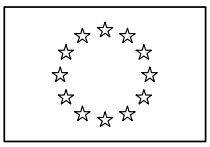

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Accompanying the

COMMUNICATION FROM THE COMMISSION TO THE COUNCIL, THE EUROPEAN PARLIAMENT, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

A Thematic Strategy on the Sustainable Use of Pesticides

TECHNICAL ANNEX

{COM(2006) 372 final}

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1. DEFINITIONS

Pesticides are active substances and products designed to influence fundamental processes in living organisms and, therefore, may have the potential to kill or control harmful organisms such as pests. There is no unique definition of the term pesticides in Community legislation. The Food and Agriculture Organisation (FAO) defines pesticides as:

"Any substance or mixture of substances intended for preventing, destroying or controlling any pest, including vectors of human or animal disease, unwanted species of plants or animals causing harm during or otherwise interfering with the production, processing, storage, transport or marketing of food, agricultural commodities, wood and wood products or animals feedstuffs, or substances which may be administered to animals for the control of insects, arachnids or other pests in or on their bodies. The term includes substances intended for use as a plant growth regulator, defoliant, desiccant or agent for thinning fruit or preventing the premature fall of fruit, and substances applied to crops either before or after harvest to protect the commodity from deterioration during storage and transport".

In the Community legislation, pesticides have been divided into two major groups: plant protection products and biocidal products. The most important pieces of legislation are:

Directive 91/414/EEC[1] concerning Plant Protection Products (PPP), which 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.. PPPs are used in a wide spectrum of applications, such as agriculture, landscape gardening and along transport routes. PPP are also used in forestry and domestic gardening.

Directive 98/8/EC[2] concerning biocidal products, which are active substances and preparations containing one or more active substances that are used to destroy, deter, render harmless, prevent the action of, or otherwise exert a controlling effect of unwanted or harmful organisms (pests) utilised in non-agricultural sectors, e.g. for purposes such as wood preservation or disinfection, household uses, etc. Borderlines between PPP and biocides have been clarified and documented[3].

Directive 2001/82/EC[4] concerning veterinary medicinal products, which covers pesticides administered to animals for the control of insects, arachnids or other pests in or on their bodies.

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

2 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).

3 Guidance document agreed between the Commission services and the competent authorities of the Member States for the biocidal products Directive 98/8/EC and for the plant protection products Directive 91/414/EEC (available at: http://www.europa.eu.int/comm/food/fs/ph_ps/pro/wrkdoc/wrkdoc17_en.html)

4 Directive 2001/82/EC of the European Parliament and of the Council of 6 November 2001 on the Community code relating to veterinary medicinal products (OJ L 311, 28.11.2001, p. 1).

2. MEASURES CONSTITUTING THE THEMATIC STRATEGY

The Communication from the Commission on the Thematic Strategy on the Sustainable Use of Pesticides[5] provides for the general framework, the necessary background information and the content of the Strategy.

Thematic Strategies are new tools, 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. Only when integration into other instruments or policies is not possible, new legislation – in particular a Framework Directive on the Sustainable Use of Pesticides – or other appropriate instruments are proposed.

In accordance with this concept, this Technical Annex will describe in more detail, following the outline given in the Communication, the measures that will be part of the Thematic Strategy – either proposed as part of a new instrument or integrated into existing instruments – and those measures that were evaluated, but are eventually not proposed as part of the Thematic Strategy.

As for the new instruments, the Communication is accompanied by a proposal for a Directive of the European Parliament and the Council (hereinafter referred to as the draft Directive) setting out a framework of legal requirements to achieve a sustainable use of pesticides. In parallel, the Commission proposes a draft Regulation of the European Parliament and the Council with regard to the collection of statistical information on sales and use of plant protection products. Obviously, measures that are best integrated into existing instruments have to respect the timetables and procedures for adoption foreseen in these instruments.

2.1. New measures that cannot be integrated into existing instruments

2.1.1. Establishment of National Plans to reduce hazards, risks and dependence on chemical control for plant protection (National Action Plans - NAPs)

The setting up and implementation of national action plans in the Member States will be a cornerstone of the Thematic Strategy. Experience in several Member States has shown that such national action plans have been highly successful to achieve a more sustainable use of pesticides.

In the draft Directive, Member States will be obliged to set up NAPs that will set individual objectives to reduce hazards, risks and dependence on chemical control for plant protection, and group together all objectives to be achieved under Community legislation related to pesticides (including the Framework Directive). In setting up their NAPs, Member States have to pay attention to good co-ordination and integration avoiding overlaps with the river basin management plans under the Water Framework Directive, the management plans under the Habitats Directive, and national/regional rural development plans. Member States will have two years to establish their plans and start implementing the required measures.

2.1.2. Involvement of stakeholders

In the spirit of what is foreseen in Directive 2003/35/EC providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment[6],

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5 COM(2006) 372.

6 OJ L 156, 25.6.2003, p. 17

involving all stakeholders is essential for the success of the Thematic Strategy. Therefore, when setting up, implementing, and revising their NAPs, Member States should ensure appropriate participation of all relevant stakeholders. Member States should ensure sufficient co-operation with other relevant stakeholder groups such as those established under the Water Framework Directive for the river basin management plans, those established under the Habitats Directive for the Natura 2000 management plans, and those for the elaboration of rural development plans.

The draft Directive contains provisions that Member States shall ensure that the core provisions on participation foreseen in Directive 2003/35/EC are also applied in the development of the NAPs. The detailed arrangements for public participation and the level at which this will be organised should be determined by the Member States so as to give the public early and effective opportunities to participate in the process.

