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# **Working Document Risk Management Tools for EU Agriculture**

**with a special focus on insurance**

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## **SUMMARY**

## Summary

This report provides an overview of the different types of risk that agriculture faces and evidence of risk exposure in European agriculture. After looking at the tools available to manage agricultural risk, it examines the reasons and objectives of government intervention and discusses the policy instruments Member States and other countries use to help their farmers in dealing with risk exposure. The lessons that can be learned from existing public involvement in agricultural risk management form the basis for reflections concerning the potential of applying risk management policies at the EU-level.

In Chapter 2, the risks faced by farmers are described. The risk types considered include price risks and production risks. Whereas the former are likely to increase due to further potential trade liberalisation, the latter might increasingly be influenced by rising quality requirements, the growing movement of animals and plants as well as climate change. Both are, furthermore, subject to increasing specialisation in agriculture. An analysis of Eurostat and FADN data shows that risk exposure in the EU as measured by price, yield and output variability varies widely across products and regions.

Chapter 3 gives an overview of risk management tools at the disposal of farmers. Several types of risk management strategies are distinguished:

- On-farm strategies concern farm management and include selecting products with low risk exposure (e.g. products benefiting from public intervention), choosing products with short production cycles, holding sufficient liquidity or diversifying production programmes. Evidence suggests that European agriculture is not adopting the strategy of diversification. Between 1975 and 1997, the share of non-specialised farms fell from 32 per cent to 17 per cent.
- Risk-sharing strategies include concluding marketing and production contracts, vertical integration, hedging on futures markets, participation in mutual funds and insurance.
- Diversification through increasing the share of income from sources outside agriculture.
- Relying on public assistance (disaster aid).

Ideally, markets should provide a wide range of risk management tools. The most important markets for risk coverage are futures markets and insurance markets:

- Futures markets help to reduce short term price risks and at the same time increase price transparency. In the EU, futures can be traded on five exchanges. Traded volumes are still relatively low. However, American trade volumes show the long run potential. Up-take is slow because the use of futures requires considerable investment in know-how and infrastructure and traders will only move to the European futures market once they have reached a minimum liquidity. In addition, the development of futures markets in Europe has been hampered by CAP-induced price stability. As price-volatility on the European markets is likely to increase with possible further

trade liberalisation, the conditions for the development of futures markets and other market-based risk management tools are expected to improve.

- Production risks can be covered by insurance if the risks are as little correlated as possible across insured individuals (independence of risks) and if farmers and insurance companies have similar information concerning the effective risks involved (symmetry of information). The classical example of such an insurable risk is hail. Mutual funds are a special case of insurance. Mutual funds are owned by the participants and cover losses of members either through money already available in the fund and/or through an additional collection among participants.

When markets for risk management tools are incomplete or missing, public intervention can be justified. Chapter 4 explains the reasons for incomplete or missing markets. Reasons can be found both on the supply and the demand side. The main reasons on the demand side are:

- Know-how to make use of certain risk-management tools (e.g. futures and options markets) can be acquired only at high start-up transaction costs and is, therefore, not always available to farmers.
- Farmers perceive risks they face as being smaller than they actually are, resulting in low demand for risk-management tools (“Cognitive failure”). Events of low probability, which are associated with high potential losses (catastrophes), are very likely to be neglected in individual decision making.
- Even if farmers do not underestimate the risks they face, they might count on other safety nets, including off-farm income and therefore might not use available risk management tools.

On the supply side, the reasons vary from product to product:

- Insurance products might not be offered on the market because the conditions for insurability (independence of risk, symmetry of information) are not sufficiently fulfilled.
- Re-insurance is often necessary in order to cover big natural hazard risks. However, re-insurance can be very expensive, especially after catastrophes have happened, making an insurance product commercially inviable. Furthermore, agricultural re-insurance markets are limited, because of the special know-how involved and because the expected returns for covering the high set-up costs might not be attractive enough.
- The conditions for a successful establishment of futures and options markets are not always fulfilled. Not only do farmers need a certain amount of know-how, there is also a need for substantial price variability, sufficient traders and speculators and products with standardised grades and quality.

