COMMISSION OF THE EUROPEAN COMMUNITIES

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**COMMISSION STAFF WORKING DOCUMENT**

**Accompanying document to the**

**Proposal for a**
**REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**
**concerning statistics on plant protection products**

**{COM(2006) 778 final**
**SEC(2006) 1624}**

# IMPACT ASSESSMENT

## 1. LEAD DG

DG ESTAT

## 2. OTHER INVOLVED SERVICES

This proposal is part of the Thematic Strategy on the Sustainable Use of Pesticides prepared under the leadership of DG ENV[1]. It completes the proposal for a Directive establishing a framework for Community action to achieve a sustainable use of pesticides, prepared by DG ENV and adopted by the Commission[2], and the proposal for a Regulation concerning the placing of plant protection products on the market[3] prepared by DG SANCO to replace Directive 91/414/EEC[4].

## 3. WP REFERENCE

Agenda planning 2006/ESTAT/006.

## 4. EXECUTIVE SUMMARY

The collection of data concerning pesticide sales and use is one of the measures proposed in the framework of the Thematic Strategy on the Sustainable Use of Pesticides[5]. In this context, a broad assessment was carried out of its likely impacts, together with the foreseen effects of the other measures contained in the Thematic Strategy[6].

This impact assessment goes into more detail as far as data collection is concerned. The following four options were assessed:

1. Collection of data mandatory for industry and distributors and voluntary for professional users;

2. Mandatory collection of data on sales, distribution and use (participation to be defined);

3. Recommendation to collect data from distributors and users;

4. No action.

Option 2 was recommended on the grounds that it would have a moderate economic impact and would enable the rapid development of accurate and reliable data on the production, distribution and use of plant protection products in a cost-efficient way.

When this option for mandatory collection of data on sales, distribution and use was considered, it was noted that some obligations for data collection (in connection with

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1 COM (2006)372 final
2 COM (2006)373 final
3 COM(2006)388 final
4 Council Directive 91/414/EEC of 15 July 1991 concerning the placing of plant protection products on the market. OJ L 230 of 19.8.1991, p.1.
5 Communication from the Commission to Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions on a thematic Strategy on the Sustainable Use of Pesticides, COM(2006) 372 final.
6 SEC(2006) 894 and SEC(2006)895.

production, import/export, placing on the market, etc.) already existed under national or Community legislation.

Despite the fact that few countries were in a position to make an estimate, it was clear that the cost of collecting use data would create the heaviest burden under this option. The overall economic impact depends largely on the approach to collection of such data, on the detail of the information to be collected, on the coverage of the collected data concerning the use of plant protection products and finally on the frequency of data collection.

Estimates of the overall direct economic impact – fully taken over as administrative costs - at Community level range from 10 to 25 million €/year, depending on the level of precision sought. With current expenditure being estimated at between 7 and 10 million €/year, the resultant overall impact ranges from 3 to 15 million €/year per year. In line with the EU common methodology for assessing administrative costs, a more detailed table of the likely total costs of the various information obligations can be found in annex 8. It is based on the few available case studies and on the same data sets used to achieve the above-mentioned range.

National authorities are likely to experience the most significant economic impact (estimation: total cost of up to 12 million €/year) as a result of increased efforts to establish and organise collection systems. However, when considering the net costs of these measures, it should be noted that some Member States already collect statistics on pesticides on a national legal base (estimated value: 3 m€), that the data produced in application of this Regulation will be used to fulfil other international reporting obligations (FAO and OECD pesticide statistics). Moreover, important benefits can be expected at national level though their expression in monetary terms is difficult. The net additional burden for national authorities is estimated around 9 million €/year.

A total impact of up to 4 million €/year is anticipated for pesticide users and the total costs for the supply chain are estimated to 9 million €/year which would represent an additional burden of 2 million €/year for this sector.

Considering that costs could be significantly reduced by tailoring survey sampling in respect of use data to national requirements, the proposal from the Commission allows the Member States a lot of flexibility in the way they organise data collection.

The objective of this Regulation is to establish a framework for the production of Community statistics on the placing on the market and use of plant protection products by imposing an obligation on all the Member States to produce detailed statistics on a regular basis. To ensure the comparability of these statistics between Member States and at Community level, the Regulation defines the coverage of the statistics, which will be limited to professional use in agriculture, and establishes harmonised rules for data collection and compilation.

These statistics will be essential for estimating the risk to human health and the environment linked to the use of plant protection products, and for measuring the progress made towards the objectives of the Thematic Strategy on the Sustainable Use of Pesticides.

Benefits from this measure should be considered in the light of the overall Thematic Strategy. The general objective for the implementation of the measures of the Thematic Strategy is to achieve environment and health improvements or other societal benefits, such as the reduction of external costs due to the use of plant protection products, by a more sustainable use of pesticides. Measurement of the progress can only be based on reliable data and relevant indicators. Direct benefits of this Regulation can be expected at national or Community level from a better knowledge of pesticide use, such as improved monitoring schemes and better

targeted and more effective policies. Furthermore, the availability of official statistics all over Europe will create a more transparent market that should improve the competitiveness of the pesticide industry.

## 5. PROCEDURAL ISSUES AND CONSULTATION OF INTERESTED PARTIES

The broad impacts of data collection concerning pesticide sales were analysed as part of the impact assessment (IA)[7] prepared by Commission services on the different measures proposed in the overall context of the Thematic Strategy on the Sustainable Use of Pesticides[8]. The present IA goes into more detail as far as data collection is concerned and is based on information made available during an extensive consultation process involving the European Institutions, Member States and other stakeholders, and a specific study mandated by DG ENV to an outside contractor[9].

Table 1 gives an overview of the numbers of actors/users/stakeholders involved or affected in EU-25 by the measures proposed to cover the Thematic Strategy (including data collection). These have been estimated on the basis of information collected via pesticide industry federation, statistics on the farming sector and general Community statistics.

**Table 1:** Numbers of stakeholders concerned by plant protection products in EU-25

| **Sector/activity** | **Number of persons concerned** |
|---|---|
| PPP Manufacturing | +/- 20,000 |
| PPP Distribution | +/- 5,000 |
| User: Agriculture | 10,419,000 |
| Non-Ag | Not available |
| Food Production | 3,000,000 |
| Food Consumption | 470,000,000 |

Following the adoption by the Commission in July 2002 of the Communication 'Towards a Thematic Strategy on the Sustainable Use of Pesticides'[10], submitted to the European Parliament, the Council, and the Economic and Social Committee, and published on the internet for consultation of the general public, DG ENV started a large consultation to allow all stakeholders to contribute to the development of the Thematic Strategy.

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7 SEC (2006) 894 and SEC (2006) 895.

8 COM(2006) 372 final.

9 The consultation was launched by the Commission following adoption of the Communication 'Towards a Thematic Strategy on the Sustainable Use of Pesticides' (COM (2002) 349 final). All steps of the consultation and the relevant documents are available at: http://europa.eu.int/comm/environment/ppps/home.htm

10 COM (2002) 349 final

A consultation of the stakeholders was first organised from July to December 2002 followed by an Internet consultation from December 2004 until January 2005 on the report concerning the impact assessment of the different measures proposed. Finally an open consultation was conducted over the internet from 17/03/2005 to 12/05/2005. The Commission received 1.772 response(s). All steps of the consultation with relevant documents and the results are available at http://europa.eu.int/comm/environment/ppps/home.htm.

The IA study was accompanied from the inception to the final report by an inter-service group involving all relevant Commission Directorates-General and its final report was published on the Commission's website. 28 organisations submitted comments on the conclusions of the study.

Concerning data requirements more specifically, the industry and farmers voiced concern during the consultation that the burden and administrative efforts for a much extended mandatory data collection system might not be justified by the benefits that could be gained from obtaining the data. On the other side, environmental NGOs requested the introduction of obligations for mandatory record keeping by pesticide distributors and users. All other stakeholders supported the development of indicators as a necessary tool to measure progress. The proposed measures as regards collection of data on sales and use of pesticides received broad support from the public.

In parallel to this procedure, Eurostat has discussed in detail the statistical aspects of the measures proposed to collect data on pesticide sales and use with experts from the Member States, Acceding Countries, and EEA Countries, in a 'pesticide statistics expert group' under the cover of the Statistical Programme Committee (SPC). This expert group met several times in 2005 to assist Eurostat in the preparation of the proposal for a Regulation of the European Parliament and of the Council concerning statistics on plant protection products. The SPC has been consulted three times on the proposed measures in plenary meetings between October 2004 and May 2006 and a last time via a written procedure in June 2006. This consultation was extended to the Acceding Countries and the EEA Countries. All the documents linked to this elaboration process are available at: http://forum.europa.eu.int/Public/irc/dsis/pip/library.

In the SPC, Member States generally recognised the need for more harmonized statistics on pesticides use. At the same time, they insisted on the need to focus on achieving harmonized outputs while allowing Member States maximum flexibility in how they go about collecting the information to provide these outputs. The necessity to limit new burdens as far as possible and to set priorities according to the limited resources available was also underlined. New statistical requirements should be balanced wherever possible by reductions in other areas. The relevance and usefulness of transmitting national data on the use of pesticides to the Commission in addition to the reports on the national action plans containing risk assessments based on harmonised indicators was also questioned. The involvement of the Member States in the implementation of the Regulation and in the definition of quality criteria through the Statistical Programme Committee was also welcomed.

## 6. PROBLEM DEFINITION

The overall risk and benefits associated to pesticide use are described in details in the Communication associated to the Framework Directive for the Thematic Strategy[11]. As far as data requirement are concerned the problem is mainly associated with the availability, the comparability and the reliability of currently available data.

Measurement of risks related to the use of pesticides, in particular the risks for the environment associated to the use of plant protection products, needs appropriate indicators and therefore, Member States, the European Commission and the Organisation for Economic Co-operation and Development (OECD) conducted preliminary studies for their establishment. The calculation of risk indicators is only possible on the basis of suitable data, but experts have expressed their concerns about the accessibility, the transparency, the adequacy and the reliability of data on pesticide use.

With the Decision 1600/2002/EC[12] adopting the 6th Environment Action Programme (6EAP), the European Parliament and the Council recognised that the impact of pesticides on human health and the environment, in particular from plant protection products used in agriculture, must be reduced further. They underlined the need to achieve a more sustainable use of pesticides and called for a significant overall reduction in risks and of the use of pesticides consistent with the necessary crop protection.

In its Communication 'Towards a Thematic Strategy on the Sustainable Use of Pesticides', the Commission recognised the need for detailed, harmonized and up-to-date statistics on sales and use of pesticides at Community level and proposed to establish relevant mandatory requirements within two years of the adoption of the Thematic Strategy for the reinforcement of ongoing work on the collection of data concerning the use of pesticides.

Since the effects of the relatively new legislation on biocides will not become visible until well after 2006, when the first evaluation of active substances for use in biocidal products will be finalised, neither the Commission nor most Member States have currently sufficient knowledge or experience to propose further measures regarding biocides. The scope of this Regulation is thus limited to plant protection products covered by the Directive 91/414/EEC for which a large experience already exists on data collection. However, it may be expanded at a later stage if necessary, so as to include biocides.

This Regulation thus aims at making mandatory the collection of data on placing on the market and use of plant protection products on a harmonised basis at Community level with the objective to assure that comparable data are collected in all Member States making possible the calculation of harmonised risk indicators and the measurement of the progress made towards a more sustainable use of plant protection products all over the Community territory.

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[11] COM(2006) 372 final.

[12] Decision No 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 laying down the Sixth Community Environment Action Programme. OJ L 242 , 10.9.2002, p.1.

**The Legal Situation**

The most relevant pieces of legislation concerning plant protection products are:

(1) Directive 91/414/EEC[13] on the **placing of plant protection products on the market**, which intends to prevent risks at source through a very comprehensive risk assessment procedure for each active substance and the products containing the substance, before they can be authorised for marketing and use;

(2) Regulation (EC) No 396/2005[14] which sets **maximum residue limits** (MRLs) of pesticide active substances in agricultural produce, thus intending to limit the risks to consumers when entering the food chain. Monitoring residues is decisive to know if recommendations and restrictions have been respected.

A number of other pieces of Community legislation and policies do also affect the use of pesticides. These are notably:

(3) The ***Water Framework Directive*** (WFD)[15], which changed the Community water policy towards a coherent and integrated framework for assessment, monitoring, and management of all surface waters and groundwater based on their ecological and chemical status (among the list of 33 priority substances adopted in 2001[16], 13 are used as active substances in plant protection products). The present limit value (0.1 µg/l) for active substances, which is an exclusion criterion for authorisation purposes, is considered as the maximum permissible concentration for defining good groundwater chemical status.

(4) Since the mid 80ies, and in particular with the 1992 reform, environmental concerns have been integrated into the various Regulations setting up the ***Common Agricultural Policy*** (CAP), with an enormous impact on agricultural production methods, their intensification and their impacts on the environment[17]. A study carried out in 1998 suggested that 20% of the variation in the use of plant protection products is attributable to the effects of the CAP. This percentage may be higher in sectors with heavy pesticide reliance and large CAP payments such as cotton or tobacco[18].

(5) Research activities aiming at the reduction and a more sustainable use of pesticides have been supported for many years in the ***Community Research and Development Framework Programmes***[19]. The Commission adopted in 2003 a ***European Environment and Health Strategy***[20] aiming at reducing diseases caused by

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13 Council Directive 91/414/EEC of 15 July 1991 concerning the placing of plant products on the market. OJ L 230 of 19.8.1991, p.1.

14 Regulation (EC) No 396/2005 of the European Parliament and of the Council of 23 February 2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin and amending Council Directive 91/414/EEC. OJ L 70, 16.03.2005, p.1.

15 Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy. OJ L 327 of 22. 12. 2000, p. 1.

16 Decision No 2455/2001/EC of the European Parliament and of the Council. OJ L 331, 15.12.2001, p. 1.

17 Further information on Agriculture and Environment can be found at: http://europa.eu.int/comm/agriculture/envir/index_en.htm

18 Oppenheimer, Wolf and Donnelly, 1998. Possibilities for future EU environmental policy on plant protection products, Synthesis report of six sub-reports in PES-A/phase 2

19 Detailed information is available at: http://europa.eu.int/comm/research/index_en.cfm

20 COM (2003) 338 final

environmental factors including exposure to chemicals and pesticides, with special emphasis on the most vulnerable groups in society, in particular children is also expected to contribute to a more sustainable use of pesticides.

(6) The use of pesticides is furthermore subject to a number of Directives aiming at the ***protection of health and the safety of workers***[21]. However, these are not applicable to the largest group of users, self-employed farmers.

(7) Traceability in pesticide use is foreseen in the recent ***Regulation on the Hygiene of Foodstuffs***[22] establishing an obligation for food business operators producing or harvesting plant products to keep records on any use of plant protection products or biocides.

The very purpose of the Thematic Strategy is to address the deficiency of the current legal framework concerning the actual use phase of pesticides, which is a key element for the determination of the overall risks that they pose.

This proposal for a Regulation concerning statistics on plant protection products has to be considered as a fundamental part of the whole Thematic Strategy.

**The international context**

An overall description of the international context related to pesticide use is given in the report on the IA accompanying the Thematic Strategy. As far as data collection is concerned, the work carried out by the Organisation for Economic Co-operation and Development (OECD) should be mentioned (See Annex 3). Over the last decade, OECD has conducted regular surveys on data availability concerning pesticides sales and use in Member Countries and supported important studies on risk indicators for the aquatic and the terrestrial environment. All these studies concluded at the difficulty to correctly assess the risk in the absence of reliable and detailed data on pesticide use.

The Food and Agriculture Organization of the United Nations (FAO) is also regularly collecting information on pesticide use and is currently developing risk indicators (See Annex 3).

**Current situation of pesticide use in the Member States**

The current situation regarding pesticide use in the Member States is marked by large variations, not only in overall use, but also in the prevailing trends. These can be partly explained by the diverging structures of the agricultural sector and different climatic conditions (leading to different needs in terms of plant protection), but also by efforts undertaken in several Member States to reduce the need for pesticides and the correlated risks to human health and the environment through National Action Plans.

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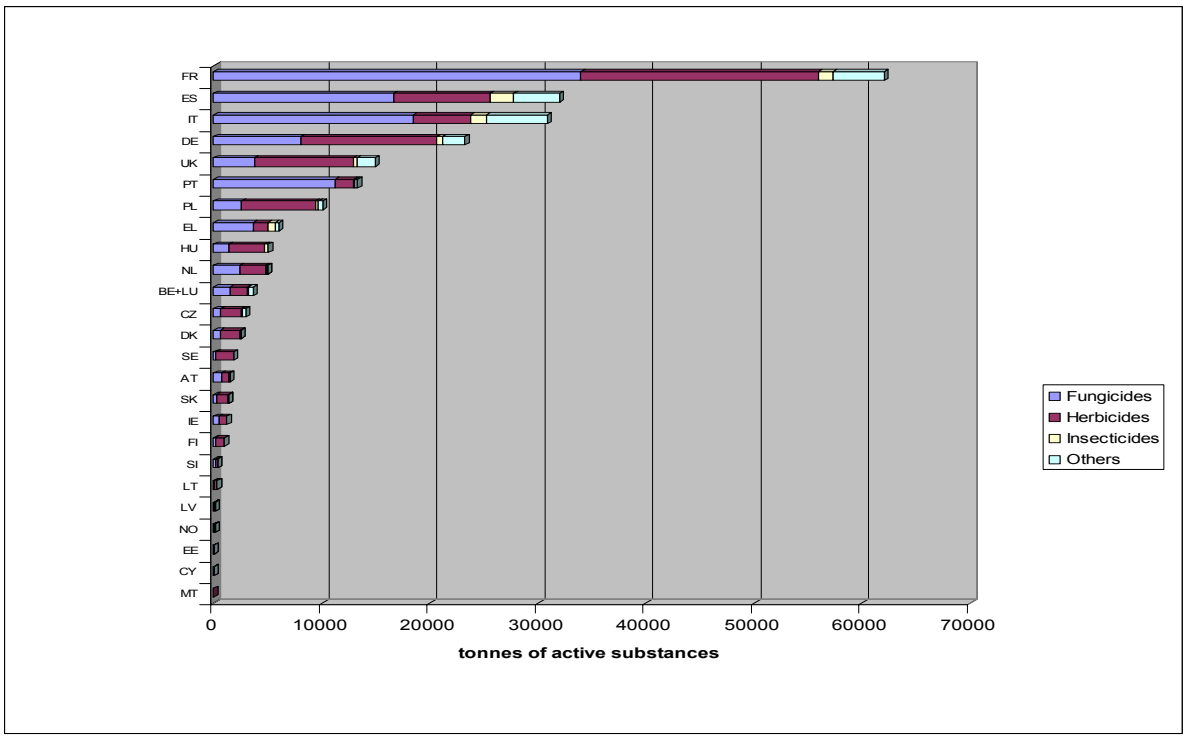
21 Among others, the following Directives could be applicable: Directive 89/391/EEC, Directive 98/24/EC and Directive 89/656/EEC.

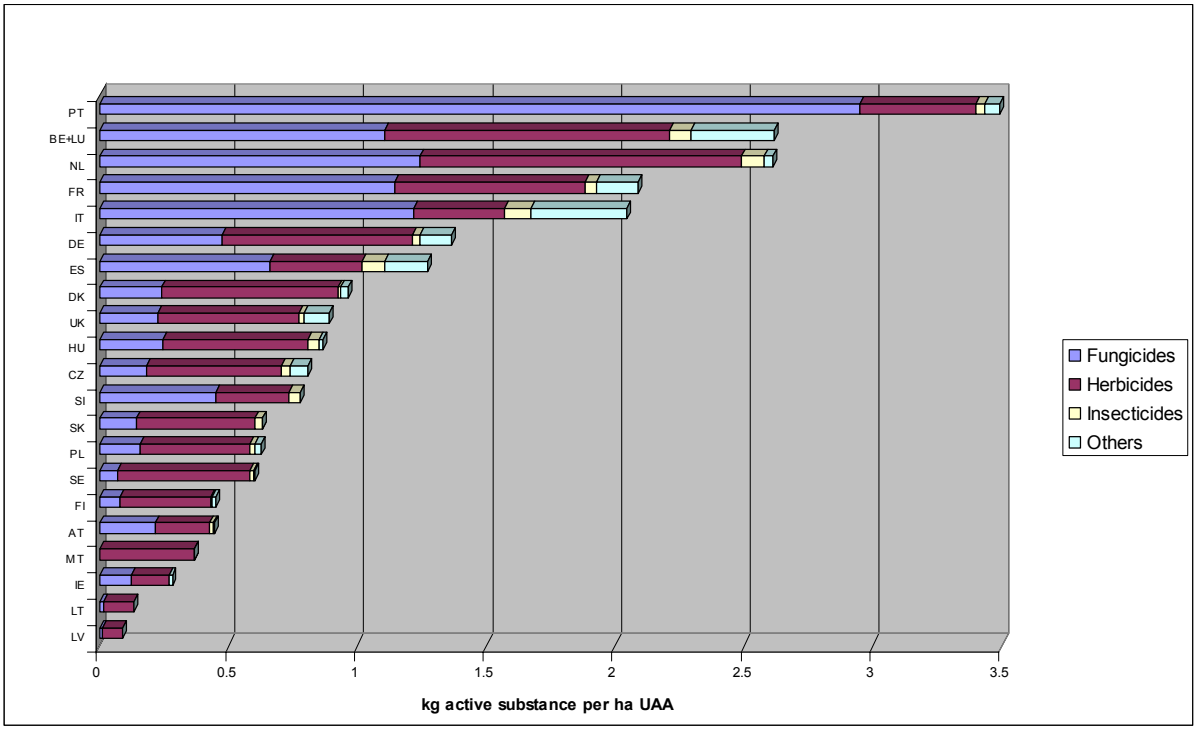
22 Regulation (EC) No 852/2004 of the European Parliament and of the Council of 29 April 2004 on the hygiene of foodstuffs, in particular Annex I, part A, point 9.

***Figure 1:*** *Estimated quantities of plant protection products used in the EU-25 Member States in 2003 (in tonnes of active substances). (Source: European Crop Protection Association (ECPA), Survey on the use of plant protection products in EU-25 from 2000 to 2003; report for Eurostat).*




In line with their agricultural surfaces, the main users in overall quantities are France, Spain, Italy, Germany, the United Kingdom, and Portugal.

***Figure 2:*** *Estimated average dosage of plant protection products in the EU-25 Member States in 2003, expressed as tonnes of active substance used per ha agricultural area (Source: estimated PPP use data form ECPA and total usable agricultural area from Eurostat).*




In terms of kg/ha of total usable agricultural area, which is an indication of the intensity of use, the Member States with the highest consumption are: Portugal, Belgium, the Netherlands, France, and Italy. This reflects the different needs for plant protection depending on climate, soil and the crops produced. In particular, production of vine (especially for fungicides), fruit, and vegetables are by far the most pesticide-intensive agricultural practices.

Apart from these important variations in the situation with regard to pesticides use in the different Member States important divergences are observed in the results obtained when estimating pesticides use through different data sources.

Figures 3.1 and 3.2 show a comparison of the figures obtained for the total amount of plant protection products used in Great Britain through an indirect estimation based on sales data (ECPA estimated use data) on the one side and with direct surveys in the farms on the other side (survey carried out by the UK Department for Environment, Food and Rural Affairs, DEFRA).

