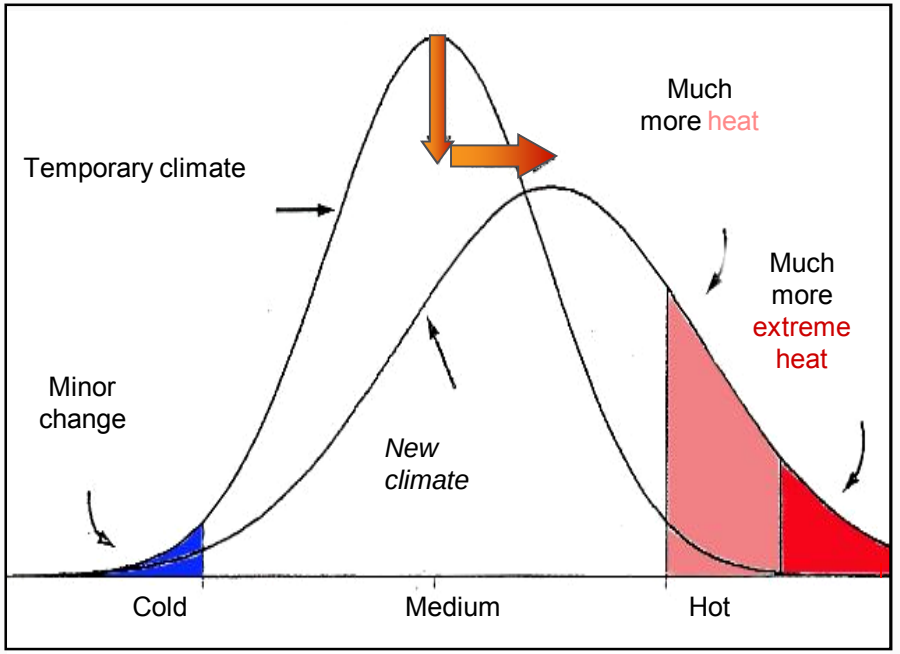
Munich RE

Increase in mean value



Source: P. Hupfer, Naturwissenschaftliche Rundschau, 5/04, p. 233 et seq.

