

***Framework Service Contract for the Procurement
of Studies and other Supporting Services on
Commission Impact Assessments and Evaluations***

***Interim, final and ex-post evaluations of policies,
programmes and other activities***

***Evaluation of Regulation
(EC) 2003/2003 relating to
Fertilisers***

Final Report

November 2010



Centre for

**Strategy & Evaluation
Services**

P O Box 159
Sevenoaks
Kent TN14 5WT
United Kingdom
www.cses.co.uk

Contents

Table of contents

<u>SECTION</u>	<u>PAGE</u>
Executive summary	
1. Introduction	1
1.1 Resume of assignment aims	1
1.2 Overall approach	2
1.3 Structure of the report	3
2 Background and methodology	5
2.1 Background	5
2.2 Intervention logic	9
2.3 Key evaluation issues	10
2.4 Research tools – Fieldwork and data collection	12
3 Evaluation findings	15
3.1 Description of fertilisers market	15
3.2 Analysis of Fertilisers Regulation against key evaluation questions	18
3.3 Mutual recognition	33
3.4 Assessment of existing support for changes	36
4 Conclusions and recommendations	38
Appendixes	
A Interview programme	42
B Country Fiches	44
C List of documents and data sources	55

Executive summary

This summary contains the main conclusions and the recommendations of the study ‘Evaluation of Regulation (EC) 2003/2003 on Fertilisers’. The study was conducted by the Centre for Strategy & Evaluation Services (CSES) LLP during the period June 2010 – November 2010.

A. Introduction

The European Commission Directorate General Enterprise and Industry asked CSES to conduct an evaluation of Regulation (EC) No 2003/2003 of the European Parliament and of the Council of 13 October 2003 (the Fertilisers Regulation). The Fertilisers Regulation aims to ensure the free circulation on the internal market of “EC fertilisers” i.e. those fertilisers that meet the requirements of this legislation for their nutrient content, their safety, and their absence of adverse effect on the environment. The Regulation in its current form applies only to inorganic mineral fertilisers. The Fertilisers Regulation does not affect other categories of fertilisers, i.e. “national fertilisers”, placed on the market of the Member States in accordance with national legislation. These include organic and organo-mineral fertilisers, liming material but also non-fertiliser products such as growing media and organic soil improvers. “National fertilisers” are covered by Regulation (EC) No 764/2008 on mutual recognition which ensures the intra-Community free movement of goods in the non-harmonised area. It obliges a Member State to accept products lawfully marketed in another Member State unless the Member State of destination can demonstrate that the product poses a risk for human health or the environment.

The objectives of the evaluation were twofold. The first one was to compile, assess and present information on the Fertilisers Regulation in terms of its impacts and enforcement by the Member States, identify difficulties and define the potential for improvement. Secondly, the evaluation aimed to assess the extent to which the lack of full harmonisation and the implementation of the mutual recognition principle represent an issue for fertiliser economic operators or national public administrations and to identify the main trade barriers that limit the free movement of national fertilisers. The results of the evaluation will contribute to any revision of the Fertilisers Regulation and to the identification and remedy of any obstacles on the internal market.

In order to carry out this assignment, CSES developed a methodological framework on the basis of the standard evaluation questions of the relevance, efficiency, effectiveness, utility, sustainability and added value of the legislation. In order to identify the answers to the evaluation questions CSES used a combination of research tools including a review of relevant documents and publications, collection and analysis of existing data sources and 46 interviews with the main stakeholders related to the Fertilisers Regulation (Member States’ authorities, industry associations and companies in the fertiliser industry) in ten EU Member States.

B. The EU mineral fertiliser sector

In 2007, the total value of the mineral fertilisers production in EU27 was close to €17 billion up from €13.6 billion in 2004. 1,058 enterprises were operating in the mineral fertilisers sector in 2007 in the EU27 with a total of 56,000 employees. Agricultural use represents the main market for mineral fertilisers. Total consumption in agriculture in the EU27 in 2008 was 17.9 million tons of nutrients. The use of fertilisers in EU-15 Member States has decreased significantly during the last decade (14% during the period 1997-2008) although in most EU-12 Member States total consumption increased.

