Perspectives for Agricultural Insurance in Moldova

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Structure

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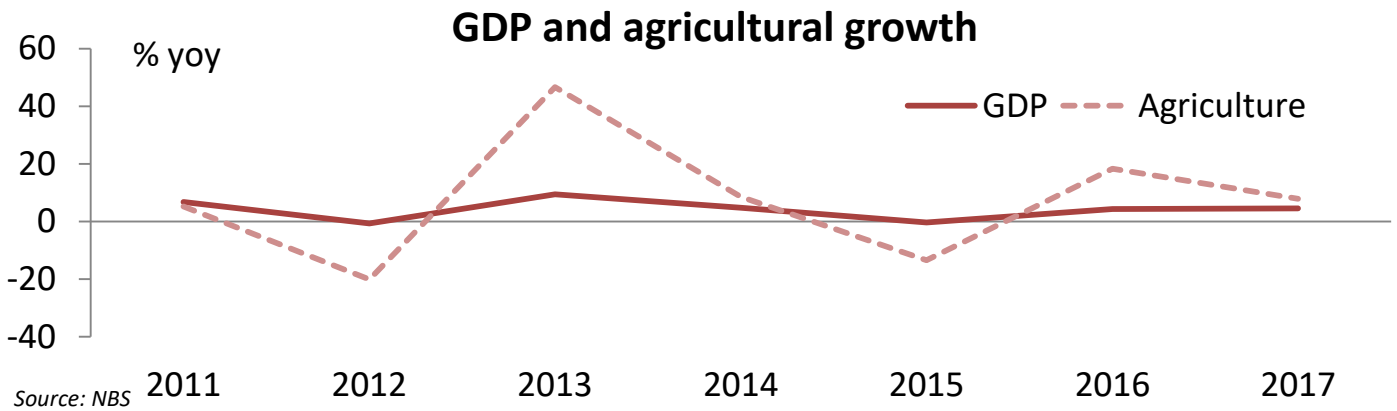
1. Introduction

- Agriculture is very important for the Moldovan economy; it accounted for 14% of GDP, 32% of employment, and 31% of exports in 2017
- Development in agriculture is crucial for the development of the economy