***Figure 3.1:*** *trend in the use of plant protection products in tonnes of active ingredients in UK based on market panels (ECPA).*

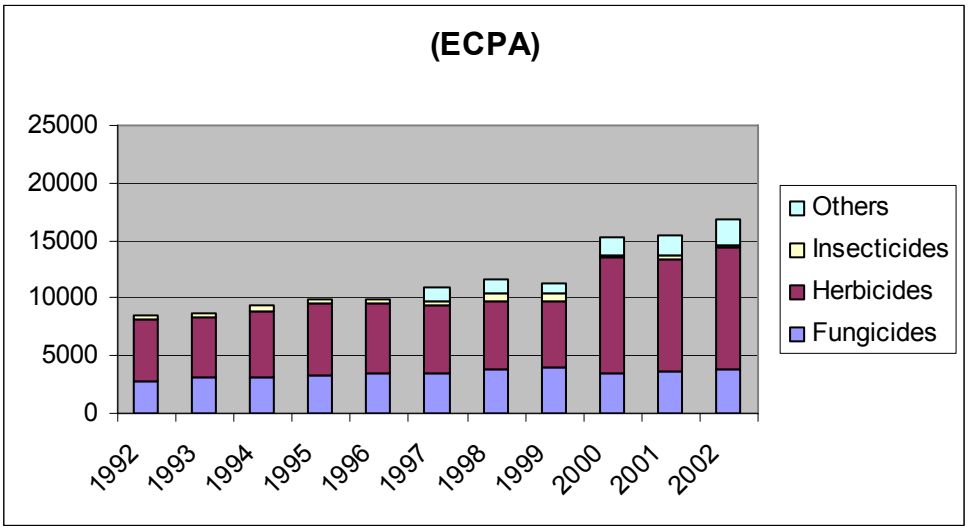



***Figure 3.2:*** *trends in the use of plant protection products in tonnes of active ingredients in UK (limited to Great Britain) based on direct surveys in the farms (DEFRA).*

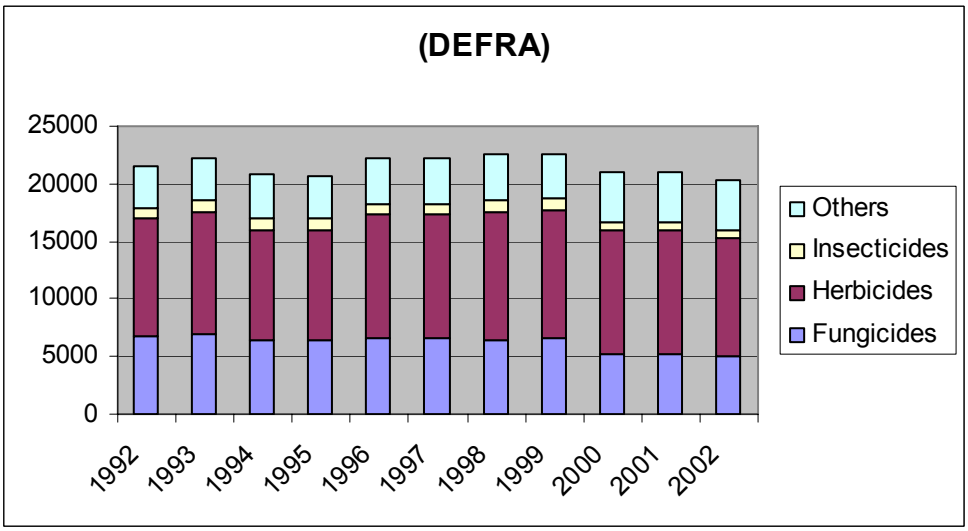



Figure 4.1 and 4.2 show at EU-15 level the differences observed between the overall quantities of plant production products sold (data provided by Member States to Eurostat) and the estimated used amounts (ECPA report).

**Figure 4.1:** *trend in the sales of plant protection products in tonnes of active substances in the EU-15 from 1992 to 2001.*

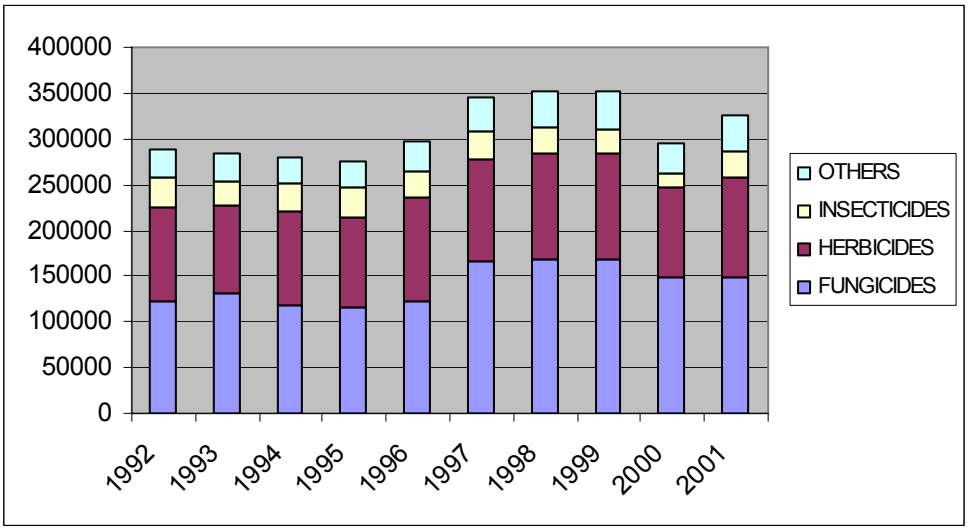
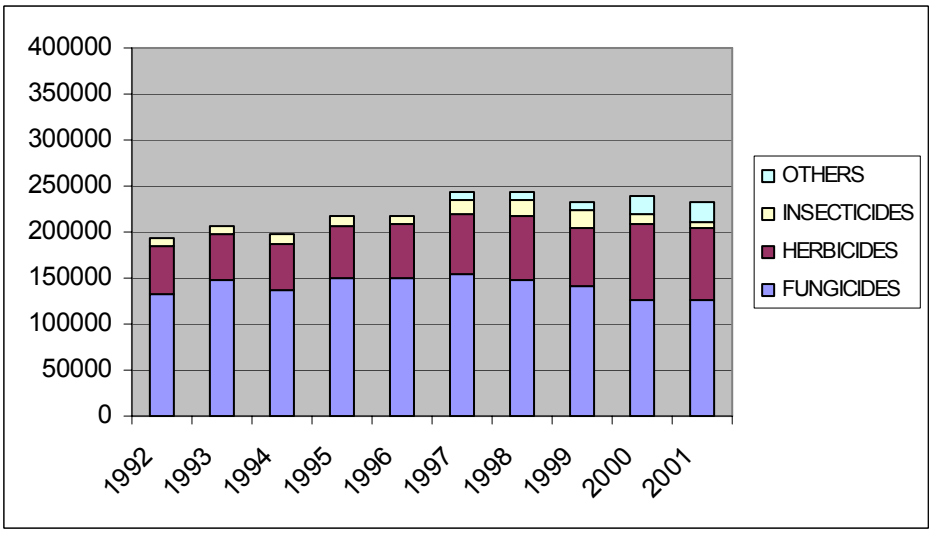



***Figure 4.2:*** *trend in use of plant protection products in tonnes of active substances in the EU-15 from 1992 to 2001.*




The overall quantity of pesticides sold in the EU-15 in 2001 was approximately 330,000[23] tonnes of active substances. This number represents an increase of ca. 13% compared to the quantities sold in 1992 (and a decline of 8% compared to 1998/1999, where maximum quantities were sold).

Quantities of pesticides used in agriculture are notoriously difficult to obtain – only few Member States carry out regular surveys, whereas at Community level, available figures rely mostly on estimates from the most important industry association (European Crop Protection Association - ECPA). ECPA's estimates are based on sales and marketing information from its member companies that do, however, not control the complete pesticides markets in the

[23] 'The use of Plant Protection Products in the European Union – Data 1992-1999' -Eurostat and European Crop Protection Association, 2002

Member States. In addition, the figures do not systematically include all types of products. A comparison of Member States' pesticide usage surveys and ECPA's figures showed that the industry figures were at a minimum around 20% lower than those from the authorities. ECPA's estimates for 1999 are at 232.000 tonnes, which suggests that real use in agriculture is probably more around 280.000 tonnes active substances. In 2002 ECPA companies sold 260,000 tonnes of active substances with a market value of 5,908 million €[24], which suggests that overall sales (including non-members of ECPA) were at 315.000 tonnes with a value of 7 billion €.

Such variations at EU level and between Members States plaid in favour of a harmonisation of the methods used to collect data and for a methodology which is as close as possible to the real use of plant protection products. This supports the need for an action at Community level aiming at making mandatory the collection of use data in a harmonised way.

## 7. OBJECTIVES

This proposal is a key element of the Thematic Strategy on the Sustainable Use of Pesticides which itself is an important tool to achieve the objectives of the Sixth Environment Action Programme (6th EAP).

The Sixth Environment Action Programme (6th EAP) is a programme of Community action on the environment with key objectives covering a period of ten years.

The priorities of the 6th EAP cover climate change, nature and biodiversity, environment, health and quality of life, and natural resources and waste.

Within these key priorities, the 6th EAP calls for the development of seven thematic strategies including a strategy on the Sustainable Use of Pesticides.

The 6th EAP establishes in its Article 7(1) that the impact of pesticides on human health and the environment must be reduced and more generally that there is a need to achieve a more sustainable use of pesticides as well as a significant overall reduction in risks and of the use of pesticides consistent with the necessary crop protection, through:

– full implementation and review of the effectiveness of the applicable legal framework in order to ensure a high level of protection, when amended. This revision might include, where appropriate, comparative assessment and the development of Community authorisation procedures for placing on the market;

– a Thematic Strategy on the Sustainable Use of Pesticides.

The specific objectives of the Thematic Strategy on the Sustainable Use of Pesticides identified in the 6EAP are:

(i) to minimise the hazards and risks to health and environment from the use of pesticides;

(ii) to improve controls on the use and distribution of pesticides;

[24] From European Crop Protection Association website : www.ecpa.be

(iii) to reduce the levels of harmful active substances including through substituting the most dangerous with safer (including non-chemical) alternatives;

(iv) to encourage the use of low-input or pesticide-free crop farming, in particular by raising users' awareness, by promoting codes of good practices and consideration of the possible application of financial instruments;

(v) to establish a transparent system for reporting and monitoring the progress made in the achievement of the objectives of the strategy including the development of suitable indicators.

In order to improve controls on the use and distribution of pesticides and to establish a transparent system for reporting and monitoring progress including the development of appropriate indicators, the Commission proposed in its 2002 Communication to establish relevant mandatory requirements within two years of the adoption of the Thematic Strategy for the reinforcement of ongoing work on the collection of data concerning pesticide use. A specific statistical Regulation to be adopted according to article 285 of the Treaty under the cover of the Community Statistics Regulation[25] and based on harmonised guidelines for data collection appeared as the best guarantee for impartiality, reliability, objectivity, scientific independence, cost effectiveness and statistical confidentiality.

## 8. POLICY OPTIONS

In the light of the preparatory work and the results of the various consultations and in the spirit of the holistic approach of Thematic Strategies, it became clear that the Strategy would have to be composed of a number of different measures. As a general rule, for each measure, the full range of possibilities has been explored, from those of a rather prescriptive and binding character to those of a relatively voluntary quality, including those based on market based instruments. Furthermore, the evaluation also examined whether a possible legally binding option could be integrated in existing legal instruments or policies, or would require new legislation. Data collection is considered as a central measure for the Thematic Strategy since it will allow assessing the progress of the different measures and of the Thematic Strategy as a whole.

As far as data collection is concerned, the description of the current situation in section 2 clearly shows that a 'no action' option at Community level would not allow any assessment of the progress made towards a more sustainable use of pesticides in the Member States at EU level.

### *Improved systems for the collection of information on plant protection products*

This measure has been assessed in detail in the IA. Lack of data on pesticide use is generally recognised as an important hurdle to define and monitor achievement of clear and realistic objectives in terms of risk reduction measured through appropriate indicators. Currently, most of the available data are from industry (through a voluntary commitment to provide data to Eurostat). Only few Member States do collect systematically use data and have made record

[25] Council regulation (EC) N° 322/97 of 17 February 1997 on Community Statistics. OJ L 52, 22.2.1997, p. 61. Regulation as last amended by Regulation (EC) No 1882/2003 of the European Parliament and of the Council, OJ L 284, 3.10.2003, p.1.

keeping by users mandatory. The intention of this measure is to collect reliable data on sales and use to support the calculation of appropriate risk indicators and to inform many areas of research, legislation and agricultural practices.

In parallel, the following measure which was not controversial during the consultation has been assessed in lesser detail in this IA.

***Establishing a transparent system for reporting and monitoring the progress made in the achievement of the objectives of the strategy including the development of suitable indicators.***

Legislation can only achieve the intended objectives, if it is well implemented and progress is monitored. In order to evaluate the progress realised, any policy, and especially those including voluntary aspects, need to be evaluated by appropriate instruments. Various indicators are currently available in several Member States to measure the impacts of pesticides on the environment, though not harmonised.

The Commission is currently financing a project in the 6th Research Framework Programme that aims at the development of a set of indicators for this purpose: HArmonised Environmental Risk Indicators for Pesticide Risks (HAIR)[26]. This project is already well advanced and deliverables are expected in 2007. The intention is to make these indicators, once they are finalised, binding for all Member States for the purpose of reporting progress with the implementation of the Thematic Strategy. Until that time, they may continue to use the indicators that they are applying now. The calculation of the risk indicators themselves will not require a lot of time and staff in the Member States, provided they have the necessary input data. The factors influencing mainly the efforts to be made by the Member States and other stakeholders are, therefore, linked to the collection of data on sales and use, which have been examined in detail in the framework of the measure described above.

## 9. ANALYSIS OF IMPACTS

It is generally recognised to be extremely difficult to quantify many of the actual adverse effects resulting from the use of pesticides and even more difficult to attribute monetary values to them. Quantification or monetisation of impacts are further complicated by very complex cause-effect relationships. For example, as the intrinsic properties of pesticides vary considerably between the different substances, certain observed effects (e.g. high bee mortality) might well be avoided by banning one (or few) particular substances without necessarily reducing the use of a great number of other substances. There is, therefore, no direct relationship between the overall use of pesticides (expressed in applied volume) and the potential threat that this use poses to human health or the environment.

Expression of such benefits in monetary terms is difficult as they are related to a complex causal chain and information to quantify or monetise them in a reliable way is not available. Still, it is reasonable to assume that a reduced use of pesticides would result in a variety of benefits for society such as:

[26] HArmonised Environmental Indicators for Pesticide Risks (HAIR): http://www.rivm.nl/stoffen-risico/NL/hair.htm

– increased food quality due to lower contamination of feed and food products;

– higher quality of life due to decreased occurrence of diseases among the users, bystanders, and to a lesser extent among the consumers; induced decreased costs for curing professional diseases and lower losses of working power due to decreased inactive periods of sick leave;

– lower redemption costs for contaminated sites due to less accidents and lower general contamination levels and decreased costs for decontamination of drinking water;

– cleaner environment and thus contribution to the sustainable conservation of natural resources;

– enhanced biodiversity;

– enhanced recreational effects due to impacts on landscape (e.g. hedges, buffer stripes).

It is to be noted however that ***PPP reduction is not an objective per se, because, in some cases, it would be detrimental to aggregate welfare***. Indeed, if not specifically targeted at risk reduction and in a proportionate manner, use reductions may cause adverse effects such as disproportionate yield losses, degradation of valuable man-made landscape or other unwanted impacts. The Thematic Strategy therefore aims primarily at achieving a significant reduction of risks to health and the environment through both the reduction of unintended losses and overuses (hence a more efficient application of plant protection products) and better protection of human health. This induces some reduction in the use of plant protection products, but only as a derivative.

A detailed analysis of potential risks and costs linked to pesticide use is given in the note on the IA accompanying the Framework Directive for the Thematic Strategy.

### 9.1. What kind of benefits can be expected from an improved system for data collection?

The general objective for the implementation of the measures of the Thematic Strategy is to achieve environment and health improvements or other societal benefits (e.g. reduced external costs due to the use of plant protection products) by a more sustainable use of pesticides.

Potential benefits of the whole Thematic Strategy are described in detail in the note accompanying the proposal for a Framework Directive.

It is obvious that even excellent data on pesticides sales and use in the different Member States will not be sufficient to measure all details of risk reduction and that more specific assessment at national, regional or even farm level will be needed to fully assess all benefits of the Thematic Strategy. Regular, reliable and comparable data on pesticides sales and use are however crucial to measure the progress of the Thematic Strategy as a whole. Without such data, the Commission will not be able to follow the progress realised in the field and take the appropriated measure to reach the objective assigned.

Independently from the evident interest of reliable statistics on pesticide use to support Community policy, the following direct benefits of collecting use data have been identified by those Member States which already experienced this measure at national level:

– to inform policy makers and citizens of the current status of pesticide use

– to provide data sets for the calculation of indicators of environmental impacts

– to monitor changes in the use of pesticides over time

– to provide information that could be useful in the review process of existing pesticides

– to provide information as part of the approval process of new pesticides

– to monitor the potential movement of pesticides into various environmental compartments

– to highlight areas where use may be optimised as a consequence of getting more information about farmers' practices

– to provide information for better organising and targeting residue monitoring programmes of fresh fruit, vegetables etc.

The establishment of a mandatory data collection will generalise these benefits to all Member States while the "no action" option would not bring about any of them. It can also be expected that the addition of all these benefits at Member State level will create synergy effects and beneficiate to some specific aspects of the EU Thematic Strategy on the sustainable use of pesticides such as the exchange of information on residues, environmental residue monitoring, approval of new pesticides, etc.

Furthermore, the availability of official statistics all over Europe will create a more transparent market that should improve the competitiveness of the pesticide industry.

### 9.2. Possible impacts on growth, competitiveness and jobs

The overall possible impact of the different measures proposed in the Thematic Strategy is described in details in the note on the IA accompanying the Framework Directive for the Thematic Strategy. A main conclusion of the overall IA is that if the Thematic Strategy is properly designed, and as long as measures do not significantly impact aggregate output, ***it is perfectly possible to achieve a situation where everybody gains***: the public through lower negative externalities related to pesticides, the farmers through lower quantities of plant protection products to buy, and the European industry with a greater share of sales made with more sophisticated and profitable products.

Compared to the "no action" option, the introduction of the data collection requirement per se will have a very limited impact on growth, competitiveness and jobs although it represents one of the most important direct costs for Member States in the implementation of the Thematic Strategy.

### 9.3. Administrative costs

Estimations mainly based on case studies for the overall direct economic impact of the option consisting of a mandatory data requirement at Community level (option 2) range from 10 to 25 million €/year, depending on the level of precision sought. With current expenditure being estimated at between 7 and 10 million €/year, the resultant overall impact ranges from 3 to 15 million €/year per year. In line with the EU common methodology for assessing administrative costs, a more detailed table of the likely total costs of the various information

obligations can be found in annex 8. It is based on the few available case studies and on the same data sets used to achieve the above-mentioned range.

Compared to this option, the additional costs linked to alternative options would range, according to the level of precision sought, from 2 to 12 million €/year if data collection would be left voluntary for farmers (option 1) and from 2 to 7 million €/year if data collection would just be recommended for distributors and users (option 3).

- *The impact on national authorities*

National authorities are likely to experience the most significant economic impact (estimation: total cost of up to 12 million €/year) as a result of increased efforts to establish and organise collection systems. However, when considering the net costs of these measures, it should be noted that some Member States already collect statistics on pesticides on a national legal base (estimated value: 3 m€), that the data produced in application of this Regulation will be used to fulfil other international reporting obligations (FAO and OECD pesticide statistics). Moreover, important benefits can be expected at national level though their expression in monetary terms is difficult. The net additional burden for national authorities is estimated around 9 million €/year.

Additional costs for the national authorities arising from the alternative options would be exactly the same with option 1 where data collection would be left voluntary for professional users and would range from 1 to 6 million €/year for option 3 consisting of a simple recommendation to collect data.

- *The impact on business*

Depending on the instruments chosen by each Member State to collect data on sales and use of plant protection products and to the organisation of the distribution chain for plant protection products in the country, the following actors could be affected at various degrees: producers, distributors and retailers of plant protection products and farmers.

Producers of plant protection products are a very limited number of big enterprises present on the market of the Community. They are very important actors within the supply chain. They usually own data collection or have contract with market research companies to collect information on the quantities of plant protection products placed on the market in order to establish their marketing policy. In most Member States, producers are already obliged to provide data on the production and on import/export to their national authorities in the context of the legal framework of economic statistics.

Varying from one country to the other, distributors are usually small to medium size enterprises buying plant protection products to producers or importing them and distributing them directly to farmers or retailers.

Retailers are usually small to medium size enterprises selling plant protection products to farmers. Farm holdings vary from very small to small or medium size enterprises.

The organisation of the distribution chain may vary from one region or country to another according to the importance and technical orientation of agriculture. However, all these actors are present in different proportions all over the territory of the Community.

The contribution of distributors and retailers can be very important to estimate the quantities of plant protection products which are actually used by farmers. Since they can import

directly some products, buy for further re-sale or constitute stocks their information is essential to get a correct estimation of final sales and use by farmers. Moreover, distributors and retailers usually have a good knowledge of the conditions in which plant protection products are used by farmers (for which crops, at what time, etc.). This information could prove essential to check the consistency and reliability of the data on use of plant protection products in the different crops. Finally some specific usages like seed treatment could possibly only be assessed through distributors or retailers. Most Member States already oblige distributors and retailers to keep and communicate records to the authorities on sales of plant protection products.

For most Member States the Regulation will not modify the obligations for producers, distributors and retailers in a large extent but will introduce specific requirements in terms of harmonisation and level of details of the information to be kept and transmitted to the authorities.

Additional administrative costs for the retail chain of plant protection products at EU level have been estimated for the different options proposed. The recommended option 2, consisting of a mandatory data collection on sales, distribution and use, would have a potential impact of 0 to 2 million €/year, according to the level of precision sought and considering that this sector already spends 4 to 7 million €/year for data collection. Option 1, leaving data collection voluntary for users, would have the same impact on the sector, whereas option 3 would have no impact on the sector since data collection would only be recommended for distributors and users.

Though they can use different sources of information like administrative data, most Member States will most probably carry out surveys in the agricultural holdings to collect data on use of plant protection products. This represents certainly the most important burden introduced by the Regulation. This burden will be shared by the national authorities who will have to organise the surveys and collect data and by the farmers who will have to keep records with sufficient details. If this burden is new for farmers, it should be noted however that the new Regulation on the hygiene of foodstuffs[27] already established an obligation for farmers to keep records on all pesticides used.

The impact of the different options has also been assessed for the farmers. Whereas the recommended option 2 would generate additional administrative costs ranging from 2 to 4 million €/year (with current expenditures estimated at 2 to 4 million €/year), according to the level of precision sought, options 1 and 2 would have a limited impact of 0 to 1 million since data collection would be voluntary for farmers in both cases.

## 10. COMPARING THE OPTIONS

In the following, summarised impacts are presented for the whole of the Union. More details for each of the options evaluated can be found in Annex 7. A qualitative assessment on how the individual Member States will be affected complementing the information in the end.

[27] Regulation (EC) No 852/2004 of the European Parliament and of the Council of 29 April 2004 on the hygiene of foodstuffs. In particular Annex I, part A, point 9.

### 10.1. Systematic data collection on pesticides sales and use

In the light of the outcome of the impact assessment for the four options examined it is recommended that all Member States establish collection schemes for data on sales and use of plant protection products involving industry, distributors and users.

The comparison of the different options showed that the total economic impact would range from 7-10 million €/year for the no action option to 9-17 million €/year for the option consisting of a recommendation to collect data from distributors and users (option 3), 9-22 million €/year for the collection of data mandatory for the industry and distributors and voluntary for users (option 1) and 10-25 million €/year for a mandatory data collection on sales, distribution and use (option 2).

Important efforts are already undertaken in many Member States to collect information on the use of plant protection products by many stakeholders for an annual cost estimated between 7 and 10 million €/year. Additional costs for the different options would thus range from 10 to 15 million €/year for recommended option 2, from 7 to 10 million €/year for option 1 and from 9 to 17 million € for option 3; depending in all cases on the precision sought.

The data currently collected by some Member States are incomplete and difficult to compare, which makes it extremely difficult to determine the risks and externalities linked to pesticides. Without any change, it will not be possible to improve this situation and in particular also to monitor the success of the implementation of the Thematic Strategy through the calculation of appropriate risk indicators and to decide on possible further or adjusted measures. For this reason the no action option is not recommended.

The main difference observed between the option consisting of a mandatory data collection for all the actors and the option leaving data collection voluntary for professional users is in the quality of the data achieved. The fully mandatory data collection is indeed the option that best fits with the objective of the Thematic Strategy to establish a data reporting system in order to assess the level of risk linked to pesticide use. The mandatory collection of data on sales and use with the establishment of a Community compliance programme is recommended on the grounds that the resulting economic impact, estimated on the base of case studies in a few Member states, would be moderate and the collection of accurate and reliable data on the use of plant protection products could be carried out quickly and cost-efficiently.