Executive summary

The European fertilisers' industry is characterized by the presence of three rather distinct types of fertiliser producers. There is a very small number (5-7) of large multinational companies that focus on transforming the basic elements into a rather small range of straight or compound mineral fertilisers that are used for major food crops. A second group of around 100-200 of medium sized enterprises focuses on the production of complex liquid fertilisers and other specialty fertiliser types. Many of them focus only on national markets although a significant proportion exports inside and outside the EU. Finally, there is a larger number (more than 800) of small-size blenders of fertilisers that cover almost predominantly their local market or national markets.

C. Main findings of the evaluation of the Fertilisers Regulation

Relevance of the Regulation

In relation to its main aim of promoting the development of a harmonised internal market, the Fertilisers Regulation is considered as providing an important step in this direction. **It has addressed the most important problems evident in the pre-2003 period, the presence of a complicated regulatory environment with various differences in the provisions of national regulations.** It provided the necessary clarity and certainty for the industry and has **been an important step towards the harmonisation of legislation across the European market.** However, the relevance of the Regulation is questioned in that **it does not encompass the whole fertiliser market.** It has left an important and growing part of the market uncovered. As a result, for most stakeholders **the Fertilisers Regulation represents only “the first step in the right direction”.**

Impact on the development of the Internal market

The Regulation has **effectively contributed to the simplification and clarification of the applicable regulation and removed the various procedures required on the basis of national regulations, thus effectively eliminating the existing trade barriers.** For the categories of fertiliser currently covered by the Regulation, this **facilitates the smooth operation of the Internal Market with limited problems reported.** It has also **simplified the requirements for imports of mineral fertilisers from outside the EU** as reported by the importers association and in certain cases it has supported the export of EC-labelled mineral fertilisers to third countries that accept them without additional tests or requirements.

However the positive role of the Fertilisers Regulation concerning the operation of the internal market for mineral fertilisers **cannot be linked with any measurable changes in the level of competition and trade in the sector inside the EU.** The mineral fertilisers industry had already consolidated in the late 1980s with a few large manufacturers dominating the market. Secondly, the Regulation replaced earlier legislation also designed to promote the internal market, so any effect may be judged to have happened before 2003. Thirdly, the levels of trade in the fertiliser market are primarily determined by changes in the demand and production of agricultural crops and, to a lesser extent, by energy costs.

Concerning the share of EC designated mineral fertilisers, the information collected indicates that this represents a total of 60-70% of the EU27 market. The data from the 10 countries studied, however, indicate a very mixed picture at a national level. While in Denmark and Sweden EC designated fertilisers represent no more than 5% of the market, in Germany, Spain, Ireland and Italy EC designated fertilisers represent 80% to 100% of the total volume of mineral fertilisers sold

Executive summary

annually. In between, in the Czech Republic EC fertilisers represent around 25% of the market, in Romania close to 35% and in France around 50%. **The important shares of “national” mineral fertilisers should not be expected to reduce over the near future.** There is still strong demand in some national markets for products with lower nutrient content than those defined in the Regulation that in certain cases may be more appropriate. In addition, in certain countries the use of the national regulation reflects the preference and familiarity of consumers with the national label even if, in practice, the traded fertilisers fulfil the requirements of the Regulation.

Ensuring the safety of the public and the absence of adverse effects on the environment.

From the industry point of view, **the Regulation provides an adequate level of protection with the necessary level of flexibility.** However, **the majority of Member State authorities are rather critical of the absence of provisions related to the presence of heavy metals in mineral fertilisers.** For some, the Fertilisers Regulation has essentially weakened the level of protection of the environment and public safety when compared to national regulations. In relation to heavy metals, the Fertilisers Working Group has reached a consensus on the appropriate limits for such contaminants in primary, secondary and micro-nutrient fertilisers. These are expected to be included in a future revision of the Regulation.

Concerning the limits on nitrogen content of ammonium nitrate fertiliser, these appear to be appropriate and do not cause any significant concern for stakeholders.

