TURKISH EXPERIENCE IN PUBLIC PRIVATE PARTNERSHIP IN RISK MANAGEMENT

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Agricultural Insurance Pool Management Company, Turkey

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Contents

- Overview of Turkish Agriculture
- Agricultural Insurance System in Turkey
- Use of the Meteorological Data in Agricultural Insurance
OVERVIEW OF TURKISH AGRICULTURE
AGRICULTURE IN TURKEY

Rural Population: 22.7%

Number of Farmers: 2.5 Million

GDP of Agriculture: 7.9% (62.5 Billion $)

Agricultural Export: 16 Billion $

Total Agricultural Area: 23.8 Million ha

Avg. Size of Farm: 6 ha

In terms of agricultural economy, TURKEY ranks **1st** in **Europe**, and **7th** in the **World**.

GTHB, 2012
AGRO-ECOLOGIC ZONES - TURKEY
THE DISTRIBUTION OF MAIN CROP TYPES IN VALUE
THE RANK OF SOME CROPS IN THE WORLD

1. Quince, Apricot, Raisin, Figs, Hazelnuts, Cherries
2. Leeks, Watermelon, Melon, Cucumber
3. Strawberries, Pistachios, Apples, Chickpeas, Pepper
RISK MANAGEMENT AND AGRICULTURAL INSURANCE IN TURKEY
NATURAL RISKS IN THE AGRICULTURE

- Catastrophic Risks: Drought
- Hard Managing Risks: Flood, Frost, Hail, Storm, Tornado
- Controllable Risks: Diseases and Pests
METEOROLOGICAL RISKS IN AGRICULTURE
Agricultural Insurance
(The Most Effective Risk Management Tool in Agriculture)
AGRICULTURAL INSURANCE SYSTEM - TARSIM (PPP)
LEGAL FRAMEWORK

2005: Agricultural Insurance Law No: 5363

2006: Agricultural Pool Regulation for Operating Procedures and Principles

2006: The Regulation of an Agricultural Insurance Implementation
AIM OF THE STATE SUPPORTED AGRICULTURAL INSURANCE SYSTEM

- To manage natural disasters effectively with insurance tool
- To encourage farmers for insurance with government subsidies
- To stabilize income and improve welfare in rural areas
- To provide budget stability of the Government by removing ad-hoc payments
THE MAIN FEATURES OF THE AGRICULTURAL INSURANCE SYSTEM

- Agricultural Insurance Pool
- Cooperation with the All Relevant Parties
- Premium Subsidy
- Voluntary Basis
- Farmer Registration System
- Risks to be Covered
- Supervision
WHY A POOL SYSTEM?

- **HOLISTIC STRUCTURE**
  Business managed as a unique organization

- **STANDARTISATION**
  Transparent and uniform terms and conditions

- **PRODUCTIVITY AND ECONOMIES OF SCALE**
  Possibility to buy insurance with lower premium rates

- **HIGH ASSURANCE**
  Farmers insurance needs are highly met by extending the coverage

- **SUSTAINABILITY**
HOW THE POOL SYSTEM WORKS?

PREMIUM PAID BY FARMER

GOVERNMENT PREMIUM SUBSIDY

INDEMNITY

AGRICULTURAL INSURANCE POOL

REINSURANCE

GOVERNMENT SUPPORT
THE ORGANIZATION STRUCTURE OF THE AGRICULTURAL INSURANCE POOL MANAGEMENT COMPANY
DUTIES OF MANAGEMENT COMPANY

- Implement the decisions taken by the Board of the Pool
- Collect premiums and pay indemnities
- Manage resources of the Pool for investment
- Carry out all kinds of works and organizations
  - Development of insurance product
  - Underwriting procedures and principles
  - Actuarial studies
  - Risk inspections
  - Loss handling
  - Training of loss adjusters and sales channels
  - Geographical Information System (GIS)
  - Research & Development
  - Data management
  - Public relations and publicity campaigns
STAKEHOLDERS OF THE SYSTEM

- Boards of Directors Pool
- Reinsurers
- Insurance Company, Agency, Brokers
- Government
- Farmers
- University and Research Institute
- Management Company
THE MAIN FEATURES OF THE AGRICULTURAL INSURANCE SYSTEM

