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# Alternative instruments for the CAP?

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## Abstract

Alternatieve instrumenten voor het EU-landbouwbeleid?

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Alternative instruments for the CAP?

With parallel negotiations taking place on enlargement of the EU and a new WTO agreement, EU's Common Agricultural Policy is facing further reforms. This report addresses the issue of whether any alternatives can be found for the instruments of this policy, and looks at decoupled payments, a net income stabilisation fund, risk insurance programmes and export credits. It is concluded that the policy instruments in question are directed at widely varying objectives. They could prove to be a useful supplement to the existing instruments. In general, however, they do not (yet) present satisfactory alternatives for the current EU agricultural policy.

Referaat





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## Contents

Preface

Summary

1. Introduction
  - 1.1 Aim of the report
  - 1.2 Definition
  - 1.3 Method
  - 1.4 Structure of the report
2. Why reforms?
  - 2.1 Changing constraints and objectives
  - 2.2 Development of the agricultural policy
  - 2.3 Assessment criteria
3. Decoupled direct income payments
  - 3.1 Mechanism
  - 3.2 Application
  - 3.3 Assessment
4. Net income stabilisation fund
  - 4.1 Mechanism
  - 4.2 Application
  - 4.3 Assessment
5. Risk insurance programmes
  - 5.1 Mechanism
  - 5.2 Application
  - 5.3 Assessment
6. Export credit programmes
  - 6.1 Mechanism
  - 6.2 Application
  - 6.3 Assessment
7. Concluding remarks
  - 7.1 General
  - 7.2 Effectiveness
  - 7.3 Budgetary costs
  - 7.4 Feasibility
  - 7.5 Trade policy
  - 7.6 Future

Foreign contacts

References

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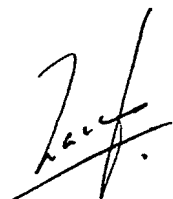
## Preface

This report contributes to the discussion on the reorientation of the Common Agricultural Policy (CAP) of the EU. The CAP is an important precondition for the operation of the common market, on which the Dutch agricultural sector is so dependent. This not only applies to sectors, which are directly supported by the policy, such as arable farming and beef farming, but also to horticulture and intensive livestock production. Although the CAP has already undergone several reforms, further modifications will follow. The achievement of sustainable rural development, in social, ecological and economic terms, is a priority here.

The report addresses the issue of whether alternatives can be found for the instruments of the EU agricultural policy. In addition to referring to literature on this subject, the experiences and insights of experts have been consulted. At the end of August 2000, a visit to the United States and Canada was organised. Later in September and October, talks were held with experts in several European capitals. A list of the foreign experts consulted has been included at the end of this report. During the last stages of the study, meetings were held with D.A.M. Risseeuw and M.P. Cuijpers of LTO-Nederland and with R.B.M. Huirne and M.P.M. Meuwissen of Wageningen University. We all acknowledge with thanks their valuable contributions to the study. The report was commissioned by the Ministry of Agriculture, Nature Management and Fisheries (LNV). The LEI project team consisted of H.J. Silvis, C.W.J. van Rijswick and C.J.A.M. de Bont. They are grateful to J.H. Post and C. van Bruchem for their comments on the draft texts.

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Although many people contributed to the study, the LEI alone is responsible for the contents of this report.



The Director

Prof.dr.ir. LC. Zachariasse





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## Summary

### Introduction

The EU's current agricultural policy, which is directed at generating a reasonable income in the agricultural sector, is coming under pressure from budgetary restrictions and trade agreements. In order to assess whether alternatives for the current policy instruments can be found, this report studies and evaluates four alternative instruments. The selection of the instruments was based on exploratory research carried out into the agricultural policy of four major competitors and WTO partners of the EU: the United States, Canada, Australia and New Zealand. In this preliminary study, the development of the agricultural policy was considered in relation to the final agreement of the Uruguay Round, in particular the agreements reached about increasing market access, reducing trade distortive domestic support and reducing export support. In this report the selected instruments are assessed for possible application in the EU and the Netherlands.

### Decoupled direct income payments

A decoupled direct income payment is a payment, which is not coupled to marketable production. Such direct income payments are interesting because they are exempt from reduction obligations at WTO level: they are classed in the green box. The most notable examples of decoupled payments within the group of WTO partner countries are the production flexibility contracts (PFCs) in the United States. Besides the PFCs, the United States also implement a number of programmes in which producers receive compensation for certain achievements in the field of environment or nature. Because the payment is decoupled from production, production decisions are not initially affected and producers are free to respond to market signals. However, the more specific the objective for using the instrument, the higher the implementation costs. The direct budgetary costs of the instrument are considerable and immediately perceptible to taxpayers who have to bear the costs. For this reason the instrument is at a disadvantage with regard to public acceptance and the available budgetary resources. However, by establishing socially important conditions this disadvantage can be offset.

### Net income stabilisation fund

A net income stabilisation fund is an instrument which can be used to stabilise a producer's corporate income on the long term. A fund of this kind is created in 'good times' and used (for withdrawals) in 'bad times'. The government may encourage participation in such a fund by offering a subsidy, guaranteeing an attractive interest rate or offering tax benefits. A similar system was developed in Canada under the name of NISA. This system has partially replaced price support and product-related income support. Compared to these 'traditional' forms of agricultural policy, NISA has relatively low budgetary costs and few disruptive effects on production, prices and trade. NISA offers producers flexibility and individual responsibility in their business operations. However, the main objective, i.e., income stabilisation, is not always achieved. The biggest problem is that during the initial period of a NISA account, very few deposits are being formed. Apart from the fact that financial incentives from the government appear to be necessa-



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ry for the development of funds, the accumulation of such funds is extremely difficult in a (lengthy) period of low income. In addition, by treating farmers equally, NISA-support is not directed at the real needs. The funds offer no solution to a structural reduction in prices and incomes. Implementation at EU level creates problems arising from national differences in fiscal and social policies. One relevant aspect in this respect is that income is not recorded in all countries.

### Risk insurance programmes

There is not always an insurance available for the costs of agricultural risks which the entrepreneur is normally expected to bear, such as frost, hail, drought, heavy rainfall, etc. The government may increase participation in insurance by assuming the costs of some of the insurance premium and/or implementation costs. In the US and Canada, subsidised crop insurance offers protection against production losses resulting from natural factors which are beyond the control of the producers. In Europe, there are only insurances covering certain kinds of risk, but no production guarantees. Private insurances, covering disease, death and accidents, are available for the livestock sector. EU regulations apply to the major contagious animal diseases, such as swine fever, whereby the government compensates losses suffered by the livestock breeder. Such agreements do generally not apply to plant diseases. Particularly for producers in areas involving high production risks, subsidised crop insurance may provide a means of covering production risks, which is voluntary and fairly consistent with the market. Insurance does not offer a solution to low prices over a long period. If the instrument is applied at EU level as it is in the United States and Canada, this will inevitably have appreciable consequences for the budget and the implementation costs. Considerable subsidies are required if enough participants are to be found to ensure sufficient risk spread. Benefits for the Dutch sector are limited. Compared with a number of other EU member states, particularly in southern Europe, production risk in the Netherlands is low. Generally speaking, in the EU it will be difficult to generate sufficient insurance participation as long as there are other government instruments, which ensure income support or income stabilisation. In the Netherlands and other EU countries, for example, there are directives for providing aid in the event of disasters.

### Export credit programmes

There is a clear distinction between a commercial insurance covering bad debt risks involved in exports and guarantees or reinsurance of credits by the government. In the latter case the government stands surety and bears the risk. The greatest providers of export credits are the United States, Australia, the EU and Canada. The subsidy element is by far the greatest in the export credit programmes in the United States. Export credit (-guarantees) can be used to promote export, particularly during economic or political crises. The disadvantage is that transactions involving irresponsible risks may be encouraged. Use of the instrument may have a slightly positive effect on domestic pricing: if export restitutions are replaced by export credits, the effect on domestic prices will be negative on balance. When a certain infrastructure is present, implementation costs will be low. On average the budgetary costs will remain modest, although they may fluctuate appreciably and it may only be possible to determine them in retrospect. The use of the instrument has not yet been restricted by WTO discipline. Incidentally the EU is in favour of regulating this, partly on account of the disrupting effects on export. If the EU plans to implement export credit programmes itself as an active instrument aimed at stimulating

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export, instead of the current export restitutions, provisions will have to be made at EU-level. In that case, each individual member state will have widely differing interests with regard to the use per product.

### Conclusion

The four groups of policy instruments are directed at differing goals. This report does not provide a clear answer to the question whether the EU should choose from the instruments investigated, and if so, to what extent the EU should use them in the future. The policy instruments analysed may be important for attaining specific goals, and in this sense might be a useful supplement. But in general the instruments, at least as they are used in the US and Canada, do not provide a simple and satisfactory alternative to the current EU agricultural policy. Further studies could be undertaken to find possible solutions for the disadvantages mentioned. In order to guide the development process of the agricultural sector in a socially acceptable direction, market and price policy, as well as a structural policy, are indispensable as support for free competition in the market.

Samenvatting





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# 1. Introduction

## 1.1 Aim of the study

In recent years the objectives of the Common Agricultural Policy (CAP) have been broadened and various reforms have been implemented. The available budget for this policy is subject to severe restrictions and the obligations imposed under the WTO agreement are becoming increasingly oppressive. With regard to current negotiations concerning enlargement of the EU and a new agricultural agreement at WTO level, further reforms seem inevitable. Besides discussions about the pace at which these should be implemented, talks are also being held about the possibilities of and the need for alternative instruments.

Against this background this report provides an assessment of the following policy instruments:

- Decoupled direct income payments
- Net income stabilisation fund
- Risk insurance programmes
- Export credit programmes

These instruments were selected on the basis of exploratory research undertaken into the agricultural policy of four major (rival) WTO partners of the EU: the United States of America, Canada, Australia and New Zealand (Van Rijswijk & Silvis, 2000). The report in question investigated the development of agricultural policy in relation to the final agreement of the Uruguay Round, in particular the agreements concerning the expansion of market access, reduction of trade disruptive domestic support and restriction of export support. The present report assesses the selected instruments for possible application in the EU and the Netherlands.

## 1.2 Definition

Our research targeted the stronger and weaker features of instruments, which might be considered to replace - entirely or partially - or supplement the existing instruments of agricultural policy. In this way, the report wishes to provide support for negotiations at European and WTO levels and for the development of proposals for future policy. However, it is not our intention to offer (full) recommendations on this matter.

Our research examines some of the issues relating to agriculture, which are due to be discussed during the forthcoming WTO negotiations. The analysis only provides alternatives relating to trade issues (import, export, internal market protection), and not, or only indirectly, issues in the field of consumer concerns (food safety, environment, landscape, animal welfare, etc.), labour and social legislation and intellectual property (patents, etc.). These issues will certainly affect discussions about further liberalisation of the agricultural trade, but they have not been considered in this report.

## 1.3 Method

This report follows on from the initial phase report, which describes applications of the regulations under consideration. After further literature study and discussions with experts, the relevant knowledge was deepened and broadened.

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With the approaching WTO negotiations in mind, it was examined whether the United States and Canada would continue using the instruments in question, or whether they would be modified, the reasons behind this and how the opinions of the stakeholders are developing on this matter. To this end, open discussions have been held in Washington DC and Ottawa with experts from the field of politics (Senate and House of Representatives), policy (USDA; Agriculture and Agri-Food Canada), the world of research (ERS) and farmer organisations (Farm Bureau and National Farmers' Union; Canadian Federation of Agriculture).

Besides the experiences in the WTO partner countries mentioned, the philosophy and opportunities in the EU itself are important. In order to gain more insight on this matter, discussions were held at the agricultural departments in Brussels, Paris, Bonn and London. Contacts were also maintained with Madrid. During these meetings, the visions and related instruments in the EU countries were discussed, and whether there were proposals for their application in coming years. A natural continuation of this subject was whether there were opportunities for achieving the CAP objectives without these instruments.