The net economic impacts – mainly on authorities (9 million €/year) – to set up improved collection schemes in all Member States according to option 2 depend to a large degree on the chosen approach to collect data, the detail of information to be collected, the coverage of the collected data concerning use of plant protection products and the frequency of data collection. Data collection with a high level of detail results in costs of about 15 million €/year in addition to what is spent today. Data on production and import/export are already required from industry in other legal context for the establishment of economic statistics. However, if a high level of detail of collected information is required some additional efforts at industry level will be necessary (estimation: up to 2 million €/year additional costs). A mandatory collection on use would also require a contribution from users beyond what is already required by Regulation on hygiene of foodstuffs, which is related to a possible economic impact of 4 million €/year. So overall, the economic impacts are relatively moderate - the high level scenario results in costs of about 15 million €/year. The costs for Member States and farmers can be limited if collection of data is not carried out annually but

only in regular intervals (e.g. varying between 1 and 5 years. In the internet consultations there was almost equal support for reporting every year and reporting every 5 years). The option of a one-year frequency for collecting sales data and five-year for use data has been retained in the Regulation proposal.

Member States should remain free to decide on the optimum way to organise data collection, as this will depend strongly on the structure of the agricultural sector (number of farms, diversity in production, etc.) However, synergy effects through the joint development of methodologies and quality assurance schemes by the Member States and the Commission might reduce the initial burden.

The measure would create a number of jobs (up to 200 in authorities and industry) and the data collected can be used multiple times – in fact, Member States do report today on pesticides sales and use in addition to Eurostat to the OECD and the FAO. The same data can be used and the other international organisations would also benefit from greater reliability of the data reported. The data can also be used to validate many of the models and assumptions applied during the risk assessment process in the framework of Directive 91/414/EEC. This would allow refining the models and adapting them more to reality. Also, comparison of the use data from farms in similar conditions would allow defining with more confidence good plant protection practices and optimal use of pesticides – including in Integrated Pest Management (IPM) schemes. Such use data will have to be generated anyway if guidance and best practices are seriously to be developed.

The other options evaluated are less advantageous – although the costs of less demanding data collection schemes would be lower (in particular for authorities), the information would either not be sufficient to calculate risk indicators or there would be insufficient incentives or obligations to expect any real change in comparison to the status quo, which was found to be unsatisfactory.

## 11. MONITORING AND EVALUATION

According to the periodicity and delays for data transmission from the Member States to the Commission, data should be made available according to the following timetable.

***Figure 5:*** *Timetable for the delivery of data by Member States to the Commission, for the publication of these data and for the reporting to the European Parliament by the Commission.*

| Main Deliverables | Y0 | Y1 | Y2 | Y3 | Y4 | Y5 | Y6 | Y7 | Y8-10 |
|---|---|---|---|---|---|---|---|---|---|
| **Adoption of the Regulation** | ⏭ | | | | | | | | |
| **PPP sales statistics** | | | | | | | | | |
| Reference periods | | | RP1 | RP2 | RP3 | RP4 | RP5 | RP6 | |
| Data from MS | | | | ⏭ | ⏭ | ⏭ | ⏭ | | |
| Data publication | | | | | ⏭ | ⏭ | ⏭ | ⏭ | |
| **PPP use statistics** | | | | | | | | | |
| Reference periods | | RP1 | | | | | RP2 | | |
| Data from MS | | | | | | | ⏭ | | |
| Data publication | | | | | | | | ⏭ | |
| **Report and publications** | | | | | | | | | |
| Report to EP | | | | | | | | ⏭ | |

According to this timetable, the Commission will be in possession of a whole set of data on sales and use for all Member States only 6 year after the end of the year of entry into force of the Regulation. Based on these data the Commission will be able to report to the European Parliament on the interest of the measure. Considering this very long delay, sales data should

play an important role as intermediate figures to anticipate important changes in use of plant protection products. In order to allow a comparison between sales and use data, the Regulation also requires the Member States to provide regularly comparability reports.

In the future, the Commission and Member States will also have to calculate risk indicators. Due to the importance of local factors on the level of risk, it is most probable that the Commission and the Member States will both have to run indicators each one at its level. Common and harmonised indicators are expected from the HAIR (HArmonised environmental Indicators for pesticide Risk) project[28]. Once this work is finalised, which is expected for spring 2007, a common set of risk indicators should be agreed by the Commission and the Member States and be made binding for all Member States for regular reporting. Until that time, Member States can continue to use their current indicators (even if only volume based).

[28] All information available at : http://www.rivm.nl/stoffen-risico/NL/hair.htm

## ANNEXES

## ANNEX 1: RESULTS OF THE STAKEHOLDERS CONSULTATION ON THE COMMUNICATION 'TOWARDS A THEMATIC STRATEGY ON THE SUSTAINABLE USE OF PESTICIDES'

In its Communication 'Towards a Thematic Strategy on the Sustainable Use of Pesticides' of July 2002[29], the Commission launched a broad consultation of all stakeholders and institutions.

The Communication recollected on the basis of preliminary studies the shortcomings of the current situation with regard to the use stage in the life cycle of plant protection products. The Communication included background elements and presented a list of essential points to be addressed. It discussed possible measures to inverse negative trends and to address the use stage more specifically. No priority was defined in the presentation of these measures: they were all considered as contributing to the general goal of reducing the risks associated with the use of pesticides, based on the preliminary studies conducted during the preparatory phase.

One of these measures especially addressed the problem of collecting better data on pesticide sales and use. In the following, this measure only is described and the proposal presented in the Communication as well as the reactions from the major stakeholders are summarised. Consultation encompassed the Council, the European Economic and Social Committee (EESC), the European Parliament (EP) and more than 150 contributions from diverse stakeholders (via the Internet and via a Stakeholders Conference in November 2002[30].

***Improved systems for the collection of information on production, import/export, distribution and use and enhanced monitoring measures on compliance including annual reporting***

(a) Communication: The Commission proposed relevant mandatory requirements within two years of the adoption of the thematic strategy for ; a) the reporting of production and import/export quantities of plant protection products by producers and distributors to national authorities ; b) the reinforcement of ongoing work on the collection of data concerning use (quantities of plant protection products applied per crop, product, area, time of application…); c) the reinforcement of the system of inspections / monitoring of uses and distribution of plant protection products by wholesalers, retailers and farmers in a co-ordinated way. The Commission has also indicated that compliance needs to be assured through adequate monitoring measures.

(b) Opinions from the consultation:

The **Council** has not addressed this issue.

The **EP** stresses the need to collect, in a harmonised way, sales and use data for all user categories as well as import and export data**,** and to make publicly available all information per active ingredient. The EP also calls for regular reports to be submitted by the Member States on the implementation of national action plans. The EP urges the Commission to set up EU-wide databases containing all national monitoring data.

[29] COM (2002) 349 final

[30] All opinions submitted are available at: http://www.europa.eu.int/comm/environment/ppps/home.htm).

The **EESC** considers that it is important not to build up reporting systems and administration ('red tape') with the associated costs unless there is a clear benefit to be gained from them. The information to be provided by users should be of such a kind that they feel it is worthwhile in production terms to collect the information. The EESC does not yet take a view on reinforced 'cross-compliance' as it is necessary to get a clearer idea of how such rules would be framed.

From the **other stakeholders**, industry and farmers voiced concern that the burden and administrative effort for a very extended mandatory data collection system might not be justified by the benefits that could be gained from obtaining the data. Environmental NGOs requested the introduction of obligations for mandatory record keeping by pesticide distributors and users, which should be regularly inspected and collected.

The Communication also included a very close-related issue on the need for proper risk indicators related to pesticide use.

***Development and use of indicators***

(a) Communication: The Commission *proposed that Member States report regularly on progress with national risk reduction programmes. Pending the development of harmonised indicators, they should report on progress by using the most suitable indicators currently available to them.* The Commission announced that it *and the Member States should actively contribute to the international development of indicators (in particular within the OECD) and their subsequent use*.

(b) Opinions from the consultation:

The **Council** is supportive of developing suitable indicators to measure the progress on national risk reduction plans. Such indicators shall take into account the work done by Member States and the OECD. Indicators may also take into account the specific risks of plant protection products and national risk mitigation measures and the Commission should therefore develop a system leading to comparable statistics on pesticides.

The **EP** notes that a variety of indicators exist - including sales volumes, use volumes, use patterns, treatment frequency, residues in food and environmental media, the percentage of land in organic farming and the percentage of farmers adopting Integrated Crop Management (ICM). If used in combination they are suitable for measuring progress. The EP, therefore, calls on the Commission to use those indicators while continuing to work on the development of agreed environmental load indicators. The EP considers that Member States should carry out mandatory and frequent monitoring of pesticide concentrations in environmental media as well as residues in food in a harmonised way.

The **EESC** finds it necessary to have a suitable system, like indicators, for showing the results of measures taken, in order to be able to assess them and make improvements. To measure the change in residues in foodstuffs or in the blood of users, it is technically possible to carry out chemical analyses. As regards the monitoring of reduction of risks to the ecosystem and to water, the EESC supports the Commission's proposal to find indicators which do not focus on quantity used, but focus on the properties of the preparations concerned and of how they are handled in use.

All **other stakeholders** support the development of indicators as a necessary tool to measure progress. In particular environmental NGO's, recommend that in a first instance the frequency of use indicator (as developed by Denmark) should be used to establish and assess the implementation of use reduction objectives.

## ANNEX 2 – RESULTS OF THE FINAL STAKEHOLDERS' CONSULTATION (INTERACTIVE POLICY MAKING)

The final public consultation received 1770 responses. The vast majority of the measures proposed were regarded as of high or medium priority by all stakeholders.

Concerning the interest of monitoring and reporting about progress made in terms of risk reduction, a majority was in favour of reporting at national level but this majority was equally divided on the question of the frequency. The same proportion of respondents was in favour of annual reporting than reporting every five year.

**Numerical Results**

***Distribution of Member States*** where organisations were established or where individuals had their residence was as follows:

| | | |
|---|---|---|
| FR - France | 514 | (29.1%) |
| DE - Germany | 373 | (21.1%) |
| UK - United Kingdom | 161 | (9.1%) |
| IT - Italy | 145 | (8.2%) |
| BE - Belgium | 75 | (4.2%) |
| NL - The Netherlands | 48 | (2.7%) |
| ES - Spain | 37 | (2.1%) |
| LT - Lithuania | 26 | (1.5%) |
| AT - Austria | 21 | (1.2%) |
| HU - Hungary | 17 | (1%) |
| EL - Greece | 15 | (0.8%) |
| PT - Portugal | 15 | (0.8%) |
| IE - Ireland | 14 | (0.8%) |
| SE - Sweden | 14 | (0.8%) |
| PL - Poland | 11 | (0.6%) |
| SI - Slovenia | 9 | (0.5%) |
| DK - Denmark | 8 | (0.5%) |
| CZ - Czech Republic | 7 | (0.4%) |
| FI – Finland | 5 | (0.3%) |
| LU - Luxembourg | 5 | (0.3%) |
| RO - Romania | 3 | (0.2%) |
| SK - Slovak Republic | 3 | (0.2%) |
| BU - Bulgaria | 2 | (0.1%) |
| ET - Estonia | 2 | (0.1%) |
| CY - Cyprus | 1 | (0.1%) |
| LV - Latvia | 1 | (0.1%) |
| MT – Malta | 0 | (0%) |
| Other | 15 | (0.8%) |

***Reply:***

| | | |
|---|---|---|
| As a private or professional individual | 1125 | (63.7%) |
| On behalf of an organisation | 422 | (23.9%) |

*Category*

| | | |
|---|---|---|
| USER - Private or professional individual using pesticides | 97 | (5.5%) |
| NGO - Non-governmental organisation | 88 | (5%) |
| IND - Manufacturing industry | 52 | (2.9%) |
| FARM - Farmer organisation | 25 | (1.4%) |
| CA - Competent Authority | 9 | (0.5%) |
| CONSUM - Consumer Organisation | 7 | (0.4%) |
| FOOD - Food manufacturer or retailer | 3 | (0.2%) |
| OTHER - Other category than specified one | 132 | (7.5%) |

*Size of organisation*

| | | |
|---|---|---|
| 1 - 9 | 199 | (11.3%) |
| 10 - 49 | 48 | (2.7%) |
| 50 - 249 | 49 | (2.8%) |
| 250 - 499 | 18 | (1%) |
| 500 - 999 | 17 | (1%) |
| 1000+ | 82 | (4.6%) |

**Monitoring and reporting**

Current knowledge about pesticide use is patchy at best, whereas sales data are available, albeit with varying degrees of detail. The implementation of the Thematic Strategy could require the Commission to measure progress in risk reduction by calculating ***appropriate harmonised risk indicators.*** At the moment, there are no agreed indicators available, but the development of a set of indicators is the subject of a Research project called 'HAIR' funded under the 6th Research and Technological Development Framework Programme. It is expected to be completed by spring 2007 and the indicators could then be made binding for all Member States for regular reporting.

A major input for calculating indicators is good statistical information on sales and actual use of pesticides. Regulation 852/2004/EC on food hygiene already provides that as of 2006 any use of pesticides should be recorded in special registers at farm level. This could be a source of information for calculating the indicators to monitor the success of the Thematic Strategy. In addition, the data collected could also be used to define best practices in plant protection and to develop standards of Integrated Pest Management (IPM). Member States could be obliged to regularly collect sales and use information and report it to the Commission.

***Question to stakeholders and authorities***

***1. In your opinion what is the most appropriate level to monitor and report about progress made in terms of risk reduction:***

| | | |
|---|---|---|
| o *Member State level* | 1173 | (66.4%) |
| o *Regional level* | 504 | (28.5%) |
| o *Community level* | 515 | (29.1%) |

***2. What could be the optimal frequency of reporting in order to ensure proper surveillance but limit the administrative burden?***

| | | |
|---|---|---|
| o *Once every year* | 649 | (36.7%) |
| o *Once every two years* | 174 | (9.8%) |
| o *Once every three years* | 126 | (7.1%) |
| o *Once every five years* | 546 | (30.9%) |
| o *Once every ten years* | 17 | (1%) |
| o *More* | 35 | (2%) |

## ANNEX 3: THE POLICY CONTEXT

### 3.1 The Community policy context

Since the proposal is focusing on the collection of data on sales and use of plant protection products and will not include the biocides, at this stage, only the Community legislation directly related with plant protection products is described hereafter:

– Directive 91/414/EEC[31] concerning the placing on the market of Plant Protection Products currently under revision[32]. These are active substances and preparations containing one or more active substances that are used to protect plants or plant products against harmful organisms (pests) or prevent the action of such organisms. They can function in many ways e.g. by killing pests, but also in other ways such as by creating a physical barrier, by repelling, by attracting pests away from plants, by regulating the growth of the plants etc. Plant protection products are used in a wide spectrum of applications, such as agriculture, landscape gardening and along transport routes. They are also used to some extent in forestry and domestic gardening.

– Regulation (EC) No 396/2005[33] on maximum residue levels of pesticides in or on food and feed of plant and animal origin.

A number of other pieces of Community legislation and policies do also affect the use of pesticides. These are notably:

The ***Water Framework Directive*** (WFD)[34], which changed the Community water policy towards a coherent and integrated framework for assessment, monitoring, and management of all surface waters and groundwater based on their ecological and chemical status. The targets and principles set out in Directive 91/414/EEC for pesticides were translated into objectives for all waters and will be implemented on a river basin scale. For the protection of surface waters, the Directive introduces criteria for establishing a list of priority substances and priority hazardous substances, for which specific measures such as quality standards and emission controls must be adopted in order to reduce or eliminate emissions, discharges and losses. A list of 33 priority substances was adopted in 2001[35]; 13 of these are contained in plant protection products. In order to achieve good groundwater status, the Commission has proposed a Directive[36] outlining criteria for assessing the chemical status of groundwater with regard to all pollutants and the reversal of upward trends in their concentration. As regards active substances contained in pesticides (and their relevant metabolites) the present limit value (0.1 µg/l), which is an exclusion criterion for authorisation purposes, is considered as the maximum permissible concentration for defining good groundwater chemical status.

The various Regulations setting up the ***Common Agricultural Policy*** (CAP) have had an enormous impact on agricultural production methods, their intensification and their impacts

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31 Council Directive 91/414/EEC of 15 July 1991 concerning the placing of plant protection products on the market. OJ L 230, 19.08.1991, p. 1.

32 COM(2006) 388 final.

33 OJ L 70, 16.3.2005, p. 1.

34 Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy. OJ L 327 of 22. 12. 2000, p. 1.

35 Decision No 2455/2001/EC of the European Parliament and of the Council. OJ L 331, 15.12.2001, p. 1.

36 COM (2003) 550

on the environment. Since the mid 80ies and in particular with the 1992 reform, environmental concerns have been integrated into the CAP, and since then a number of measures have been adopted that deal both with the integration of environmental considerations into CAP rules and with the development of agricultural practices preserving the environment and safeguarding the countryside[37]. A study carried out in 1998 suggested that 20% of the variation of PPP use is attributable to the effects of the CAP. This percentage may be higher in sectors with heavy pesticides reliance and large CAP payments such as cotton or tobacco[38].

Pesticides and in particular research activities aiming at the reduction and a more sustainable use of pesticides have been supported for many years in the ***Community Research and Development Framework Programmes***[39]. The Commission adopted in 2003 a ***European Environment and Health Strategy***[40] with the overall aim to reduce diseases caused by environmental factors (including exposure to chemicals and pesticides) in Europe. Special emphasis will be given to the most vulnerable groups in society, in particular children

One of the shortcomings of the current legal framework concerning pesticides is that the actual use phase, which is a key element for the determination of the overall risks that they pose, is not sufficiently addressed. The very purpose of this Thematic Strategy is to address this deficiency.

On 22 July 2002 the European Parliament and the Council adopted Decision No 1600/2002/EC[41] laying down the Sixth Community Environment Action Programme which provides in its Article 7(1) that the impact of pesticides on human health and the environment must be reduced and more generally that there is a need to achieve a more sustainable use of pesticides as well as a significant overall reduction in risks and of the use of pesticides consistent with the necessary crop protection. Pursuant to Article 7 (2) (c) of the Decision the European Parliament and the Council called upon the Commission to achieve these objectives through:

- full implementation and review of the effectiveness of the applicable legal framework in order to ensure a high level of protection, when amended. This revision might include, where appropriate, comparative assessment and the development of Community authorisation procedures for placing on the market;

- a Thematic Strategy on the Sustainable Use of Pesticides.

In July 2002 the Commission adopted a Communication 'Towards a Thematic Strategy on the Sustainable Use of Pesticides'[42] which contained an analysis of the situation and outlined the possible elements of a European Thematic Strategy, with a view of launching a broad consultation of all concerned stakeholders, including the European Parliament and the

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37 Further information on Agriculture and Environment can be found at: http://europa.eu.int/comm/agriculture/envir/index_en.htm

38 Oppenheimer, Wolf and Donnelly, 1998. Possibilities for future EU environmental policy on plant protection products, Synthesis report of six sub-reports in PES-A/phase 2

39 Detailed information is available at: http://europa.eu.int/comm/research/index_en.cfm

40 COM (2003) 338 final, available at: http://europa.eu.int/eur-lex/en/com/cnc/2003/com2003_0338en01.pdf

41 Decision No 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 laying down the Sixth Community Environment Action Programme. OJ L 242, 10.9.2002, p. 1.

42 COM (2002) 349 final, 1.7.2002

Council. This Communication and the ensuing broad consultation have been the basis of the actual Strategy, for which this impact assessment has been established.

The proposal for a Regulation concerning statistics on plant protection products has to be considered as a fundamental part of the whole Thematic Strategy.

### 3.2 The international policy context

An overall description of the international context related to pesticide use is given in the report on the IA accompanying the Thematic Strategy. As far as data collection is concerned, the work carried out by the Food and Agriculture Organization of the United Nations and by the Organisation for Economic Co-operation and Development (OECD) should be mentioned.

**The Food and Agriculture Organization of the United Nations (FAO)**

The Food and Agriculture Organization of the United Nations (FAO) started collection of data on consumption of major individual pesticides products about three decades ago. Data collected until the year 1988 were published in various issues of the Production Yearbook. However, the response to the related Pesticides Consumption Annual Questionnaire sent to all member countries was not very encouraging. Therefore, in 1986 in cooperation with the Commission of the European Union, a study was undertaken to find ways to improve the country coverage of the data. At present the FAO requests member countries to supply data on consumption and trade of pesticides through an annual questionnaire. The FAO's database on pesticides consumption refers to the quantity of pesticides used in or sold to the agricultural sector expressed in metric tons of active ingredients for major groups and sub-groups. Information on quantities applied to single crops is not available. A strict inter-country comparison on the basis of the database is not feasible because:

- The country coverage and time series are incomplete due to a high rate of non-response;
- Although countries have been requested to report data in terms of active ingredients, some countries may have reported in formulation weight (including diluents and adjuvants) without specific indication;
- Production/Import/export statistics may not show sufficient detail as to product or compound specification. Producers might be reluctant to disclose information required for fear that competitors might acquire strategic information.

**OECD activitivities in the area of agricultural pesticides data and statistics**

Both the Uppsala Workshop (1995) and the first OECD Workshop on Pesticide Risk Indicators (Copenhagen, 1997) recommended establishing systems to monitor agricultural pesticide use and to improve the quality of the data used in indicators as areas of further work. The latter workshop recommended that national governments consider implementing new programmes and/or extending existing ones to collect data on actual pesticide use in agriculture. If collection of actual use data is not possible for every year or every purpose, the workshop agreed that countries should be encouraged to collect annual sales data which can be used to substitute for, or derive information about actual use.

Following these recommendations, the 1997 OECD Survey of Member Countries' Approaches to the Collection and Use of Agricultural Pesticide Sales Data was conducted as a

preparatory activity for the pesticide risk indicators project. The survey focused principally on what types of sales data were collected and how these data were used. The survey was based on a questionnaire designed by Canada with the assistance of representatives of the United Kingdom, Australia, Denmark, Eurostat and the OECD Secretariat. The survey consisted of 28 questions which first asked whether agricultural pesticide sales information was collected and, if so:

- what types of data were collected?
- how the raw data were collected and stored?
- whether and how these data were aggregated and analysed? and finally
- how and to whom information was made available?

The questionnaire was sent to all OECD member countries in September 1997. Twenty-one member countries completed it. They were: Austria, Australia, Belgium, Canada, Czech Republic, Denmark, Finland, Germany, Greece, Hungary, Ireland, Japan, Korea, Mexico, the Netherlands, Norway, Portugal, Sweden, Switzerland, the United Kingdom and the US. The Slovak Republic, which at that time participated in the Pesticide Forum meetings as an observer, also completed the questionnaire.

Of the 22 countries that responded to the survey, all but Canada and the Slovak Republic collected data on pesticide sales as of 1997. Among the 20 member countries that collected pesticide sales data, there were strong similarities in most areas of the survey. The survey indicated that most OECD countries collected sales data nationwide as a mandatory requirement, and on an annual or more frequent basis. The data were used for general information purposes, often to help in formulating strategies or policies and, to a lesser extent, to track the use of specific products or the use of agricultural pesticides in specific crops.

Almost all of the 20 countries collected the data by volume or by both volume and monetary value, with most countries collecting the data for individual formulated products and/or active ingredients. The majority of countries did not include export data in the collection. Most of those that did include export data could segregate the export data from the rest of the collection.

Collection of the sales data was carried out by national or federal organizations in almost all of the 20 countries but the source of the data varied considerably, with about half the countries collecting at least some of the data from individual pesticide manufacturing companies. About half the countries took steps to verify the accuracy and completeness of the data.

Most countries maintained the data on a computer system. Access to the raw data was usually restricted to domestic government organizations, although in some countries access was also provided to the pesticide industry. Almost all the countries aggregated the data, usually by pesticide type. Some countries also aggregated data by use or chemical family. The majority also carried out some analysis of the data. The results of these analyses were used most frequently to track trends in year-to-year sales of products or active ingredients and to monitor reductions in pesticide use. Almost all countries made the aggregated data available to all and most produced publicly available publications.

The full 1997 survey results are provided in OECD Survey on the Collection and Use of Agricultural Pesticide Sales Data[43], available on the web-site: www.oecd.org/env/pesticides, Risk Reduction, risk indicators.

Concerning Canada, a pesticide sales database framework has been developed, which will provide better estimates of pesticide exposure and risks to humans and the environment, assist in setting priorities for re-evaluation, and determine the extent of use of reduced risk products. A proposed regulation to require the mandatory reporting of annual sales data is under consultation. Increased funding was secured to expand research and monitoring activities, the results of which will better enable the identification of potential problems and allow for the refinement of risk characterization methods. Collaboration is ongoing with Federal departments and stakeholders to find ways to obtain commodity-based pesticide use data.