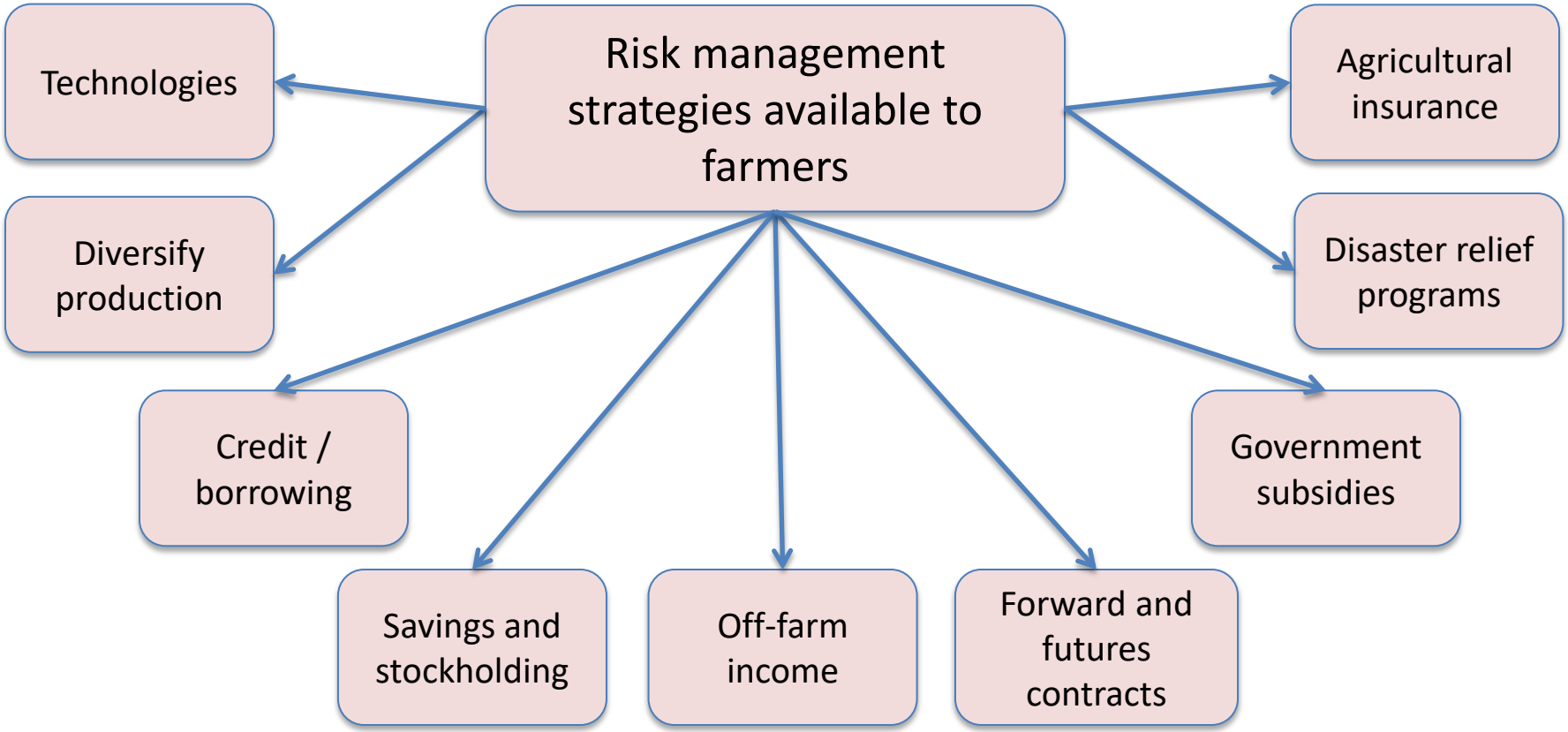


Source: NBS

- However, agriculture is inherently dependent on weather and other risks
- Farmers have many strategies for managing risk, and agricultural insurance schemes can complement these strategies
- **Goal of analysis**: Review international experience with agricultural insurance as mechanism to smooth farmers' income and provide recommendations for MD

How do farmers cope with risk?

- Agricultural insurance is only one tool of many that farmers use to manage risk



2. Agricultural insurance general
What is agricultural insurance?

- In general, insurance means that one party (the insured) transfers the risk of a large, potentially devastating loss to another party (the insurer) in exchange for a predictable and quantifiable small loss (the premium)
- Agricultural insurance (AI) is a specialized form of insurance
- AI most commonly takes the form of crop insurance, but it can also apply to livestock, greenhouses, aquaculture, forests and bloodstock (high-value animals, for example racehorses)
- If farmers are risk averse, they will be willing to forego some expected income in return for a smoother stream of income and insurance against large losses

Why the interest in agricultural insurance?

1. Other risk management tools do not always provide an adequate safety net, especially against catastrophic losses
   - Can lead to humanitarian concerns, poverty traps in rural areas
2. Strategies such as diversification of production lead to less specialization, possibly less investment in modern technologies
3. AI included in annex 2 of the WTO's Uruguay Round Agreement on Agriculture
   - AI is considered to have a minimal effect on trade (a so-called green box policy), therefore exempt from reduction commitments, as are natural disaster relief programs
   - Hence, AI provides a means of assisting farmers that is largely free from WTO disciplines
4. Commercial interest on the part of the private insurance industry
   - AI can help insurers diversify risk from other lines of insurance business
   - AI can open channels to public funding

Main types of agricultural insurance

- Three general categories of AI (but wide variety of specific schemes in use in different countries of the world)

I. Specific peril products provide insurance against a farm's losses from a specific peril or named risk. The most common example is hail. Specific peril insurance is often offered by private insurance companies without government support on a purely commercial basis.