Finally, information was given about the progress of ideas at WTO and OECD levels. Various working parties are active in the fields of decoupled income support, risk insurance and export support. This all provided valuable information on which to base an assessment of the possibilities of applying the instruments concerned in the EU.

The assessment of the instruments was based on four main criteria, which can also be seen as conditions and goals:

- Effectiveness: suitability as an alternative for the existing policy, in view of the goals of the policy (including reasonable income generation) and the problems of the sector in the EU or member states;
- Budgetary costs: consequences for the budget in the EU or its member states;
- Feasibility: implementation problems and (transaction) costs; enforceability;
- Trade policy: compatibility with WTO agreements.

#### 1.4 Structure of the report

The assessment criteria mentioned above are derived from the answer to the question why further policy reform is necessary. This is explained further in Chapter 2. The assessment of possible application of the instruments in the EU (and the Netherlands) is reported in Chapters 3 to 6. As a means of introduction, the operation of the instrument concerned is outlined in these chapters. Subsequently the specific applications in the agricultural policy, on which the assessment is based, are discussed. The concluding remarks in Chapter 7 complete this report.

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## 2. Why reforms?

### 2.1 Changing constraints and objectives

There are many reasons to consider alternative instruments for the CAP. The issues involved relate to developments in agriculture and society and changes at EU level and beyond. In this discussion the changing ideas of the government regarding its responsibilities also play a role. These new ideas involve placing less emphasis on the primary producer and his income and devoting more attention to the functioning of the agribusiness as a whole and its significance for society. With regard to price and income formation, which is the main focus of current EU agricultural policy, the Dutch government wants "more market". In addition it wants to see "more government" with regard to the norms and social constraints under which the sector may operate (LNV, 2000). Companies are expected to operate along healthy business lines, deliver high quality products and do so in a socially responsible manner. This line must be seen against the background of the following developments:

- The social demands which agriculture must meet are changing. In the past, agriculture was (almost) exclusively involved in supplying food and other market products (raw materials, ornamental products). The further rise in yields have led to the decline in political importance of the quantitative aspect of food supply, and the rise in importance of the quality, health and safety of the products. This is coupled to increasing attention to the links in the food chain.
- At the same time stricter demands are being made for the care and management of landscape, nature and environment. The preservation and protection of the natural environment and the repair of environmental damage sustained require a great deal of attention.
- The EU has set limits for the budget and in this context for expenditure for the agricultural policy, whereby it is important to make it manageable and therefore avoid significant fluctuations in expenditure;
- After the entry of the last three member states in 1995, the coming years will see a further enlargement of the EU to include an extensive group of Central and Eastern European countries; in general these will be countries in which agriculture is still quite significant for the economy;
- The EU wishes to take a constructive part in the WTO negotiations, which follow the implementation of the agriculture agreement of the Uruguay Round (URAA). During these negotiations the EU wishes to target its own objectives. For the first time in a long series of GATT talks, through the UR concrete steps towards the liberalisation of international agricultural trade were taken. It may be expected that the new WTO talks will decide on a further reduction of market protection, domestic support and export support.

### 2.2 Development of the Common Agricultural Policy

The Common Agricultural Policy (CAP) was developed in the fifties and sixties to allow agriculture to take part in the Common Market (De Hoogh and Silvis, 1998). As a logical consequence, a great deal of attention was devoted to market and price policy. A system was chosen including border protection, export support and market intervention (purchase of surpluses) for 'land-based products' in particular. Although the goals of the CAP (article 39 of the Treaty of Rome) were broader, the instruments described were applied in practice to foster reasonable income formation in agriculture.

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Over the years, this agricultural policy became increasingly linked with negative effects such as uncontrollable government expenditure, surpluses, market disruption for third countries, environmental load. In response to this, in recent decades the European Commission proposed a series of policy changes. In part they were placed in the framework of the annual fixing of the prices of agricultural products, but the more fundamental changes were presented as separate proposals to the Council of Agricultural Ministers.

The reform of the traditional policy has already been put into effect, partly under the influence of budgetary restrictions and later also as a result of the UR: the level of price support has been considerably reduced for a number of products (particularly grain and beef) and in rural development policy a greater emphasis has been given to environmental goals, in addition to maintaining agriculture in disadvantaged natural areas (particularly mountainous areas and arctic areas in the Scandinavian countries).

Due to the income effects in agriculture, decision-making about reducing prices in the framework of the MacSharry reform and Agenda 2000 has been combined with the introduction and increase of direct income payments in Euro per ton. These payments are linked to the number of hectares of related crops or the number of related animals. The (direct) link with the actual production has met with resistance at WTO level. The expenditure involved is currently exempt from reduction obligations: as a temporary exception they are classed in the blue box instead of the amber box. Extension of this agreement has encountered resistance from various WTO partners. In addition, they result in higher EU agricultural expenditure, particularly when the system is applied for more products (dairy products from 2005, possibly also sugar) and in the new member states in the future.

## 2.3 Assessment criteria

### 2.3.1 Effectiveness

European market and price policy is mainly directed at generating a reasonable income in the agricultural sector. Is it possible to attain this goal with the alternative instruments? Will the desired effect be achieved and what additional effects will result? General issues, which might be mentioned here are the effects on employment, environment, landscape and consumer prices. Of course the consequences are related to the design and the circumstances under which application takes place. The assessment must devote special attention to the consequences for agriculture and horticulture. To which agricultural and horticultural sectors and to what kind of enterprise is the instrument applicable? What are the results of application of the instrument, what is the effect on business operations, what are the possible negative effects for (other) enterprises? Does application of the instrument involve particular consequences or problems for the Dutch farmers compared with their foreign colleagues?

### 2.3.2 Budgetary costs

The second assessment criterion relates to the budgetary costs of the application of the policy instrument. Furthermore we must ask the question whether already existing expenditure can be replaced. This expenditure is important in terms of the budgetary restrictions of the EU (financial perspectives). An interesting aspect is also the distribution of expenditure over the member states.



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### 2.3.3 Implementation

In order to be able to offer a suitable alternative, the policy instrument must not only be effective and affordable, it must also be easy to implement and maintain. This third assessment criterion relates to administrative expenses for implementation bodies and interested parties, the complexity of the implementation, the EU, national or regional applicability, and the risks of improper or fraudulent use of the directives.

### 2.3.4 Trade policy

This fourth and last criterion forms more or less the starting point of the analysis, since acceptance in trade agreements is a basic condition for further study. This aspect has already been discussed partly in the background study (Van Rijswijk and Silvis, 2000). However it will also require attention in the follow-up, when modalities are formulated for possible application in the Netherlands and the EU. Current agreements at WTO level are mainly based on the principle that the extent to which certain support measures disrupt trade determines acceptance, limited acceptance or rejection of these measures. Furthermore, in practice it is important to see how other trade blocks or countries value the use of the particular instrument.

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## 3. Decoupled direct income payments

### 3.1 Mechanism

A decoupled direct income payment is a payment, which is not coupled to marketable production. Such direct income payments are interesting because they are exempt from reduction obligations at WTO level: they are classed in the green box. A decoupled payment may serve various purposes. It may involve the distribution of income; for example an income supplement for an agricultural producer in compensation for loss of income resulting from policy-related price reductions. But it may also involve meeting certain public demands relating to the environment, animal welfare, nature or countryside, by rewarding certain performances.

The application of decoupled payments can be defended on the grounds of a lack of market forces. Using a decoupled direct income payment one can try and achieve goals, which cannot be reached through the market mechanism. There may be conditions attached regarding the production method, and the management of the environment, nature or countryside. Initially, it will therefore concern giving agricultural producers the possibility of income in exchange for reciprocal actions. This may be linked to reduced production, if the use of a particular means of production is restricted (extensification).

In order to be really decoupled, according to the OECD, direct income payments must satisfy three basic conditions: they must be directly funded by tax payers, the level of support must be fixed or dependent on a production-variable which is beyond the control of the producer; and the level of support may not be determined by the extent of current or future production or application of means of production (see OECD, 2000a and OECD, 1994).

References which can serve as a basis for decoupled payments are for example past production entitlements or the total farm income.

In theory, decoupled payments have no effect on decisions of producers (and consumers) and markets adapt as if the instrument had not been used. The agricultural agreement of the Uruguay Round has a less restrictive definition of decoupled payments. Here, the word decoupled generally means that there are no or very few effects on trade and production. The payment may affect the decisions of the producer, as long as this does not result in overproduction.

### 3.2 Application

Direct income payments are now an integral part of agricultural policy in most wealthy countries. Often, however, they are not decoupled. Figure 3.1 shows for several countries which references are most common for the allocation of payments. In the EU the most common payments are mainly those linked to production, and the number of animals and area of crops.

#### *Production Flexibility Contracts*

The most well-known examples of decoupled payments within the group of WTO partner countries are the production flexibility contracts (PFCs) used in the United States, also known as the Agricultural Market Transition Act (AMTA) payments. During the introduction of PFCs in 1996, it was decided that producers who had participated in a support programme during one of the years between 1991 and 1995 for wheat, grain, rice or cotton, could sign a seven-year contract for PFCs. On the basis of this contract, participants receive a direct annual payment

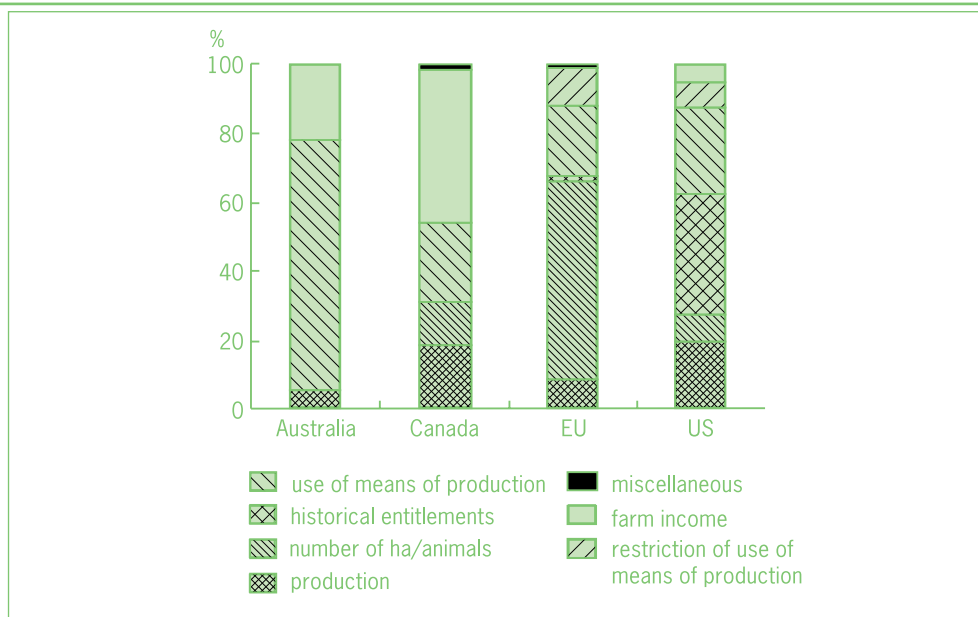


Figure 3.1 Distribution of direct payments according to the reference used as the basis for the payment, for several countries, 1997-1999 (Source: OECD, 2000b)

between the years of 1996 and 2002, if they continue to use the land under consideration for agriculture (in principal other crops may be grown) and satisfy various conditions relating to nature and the environment.

The level of the direct income payment is based on the area and past productivity. In 1996, fixed sums were established for the total payments to be granted, which decreased from 5.2 billion USD in 1996 to 4 billion USD in 2002. Due to the fixed total amount for PFCs, the payment may increase per individual producer if the total acreage covered by PFCs declines. However, a maximum of 50,000 USD has been allocated per business unit, but there is no strict limit for a family. Individual producers may make use of the regulation for three business units ('three entity rule') and families may consist of several producers.