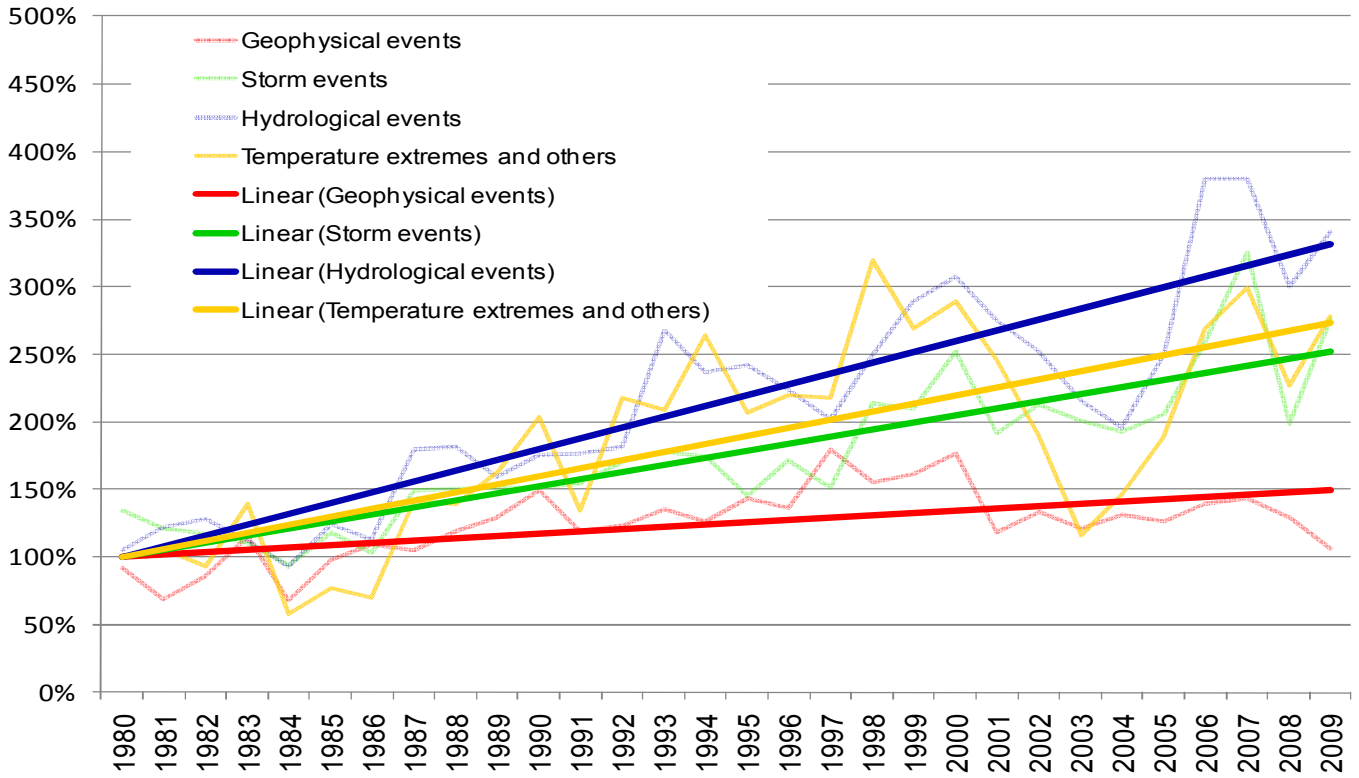
Increase in mean value and variance



Source: P. Hupfer, Naturwissenschaftliche Rundschau, 5/04, p. 233 et seq.

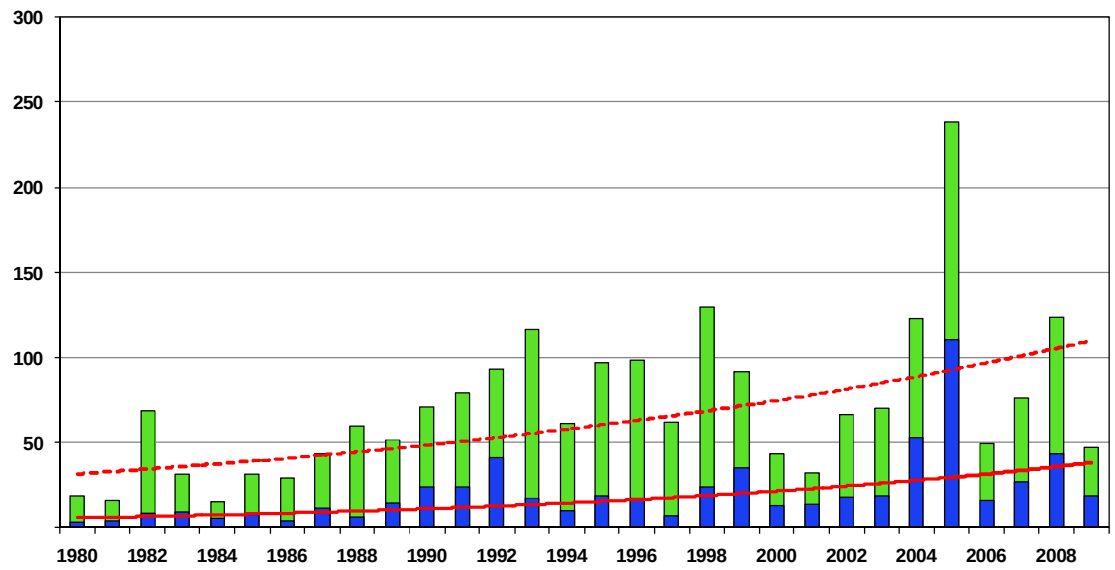
Number of natural catastrophes worldwide 1980 – 2009
Upward trend