Public policy can intervene at different levels: A field of action can be to set-up the necessary legal framework for the creation of markets for risk coverage. Public policy can also provide incentives for the development of such markets (e.g. by encouraging training in the use of risk management tools) or lower the costs of such tools (e.g. by providing

subsidies for insurance premia). Finally, governments can also provide risk coverage themselves (e.g. by providing re-insurance).

Different systems of agricultural insurance in Member States and other countries helping farmers to cope with production risk exposure are described in Chapter 5. The overview shows considerable differences in coverage, public sector involvement and up-take.

- Greece has a predominantly public system. The state, through its public insurance organisation, collects compulsory contributions, administers the programme and guarantees coverage of losses. By virtue of this, the role of the private sector is limited (system under reform).
- Spain and Portugal have “public-private partnership”-systems, where the state plays a key role, providing both premium subsidies and re-insurance. The private insurance industry is integrated into the system; it takes care of programme administration and contributes to covering a share of the risk.
- Italy, France, Austria and Germany have systems of agricultural insurance, which are predominantly private. The four countries differ considerably with respect to subsidies for insurance premia. While Germany is not providing any premia subsidies, Italy grants considerable amounts.
- In the US, a comprehensive system of crop insurance is in place within which state involvement takes four principal forms: (1) subsidising insurance premia; (2) covering administration expenses of the private insurance sector; (3) reimbursing acquisition costs of the private sector; and (4) providing reinsurance. Although two thirds of the country’s total planted acreage of field crops (except for hay) is insured (1998) substantial emergency aid has been paid since 1998.
- Canada has a crop insurance programme (CI), a subsidised savings programme for farmers (NISA) and an anti-cyclical income safety net (AIDA) which secures individual whole farm income at 70 percent of the historical three-year average income.

In the framework of the WTO Uruguay Round Agreement on Agriculture, insurance subsidies and disaster aids are, under certain conditions, exempt from reduction commitments (green-box). These conditions are explained in Chapter 6.

In Chapter 7, lessons from existing public-private systems of agricultural insurance are drawn. The chapter draws heavily on the US experience.

- Coverage and participation: Even for well-developed agricultural insurance systems the coverage in terms of products and participation rates remains limited. This is true even for products which are specifically designed to provide basic safety net coverage for every farmer and which are provided at very low cost. In Spain, 30 per cent of the farmers participate in the system resulting in 30 per cent of crop production and 10 per cent of animal production covered. In the US, 20 per cent of farmers participate in the system, while two thirds of the country’s total eligible acreage is covered.
- Incentive structure and efficiency: Covering a wide range of perils at a level of protection which is interesting to the farmer seems to require considerable state

involvement (US, Spain). Questions arise as regards the efficiency of programmes, which are based on a public-private partnership.

- **Programme design:** Publicly supported insurance programmes can be under (political) pressure to provide products which have not been sufficiently tested and which can therefore undermine the soundness of the system.
- **Complexity:** Changing demands and necessary programme adjustments increase complexity and decrease transparency. This makes it easier for the various stakeholders to engage in rent-seeking.
- **Limits of comprehensiveness:** Even insurance systems benefiting from considerable public support do not have universal take-up rates. Farmers' needs vary widely and no system can be tailored to meeting everyone's needs. Therefore, the (political) demand for providing ad-hoc aids remains considerable.
- **Equity and influence on production:** Since premia subsidies are normally set as a percentage of premia, farmers and regions facing the highest risk receive the highest subsidies. Due to these subsidies, producers might not abandon production in high-risk areas, which can result in significant costs for society as a whole.

Chapter 8 summarises the availability of off-farm instruments to cope with risk exposure in the EU and discusses the potential of applying risk management policies at the EU-level.

