Risk management and estimation of drought impact in Hungarian Agriculture

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Role of AKI

• collecting Hungarian Agricultural Risk Management System (MKR) data
• processing data and publishing
• supporting monitoring and decision making by the Ministry of Agriculture
Outline of the presentation

The operation of (MKR) 2012 to 2017

• Structure
• Operation of the Pillar 1.
• Operation of the Pillar 2.

Estimation of drought impact on Hungarian Agriculture
Structure and operation of the MKR
Structure of the MKR

Pillar 1. – compulsory State-based

- Risk definitions
- Meteorological indices
- Information exchange
- Completion of payments of P2 by P1
- Reduced mitigation in P1 without P2

Pillar 2. – voluntary Market-based

- Insurances
- Compensation

Farmers

Research Institute of Agricultural Economics
## Risks covered by MKR

### Pillar 1.
- **Risks:** Hail, Storm, Fire, Winter/spring frost, Drought, Heavy rain, flood, Inland water

### Pillar 2.
- **Risks:** Hail, Storm, Fire, Winter/spring frost, Drought, Heavy rain, flood, Inland water

<table>
<thead>
<tr>
<th>Pillar</th>
<th>Risk Description</th>
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<tbody>
<tr>
<td>1.</td>
<td>&gt;15% crop value level, &gt;30% crop yield level</td>
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<td>2.</td>
<td>&gt;30% crop yield level &gt;50% crop yield level &gt;50% crop yield level &gt;40% crop yield level</td>
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<tr>
<td>Private added insurance</td>
<td>&gt;5% to &lt;30% crop level</td>
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Operation of Pillar 1. 2012 to 2017
Penetration in Pillar 1.

- Compulsory participation
- Members are 65-70 per cent of agricultural producers
- 92.4 per cent of the agricultural area in 2017

Almost 4 million hectar is covered!
Damaged area in case of Pillar 1.

Less than 2.5% of the covered area is affected yearly on average.

- the weather conditions were favourable in this period
- That is why the conditions of mitigation benefits have been softened since 2015 in order to pay off the producers
Mitigation benefits by risks (2012-2017)

- Drought is the most common risk in Hungary in Pillar 1.
- Spring frost is the second one
Mitigation benefits by districts (2012-2017)

- Eastern Hungary and the central part of Great Plain are the most affected areas.
Mitigation benefits for drought (2012-2017)
Maize is the most affected arable crop – because of drought.
Mitigation benefits in case of fruits

Apple is the most affected fruit – because of spring frost and drought.
Operation of the Pillar 2. 2012 and 2017
Penetration in Pillar 2.

- Number of insurance contracts significantly increased
- Dynamic increase in 2013, in 2016 and in 2017
Revenue from insurance fees by districts in 2017

- Supported insurance has spread across the country.
Share of arable crops, fruits, vegetables

- Increasing coverage of each category
- Fruits have the lowest coverage

Only 1/3 of the area covered by Pillar 2.
Compensations (by insurance)

- There is a sharper increase because of unfavourable weather conditions
Compensation by risks (2012 and 2017)

- Most of the losses were caused by hail
- Spring frost is the second one
- Drought is only the 4th.

- Hail: 82.4%
- Storm: 5.9%
- Drought: 3.4%
- Spring frost: 6.9%
- Fire: 0.4%
- Heavy rain: 0.4%

- 3.4% of the losses were caused by drought, 5.9% by storms, 0.4% by heavy rain, 0.4% by floods, and 6.9% by spring frost.
Compensation by insurances (2012 to 2017)

- Szabolcs-Szatmár-Bereg county, Southern part of Great Plain, and southern part of Transdanubian region are the most damaged areas.
Compensation for drought (2012 to 2017)
Compensations for arable crops

The main arable crops in Hungary are affected by hail and drought.
Apple is affected by hail and spring frost.
Problems with measuring losses caused by drought in the MKR

• Definition: 30 consecutive days, below 10 mm rain, OR 30 consecutive days, below 25 mm rain, daily maximum temperature above 31 C° for 15 consecutive days

• Threshold: 30/50% threshold in the Pillar 1. and 2.

• Penetration: voluntary participation in the Pillar 1. for small farmers, voluntary for all farmers in the Pillar 2.

Because drought is a normal climatic event, we have it in most of years – this is not insurable – what is insurable is catastrophic drought – above 30/50% yield loss – as it is rare enough.
Thank you for your attention!