Munich RE



Number of weather-related natural catastrophes is rising faster than the number of geophysical events

Weather catastrophes worldwide 1980 – 2009
Losses are increasing



Total losses

Insured losses

Trend line, total losses

Trend line, insured losses

Weather-related natural perils in agriculture

- Dry spells, heat waves, shortage of water
- Floods, heavy rain, hail
- Shift in growth periods, frost

→Severe weather-related events are already numerous – with upward trend

- Risk minimization measures, such as hail nets or irrigation systems are only cost-efficient above a certain concentration of values, e.g. fruits

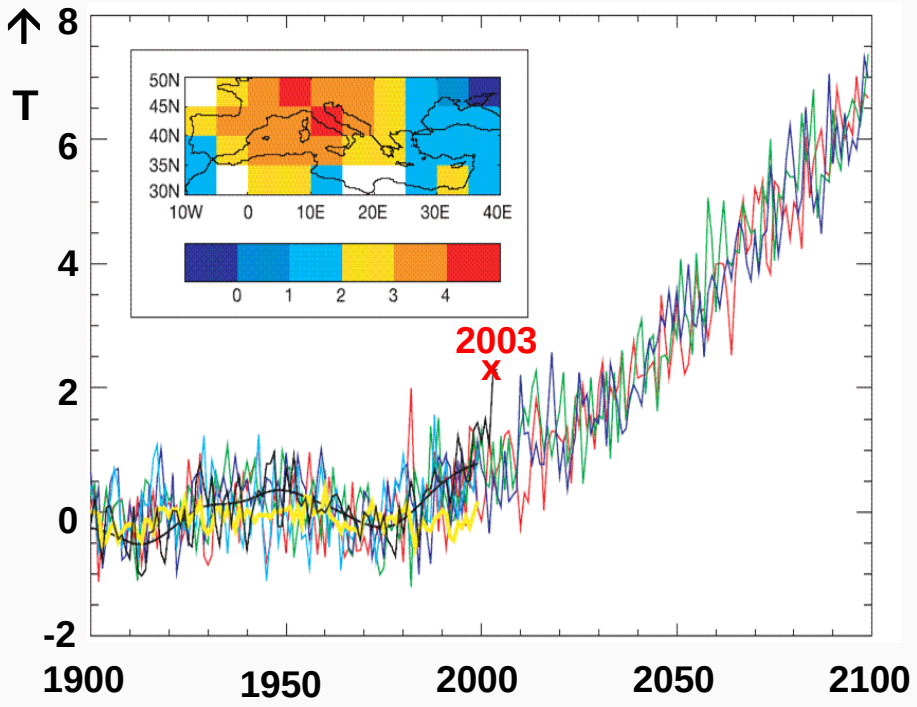
→Considerable fluctuations in harvest yields