Pesticide risk indicator models from OECD work have been evaluated aiming at adapting an indicator for the Canadian context, which will provide risk trends by commodity at local, provincial or national levels and harmonize indicator characteristics with other OECD countries. A Federal/Provincial/Territorial Working Group on Pesticide Risk Indicators has been formed and a workshop on risk indicators has been held.

The OECD Pesticide Forum printed in 1999 Guidelines for the Collection of Pesticide Usage Statistics within Agriculture and Horticulture to assist OECD Member countries who wish to collect data on pesticide use for plant protection. The guidelines had been developed by the Eurostat Pesticide Statistics Task Force, and were originally intended for use within Europe. At an earlier stage, however, Eurostat and the OECD Pesticide Forum had agreed that the guidelines would also be helpful for other countries. The Pesticide Forum had therefore been invited to review drafts of the guidelines and to distribute the final version.

Based on methods of actual pesticide usage data collection already in use within the EU and OECD member countries, the Guidelines identified the following information related to pesticide use to be important:

- crop treated
- area of crop grown
- product used
- amount used or rate of application (kg/ha)
- area of crop treated
- any biological control methods used
- timing of application

These are the types of information that could not be provided by pesticide sales data alone. The report is available on the web-site: www.oecd.org/env/pesticides, Risk Reduction, risk indicators.

[43] Survey Results (OECD Series on Pesticides No.7), ENV/JM/MONO(99)1

Given the renewed emphasis on the importance of the quality of data on use and sales of agricultural pesticides as the WGP now completes its terrestrial risk indicators project, and the recent developments at the EU level, the WGP bureau felt that it may be timely to update the 1997 survey on member country approaches to the collection and use of data on agricultural pesticide sales, and this time to also address use data.

Through the Working Group on Environmental Information and Outlook (WGEIO), the OECD publishes data on "consumption of pesticides" periodically as part of Environmental Data Compendium[44]. Here, the definition of consumption reported is different from country to country. Most countries report sales, while some report use, or even production. Data are broken down into "insecticides", "fungicides", "herbicides" and "other pesticides" (as for the current Eurostat pesticide sales data). These and other differences in the definitions and classifications of pesticides make cross-country comparisons difficult. The government bodies responsible for national reporting for the Compendium vary from country to country, but are mainly national statistical agencies.

The above pesticide consumption data are fed into other activities within the OECD, notably, the work on agro-environmental indicators under the Joint Working Party on Agriculture and Environment (JWP).

**Switzerland**

In order to be able to make a reliable assessment of the effect of environmental and agricultural policy measures, Switzerland[45] initiated a program to collect data on the use of pesticides in a representative and transparent way. The risk associated with the pesticide applications will be determined using appropriate indicators, which are based on relevant regional or local monitoring. The results will also serve as a basis for targeted monitoring of environmental pollution from pesticides and for advice regarding targeted selection and application of pesticides.

### 3.3 Scope of the measure on improving data collection

The largest users of pesticides in the EU for plant protection purposes are farmers - agricultural uses represent 86 % of total uses[46]. The quantities of pesticides sold in the European Union (15 Member States) in 2001 was approximately 330,000[47] tonnes of active substances. This figure represents an increase of ca. 13% compared to the quantities sold in 1992 (and a decline of 8% compared to 1998/1999, where maximum quantities were sold). Figures of pesticide use in agriculture are notoriously difficult to obtain – only few Member States carry out regular surveys, whereas at Community level, available figures rely mostly on estimates from the most important industry association (European Crop Protection Association - ECPA). ECPA's estimates are based on sales and marketing information from its member companies that do, however, not control the complete pesticides markets in the Member States. In addition, the figures do not systematically include all types of products. A comparison of Member States' surveys and ECPA's figures showed that the industry figures were at a minimum around 20% lower than those from the authorities. ECPA's estimates for

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44 The most recent one available on line is at: http://www.oecd.org/dataoecd/53/12/2958351.pdf.

45 Swiss Agency for the Environment, Forests and Landscape ( SAEFL), 2005 - http://www.umwelt-schweiz.ch/buwal/de/

46 West European Agrochemical Market 2002, Philip Mc Dougal

47 'The use of Plant Protection Products in the European Union – Data 1992-1999' -Eurostat and European Crop Protection Association, 2002

1999 are at 232.000 tonnes, which suggests that real use in agriculture is probably more around 280.000 tonnes active substances. In 2002 ECPA companies sold 260,000 tonnes of active substances with a market value of 5,908 million €[48], which suggests that overall sales (including non-members of ECPA) were at 315.000 tonnes with a value of 7 billion €.

For biocidal products, the UK Pesticides industry association estimated recently that the existing market in the EU-15 represents about 1,700 million €, which is only about 25% of the value of plant protection products. In addition, as biocidal products achieve higher prices per volume, the tonnage of substances involved is comparatively even lower.

So, in comparison to plant protection products, biocides represent only a small share of the overall use in terms of tonnage. Many uses of biocides do not directly lead to intentional emissions into the environment. In addition, the reassessment of all biocides present on the market in accordance with Directive 98/8/EC[49] has only started recently and the effects of this relatively new legislation will not become visible until well after 2006, when the first evaluations of active substances for use in biocidal products will be finalised. Therefore neither the Commission nor most Member States have currently sufficient knowledge or experience to propose further measures regarding biocides.

Consequently, the Thematic Strategy in general and data collection in particular will first only address Plant Protection Products with a special focus on agricultural uses and, as far as possible, also including other purposes. Should it be necessary at a later stage that similar measures are developed for biocides the scope of the Thematic Strategy will be widened accordingly.

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48 From European Crop Protection Association website : www.ecpa.be

49 Directive 98/8/EC of the European Parliament and of the Council of 16 February 1998 concerning the placing of biocidal products on the market, OJ L 123, 24.4.1998, p. 1.

## ANNEX 4: WHAT ARE THE MAIN POLICY OPTIONS AVAILABLE TO IMPROVE DATA COLLECTION?

Thematic Strategies are a new tool, which follow a holistic concept in addressing a specific topic. A lot of emphasis has therefore been put on integration of the measures of the Strategy in existing policies and legislation (such as the Common Agricultural Policy - CAP). Only when integration into other instruments or policies is not possible, new legislation – in this context a Framework Directive on the Sustainable Use of Pesticides and a specific Regulation on pesticide statistics - or other appropriate instruments are proposed.

The Thematic Strategy on the Sustainable Use of Pesticides is actually composed of a number of individual measures that, in accordance with this concept of integration, will either be implemented using existing instruments or, if that is not feasible, will be proposed as new legislation. Certain measures that have been examined have been discarded eventually.

So the basic approach is threefold:

- incorporation of a number of measures into the existing legal framework, in particular Directive 91/414/EEC and its revision[50], and policy frameworks such as the CAP or Research and Development;

- new legislative proposals: a Framework Directive on the sustainable use of pesticides[51] that incorporates all measures, where a legislative solution was found necessary but which cannot be integrated into existing legislation. The Directive will set out goals and objectives, leaving the necessary freedom to Member States to adapt the measures to their specific situations, and foresees a system of reporting with appropriate risk indicators and information exchange for reviewing the national measures in order to develop guidance and best practices. In addition, this proposal for a **Regulation addresses the collection of statistical information on the placing on the market and use of plant protection products**;

- recommendation to Member States to take certain further measures as appropriate, for which Community intervention was not found adequate or practicable (in the spirit of the subsidiarity principle).

As an integral part of the Thematic Strategy that cannot be integrated in existing legislation / policies, the measure covering the improvement of statistics on pesticides has been fully assessed in the impact assessment of the Thematic Strategy.

***Improved systems for the collection of information on plant protection products***

Lack of data on pesticide use is generally recognised as an important hurdle to define and monitor achievement of clear and realistic objectives in terms of risk reduction measured through appropriate indicators. In numerous studies conducted for the establishment of indicators, all experts expressed their concerns about accessibility, transparency, adequacy and reliability of data on pesticide use. Currently, most of the available data are from industry (through a voluntary commitment to provide data to Eurostat). Only few Member States do

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50 COM(2006) 388 final

51 COM(2006) 373 final

collect systematically use data and have made record keeping by users mandatory. The latter will change, through the implementation of Regulation 852/2004 on the hygiene of foodstuffs[52], which requires all users of pesticides to maintain detailed records of use.

The intention of this measure is to collect reliable data on sales and use to support the calculation of appropriate risk indicators and to inform many areas of research, legislation and agricultural practices, and should not be seen as a simple statistical exercise in its own right.

However, collection of more reliable and more detailed data on pesticide use will create burdens in particular for farmers (to register the use data) and for authorities to collect and report them. On the other hand it should be borne in mind that these data need to be collected only once and can then serve multiple purposes:

- to inform policy makers and citizens of the current status of pesticide use
- to provide data sets for the calculation of indicators of environmental impacts
- to monitor changes in the use of pesticides over time
- to provide information that could be useful in the review process of existing pesticides
- to provide information as part of the approval process of new pesticides
- to monitor the potential movement of pesticides into various environmental compartments
- to highlight areas where use may be optimised as a consequence of getting more information about farmers' practices
- to provide information for better organising and targeting residue monitoring programmes of fresh fruit, vegetables etc.

The following options have been examined:

- Option 1: Collection of data mandatory for industry and distributors and voluntary for professional users.

The Strategy would require Member States to collect data on sales and distribution via industry and distributors on a compulsory basis and on a voluntary basis from professional users.

Guidance would be developed in a Steering Committee on how to organise this data gathering in a harmonised way, how to perform verification and monitoring of provided information. On the basis of the collected and transmitted data, indicators would be calculated (see Chapter 5.2.1) and, where feasible, the data could also serve to develop guidance on Best Agricultural Practices or Integrated Pest Management (IPM) standards. Good co-operation by industry and retailers could be ensured by their certification through the national authorities or other

[52] Regulation (EC) No 852/2004 of the European Parliament and of the Council of 29 April 2004 on the hygiene of foodstuffs. OJ L 139, 30.4.2004, p. 1.

appropriate certification schemes. Food retailers could contribute by setting up their own monitoring schemes, preferably in co-operation with the national authorities.

This option combines a mandatory with a voluntary approach with flexibility regarding the best implementation.

- Option 2: Mandatory collection of data on sales, distribution and use (participation defined in detail)

The Strategy would require Member States to collect data on sales, distribution and use on a mandatory basis. The participation/responsibility of plant protection products retailers, farmers, users and authorities would be defined in detail. Quality of data would be ascertained by a Member State quality check system. Details would be determined for Member States authorities, retailers and users.

This option defines a strict mandatory approach with little flexibility.

- Option 3: Recommendation to collect data from distributors and users

The Strategy would only recommend that Member States collect data on distribution and use from distributors and users on a voluntary basis. Guidance would be developed by a Steering Committee (or other forms of co-operation between the Member States, referring in particular to private-public partnerships (co-operation with industry and retailers).

This option is mainly voluntary and leaves flexibility for further coordination among Member States.

- Option 4: No action

In this option, no particular action would be proposed in addition to already existing legislation or voluntary initiatives.

## ANNEX 5: PROBLEMS, COSTS, AND BENEFITS OCCURING FROM IMPROVING DATA COLLECTION ON SALES, DISTRIBUTION AND USE OF PESTICIDES.

A detailed analysis of potential risks and costs linked to pesticide use is given in the note on the IA accompanying the Framework Directive for the Thematic Strategy[53]. The analysis of the whole pesticide life cycle clearly shows that with regard to the potential for exposure of humans and direct emissions into the environment, ***the use and post-use stages are the riskiest steps***. Without reliable data on pesticide use it is impossible to assess the risk for the different categories of people concerned with pesticides. Improvement of the current situation with regard to data collection is clearly needed if we want to be able to measure in the future the impact of the different measures included in the Thematic Strategy in terms of problems, costs and benefits for the different categories of people concerned.

### 5.1 Possible impacts on growth, competitiveness and jobs

The overall possible impact of the different measures proposed in the Thematic Strategy is described in details in the note accompanying the proposal for a Framework Directive. As a conclusion if the Thematic Strategy is properly designed, and as long as measures do not significantly impact aggregate output, ***it is perfectly possible to achieve a situation where everybody gains***: the public through lower negative externalities related to pesticides, the farmers though lower quantities of plant protection products to buy, and the European industry with a greater share of sales made with more sophisticated and profitable products.

The data collection requirement per se will have a very limited impact on growth, competitiveness and jobs although it represents one of the most important direct costs for Member States in the implementation of the Thematic Strategy.

Estimations for the overall impact of a high level of detail data requirement at Community level range roughly from 10 to 25 million €/year according to the level of precision requested. Current expenditures where estimated between 7 and 10 million €/year leading to an overall impact of 3 to 15 million €/year.

Most relevant net economic impacts are expected at authority level (estimation: up to 9 million €/year) due to increased efforts for the establishment and organisation of collection systems. An impact of up to 4 million €/year is expected for pesticide users and 2 million €/year additional burdens could be expected for the supply chain.

### 5.2 The impact on business

A variety of people, groups and individuals are concerned with pesticides, and therefore are potentially affected by the Thematic Strategy on their sustainable use and in particular by the measure concerning data collection. Table 5.1 gives an overview of the numbers of actors/users/stakeholders involved or affected by plant protection products in EU-15. These have been estimated on the basis of information collected via pesticide industry federation, statistics on the farming sector and general Community statistics.

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[53] SEC(2006) 894 and SEC(2006) 895.

***Table 5-1:*** *Numbers of stakeholders concerned*

| Sector/activity | Number of persons concerned |
|---|---|
| PPP Manufacturing | +/- 20,000 |
| PPP Distribution | +/- 5,000 |
| User : Agriculture | 10,419,000 |
| Non-Ag | Not available |
| Food Production | 3,000,000 |
| Food Consumption | 440,000,000 |

***Table 5-2:*** *Economic key data concerning pesticides (EU-15)*

| Facts | Figure | Unit | Source |
|---|---|---|---|
| Total value of crop production (2002) | 166,697 | m€ | European Commission (COM), Eurostat |
| Total usable agricultural area (UAA)(2001)) | 167,000,000 | ha | COM, Agriculture |
| Area used for crop production (1999) | 74,118,000 | ha | COM, Eurostat |
| Volume of active substances for agricultural use per year (estimation 1999) | 280,000 | t | COM, Eurostat |
| Volume of non-agricultural use (estimation 1999) | ~36,000 | t | COM, Eurostat |
| Average use per ha UAA(calculation 1992-1999) | 1.7 | kg | COM, Eurostat |
| Average PPP use for main consuming crops per ha (calculation 1992-1999) | 4.2 | kg | COM, Eurostat |
| Value of agricultural PPP market (estimation EU-15 data 2002) | 5,908 | m€ | ECPA |
| Average price per kg a.i. (calculation 2002) | ~25 | €/kg | ECPA |
| Number of employees in PPP industry (estimation EU-15 data for 2002) | 26.300 | persons | ECPA |
| thereof in agricultural business | 23.000 | persons | |
| thereof in non-agricultural business | 3.300 | persons | |
| Average turnover per employee chem. Industry | 313.000 | € | BiPRO |
| Number of agricultural holdings | 7.900.000 | holdings | COM, Agriculture |
| Average agricultural area per holding (estimation EU-15 data) | 20 | ha | COM, Agriculture |
| Average PPP use per holding | 35.5 | kg | BiPRO |
| Average cost per employee at authorities (estimation) | 50.000 | € | BiPRO |

Table 5-2 gives some key figures concerning pesticides that are particularly relevant in the evaluation of the economic impacts of the measures of the Thematic Strategy.

According to the instruments chosen by each Member State to collect data on sales and use of plant protection products and to the organisation of the distribution chain for these products in the country, the following actors could be affected at various degrees: producers, distributors and retailers of plant protection products, and farmers.

Producers of plant protection products are a very limited number of big enterprises present on the market of the Community. They are very important actors within the supply chain. They usually own data collection or have contract with market research companies to collect information on the quantities of plant protection products placed on the market in order to

establish their marketing policy. In most Member States, producers are already obliged to provide data on the production and on import/export to their national authorities in the context of the legal framework of economic statistics.

Varying from one country to the other, distributors are usually small to medium size enterprises buying plant protection products to producers or importing them and distributing them directly to farmers or retailers.

Retailers are usually small to medium size enterprises selling plant protection products to farmers. Farm holdings vary from very small to small or medium size enterprises.

The organisation of the distribution chain may vary from one region or country to another according to the importance and technical orientation of agriculture. However, all these actors are present in different proportions all over the territory of the Community.

The contribution of distributors and retailers can be very important to estimate the quantities of plant protection products which are actually used by farmers. Since they can import directly some products, buy for further re-sale or constitute stocks their information is essential to get a correct estimation of final sales and use by farmers. Moreover, distributors and retailers usually have a good knowledge of the conditions in which plant protection products are used by farmers (for which crops, at what time, etc.). This information could prove essential to check the consistency and reliability of the data on use of plant protection products in the different crops. Finally some specific usages like seed treatment could possibly only be assessed through distributors or retailers. Most Member States already oblige distributors and retailers to keep and communicate records to the authorities on sales of plant protection products.

For most Member States the Regulation will not modify the obligations for producers, distributors and retailers in a large extent but will introduce specific requirements in terms of harmonisation and level of details of the information to be kept and transmitted to the authorities.

Though they can use different sources of information like administrative data, most Member States will most probably carry out surveys in the agricultural holdings to collect data on use of plant protection products. This represents certainly the most important burden introduced by the Regulation. This burden will be shared by the national authorities who will have to organise the surveys and collect data and by the farmers who will have to keep records with sufficient details. If this burden is new for farmers, it should be noted however that Regulation (EC) No 852/2004 of the European Parliament and of the Council of 29 April 2004 on the hygiene of foodstuffs[54] established in its Annex I, III, 9 an obligation for farmers to keep records on all pesticides used.

### 5.3 What kind of benefits can be expected from an improved system for data collection?

The general objective for the implementation of the measures of the Thematic Strategy is to achieve environment and health improvements or other societal benefits (e.g. reduced external costs due to the use of plant protection products) by a more sustainable use of pesticides.

[54] OJ L 139, 30.4.2004, p. 1.

Potential benefits of the whole Thematic Strategy are described in detail in the note on the IA accompanying the proposal for a Framework Directive.

Expression of such benefits in monetary terms is difficult as they are related to a complex causal chain and information to quantify or monetise them in a reliable way is not available. Still, it is reasonable to assume that a reduced use of pesticides would result in a variety of benefits for society such as:

- increased food quality due to lower contamination of feed and food products;
- higher quality of life due to decreased occurrence of diseases among the users, bystanders, and to a lesser extent among the consumers; induced decreased costs for curing professional diseases and lower losses of working power due to decreased inactive periods of sick leave;
- lower redemption costs for contaminated sites due to less accidents and lower general contamination levels and decreased costs for decontamination of drinking water;
- cleaner environment and thus contribution to the sustainable conservation of natural resources;
- enhanced biodiversity;
- enhanced recreational effects due to impacts on landscape (e.g. hedges, buffer stripes).

It is to be noted however that ***PPP reduction is not an objective per se, because, in some cases, it would be detrimental to aggregate welfare***. Indeed, if not specifically targeted at risk reduction and in a proportionate manner, use reductions may cause adverse effects such as disproportionate yield losses, degradation of valuable man-made landscape or other unwanted impacts. The Thematic Strategy therefore aims primarily at achieving a significant reduction of risks to health and the environment through both the reduction of unintended losses and overuses (hence a more efficient application of plant protection products) and better protection of human health. This induces some reduction in the use of plant protection products, but only as a derivative.

It is obvious that even excellent data on pesticide sales and use in the different Member States will not be sufficient to measure all details of risk reduction and that more specific assessment at national, regional or even farm level will be needed to fully assess all benefits of the Thematic Strategy. Regular, reliable and comparable data on pesticide sales and use are however crucial to measure the progress of the Thematic Strategy as a whole. Without such data, the Commission will not be able to follow the progress realised in the field and take the appropriated measure to reach the objective assigned.

Independently from the evident interest of reliable statistics on pesticide use to support Community policy, direct benefits of collecting use data can be expected at national or Community level from a better knowledge of pesticide use, such as improved monitoring schemes and better targeted and more effective policies. These benefits are listed in Annex 5. Furthermore, the availability of official statistics all over Europe will create a more transparent market that should improve the competitiveness of the pesticide industry.

## ANNEX 6: METHODOLOGY USED IN THE IMPACT ASSESSMENT

### 6.1 General methodology

The General methodology used for the Impact assessment has been described in the note accompanying the proposal for the Framework Directive and is based on the Guidelines of the European Commission on Impact Assessments (ExIA). These guidelines set up 7 steps:

(1) Description of procedural issues and consultation of interested parties;

(2) Definition of the problem to be tackled;

(3) Definition of the objectives to be reached;

(4) Description of the policy options available to reach the objective;

(5) Analysis of the impacts – positive and negative – expected from the different options identified;

(6) Comparison of the impacts of the various options;

(7) Monitoring and evaluation of the proposed options.

The different options on how to improve data collections on pesticide use are described in Annex 4. All options have been analysed with regard to their economic, social, and environmental impacts in the following way:

- determination and documentation of the current situation (status quo) in EU Member States related to the key measures and options;
- identification of causalities and relations;
- assessment of the impacts of the various options;
- recommendation of most appropriate options.

Impacts have been assessed with respect to:

- economic consequences (where possible measured in € additional costs or additional income compared to status quo for the actors concerned);
- social consequences (where possible measured in number and quality of jobs; based on average correlations income to jobs or costs to jobs);
- environmental consequences (mainly assessed on the basis of expected reduction in tons of PPP used, taking into consideration possible effects of PPP substitution and other consequences that are not correlated to use reduction but nevertheless constitute a risk reduction, e.g. buffer zones to protect water);
- health consequences (not quantified but qualitatively assessed taking into consideration avoided adverse health impacts on operators, consumers, bystanders as an effect of reduced exposure or reduced number of accidents).

## 6.2 Specific challenges to apply the general methodology to the measures constituting the Thematic Strategy

### *6.2.1 Particular Problems*

The Impact Assessment for the Thematic Strategy on the Sustainable Use of Pesticides was complicated by some specific problems that made it necessary to develop additional methodological elements. The main issues can be summarised as follows:

*a) The flexibility of measures and options.*

The Thematic Strategy is not only concerned with one specific proposal but comprises a whole set of measures, for each of which there are different options. All of these have a significant degree of flexibility. For example:

- an option could have several sub options ;
- important decisions within an option are still open and need to be made in the future where Member States would have to decide on detailed implementation within a given framework;
- the option leaves various alternatives to Member State decisions.

It is obvious that in order to assess impacts of the various options a proper methodology is necessary to deal with this problem of flexibility.

*b) Different status quo in Member States*

There are significant differences with respect to the existing situation in Member States. This means that a certain option might have important impacts in one MS and no impacts in another one. For that reason it was necessary to have a methodological element to take different status quo into consideration.

*c) Completeness and plausibility of impacts*

Different types of impacts have to be assessed i.e. environmental impacts, health impacts, economic impacts have to be covered. It is obvious that not all impacts can be fully analysed and that focussing on the more important ones is necessary. Against this background it was crucial to have a methodological element that enables to:

- analyse completeness of impacts;
- evaluate importance of impacts;
- check plausibility of impacts.

*d) Data availability and data gaps*

Assessment of the impacts of the use of pesticides is a widespread and complex field which leads to a huge demand for data to assess impacts of the Thematic Strategy. However a lot of necessary data are not available or it would have taken too long to collect them. The lack of coordination between authorities concerned in Member States is frequently cited to explain the data gaps: this indication is also important for the implementation phase of the Thematic

Strategy. In the meantime, a methodology had therefore to be developed to collect as many as possible reliable data in a short period of time and to cover data gaps in an appropriate way.

*e) Overlapping impacts and communication requirements for the results*

There are various impacts that are caused in similar ways by different measures, options and case studies. For example: the complex causal chain: reduced use of a given pesticide[55] → reduced exposure of humans → reduced health problems → reduced costs for health treatments, is relevant for many options and measures.

A methodology was necessary to cover these overlapping impacts and avoid double counting.

### *6.2.2 Overview: the complete methodological concept*

The overall methodology applied for this impact assessment has been developed in order to enable the fulfilment of the following tasks:

- development of possible options for the implementation of specific measures for the achievement of the objectives of the Thematic Strategy;
- determination and documentation of the status quo in EU Member States related to the measures and options;
- impact identification of the developed options relative to the status quo;
- consideration of flexibilities within the options;
- identification of causalities;
- assessment of qualitative/quantitative impact;
- recommendation of most appropriate options.

