SYSTEMAGRO – THE BASIS FOR SUSTAINABLE RISK MANAGEMENT IN AGRICULTURE

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Karl Murr
Munich, 29 June 2010
Challenges in agriculture make risk management more important than ever
Climate is changing
Rise in globally averaged temperature

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

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

Source: P. Hupfer, Naturwissenschaftliche Rundschau, 5/04, p. 233 et seq.
Number of natural catastrophes worldwide 1980 – 2009
Upward trend

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

Weather catastrophes worldwide 1980 – 2009

Losses are increasing

Total losses

Insured losses

Trend line, total losses

Trend line, insured losses

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Expected change in summer temperature and dry spells

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

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

Deviation from mean temperature 1961 – 1990

Example Italy: Dry spells up to 20 days longer


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

Press briefing, SystemAgro 29.6.2010
Heat wave and drought 2003 in Europe
Effects on agriculture

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

Financial impact (in euros)
- Austria: 197 million
- Spain: 810 million
- Germany: 1500 million
- France: 4000 million
- Italy: 4-5000 million

Influence on production: difference in relation to the average (in %)
- Poultry
- Potatoes
- Maize
- Wheat
- Dry fodder

Source: UNEP/DEQA (2004); Data source: GOPA-COGECA (2003)
SYSTEMAGRO — ADDED VALUE FOR ALL STAKEHOLDERS IN AGRICULTURE
Climate change makes risk management in agriculture more important.

Risks (yield, market, politics)

- **Avoidance**: farming in accordance with the location, farming under contract, etc.
- **Adjustment**: breeding / biotechnology, farming methods
- **Reserves**: assets, saving
- **Transfer**: insurance, hedge

Press briefing, SystemAgro
Insuring the risks from climate change is fundamental to the agricultural value chain

**Agricultural value chain**

- Seed, fertilizer, manufacturers of agricultural equipment
- Distributors
- Farmers
- Farm trade
- Processors

**State**

- Agriculture banks
  - Safeguard for credit risk
  - Safeguard return on capital

- State
  - Break-even budget
  - Social stability

**Risk management and climate change**

- Guaranteed sales
- Increase in product benefit / innovation
- Guaranteed sales
- Increase in product benefit / innovation

- 1. Assured yield
- 2. Assured quality
- 3. Assured income

- Guaranteed purchase quantities
- Guaranteed prices
- Protection, farming under contract / business interruption

**Source:** Based on World Bank, 2010
Risk management that prepares farmers for the future

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

<table>
<thead>
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<th>European agricultural policy today</th>
<th>Challenges and goals</th>
<th>GAP 2013: Crop insurance stimuli</th>
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<td>Responsibility for feeding the world</td>
<td>Establishment of a government drought fund</td>
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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

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

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

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<th>Type of risk</th>
<th>Type of production</th>
<th>Political objectives</th>
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<td>Risk sensitivity: entire regions may be affected</td>
<td>Production cannot be relocated</td>
<td>Degree of self-sufficiency</td>
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<td>High frequency of catastrophe losses</td>
<td>Open-air production</td>
<td>Socio-economics: promotion of rural areas</td>
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<td>Different risk exposure depending on location</td>
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**Public-private partnership:**

*SystemAgro crop insurance system*
Effective multi-peril crop insurance as a public-private partnership

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

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

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| - 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

Press briefing, SystemAgro 29.6.2010
Open for all farmers

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| ▪ 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

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

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

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
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