→Declining harvest yields on average

Expected change in summer temperature and dry spells

Munich RE

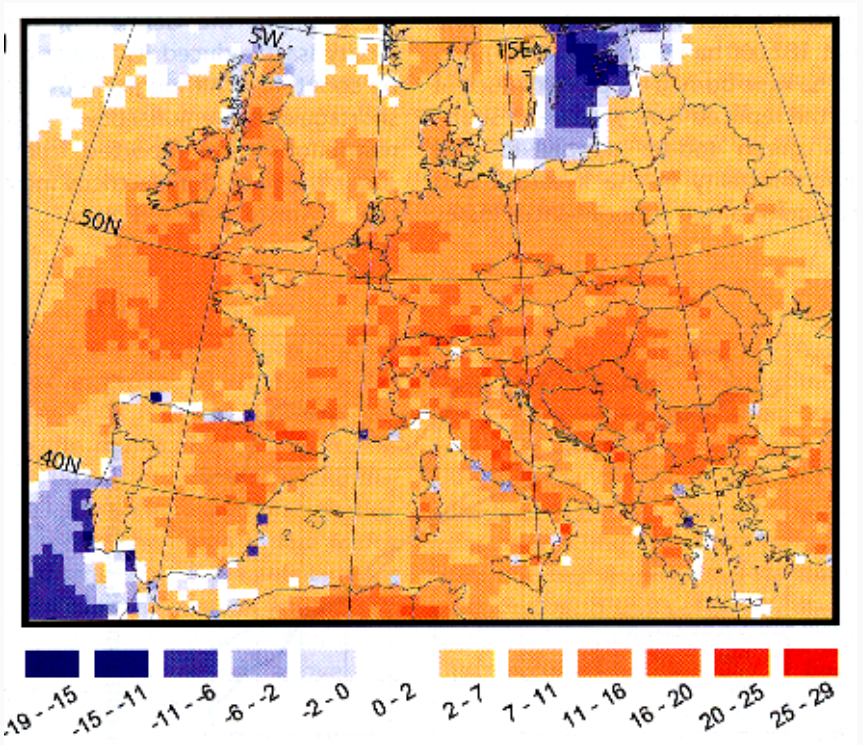
Temperature change (June – August)
(Southern and Central Europe)