Figure 6-1 shows the complete concept of the applied methodological elements that has been used in the main source of information for the quantification of impacts in this assessment[56].

Starting points are the options that have been developed for every possible measure that aims to contribute to the achievement of the objectives of the TS.

Steps 2, 3, and 4 of the Guidelines on Extended Impact Assessment are covered by the first matrix ("options-objectives-matrix" (a)). The matrix makes clear which of the objectives of the TS are aimed at and which are the measures and options that could contribute to achieve the objectives. The impacts of these options have then been assessed in the following steps ((b) to (h)). Where necessary, new options have been included in the options-objectives-matrix in an iterative process based on the initial results of the impact assessment and more policy-making discussions.

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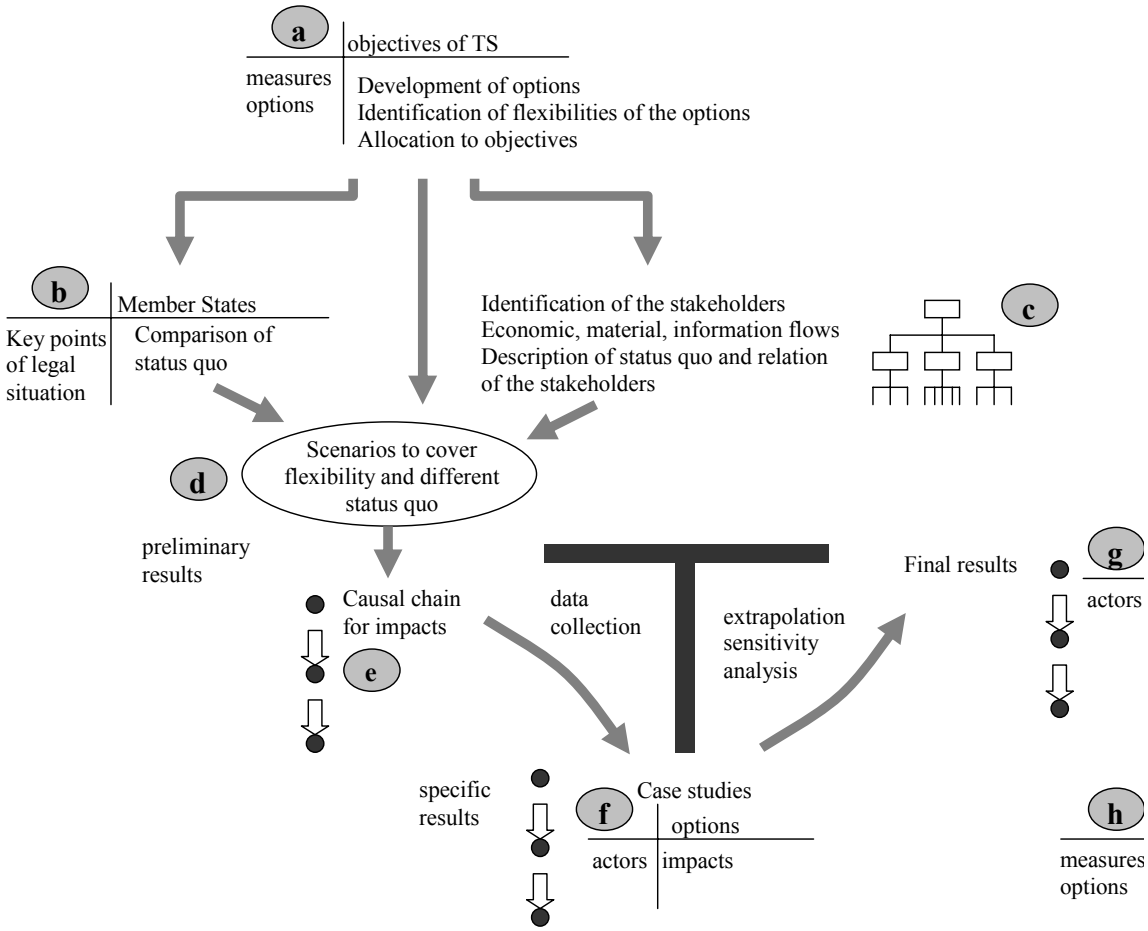
55 Caused for example by improved training, technical check, enhanced protection of water or quantitative use reduction.

56 For further details, please see: Assessing economic impacts of the specific measures to be part of the Thematic Strategy on the Sustainable Use of Pesticides, BiPRO 2004, available at: http://europa.eu.int/comm/environment/ppps/pdf/bipro_ppp_final_report.pdf


a
objectives of TS
measures
options
Development of options
Identification of flexibilities of the options
Allocation to objectives
b
Member States
Key points
of legal
situation
Comparison of
status quo
Identification of the stakeholders
Economic, material, information flows
Description of status quo and relation
of the stakeholders
c
d
Scenarios to cover
flexibility and different
status quo
preliminary
results
Causal chain
for impacts
e
data
collection
extrapolation
sensitivity
analysis
Final results
g
actors
specific
results
f
Case studies
options
actors
impacts
h
measures
options

The structure of the options-objectives-matrix is identical to the matrix that summarises the final results containing the recommendations about the suitability and ranking of the options (recommendation-matrix (h)).

Key points of the current legal situation have been determined and evaluated and compared for all Member States (b) (legal-status-quo-matrix). For this purpose appropriate data had to be collected.

In addition to the legal situation, the status quo is also characterised by relevant actors and their relations, material flows (e.g. amounts of pesticides used), economic flows and information flows (c). Also for the investigation and documentation of the status quo with regard to the flows, vast amounts of data had to be collected.

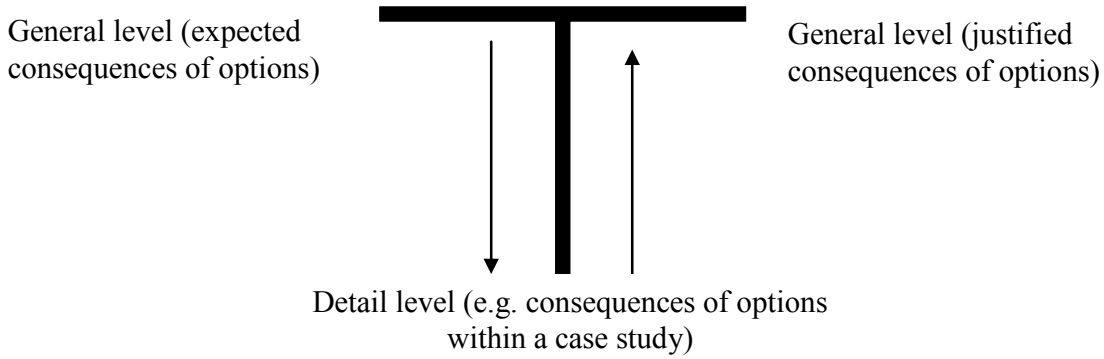
The results of steps (b) and (c) and their documentation as the present status quo is an important outcome because it defines the starting point for the evaluation of the various options against the current situation or in other words it represents the “no-action option”. The status quo is documented at EU level and for the individual Member States. All impacts are evaluated relative to the status quo.

Options that are flexible constitute a particular problem. For their evaluation their internal flexibility had to be taken into consideration. To this end different scenarios had to be set up that cover the existing flexibilities (d) and these could lead to different impacts.

The scenarios are closely correlated with the causal chains that are established in order to describe systematically all relevant impacts (e). Following the causal chains first impact results became available. If the impacts were important, they were checked by a detailed analysis. Where reliable data for a detailed analysis were not available at European scale typical case studies in individual Member States were carried out (f) which were then extrapolated in order to conclude on the general situation at European level. For this purpose again data collection was necessary.

The case studies themselves were used to extrapolate to general results covering relevant actors and relevant impacts (environmental, economic, social, health impacts) (g). The procedure follows a so-called "T-principle" and finally enables to answer the question 4 of the Guidelines on Extended Impact Assessment: "What are the impacts – positive and negative – expected from the different options identified?"

**Figure 6-2:** The "T"-principle




The "T" principle means a methodology that starts with preliminary general results at

European level, goes into details at a certain point for checking and improving the general results and finalises the exercise by extrapolating to reliable results on the general level. It is a tool that helps to create a reliable information basis if appropriate data are not available on a European scale.

During the multiple phases of data collection and using the methodological element of the T-principle, steps 5 and 6 of the Guidelines on the Extended Impact Assessment could be put into practice.

The overall results for the various impacts have then been extrapolated for the options and the objectives of the TS. A final matrix presents the evaluation of the options regarding their suitability to achieve the objectives of the Thematic Strategy taking into consideration the positive and negative impacts of each option (h). The final matrix is designed as an easily understandable policy making tool and a basis for the Commission's proposal and its justification (seventh step of the guidelines on Extended Impact Assessment). The evaluation of the options illustrated in the matrix is justified in a transparent and detailed way by the impact assessments carried out in the corresponding chapters.

### *6.2.3 Assessment of measures and options*

The objectives of the Thematic Strategy and the envisaged measures and their options are best presented in a 'options-objectives-matrix', as illustrated in Table 6-1.

***Table 6-1:*** *Options-objectives-matrix*

| Objectives<br><br>Measure/Options | A | B | C | D | E |
|---|---|---|---|---|---|
| Measure I | ✳ | | | | |
| Option I-1 | | | | | |
| Option I-2 | | | | | |
| Option I-3 | | | | | |
| Option I-4 | | | | | |
| Option I-5 | | | | | |
| Measure II | | ✳ | | ✳ | |
| Option II-1 | | | | | |
| ….. | | | | | |

✳ indicates that this measure is expected to contribute significantly to achieving the indicated objective

The various options were developed in a specifically created Inter-service Group comprising a number of Directorates-General from the Commission.

The structure of the options-objectives-matrix is also maintained for the documentation of the final result. Based on the impact analysis and the results thereof the final recommendations-matrix has the following structure as shown in Table 6-2:

***Table 6-2:*** *Recommendation-Matrix*

| Objectives<br><br>Measure/Options | A | B | C | D | E |
|---|---|---|---|---|---|
| Measure I | ✳ | | | | |
| Option I-1 | **1** | | | | |
| Option I-2 | **2** | | | | |
| Option I-3 | **3** | | | | |
| Option I-4 | **3** | | | | |
| Option I-5 | **1** | | | | |
| Measure II | | | | | |
| Option II-1 | | | | | |
| …. | | | | | |

✳ indicates that this measure is expected to contribute significantly to achieving the indicated objective: the figures indicate the appropriateness of an option relative to the status quo (no-action): **1 recommended** , **2 neutral**, **3 not recommended**

As mentioned above, this matrix is designed as an easily understandable policy making tool and a basis for the Commission proposal and its justification. The evaluation of the options as ranked in the matrix is justified in a detailed way by the impact assessments carried out in the corresponding chapters of this report.

### *6.2.4 Consideration of status quo*

The existing status quo is the essential basis for assessing impacts of potential measures and their various options. Other future developments independent of the Thematic Strategy such as price changes, newly developed plant protection products, economic growth, etc. have not been taken into consideration as they would occur also in the baseline situation. The whole analyses of options and measures is therefore based on "ceteris paribus" (all else being equal) assumptions.

With respect to the legal status quo key points for differences between the existing situation and the options have to be identified. Table 6-3 shows the matrix that is used to compare the situation in the different Member States.

***Table 6-3:*** *Matrix to present current legal situation in MS (data collection)*

| Basis for collected data | AT | BE | CY | CZ | DE | DK | EE | ES | FI | FR | GR | HU | IE | … |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mandatory collection | yes | no | yes | no | Yes | yes | | yes | yes | | | | | |
| Mandatory reporting | yes | yes | yes | yes | Yes | no | yes | yes | no | | | | yes | |
| Voluntary reporting | no | yes | no | no | Yes | | | | yes | yes | | | | |

In addition to the description of the legal situation, knowledge about the status quo with respect to:

- material flows

- economic flows
- information flows

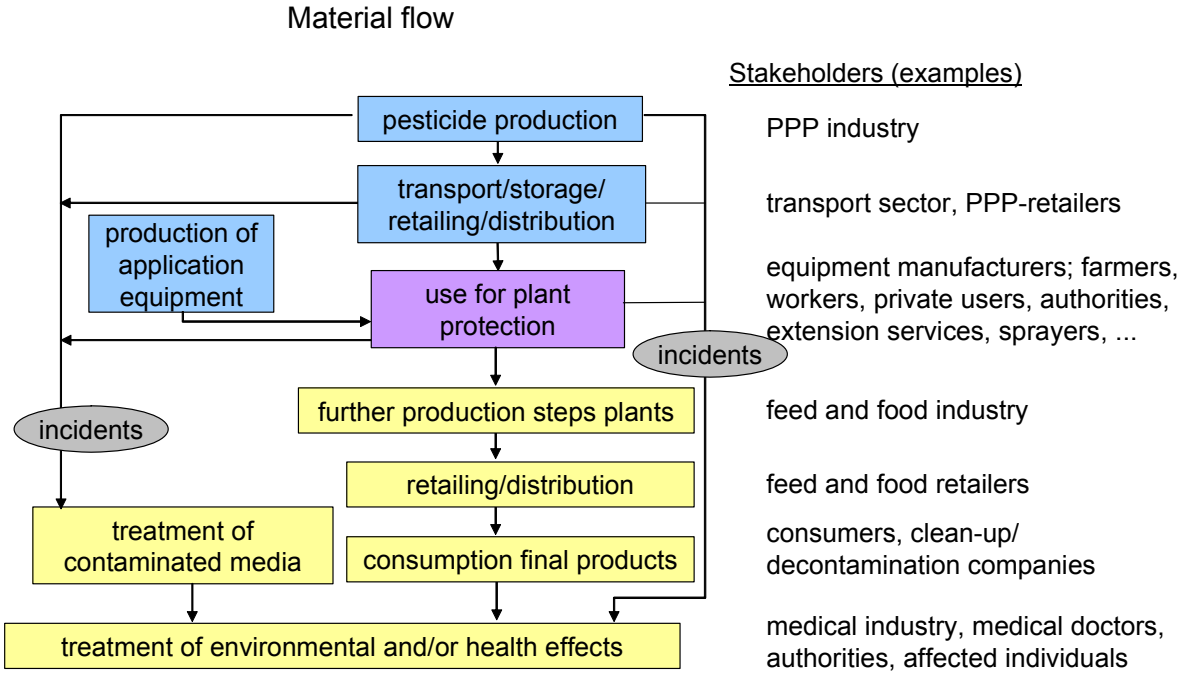
was essential. Between the various actors involved in the use of pesticides these flows are the basis to describe all relevant relations between the actors.

Further to the description of the status quo these flows are methodological tools for

- the identification of cause-effect relations
- estimations with respect to data gaps
- plausibility checks.

Figure 6-3 shows the general ***material flow*** related to plant protection products between the main stakeholders concerned.

***Figure 6-3:*** *General material flow and concerned stakeholders*




The main actors (and hence most concerned stakeholders) are:

- producers of plant protection products;
- companies responsible for transport, storage, retailing, distribution of plant protection products;
- users of plant protection products;
- producers of application equipment;
- actors dealing with the treatment of contaminated media (in particular water treatment companies);

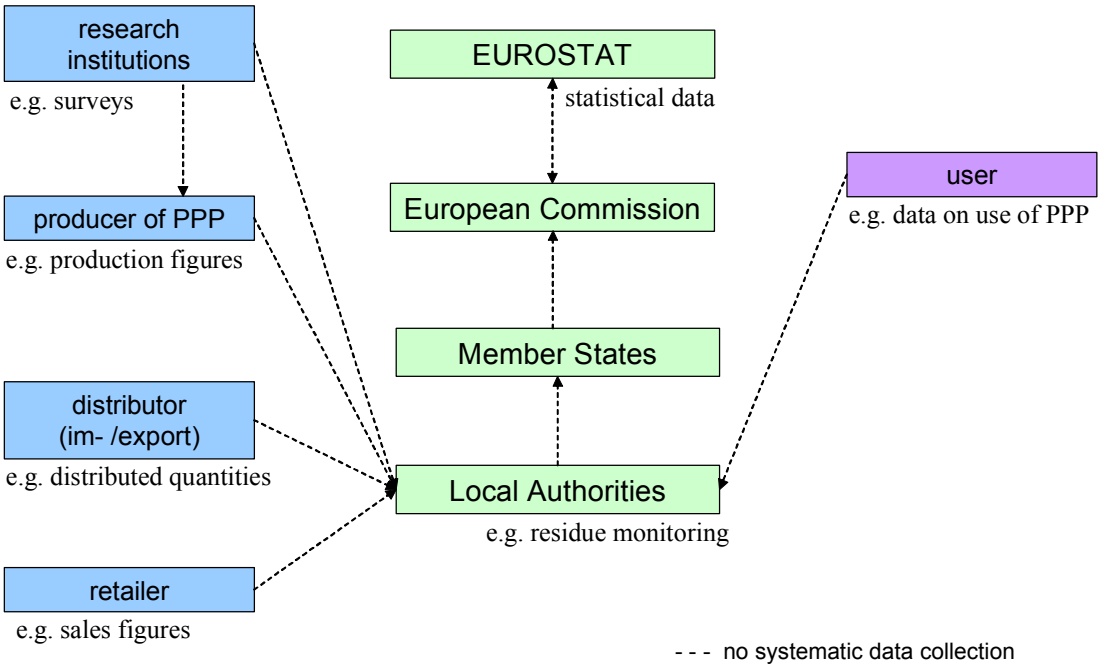
- actors involved in further production steps, retailing and distribution of agricultural products;
- consumers.

There are three major types of material flows

- flow of plant protection products;
- flow of agricultural products:
- flow of equipment.

Figure 6.4 shows the principle ***information flows*** concerning systematic data collection on use.

***Figure 6-4:*** *Information flow - systematic data collection on use*




In addition to the already mentioned actors and stakeholders, the following are relevant:

- authorities;
- training and service (e.g. consulting) institutions;
- certification institutions;
- controlling institutions.

As material and information flows are typically combined with ***economic flows*** the same actors appear in the economic flow chart.

### *6.2.5 Completeness and plausibility*

Based on the scope of the analysis and the flexibility of the options for the various measures not all data that were relevant for impacts could be collected. As a consequence there was a need to focus on the most important impacts and to work with the help of case studies. These could be checked on their plausibility taking into consideration the overall relations of the general flows and the flows of the case studies. Also, in cases where quantification of impacts was not possible (due to absence of relevant data) a qualitative analyse had to suffice.

### *6.2.6 Identifications of impacts and causal chains*

For the identification of impacts of measures and their options it has to be borne in mind that an assessment of impacts is depending on a number of uncertainties such as:

- In many cases there are various alternatives for the actors to react to changes of the status quo;
- In many cases there is still some flexibility within the options analysed and also a 100% implementation might not be achievable for all measures.

Against this background it seemed essential to follow causal chains for the assessment of impacts. The developed methodology foresees that in a first step the direct impacts were identified, which were the starting points of the causal chain. For direct impacts the actors are typically addressed immediately in the option analysed.

### *6.2.7 Collection and checking of data*

Data collection was a major task of the impact assessment in particular in order to determine the status quo with respect to the envisaged measures within the Member States. For the collection of data different approaches have been followed.

A questionnaire was developed for authorities and other stakeholders. Based on the feedback of the authorities, official data are available for most of the Member States. The questionnaire[57] had the main function to provide a first basis which was followed up by personal discussions, telephone interviews, participation in conferences and meetings. Additionally, relevant literature and studies have been checked for data and results pertinent for the impact assessment.

As far as possible, the received information has been integrated into the schemes of material and economic flows and has been checked by this means for their plausibility.

In some cases, key factors (e.g. use of kg active substance per hectare; average cost PPP/ha) for cross checking of important data have been collected and have been compared for different Member States. If these key factors showed important divergences, they were cross-checked with the authorities.

[57] Available at : http://europa.eu.int/comm/environment/ppps/pdf/bipro_ppp_final_report.pdf, p. 387 ff.

### *6.2.8 Addressing data gaps*

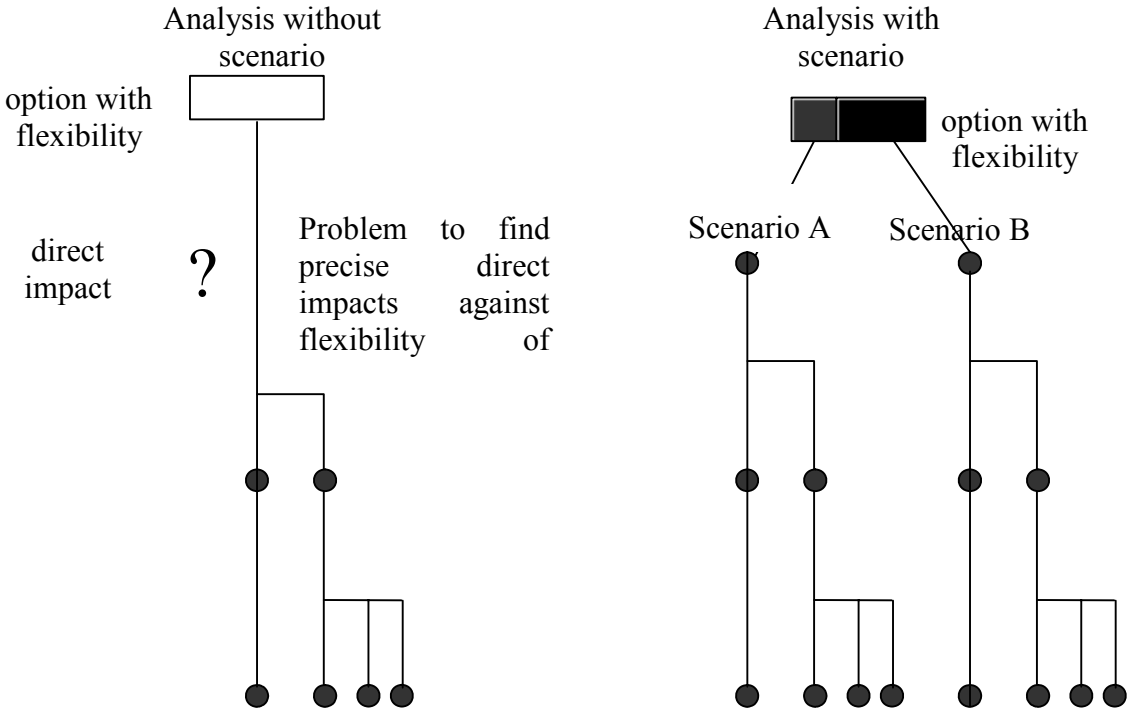
Despite all efforts to collect all relevant data, it was not always possible to close all data gaps. These are documented and, where feasible, quantitative estimations based on the flows or on key figures are made. If quantified estimations are not possible either, qualitative results instead of quantitative impacts are given.

Some of the figures occurring in certain tables (e.g. in tables related to sensitivity analyses) are calculated and therefore seem to have a level of accuracy that is implausible on the basis of the underlying data: e.g. expected job losses of 362 jobs means that job losses in the dimension around 350 jobs are expected. Still, the indication of calculated figures increases the transparency of the results. In general statements and recommendations rounded figures are given.

### *6.2.9 Analysing scenarios*

Analysing different scenarios is a tool to examine different possible future developments that can appear due to the flexibility of options, different status quo in Member States and non-rational behaviour of actors.

It is possible to use scenarios for different levels of the causal chain, which however, can make the results for impacts very complex.




Working with scenarios leads to ranges of results for the expected impacts. The scenario results after the impact analysis are best presented in an overview as shown in Table 6-4.

***Table 6-4:*** *Summary table for impacts of various scenarios within one option*

| | **Measure X, option/scenario** | | | | |
|---|---|---|---|---|---|
| **Stakeholder** | **option X-1 scenario A** | **option X-1 scenario B** | **option X-1 scenario C** | **option X-2 scenario A** | **…** |
| economic impacts | | | | | |
| | | | | | |
| environmental impacts | | | | | |
| | | | | | |
| health impacts | | | | | |
| | | | | | |
| social impacts | | | | | |
| | | | | | |

The ranges for the results of the scenario analyses have to be condensed to a final result as different scenarios might have different probabilities to occur and consequently there is a certain probability within the ranges of results. However it is only a theoretical approach to calculate the probability within the range of results. Due to missing data this is feasible only for a few examples. But even if a quantitative statement is not possible, a qualitative assessment on the probability has been done within the sensitivity analysis.