An important feature of the PFC programme is deregulation: farmers are free to make production decisions without losing their entitlements ('freedom to farm'). Also the compulsory regulation relating to fallow land, which used to be a fixed part of previous programmes, has now been ended.

Despite the intention to reduce the direct payments in annual steps, significant supplementary payments have been granted to producers with PFCs since 1998. Plans to limit government expenditure have therefore not yet come to fruition.

#### *Payments related to conservation*

In addition to the PFCs, the United States also implement a number of programmes whereby producers receive compensation for contracts of 10-15 years to carry out certain activities related to the environment or nature. The two major programmes in this regard are the Conservation Reserve Program (CRP) and the Environmental Quality Incentives Program (EQIP).

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The importance of such programmes is increasing not only in the United States, but also in other WTO countries like Canada and Australia (Van Rijswijk & Silvis, 2000).

#### *Disaster relief*

Another major category of direct income payments is disaster relief. In Canada decoupled income support is provided under the Agricultural Income Disaster Assistance (AIDA) programme. For the coming three years a new income support programme has been created, the Canadian Farm Income Program (CFIP), which will replace the AIDA programme. In the case of disasters the income of producers is supplemented to 70% of their average income over the last three years. All farmers are treated equally, whatever their farm type. In order to take part in this programme, producers should provide detailed business information.

In other WTO partner countries emergency assistance is also provided following disasters. In the United States extra direct disaster relief for (natural and financial disasters) has increased spectacularly in recent years, from almost 3 billion USD in 1998 to almost 10 billion USD in 2000. In an attempt to reduce disaster relief, the US has recently drastically increased support to risk management programmes (see Chapter 5).

### 3.3 Assessment

#### 3.3.1 Effectiveness

##### *Redistribution of incomes*

A decoupled direct income payment is a very direct and often fast way of redistributing income, while producers - unless further conditions are made to the payment - can continue to direct their business operations at market signals. A major objection to decoupled direct income payments is that they do not usually target real needs. Fixed decoupled direct income payments like the PFC payments are not related to incomes and are just as high in 'poor years' as in 'good years'. When things are going badly in the sector, the need for supplementary income support will increase. Where payments supplement the average past income of producers (such as the Canadian AIDA), the highest income payments are given to producers with the highest incomes. This raises the question as to whether this is a desirable situation. By creating payment ceilings per enterprise, the government authorities attempt to correct the distribution of income over the small and large enterprises.

The more direct income payments are directed towards the farmers' needs, the higher the implementation costs. If payments are allocated as a safety net, we enter the area of general social provisions, which vary considerably from country to country. In the Netherlands, for example, we have a specific regulation for independent producers in the framework of the National Assistance Act, which can be used, under many conditions, to tide over a difficult period.

Despite the term 'decoupled', such payments often still have some effect on production and prices. Direct payments like the PFCs are not related to present production or prices, but do increase the income of the producer, causing these payments to affect investment decisions (wealth effect). Producers have more financial resources to invest and with a higher guaranteed income it is usually easier to negotiate a loan. This may mean that more employment is being retained in rural areas or the agricultural sector. Another effect may be that guaranteed income ensures that farmers who normally avoid risks are now more inclined to take risks. Higher risks are generally linked to higher production. The extent to which payments finally affect or disrupt

production decisions therefore depends on the extent of the wealth effect and the risk aversion of the producer. In their totality the production-increasing effects of PFCs and disaster payments are limited. Young and Westcott (2000) estimate the final effect of PFCs in the United States at some hundred thousand hectares.

According to the researchers mentioned above, immediate disaster relief has a greater effect on production than PFCs. If producers can count on disaster relief, they take this into account when making production decisions, even if compensation is only given after a disaster. Another disadvantage of disaster relief is the possible discouragement of private initiative when dealing with risk factors (for example, taking out insurance, choice of more suitable crops).

#### *Payments for public purposes*

Under normal market conditions there are few financial incentives for producers to supply services in support of the environment, nature or countryside. However by linking government payments or conditions to compensation, improvements may be achieved relating to nature, environment and countryside, or a threatening decline in this area may be prevented. The rise of the volume of production per hectare may be restricted by the production conditions, which may result in the relief of market surpluses. Government payments, which reward such services (public or collective goods) may then offer a solution.

If entry requirements are not too restrictive and compensation is sufficiently high, the above-mentioned payments may prove to be interesting to agriculture. Moreover, such programmes may link up with already existing (national or European) legislation and fit into the framework of the fertilizers and minerals policy, the crop protection policy, etc. or aim at the application of 'good farming practices' in as many farms as possible. Depending on the amount per hectare, an upper limit to the payment per farm may be restrictive for (100%) participation of larger farms. In terms of area, this might mean that no homogenous situation is attained.

In the case of payments coupled to the supply of certain services, in addition to the effects of higher compensation, there may also be possible lower kg yields (and the possibility that, in a market segment, the products concerned may generate a higher price than usual) and changes in the (cultivation) costs per hectare. Compared with savings on the costs of manure and crop protection, for example, farmers may face higher processing and management costs; besides labour costs they may also face specific costs related to new machinery. Labour management, for example combating weeds manually instead of chemically, may become a problem. The changeover of farms to production under new conditions may entail specific transition costs which might prove an obstacle to participation.

#### *3.3.2 Budgetary costs*

The budgetary costs of direct income payments are high compared with those of other instruments of market and pricing policy (Meester, 1979). Direct income payments can serve as a replacement for other measures (such as export restitutions and intervention), but on balance, expenditure will usually increase. This is because the costs of direct income payments are borne totally by the treasury. This is in contrast to price support for farmers, which is generally borne by consumers. In the conversion of price support into direct income payments, a redistribution of income takes place from the taxpayer to the consumer. This makes that support for the agricultural sector is directly visible to the public. To a greater extent than with most other agricultural policy instruments, public acceptance and sufficient budgetary resources are therefore very important for the implementation of direct income support.

Environmental or rural demands linked to direct income payments may justify this compensation

more easily.

The question is whether these expenses should continue to be totally charged to the EU budget. The more specifically national or regional the support, the more logical it becomes to request a contribution from the member state. In addition, a maximum per farm can be determined, or following the allocation of decoupled payments, agreements can be reached that these will gradually be reduced over a certain period (degressivity).

Besides the direct budgetary costs, implementation costs are also involved in the allocation of direct payments. These costs increase the more the payments are directed towards specific needs or coupled to certain conditions. The implementation costs of the Canadian AIDA are fairly high, partly because the programme is geared to needs: a payment is only awarded if the income situation requires it. Where long-term payments for a fixed group of receivers are involved, as in the case of the PFCs, implementation costs are fairly low.

### 3.3.3 Implementation

A system of payments can be implemented very simply, but the more a payment is geared to specific needs, the more complex it becomes. The detailed information and inspections required for the implementation of direct income payment programmes also make such programmes susceptible to fraud.

When awarding payments on the basis of reciprocal actions in the field of environment, nature and countryside, there are a number of issues which complicate implementation (Claassen, 2000). For example, environmental effects are difficult to measure and there are often several producers who contribute to the realisation of a certain environmental effect. In addition, the conditions under which producers operate are very diverse. There are huge differences between producers and regions with regard to business operations, attitudes towards the environment and the surroundings in which one operates (differences in soil, climate, water management, etc.). Moreover the effects achieved by certain measures are extremely dependent on unpredictable natural circumstances. The effectiveness of agricultural environmental policy is therefore highly related to the differentiation of the policy. The more differentiated the policy, the more complex its implementation. In the EQIP and CRP programmes in the United States, long-term contracts are signed with individual producers and - via tendering - only those producers are admitted to the programme who are expected to contribute most to the environment or nature.

In principal, the implementation of legislation may be carried out at (some) distance from the government, as is done in the Netherlands by Laser. Certification of agricultural businesses by certain institutes can play a role in this. Compliance with contracts demands local inspection. The formation of nature and landscape cooperatives, consisting not only of farmers but also of nature and environmental organisations, may also have a role to play here.

With regard to the EU, inspections are already required in the framework of the present hectare and livestock premiums (registration of plots and crops). Therefore, it may be possible to limit the extra costs of decoupled payments linked to environmental goals. Some interesting trials have taken place in the Netherlands with 'cross compliance', which was implemented in 2000 for some crops (starch potatoes and maize). At the moment the specific implementation costs of these measures are not yet known.

Payments can also be further included in the current environmental and landscape legislation of the member states, including the Programma Beheer [Programme Management] in the Netherlands (control agreements with ca. 6.000 farmers, ca. 50.000 ha). In most other mem-

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ber states, less progress has been made in this field. In less intensive agricultural areas, where agriculture is less of a burden to the environment, and in member states where there is less scarcity of landscape and nature than in the Netherlands, there seems to be little need for such legislation.

### 3.3.4 Trade policy

Decoupled direct income payments, such as the PFC payments in the United States and disaster relief, satisfy the criteria relating to support which is considered the least trade distortive at WTO level (green box). However this does not alter the fact that decoupled support very probably affects production and therefore trade too. This depends on the application of the payments; by establishing further conditions the production effects as a whole may be neutral or even negative. For the meantime, however, the forms of decoupled payments do not seem to be subject of discussion at WTO level. With the further reduction of trade distortive support measures in the amber and blue box, the size of the green box is expected to grow and criticism regarding this support will probably increase.

### 3.3.5 Conclusion

From a political-economic point of view, direct income payments can be justified in various ways. Direct income payments may be necessary to redistribute incomes, for example the (temporary) supplementing of incomes of agricultural producers following decisions to lower or discard price support. Another justification may relate to finding solutions to problems because of market failure. In that case this involves the provision of public goods such as environment and nature. Because the payment is decoupled from production, production decisions are in principal not affected and producers can freely respond to market signals. Although the decoupled payment may continue to influence production, prices and trade via the income effect, this form of support is accepted at WTO level. The instrument can be applied for achieving certain (public) objectives in the field of environment, nature and landscape. However, the same applies to this as to the income objective: the more specifically one wishes to use the instrument, the greater the implementation costs. In addition, the direct budgetary costs of the instrument are relatively high and the effects are directly felt by taxpayers who have to bear these costs. The instrument is therefore vulnerable with regard to public acceptance and the available budgetary resources. By setting socially desirable conditions, this vulnerability will become less.

## Assessment of decoupled direct income payments

	+	-
Effectiveness	Can provide incomes with fast, direct at need for support.	Not necessarily support directed
	Suitable for achieving environmental, rural or nature objectives	Supplementary disaster relief discourages private initiatives
Budget		High government expenditure
Implementation		Complex in case of certain conservation or environmental goals
Trade policy	Accepted in WTO: green box	Production neutrality debatable



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## 4. Net income stabilisation fund

### 4.1 Mechanism

Income fluctuations are characteristic for the agricultural sector because production depends on the weather and consequently, revenue prices can fluctuate strongly. This is certainly the case if no price stabilizing measures are taken. A net income stabilisation fund is an instrument with which a producer can stabilise his income on the long term. Such a fund is set up by the producer in 'good times' and used (for withdrawals) in 'bad times'. This means the producer can, to a certain extent, level out the peaks and downturns in income. The government can stimulate participation in such a fund by granting a subsidy, guaranteeing an attractive interest rate or offering tax relief.

Besides a fund of this kind, fiscal measures may contribute to levelling off peaks and downturns in available income. The intended fiscal facilities are not studied in detail here. In view of the fact that in the EU, apart from the Netherlands, only a few countries apply a real system of income tax for agriculture, they would not be able to serve as a real alternative policy instrument for the EU agricultural policy.

### 4.2 Application

In some countries, saving is made attractive to agricultural producers by offering tax relief. An example of this is the so-called Farm Management Deposits (FMDs) programme in Australia. This instrument provides tax concessions to farmers who reserve money for future financial setbacks. In the year in which the reserve is made, the amount is deductible from the taxable income, and when the 'reserved' income is used, the amount is taxed. A maximum amount of 300,000 dollars applies.