Deviation from mean temperature 1961 – 1990

P.A. Stott et al. Nature 432 (2004), p. 611

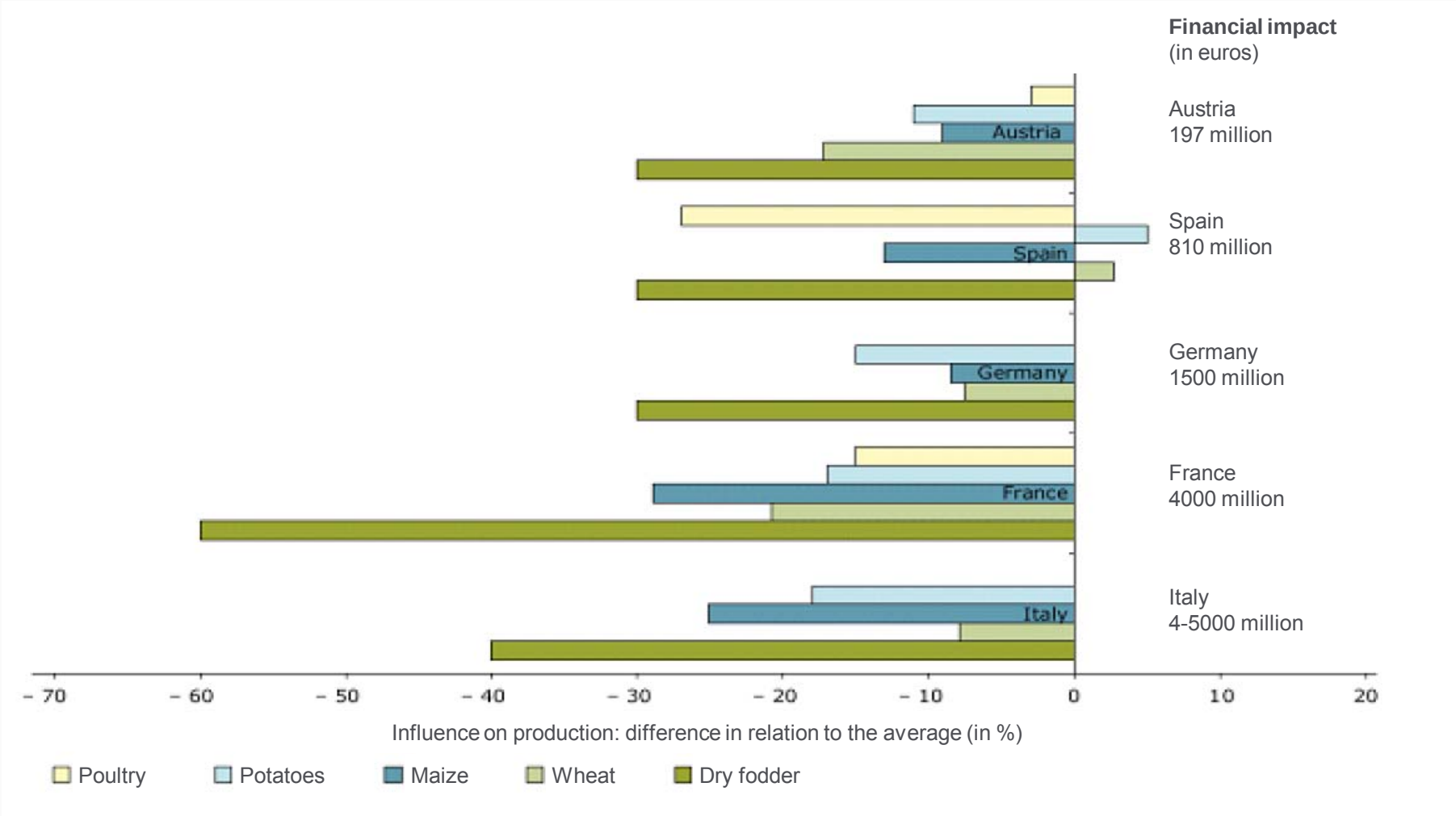
Longer dry spells
(Number of days with < 0.5 mm precipitation)