Role of the Fertilisers Regulation in the development of innovation

The role of the Regulation in relation to innovation appears to be its weakest point, in that its implementation operates as an obstacle to the introduction of new mineral fertiliser formulations and products. The key problematic area is, according to almost all stakeholders, the lengthy **procedures required for the registration of a new type of product in Annex I of the Regulation.** The typical period required until the final entry of a new product in Annex I is 4-5 years while, in cases concerning new categories of additives, it extends to a total of 7 years. Due to the long procedures, **some firms have decided not to move into the introduction of a new product or, more often, to focus only on national markets.**

The main reasons for this long approval period are the relatively slow procedure for the development of European Norm for the determination of the candidate fertiliser type and the lengthy discussions **in the working group meetings where the review and decisions on the relevant technical files are taken.** Furthermore, any approved new product cannot be placed in the market before an amended version of the Regulation including the type in Annex I is published. Finally, a number of stakeholders indicated that the information required for the technical files remains unclear – despite the presence of a guidance document developed by the Commission. This leads to confusion and additional delays.

It is important to note however that in general the **fertilisers industry is a rather mature industry and that, in comparison to the chemical industry, innovation is limited,** concentrated mainly on the development of additives that modify the nutrient release pattern.

Executive summary

Implementation of the Regulation

The findings of the evaluation indicate that there are no **significant efficiency problems related to the implementation of the Fertilisers' Regulation**. The **additional administrative costs for enforcing the Regulation have been very limited and that the human and financial resources used have not changed dramatically**. From the industry side, the Regulation has been linked with **limited cost savings** concerning the use of common labelling for trading across the EU27. It has also brought some savings on other administrative costs arising from compliance with national regulations.

Market surveillance by authorities has been adapted to the resources and the budgets available and market surveillance plans are now based on the examination of a sample of EC fertilisers with a greater focus on specific types and those considered the most risky. The interviews suggested, however, that **market surveillance does take place in a consistent and appropriate form**. Incorrect labelling or non-conformity with the requirements for the levels of nutrient content are the most common reasons of non compliance.

The **main issues concerning the implementation of the Regulation are the procedures at the EU level**. The human resources dedicated to the administration of the Regulation are seen to be rather limited and this is also linked with the **long procedures in the working groups for the approval of new types of products in Annex I of the Regulation**. The role of CEN and the issuing of standards for sampling and analytical methods appear to be effective in general although the procedures for updating the standards remain rather long. Overall, there is scope for improvement of certain procedures at the EU level but this depends on the availability of the necessary financial resources.

D. Mutual recognition and extension of the Fertilisers Regulation

Based on information from the ten Member States studied, there has been so far **very limited use of the mutual recognition regulation by companies in the mineral fertilisers sector** with no more than 5-10 products per year sold on this basis. The only country among those studied, where mutual recognition has been more widely used is the Czech Republic with more than 20 cases of products in 2010. However, data on products placed on the market for which mutual recognition has been used are limited and Member States become aware of their presence either as a result of the surveillance of the market or through enquiries from companies. As a result, any points and arguments made are based primarily on expectations and fears rather than hard evidence.

Among those firms considering the use of mutual recognition for mineral fertilisers **the main reason for doing so is that it provides a faster alternative for new types of fertiliser that are not covered by the Fertilisers Regulation**. While all firms indicate that they would prefer to trade their products under the EC label, the very long procedure for introduction of a type in Annex I is considered as an important problem to which mutual recognition can provide an alternative. **In general though, firms are sceptical or clearly against the use of mutual recognition**. The mutual recognition Regulation has come rather as a surprise and it has created confusion in the market in a way that could work against harmonisation. It is also stated that there is a clear danger that firms could use Member States with the most relaxed regulation as an entry point to the EU market driving the quality of fertilisers towards the lowest common denominator.

The position of most Member States' authorities is even more negative. They are mainly worried that the mutual recognition Regulation does not ensure protection of the environment and public

Executive summary

safety. The control of fertilisers' compliance with the regulations of other Member States and the validity of their certification are seen to be particularly difficult and burdensome for authorities that are already pressed for resources. Adopting a more positive approach, authorities in the Czech Republic suggest that they have not experienced any problems with mutual recognition and that compliance with national requirements concerning the protection of environment and safety is still required, tested and guaranteed.

Against a solution based on the application of the mutual recognition Regulation **there is clear support by all stakeholders for the development of an EU-wide regulation to cover all categories of mineral fertilisers.** In relation to other categories of fertilisers, an extension of the Fertilisers Regulation is generally supported, although there is still no consensus on issues such as the possible use of pathogenic material in organic fertilisers and the efficacy of some categories of fertilisers in different climatic conditions. Additional work in this direction is considered necessary.