### *6.2.10 Case studies*

Case studies are a tool to:

- examine impacts more in detail and with a deeper involvement of stakeholders;
- deliver arguments and examples for the Commission's deliberations;
- enable extrapolations to a broader scope if reliable data are not available at European scale (as it was observed frequently during the survey).

Case studies are used in the project in accordance with the "T" principle (see figure 6-2) which starts with preliminary general results, goes into details for checking and improving the general results and finalises the exercise by extrapolating to reliable results at the general level.

Case studies have been selected according to the following requirements:

- results of case study are important;
- results can be extrapolated;
- data are available.

Case studies, their impact assessment and scenarios are designed in a way similar to the general approach.

### *6.2.11 Overlapping correlations of impacts*

Certain impacts further down in the causal chain are based on general trends and are more or less independent from an individual measure or its options at the starting point of the causal chain. It is also important to note that certain effects of the various measures are either overlapping or cumulative.

This problem has been described in the note accompanying the proposal for the Framework Directive covering the Thematic Strategy. It was not very relevant for the measure concerning data collection and is thus not described in details here.

### *6.2.12 Methodology to derive recommendations*

Deriving recommendations against the background of the assessed impacts is a difficult task when a broad range of possible impacts, criteria and solutions exist.

It is, on the one hand, obvious that an option for an envisaged measure contributing better to a particular objective than the others is a candidate for recommendation. However, it might be that exactly this option has impacts that are not intended and therefore the recommendation does not remain clear. To make it more complicated the various impacts themselves might lead to a very inhomogeneous picture as there are in most cases winners and losers, which are not necessarily the same in the different options. Quantification of results is often not possible at all or only partially possible.

The methodology applied in this impact assessment therefore relies on the following principles:

- the relative comparison between options against the status quo;
- the relative importance of impacts;
- the existing flexibility within the options and the potential for an optimised implementation.

In the relative comparison between options the "no action – no impacts" situation defines the baseline. Advantages and disadvantages of each option are compared to this standard. Disadvantages (= negative impacts) are checked for whether they will lead to unacceptable consequences that would cause severe problems for implementation and acceptance of the whole Thematic Strategy. If “yes” then the option is characterised as "not recommended". If "no" then the advantages (positive impacts) compared to the no action standard are evaluated. If there are significant advantages then the option is characterised as "recommended", if not, it is characterised as "neutral".

For the two types of decision, whether a negative impact was unacceptable or whether positive impacts were significant, the relative importance of the impacts for the various options is taken into consideration.

If there are several options that can be recommended, additional information is given on the existing flexibility and the potential for an optimised implementation.

## ANNEX 7: DETAILED ASSESSMENT OF THE MEASURE CONCERNING A BETTER DATA COLLECTION AND ITS DIFFERENT OPTIONS

### 7.1 Status quo situation in the Member States

Currently, most of the available data concerning marketing and use of plant protection products are from industry (through a contractual arrangement to provide data to Eurostat). The Commission supports this financially by providing a grant in the order of 130.000 € per 3 years. Only few Member States do collect systematically use data and have made record keeping by users mandatory.

#### *7.1.1 Legal situation*

Data collection is already covered by existing legislation to a limited extent (e.g. for production, import/export and residues). For the assessment of the sustainability of pesticide use and the effects of the Thematic Strategy, the "real use" data at farm level are of crucial importance. As a consequence there is a real need for the systematic collection of use data and this was the main focus of the assessment.

In order to be able to describe the current situation several questions have been addressed to authorities and stakeholders by means of questionnaires and personal interviews. The questions were in particular related to the following points:

- What kind of data is already available and what is the corresponding level of detail?
- Who collects/reports the data?
- Is data collection based on mandatory or voluntary approaches?
- What are the related costs for the involved stakeholders?

The evaluation of the questionnaires, additional interviews, literature and statistics demonstrate the following status quo with respect to the present situation, which is also summarised in Tables 7-1 and 7-2.

#### *7.1.2 Data availability*

- 21 Member States have access to data on at least one of the areas production, import/export, sales, use (general or specific) or residues. From the Member States responding to the questionnaire up to now, only Greece states to have no data collection/reporting at all.
- 14 countries have information on import/export and 20 countries on sales figures

11 countries are able to provide data on use to different levels of detail and up to 9 countries are able to provide data specified with respect to user groups, areas or crops.

***Table 7-1:*** *Data availability concerning plant protection products*

| | AT | BE | CY | CZ | DE | DK | EE | ES | FI | FR | GR | HU | IE | IT | LT | LU | LV | MT | NL | PL | PT | SE | SI | SK | UK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Data available | yes | yes | Yes | yes | Yes | yes | yes | yes | yes | yes | no | yes | yes | yes | yes | | yes | yes | yes | yes | yes | yes | Yes | | yes |
| Production | yes | yes | Yes | no | Yes | | | yes | no | | | | | | no | | no | no | no | yes | no | | Yes | | |
| Import/Export | yes | yes | Yes | no | Yes | | yes | yes | no | | | | yes | | yes | | yes | yes | no | yes | no | yes | Yes | | yes |
| Sales | yes | yes | Yes | yes | Yes | yes | yes | yes | yes | yes | No | yes | yes | yes | no | no | yes | no | yes | yes | yes | yes | Yes | No | yes |
| Use (general) | yes | no | Yes | yes | No | yes | | yes | no | | | | | | no | | yes | | yes | no | yes | yes | Yes | | yes |
| Use (specific for user groups) | no | no | Yes | yes | No | no | | yes | no | | | | | | yes | | no | yes | yes | no | yes | yes | No | | yes |
| Use (specific for areas) | no | no | Yes | yes | No | no | | yes | no | | | | | | no | | yes | no | yes | no | no | yes | No | | yes |
| Use (specific for crops) | no | yes | Yes | yes | No | no | | no | no | | | | | | yes | | no | no | yes | yes | no | yes | No | | yes |
| Residues | yes | no | Yes | no | No | yes | yes | yes | yes | | | | yes | yes | no | | no | yes | yes | yes | yes | yes | Yes | | yes |

***Table 7-2:*** *Systematic data collection on use – data basis*

| Basis for collected data | AT | BE | CY | CZ | DE | DK | EE | ES | FI | FR | GR | HU | IE | IT | LT | LU | LV | MT | NL | PL | PT | SE | SI | SK | UK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mandatory collection (mostly from manufacturer) | yes | no | yes | no | Yes | yes | | yes | yes | | | | | | yes | | yes | Yes | yes | yes | yes | yes | yes | | yes |
| Mandatory reporting to authorities | yes | yes | yes | yes | Yes | no | yes | yes | no | | | | yes | yes | yes | | yes | No | yes | | yes | yes | yes | | no |
| Voluntary reporting to authorities | no | yes | no | no | Yes | | | | yes | yes | | | | | no | | no | No | yes | | yes | yes | yes | | yes |

It is obvious that numerous activities related to data collection on production, import/export, sales and use are currently already ongoing in the Member States. Consequently a considerable effort is already spend on data collection.

However, during expert interviews and during the attempt to find reliable and comparable data, it turned out that data are only available in very limited cases in a satisfying degree of detail and in a comprehensive way. If data are available it is often difficult to trace how the information was aggregated. Furthermore, data are frequently not comparable as the information collected is not the same (e.g. sales data intended for agricultural use in one case versus total sales data in others). Finally, data that have been collected for specific purposes (e.g. for marketing decisions by industry) are not available due to reasons of confidentiality.

In most of the Member States data collection/reporting is covered by a legal framework and the data is made available on the basis of different, coexisting mandatory and voluntary systems. As Table 7-2 indicates:

- 20 Member States have established mandatory collection and/or reporting systems that are sometimes supplemented by additional voluntary systems;
- 9 Member States rely exclusively on voluntary reporting systems.

The legal situation with respect to data collection mirrors the existing framework in the Member States with respect to reporting of data. Except for France, all Member States, for which information was available, confirm the existence of legislation on reporting. In addition it is planned in five Member States to establish further legislation within the near future (BE, FI, IE, IT, PT).

### *7.1.3 Involved stakeholders*

The information flow (see Figure 6-4) gives an overview on the communication between the different stakeholders and shows in particular the information exchange between relevant actors. The most relevant actors to be considered in the impact assessment are authorities, users, those in the supply chain and eventually research or Statistical institutions.

- Authorities: collection and aggregation of information from several stakeholders. Evaluation of data for policy decisions. This can take place at different aggregation levels (local, national and international level). For the purpose of statistical data management, institutions like Eurostat, or national statistical offices are involved.

- Plant protection products producers: usually users do not provide data on pesticide use. In selected cases specific information, e.g. related to amounts and types of plant protection products use in specific areas or specific crop types is reported. Information provided by plant protection products users would provide the highest spatial and thematic resolution possible.

- Plant protection products producers: producers are important information holders within the supply chain, due to own data collection or contracting such work to research institutions in order to dispose of decision basis for marketing policy.

Producers are obliged to provide data on production and import/export in the context of the legal framework related to economic statistics.

- Distributors/Retailers: also information holders about the supply chain and in some MS already obliged to provide data on distributed or sold quantities. Appropriate starting point for comparatively high spatial and thematic resolution of information. Via distribution it can be concluded on use at regional level (spatial resolution) and on use types (e.g. agricultural use or non-agricultural use).

- Research or Statistical institutions: collection and aggregation of data in a professional way e.g. by doing surveys mandatory by industry or authorities. The tasks depend on the contracting parties. Either collection or aggregation of data only performed by research institutions or evaluation of the information to form a decision basis e.g. for marketing or policy measures. Provision of the raw, aggregated or evaluated data to the supply chain institutions or authorities.

- NGOs: the work and the contributions of NGOs depend to a large extent on specific interest they have for the survey and on the reliability of their database.

### *7.1.3 Economic flows and key figures*

The costs currently incurred by authorities related to the collection, evaluation and other processing of plant protection products related data are summarised in the Table 7-3.

The evaluation of the questionnaires with respect to costs for data collection and evaluation shows a quite inhomogeneous picture. The costs per country vary from several thousand € (authority costs) up to 2million €/year (industry costs). It can be concluded that authority costs for data collection usually amount up to several 10.000 € (the amount certainly depends on the degree of detail and the volume of plant protection products used in a certain country). However, it seems that the "true" costs behind the authority costs for the real collection and compilation of data which is now often carried out by industry may be significantly higher. This conclusion is justified on the one hand by the high estimates for industry costs (see e.g. Belgium and France) and on the other hand by costs related to specific voluntary approaches where the whole range of costs from data collection at users level to the final aggregation and evaluation is covered and taken into consideration (see e.g. voluntary data collection in Germany or the United Kingdom).

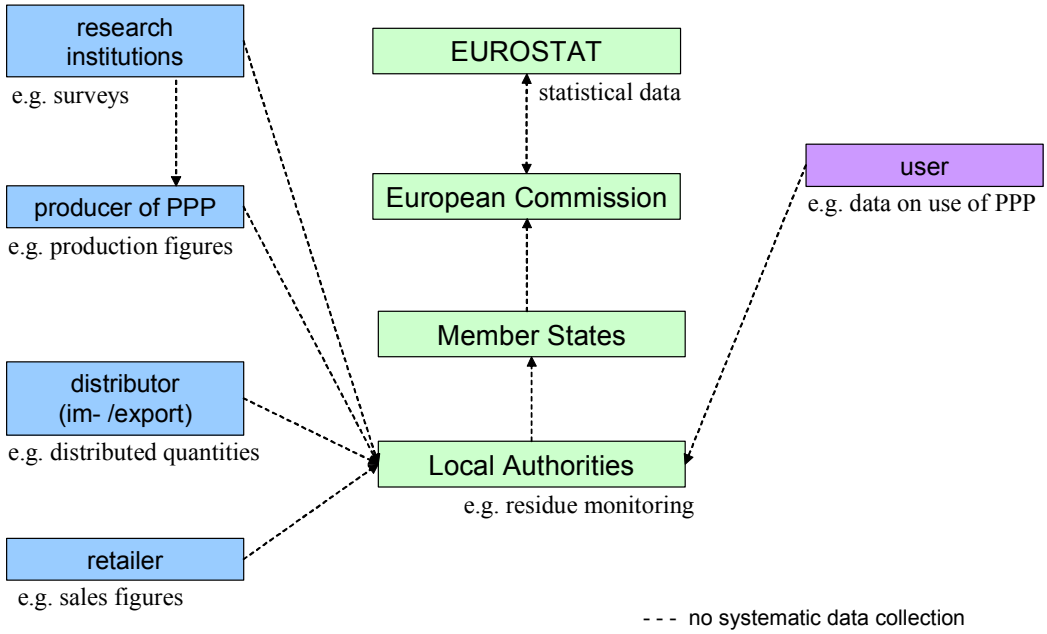
***Table 7-3:*** *Status quo on costs related to the collection, evaluation and use of plant protection products related data*

| Data | Note | costs [€/y] |
|---|---|---|
| UK | England and Wales only | 400.000 |
| AT | | 3.000 |
| BE | The budget for the TAPAS action in Belgium in 2002 was 58.300 €<br>Industry estimates costs significantly higher: "In Belgium, industry pays an independent market research company for data collection on the use of PPP's. They do provide use data, but surely serious costs and a lot of time are involved. However, one should really explore the added value of further data collection / reporting systems first - and its value / contribution towards achieving sustainable use and further risk reduction" | 58.000 € |
| CY | | 20.000 |
| CZ | Details available | 216.000 |
| DE | The personnel costs for the existing monitoring and reporting system for PPP sales is 30,000 € (0.6 man years in Federal Office of Consumer Protection and Food Safety).<br>The voluntary NEPTUN survey (from 2000 to 2003) of PPP use costs EUR 364,000 per year (see case study) | 30.000<br><br>364.000 |
| DK | 4 to 6 man weeks authority work + 10.000 € consulting;<br>costs for extension services and industry not included | 16.000 |
| ES | | 30.000 |
| FR | | 1 to 2 m€ |
| SI | ~ 700 working hours | 21.000 |
| SE | details on collection system available | 25.000 |

### *7.1.4 Information flows and key figures*

The information flow shown in Figure 7-4 gives an overview on the institutions involved in the communication chain and further shows the direction of possible information flows.

***Figure 7-4:*** *systematic data collection on use – information flow*




The central actors in the data collection process are the authorities, as on their level the collected information is aggregated. Aggregation and evaluation is possible at several levels (e.g. at regional, national and Community level). Users provide either general data on use (overall quantities) or specific data e.g. for certain areas or crops. In addition research institutions perform surveys and producers as well as distributors collect information on capacities or quantities and may provide specific data. In any case they are already obliged to provide data on production and import/export.

The information is communicated to the Member States and afterwards provided to the European institutions as a basis for data at EU level e.g. within the corresponding Eurostat database.

Generally the information is related to the plant protection products themselves and in particular to the following details:

- the amount of plant protection products in terms of kg active substance;
- the amount of plant protection product types differentiated according to their function such as e.g. fungicides, herbicides, insecticides or plant growth regulators in terms of kg active substance; the differentiation may go in more detail on the basis of the chemical properties of plant protection products;
- the amount of each specific active substance in kg

The latter point constitutes the crucial link between use and related risks because each active substance has specific physico-chemical, toxicological, and eco-toxicological properties which decide its transport, fate and impacts. As a consequence, this information is indispensable for the assessment of risks related to the use of plant protection products and should therefore be targeted in a data collection system.

The plant protection product related details can be collected and reported according to the following structure:

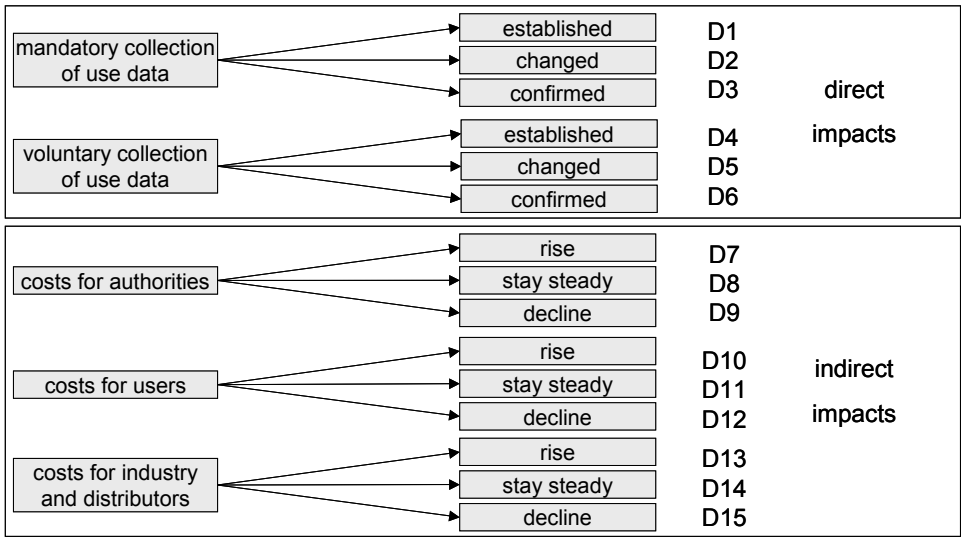
- Production;
- Import/Export;
- Intended use;
- Real use:
  - Application type (e.g. use for agriculture, forestry, public gardens and parks, railroads and streets, etc);
  - Crop type (e.g. use for specific crops).

Real use data including information on active substances are a prerequisite for appropriate risk calculations. Under aspects of risk assessment the real use with all details on application type and crop type contains the optimum information for a risk assessment. However all information on production, import/export and intended use is needed to complement a risk assessment on the use of plant protection products. At present the status of information flows based on collection and reporting of such data and details is extremely inhomogeneous throughout Member States.

## 7.2 Direct impacts and start of the causal chain

### *7.2.1 Start of causal chain*

***Figure 7-5:*** *Systematic data collection on use – causal chain; direct and first indirect impacts*



The impacts of the different options envisaged for the measure concerning systematic data collection are causally related to the decision if mandatory or voluntary systems for the collection of data will be established.

The further impacts of the option are primarily related to economic aspects as the data collection itself will not directly cause e.g. a risk reduction that would lead to desired environmental or health effects. The economic effects can be expressed in terms of costs for data collection, aggregation and reporting for the relevant involved stakeholders, in particular the EU authorities, Member State authorities, users and the supply chain. However an important medium to long term objective is to assess the risks related to the use of plant protection products as a decision basis for measures to reduce these risks is required.

The precise costs for data collection for authorities, producers, retailers and users depend to a high degree on the level of representativity of the sample, the level of detail of collected information (e.g. differentiation to plant protection products-types: fungicides, herbicides, insecticides, etc.), active substances, production and sales according to the intended use, import/export, application types[58], crop types, etc.) and on the frequency of data collection (e.g. annual).

Details on the participation of stakeholders in data collection and reporting and on the level of detail of collected information are not specified in the options. Thus a precise estimation of related costs is difficult. This flexibility has to be taken into account in the scenarios for the impact assessment. To this end three scenarios with different level of participation of stakeholders and different level of detail of collected data have been established for the impact assessment.

The start of the causal chain and the generally expected direct and indirect impacts is outlined in the following tables (Tables 7-4 , 7-5 and 7-6).

[58] e.g. use for agriculture, forestry, public gardens and parks, railroads and streets, etc.

### *7.2.2 Causal chain for option 1: Collection of data mandatory for industry and distributors and voluntary for professional users*

**Table 7-4:** Impacts of option 1 – Collection of data on use mandatory for industry and distributors and voluntary for professional users

| Number of impact | countries with existing data collection schemes | countries without existing data collection schemes |
|---|---|---|
| number of impacts | D2; D3; D5; D6 | D1; D4 |
| direct impacts | existing systems will either be confirmed or adjusted to the new requirements | collection systems will be introduced |
| number of impacts | D7; D8; D11; D12; D13; D14 | D7; D11; D13 |
| indirect impacts | costs for authorities and industry will rise in case of adjustment of the existing system or will stay steady if the system is confirmed | costs for authorities and industry will rise as they have to implement and maintain such a system |

### *7.2.3 Causal chain for option 2: Mandatory collection of data on sales, distribution and use (participation to be defined)*

***Table 7-5:*** *Impacts of option 2 – Mandatory collection of data on sales, distribution and use (participation to be defined)*

| Number of impact | Countries with existing mandatory collection schemes | Countries without existing mandatory collection schemes |
|---|---|---|
| number of impacts | D2; D3 | D1 |
| direct impacts | established mandatory systems will be confirmed or adjusted and in consequence the costs for authorities will stay steady or rise; | required schemes will be established |
| number of impacts | D7; D8; D10; D13; D14 | D7; D10; D13 |
| indirect impacts | costs for authorities, industry and users will stay steady or rise depending on the details of the option | cost for authorities, industry and users will rise |

### *7.2.4 Causal chain for option 3: Recommendation to collect data from distributors and users*

This option contains a maximum degree of flexibility. However it is not expected that Member States will go below their actual system of data collection. For the Member

States as a whole costs might rise due to the establishment of new data collection schemes or the adjustment of existing systems. All impacts depend on specific details of the option.

***Table 7-6:*** *Impacts of option 3 – Recommendation to collect data from distributors and users*

| | |
|---|---|
| impacts | All direct and indirect impacts possible, depending on the details of the recommendation, the status quo and the future implementation of the recommendation in the Member States |

### *7.2.5 Causal chain for option 4: No action*

No direct impacts expected in comparison with the status quo concerning data collection.

## 7.3 Open questions and selection of case studies

### *7.3.1 Open questions*

The following questions are of major importance for possible future action:

What is an appropriate level of detail of data collection that enables the risk assessment of the use of plant protection products (this also includes the question for appropriate risk indicators)?

How can an efficient and complete data collection scheme be organised?

Does it make sense to base data collection on a sample system and if yes, what is an adequate sample?

What are the related costs for the different stakeholders?

### *7.3.2 Selection of German data collection scheme*

Agricultural use is by far the most important use of plant protection products. In Germany a voluntary programme in order to estimate the real use of plant protection products in agriculture was initiated. Detailed information on the survey has been provided by the German Authorities.

The case study is one of only few examples which provides a good basis to estimate the costs for comparable data collection (no matter whether voluntary or mandatory) at European Level.

### *7.3.3 Selection of UK data collection scheme*

A similar voluntary programme which is financed from a levy on the agrochemical industry is run since a long time in the U.K. This example allows in particular to assess the related costs on the basis of a long term established and precisely organised and time-scheduled system. Detailed information on the survey has been provided by the U.K. Authorities [DEFRA 2004].

## 7.4 Case study: German data collection scheme

### *7.4.1 Background*

As in Germany reliable data on the use of plant protection products were lacking, a programme (NEPTUN[59]) in order to estimate the use of plant protection products in agriculture was initiated. The objective was to provide realistic and practical data on the use of plant protection products in order to provide information for scientific and political purposes. Information on the survey has been provided by the German Authorities, in particular by the BBA[60].

In the years 2000 – 2003 the collection of use data was organised as a voluntary and statistical approach. In the beginning main crops have been selected (Cereals, Rape, sugar beets, potatoes, maize and green fodder). Later the programme was extended to fruit trees, hops and strawberries.

Data collection was related to information on the farm (region, areas, crops, etc.) and on the use of plant protection products (e.g. date of use, treated crop, reason for treatment, name of plant protection products, dosage and amount of plant protection products, treated area). The collected data enable the evaluation of various aspect e.g. use patterns by pesticide groups, individual pesticide classes or specific active substances.

Based on a representative sample system of about 950 holdings, the data on use was gathered and aggregated by the Federal Biological Research Centre for Agriculture and Forestry. This was done in cooperation with the German phytosanitary offices[61], which were acting as contact persons to the farmers. The farmers which were taking part in the programme were each paid about 120 € as allowances and incentive for participation.

After three years of experience within this voluntary approach the use data will no longer be collected within the near future. Several conclusions can be drawn as requirements for of a long term working system of use data collection. Such a system:

- should either be based on a mandatory approach or should be related to significant financial incentives;
- farmers' organisations are important stakeholders to persuade farmers to accept the system and to participate;
- data reporting should be strictly organised and time scheduled;

### *7.4.2 Results from case study Germany*

Table 7-7 summarises relevant results in the form of key figures that can be derived from the case study on pesticide usage monitoring. It has to be noted that collected data relate only to real use data but with a very high level of detail.