II. Multiple peril products provide insurance against a wide range of generally un-named perils. They typically insure yields, revenues or incomes, and experience shows that they require government support (i.e. are not offered by private insurance companies on a purely commercial basis).

III. Index-based insurance (IBI) products allow farmers to insure against events measured at the regional level, such as (lack of) rainfall or extreme temperatures. If, for example, rainfall in a region falls below a certain level, farmers in the region who have purchased rainfall IBI receive indemnities. To date, IBI products have also depended heavily on government support.

Agricultural insurance in the world today

- Most comprehensive inventory is a World Bank survey conducted in 2008 (65 countries)
- 80-90% of global AI premium volume still in high-income countries, especially US and Canada (roughly 60% of global volume), and Europe (17%)
- Crop insurance accounts for roughly 90% of global AI premium volume, and livestock for most of the rest
- Most AI programs are voluntary for farmers. In some low-income countries AI is a pre-condition for acquiring farm loans
- AI depends heavily on government support:
  - Premium subsidies – usually account for roughly 50% of total premiums
  - Re-insurance – governments sometimes act as ‚excess of loss‘ reinsurers for private or public-private AI providers
  - Support for administrative and operational expenses such as loss assessment
  - Support for research and training on AI

The main challenges associated with agricultural insurance (I)

AI is a special line of business

- Geographic dispersion of agricultural production and often high spatial correlation (systemic nature) of loss episodes, claims and payouts
- Outcomes/claims in agriculture are determined by complex biological processes
  - Animal epidemics are large and difficult to deal with actuarially
  - Loss histories are often short (e.g. lack of long-term crop yield histories under modern production conditions in Eastern Europe)
  - Uncertainty about the effects of climate change on future probabilities of losses
- Farmers often have a low willingness to pay for AI
  - Often farmers have alternative means of managing risk (see slide 4)
  - Farmers often mistrust or have a limited understanding of insurances
- In addition, farmers can often safely assume that governments will provide disaster relief in the event of catastrophic events such as drought or flooding, so they are not willing to pay for AI that covers such events (so-called Samaritan's dilemma)

The main challenges associated with agricultural insurance (II)

Information asymmetry and its consequences

- Information asymmetry – it is often difficult for an AI provider to quantify the exact magnitude of losses at the farm level
- Moral hazard – an insured farmer has an incentive to take advantage of information asymmetry by not following agricultural best practice. For example, he/she might reduce irrigation or pesticide applications to save money, because he/she knows that the resulting yield reductions can be claimed as an indemnity. Or he/she might shift to crops that are more vulnerable to risk
- Adverse selection – farmers face different amounts of risk. A homogeneous insurance contract that is offered to all farmers will be priced too high for those who have below-average risks, and too low for those with above-average risks. As a result, low-risk farmers will not accept the contract, and the AI provider will be left with only the high-risk farmers

The main challenges associated with agricultural insurance (III)

Consequences

- Except for a few single peril products (in particular hail, which is non-systemic and for which losses are relatively easy to assess), AI is not successfully offered on a commercial basis – it depends heavily on government support
- Experience with subsidized multiple peril products has been disappointing
  - Expensive, prone to high administrative costs, moral hazard on the part of farmers (and commercial providers, when the government underwrites all losses)
- Increasing interest in IBIs as a possible solution to some of these problems
- It is challenging for private and public AI providers to acquire and maintain the specialized skills in underwriting, loss assessment and re-insurance that are necessary to provide adequate levels of AI at reasonable costs