Example Italy: Dry spells up to 20 days longer

UK-Model HadRM3P; Fink et al., Weather 59 (2004), p. 214

Heat wave and drought 2003 in Europe
Effects on agriculture



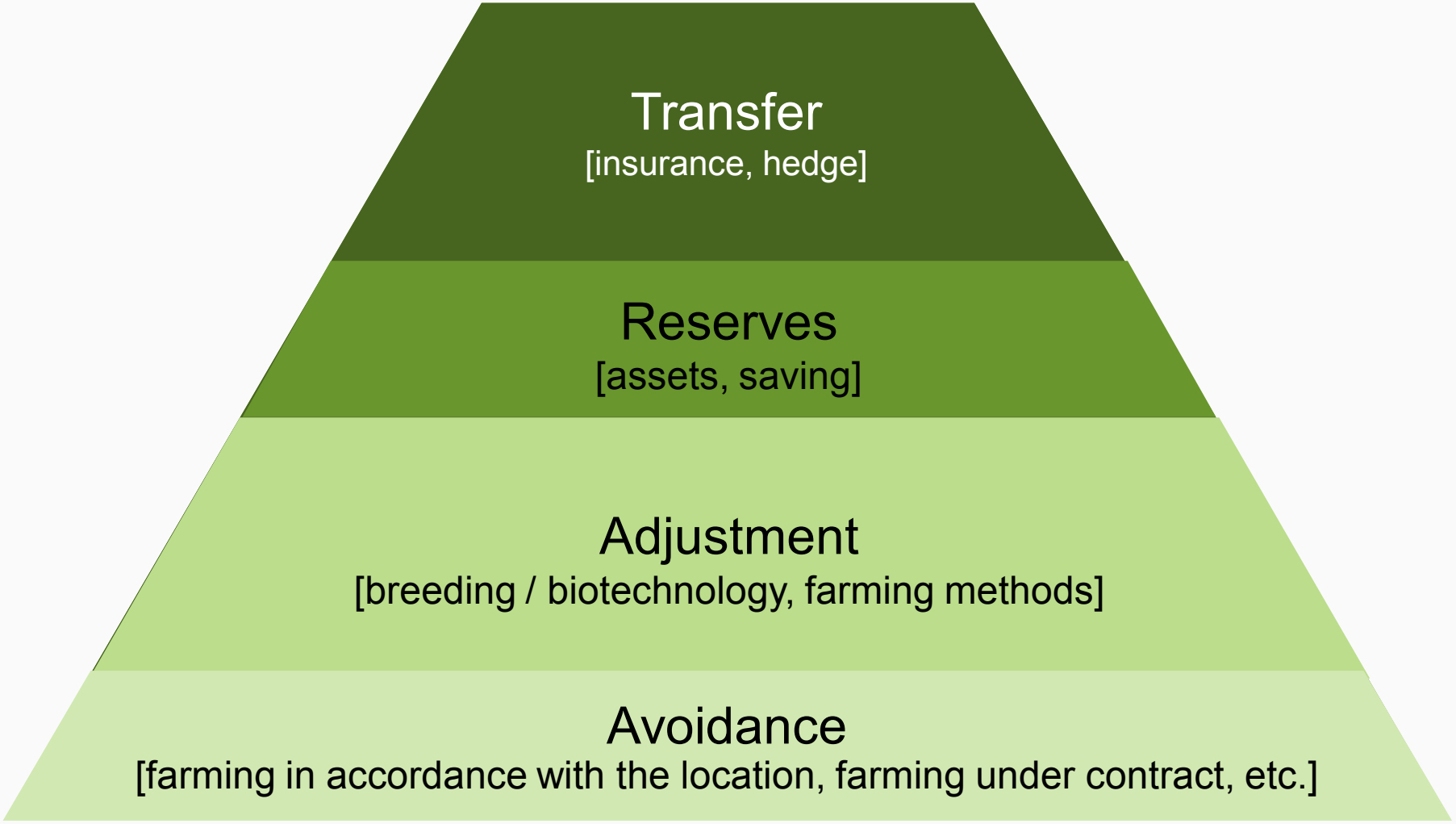
Source: UNEP/DEQA (2004); Data source: GOPA-COGECA (2003)