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59 Netzwerk zur Ermittlung des Pflanzenschutzmitteleinsatzens in unterschidlichen landwirtschaftlich relevanten Naturräumen Deutschlands"

60 Biologische Bundesanstalt

61 Staatliche Pflanzenschutzdienste

The effort of approximately 360.000 € for the survey does not take into account the real cost that have been voluntarily spent by the farmers to provide the information but takes into account that an incentive of 120€ per participating farm has been paid as an incentive.

Due to the statistical approach based on a representative sample of 950 farms (0.2% of all farms) the costs for data collection per individual farm or per hectare crop area are comparatively low with 0.77 €/farm and 21 Cent/ha respectively.

The sample represents 0.2% of all farms in Germany. Compared to the sample approach in the U.K. pesticide use survey, the representativity of the latter survey is higher (0.64% of all farms in the U.K.).

***Table 7-7:*** *Key figures derived from the German case study (based on [NEPTUN 2000], [NEPTUN 2001], [ECPA 2003] and statistical data DG Agriculture)*

| DE pesticide use monitoring "NEPTUN" | | |
|---|---|---|
| collected information | real use | |
| level of detail | high | |
| UAA DE | 17.038.000 | ha |
| total use of pesticides (AS/year) survey results | 34.000.000 | kg |
| total use of pesticides (AS/year), ECPA data | 26.635.000 | kg |
| value of national agrochemical market, ECPA data | 1.133.000.000 | € |
| average costs for 1 kg AS | 43 | € |
| number of holdings | 472.000 | farms |
| average use per holding | 72 | kg |
| average UAA per holding | 36 | ha |
| average use per ha UAA | 1,6 | kg |
| average costs for pesticides per holding | 3.064 | € |
| representative sample farms | 950 | farms |
| representative sample crop area | 34.293 | ha |
| representative sample (share) | 0,2 | % |
| sampling frequency | no regular sampling | |
| Effort for data collection (total)<br>Authorities: annual costs for organisation of survey with experienced surveyors in face to face interviews<br>Farmers: | 364.000<br>250.000<br><br>114.000 | <br>€<br><br>€ |
| Costs per ha crop area | 0,021 | € |
| Costs per holding | 0,77 | € |

## 7.5 Case study voluntary data collection scheme in UK

### *7.5.1 Background*

Throughout the U.K. surveys of all commercially grown crops are undertaken at regular intervals using fully stratified samples of farmers and growers. Data are raised to provide annual regional and national estimates of use of registered plant protection products across all major crops though only certain crops are surveyed in a given year. Information on the survey has been provided by the U.K. Authorities [DEFRA 2004], in particular the "Pesticide Usage Survey, Central Science Laboratory". The pesticide usage survey is a voluntary survey of a representative sample of agricultural, horticultural and other business that may use and apply pesticides.

The system is run and actually funded by the government but the money originates entirely from a levy on the agrochemical industry which pays for three areas of post-registration monitoring of pesticide use, as well as pesticide registration etc. These three areas are first, residue monitoring in UK produce, second, pesticide usage monitoring and third, and wildlife poisoning investigations.

Surveys of all professional uses of plant protection products in agriculture and horticulture are undertaken:

- arable crops are surveyed every 2 years, visiting about 1100 farms each time;
- grassland and fodder crops are covered every four years, visiting about 1400 holdings;
- the other 8 surveys cover horticultural crops and each one is repeated every 4 years: orchard crops (350), outdoor vegetables (450), glasshouse crops (350), hardy nursery stock (350), bulbs and flowers (200), hops (80), mushrooms (80) and soft fruit (300)[62].

The collected information on applications made to land on which a crop is grown over a 12 month period field by field for each product applied contains among other the following details:

- product name;
- crop, crop type and variety, crop stage;
- areas of crop treated (region, farm, field number, area [ha]);
- amount applied per ha;
- number of treatments;
- date of application;
- reason for application;
- method of application;
- tank mixing details (e.g. dosage);
- adjuvants used;
- agronomic factors which may influence the use of PPPs such as crop covers, mulches, biological control agents, etc.

Sampling is based on stratified (farm size, group and region) statistical samples based on regional cropping patterns and holding size. The use of plant protection products in non-agricultural situations (e.g. industrial, amenity, or private use in homes and gardens) is not covered. The survey provides annual regional and national estimates of use of registered plant protection products across all major crops in agriculture and horticulture and enables evaluation of various aspect e.g. use patterns by pesticide groups, individual pesticide classes or specific active substances.

The surveys on PPP use on crops are undertaken at the end of the cropping season by experienced pesticide usage surveyors performing face-to-face interviews ensuring high

[62] The number in brackets is the approximate number of holdings visited each time, and represents between 25-35% of the area of those crops grown

accuracy and quality of the results. The costs are currently 271,000 £ per annum which corresponds to approximately 400,000 €.

The survey is voluntary and farmers have no obligation to collaborate. Each year 1500 to 2000 holdings are contacted and asked to supply details of current pesticide usage by crop or commodity category. Rates of collaboration of 75% in the arable sector and 85% in the horticultural sector are normal. The farmers receive no payment for participating but receive a copy of the published report.

According to the responsible persons for the U.K. plant protection products monitoring survey the important limiting factor to voluntary surveys is the time effort to collect the data and the consequent burden to the farmer. The actual U.K. survey is regarded to be at the tolerance limit of users for voluntary surveys.

### *7.5.2 Results from Case study UK*

Table 7-8 summarises relevant results in the form of key figures that can be derived from the case study on pesticide usage monitoring. It has to be noted that collected data relate only to real use data but with a very high level of detail.

***Table 7-8:*** *Key figures derived from the U.K. case study (based on [Thomas 2001], [ECPA 2003] and statistical data DG Agriculture)*

| U.K. pesticide usage monitoring | | |
|---|---|---|
| collected information | real use | |
| level of detail | high[63] | |
| UAA U.K. | 15.722.000 | ha |
| total use of pesticides (AS/year) survey results | 31.122.665 | kg |
| total use of pesticides (AS/year), ECPA data | 21.114.000 | kg |
| value of national agrochemical market, ECPA data | 575.315.000 | € |
| average costs per kg AS | 27 | € |
| number of holdings | 233.000 | farms |
| average use per holding | 134 | kg |
| average UAA per holding | 67 | ha |
| average use per ha UAA | 2,0 | kg |
| average costs for pesticides per holding | 3.640 | € |
| representative sample farms | 1.500 | farms |
| representative sample crop area | 101.215 | ha |
| representative sample (share) | 0,64 | % |
| sampling frequency | 1 to 4 | years |
| Effort for data collection<br>Authorities: annual costs for organisation of survey with experienced surveyors in face to face interviews | 400.000 | € |

[63] Evaluation possible for pesticide groups, individual pesticide classes or specific active substances

| | | |
|---|---|---|
| Farmers: voluntary contribution: time effort; costs not calculated | 0 | € |
| Costs per ha crop area | 0,03 | € |
| Costs per holding | 1,7 | € |

The effort of approximately 400.000 € for the survey does not take into account the time which has been voluntarily spent by the farmers to provide the information but takes only the costs into account that have to be brought up by authorities.

Due to the statistical approach based on a representative sample of 1.500 farms (0.64% of all farms) the costs for data collection per individual farm or per hectare crop area are comparatively low with 1.7 €/farm and 0.3 €/ha respectively.

## 7.6 Conclusions from case studies

### *7.6.1 Conclusion case study United Kingdom:*

Collection of real use data in a high level of detail and comparatively high level of representativity: Low costs for two reasons:

- statistical approach based on a representative sample;
- voluntary approach without counting the efforts made by farmers.

The voluntary approach will not work in the long term as the tolerance level for voluntary contribution is already reached and is expected to decline in the medium to long term.

### *7.6.2 Conclusion case study Germany:*

Collection of real use data in a high level of detail and a lower level of representativity (compared to U.K. case study): Cost lower (compared to U.K. case study) due to lower degree of representativity and less crops covered. The main reason for comparatively low costs is a statistical approach based on a representative sample.

Even if within the German approach an incentive is paid to participating farmers, the voluntary approach will not work in the long term as participation from farmers can not be assured for the long term. The role of farmers' organisations is estimated to be crucial.

## 7.7 Expected direct and indirect impacts of options

### *7.7.1 Key data for the impact assessment*

An extrapolation of the key figures from the case studies to the European level taking into account a comparable level of detail and the same degree of representativity leads to the following picture for the total cost linked to the organisation of a survey on the use of plant protection products.

***Table 7-9:*** *Extrapolation of the results from the case studies to EU level*

| | Extrapolation from the UK case study to EU level | Extrapolation from the DE case study to EU level |
|---|---|---|
| collected data | real use | real use |
| level of detail of data | Higher | High |
| level of representativity | higher (representing 0.64% of all farms) | high (representing 0.2% of all farms) |
| representative farm sample | 43.590 | 13.628 |
| representative area sample [ha] | 459.966 | 143.804 |
| costs for the survey at EU level | 11.624.034 | 5.221.703 |
| costs per ha UAA [€] | 0,09 | 0,04 |
| costs per holding [€] | 1,7 | 0,77 |

To conclude it can be assumed that a sample based data collection on real use of plant protection products with a comparatively high level of detail of data and representativity would be related to MS authority costs between 5 and 12 million €/year at EU level. For the impact assessment a range from 4 to 12 million €/year is taken as a basis for the expected costs depending on the level of detail of data collection.

It is expected that the reporting to EU authorities and collection of data will not significantly rise the authority costs of a corresponding survey at EU level even if then as well national as well EU authorities will have to deal with the collection and reporting of information and a Member State quality check system would have to be organised. An EU wide coordinated data collection will enables optimised const efficiency due to synergy effects because methods for data collection and quality assurance can be established in a coordinated way between Member States and the Commission and the same details for data collection can be applied in all Member States at the different levels. As a consequence the cost range of 4-12 million €/year is the estimation for authority costs (EU and 25 MS) for the organisation of the survey, data aggregation and reporting and the quality check system.

The costs for the provision of the use data are not taken into account. However, if data collection is strictly organised and appropriate support will be provided (e.g. by experienced surveyors and tools for data collection) the effort per farmer will not be more than 1 working day (or 120 €) per farm to provide the data. The analogue extrapolation from the case studies to EU level leads to estimated costs for farmers ranging from 1.5 to 5 million €/year.

The French industry collects data on the production and distribution of plant protection products in France. Data are not entirely public available but the cost related to the collection of the data are estimated between 1 and 2 million €/year. The use of plant protection products in France amounts to less than 30% of the total use in the EU. Extrapolating the costs from the French example to the whole of Europe leads to total costs for producers and distributors of plant protection products for the collection of data ranging from a minimum of about 4 million €/year up to a maximum of about 7 million €/year. The data collected by industry are often not available or only available to a very restricted extent. Data on production and import/export data have to be collected in the

legal context of economic statistics and are thus already available. In total, relevant additional cost would not be expected for the reporting of the data to Authorities. However if a very high detail of data will have to be provided, additional costs up to 2 million €/year would be estimated.

The accumulation of these costs lead to a total cost range from 9 to 24 million €/year including the cost for authorities, users and the plant protection products supply chain as expected costs for a European data collection and reporting system.

The economic impacts have to be assessed against the present expenditure for data collection.

Taking into account the feedback from the questionnaires it is possible to get a very rough idea about the money that is currently expended for the collection of plant protection products use data by authorities. Table 7-10 shows information on current expenditures of MS authorities for data collection on use on the corresponding usable agricultural area of these countries. The nine countries spend about 1.2 million €/year for the data collection and represent a share of 36% of the EU-UAA. The extrapolation leads to an estimate of about 3.2 million €/year currently expended by authorities for collection of use data for the total UAA of the EU.

The analogue extrapolation based on the number of farm holdings leads to a higher estimation: The nine countries spending about 1.2 million €/year for the data collection represent a share of 15% of total number of EU farm holdings. The extrapolation to EU level leads to an estimate of about 7.5 million €/year currently expended by authorities for collection of use data for the total Usable Agricultural Area of the EU.

As the countries reporting on data collection are expected to be the most active in this field, the further assessments are based on the lower edge of the estimation assuming current expenditures of around 3 million €/year for plant protection products related data collection.

***Table 7-10:*** *Current expenditure of MS authorities for data collection on use and estimate of the corresponding current expenditure at EU level (based on questionnaires and statistical data DG Agriculture)*

| MS | [€] | UAA [ha] | [€] | No of holdings |
|---|---|---|---|---|
| UK | 400.000 | 15.722.000 | 400.000 | 233.000 |
| DE | 394.000 | 16.971.000 | 394.000 | 472.000 |
| AT | 3.000 | 3.387.000 | 3.000 | 200.000 |
| CY | 20.000 | 144.000 | 20.000 | 45.199 [4)] |
| CZ | 216.000 | 3.652.000 | 216.000 | 36.585 [3)] |
| DK | 16.000 | 2.690.000 | 16.000 | 58.000 |
| SI | 21.000 | 506.000 | 21.000 | 86.427 [3)] |
| SE | 25.000 | 3.039.000 | 25.000 | 81.000 |
| BE | 60.000 | 1.390.000 | 60.000 | 62.000 |
| Total | 1.155.000 | 47.501.000 | 1.155.000 | 1.212.211 |
| Total EU | 3.180.657 [1)] | 130.809.000 | 7.527.155 [2)] | 7.900.000 |

(1) Estimation for expenditure at EU level, extrapolation based on UAA

(2) Estimation for expenditure at EU level, extrapolation based on number of farm holdings
(3) The future of rural areas in the CEE new Member States, IAMO – Institut für Agrarentwicklung in Mittel- und Osteuropa, January 2004
(4) http://www.mof.gov.cy/mof/cystat/statistics.nsf

The industry of plant protection products representing producers and distributors is already collecting and evaluating the data on production and distribution (and in certain cases on intended use). As outlined above the related estimated currently expended costs range from about 4 to 7 million €/year.

The accumulation of these costs which do not take into account the costs for farmers leads to an estimate ranging from about 7 to 10 million €/year that are currently expended for the data collection within European Member States.

*7.7.2 Introduction of scenarios*

In order to cover the flexibility within the options, different scenarios have been developed for the assessment of the options. The scenarios differentiate between a low, medium and high level of participation of involved stakeholders and the low, medium and high level of detail of data to be collected and/or reported.

Table 7-11 illustrates the differentiation of three scenarios:

*Scenario A: Low level of participation of involved stakeholders and low level of detail of data*

- Users have to collect and report on real use of plant protection products amounts;
- MS and EU authorities have to collect and report on the collected information (i.e. real use of plant protection products amounts reported by users).

*Scenario B: Medium level of participation of involved stakeholders and medium level of detail of data*

- Users have to report on amounts of real use and application type of plant protection products and types of plant protection products;
- Distributors have to report on intended use of plant protection products and types of plant protection products;
- Member States and EU authorities have to collect and report on the collected information.

*Scenario C: High level of participation of involved stakeholders and high level of detail of data*

- Users have to report on amounts of real use and application type and crop type of plant protection products and types of plant protection products;

- Distributors have to report on intended use, application type and crop type of plant protection products and types of plant protection products and active substances;

- Producers have to report on intended use, application type and crop type of plant protection products and types of plant protection products and active substances;

- Member States and EU authorities have to collect and report on the collected information.

***Table 7-11:*** *Scenarios for the impact assessment of options related tot the measure on systematic data collection*

| | EU authorities | | | MS authorities | | | Producer | | | Distributor, Retailer | | | User | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Level of detail of data | L | M | H | L | M | H | L | M | H | L | M | H | L | M | H |
| Intended use | | | | | | | | | | | | | | | |
| PPP amount [kg AS] | | x | x | | x | x | | | x | | x | x | | | |
| Amount of PPP types [kg AS] | | x | x | | x | x | | | x | | x | x | | | |
| Amount of each AS [kg] | | | x | | | x | | | x | | | x | | | |
| Real use | | | | | | | | | | | | | | | |
| PPP amount [kg AS] | x | x | x | x | x | x | | | | | | | x | x | x |
| Amount of PPP types [kg AS] | | x | x | | x | x | | | | | | | | x | x |
| Amount of each AS [kg] | | | x | | | x | | | | | | | | | |
| Application type | | | | | | | | | | | | | | | |
| PPP amount [kg AS] | | x | x | | x | x | | | x | | | x | | x | x |
| Amount of PPP types [kg AS] | | x | x | | x | x | | | x | | | x | | x | x |
| Amount of each AS [kg] | | | x | | | x | | | x | | | x | | | |
| Crop type | | | | | | | | | | | | | | | |
| PPP amount [kg AS] | | | x | | | x | | | x | | | x | | | x |
| Amount of PPP types [kg AS] | | | x | | | x | | | x | | | x | | | x |
| Amount of each AS [kg] | | | x | | | x | | | x | | | x | | | |

L = low, M = medium, H = high level scenario

The following table compiles the estimated current and expected expenditures and demonstrates the expected possible impacts for the economic impact assessment:

***Table 7-12:*** *estimated current and expected expenditures for the economic impact* assessment of the measure on data collection

| Stakeholder | Scenario level | Expected expenditures [m€] | Status quo expenditures [m€] | Possible impact [m€] |
|---|---|---|---|---|
| Authorities | Low | 4 | 3 | 1 |
| | Medium | 9 | | 6 |
| | High | 12 | | 9 |
| User | Low | 2 | 0 | 2 |
| | Medium | 3 | | 3 |
| | High | 4 | | 4 |
| Supply chain | Low | 4 to 7 | 4 to 7 | 0 |
| | Medium | 4 to 7 | | 0 |
| | High | 6 to 9 | | 2 |

*7.7.3 Impact Assessment Option 1: Collection of data mandatory for industry and distributors and voluntary for professional users*

***Table 7-13:*** *Impact assessment option 1*

| Starting actor: Authorities | |
|---|---|
| impact level 1 (short to mid-term) | implementation of new regulations at EU, Member States and local level;<br>establishment and organisation of a collection and reporting system for data on sales, distribution and use at national and EU authorities<br>economic: increased costs due to establishment and organisation of a collection and reporting system<br>social: creation of jobs<br>Scenario A Scenario B Scenario C<br>economic effort 1 m€ 6 m€ 9 m€<br>jobs 20 120 180 |
| impact level 2 (short to mid-term) | Plant protection products users:<br>Selected users will voluntarily invest working time for the compilation and provision of information on real use.<br>Scenario A Scenario B Scenario C<br>economic effort 0 to 1 m€ 0 to 1 m€ 0 to 1 m€ |
| impact level 2 (short to mid-term) | producers, distributors, retailers of plant protection products:<br>If a high level of detail of the data will be required from industry additional effort for data collection and reporting may be necessary with corresponding socio-economic effects:<br>Scenario A Scenario B Scenario C<br>economic effort 0 m€ 0 m€ 2 m€<br>jobs 0 0 20 |

*7.7.4 Impact Assessment Option 2: Mandatory collection of data on sales, distribution and use (participation to be defined)*

***Table 7-14:*** *Impact assessment option 2*

| Starting actor: Authorities | |
|---|---|
| impact level 1 (short to mid-term) | implementation of new regulations at EU, Member States and local level;<br>establishment and organisation of a collection and reporting system for data on sales, distribution and use at national and EU authorities<br>economic: increased costs due to establishment and organisation of a collection and reporting system<br>social: creation of jobs<br>Scenario A Scenario B Scenario C<br>economic effort 1 m€ 6 m€ 9 m€<br>jobs 20 120 180 |
| impact level 2 (short to mid-term) | Plant protection products users:<br>According to a statistical approach selected users (representative sample) have to invest working time to for the compilation and provision of the required information<br>Scenario A Scenario B Scenario C<br>Economic effort 2 m€ 3 m€ 4 m€ |
| impact level 2 (short to mid-term) | producers, distributors, retailers of plant protection products:<br>If a high level of detail of the data will be required from industry additional effort for data collection and reporting may be necessary with corresponding socio-economic effects:<br>Scenario A Scenario B Scenario C<br>economic effort 0 m€ 0 m€ 2 m€<br>jobs 0 0 20 |

### *7.7.5 Impact Assessment Option 3: Recommendation to collect data from distributors and users*

**Table 7-15:** Impact assessment option 3

| Starting actor: Authorities | |
|---|---|
| impact level 1 (short to mid-term) | implementation of new regulations at EU, Member State and local level possible<br>establishment and organisation of a collection and reporting system for data on sales, distribution and use at national and EU authorities possible<br>economic: where data collection systems will be established in addition to existing ones increased costs due to establishment and organisation of a collection and reporting system<br>social: creation of jobs<br>Scenario A Scenario B Scenario C<br>economic effort 0 to1 m€ 0 to 6 m€ not relevant<br>jobs 0 to 20 0 to 120 not relevant |

| | |
|---|---|
| impact level 2 (short to mid-term) | Plant protection products users:<br>Selected users will voluntarily invest working time for the compilation and provision of information on real use.<br>Scenario A Scenario B Scenario C<br>Economic effort 0 to 1 m€ 0 to 1 m€ not relevant |
| impact level 2 (short to mid-term) | producers, distributors, retailers of plant protection products:<br>It is not expected that industry would invest additional effort on data collection compared to the status quo |

*7.7.6 Impact Assessment Option 4: No action*

No impact expected compared to the present status quo. Considerable effort for not harmonised data collection in many Member States by several stakeholders results in a not satisfying availability of data with information that is often not or difficult to compare.

## 7.8 General expected impacts of the different options

Table 7-16 summarises the evaluation of the impacts as described and explained in the previous chapters.

Economic impacts reflect changes of the current economic situation. They are e.g. related to:

- costs for authorities that are required for the implementation and management of data collection and reporting systems;
- costs for farmers to collect and provide data;
- costs for industry (producer, distributor, retailer) for data collection and reporting.

Social impacts are related to gains or losses of jobs as a consequence of the realisation of an option.

The assessment of environment and health impacts and effects on plant protection is not carried out as data collection and reporting itself will not have direct impacts on these issues. However it will have implications in the long term when better knowledge on the production, distribution and use and the related risks from plant protection products will result in more knowledge based policy measures. These decisions will depend on the quality of information as an outcome of data collection. Therefore the expected quality of data of the different options has been assessed. The relevant criterion is the appropriateness to assess the risks related to plant protection products on the basis of the expected data quality.

The evaluation is done in a qualitative way and differentiates between positive ("+"), neutral ("~") and negative ("–") impact types. If an option may have different impact types depending on how details of the option are established or which scenario is taken into account several impact types (e.g. "~" and "–") are possible at the same time (e.g. "~/–").

***Table 7-16:*** *General expected impacts of the individual options of measure III: Systematic data collection*

| Options / Actors | Option 1: Collection of data mandatory for industry and distributors and voluntary for professional users | Option 2: Mandatory collection of data on sales, distribution and use (participation to be defined) | Option 3: Recommendation to collect data from distributors and users | Option 4: No action |
|---|---|---|---|---|
| **User of PPP** | | | | |
| Economic | ~ | - | ~ | ~ |
| Social | ~ | ~ | ~ | ~ |
| **Authorities** | | | | |
| Economic | - | - | - / ~ | ~ |
| Social | + | + | ~ | ~ |
| **PPP Industry** | | | | |
| Economic | - / ~ | - / ~ | ~ | ~ |
| Social | ~ / + | ~ / + | ~ | ~ |
| **Quality of data** | + | + + | ~ / + | ~ |

"+" = positive impact "~" = neutral impact "–" = negative impact

## 7.9 Sensitivity analyses

The sensitivity analysis is based on the scenarios described before.

Table 7-17 shows the results from the sensitivity analyses. The impacts are calculated on the basis of the key figures described in the previous chapters. Where calculations were not possible symbols have been used ("+", "~" and "–").

***Table 7-17:*** *Results from sensitivity analyses of the measure concerning the systematic data collection*

| Option<br><br>Actor | 1<br>Collection of data mandatory for industry and distributors and voluntary for professional users | 2<br>Mandatory collection of data on sales, distribution and use (participation to be defined) | 3<br>Recommendation to collect data from distributors and users | 4<br>No action |
|---|---|---|---|---|
| **Authorities** | | | | |
| economic effort | 1 to 9 m€ | 1 to 9 m€ | 0 to 6 m€ | ~ |
| new jobs | 20 to 180 | 20 to 180 | 0 to 120 | ~ |
| **PPP-Users** | | | | |
| economic effort | 0 to 1 m€ | 2 to 4 m€ | 0 to 1 m€ | ~ |
| social | ~ | ~ | ~ | ~ |
| **PPP-industry** | | | | |
| economic effort | 0 to 2 m€ | 0 to 2 m€ | ~ | ~ |
| new jobs | 0 to 20 | 0 to 20 | ~ | ~ |
| **Data quality** | + | ++ | +/~ | ~ |

## 7.10 Recommendations

**Option 2: Mandatory collection of data on sales, distribution and use (participation to be defined) → is recommended**

*Justification*

Data collection (e.g. for production, import/export and residues) is already covered by existing legislation to a certain extent and not part of the recommendations. Moreover, when establishing a data collection system, recent legal requirements related to record keeping on the use of plant protection products and biocides under the regulation on the hygiene of foodstuffs[64] has to be taken into consideration.