2.1.3. Creation of a system of awareness raising and training of all professional users and distributors of pesticides

In order to ensure that those who use pesticides (in particular professional users) are fully aware of the risks linked to this use, Member States will have to set up systems of training and official recognition of training attendance (*via* certificates) for professional users and distributors. The programme of the training shall include *inter alia* notions on legislation, risks from pesticide use, safe practices for storing, handling and disposing of pesticides and their packaging, notions on Integrated Pest Management and low-pesticide input cultivation techniques, maintenance of application equipment. Moreover, the general public should be better informed through awareness raising campaigns, information passed on through retailers/distributors, and other appropriate measures.

In the draft Directive, Member States are obliged to ensure that all professional distributors and users of pesticides have access to appropriate training. Distributors selling pesticides classified as toxic or very toxic shall have at least one person in their employment who has attended a whole training session and who has to be present and available at the place of sales to provide information to customers regarding pesticide use. Distributors selling pesticides to non-professional users will have to provide general information regarding the risks on pesticide use. The organisational aspects (like the training institutions/organisms involved, certification of training bodies, financing aspects, licensing bodies, training frequency, etc.) remain at the discretion of the Member States.

Regulation (EC) No 1698/2005[7] already offers some possibilities for providing financial incentives for the training of farmers and agricultural workers (in particular in Article 20).

Member States will report on the measures they have set up and the Commission, in co-operation with the Thematic Strategy Expert Group (see Chapter 2.1.11), will develop guidelines for training and education of farmers, professional users and distributors, taking into account the diversity of situations in the various regions of the Community, which would address:

– a minimal list of elements to be included in the training courses, like legislation, toxicology, ecotoxicology, low-pesticide pest-control systems, non-chemical alternatives,

[7] Council Regulation (EC) No 1698/2005 of 17 20 September 2005 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD) (OJ L 277, 21.10.2005, p. 1).

comparative assessment, environmental management, pest forecasting, good practice integrating IPM concepts, compliance with measures adopted in the context of the Water Framework Directive 2000/60/EC, etc.;

- the minimal compulsory training frequency - possibly as a function of the category of users;
- special training and licensing requirements for users entitled to apply more hazardous pesticides;
- guidelines for mandatory training and certification / licensing of distributors / retailers;
- duration of validity and required qualification for certificates/licences delivered to the distributors and professional users;
- legal obligations that those certificates / licences shall imply for the stakeholders concerned: for instance, any intentional misuse or misinformation would lead automatically to the withdrawal of certificates/licences;
- obligation for distributors / retailers of informing non-professional users and alternative information campaigns for the non-professional users.

2.1.4. Compulsory inspection of application equipment

Well designed and maintained application equipment is key to reduce adverse impacts of pesticides on human health (in particular the operators) and the environment, and to guarantee the most efficient and economic use by ensuring compliance of the actual quantities applied with the authorised dosages. Following the examples already set in some Member States, the draft Directive requires Member States to set up regular control and maintenance verifications of application equipment in use. This would thus also apply to equipment already in use in those Member States where an equivalent measure was not implemented before. The legal obligations should establish:

- the objectives of the control (regular and reproducible spraying pattern, identification of unsuitable apparatus, etc.) and the conditions of validity of the certificate delivered by the control body;
- the listing of essential requirements which have to be fulfilled, for instance by adhering to existing or newly developed CEN standards for the control methodologies.

Essential environmental protection requirements for the placing on the market of new pesticide application equipment should be ensured as well. A legislative proposal to this end should be adopted at the latest by 2008, possibly within the framework of Directive 2006/42/EC on Machinery. For new equipment or parts thereof, e.g. nozzles, specific standards should be developed in support of those requirements. This would allow requiring use of such material as a risk mitigation method in certain vulnerable situations (e.g. particular nozzle-types which decrease spray-drift for the protection of surface water).

The organisational aspects (like public or private inspection systems, quality control of inspection bodies involved, financing, fees to be paid by owners, etc.) will remain at the discretion of the Member States, who will have to report to the Commission. Through co-operation between the Member States and stakeholders in the Thematic Strategy Expert Group, guidance and best practices should be developed. Possibilities to support farmers

under Regulation (EC) No 1698/2005 in order to upgrade or replace their spraying equipment could be examined, where necessary.

2.1.5. Prohibition of aerial spraying

Aerial spraying of pesticides has the potential of causing significant adverse impacts on human health and the environment, in particular from spray drift. Therefore, it should only be used by way of derogation where it represents clear advantages and also environmental benefits compared to other spraying methods, or where there are no viable alternatives.

The draft Directive therefore requires Member States to ban aerial spraying, allowing derogation for crops and areas where aerial spraying can have advantages or environmental / health benefits (e.g. treatment of larger surfaces in shorter time which allows quicker response to pest forecasting and weather conditions, less refilling / washing and tank residues, reduced operator exposure, etc.) or where there are no viable alternatives (e.g. on specific crops such as rice, forests, etc.). Member States will have to report on these derogations, which will be discussed in the Thematic Strategy Expert Group in order to define guidelines and criteria.

Among the conditions for derogation, the following seem indispensable:

- pilots have to be well trained and certified / licensed for pesticide spraying;
- the equipment used has to be specifically designed, certified, and maintained;
- modern technologies (model calculations, specific nozzles, reduced boom width, etc.) need to be fully exploited to further reduce risks;
- detailed log-books about substances used and use conditions have to be maintained.

2.1.6. Enhanced protection of the aquatic environment

Specific measures to protect surface and groundwater are required to reduce the risks from pesticides to the aquatic environment. A number of pesticides are identified as priority hazardous substances or hazardous substances in the Water Framework Directive (2000/60/EC) and therefore specific measures will be taken with regard to them. Overall, coherence between the Water Framework Directive (WFD) and the Directives 91/414/EEC and 98/8/EC needs to be strengthened in order to better enforce risk mitigation measures concerning the aquatic environment decided within the product authorisation by adequate provisions in the WFD.