In Canada there is a fairly unique income stabilisation instrument, the so-called Net Income Stabilisation Fund (NISA). This is completely different from the Australian FMD and the existing savings and investment products in other countries (not necessarily only directed at the agricultural sector). The Canadian NISA will be described in more detail in this chapter.

NISA was introduced in 1990, starting off in three provinces and in all provinces from 1998. Each participant pays a contribution to the administration costs of 55 CAD per year. Producers can decide themselves whether and at which bank they open a NISA account and how much they deposit on this account. Up to a maximum of 3% of the net turnover per year (maximum 250,000 CAD), the Canadian government (federal and provincial) doubles the deposit made by the producer. Over and above that, the participant can deposit up to another 20% of his turnover onto the account, for which he receives an interest bonus of 3%. The deposits made by the producer and the amounts (subsidy and the interest bonus) from the government are deposited in two separate funds, funds 1 and 2 respectively. When determining the net turnover, and therefore the maximum amount to be deposited, the products to which a system of production control applies (dairy, poultry and eggs) are not included. All the other products and types of producers are eligible for participation in NISA. If the taxable income of the producer is lower than the threshold value or the gross income is lower than the five-year average, the producer may withdraw the credit. Withdrawals are first taken from fund 2 (consisting of subsidy and interest bonus) and if not sufficient, from fund 1 (Spriggs, J. and T. Nelson, 1997). Income tax is only paid over withdrawals from fund 2. If a participant wishes to close his NISA account, he

can receive his credit as a lump sum or in instalments over a maximum of 5 years.

The functioning of and participation in NISA is regularly monitored. Recent reports (Lorimer, 2000; Pikor and Schissel, 2000) indicate that some 140,000 businesses take part in the programme. Together they have so far built up some 3 billion CAD in funds. Of all the producers eligible for NISA, three quarters of them actually have a NISA account. Random tests among participants show that many participants view NISA more as a pension provision than a way of managing the cash flow of the business (Lorimer, 2000). Furthermore, it appears that over the last two years (1998 and/or 1999), 78% of the accountholders has made a deposit on his account. In the same period 30% of participants withdrew money from the fund. The main reasons for withdrawing money from the fund appeared to be lack of cash, low prices and high business costs.

### 4.3 Assessment

#### 4.3.1 Effectiveness

NISA, as well as the Australian FMD, is a regulation, which may enlarge opportunities for the continuation of the agricultural business in a period of poor financial results in a certain year, or even over several years. In both cases the precondition is that the business has formed reserves in previous, more successful years. Businesses with a structurally low income have little or no benefit from such schemes. The producer also has few stabilisation opportunities during the start-up period of the fund.

When assessing the effectiveness of NISA it is particularly important to know which target group the government has in mind. In principal, NISA treats all producers who find themselves in a similar position equally. Almost anyone can participate, no matter what his production is, and participants with a similar deposit receive the same government subsidy. The result is that the smaller and most vulnerable farmers in particular have been unable to build up adequate reserves in NISA, although they are the ones who are forced to withdraw money from the fund, not the larger businesses. The fund is therefore not directed at a specific need for income stabilisation or government support. This applies all the more because it does not provide a solution to structurally declining prices and incomes, which could be the result of a further liberalisation of the agricultural policy. In this sense it cannot be considered an alternative for the existing direct compensation for reduced grain and beef prices in the EU, for example.

In Dutch agriculture most fluctuations in income occur in businesses in which there is little market intervention (pigs, poultry, potatoes, horticulture). It is possible to designate the instrument for these non- or less land-based productions, which until now have been left (almost) alone in agricultural policy.

Within the EU in recent years the income of British agriculture has fallen the most, particularly due to the stronger British pound and the fact that with the introduction of the euro, the monetary compensating amounts will no longer be granted. The formation of funds in the coming years will no longer be able to stabilise such declines in income. Examples of similar situations when a response came too late are the consequences of the BSE and dioxin affairs, the Russian and East Asian crises, etc.

One advantage of NISA is that it does not have a disputed effect on the business operations of the participants, production and prices of agricultural products and the environment. Producers have their own responsibility and flexibility with regard to the products and volumes to be produced.

### 4.3.2 Budgetary costs

Apart from the fiscal consequences, NISA is directly linked to government expenditure, both federal and provincial. The budgeted expenditure for the year 2000/01 totalled some 315, 120 and 300 million CAD for the federal government, the provincial government and the NISA participants respectively. Besides the immediate expenses there are also the implementation costs. These are fairly limited because the management of the accounts is left to the banks with whom producers can open a NISA account. Moreover participants themselves bear some of the implementation costs through an annual contribution of 55 CAD.

The (direct) budgetary costs increase as the agricultural situation improves. In bad years, compensation is only paid for the bonus on the interest on the previously deposited capital. Moreover tax revenue increases as more withdrawals are made from the fund. It may seem strange to the taxpayer that costs increase in years when the farmers have not required subsidies. The government suffers a dilemma when the situation in agriculture becomes so bad that all the NISA assets have dried up: should it offer extra financial support or leave businesses to their fate, so that they might have to leave the sector.

A fiscal system such as the Australian FMD results in less tax revenue the more that is saved. The 'reserved' gross income is taxed a year later, but possibly at a lower rate. Application of the Australian (fiscal) system in the EU, in view of the fact that the EU itself does not impose direct taxation, would mean that the separate member states would have to pay the costs.

Both with regard to NISA and fiscal systems, the question to be asked is whether these are instruments which are linked with the replacement or reduction of existing support measures, such as the direct EU payments. As producers themselves bear some of the costs of NISA, the budgetary expenditure of such an instrument will be much lower than an instrument that is wholly subsidised by the government. Because a fund like NISA is not an instrument that can deal with structural price declines, it cannot be considered an alternative for existing direct compensations from the EU. Depending on the target group of agricultural businesses, a shift may take place from resources of 'land-based' to 'non land-based' agriculture.

In view of the principle of equality, any radical application of fiscal facilities in connection with income fluctuations may also apply to independent businesses outside agriculture (medium and small-sized businesses). In the Netherlands this involves almost four times as many entrepreneurs, but in businesses outside agriculture there are clearly fewer income fluctuations.

### 4.3.3 Implementation

Although the implementation of NISA is largely left to the banks, a separate institution is required for the inspection and processing of registration forms and requests for withdrawals from the fund. In practice the processing of requests for withdrawals is quite a lengthy business. For this reason, participants who are experiencing financial problems often have to wait a long time to receive money from their NISA account. Another implementation problem is the often poor accounts kept by producers, which delays the implementation of NISA and causes costs to rise (Richardson, 2000). According to Romain and Calkins (1997) NISA-type programmes are very susceptible to fraud because the accounts are quite easy to manipulate.

For the EU, implementation of a kind of NISA would mean that an extra administrative department would have to be set up or added to the existing one. In order to determine the contributions per producer, this department must have (almost) the same information as the

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Income Revenue at its disposal. Based on the individual input of the farmers, they must determine the government contribution(s). It then needs to be asked whether a link between both departments can be made in EU context. With the implementation of a fiscally imbedded income stabilisation instrument at EU level, the problem is that the EU itself does not collect income taxes and that there are great differences between the tax systems of the member states.

#### 4.3.4 Trade policy

NISA is registered by Canada at WTO level as support which belongs to the most trade distortive category (amber box). For this reason it was initially subject to reduction obligations. NISA was classed in the amber box because it does not precisely satisfy all the WTO criteria for the accepted green box support. However it is questionable whether NISA actually distorts trade. In a study into the distortive effect of NISA, Rude (2000) concluded that this effect is very small, even if the programme is not totally production neutral. This is because extra government subsidies are received for higher turnover. However it is only producers with a turnover of less than 250,000 CAD and deposits above 3% but lower than 20% who are stimulated to increase their turnover and therefore receive more government subsidies

NISA account holders must assess whether they should deposit their possibly positive income in NISA or keep their assets liquid and directly invest in their business. In practice most producers deposit in NISA, due to the attractive conditions. However when this detracts from the propensity of producers to invest in their businesses, the fund may have unfavourable consequences for the modernity of the particular business. On the other hand assets in NISA may be used as a surety for financing, due to it being person-related, although with a certain fiscal claim.

Another argument for the limited production and trade distortive effect of NISA lies in the fact that NISA is a programme for the whole business (except for products which are subject to quotas, like milk). The subsidy is not coupled to certain products or volumes of production so that producers can continue to align their production decisions to market trends.

#### 4.3.5 Conclusion

The NISA savings fund, developed in Canada specifically for the agricultural sector, is a system which partially replaces price support and product-related income support. Compared with these 'traditional' forms of agricultural policy, NISA has fairly low budgetary costs and few disruptive effects on production, prices and trade. Because support for all comparable producers, whatever the type of their business, is the same, there is very little incentive for producers to adapt their choice and quantity of product under the influence of NISA. NISA therefore offers producers complete flexibility and individual responsibility in their business operations. With this it can also stimulate producers to choose new products and methods of production.

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The aim of income stabilisation is not always achieved, however, because producers often save their assets until their retirement. This could be experienced as a luxury problem. A more fundamental problem is that during the initial period of a NISA account, few assets are created. Apart from the fact that for the creation of funds, financial incentives from the government seem to be necessary, the creation of these funds is an additional problem in a (long) period of low income. Furthermore, because of its equal treatment of farmers, NISA does not target the real need for support. With even more fluctuation of prices expected in future as a result of the liberalisation of the (EU) agricultural policy, the significance of instruments like NISA may increase. However it does not offer a solution for structural declines in prices and incomes.

Assessment of the net income stabilisation fund		
	+	-
Effectiveness	Supports income security; principally suited to all businesses	Is not effective in periods of low income
	Individual responsibility and flexibility	No compensation for structurally declining prices and incomes
	Well-filled fund offers government way out when called on for support	Subsidies are not in line with needs
Budget		Governmental contribution especially needed in good years
Implementation	Limited implementation costs	Susceptible to fraud
		Implementation at EU level is problematic
Trade policy	Little effect on production; very little trade distortion	Still in amber box

## 5. Risk insurance programmes

### 5.1 Mechanism

Agricultural businesses are faced with a number of specific risks due to the nature of production, the environment and the market. They are specific in the sense that they do not apply, or only marginally, to other business sectors. Here it involves the following kind of risks:

- production risks (as a result of plant disease, animal disease, or natural damage as a result of earthquakes, floods, severe rainfall, frost, drought, hail or storms);
- ecological risks (caused by climate change, pollution, exhaustion of natural resources);
- price and market risks (caused by fluctuations in product prices and means of production);
- institutional risks (limitation in business operations or rising expenses by government policy) (see also Harwood et al., 1999 and OECD, 2000).

The risks described above are subject to change as a result of the far-reaching structural development of agriculture and reform of government policy (Meuwissen, 2000). The reduction of price support in the EU agricultural policy thus leads to an increase in price risks and the increasingly progressive restrictions on medicine, vaccination and crop protection substances lead to higher production risks.

With the various risks the important question is whether and to what extent the entrepreneur can take measures to prevent damage or limit it, respectively (see box 5.1). Most people avoid risks and attempt to limit them (Hardaker et al., 1997). In the agricultural sector, too, management instruments and strategies are used to deal with the above-mentioned risks. These instruments and strategies are divided into two categories: (1) strategies within the business and (2) strategies whereby the risk is shared with others. An example of the first category is diversification within the business. Sharing risks with others is made possible by sales and production contracts or by insurance.

#### Box 5.1

Kinds of agricultural risks, assessed according to degree of prevention, influence, role of chain and government and effect on sector

	Prevention on business		Influence during damage		Relation with chain	Influence
	of the government	Influence of other	businesses	and sector		
Plant disease	++	+/-	+	+	+	
Animal disease	++	+/-	+	+	+	
Earthquake	-	-	-	-	-	
Floods	+/-	+/-	-	++	-	
Rainfall	+/-	+/-	-	+/-	- (+)	
Frost	+/-	+/-	-	-	-	
Drought	+/-	+	-	+	-	
Hail	+/-	-	-	-	-	
Storm	+/-	-	-	-	-	
Environment	-	-	-/+	+/-	+	
Prices						

-/+ · ++ +/- +

Further explanation about the row relating to drought may clarify this scheme.