Moderate economic impacts are expected. The estimations for the overall impact compared to the present situation range from 4 to 15 million €/year. The economic impacts depend to a large degree on the approach to collect data, on the detail of information to be collected, on the coverage of the collected data concerning plant protection products use and finally on the frequency of data collection. These flexibilities are covered within three scenarios in the report (high, medium and low extent of data collection). The high level scenario results in additional costs of about 15 million €/year. Only this implementation level is recommended.

Most relevant net economic impacts are expected at authority level (estimation: up to 9 million €/year) due to increased efforts for the establishment and organisation of collection systems. If a high level of detail of collected information will be required some additional efforts at industry level will be necessary (estimation: up to 2 million €/year).

64 Regulation EC/852/2004 of 29 April 2004 on the hygiene of foodstuffs

The significant difference to option 1 is a comparatively important expected economic impact on users (estimation: about 4 million €/year) as a mandatory collection on use would require their significant contribution.

In order to guarantee the confidentiality of commercially sensitive information it is important that the results will only be made accessible only after appropriate aggregation.

A mandatory collection enables optimum outcomes what concerns comparability of data (optimised comparability) and synergy effects (maximum cost savings) as the same details will be applied in all levels of information collection.

The mandatory involvement of users in data collection will ensure a complete picture on production, distribution and use of plant protection products and will thus enable better knowledge based decisions. Furthermore the mandatory approach allows (depending on the instrument of implementation) a comparatively fast realisation of the data collection which would be desirable for the assessment of policy measures related to the use of plant protection products e.g. in a future revision of the Thematic Strategy on the sustainable use of pesticides.

To conclude, option 2 is recommended against the background that its realisation would have moderate economic impacts and would enable the development of accurate and reliable data on the production, distribution and use of plant protection products in a fast and cost efficient way.

The usefulness of making data collection on plant protection products compatible with the existing Farm Accountancy Data Network (FADN system) and eventually the Community Farm Structure Survey (FSS) should be examined when establishing a PPP data collection system. This would have to be done when establishing a system for data collection in detail and in close cooperation within the Commission services and the Member States. The FADN is an instrument for evaluating the income of agricultural holdings and the impacts of the Common Agricultural Policy. The services responsible for the operation of the FADN collect every year accountancy data from a sample of the agricultural holdings in the European Union. Moreover, agricultural statistical data are collected in the frame of the EU Farm Structure Survey (FSS). Even if it was not considered an option within the measure on data collection, it should be mentioned that the demand for data collection could be combined with a tax on plant protection products use. The sellers of plant protection products could for example have to pay the tax while simultaneously providing sales data. In a second step the plant protection products users could be partially reimbursed for the tax on the plant protection products he has used under the condition of providing requested data on the use of plant protection products. This combination of a tax and data collection seems also attractive with respect to the discussion of reducing administrative costs. The additional costs of data collection could be covered by plant protection products users.

**Option 1: Collection of data mandatory for industry and distributors and voluntary for professional users → is regarded as neutral**

*Justification*

Moderate economic impacts are expected. The estimations for the overall impact compared to the present situation range from 1 to 12 million €/year. The economic impacts depend to a large degree on the approach to collect data, on the detail of information to be collected, on the coverage of the collected data concerning PPP use and finally on the frequency of data collection. These flexibilities are covered within three scenarios in the report (high, medium and low extent of data collection). The high level scenario results in costs about 12 million €/year.

Relevant net economic impacts are mainly expected at authority level due to increased efforts for the establishment and organisation of data collection systems (estimation: 1 to 9 million €/year). Only if a high level of detail of collected information will be required some additional efforts at industry level will be necessary (estimation: up to 2 million €/year) as industry already invests important efforts in data collection. Expected impacts for users are very moderate (estimation: up to 1 million €/year).

The confidentiality of commercially sensitive information should be respected.

Having in mind a good comparability of data and synergy effects for data collection (cost savings possible) much emphasis should be given to the development of guidance by a Member States Steering Committee if this option would be realised.

The realisation of option1 would have relevant but moderate economic impacts. The option would improve the situation related to information about plant protection products use compared to the status quo but, as experiences from Member States demonstrate, voluntary systems (as foreseen in the option for data collection from users) do not work well in the long term. Consequently it is expected that an important piece of information will be missing if option 1 will be put into practise: complete and comparable data on real use of plant protection products.

**Option 3: Recommendation to collect data from distributors and users → is regarded as neutral**

If the Commission would only recommend that Member States collect data on distribution and use from distributors and users on a voluntary basis the estimated overall economic impacts are low and due to the voluntary approach difficult to estimate (0 to 7 million €/year).

Possible economic impacts are only expected at authority level due to increased efforts for the establishment and organisation of data collection systems (estimation: 0 to 6 million €/year). Even for a voluntary system a detailed approach would be required and depending on the details of the option, the authorities would have to establish and organise such a system.

Expected impacts for users are very moderate (estimation: up to 1 million €/year) as the option foresees a voluntary contribution to data collection by users. For the supply chain no additional economic efforts are expected compared to the status quo. In order to increase the voluntary participation of industry the confidentiality of commercially sensitive information has to be respected.

Having in mind a good comparability of data and synergy effects for data collection (cost savings possible) much emphasis should be given to the development of guidance by a Member States Steering Committee if this option would be realised.

The realisation of option 3 would have the lowest economic impact of the discussed options with the exception of the no action option. The option would improve the situation related to information about plant protection products use compared to the status quo but, as experiences from Member States demonstrate, voluntary systems (as foreseen in the option for data collection from users) do not work well in the long term. Consequently it is expected that an important piece of information will be missing if option 1 will be put into practise: complete and comparable data on real use of plant protection products.

**Option 4: No action → is not recommended**

Currently important efforts are already undertaken to collect information on plant protection products use by all stakeholders. In particular industry and authorities are spending significant budget to establish data on plant protection products production, distribution and use. Due to confidentiality reasons only partly information is available for political decision basis.

Furthermore the data collection aims often at particular objectives and is not harmonised. As a result the obtained information is not or difficult to compare.

The actually spent budgets could be used more efficiently if data collection would be harmonised and obtained data would be better accessible (respecting confidentiality of information). The present situation is not satisfying and action should be taken as recommended above.

### 7.11 Summary of the evaluations and recommendations

In the light of the outcome of the impact assessment for the four options examined it is recommended that all Member States establish collection schemes for data on pesticides sales and use involving industry, distributors and users. The details on how the collection schemes are to be organised in an optimal way can be worked out by the Member States.

Important efforts are already undertaken in many Member States to collect information on use of plant protection products by many stakeholders (at annual costs of around 3 million €) but the data are incomplete and difficult to compare, which makes it extremely difficult to determine the risks and externalities linked to pesticides. Without any change, it will not be possible to improve this situation and in particular also to monitor the success of the implementation of the Thematic Strategy through the calculation of appropriate risk indicators and to decide on possible further or adjusted measures.

The economic impacts – mainly on authorities – to set up improved collection schemes in all Member States depend to a large degree on the chosen approach to collect data, the detail of information to be collected, the coverage of the collected data concerning use of plant protection products and the frequency of data collection. Data collection with a high level of detail results in costs of about 15 million €/year in addition to what is spent today. Data on production and import/export are already required from industry in other

legal context for the establishment of economic statistics and should not be collected as a double burden under the Thematic Strategy. However, if a high level of detail of collected information will be required some additional efforts at industry level will be necessary (estimation: up to 2 million €/year additional costs).

A mandatory collection on use would also require a contribution from users beyond what is already required by Regulation 854/2004, which is related to a possible economic impact of around 4 million €/year. So overall, the economic impacts are relatively moderate - the high level scenario results in costs of about 14 million €/year. The costs for Member States and farmers can also be reduced if collection of data is not carried out annually but only in regular intervals (e.g. varying between 1 and 5 years. In the internet consultations there was almost equal support for reporting every year and reporting every 5 years).

On the positive side, mandatory collection enables optimum outcomes with regard to comparability of data and synergy effects because methods for data collection and quality assurance can be established in a co-ordinated manner between Member States and the Commission and the same details can be applied in all Member States at the different levels of information collection. This might reduce the burden on Member State authorities for developing and implementing their own individual systems. On the other hand, Member States should remain free to decide on the optimum way on how to organise data collection, as this will depend strongly on the structure of the agricultural sector (number of farms, diversity in production etc.).

The measure would create a number of jobs (up to 200 in authorities and industry) and the data collected can be used multiple times – in fact, Member States do report today on pesticides sales and use in addition to Eurostat to the OECD and the FAO. The same data can be used and the other international organisations would also benefit from greater reliability of the data reported.

Although collection of data does not create environmental or health benefits per se, the data can be used to validate many of the model and assumptions applied during the risk assessment process in the framework of the authorisation process under Directive 91/414/EEC. This would allow refining the models and adapting them more to reality.

Also, comparison of the use data from farms in similar conditions would allow defining with more confidence good plant protection practices and optimal use of pesticides – including in IPM schemes. Such use data will have to be generated anyway if guidance and best practices are seriously to be developed.

## ANNEX 8: ADMINISTRATIVE COSTS ASSESSMENT

### 8.1 What administrative costs will be generated by this Regulation?

In line with the EU common methodology for assessing administrative costs, the likely total costs of the various information obligations are presented in details in table 8.1. Estimations are based on the case studies presented in annex 7 and on the same data sets used to calculate the overall economic impact in annex 7.

Estimate of the overall total administrative costs linked to a mandatory collection of detailed data on pesticide sales and use from the distribution chain and from the users at Community level is around 25 million €/year.

National authorities are likely to support the most important administrative costs (total cost estimated at 12 million €/year) as a result of increased efforts to establish and organise collection systems. However, when considering the net costs of these measures, it should be noted that some Member States already collect statistics on pesticides on a national legal base (estimated value: 3 m€) and that the data produced in application of this Regulation will be used to fulfil other international reporting obligations (FAO and OECD pesticide statistics). Moreover, important benefits can be expected at national level though their expression in monetary terms is difficult. The net additional burden for national authorities is estimated around 9 million €/year.

For the supply chain, total administrative costs are estimated at 9 million €/year. Considering that this sector is already obliged to provide quite detailed information in the context of trade statistics obligations (current estimated cost: 7 million €/year), the new obligations would represent an additional burden of 2 million €/year for this sector.

As the main professional users of plant protection products, farmers will have to support new administrative burdens estimated at 4 million €/year. It is important to note that farmers are already obliged to keep records on the use of plant protection products in the context of the recent EU legislation on the hygiene of foodstuffs[65]; data collection at farm level should thus be based on this record keeping obligation.

With current expenditure being estimated at 10 million €/year, the resultant overall impact at EU level is estimated at 15 million €/year per year.

These administrative costs should also be balanced with the benefits expected from this new Regulation which should be considered in the light of the overall Thematic Strategy. The general objective for the implementation of the measures of the Thematic Strategy is to achieve environment and health improvements or other societal benefits, such as the reduction of external costs due to the use of plant protection products, by a more sustainable use of pesticides. Measurement of the progress can only be based on reliable data and relevant indicators.

Direct benefits of this Regulation can be expected at national or Community level from a better knowledge of pesticide use, such as improved monitoring schemes and better targeted and more effective policies. Furthermore, the availability of official statistics all

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[65] Regulation (EC) No 852/2004 of the European Parliament and of the Council of 29 April 2004 on the hygiene of foodstuffs, OJ L 139, 30.4.2004, p. 1

over Europe will create a more transparent market that should improve the competitiveness of the pesticide industry.

8.2 Caveats and explanations

The EU common methodology for assessing administrative costs recommends calculating the net costs generated by new regulations. In the context of this Regulation, the current costs linked to existing measures in the different Member States were difficult to estimate with precision since these measures are not always fully comparable with the measures proposed in the Regulation. In addition it is very difficult to quantify and monetise the benefits of the proposed measures in terms of health protection or improvement of the quality of the environment. Finally international reporting obligations to the FAO and OECD are based on a kind of gentlemen's agreement; it is therefore difficult to compare them with a legal obligation at EU level. However, the data collected in the context of this Regulation will undoubtedly be useful to fulfil these reporting obligations. For all these reasons, total administrative costs have been calculated and net cots deduced on base of raw assumptions.

Total administrative costs generated by this Regulation at EU level have been calculated on base of average costs per hour for the different target groups and duration of work identical for all Member State. It is evident that these costs as well as the importance of the different tasks may vary widely from one country to another according to the country size and to the importance of the pesticide sector in each Member State. A more refined cost assessment for each Member State would be difficult at this stage but the results presented in table 8.1 are coherent with the conclusions of the general impact assessment presented in annex 7 and are representative of the situation at EU level.

***Explanations of the different obligations presented in table 8.1***

1. Record keeping on sales by PPP producers: around 15 PPP producers should be concerned in Europe. 100 hours/year per enterprise for keeping and retrieving records on PPP sales looks realistic and consistent with the current experience between Eurostat and the European Crop Protection Association (ECPA) on PPP data collection at EU level. It should be noted that PPP producers also have to keep records to fulfil their obligations in the context of production statistics.
2. Data transmission from PPP producers to national authorities: In addition to data collection, 50 hours/year per enterprise for the preparation of annual report and transmission of data looks realistic.
3. Record keeping on sales by PPP distributors: The organisation of the PPP distribution chain may differ a lot from one country to another. The sector is estimated to 5000 enterprises in the EU. For each of them 18 hours/year for keeping records looks realistic. It should be noted that PPP distributors are usually obliged to keep records on PPP sales according to national rules.
4. Data Transmission from PPP distributors to national authorities: In addition to data collection, 8 hours/year per enterprise for the preparation of annual report and transmission of data looks realistic.
5. Record keeping at the farm: Farmers are already obliged to keep records on pesticide use according to Regulation (EC) No 852/2004 on the hygiene of foodstuffs. The current obligation only concerns the necessity to retrieve these data in the context of pesticide use surveys. According to existing pesticide use surveys in a few MS 40 000 farms should be involved annually in surveys on

PPP use. For each of these farms 4 hours would be necessary to retrieve data in preparation of the interview.

6. Farm interviews: According to existing experiences and considering that only a few crops will have to be covered every year, 1 hour interview per farm is realistic.
7. Processing sales data provided by PPP producers and distributors: 320 hours/year are foreseen in each MS to collate and process data provided by the PPP sector. It should be noted that the data collected in this context can be used as such to fulfil the reporting obligations on pesticides towards the FAO and the OECD.
8. Preparation of data collection on PPP use by national authorities: ideally, national statistical institutes and plant protection services should be involved in the collection of data on PPP use. In each MS, a two-day training for 10 people should be organised annually to coordinate data collection. Same comment as above concerning FAO and OECD reporting obligations.
9. Data collection on PPP use in the farms: the most time consuming action will be the collection of use data in the farms usually by interviews. Considering an average of 1600 farms to survey in each MS with 5 hours for each farm to do the interview and process the data, this task would request 8000 hours/year on average in each MS. The improvement of data quality on pesticide use is also an objective recognised by FAO and OECD.
10. Preparation of sales data for transmission to the Commission: 40 hours/year by country. See previous comment on FAO and OECD reporting obligations.
11. Transmission of sales data to the Commission: 40 hours/year by country. Same comment on FAO-OECD reporting obligations.
12. Preparation of use data for transmission to the Commission: 40 hours/year by country. Same comment on FAO-OECD reporting obligations.
13. Transmission of use data to the Commission: 40 hours every 5 years by country. Same comment on FAO-OECD reporting obligations.
14. Preparation of national report on quality of sales data: 40 hours/year by country
15. Transmission of national report on quality of sales data: 40 hours/year by country
16. Preparation of national report on quality of use data:80 hours every 5 years by country
17. Transmission of national report on quality of use data: 40 hours every 5 years by country

***Table 8-1:*** *Assessment of total administrative costs generated by the proposed Regulation*

| **Proposal for a Regulation of the European Parliament and of the Council concerning statistics on plant protection products. COM(2006)XXXfinal**<br>**FAO and OECD reporting obligations on pesticides sales and use** | | | | | | **Tariff (€ per hour)** | | **Time (hour)** | | **Price (per action or equip)** | **Freq (per year)** | **Nbr of entities** | **Total nbr of actions** | **Total cost** | **Regulatory origin (%)** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Ass. Art. | Orig. Art. | Type of obligation | Description of required action(s) | Target group | i | e | i | e | | | | | | Int | EU | Nat |
| 1 | 3.1 | | Notification of (specific) activities | Producing new data | PPP Producers | 60 | | 100.00 | | 6,000.0 | 1.00 | 15 | 15 | 90,000 | | 100% | |
| 2 | 3.1 | | Notification of (specific) activities | Filling forms and tables | PPP Producers | 60 | | 50.00 | | 3,000.0 | 1.00 | 15 | 15 | 45,000 | | 100% | |
| 3 | 3.1 | | Notification of (specific) activities | Producing new data | PPP Distributors | 60 | | 18.00 | | 1,080.0 | 1.00 | 5,000 | 5,000 | 5,400,000 | | 100% | |
| 4 | 3.1 | | Notification of (specific) activities | Filling forms and tables | PPP Distributors | 60 | | 8.00 | | 480.0 | 1.00 | 5,000 | 5,000 | 2,400,000 | | 100% | |
| 5 | 3.1 | | Notification of (specific) activities | Retrieving relevant information from existing data | Farmers | 25 | | 4.00 | | 100.0 | 1.00 | 40,000 | 40,000 | 4,000,000 | | 100% | |
| 6 | 3.1 | | Notification of (specific) activities | Filling forms and tables | Farmers | 25 | | 1.00 | | 25.0 | 1.00 | 40,000 | 40,000 | 1,000,000 | | 100% | |
| 7 | 3.1 | | Notification of (specific) activities | Retrieving relevant information from existing data | National Authorities | 50 | | 320.00 | | 16,000.0 | 1.00 | 25 | 25 | 400,000 | 50% | 50% | |
| 8 | 3.1 | | Notification of (specific) activities | Training members and employees about the information obligations | National Authorities | 50 | | 160.00 | | 8,000.0 | 1.00 | 25 | 25 | 200,000 | | 100% | |
| 9 | 3.1 | | Notification of (specific) activities | Retrieving relevant information from existing data | National Authorities | 50 | | 8,000.00 | | 400,000.0 | 1.00 | 25 | 25 | 10,000,000 | 25% | 75% | |
| 10 | 3.2 | | Notification of (specific) activities | Filling forms and tables | National Authorities | 50 | | 40.00 | | 2,000.0 | 1.00 | 25 | 25 | 50,000 | 50% | 50% | |
| 11 | 3.2 | | Notification of (specific) activities | Submitting the information (sending it to the designated recipient) | National Authorities | 50 | | 40.00 | | 2,000.0 | 1.00 | 25 | 25 | 50,000 | 50% | 50% | |
| 12 | 3.2 | | Notification of (specific) activities | Filling forms and tables | National Authorities | 50 | | 40.00 | | 2,000.0 | 1.00 | 25 | 25 | 50,000 | 50% | 50% | |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | 3.2 | | Notification of (specific) activities | Submitting the information (sending it to the designated recipient) | National Authorities | 50 | | 40.00 | | 2,000.0 | 0.20 | 25 | 5 | 10,000 | 50% | 50% | |
| 14 | 3.4 | | Notification of (specific) activities | Filing the information | National Authorities | 50 | | 40.00 | | 2,000.0 | 1.00 | 25 | 25 | 50,000 | | 100% | |
| 15 | 3.4 | | Notification of (specific) activities | Submitting the information (sending it to the designated recipient) | National Authorities | 50 | | 40.00 | | 2,000.0 | 1.00 | 25 | 25 | 50,000 | | 100% | |
| 16 | 3.4 | | Notification of (specific) activities | Filing the information | National Authorities | 50 | | 80.00 | | 4,000.0 | 0.20 | 25 | 5 | 20,000 | | 100% | |
| 17 | 3.4 | | Notification of (specific) activities | Submitting the information (sending it to the designated recipient) | National Authorities | 50 | | 40.00 | | 2,000.0 | 0.20 | 25 | 5 | 10,000 | | 100% | |

| | | | | |
|---|---|---|---|---|
| **Total administrative costs (€)** | **23,825,000** | | | |
| *Administrative costs by origin (€)* | | 2780000 | 21045000 | 0.00 |

## ANNEX 9: HOW TO MONITOR AND EVALUATE THE RESULTS AND IMPACTS OF THE MEASURE AFTER IMPLEMENTATION?

### 9.1 How will the measure be implemented?

In parallel to the Thematic Strategy on the Sustainable Use of Pesticides presented in the form of a Communication outlining the overall approach and the purposes and extent of the different actions envisaged as well as the non envisaged actions, the Commission will propose a specific Regulation to cover the statistical aspects of data collection. This approach has been preferred since it gives strong guarantees in terms of data collection efficiency, data comparability, and protection of confidentiality. Moreover, the integration of this requirement in the overall context of Community statistics allows avoiding overlapping with other monitoring obligations or data requirements linked to either environmental or agricultural legislations.

### 9.2 How will the measure be monitored and reviewed?

According to the provisions established by the expert group on pesticides statistics Member states will have to provide the Commission regularly with data on sales and use of plant protection products. Sales data will have to be delivered annually when use data will have to be provides every 5 year. The first reference periods to start collecting data on both sales and use have been chosen as to leave time to the Member States to put the structure needed in place. According to the timetable summarised hereafter, Member States will have to provide the first data on sales at the earlier 3 years after the entry into force of the regulation and after 6 year for use data.

| Main Deliverables | Y0 | Y1 | Y2 | Y3 | Y4 | Y5 | Y6 | Y7 | Y8-10 |
|---|---|---|---|---|---|---|---|---|---|
| **Adoption of the Regulation** | ⏭ | | | | | | | | |
| **PPP sales statistics** | | | | | | | | | |
| Reference periods | | | RP1 | RP2 | RP3 | RP4 | RP5 | RP6 | |
| Data from MS | | | | ⏭ | ⏭ | ⏭ | ⏭ | | |
| Data publication | | | | | ⏭ | ⏭ | ⏭ | ⏭ | |
| **PPP use statistics** | | | | | | | | | |
| Reference periods | | RP1 | | | | | RP2 | | |
| Data from MS | | | | | | | ⏭ | | |
| Data publication | | | | | | | | ⏭ | |
| **Report and publications** | | | | | | | | | |
| Report to EP | | | | | | | | ⏭ | |

This means that the Commission will only be in the possession of a whole set of data 6 year after the entry into force of the Regulation. At the end of the seventh year following the entry into force of the Regulation, the Commission should thus be in position to report the European Parliament on the efficiency and usefulness of this measure.

In order to allow some flexibility in the implementation of the Regulation, some practical aspects of its implementation will be entrusted to the Statistical Programme Committee (SPC) acting by comitology. The SPC will be assisted in this task by the pesticide expert group established by Eurostat.

In the future, Member States will also have to report data on pesticides sales and use and – once they are available - the calculated indicators expressing risks for human health and the environment. Common and harmonised indicators are important in order to measure trends in risk reduction within and among the Member States. At the moment there are no harmonised risk indicators available and agreed yet. This work is currently carried further in a project

financed under the 6th Framework Programme on Research and Development: HAIR (HArmonised environmental Indicators for pesticide Risk)[66]. It will be finalised in spring 2007.

Once this work is finalised, a common set of risk indicators should be agreed by the Commission and the Member States and be made binding for all Member States for regular reporting. Until that time, Member States can continue to use their current indicators (even if only volume based).

Further information on the occurrence of pesticides and their residues in environmental media would be needed in order to monitor whether in practice the application of pesticides does not lead to unacceptable values in the environment as calculated in the risk assessments under Directive 91/414/EEC. This goes in particular for concentrations in water (both surface and groundwater) and soil. Monitoring of pesticides in these media could be achieved in the context of activities ongoing under the Water Framework Directive and in the national implementation of the future Thematic Strategy on Soil.

[66] All information available at : http://www.rivm.nl/stoffen-risico/NL/hair.htm