The draft Directive will require Member States to establish pollution reduction programmes addressing pesticides in the framework of the River Basin Management Plans, which must include, among others, measures such as mandatory buffer strips or the use of particular technical equipment reducing spray drift. Strongly reduced or zero use of pesticides shall be ensured by Member States in the specific safeguard zones according to Article 7(3) of Directive 2000/60/EC (Water Framework Directive). Member States will also have to ensure that application of pesticides is reduced as far as possible on or along infrastructure close to water bodies (like railway lines or roads), on sealed surfaces with high risk of run-off into surface water or sewage systems, or on very permeable surfaces.

Some of the measures in the pollution reduction programmes can also be combined with measures foreseen in Chapter 2.1.4 of this Technical Annex, such as the mandatory use of special nozzles or other equipment to reduce diffuse emissions from spray-drift, or in Chapter 2.1.8, such as biobeds to address point source pollution. Close co-ordination with the development and content of the river basin management will be important to avoid gaps or contradiction.

Also, for each substance being evaluated under Directive 91/414/EEC, specific risk reduction measures relevant for the protection of the aquatic environment could be spelled out in more detail and, where appropriate, become a part of the river basin management plans.

It will be important to examine what kind of assistance can be given to farmers in order to implement these risk mitigation measures, e.g. support introduced by Regulation (EC) No 1698/2005, which could be used to support investments into specific equipment, or support under the set-aside provisions of Regulation (EC) No 1782/2003 for measures such as untreated buffer strips and planting hedges.

In addition, the Commission will propose shortly a Directive of the European Parliament and the Council setting environmental quality standards in the field of water policy, which do also include mandatory standards for certain pesticides. These standards will have to be observed and the measures spelt out above will be important elements in the strategies to comply with them.

2.1.7. Defining areas of strongly reduced or zero pesticide use

Member States should in coherence with measures taken under other legislation – and when considered appropriate to achieve the objectives defined in that legislation - designate areas with strongly reduced or zero use of pesticides. This could be the case for the special areas of protection designated in accordance with Directive 92/46/EEC (Habitats Directive) and Directive 79/409/EEC (Birds Directive) constituting the Natura 2000 network. Such areas should also be designated as a function of the specific protection needed by vulnerable groups such as children (e.g. playgrounds, except where non-chemical alternatives are not available and where the risks associated with the specific pest are important, e.g. allergenic plants) or the need to preserve biodiversity.

In the draft Directive, Member States are obliged to designate zones of strongly reduced or zero pesticide use and have to inform the Commission about the extent of such zones as well as the reasons for the designation, in particular also the relevance for other legislation. Member States should pay particular attention to the activities of regional / local authorities in this context and their practices of using pesticides in areas where public exposure might be high (such as public parks, playgrounds etc.). The Commission and the Member States in the Thematic Strategy Expert Group will examine which zones have been designated by the Member States to develop guidance, criteria for selecting areas, and best practices.

2.1.8. Storage and handling of pesticides and their packaging and remnants

Empty packaging have to be collected in accordance with the rules for waste, in order to avoid that they are stored carelessly and eventually pollute the environment. Obsolete pesticides have to be treated in accordance with the rules for hazardous waste. Collected packaging (which after triple rinsing is considered as non-hazardous in most Member States) should be treated for possible re-use and ultimately destructed under controlled conditions. The

elimination of remainders in spraying equipment after application and cleaning of such equipment must be carried out in an environmentally sound way.

In the draft Directive, Member States are obliged to take measures to ensure safe storage and handling of pesticides, and their empty packaging and remnants, in order to address point source emissions, in particular from mixing, loading, and washing. In this context, attention should also be given to use of pesticides by amateurs (e.g. in home gardening), where appropriate rules need to be adopted to minimise related risks, e.g. sale to amateurs only in 'ready-to-use' formulations, which would avoid mixing, loading and washing by untrained users, and in packaging that is designed to minimise remains in the container.

Member States would have full discretion to develop all necessary details as they see fit. Some of the new Member States will have to pay special attention to the issue of obsolete pesticides when developing their national plans for hazardous waste management within Directive 91/689/EEC on hazardous waste. Exchange of information between the Member States on their national initiatives, and on the progress achieved will be organised through reporting and discussions in the Thematic Strategy Expert Group involving also stakeholders that are particularly active in this area.

The Commission may, after having examined the feasibility of existing pilot projects for the cleaning of spraying equipment and treatment of unused tank mixtures (e.g. biobeds), and in the light of the information reported by Member States propose, at a later stage, further measures addressing the handling of pesticides prior to and post use.

2.1.9. Promotion of low pesticide-input farming, creation of conditions for implementation of Integrated Pest Management (IPM) and development of standards for IPM

Because of their potential side-effects, pesticides should only be used as necessary and in an efficient manner, when no alternative is available to control and limit the damage caused by pests. Therefore, low-pesticide input farming systems such as IPM, organic farming or other schemes with the objective to reduce pesticide application should be further promoted.

Low pesticide-input farming will be promoted through implementation by Member States of several measures and initiatives available under the Common Agriculture Policy:

- Specific support to farmers within the framework of the rural development policy (e.g. agri-environmental payments);

- Requirements of cross-compliance, minimum requirements on fertiliser and plant protection product use and other national mandatory requirements as baseline for the agri-environmental measures in the new Rural Development Regulation (Regulation (EC) No 1698/2005);

Actions to promote organic farming in Europe identified in the Action Plan for Organic Food and Farming, adopted by the Commission in 2004[8].