The possibilities for prevention (fewer crops susceptible to drought or modified sowing schedule) are limited (reason for +/-). But the damage can be considerably contained during a dry period by overhead irrigation, which is the reason for + in the column 'influence by the business'. There is however dependence on the government (reason for +) related to the prohibition or limitation of sprinkler irrigation. The possibility of damage to a business by drought is separate from the chain (supply, customers); this is the reason for a - here. This is clearly the case in animal and plant disease: danger of spreading disease by supplying new animals or plants. Damage caused by drought in an individual business has no effect on the results of the sector (it does in the case of drought in a large area over a long period of time), while this is the case in (contagious) animal and plant disease (in the worst scenario export prohibition or rejection of the product by the consumer, as in the BSE and dioxin affairs).

Insurances exist for many risks, but some risks are difficult to insure. The 'insurability' of a risk is determined by various circumstances and conditions (Dijk et al., 1994). The most important of these are shown in box 5.2. Much depends on the amount of insurance premium the entrepreneur is prepared to pay. He will weigh up the costs of the premium against the risks he runs and the options available to him of facing these without insurance, for example by reserving funds within the business. Fiscal instruments are important here, such as the possibilities of settling losses and profits in different years and the extent to which funds can be reserved on a tax-free basis.

An essential condition for insurability is sufficient risk spread over the insured parties.

This is much less feasible for natural disasters that result in crop damage than for car accidents, for example. This makes it difficult to implement crop insurance without subsidies and/or re-insurance by the government. If a natural disaster occurs, a large number of claim assessors will be required to assess the damage of the participants. Extra implementation costs occur when businesses are inspected to assess the number of preventive measures in force. If acceptance for insurance is linked to participation in an existing, or widely applied certification system in the sector, then these (extra) costs are limited.

Familiar insurance problems such as 'adverse selection' and 'moral hazard' arise as a result of asymmetric information between participant and insurer. 'Moral hazard' in particular can make implementation of insurance more difficult. 'Moral hazard' means that after a producer has taken out an insurance, he can start to behave in a way which has an adverse effect on the risk and therefore for the level of any claim paid out. Because of this phenomenon, it is almost impossible to take out insurance for animal production: any production losses are particularly dependent on business hygiene to prevent animal disease. Moral hazard and adverse selection may be limited by introducing excess, no-claim bonuses, inspection of the behaviour of the farmers ('good farming practices') and inspection of the production process.

#### *Position of the government*

With regard to the position of the government a distinction must be made between disasters on the one hand, and situations which should really be attributed to the risk of the entrepreneur on the other hand. Examples of the former category are floods, non-claimable environmental damage and earthquakes, whereby general opinion feels that the government should provide support, if possible drawing on a disaster fund. These are unforeseeable risks, which are beyond the control of the entrepreneur.



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## Box 5.2

### Conditions for the insurability of a risk

Condition	Explanation
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Availability of statistical information	Data must be available about what extent of damage occurs with what frequency, so that the level of the premium can be determined.
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Sufficient risk spread over insured parties	
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	There must be sufficient policies without damage compared with policies on which damage has been claimed, so that the insurer is not confronted with a huge claim. In the case of a major natural disaster in a large area or other cases of damage which show correlation, this will not often be the case.
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No adverse selection	An equal proportion of participants with lower and higher risks of damage is required. In the case of adverse selection, people with a higher risk will be more likely to insure themselves. Adverse selection occurs when insured parties have more information about their risks than the insurers.
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No moral hazard or possibility to affect damage	Insured parties must not be able to have any great effect on damage or possible claims. Moral hazard can be tackled by introducing an 'excess' or 'no-claim' bonus.
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Opportunity to determine the damage	In the case of damage there must be sufficient manpower and expertise available to assess the damage and the cause of the damage, and to assess the claim.
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Sufficient number of insured parties	If participation is too low, certainly in the case of insufficient risk spread, insurance will not be feasible from a micro-economic point of view.
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Acceptable premium rate for the participant	If the premium is 'too high' an insured party may decide to cancel the insurance and bear the risk himself.
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The risk must be re-insurable	Capacity must be available on the reinsurance market and re-insurers must be prepared to insure risks.
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No high expectations with regard to government support	If people expect the government to provide support in the case of damage, the incentive to take out insurance will be minimal.
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Sources: Dijk et al., 1995 and Meuwissen et al., 1999.

An example from the past was the damage caused by the explosion of the nuclear reactor in Chernobyl; growers of lettuce and spinach were forced to destroy all their crops. Support for the damage caused by flooding will also be a task for the government to a large extent, if there is an increased probability of such occurring in the framework of the government's water management

Circumstances that are considered part of the risk of the business owner include frost, hail, drought, severe rainfall etc., but for which there are not always insurance possibilities. This is due to a lack of market forces (supply and demand are not reconciled). This chapter is mainly devoted to these kinds of issues. The government can increase participation in insurance by assuming responsibility for part of the insurance premium and/or implementation costs, temporarily or on a structural basis. In the case of agricultural risks it usually involves insurances which insure part of the production/crop and not so much the damage insurances which are generally offered by private insurers (hailstorm damage) or long-term agreements which exist between the government and the sector (animal health programmes).

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The box below explains how crop insurance works. Crop insurance can be extended to include insurance of part of the expected prices (crop insurance). Income insurance goes even further and insures a certain level of income, whereby several risks for one business are actually combined in one insurance.

How crop insurance works

The producer selects the guarantee level: the % to be insured of the expected crop. The expected crop is determined by the number of hectares and the average historical (or forecast) production per ha.

On the basis of futures market prices, historic prices or production costs, the government or insurer determines the insured price.

Compensation for damage is determined by the insured price and the production deficit (actual crop-guarantee level).

## 5.2 Application

In almost all countries insurances for agricultural production risks exist. These vary in particular with regard to the kinds of risks and products that can be insured. Moreover government intervention in insurances varies too.

### *Europe: damage insurance*

In Europe no production guarantees are insured, only certain kinds of risks. For the animal sector, in almost all EU member states, rather extensive private insurances are offered to cover disease, death and accidents (Copa/Cogeca). EU directives apply to the major contagious animal diseases, such as swine fever, on the basis of which the cost to the livestock breeder, including the loss of the livestock and the elimination measures, are almost all charged to the EU and member state in question. Such agreements do not exist for plant diseases. A number of countries (Germany, the Netherlands and the United Kingdom) also have partially subsidised disaster funds.

In many European countries (including France, Germany, Belgium, Italy and the United Kingdom) for crop risks there are only a limited number of damage insurances available concerning plant products; usually only hail and fire damage are included and insurances are only offered via private insurance companies (Copa/Cogeca). In Italy the government subsidises part of the premiums. In France there is a disaster fund for all land-based products (crops and livestock), which is financed by compulsory levies (Meuwissen et al., 1999). In some countries (including the Netherlands) various risks, including storm damage, frost and vandalism, can be insured. In Greece, Portugal and Spain there is one complete insurance subsidised by the government which insures against various natural risks.

In Spain, depending on the product, up to a maximum of 45% of the premium for the agricultural insurance network is subsidised, but for disasters there is no (direct) supplementary government support. There are around 350,000 participants who have a 45% share in the total plant production (more than 70% for grain and fruit) and 15% share in the total insurable livestock. The insured value is more than 22 billion USD. Insurance costs in Spain amount to about

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250 million USD, half of which are assumed by the government.

#### *Canada: crop insurance*

Crop insurance has been available in some Canadian provinces for forty years, and in the whole of Canada for the last twenty-five years. Crop insurance in Canada offers protection against production losses as a result of natural disasters that are beyond the control of the producers (drought, frost, flooding, hail, disease, insect plagues). A production guarantee is available for almost all crops; 88% of the plant production value in Canada can be insured. Between 1991 and 1995 Canada also had a revenue insurance (insurance of price x production) on the basis of average revenue from the past, the so-called Gross Revenue Insurance Plan (GRIP). The programme was terminated due to the high budgetary expenses. Some provinces (Ontario and Quebec) still have similar programmes.

Because of negative experiences with implementation by private insurers, the Canadian government now controls the insurance programmes entirely itself. Ten provincial government institutes implement the insurance (sales, premium collection, payment of claims, inspection). The insurance premiums are paid collectively by the federal government, the provincial government and the insured producers. The federal and provincial governments also each bear half the implementation costs. The producers are involved in improving the insurance programmes through various organisations. As mentioned, no private insurance companies are involved in Canadian crop insurance. Separate from government insurance, private insurers do offer policies which insure crops against certain damage, (hail, fire). In addition there are insurance companies which reinsure government insurance.

Participation in crop insurance is voluntary. A participant himself chooses the crops and the percentage of production (usually between 70 and 80% of the expected production) which he wishes to insure. The participant is obliged to insure the whole acreage of a certain crop. The yield per hectare which serves as a basis for the production to be covered is adapted in a number of cases to the progressive average achieved over 5 to 15 years. The insurance premium is determined on the basis of individual characteristics (risk, area, crops). Any compensation depends on the production guarantee, the loss of crop and the determined price at which the crop is valued (see diagram).

In 1997/98 almost 50% of all producers and 50% of the total acreage of plant crops were insured. The number of participants in 1997/98 was almost one hundred thousand. The federal costs of the insurance programme totalled around 206 million CAD in that year, of which more than 80% consisted of premium subsidies and around 20% of implementation costs.

#### *United States: crop, revenue and income insurance*

Crop insurance for several production risks has been available in the United States since 1938, but over the years major reforms have been introduced. Since 1980, insurances have been offered by private insurance companies. The government pays some of the premiums and implementation costs, reinsurance and possible uninsured losses.

Low numbers of participants and high government expenditure led, in 1994, to the Federal Crop Insurance Reform Act. For the insurance of production risks of several tens of plant crops (mainly agricultural crops and fruit), there is the 'Multiple Peril Crop Insurance' (MPCI). An important element of this is catastrophic (CAT) coverage. This is a basic insurance, which was initially a compulsory condition for producers to receive government support from product programmes. In 1996, one year after the introduction of the CAT coverage, the deci-

sion to make this insurance compulsory was reversed under pressure from the agricultural sector. Participants in CAT coverage only paid a modest contribution to the administration costs: 60 USD per crop per year. In return they received 50/55 coverage: with a crop loss of more than 50% of the average historic crop revenue, the loss was compensated at 55% of the insured price. For higher coverage, producers could take out the additional multiple risk insurance, MPCI (see example below).

Producers themselves bear some of the risks and therefore cannot insure themselves for 100%. Since the 1994 reform, subsidies on the premiums have been increased. Together with the introduction of CAT coverage, this has led to a significant rise in participation. In the eighties, almost 30% of the acreage which was eligible for crop insurance was actually insured; in 1995 participation was up to 80% (Harwood et al., 2000). After 1995, when CAT coverage became voluntary, participation declined to around 60% in 1997.

Since 1998, participation in risk insurance has increased again thanks to new insurance products and higher subsidies. At the moment about two thirds of insurable producers have a crop or revenue insurance. With the enforcement of the Agricultural Risk Protection Act in June 2000, an extra 8.2 billion USD has been made available for modification and expansion of risk insurance in the period between 2001 and 2005. This amount is added to the average 1.5 billion USD, which the government has contributed annually to insurance programmes since 1994. An overview of subsidised agricultural insurance programmes is given in box 5.4.

#### Box 5.3

#### Example of crop and revenue insurance in the US

An example of a crop and revenue insurance is described below. This is based on:

- a producer with 10 hectares of maize and an average historic production (Gross Historic Production - GHP) of 5 tons per hectare
- an expected price of maize determined by the US Department of Agriculture (USDA) of 100 USD per ton.