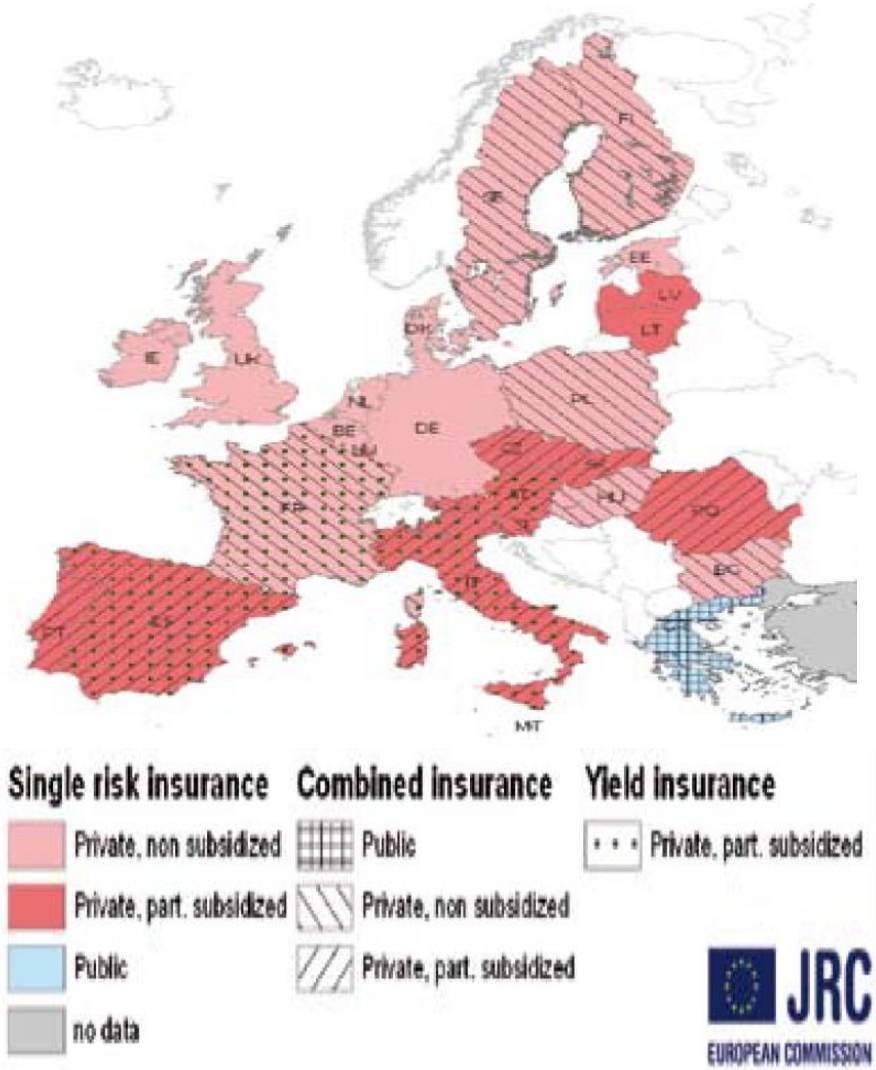
Result: AI can contribute to risk management in agriculture, and is broadly used internationally, but it faces many challenges, and should complement, not substitute other components of a comprehensive risk management strategy

3. Agricultural insurance in the EU

- The EU does not manage any common AI program
  - Agro-climatic conditions and exposure to risks in agriculture differ greatly across member states of the EU
  - EU farm structures (numbers, types, and financial resilience) are very heterogeneous
- The bulk of EU farm support is spent on direct payments to farmers
  - Direct payments provide a certain degree of automatic income stabilization
  - Member states unwilling to consider a major redistribution of agricultural spending
- Hence, the EU allows each member to implement the AI policies that suit its specific conditions

Result: A great variety of different systems and insurance products in the EU

Agricultural insurance in the EU (II)



- Commercial single peril insurance (hail and fire) is well developed in almost all member states
- Multiple peril products generally only offered where government support is provided
- Only private single peril insurance in DE, BE, NL and UK
- Different mixtures of private and public insurance products in other member states
- So far only limited experience with IBI products

Agricultural insurance in the EU (III)

Insurance market

- In most countries there are a few insurance providers, sometimes only one or two
- Some cases of monopoly