Specific conditions need to be fulfilled before IPM can become mandatory as of 2014. Farmers would need to be trained for this practice and they would have to be offered the support of pest warning and forecast systems, as well as that of a farm advisory system.

[8] COM(2004) 405.

Without technical support, many farmers would have difficulties in applying IPM because this is a very knowledge-intensive practice. Therefore, Member States will be required to put in place all the conditions necessary for a higher uptake of IPM by farmers. In particular, Member States shall ensure that farmers have access to systems and tools for pest monitoring and decision making (e.g. pest warning and forecast systems), as well as specific training and advisory services on IPM.

Community-wide standards for IPM shall be developed and become mandatory as of 2014. IPM standards should include in particular the obligation to first explore all non-chemical solutions to particular pest problems. Development of such standards will take some time and until they are developed, Member States can continue using existing national or international standards/guidelines[9] for that purpose.

Besides, Community-wide specific IPM standards will be developed for particular crops, regions, or climatic zones that would go beyond the requirements of the general standards, but their implementation should remain voluntary and could bring support under agri-environment schemes. This measure complements the development of harmonised general IPM standards under the Regulation revising Directive 91/414/EEC that will be mandatory and under cross-compliance as from 2014.

2.1.10. Measuring progress in risk reduction through appropriate indicators

Common and harmonised indicators are important in order to measure trends in risk reduction within and among the Member States[10]. At the moment there are yet no harmonised risk indicators available. Several Member States have decided to use certain national indicators, such as the frequency of application indicator in Denmark - however these are not necessarily truly risk based, but rather express spraying intensity.

Work on the development of harmonised risk indicators has been carried out for the environmental compartments water and soil in the framework of the OECD[11]. This work is currently carried further in a project financed under the 6th Framework Programme for Research and Development: HAIR (HArmonised environmental Indicators for pesticide Risk)[12]. Eight Member States (plus Norway and Switzerland) are involved in the project which started in April 2004 and 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).

In addition, environmental monitoring and systematic collection of other relevant information should continue and – where relevant – be modified when the harmonised risk indicators are

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9 It should be noted that efforts to establish international standards have already started within organisations such as the European and Mediterranean Plant Protection Organisation (EPPO) and the International Organisation for Biological and Integrated Control (IOBC).

10 A prerequisite for good indicators is the collection of reliable use data, which is addressed in more detail in chapter 2.1.10.

11 Report on indicators for the aquatic environment available at: http://www.oecd.org/document/34/0,2340,en_2649_201185_2752226_1_1_1_1,00.html

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

available. Examples are data that are already relevant for sustainability indicators in agriculture such as:

- percentage of farmland under IPM or organic farming,
- residues in food and feed.

The results from the IRENA project (Indicator Reporting on the Integration of Environmental Concerns into Agriculture Policy) are also relevant in this context as the basis for further agri-environment indicator work.

Further information on the occurrence of pesticides and their residues in environmental media would be of interest in order to monitor whether the real application of pesticides does not lead to unacceptable values in the environment as calculated in the risk assessments under the Directives 91/414/EEC and 98/8/EC. This goes in particular for concentrations in water (both surface and groundwater) and soil. Monitoring of pesticides in these media can best be achieved by integrating the necessary activities in those ongoing under the Water Framework Directive and, where relevant, other policies or legislation.

However, the analysis at river basin scale will be able to be enhanced through the use of the methods developed by Community project AQUATERRA[13], which seeks to assess in particular the fate and behaviour of pesticides in soils and water, as well as the associated risk. Also, tools for pesticide risk assessment and management at different scales – local to regional – are being developed in Community project FOOTPRINT[14]. The results of such projects can contribute in the design of indicators to measure progress in risk reduction.

2.1.11. Establishment of a system of information exchange at Community level

In order to maintain a coherent Community-wide approach, a consultative forum the so called '*Thematic Strategy Expert Group*' will be set up to develop guidance on best practices and monitor the implementation of the Thematic Strategy, among others through:

- exchange of information and experience as reported by the Member States when implementing the Thematic Strategy (lessons learned in the past in some Member States will also be fully taken into account);
- harmonisation of necessary technical guidelines;
- establishment of a set of indicators, on the basis of which progress can be measured and quantitative objectives of risk reduction can be established;
- mutual information on ongoing developments and progress achieved;
- exchange of data and reports on a regular basis about incidents having consequences for health of professionals, private users, and the environment.

The Expert Group should comprise representatives from the Member State authorities and other relevant stakeholders (such as farmers, industry, environmental and consumer organisations). Representative of third countries may be invited to participate in the work of the Expert Group. Meetings of the Group will be organised and chaired by the Commission.

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[13] Information available at: http://www.attempto-projects.de/aquaterra/

[14] Information available at: http://www.eu-footprint.org/home.html

2.1.12. Improved systems for the collection of information on distribution and use and reporting of this information

In the light of the absence of reliable data on distribution and use of pesticides at the level of active substances, in particular also in view of the necessary calculation of risk indicators, it is necessary to set up greatly enhanced data collection schemes on the production, import/export, distribution and use of pesticides.

In a separate proposal for a Regulation concerning statistics on plant protection products, Member States will be obliged to collect data on the placing on the market and use of PPP *via* the distribution chain and from the professional users (in particular farmers). Rules are laid down for Member States authorities in order to:

- collect these data regularly (annually for the placing on the market – with five-year intervals for use). Given the complexity of the tasks involved, collection of use data is phased in over several years with the objective to cover a large part of the crops of interest for PPP use.