#### Multiple Peril Crop Insurance

- a) the producer takes out a crop insurance with a 75/100 coverage; with losses totalling more than 25% he will receive compensation amounting to 100% of the determined (estimated) market price;
- b) for various reasons the producer's crop only yields 2 ton per hectare; this is 3 tons below his GHP, a loss of 60%;
- c) for the first 25% of his GHP, or 1.25 tons, the producer bears the risk himself and receives no compensation;
- d) for the remainder of the loss (35% of his GHP or 1.75 ton) the producer receives compensation of 175 USD per hectare (=100 USD per ton  $\times$  1.75 ton loss per hectare). For his total insured acreage the producer receives compensation from the insurer amounting to 1,750 USD.

#### Revenue Insurance

- a) the producer takes out a revenue insurance with 75/100 coverage; for losses of more than 25% he receives compensation of 100% of the determined (estimated) market price;
- b) with the revenue insurance, the (insured) revenue guarantee is equivalent to 5 tons  $\times$  100

USD per ton  $\cdot$  75% coverage = 375 USD per hectare

c) for various reasons, the crop yield is limited to 2 tons per hectare, a loss of 60 %; furthermore the market price has declined to 90 USD per ton;

d) the real revenue of the producer is 2 ton per ha  $\cdot$  90 USD = 180 USD per ha;

e) the revenue insurance pays the producer compensation which is equivalent to the difference between the revenue guarantee and the actual revenue: 375 USD - 180 USD = 195 USD and 1,950 USD for the whole insured acreage;

f) in this case the producer receives 20 USD per ha more than with the crop insurance (without price guarantee). However the premium for the revenue insurance is higher than for the crop insurance.

The supplementary government contribution is used for increasing subsidies (meaning that premiums can be reduced), better coverage possibilities and pilot projects with new forms of insurance. All these changes are intended to increase participation in insurance, making ad-hoc disaster relief less essential.

In recent years, many new insurance products have been introduced, such as the Group Risk Plan (GRP) - insurance and revenue insurance. GRP insurances are based on the harvest in the whole region instead of that of an individual producer. This means that compensation is paid to all participants in a region when the crop yield of the region in question is below the insured production guarantee of the region, independent of individual production levels. The advantage of GRP is that it is simpler to implement. Up until now participation in GRP insurance is considerably lower than in an individual insurance.

#### Box 5.4 Subsidised agricultural insurance programmes in the United States

	One crop	Multiple crops
Basis determination guarantee:	Production risk	Price risk
Individual producer	Catastrophic (CAT)-coverage	
	Multi-Peril Crop Insurance (MPCI)	
	Crop Revenue Coverage (CRC)	
	Income Protection (IP)	
	Revenue Assurance (RA)	
	Adjusted Gross Revenue (AGR)	
Whole region	Group Risk Plan (GRP)	
	Group Revenue Insurance Policy (GRIP)	

Revenue insurance is rapidly increasing in popularity. Income Protection (IP) and Crop Revenue Coverage (CRC) have been available since 1996 and Revenue Assurance (RA) since 1997. Since 1999, Group Risk insurance (GRIP) has also been available for revenue insurance. Not all revenue insurances are available in all regions. The main feature of revenue insurance is the combination of price and production risks in one insurance. The producer not only insures himself for a production guarantee but also for a revenue guarantee (price  $\times$  quantity) (see example in box 5.3). This revenue guarantee is based on an historic crop yield and the price on the futures market when the insurance was taken out. When receiving compensation under CRC (and since 1999 also RA) any price increases on the futures market between the moment of taking out insurance and the harvest are also taken into account. IP insures against revenue losses using a fixed price (determined before the harvesting season). RA is very similar to IP, but

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uses a different method (geared towards the region) for determining prices.

Because the price guarantee during the season can increase due to rising futures market prices, the CRC is the most popular revenue insurance. The number of CRC policies taken out has risen from more than 92,000 in 1997 to almost 408,000 in 2000. No other insurance programme has experienced such an explosive growth.

Adjusted Gross Revenue (AGR) goes even further than revenue insurance because it does not insure one crop, as with crop and revenue insurances, but several crops. In this way it provides a guarantee for (some of) the business income. AGR is mainly intended for producers with a number of small specialty crops and until now has only been applied in a few cases (as a pilot project). AGR should offer the producer more income stabilisation and flexibility in production decisions.

Besides the number of insurance products, the choice in coverage percentages (the production guarantee to be insured) has increased dramatically over the years. For most insurances an excess of 25% applies, and compensation is only paid when the harvest (or revenue) is under 75% of the average historic production (or revenue). Many producers found this excess a reason not to take out insurance, as a result of which the maximum coverage ratio was raised to 85%. The payable insurance premiums above a coverage payment of 75% increase more than proportionately. With the Agricultural Risk Protection Act of 2000 the premium subsidies for the coverage possibilities above 75/100 have increased more rapidly than those for the insurance with a relatively low coverage.

In 1998 the insurance participants paid 930 million US\$ in premiums. The government paid 940 million USD in premium subsidies and around 509 million US\$ in implementation costs (427 USD for insurance companies and 82 million for own (government) costs). In recent years insurance companies have received an implementation subsidy of 24.5 cents in premiums for every unsubsidised dollar. In 1998 producers paid almost 40% of the costs themselves. With the rising premium subsidies the implementation costs have risen significantly since 1998; the producers' share in the costs has decreased correspondingly. Partly due to the high subsidies there have been no extra losses since 1997 because compensation for damage has exceeded the premiums. Between 1981 and 1996 these extra losses totalled an average of 219 million USD each year.

## 5.3 Assessment

### 5.3.1 Effectiveness

For the producer, insurance for a certain crop may be an adequate means for covering production and any price risks. It allows him to continue his business operations as usual after a loss of harvest. Risk insurances in all shapes and sizes gain in significance the greater the risk of fluctuations in kg- revenue and/or price and the lower the level of the excess (premium) as a result of government contributions (direct or by reinsurance/guarantees). An additional advantage of taking out risk insurance can be that producers find it thus easier to obtain credit from banks. However, risk insurance does not offer solutions for a structural decline in prices.

#### *Wide range of advantages*

The advantages of subsidised insurance vary widely according to the different kinds of producers and crops. In enterprises that have different crops in their development plan and perhaps

different varieties with differing harvesting times, risks are automatically spread. Insurance programmes stimulate producers to take more risks. If producers take more risks, for example in their choice of crops and cultivation methods, this can promote innovation. In general, producers and regions with proportionally higher risks receive the most subsidies. A basic insurance with low coverage, such as the CAT coverage in the US, does not offer any help to small companies. Only the very large companies receive a fair sum in such programmes. It is also the case that existing insurance programmes in the US and Canada are only helpful for a limited number of producers for dealing with risks. A large number of products, including animal products, are not, or hardly, eligible for subsidised insurance.

#### *Underwriting often unhealthy*

Subsidised risk insurances are usually an inefficient way of restricting agricultural risks and/or effecting an income transfer from the taxpayer to the agricultural sector. With an efficient insurance the collected premiums can cover the compensations to be paid and the implementation costs. Ideally, the ratio between the compensation plus implementation costs and the collected premiums should equal 1. Various studies (Skees, 2000) have shown that this ratio is generally far above 1 in government insurances in the agricultural sector, causing losses to be suffered. In all the countries (Brazil, Costa Rica, Japan, Mexico and the USA) where Hazell studied the performance of crop insurance, the loss ratio was at least 2, which means that twice as much is spent on compensation and administrative costs than received through premiums (Skees, 2000). Also Goodwin and Smith (1995) conclude that up till now, hardly any countries have been successful in developing crop insurance for different crops on a national basis, which is healthy in underwriting terms. This means that high subsidies and implementation costs are linked to the application of this instrument.

#### *Rent-seeking difficult to avoid*

It is difficult for governments to implement insurance programmes according to the basic principles of a well-functioning insurance because 'rent-seeking' behaviour from various groups encourages inefficient insurance. For example, now that other forms of market and price support are being reduced further, certain agriculture groups in the United State see new possibilities in insurance programmes for receiving government subsidies. In addition, other groups (insurance companies, lenders and the agribusiness), which also see opportunities for taking advantage of the subsidised insurance programmes, are increasingly making their presence felt. However, here lies the danger that governments will allow themselves to be influenced more by the lobbying of such groups than by insurance principles, thus negatively affecting the efficiency of government policy.

#### *Market effects differently assessed*

When assessing risk insurance it is important to know to what extent this instrument disrupts market forces. Wide-ranging estimates have been made about the effects of risk insurance on production, prices and trade. According to Skees (2000) these effects are probably considerable. For the six biggest crops in the United States, Keeton, Skees and Long estimate an effect of 15% on the size of the acreage which is in use for production (Skees, 2000). In contrast to Skees, Young and Westcott (2000) and Harwood et al. (2000) conclude that the total effect of risk insurance on production and export is slight. The effect of risk insurance on the acreage amounts to some 0.2% per year, according to Young and Westcott (around 600,000 acres). Higher production leads to lower prices for producers and consumers. Lower expenditure for

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the citizen must be weighed up here against higher expenditure for the taxpayer.

Subsidised crop insurance not only results in disruption in the market for the crop concerned, but also in the insurance market. Subsidised insurances can lead to unfair competition with private insurance. Due to the high premium subsidies in crop insurance, producers are discouraged from taking out unsubsidised hailstorm damage insurance, for example.

#### *Quality of life in rural areas*

An even more difficult task than assessing the consequences for markets is that of determining the consequences of risk insurance for the living environment. In general insurance programmes are aimed at entrepreneurs being able to continue business operations during and after exceptional circumstances. This has a restraining function on structure changes in agriculture. On the other hand it may be socially desirable to maintain agriculture, in certain areas which might be considered less suitable in economic terms, from the point of view of the quality of life in rural areas. Conditions can also be laid down for participation in insurance in order to guide a certain structure change. Conditions may be aimed at restricting the risk of damage, so making preventative measures compulsory. In relation to this, some issues that are favourable to the environment may be included. On the other hand, maintaining production on shaky ground may have a damaging effect on the environment (Chite, 2000).

#### *5.3.2 Budgetary costs*

The government costs for insurance can be divided into various categories: premium subsidies, management and implementation costs (of governments and/or insurance companies); and the costs which are associated with possible losses which cannot be covered by the collected premiums. In general crop insurances are linked with high expenditure. In the United States and Canada, at least half of the premiums must be subsidised in order to acquire enough participation. Additionally, in all the countries with subsidised insurance programmes, the implementation costs form a major cost item. Hazell's research shows that in Japan, in 1989, the administrative costs alone were almost four times as high as the collected premiums. In the United States the administrative costs amount to around 55% of the collected insurance premiums. With the application of an insurance programme at EU level and subsidies through the EU budget, the net costs for member states with relatively large agriculture acreage and a high risk of damage may be negative. Other countries are then net payers.

#### *5.3.3 Feasibility*

In general the implementation of crop insurance is felt to be very complex, both by governments (including Canada, US) and producers. It is very difficult to fulfil the conditions described above for the insurability of risks with crop insurance.

One major problem firstly involves the availability of information about the policyholder. In principal, the insurer should have information from each individual participant about revenue per hectare, harvests and crop losses; at least when an insurance is not based on regional averages. The amount of insurance premium to be paid is based on this information. The implementation and control of this information on an individual basis is complex and expensive. Implementation costs may be limited by using regional information instead of individual information as in the United States in the GRP and GRIP insurances. The use of regional information is aligned to the system of granting hectare allowances in the EU and the approach chosen in the



Netherlands after the water damage of 1998 for agricultural and horticultural crops. A point of discussion here is the determination of regional boundaries; each boundary means that some enterprises will experience advantages and disadvantages respectively compared with their own situation.

The problem is even more complex in the case of revenue or income insurance than with crop insurance. According to Goodwin and Smith (1995) it is almost impossible for every producer to determine the insurance premium on the basis of individual risk. Both Skees (1999) and Meuwissen et al. (1999) feel that income insurance for the entire business income is impossible to implement. When determining business income, the production costs and stocks are also taken into account, and these can be easily influenced by the management. Moreover, a huge amount of information is required to determine premiums for income insurance.