Munich RE

SYSTEMAGRO — ADDED VALUE FOR ALL STAKEHOLDERS IN AGRICULTURE

Climate change makes risk management in agriculture more important

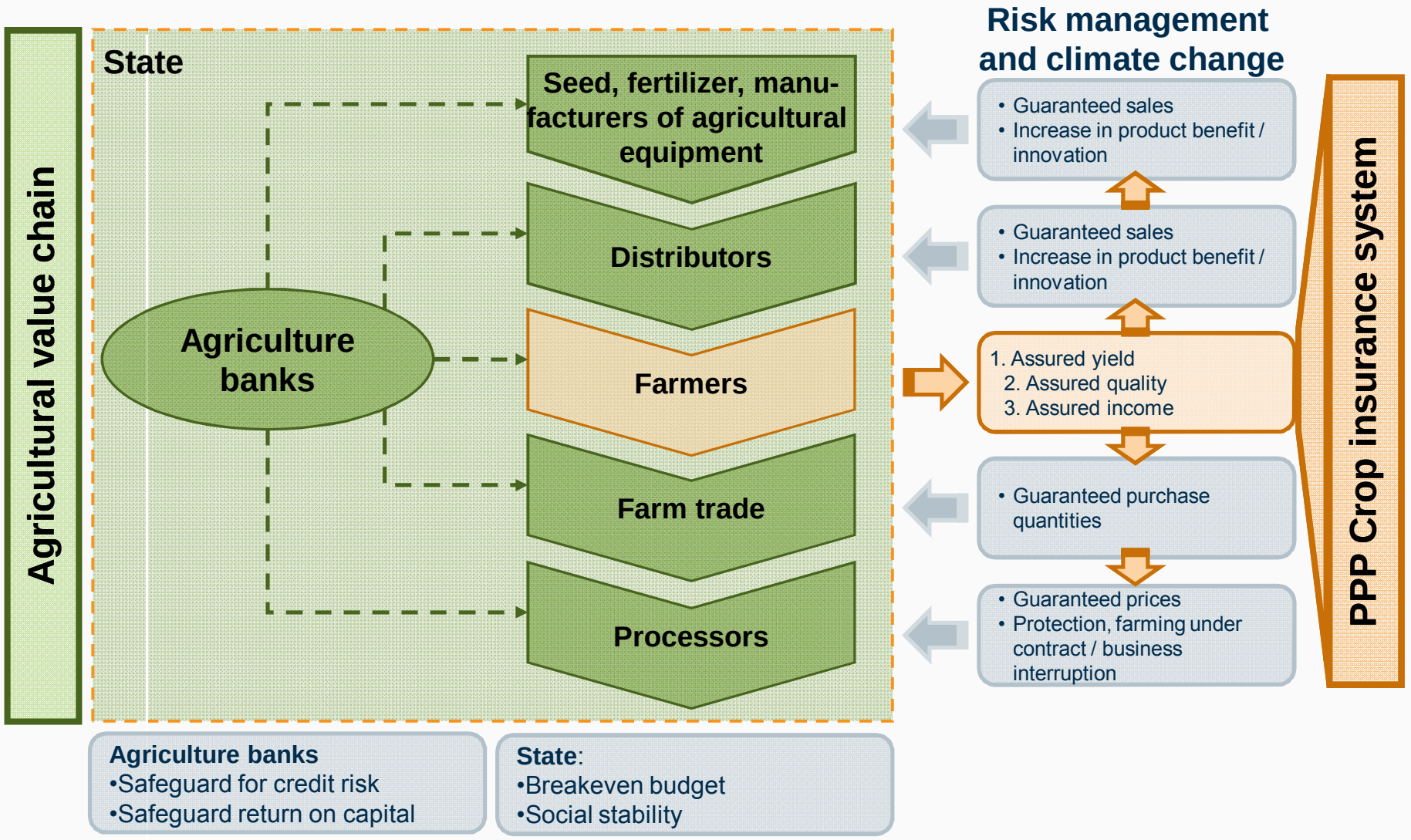
Munich RE



Risks (yield, market, politics)

Insuring the risks from climate change is fundamental to the agricultural value chain

Munich RE



Source: Based on World Bank, 2010

Risk management that prepares farmers for the future

Munich RE

Conventional safeguards

- Diversification through mixture of crops
- Hail insurance
- Creditworthiness through the Land Register
- Direct EU payments stabilize income
- Ad-hoc payments following a catastrophe

Environmental changes

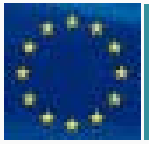
- Fewer main crops: less diversification
- Climate change
- Ever higher investments: increasing financial risk
- Larger operations, smaller ownership share
- More volatile prices
- GAP 2013

Risk management in SystemAgro

- Growing demand for risk transfer
- State-aided crop insurance for all risks
- Multi-peril crop insurance stabilizes earnings and offers protection against the risk of ruin: acts as credit insurance for banks and agro-business
- Legally assured protection in the event of disasters

Changing agricultural policy

Munich RE



European agricultural policy today

- Mistakes in past market and price policy have been corrected
- Competitiveness of the agricultural sector has been improved
- Introduction of a second pillar accompanied by measures to promote socially desirable activities
- Direct payments to compensate income, coupled with requirements

Challenges and goals

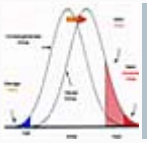
- Enlargement and specialization of the operations
- Declining and more volatile agricultural prices
- Climate change
- Responsibility for feeding the world
- Interconnection of agricultural policy objectives

GAP 2013: Crop insurance stimuli

- Direct payments partly used to finance crop failures
- EU-wide measure subsidizes farmers' insurance premiums
- Among other things, the risk of losses exceeding a certain limit is borne by the state
- Establishment of a government drought fund

Reasons behind the need for government involvement

Munich RE



Type of risk

- Risk sensitivity: entire regions may be affected
- High frequency of catastrophe losses

Type of production

- Production cannot be relocated
- Open-air production
- Different risk exposure depending on location