- define how to collect them, either by representative surveys or systematic collection. Member States will have a wide choice of instruments to collect data on the placing of PPP on the market and on their use on different crops. Record-keeping systems concerning PPP do already exist in several Member States and are also imposed by certain privately organised integrated food production chains. In addition, the recently adopted Regulation (EC) No 852/2004 concerning the hygiene of foodstuffs[15] requires all professional producers of food to maintain detailed records about the use of each pesticide since 1 January 2006. In addition to the quantities of each PPP active substance applied per crop, Member States will have to report on the crop area treated with each active substance. The possibility of providing financial support for farmers accepting to participate in representative surveys could be envisaged by the Member States under rural development measures in the framework of Regulation (EC) No 1698/2005.

- define harmonised reporting formats and quality requirements for the data to be transmitted to the Commission by way of comitology with the experts on pesticide statistics from the Member States.

- centralise those data on the placing on the market and use of PPP from the Member States, which would best be handled by the Statistical Office of the Commission. The Commission will publish regular aggregated reports. The information collected will also help establish Good Plant Protection Practices and specific IPM standards related to particular crops, which could be done either at EU level, for the major crops, or at least at the level of several Member States in comparable climatic zones. Availability of these data might also help define strategies for the identification of the most appropriate solution for a given pest problem.

- calculate the risk indicators at national level as a basis for describing trends in risks from PPP use (see Chapter 2.1.9).

The Commission will use statistical data to calculate risk indicators at Community level, to assess the trends in risks from PPP use at EU level.

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

2.2. Measures that can best be integrated in existing instruments

2.2.1. Improved systems for monitoring compliance with the legal requirements concerning pesticides

Current systems set up in the Member States to monitor compliance with all requirements regarding the safe use of pesticides (except monitoring residues in food and feed) are clearly insufficient[16] and need to be greatly reinforced. This holds in particular with regard to distribution and use of pesticides in accordance with Directive 91/414/EEC.

The current Article 17 in Directive 91/414/EEC is not sufficient and will be substantially amended during the revision of the Directive in order to define in more detail the obligations of the Member States with regard to monitoring activities:

– similar to the existing Community monitoring programme for residues of plant protection products in food and feed and other relevant Regulations in agriculture;

– and in full co-operation with the Commission's Food and Veterinary Office which has gained considerable experience in that domain and the competencies of which should be reinforced for auditing national inspection services.

The revised provisions will determine the most appropriate level of implementation, the intensity, frequency and technical details of the control and monitoring schemes. The scope and detail of specific annual compliance programmes to be set up will be defined in close co-operation between the Commission and the Member States.

Setting up efficient schemes for monitoring compliance has become particularly important since January 2006, when, in accordance with Regulation (EC) No 1782/2003[17], reinforced cross-compliance rules for direct payments have included the national statutory requirements established in application of Article 3 of Directive 91/414/EEC (i.e. the obligation to use PPPs properly). In accordance with Article 24 of Regulation (EC) No 1782/2003, Member States have to reduce direct payments to farmers who do not respect all legal requirements.

2.2.2. Comparative assessment and substitution principle

Substitution of the more dangerous pesticides by others, presenting lower risks, or non-chemical alternatives will be important to achieve an overall reduction of risks linked to pesticides use. Comparison of the risks presented by different pesticides can take place at different levels: inclusion of the active substance into Annex I of Directive 91/414/EEC (Community level), authorisation of products at Member State level, and choices made by the users from different products available to them for the same application (farm level).

Based on the results of the various consultations, the Commission will propose in the modification of Directive 91/414/EEC to insert comparative assessment in an equivalent manner, as already included in the existing Article 10(5) of Directive 98/8/EC on the placing of biocides on the market. It will have to be applied, where relevant, practically feasible and

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[16] Relevant reports on the inspections of the Commission's Food & Veterinary office are available at: http://europa.eu.int/comm/food/fs/inspections/index_en.html

[17] Council Regulation (EC) No 1782/2003 of 29 September establishing common rules for direct support schemes under the common agricultural policy (OJ L 270, 21.10.2003, p. 1).

economically viable, at various stages of the authorisation process: Community evaluation of the substances, and national authorisations. Due account has to be taken of resistance management and the results of the current review process under Directive 91/414/EEC for existing active substances, and also of all potential alternatives (biological agronomic practices, GM-technology, etc.) on a case-by-case (crop-by-crop) basis.

Guidance, technical or otherwise, should be developed on how to compare risks and on how to balance the economic, social and agronomic aspects. Guidance would address Member States acting as Rapporteur in the Community evaluation, and when granting national authorisations.

Directive 91/414/EEC will not be suitable to address substitution at farm level. Comparative assessments and choices among different products will have to be made by the pesticide users, and it will therefore be important that this is addressed properly in the mandatory training referred to in Chapter 2.1.3, in particular also in the context of integrated pest management (IPM). Furthermore regular and improved advice by extension services will be crucial as well, to support users to make the best choices in a given situation. Guidance and best practices for comparative assessment and substitution at the farm level should be developed and regularly reviewed by the Member States and the Commission in the Thematic Strategy Expert Group.

2.2.3. Residue monitoring and epidemiological exposure studies

Annual monitoring programmes on residues of pesticides in food and feed are already in place and being carried out[18]. The new Regulation on Maximum Residue Levels (MRL)[19] foresees that such monitoring will be reinforced by increasing the intensity of sampling programmes and by focusing more appropriately on 'crop / substance combinations at risk', i.e. those being suspected to be misused or illegally used. The collection of information on other incidents involving exposure to pesticides also needs to be improved.