As with almost all kinds of insurance, fraud occurs in crop insurance. According to the Risk Management Agency (RMA) the number of cases of fraud in the United States is low; the estimated fraud foot of around 1% is low compared with non-agricultural insurances. One of the most common kinds of fraud is to plant several (2 or 3) crops consecutively (within a year) when it is already clear that the harvest will fail due to unfavourable weather conditions. In this way, one can claim compensation from the insurer twice or three times instead of once. Another form of fraud is concealing part of the harvest.

A possibly even greater problem than that of fraud committed by participants is finding sufficient businesses to participate in the insurance. By providing ad-hoc support in the event of natural disasters, political intervention frustrates the operation of the insurance programme. The incentive to take out an insurance declines if farmers expect politics to provide support when a natural disaster causes crop losses. Other forms of government support too (price support, direct income payments) have an unfavourable effect on participation in crop insurance.

Finally we arrive at the question as to whether implementation of crop insurance should be carried out by governments or by private insurers. There are various arguments for saying that the implementation costs could be reduced if insurance companies implemented the insurance. They already have the necessary capacity and expertise. In addition implementation by private insurers would offer more opportunities for innovation. However, greater autonomy for insurers stimulates them to sell those products that obtain the greatest profit. In general, the government bears all the risks anyway. In the United States various problems have arisen because insurers have offered policies in which, for example, a high expected price guarantee for a product was offered. The great popularity of this insurance with farmers resulted in significant losses for the government. Because insurers can confront the government with extra risks, supervision of the insurance companies is essential. In this respect a joint direction and supervision provided by government, sector and insurers should lead to improvement, as in Spain. Within the framework of such joint action for example, the premiums, compensations and government contributions could be established.

#### 5.3.4 Trade policy

Most insurance programmes do not fully satisfy all the green box criteria of the WTO and are therefore considered as support in the amber box. If government subsidies are limited, the 'de minimus' regulation may apply, so that in fact no cutback in the support is necessary. The more the government subsidies for crop insurance rise, the more the effects on production, prices and trade increase. It is of course clear that crop insurances are not production-neutral but have a certain effect on production decisions. If subsidised crop insurance increasingly replaces

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instruments like price support, this will lead to more international discussions about the acceptability of large-scale subsidised crop insurance.

### 5.3.5 Conclusion

Existing risk insurances in Europe only insure the agricultural producer for a limited number of risks like hailstorm damage and fire damage. On the other hand, subsidised crop insurance in Canada and the United States insure a certain production level, whereby different kinds of damage may be the reason for loss of production. A positive feature of crop insurance is that it can be a voluntary means of dealing with production risks, which is relatively conformable with the market. This mainly applies to producers in areas with high production risks. Insurance is a temporary form of support and does not offer solutions for long-term low prices. From a social point of view, subsidised crop insurance may be desirable because it maintains production in risky areas and therefore contributes to the quality of life in rural areas.

In general, government insurance programmes are characterised by their great complexity and high implementation costs. This complexity increases as the insurance is expanded to include more production risks, a price risk and maybe even income risks. There are many problems which make their functioning more difficult and which entail high implementation costs. For example, the compilation of information about policyholders and checking of participators is a difficult and expensive task. 'Moral hazard' and 'adverse selection' require measures to prevent misuse of insurance. It is also difficult to ensure sufficient participation for a healthy insurance. In order to increase participation, reasonably large subsidies are necessary. On the one hand, participation is often discouraged when other forms of price or income support are offered to farmers in the case of damage. The more subsidies on insurance premiums increase, the more the risk of disruptions on the market. Another negative aspect is competition with non-subsidised private insurance.

On the basis of the above, we can formulate a cautious opinion about the applicability of risk insurance in the Netherlands and the EU respectively. If the instrument is applied at EU level in a similar way to the US and Canada, it will inevitably have considerable budgetary costs and high implementation costs. Large subsidies would be required to recruit enough participants for sufficient risk spread. The Dutch sector would only enjoy limited benefits, particularly if application targeted plant sectors. This is because the risks in the Netherlands as opposed to the other EU member states are fairly small. In general, it will be difficult to get sufficient participation in the EU as long as there are other government instruments that provide income support or stabilisation. For example, there are already regulations aimed at compensating disasters in the Netherlands and other EU countries (see application in agriculture in the autumn of 1998 following floods).

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Assessment of risk insurance programmes

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Effectiveness Instrument for risk management by the producer No protection against structural decline in prices

Can stimulate investments (by taking more risks and easier access to credit) Other subsidies discourage participation

Budget Large subsidies are required to effect sufficient participation

Feasibility Can be (partially) implemented by private companies A lot of information is required to determine the correct premium

Many inspections required because of 'adverse selection' and 'moral hazard'

Trade policy Not production-neutral: subject to WTO discipline

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## 6. Export credit programmes

### 6.1 Mechanism

Government programmes for export credits are usually aimed at stimulating or maintaining export. Export credits can be applied as a policy instrument in various ways. For example governments can guarantee commercially granted credits (for credit terms which commercial lenders do not want to enter into), grant credits directly themselves, or subsidise the interest. There is a clear distinction between a commercial insurance for bad debt risks in export and guarantees or reinsurance of credits by the government. In the latter case the government stands surety and bears the risks.

Export credit guarantees are used to guarantee payment to the exporter, to improve the competitiveness of products from a certain country, to restrict economic or political risks in export, or to grant the exporter or importer better access to bank loans. Guarantees by the government can also result in lower credit interest and/or insurance premium. The result is that importers can finance the purchase of goods from a certain exporter under conditions that ensure that the costs are lower than in the case of a fully commercial transaction. This also enables transactions to take place that would not have been possible without government intervention. So in a certain sense there is an element of subsidy to the exporter or importer.

### 6.2 Application

According to research carried out by the OECD, the greatest providers of export credits are the United States, Australia, the EU and Canada (OECD, 2000). The subsidy element is by far the greatest in the export credit programmes of United States.

Table 6.1 Export credit allocations and exports from selected countries, 1995-1998

	Export credit	
(billion USD)	Total value of exports	Share with export credit (%)
Australia	6.844.9	15.1
Canada	3.667.2	5.4
United States	12.8	245.3 5.2
European Union*	4.4	232.6 1.9

\*) exclusive intra-trade Source: OESO, 2000.

Export credit guarantees have been granted by the US Department of Agriculture (USDA) for about twenty years. The USDA has four export credit programmes (GSM-102, GSM-103, Supplier Credit, Facility Guarantee), which commercially grant credit guarantees for agricultural products. In the two most used programmes (GSM-102 and (GSM-102 and GSM-103), coverage amounts to 98% of the principal sum and some of the interest. These government guarantees help foreign purchasers of American agricultural products gain access to commercial credits which are required to finance the purchase of these products. In order to assess the creditworthiness of foreign buyers, the network of foreign agriculture posts is used. Depending on the kind of programme, guarantees are given for repayment instalments of up to ten years. Such

long-term financing is unusual in commercial lending. It is more usual to provide financing for the length of the period during which the product is in use. For capital goods, machinery for example, the period may extend over a number of years, for consumer agricultural products perhaps only a few days. For breeding livestock and seed potatoes or sowing seeds, it may be a few months, at most a year.

Such long-term guarantees tend to remove the political and economic risks for the banks or lenders. For exporters, they make export possible where it would not otherwise have been.

Almost all agricultural products, both processed and unprocessed, may be considered for export credit guarantees. In addition, there is a credit programme (Facility Guarantee) for goods and services from the US which are used in importing countries for storage, transport, processing and sales of agricultural products. The number of products and countries that are eligible for a credit guarantee has sharply increased over the years. Export credits in the US are mostly used for cotton, wheat, maize and soybeans, although recent years have seen a shift in the granting of guarantees for bulk goods to goods with more added value. The total value of exports for which the USDA issued credit guarantees in 1998 amounted to around 4 billion dollars, equivalent to 7.5% of the total agricultural value of exports (USDA, 2000). The credit guarantees for 1999 and 2000 have also been budgeted at more than 4 billion dollars. In 1997, with the economic crises in Asia and Russia still at their peaks, the number of export credit guarantees was over 30% less than in 1998. The number of credits which are finally not repayable and which are therefore subsidised by the government, amount in the US to an average of around 2% of the credit for which guarantees were granted.

In a large number of other countries, including Australia and the Netherlands, commercial credit companies insure export up to a period of several months, and in exceptional cases a guarantee may be requested from the government, such as during the Asia crisis. In the Netherlands, the NCM (the Dutch Credit Company) operates in the field of commercial credit insurances. Following a proposal by the NCM, guarantees may be granted by the Ministry of Finance, in consultation with industry, the Ministry of Economic Affairs and the Ministry of Agriculture, Nature Management and Fisheries (LNV). The government is in particular involved in cases where political risks are concerned (diplomatic relations with the country involved) or because the IMF might play a role in the economic restructuring of the country. Within the EU the policy has not (yet) been harmonized. Some countries may issue guarantees for political reasons, while other EU countries do not. This can lead to a shift of trade flows and have an undesirable effect on competition between the EU countries.

With regard to application in the agricultural sector in the Netherlands, a fairly long guarantee period applies to starting material (seed potatoes, breeding livestock) and sustainable means of production (stalls, slaughter lines), the revenue from which will only be visible months or years after export. For consumer products the guarantee period is short, which is understandable because the 'security' is almost immediately delivered to the consumer through the retail trade.

## 6.3 Assessment

### 6.3.1 Effectiveness

Export credit programmes seem to be an effective means of developing or stimulating the

export of a range of agricultural products to economic or politically risky markets. Already existing export flows and the related production and job opportunities in the export country can thereby be maintained in crisis periods. Existing trade contacts can be continued, which may be important during a later economic recovery in the country concerned. Export credit guarantees can increase the demand for food and therefore have a beneficial effect on the price of the agricultural products. However it is important to know whether this increase in demand is the result of the lower price caused by the subsidy element in the export credit guarantee or whether the extra demand is the result of an exogenous increase in demand. The latter is the case when export credits are offered as a solution to liquidity restrictions in developing countries. This causes the global demand for products to rise and the revenue goes to the exporter concerned, without this being at the expense of the exports of other exporters. In reality, however, only a very small part of the export credits go to countries which are faced with liquidity restrictions or financing restrictions (OECD, 2000). The argument that export credit guarantees are granted to give developing countries the opportunity to buy food to meet their needs therefore only applies on occasions.

A possible risk of the instrument is that transactions are entered into with unreliable importers. This can be overcome by allowing the exporter to bear some of the risk. It is difficult to obtain insight into the size of the 'bad debtors' problem. Incidentally, these may not only be importing companies, but also the countries concerned. In the framework of their foreign exchange policy they may suddenly place a ban on payment. Importers can also 'become accustomed' to credits, when they make them a condition for the transaction without it being strictly necessary and (partly) select exporters on this criterion.

The total effect of export credits on international prices is difficult to assess. According to the OECD they probably only have a slight effect (OECD, 2000). Model calculations of the OECD indicate that export credit guarantees in the United States for wheat have resulted in a reduction in prices of almost 1% on the world market and a 1% price rise on the domestic market.

### 6.3.2 Budgetary costs

When the government itself only guarantees credit, i.e. does not grant credit itself, expenditure on export credit programmes consists of two kinds of costs: (1) the implementation costs; and (2) the costs which are linked to the non-payment of delivered goods by importers. The first category of expenditure may be quite small if there is already a network (e.g. embassies or agricultural mission) for the provision of information and other contributions to the implementation of export credit programmes, like those in the United States. Moreover such programmes are generally implemented through banks or commercial credit companies, thus limiting the implementation costs for the government.