- Agricultural Insurance Pool
- Cooperation with the All Relevant Parties
- **Premium Subsidy**
- **Voluntary Basis**
- **Farmer Registration System**
- **Risks to be Covered**
- **Supervision**
INSURANCE LINES

Crop Insurance

Greenhouse Insurance

Cattle Insurance

Sheep and Goats Insurance

Poultry Insurance

Aquaculture Insurance

Beehives Insurance
<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Policy</th>
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<td>2007</td>
<td>218,938</td>
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<td>2008</td>
<td>260,944</td>
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<tr>
<td>2009</td>
<td>306,770</td>
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<td>2010</td>
<td>371,116</td>
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<td>2011</td>
<td>587,716</td>
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<td>2012</td>
<td>744,093</td>
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<tr>
<td>2013</td>
<td>891,876</td>
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<td>2014</td>
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INSURED AREA (Ha.)

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<th>Year</th>
<th>Area</th>
<th>% Change</th>
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<td>2007</td>
<td>348.995</td>
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<td>2008</td>
<td>443.518</td>
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<td>2009</td>
<td>560.239</td>
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<td>2010</td>
<td>661.955</td>
<td>%39</td>
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<td>2011</td>
<td>920.323</td>
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<td>2012</td>
<td>1,205.464</td>
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<td>1,434.105</td>
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<td>2014</td>
<td>1,567.785</td>
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INDEMNITY PAID (2006-2014)

(Million TL)

- 2006: 0.9
- 2007: 41
- 2008: 40
- 2009: 892
- 2010: 114
- 2011: 209
- 2012: 261
- 2013: 386
- 2014: 477
DISTRIBUTION OF INDEMNITY BY REASON OF CAUSES (2007-2014)

- HAIL: 53%
- FROST: 38%
- STORM: 7%
- FLOOD: 1%
- FIRE: 1%
- TORNADO: 0%
- LANDSLIDE: 0%
BASIC DATA USED IN AGRICULTURAL INSURANCE

- INSURANCE STATISTICS
- DAMAGE STATISTICS
- AGRICULTURAL STATISTICS
- PHENOLOGICAL INFORMATION
- TOPOGRAPHIC INFORMATION
- GEOGRAPHICAL INFORMATION
- METEOROLOGICAL DATA
USE OF THE METEOROLOGICAL DATA
IN AGRICULTURAL INSURANCE
USE OF THE METEOROLOGICAL DATA IN AGRICULTURAL INSURANCE

**Aim:** To establish fair, balanced and affordable premium rates for farmers.

**Rate making in crop insurance:** depends on the availability of statistically meaningful data
- quality
- size
- length
MAIN FACTORS AFFECTING PREMIUM RATES IN CROP INSURANCE

1. Frequency of risk
2. Severity of risk
3. Location
4. Type of Crop
MAIN COMPONENTS OF PREMIUM RATES IN CROP INSURANCE

1. **Location**

2. **Type of Crop**
RISK MAPS AND PREMIUM RATES

• It is not possible to prepare appropriate premium rates without long term meteorological data. Providing the long-term meteorological data is crucial for the development of agricultural insurance.

• There are meteorological data for long term but these are generally on province and partly district level.

• We need data on village level.

• Therefore it is important to increase the number of meteorological station to measure the exposure of various meteorological risks.
EFFECT OF METEOROLOGICAL RISKS ON DIFFERENT GROWTH STAGES OF WHEAT
PHENOLOGICAL STAGES OF WHEAT
## RATE MAKING IN CROP-HAIL INSURANCE WITHOUT INSURANCE DATA

<table>
<thead>
<tr>
<th>Meteorological Station</th>
<th>Observation Duration (Year)</th>
<th>Vegetation Period of Wheat Exposed and Monthly Average Hail Days</th>
<th>Average Hail Days of Vegetation Period</th>
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HAIL RISK MAP PREPARED FOR CROP INSURANCE
BY USING METEOROLOGICAL DATA AND GIS
### CLASSIFICATION OF METEOROLOGICAL RISKS ON VILLAGE BASIS

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<th>PROVINCE</th>
<th>DISTRICT</th>
<th>SUB</th>
<th>VILLAGE</th>
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BASIC METEOROLOGICAL DATA USED IN AGRICULTURAL INSURANCE

- Daily Precipitation Data
- Daily Min. and Max. Temperatures
- Daily max. Wind Speed
- Monthly Hail Days
- Monthly Frost Days
Thank you for your attention.

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