According to Article 29 of the Regulation, the Commission will, in close co-operation with the Member States define every year scope and targets of an enlarged Community residue monitoring programme. It would be desirable that the Food and Veterinary (FVO) office should increase its frequency of inspections in the Member States, and any observations on weaknesses would have to be taken into account by Member States. Best practices and recommendations for setting up national monitoring services and activities would have to be developed. Systematic trends in the results of the monitoring, e.g. persistent occurrence of residues of particular substances will be used as feedback for the authorisation process in Directive 91/414/EEC (e.g. for re-defining Good Agricultural Practice, additional restrictions of use etc.).

Within the Strategy on Environment and Health (SCALE), the Commission and the Member States will, in the future, define the necessary monitoring and research activities for cases where there is an obvious need for more information, like exposure to multiple residues ('cocktail effect') and/or from multiple sources (combined exposure from dietary intake,

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[18] Reports are available at: http://europa.eu.int/comm/food/fs/inspections/fnaoi/reports/annual_eu/index_en.html

[19] Regulation (EC) No 396/2005 of the European Parliament and the Council of 23 February 2005 on maximum residue level of pesticides in or on food and feed of plant and animal origin (OJ L 70, 16.3.2005, p. 1).

water, and via environmental media), impacts on amateur users and particularly sensitive groups of the population (children and elderly).

The Commission also proposes in the Regulation revising Directive 91/414/EEC that Member States have to report in regular intervals on poisoning incidents involving plant protection products, similar to what is already foreseen in Directive 98/8/EC for biocidal products, covering operators, but also residents, bystanders and consumers. To that effect, they might for example provide statistics on the numbers of enquiries made at the 'poison centres' established in accordance with Directive 1999/45/EC concerning dangerous preparations involving pesticides.

2.2.4. Environmental monitoring

Residues of pesticides and their metabolites cannot only remain in food and feed, but can also be found in soil and water. Although fate and behaviour of active substances and other components of PPP are thoroughly investigated during the authorisation process and unacceptable results lead to non-authorisation decisions or the establishment of specific risk mitigation measures, the models and calculations used during the risk assessment might not always predict accurately the real behaviour of substances and their residues under particular conditions. Also, it is unclear whether all risk mitigation measures, such as buffer zones along surface waters, are fully respected. In addition, for certain substances, intrinsic properties such as persistence or potential for long-range transport cannot be fully clarified during the risk assessment process.

It would, therefore, be very important to measure concentrations of pesticides and their residues in soil and water (surface waters and groundwater) in order to verify whether the models and forecasting techniques are correct and whether all risk mitigation measures and use of pesticides according to Good Agricultural Practice do actually lead to acceptable concentrations in the environment.

However, such measurements are technically difficult and expensive and have to be concentrated on a limited number of substances. As the methodologies employed can also be used for other chemicals, environmental monitoring for pesticides should be integrated into the monitoring activities in the framework of the Water Framework Directive[20]. Other environmental monitoring activities, e.g. from the European Environmental Agency, should also be examined for their suitability to include pesticides. In the Thematic Strategy Expert Group, the Commission, the Member States and other stakeholders, e.g. drinking water companies, should define the priority substances on which efforts should be concentrated.

2.2.5. Research on pesticides

The Commission has already established within the 6th Community Framework Programme for Research a thematic priority with the objective to improve the health and well-being of European citizens through higher quality food and improved control of food production and related environmental factors. This approach re-addresses the classical "farm-to-fork" approach by giving priority to consumers' demands and rights for high quality and safe food. The research areas within this thematic priority address key aspects of food quality, safety and consumer concerns along the food chain. The approach starts with consumer health and well-

[20] All relevant information available at: http://europa.eu.int/comm/environment/water/index.html

being, quality, safety and consumer concerns, identifying the major issues, and then proceeds along the production chain, outlining issues associated with primary production, animal feeds, processing, distribution, consumption and environmental health risks related to the chain.

The specific research topics for the instruments of integrated projects and networks of excellence embrace – within a food chain context – human nutrition and quality of food on the plate, through animal and crop production, whilst also addressing related processing factors and increasingly important environmental hazards associated with food. One area deals with safer and environment-friendly production methods and technologies and healthier food. Among other issues, one topic foreseen for 2006 concerns pesticides, the purpose of which is a durable restructuring of European research and development work on the use of chemicals (insecticides, nematicides, acaricides, herbicides and fungicides) in integrated and organic crop production. A network of excellence should be set up and include industries (including farmers), advisors and research scientists, so that the research and technology is brought immediately into application in integrated pest management. Special emphasis will be placed on including the expertise and knowledge available in the new Member States, and on the inclusion of projects already under way[21].

Further research activities on the potential effects of pesticides on human health, in particular effects of exposure to multiple substances – the so called cocktail effect – and epidemiological research involving workers and/or the general population can also be financed within other areas of the thematic priority such as Environmental Health Risks. Within the framework of the project AQUATERRA[22], aiming to provide the scientific basis for an improved river basin management through a better understanding of the river-sediment-soil-groundwater system, the fate and behaviour of pesticides at river basin scale are assessed by the sub-project MONITOR.

A scientific support to policy project named FOOTPRINT[23] started in 2006. It mainly aims at creating tools for pesticide risk assessment and management to be used by three different user types (farmers and extension advisers at farm scale; water managers at the scale of catchment area; policy makers/registration authorities at national and EU scale).

In addition, there are possibilities under the Scientific Support to Policies Initiative to explore effects of pesticides on biodiversity and how these can be reduced[24].

As the 6th Framework Programme ends in 2006, similar possibilities will be maintained in the 7th Framework Programme.