The costs resulting from non-payment of goods or credits are also fairly limited in most countries (see also OECD, 2000). On average the percentage of outstanding credits for which compensation is finally required by the government, the so-called 'default-rate', is less than 1% of the total value of exports for which credit guarantees have been issued. For that matter in certain circumstances, such as the economic crises of the ex-Soviet Union/Russia/Eastern Europe and East Asian countries, it has not proved possible to collect significant amounts. For the EU this has generally concerned non-agricultural products. For the US and Australia, which mainly exports to the Far East, losses were mostly in the agricultural sector. Due to the Asian crisis, Australia introduced credit ceilings in order to control costs.

The budgetary costs of export credit programmes can only actually be determined in retrospect, while with export restitutions the budgetary attachment can be followed week by week. The costs can of course be registered immediately per granted export transaction

The costs of applying the instrument within the common agricultural policy of the EU, largely depend on the extent of associations with existing organisations in this field and the creditworthiness of the buyers with whom transactions are being initiated. The governments' national policy (exclusion of countries or introduction of ceilings) is of great importance for adequate cost control. For the EU this would require more consensus between the member states than is now the case. Compared with the present EU expenditure for export support - mainly export subsidies - the costs are low.

### 6.3.3 Feasibility

Any difficulties encountered with the implementation of export credit programmes are mainly related to the approval of registered transactions. Clear criteria must be established and organisations capable of assessing the creditworthiness of foreign customers are required. In general, high quality international financial and business economic expertise is required in the implementation.

Implementation can be linked to the activities of embassies or agricultural mission and existing institutions with experience in the field of export credits (the NCM in the Netherlands and the internationally oriented Dutch banking).

### 6.3.4 Trade policy

At OECD level there has been an arrangement on Guidelines for Officially Supported Export Credits for more than twenty years, which in general operates well. However agricultural products are excluded from these arrangements. During the Uruguay Round it was agreed that work would be started at OECD level on international regulations for the use of export credits and export insurance in agriculture. Negotiations concerning a special arrangement for agricultural products have not yet led to an agreement. In practice this means that the instrument may be used unrestrictedly. Countries that feel at a disadvantage may start a (panel) procedure at WTO level. On the basis of this procedure any further restrictions or general prohibition may be applied in future.

The need for an agreement for agricultural export credits is becoming increasingly urgent. A number of WTO partners feel that export credit programmes have a rather disruptive effect on international trade, although the extent of this disruptive effect is still unclear. The OECD states that export credits do have a disruptive effect on trade, but this is insignificant due to the minor share of export credits in the total trade (OECD, 2000). In 1998, exports with export credits totalled some 5.2% of the total global trade, and of this a small percentage did have a disruptive effect according to the OECD.

If EU member states begin to expand their export credit programmes or if this instrument were to be applied at EU level, one might expect more criticism from trade partners. On the other hand, there will be less criticism of the EU's export policy if the EU replaces its export subsidies (restitutions) by export credit programmes.

### 6.3.5 Conclusion

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There are advantages and disadvantages to government programmes for export credit. Export can be stimulated with export credit (guarantee), particularly during economic or political crises. The instrument can also be used to obtain credit for developing countries with liquidity problems. The disadvantage is that it may encourage transactions with unacceptable risks. Application of the instrument has a slightly positive effect on the domestic price level: by replacing export restitutions with export credits the effects on domestic prices on balance will be negative. For certain infrastructures the implementation costs are low. On average the budgetary costs may remain small, although they may fluctuate strongly and can only be determined in retrospect. The application of the instrument has not yet been curtailed by WTO disciplines. Incidentally, the EU is in favour of this, partly because of the disruptive effects on export. If the EU wishes to use export credit programmes itself as an active instrument to stimulate export instead of the current export restitutions, arrangements must be made at EU level, analogous to the current procedures of the Management Committees for example. The member states have diverse interests in the application per product. The interest of the Netherlands, with its considerable exports of dairy products to third countries, for example, may be in conflict with those of France, which might consider using the mechanism for grain.



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Assessment of export credit programmes

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Effectiveness Mainly suitable in economic and political crises In general less effective than export restitutions

Budget In principal low Expenditure may fluctuate strongly; only clear in retrospect

Implementation Relatively low

implementation costs Infrastructure required for risk assessment

Trade policy Not yet curtailed by WTO Disruptive effect to competition leads to criticism from trading partners

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## 7. Closing remarks

### 7.1 General

This report studied four kinds of instruments as possible alternatives for the existing price and income support instruments of the EU agricultural policy. In doing so, the effectiveness of the instruments, the budgetary costs, the feasibility and the trade policy aspects were examined. In this final chapter we compare the selected instruments on the four criteria.

In assessing the possibilities of application at EU level it is important to realise that there are significant differences between the member states (the present and certainly the future ones) concerning the circumstances in the basic situation. For example there are differing approaches to dealing with disasters and to combating income fluctuations. It concerns differences in the fiscal and social policies of the countries in question. There are also differences in the options available for using (agricultural) insurance, futures markets and contracts for supplying the products at a previously agreed price or by associating with sales and processing cooperatives. In addition, producers can limit their own business risks by product diversification, which may counter efforts at reducing costs by specialisation.

### 7.2 Effectiveness

With clear conditions, decoupled income payments may have several objectives: apart from income, also objectives in the field of environment, landscape, and nature. The other three are more exclusively directed at income or market objectives

Decoupled payments may be the most suitable as an alternative instrument for the more land-based agriculture, on which the EU agricultural policy is concentrated. The other instruments are also applicable for the non land-based sectors (horticulture, intensive livestock breeding). There may be a great demand for these instruments from these sectors due to the price and income risks. In the United States, the livestock sector and the horticultural sector are excluded from direct income payments and the insurance system due to the potentially very high budgetary costs.

The net income stabilisation fund may contribute to the stabilisation of a fluctuating business income. This instrument assumes that in good years, reserves will be accumulated for use in years with poor results. However, this is no solution for enterprises with structurally low incomes. This is also true in the case of a structural decline in the prices of products, when prices fall behind rising production costs. In order to make the fund attractive, a considerable financial or fiscal incentive is required; an objection to this is that the subsidies do not target the needs. Insurance could be included in the risk management of agricultural business owners. The quality of the business operations may be involved when determining the premium (and differentiation). Government support to risk insurance may be considered as an instrument which helps provide relief for possible financial disasters suffered by business owners. Such support may provide assistance when weather conditions are extremely bad, or during market downturns. However an objection to this kind of support is that it thwarts private initiatives in this field.

Export credits are an instrument aimed at maintaining or increasing sales in third countries in international competition. The significance of export credits for the income of the primary producer is difficult to determine; they only provide indirect and, it is expected, only limited positive (price) effects. Given the uncertainties of income and price fluctuations on the

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agriculture markets, it will probably be impossible to rely on this instrument alone.

### 7.3 Budgetary costs

In budgetary terms, income payments are an expensive form of agricultural policy; this is already the case in the EU for cereals, oilseeds en beef. With payments, the income transfer to the agricultural sector runs via the government budget. The fact that the EU has changed its policy from price support to income payments for a number of products is related to the situation that the budgetary costs of unrestricted price guarantees were no longer controllable. For both forms of agriculture support, we find that the level of government expenditure raises social questions. It is easier to find a basis for support for direct payments linked to environmental or nature objectives, than for payments which only compensate for price reductions. Agriculture is seen to supply 'collective goods' in return. But the need for such goods depends to a large extent on the region: in many European regions where agriculture is already extensive and environmentally friendly, there will be less need than in intensive agricultural regions which are also often located in highly populated areas. Income payments in peripheral agricultural regions may meet the need to keep the area populated. Once they have been implemented, it is very difficult to terminate payments. The farms involved then loses the incentive to provide the collective services related to the environment, landscape, etc. Each year this instrument can therefore place a considerable, permanent burden on the budget of the EU and that of the member states directly. The budgetary burden of the other instruments will not only be considerably smaller on average, it may be (almost) nil in some years.

### 7.4 Feasibility

With regard to the implementation of decoupled direct income payments a basis has been laid in the resolutions over Agenda 2000, which included the option of cross compliance. Some member states are experimenting with this and on the basis of their experiences will be able to improve and broaden its application. Many countries still seem to be hesitating. Granting payments without supplementary conditions is much simpler. The government is not then required to confront agriculture (agricultural organisations) about the laying down of conditions, controlling compliance with these conditions and any cutbacks on the payments to be made. Here, the threat of excessive administration and bureaucracy may act as an obstacle here.

Until now, in European countries, no insurance has been available for many risks, particularly related to exceptional weather conditions (drought, flooding, etc.). The major reasons for this are that people expect the government to provide relief anyway in the event of an emergency, and that the insurers will not be able to arrange affordable premiums for the entrepreneurs. The problem facing the government is then whether it should provide financial assistance to ensure that the risks are made insurable. Another major issue is whether the government should play a role in determining the damage, the level of compensation, exclusion of farmers who take irresponsible risks ('moral hazard'), etc. It is an area requiring much more discussion and research. Alignment between government and primary producer is crucial. Clear agreements must be made, with insurers as intermediaries. A great deal of information must be made available by the agricultural enterprises. Such customised work may not be possible in all EU countries. For this reason it does not seem likely that subsidised risk insurance will be ready for introduction at EU level in the next few years.

The only one of the four instruments that does not come into direct (administrative) con-

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tact with the primary producer is the export credit programme. This resembles the 'traditional' instruments of the European agricultural policy (import protection, intervention purchases, export restitution), none of which the agricultural entrepreneur came into direct contact with. With regard to implementation, these programmes entail the lowest costs; in contrast with the others they could rather easily be implemented from Brussels.

### 7.5 Trade policy

A new agreement at WTO level about internal support, market access and export support directed at further liberalisation of the international agricultural trade, may force a new reform of EU agricultural policy. For the meantime, decoupled direct income payments have been placed in the green box and are therefore exempt from reduction obligations. The trade policy acceptance of the other instruments is not assured. Support for a net income stabilisation fund is classed in the amber box and is subject to reduction obligations, although the instrument appears to have very little effect on production. That also applies to subsidies for risk insurance. Support for export credits is also disputed. There is still a lack of internationally accepted discipline. The EU recently pleaded for transparent agreements in this field.

### 7.6 Future

This study of alternative instruments is focused at the 'trade issues' that will be discussed in the agricultural negotiations at WTO level. Important themes for the future like consumer concerns, food safety, animal welfare, labour conditions, etc. have not been considered in this report. This also applies to the options available to producers to develop income-generating and stabilising activities alone or with each other.

This report deals with an assessment of policy instruments that could be considered alternatives or supplements for the current instruments of EU agricultural policy. The report does not provide any ready answers to the question whether the EU should choose from the instruments studied, and if so, to what extent the EU should put them to use in the future. Such recommendations would anticipate considerations which will have to be discussed by the European Commission and the European agricultural ministers - considerations which are also in part dependent on the enlargement of the EU to include Central and Eastern European countries and a new agreement at WTO level.

The report indicates that the policy instruments analysed may be significant for attaining a range of objectives. In this sense they could form a useful addition. In general, however, the instruments, at least as they are applied in the United States and Canada, do not constitute a simple, high quality alternative for existing EU agricultural policy. Further research could be directed at finding possible solutions for the disadvantages mentioned.

The argument could be made that market participants would arrive at acceptable solutions without government intervention. This line, which might take form by gradually reducing existing (coupled) payments, is in alignment with a radical liberalisation of the agricultural policy.

Partly with reference to the recent developments and experiences in the United States, which saw the failure of the agreed liberalisation of the agricultural programmes in 1996, some scepticism is due with regard to the satisfactory functioning of free market forces. Due to the price inelasticity of supply and demand, agricultural markets are characterised by a high level of price instability. Even more worrying is that any growth of agricultural production capacity is not very sensitive to a reduction in the relative price of agricultural products. Then there is the risk

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of under-compensation of production factors mainly in the land-based agricultural sectors. In order to direct the development process of the agricultural sector in a socially desirable direction, both market and price policy, as well as rural development policy, may not be missed as support for free competition. A supplementary role could be given to the instruments studied in this report, as long as they are tailored to conditions in the EU.

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