P Political objectives

- Degree of self-sufficiency
- Socio-economics: promotion of rural areas

Public-private partnership:
SystemAgro crop insurance system

Effective multi-peril crop insurance as a public-private partnership

Munich RE

Sustainable
… for all stakeholders in the agricultural production chain

Tailored
… to each farmer's individual risk

Open for all farmers
… to ensure liquidity for equipment and investments

Transparent
… for all parties

Insurance premium co-financed by the state

Munich RE

Objectives	Measures	Background
▪ Make the insurance premium affordable to farmers ▪ Farmers obtain sufficiently high coverage ▪ Ensure high level of participation	▪ Premium is co-financed by the government ▪ Budget defined by law for several years	▪ Risk-adequate premium for agricultural insurance is very high: around 10% of the sum insured. This makes agricultural insurance barely affordable. ▪ From an economic point of view, state-subsidized premiums are the most effective and cost-efficient means of affording protection against agricultural risks

Management tool for achieving agricultural policy objectives

Catastrophe losses co-financed by the state

Munich RE

Objectives	Measures	Background
▪ No ad-hoc payments by government following a catastrophe ▪ Lower premium rates as claims volatility of private insurers declines	▪ Clear definition of the amount of loss above which the state shares in the insured catastrophe losses	▪ Extreme losses with a loss ratio of around 300% have a return period of 10-20 years in crop insurance → cannot be insured by the private sector ▪ System remains stable, as insurers do not withdraw from the market after a number of years with extremely high losses

Stabilization of the insurance system

Open for all farmers

Munich RE

Objectives	Measures	Background
▪ All farmers can basically purchase insurance cover ▪ This means that all farmers can obtain financial aid from the government	▪ Premium subsidies are coupled to other agricultural policy measures ▪ This increases the frequency of insurance in the agricultural sector	▪ High penetration of the market means high premium volume ▪ Large portfolio allows risks to be spread widely ▪ Multi-peril cover prevents negative risk selection, as it is not possible to pick and choose the perils covered

More just distribution of financial aid from the state

Importance of SystemAgro for farmers
Financial security and planning security

Munich RE

Farmers

Expectations to be met by the farmers:

- Good professional practice and management of the business
- Agricultural risk management
- Risk deductible reflecting normal fluctuations in income

Advantages for the farmers

- Affordable insurance premiums
- Coverage of all natural perils, based on individual risk exposure
- Fewer fluctuations in annual income and protection against the risk of ruin
- Better creditworthiness

Role of agricultural insurers in SystemAgro
Existing infrastructure and know-how

Munich RE

Agricultural insurers

Role of insurers:

- Assessment of the risks to be covered and of the losses
- Development of policies and calculation of rates
- Prompt payment of claims
- Administration and claims settlement
- Marketing and sales
- Innovation, development of new products

Advantages of the public-private partnership:

- Sustainable stability of the system
- Permits long-term investment in new insurance products and efficient processes
- Balanced risk portfolio

SystemAgro: Duties and advantages for the state
Clear budgeting and management of agricultural policy goals

Munich RE

State

Duties:

- Definition of the statutory framework and implementation of SystemAgro as a risk management tool in agricultural policy
- Co-financing of insurance premiums within the defined budget
- Share of the loss in the event of major catastrophic losses

Advantages:

- Systematic support of agricultural policy objectives
- Open and transparent system for all parties
- Clear planning of the costs over a period of several years
- Domestic agriculture becomes more competitive
- Stabilization of the agricultural sector

SystemAgro → 35 years of experience
On 200 million hectares worldwide today

Munich RE

- Individually and reliably mitigates the risk due to natural hazards for all farmers
- Reduces farmers' income volatility, offers protection against the risk of ruin and consequently improves their creditworthiness as well as their competitiveness
- Must be implemented by the government within the framework of overall agricultural policy
- Supports agricultural policy objectives
- Stabilizes the agricultural sector
- Directly and indirectly strengthens all elements in the agricultural value chain, such as manufacturers of seed, fertilizer and agricultural equipment, farm trade, processors, agriculture banks and agricultural research

THANK YOU FOR YOUR ATTENTION!
ANY QUESTIONS?

www.munichre.com/systemagro

Munich RE