2.2.6. Application of normal VAT rate to pesticides

Some Member States continue to apply reduced VAT for pesticide sales, which is in line with Directive 77/388/EEC, where on the basis of in Annex H, point 11, Member States have the possibility to apply reduced VAT rates on '*the supply of goods and services of a kind normally intended for use in agricultural production but excluding capital goods such as machinery or buildings*'. Pesticides are among the very many goods that are covered by this

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21 All relevant information available at: http://europa.eu.int/comm/research/fp6/index_en.html

22 See footnote 11.

23 See footnote 12.

24 More information is available at: http://www.europa.eu.int/comm/research/fp6/policy-support/index_en.html

provision. In its proposal to amend the Directive, the Commission did not suggest to modify the categories in Annex H of the directive. This Directive was last modified on 14 February 2006, and the Council did not modify any of the categories in Annex H.

Nevertheless, differences in VAT rates between the Member States can lead to enhanced price differentials for products containing the same active substances in the Member States, which can contribute to illegal cross-border trade of products that are not authorised in the Member State where they are used, or are labelled in a language that the users might not understand, even if they are authorised.

The Commission therefore invites those Member States who still apply reduced VAT rates to re-examine their position in order to contribute better to the achievement of the objectives of the Thematic Strategy. They should instead apply the standard Community VAT-rate of minimum 15% set in Article 12(3)(a) of the Sixth VAT Directive, in order to reduce price differentials. Obviously such a change in policy regarding pesticides does not need to affect any other goods or services covered by point 11 in Annex H to Directive 77/388/EEC.

2.2.8. International dimension

In the ***international arena***, the Community and the Member States should contribute to the safe use of pesticides in third countries outside the EU (in particular developing countries and NIS) by better monitoring and assessing the exports or donation of chemicals, training and stewardship for the safe use, handling and storage of pesticides, and the management of stockpiles of obsolete pesticides, by supporting capacity building and information exchange. Health and environmental risks deriving from pesticide use are higher in developing than in industrialised countries, because of the continued use of old fashioned and more toxic products, the far less advanced infrastructures and capacity for evaluating, authorising and controlling the use and disposal of pesticides, and the unavailability of protective equipment. Hence developing countries would need cooperation and technical assistance in pesticide management.

The Community and the Member States have ratified and implement the Rotterdam Convention on Prior Informed Consent (PIC)[25], and the Stockholm Convention on Persistent Organic Pollutants (POPs)[26] – which includes a fully-fledged mechanism for technical and financial assistance addressing also certain pesticides. Besides, they provide financial and technical assistance (capacity building) in numerous bilateral and multilateral programmes which contribute to the safe handling and disposal of pesticides (including obsolete stocks of pesticides), such as the Cotonou Agreement with African, Caribbean and Pacific States[27].

Examples are (i) the initiative to enable developing countries to substitute pesticides no longer authorised in the EU and respect MRLs on agricultural produce exported to the EU[28]; (ii) the support to the African Stockpile Programme, which has the objective to clean up and safely dispose of all obsolete pesticide stocks from Africa and establish preventive measures to avoid future accumulation[29]; (iii) the support to NGO's (such as the Pesticides Action

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25 Information available at: http://www.pic.int
26 Information available at: http://www.pops.int
27 Information available at: http://europa.eu.int/comm/development/body/cotonou/index_en.htm
28 Information available at: http://www.coleacp.org/FO_Internet/en/cadre/
29 Information available at: http://www.africastockpiles.org/

Network - PAN) working with farmers in Africa to support sustainable agriculture solutions[30], and in NIS for projects that could also address pesticides within the Environment Programme for Europe[31]; and (iv) the European Neighbourhood Policy that the EU is pursuing with its neighbouring partner countries[32].

In addition, the Community and the Member States should increase their commitments under particular programmes, such as research on DDT alternatives to combat malaria in the framework of the Community initiative on communicable diseases. The Commission and the Member States will continue to take part in work under the Codex Alimentarius to ensure that Codex MRLs provide for adequate protection of human health.

2.3. Measures/actions that are currently not proposed to be part of the Thematic Strategy, but could be examined again at a later stage

After having been discussed extensively during the consultation, the following measures/actions, will not be proposed as part of the Thematic Strategy.

2.3.1. Definition of quantitative use reduction targets

Whilst it is to be expected that implementation of the measures foreseen in Chapters 2.1 and 2.2 will lead to a more rational and hence reduced use of pesticides, the Thematic Strategy will not propose to set mandatory quantitative use reduction targets (either in terms of volume or frequency of application).

The debate on this matter has been extremely controversial throughout the stakeholder consultation. The Commission considers that there is no direct link between the overall reduction of the quantities of pesticides used and the risks involved. No evidence has been provided demonstrating such a direct link. Quite on the contrary, there are indications for the opposite: inorganic sulphur is used in large quantities as a fungicide in the EU (41% of all pesticides, more than 100 000 tonnes in 1999). It is used at high doses (up to 6 kg/ha) and has to be applied frequently. On the other hand it does not present high toxicological or ecotoxicological risks. Setting quantitative volume reduction targets could induce farmers to replace sulphur with specifically developed fungicides that are applied at rates in the order of 0,2 kg/ha. This would lead to a drastic reduction of quantities, whereas the associated risks might actually increase (due to inherent properties of the substances).

So far, no Member State has ever adopted mandatory use reduction targets - if at all existing, they were framed as 'political objectives'. Adopting such mandatory targets at Community level is further complicated by the fact that for most Member States there is no adequate information about the baseline consumption which could be used as reference, and there are a number of legal questions about liability (e.g. would the targets have to be implemented on national, regional, or farm level? Who would be liable in case of non respect of the targets? How to ensure compliance and enforcement, penalties?).

However, after implementation of the proposed Strategy, it might be possible to develop such use reduction targets at a later stage, on the basis of the much better knowledge about pesticide use that will be acquired through the implementation of the Thematic Strategy.