Market penetration

- Large differences among countries, often high penetration reached by single peril insurance (Germany)

Premium rates

- Lower levels for UK and Germany (1% of insured value) and higher levels Spain, Italy and Portugal (up to 8% of value)
- Depending on types and frequency of insured risks, vulnerability of crops, number of farms and product design (deductibles, payment triggers)

Level of subsidies

- Wide range, from 0% in Germany, to as much as 75% of total premiums Portugal

Agricultural insurance in the EU (IV)

Re-insurance

- In most countries provided by private companies that are active in international re-insurance markets
- In Portugal, Spain and Italy totally or partly managed by public companies

Deductibles and bonus-malus systems

- Deductibles are amounts that are deducted from indemnities to reduce moral hazard
- Range between 0 and 40%
- Bonus-malus refers to discounts and penalties on premiums based on previous performance (i.e. a farmer who has frequently claimed indemnities in the past might be charged higher premiums in the future)
- Large range of specifications across member states and insurance products

Compulsory insurance?

- In most countries, if a farmer insures a crop, all fields sown to that crop must be insured (otherwise farmers will only insure fields subject to higher risks – adverse selection)
- Greece and Cyprus have compulsory schemes
- Banks will sometimes require AI as a condition for loan provision

4. Agricultural insurance in Moldova

- Law N 243-XV as of 08.07.2004 regulates agricultural insurance subsidies
  - Foreseen subsidies of 50/60%, increased to 80% of insurance premiums in 2008, later lowered again to 50%
  - Subsidies can be applied to quantity, not to quality or price
  - Exclusive list of crops that can be insured
- Insurance market
  - 9 companies with licenses in 2017 to provide agricultural insurance, but high market share of 2-3 companies that have experts
- Market penetration
  - Reported to be 2-3% of total acreage, quite low (reached 4.5% when subsidies amounted to 80%)
  - Subsidies for AI account for roughly 1% of total agricultural subsidies
- Premium rates
  - Reported to be quite high, e.g. 5-6% premiums for hail, 1.5-3% for frost, 7-9% for drought, if insured separately

Agricultural insurance in Moldova (II)

- Further characteristics
  - Loss assessment done by insurance company experts on-site with participation of local authorities
  - Re-insurance provided by international re-insurers, no obligation for re-insurance by law
  - No regulation on triggers and deductibles by law, negotiated between insurer and insured
  - No regulation on bonus-malus system
  - No compulsory insurance for all fields with the same crop foreseen
- Livestock: Insurance is precondition for receiving government subsidies

Result: Moldova has a subsidised, private system of single- and multi-risk AI with a low penetration rate

Question: What should be done to smooth farmers' income?

Reasons for low participation rate in agricultural insurance – results from interviews

1. Farmers
   - Do not fully understand insurance, lack of knowledge and financial education
   - Consider risk premiums too high (vicious circle with low participation)
   - Mistrust insurance companies, do not agree with loss assessments
   - Complain about excessive bureaucracy, large number of documents required
2. The legal framework
   - Underdeveloped and outdated
   - No transparent regulation of contract provisions such as deductibles, triggers, indemnities
   - No regulation of re-insurance
3. Implementation
   - Disaster relief payments undermine incentives for participation in AI
   - Lack of a solid statistical basis at the state level (yields levels, loss histories)
   - Yields systematically undervalued in official statistics (also due to underreporting, crops partly sold on the grey market)
   - Delays in payment of indemnities

5. Looking forward: reforming AI in Moldova

1. Consider alternatives to AI carefully – a simple direct payment system can also stabilize incomes while avoids incentive problems associated with AI (moral hazard, adoption of riskier production practices), and at lower costs
2. If strengthening AI is a policy priority
   - Increase farmers' financial literacy (training)
   - Develop a transparent regulatory framework to reduce transaction costs and increase trust
   - Invest in administrative and regulatory capacity (training)
   - Invest in (publicly available!) data systems (yield and loss histories, etc.)
   - Support research and the design of effective AI products (design is costly, copying is cheep – "free rider problem" discourages private insurance providers)
3. Designing effective AI products in a new environment requires data, expertise and time
   - Compulsory participation in a weak, unattractive scheme can backfire and strengthen farmers' mistrust
   - More sustainable to gradually design, test and upscale an attractive and effective scheme

Looking forward: index-based AI in Moldova?