In all Member-States, some private off-farm instruments to cope with risk exist. Some instruments have reached maturity and are widely available (mainly hail insurance), whereas others are less developed (futures and options markets, mutual funds). Some insurance systems are private, whereas others rely heavily on public involvement. Instruments which cover a combination of production and price risk (revenue risk) are in their infant stages. The main public measure is disaster aid. Member States are also active in risk prevention (sanitary and phytosanitary measures)<sup>1</sup>.

### Current off-farm responses to risk exposure in EU Member States

Response	Risk	
	Production	Price
Private	<b>Insurance</b> (mainly hail) <b>Mutual funds</b>	<b>Futures and options markets</b>
Public	<b>Disaster aid</b> <b>Sanitary and phytosanitary measures</b>	<b>(CAP)</b>
Public-private	<b>Insurance (multi-peril)</b> (mainly crops)	-

Market support, direct payments and rural development measures (diversification) in the framework of the CAP have a major impact on farmers' risk, even if their main goal may be income stabilisation and not risk reduction. In particular, the price support mechanisms play a role in reducing price risks for key products. EU measures explicitly targeted at production risk include sanitary and phytosanitary measures as well as guidelines for Member States' disaster aids and insurance subsidies.

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<sup>1</sup> Furthermore, income tax averaging systems are in force in some Member States.

The perspective of rising risk-exposure in Europe raises the question whether the EU has a role to play in risk management, which goes beyond its current role. This question has to be examined in the context of the fact that the core CAP instruments have an impact on farmers' risk exposure, as mentioned before. It also has to be remembered that specific risk management policies cannot replace income support policies. The goal of risk management policies is not income support but only to reduce fluctuations of income or its components. Risk management instruments cannot reverse long-term income trends.

The case for introducing additional risk management instruments can be argued, if it can be shown

- that markets for risk-reduction are missing or incomplete;
- that risk reduction is not sufficiently achieved by existing income stabilisation policies;
- that Community action provides value-added as compared to national or regional initiatives/action.

### Price risk

Although market intervention remains important even after Agenda 2000, the lower price floor for beef and cereals increases the scope for private instruments to manage price risk, i.e. the use of futures and options for commodities with standardised grades. Although the traded volumes are still low on EU futures markets, a dynamic development can be observed, with an increasing range of products.

The EU has an active interest in well-functioning futures and options markets. Firstly, as price support is being reduced, new instruments are needed to help farmers across Europe to cope with the increasing price volatility. Secondly, futures and options markets contribute to market transparency, which favours the functioning of the internal market. The development of futures markets can already be promoted through education and training measures under Rural Development policies. In addition, an active encouragement at the EU-level might be needed in order to prepare the ground for a wider use of such instruments. Initiatives might include a special information programme on futures and options markets for all European farmers.

### Production risk

Traditionally, Member States have been at the forefront of helping producers to cope with production risk (disaster aid, sanitary and phytosanitary measures, public-private systems of agricultural insurance, insurance subsidies). The Community's role has been limited to setting the overall framework (i.e. sanitary and phytosanitary measures), providing some financial support (e.g. disease control), and – most importantly – applying state aid disciplines with a view to avoid market distortions.

EU guidelines on state aids give Member States a considerable margin of manoeuvre in responding to the various needs of their farmers. As a result, existing agricultural insurance systems vary widely among Member States with respect to organisation, coverage, complexity and state involvement. The Spanish experience shows that a comprehensive system of agricultural insurance could be developed within the common framework on state aids.

Three conclusions can be drawn from existing public-private systems of agricultural insurance:

- Firstly, initiatives have to be based on a “bottom-up approach” in order to be successful. Insurance products have to be tailored to the needs of farmers which vary among countries and regions.
- Secondly, a system has to be given time to develop. With growing experience, it can become more and more comprehensive (regarding both products and risks covered).
- Thirdly, strong and close public surveillance is needed in order to avoid growing complexity leading to unjustified rent-seeking and losing track of the original purpose of providing insurance.