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30 Information available at: http://www.pan-uk.org/Internat/globinit/glindex.htm

31 Information available at: http://www.unece.org/env/europe/welcome.html

32 Information available at: http://europa.eu.int/comm/world/enp/policy_en.htm

Reduction targets would have to be established taking into consideration the national use pattern (substances and crops), and also the available results of pilot studies trying to optimise the dose rate applied in several crops (established for instance by extension services), and the efforts already carried out in the past.

Alternatively, once the harmonised risk indicators mentioned in Chapter 2.1.9 are available, it might be more adequate to define targets in terms of risk reduction instead of use reduction.

2.3.2. Setting-up of a system of taxes/levies

Although it would be fully in line with the 'Polluter-Pays-Principle', the Commission continues to believe that for scientific and administrative reasons it will be virtually impossible to devise an efficient and manageable system of taxes/levies that would reflect the true externalities of individual pesticides.

The externalities of individual pesticides are extremely difficult to assess, because they depend on a number of different factors, among which are:

– the inherent properties (hazards) of the active substance: toxicological and ecotoxicological properties, and indirect effects such as impacts on biodiversity;

– the biological activity, which determines the dose at which they are to be used;

– the presence of other hazardous substances, such as adjuvants in the final products, with their own toxicological and ecotoxicological properties;

– the precise conditions under which they are used: soil characteristics, climate, distance from surface water, depth of groundwater table, etc.;

– the subjective behaviour of the farmer, when applying the pesticide: uses other than prescribed on the label (e.g. wrong doses, non-respect of buffer zones), improper cleaning of equipment, spillage can have significant adverse effects on health and the environment;

– possible positive externalities in the area of climate change, as use of herbicides can reduce the need for mechanical soil treatment, which reduces energy consumption and also erosion.

It is not uncommon that the same product can have different externalities depending on where it is used: a substance could have very limited adverse effects in the aquatic environment but be very dangerous to soil organisms or birds, whereas an alternative substance for the same purpose could have the opposite profile. Depending on the location of the plot where the farmer wants to use the pesticide, the externalities are different.

As already explained in the earlier Communication[33] and further expanded in the impact assessment accompanying the Strategy and this Technical Annex, experience to date with the tax / levy systems set up in some Member States has been somewhat disappointing. It was, in general, not possible to relate directly the observed changes in pesticide use behaviour to the tax / levy. Also, it would be difficult to ensure that the perceived money would actually be used for purposes of the Thematic Strategy and not become part of the general budget of the

[33] COM(2002) 349.

Member States, which was always mentioned by farmers and industry as an important element of acceptability.

A non-discriminatory tax system with fixed volume-based rates, which some Member States have set up in the past, is not really desirable, as it only gives incentives to reduce overall quantity of active substances (in tonnes), which could be achieved by increased use of low-dose products, that could actually lead to increased overall risks (see also chapter 2.3.1). In addition, if transferred to Community level, there would be significant distributional effects among the Member States, as the agricultural production in Mediterranean Member States (in particular vine, fruits, vegetables) is more pesticide intensive than arable crops dominating in other Member States.

Therefore, the best that can be achieved is a system that stays manageable in terms of administration and gives incentives to users to make choices that result in a true risk reduction.

A meaningful tax system, if set-up, should follow a model that would set different tax rates depending on certain inherent properties of the substances contained in pesticides, which would have to be assigned to different classes. At this point in time, it seems impossible to devise such a system for the Community for the following reasons:

- the review of active substances in the framework of Directive 91/414/EEC is far from being completed. Evaluations have been finalised for only about 70 out of 450 existing active substances and 50 out of 100 new substances. Scheduled date for finalisation of the review is 2008, and before that date it would not be possible to make statements on risks for all substances;

- current evaluation is limited to inclusion (or non-inclusion) into Annex I of the Directive amounting to a pass/fail judgement with no further categorisation into different classes of risks, and hence no comparison of inherent properties;

- adjuvants are not evaluated at Community level although they can contribute significantly to the overall risk presented by a formulated PPP.

Furthermore, in the absence of better quantification of the externalities, it would be rather impossible to set differentiated taxes that do not entail the risk of creating new inefficiencies.

This situation will change in the future. The Commission will propose in the Regulation revising Directive 91/414/EEC that the current Annex I should be split into three Annexes: one for so called low-risk substances (similar to what is already foreseen in Directive 98/8/EC on biocides), one for 'normal' active substances, and one for substances with remaining concerns (despite overall acceptability). This would form a good basis for a future 'banded' Community system of differential tax rates, in particular once all substances are reviewed and assigned to one of the three Annexes. The revised Directive will also include a Community evaluation for adjuvants.

Until that time, Member States could explore to conceive such 'banded' systems (but they should refrain from setting up non-discriminatory flat rate systems), adapted to their specific situations and to the protection objectives they pursue, as well as with appropriate supporting / compensation measures to assure that revenues are at least partly directed to further other objectives of the Thematic Strategy.

A proposal for a possible Community scheme that would give incentives for risk reduction (and not just volume reduction) could then be developed in the forthcoming years, in particular on the basis of the revised Directive 91/414/EEC with risk-specific Annexes for active substances and adjuvants, and on the basis of the acquired experience in the Member States, which would allow to set more appropriate tax levels reflecting better the true externalities and with better information about elasticity.

3. GLOSSARY

CAP	Common Agricultural Policy
GAP	Good Agricultural Practice
EAP	Environment Action Programme
HAIR	Harmonised Pesticides Risk Indicator
IPM	Integrated Pest Management
MRL	Maximum Residue Limit
NAP	National Action Plan
OECD	Organisation for Economic Co-operation and Development
PPP	Plant Protection Product
SCALE	European Environment and Health Strategy