- By relying on objective, regional-level triggers (such as rainfall, dry or wet days during critical phases in crop development, etc.), IBI reduces many of the incentive problems that challenge traditional AI products
- However, IBI must be well designed to avoid the problem of basis risk (i.e. when an individual farmer‘s crop losses are weakly correlated with the regional-level insurance trigger)
- IBIs therefore depend heavily on high-resolution weather station infrastructure or satellite monitoring, and research on the links between weather data and agricultural outcomes that matter to farmers
- Take advantage of growing international experience and knowledge networks
- For example, the World Bank/IFC Global Index Insurance Facility (GIIF), which has been supporting the implementation of a pilot IBI product and associated seminars and training workshops in Ukraine

Looking forward: mutual funds in Moldova?

- Mutual funds are non-profit risk-sharing tools based on private agreement among farmers/members, who contribute to a stabilization fund that is used to compensate losses according to agreed-upon rules
- Advantage: members know one another – solidarity and moral suasion can reduce moral hazard and adverse selection
- Disadvantage: danger that most or all members of a regionally organized mutual fund incur losses simultaneously
- This can be solved by re-insurance, pooling with funds in other regions, or the use of public funds to underwrite the stabilization fund
- If a mutual fund is based purely on private agreement, who regulates to ensure that it is properly managed (contributions, payouts, prudent management of the stabilization fund, avoidance of fraud)?
- Mutual insurance, like a mutual fund, is non-profit, but is subject to regulatory environment for insurance providers (contributions determined on actuarial basis, re-insurance requirements, etc.
- Mutual funds are no silver bullet for improving AI in Moldova; they also require capacity building, investments in infrastructure and careful design

Summary

Question: What should be done to smooth farmers' income?

Option 1: Consider alternatives to AI, a simple direct payment system could lead to same results at lower costs

Option 2: Keep AI and improve it gradually by tackling described problems

- Create a transparent regulatory framework
- Train and inform farmers and administration
- Invest in data systems and support research and design of AI products
- Compulsory participation not advisable without reforming AI
- Index-based insurance could be a viable, growing international experience and international support could be used
- Mutual funds could be useful but no silver bullet for improving AI

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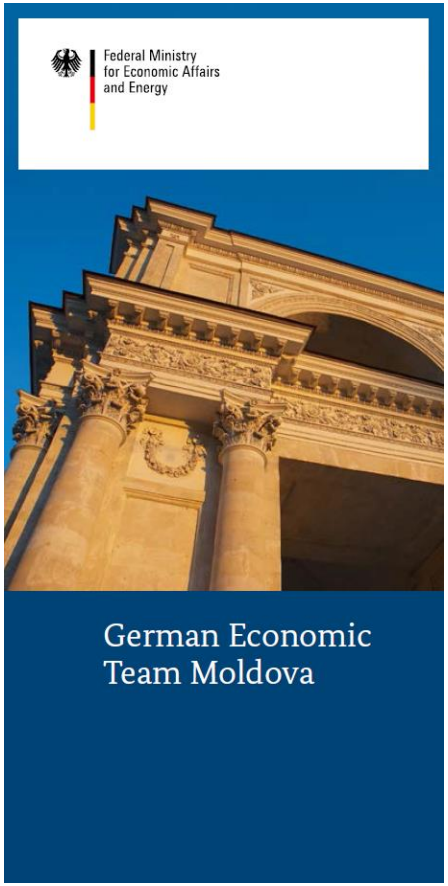

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