Insurance solutions should be primarily developed at the Member States level. In addition to the need for a “bottom-up approach”, two further reasons support this conclusion:

- Insurance could increasingly replace national ad-hoc disaster aids. This would stabilise expenditure and reduce negative effects of disaster aids (e.g. delayed payments, discouraging private risk management and encouraging irresponsible management decisions).
- Member States are best placed to target public funds spent in the framework of such systems to certain groups of farmers, reflecting specific needs.

A cautious role regarding the EU’s involvement beyond its current involvement is therefore advocated. The EU might have a role where production risks are to a large extent systemic (probability of high losses in any given year), which prevents insurance products being offered on the market or makes them very expensive and therefore commercially inviable. A private solution for this problem could be for insurance and re-insurance companies across Europe to jointly cover such risks by creating insurance/re-insurance pools. The EU could accompany such a process by providing the appropriate legal framework, where needed. The issue of risk-pooling across regions and commodities is equally relevant for farmer-owned mutual funds.

The EU could also investigate further into the potential of insurance systems. Major trade partners use such instruments and there might be a certain prospect for getting these instruments accepted as modestly trade distorting within a future WTO agreement on agriculture. In the long term, a more substantial involvement would be possible under two conditions: Firstly, an instrument would have to fit into the overall policy-mix of the CAP. Essentially, this would require that there is no overlapping with other instruments addressing the problem of risk exposure in agriculture. Secondly, sufficient funds would have to be made available.

Providing re-insurance (especially covering losses above a certain level) would address the most often cited obstacle for the development of insurance systems, i.e. potentially catastrophic losses. If such re-insurance were provided, more insurance companies would offer insurance for the coverage of risks potentially resulting in catastrophic losses.

Re-insurance could be made contingent on risk pooling at EU level in order to limit aggregate loss potentially covered by the EU. A further condition could be that pool members have to offer insurance for all major products of European agriculture. Any involvement would have to meet the requirements of efficiency and transparency and take into account possible effects on production, price levels and income distribution.

### Anti-cyclical income support

Anti-cyclical income support might be an attractive option in the long run. The very meaning of such an approach is to provide income support in times of need, while reducing support during periods of prosperity. This instrument has the potential to respond in a transparent way to the farmers' needs by preventing severe disruptions in the farm sector and to gain support from the broader public. It could help to overcome the problems of ad-hoc disaster measures and it appears to be compatible with the WTO green box criteria.

As such solutions have features similar to those of socially motivated safety-nets, questions of compatibility with existing national social security systems aiming to secure a certain minimum standard of living arise. It would be necessary to explain carefully why farmers need an additional safety net.

An example of such a safety net is the Canadian AIDA programme. Payments are made if individual farm incomes fall below 70 percent of their historical three-year average. The provisions for calculating the trigger for payments ensure that newcomers, high-debt and low-debt farmers, as well as high and low investment enterprises are treated equitably. A cap is placed on payments.

Under this system, tax declarations are used to determine the relevant income. Given that aid is targeted to cover 70 per cent of a moving average of past income histories, the system would not create adverse incentives. Farmers still have an incentive to go beyond the 70 per cent trigger for aid, in order to avoid a continuous deterioration of their reference income serving as the basis for calculating payments.

Model calculations applying the AIDA system to the EU show that in 1997, the family farm incomes of 20 per cent of the commercial farms were less than 70 per cent of their average income during the previous three years. Compensation of income losses up to the 70 per cent level would have cost about 3 500 million Euro for commercial farms in 1997 (2 700 million € in 1996). This figure does neither prejudge any assumption about the global cost of such a scheme in the EU nor its potential allocation between EU and Member States' budgets.

With respect to a possible application in the EU, it should be taken into account that the system is very demanding as regards information requirements (individual income histories) and administrative provisions. Also the differences between tax systems applied in the different Member States could pose problems with respect to identifying income. Furthermore, it must be taken into account that such a public safety net could represent a disincentive for farmers to use private risk-management instruments.