E. Recommendations

On the basis of the findings of the analysis concerning the Fertilisers Regulation and the mutual recognition Regulation, CSES makes the following recommendations:

- The Commission should **push forward with the inclusion in the Fertilisers Regulation of provisions concerning maximum levels of heavy metals.**
- The Commission should make efforts to **reduce the time required for the processing of applications for the inclusion of a new type of fertiliser in Annex I of the Regulation.** To this end, it should consider adopting the following measures:
 - **develop and promote an updated and more detailed guide** on the application process.
 - **create a committee comprised of technical experts covering the whole range of relevant disciplines for the examination of the technical files of applications.** The committee would examine the technical aspects of the applications and make recommendations to the working group member. This should allow them to focus on taking informed decisions on the approval or not of specific applications.
 - Address the main area of innovation in the sector - the use of additives – by creating a **separate section in Annex I of the Regulation for a list of permitted additives and the mineral fertilisers that they can be used in conjunction with.**
- The Commission should develop a guidance document to **clarify the applicability of mutual recognition and promote some common rules of practice.**
- The Commission should **push forward with an extension of the Regulation to cover all categories of fertiliser and liming material** as the only way to eliminate existing trade barriers and address the problems of the mutual recognition. The extended Regulation should allow for a gradual coverage of the various categories of fertiliser. It should set basic rules applying to all categories and lay down the specific rules applicable to each category in separate sections to be inserted into the Regulation when agreement is reached.

Executive summary

- Adopt separate EU legislation concerning non-fertiliser products such as growing media and peat. This could also be part of an umbrella regulation described above but it is possible that this may cause unnecessary delays.

Introduction

1

This document contains the final report submitted by the Centre for Strategy & Evaluation Services (CSES) LLP in respect of the assignment: ‘Evaluation of Regulation (EC) 2003/2003 on Fertilisers’ being tendered through Lot VI of the Framework Contract for the Procurement of Studies and other Supporting Services on Commission Impact Assessments and Evaluations (2008/S146-195858).

1.1 - Resume of Assignment Aims

This evaluation has been commissioned by the Chemicals Unit of DG Enterprise and Industry with the support of the Evaluation function of the Planning and Management Unit.

The purpose of the evaluation is to assess the functioning of the Fertilisers Regulation¹ and identify the potential for improvement.

In particular, the evaluation aims to:

- assess the extent to which the lack of full harmonisation and the implementation of the mutual recognition principle is an issue for economic operators in the fertiliser sector or national public administrations;
- Identify the main trade barriers that limit the free movement of national fertilisers.

As part of meeting these aims, the study examined the implications for intra-Community trade of national fertilisers of the entry into force of Regulation (EC) No 764/2008 on mutual recognition.

The results will be used to contribute to the revision of the Fertilisers Regulation and/or to identify and remedy any obstacles to the proper functioning of the Internal Market.

In the revision of the Fertiliser Regulation, consideration is being given to extending its scope to products that are not currently covered by harmonised legislation. It is intended that information and analysis arising from this ex-post assessment will feed into the revision process.

Evaluation questions

The objectives of the evaluation are to address the following set of questions as determined in the terms of reference:

- What have been the strengths and weaknesses of the Fertilisers Regulation? Which parts have been effective and which parts need improvement?
- To what extent has the Fertilisers Regulation contributed to an efficiently operating Internal Market for mineral fertilisers?

¹ Throughout the text the terms “Fertilisers Regulation” and “Regulation” (with uppercase) will be used to refer to Regulation EC (2003/2003) on fertilisers. In all other cases, the term “regulation” with lower case will be used.

Introduction

1

- To what extent has the Fertilisers Regulation contributed to or hindered market innovation in the form of new mineral fertilisers?
- To what extent has the Fertilisers Regulation achieved its aims with regard to the protection of the environment and human health?
- What are the market shares of 'EC fertilisers' in each Member State? Why do these market shares differ across the EU? Why do companies not market all their mineral fertilisers as 'EC fertilisers'?
- To what extent do companies make use of Regulation (EC) No 764/2008 on mutual recognition?
- What are the main technical barriers to the free movement of national fertilisers?

1.2 - Overall approach

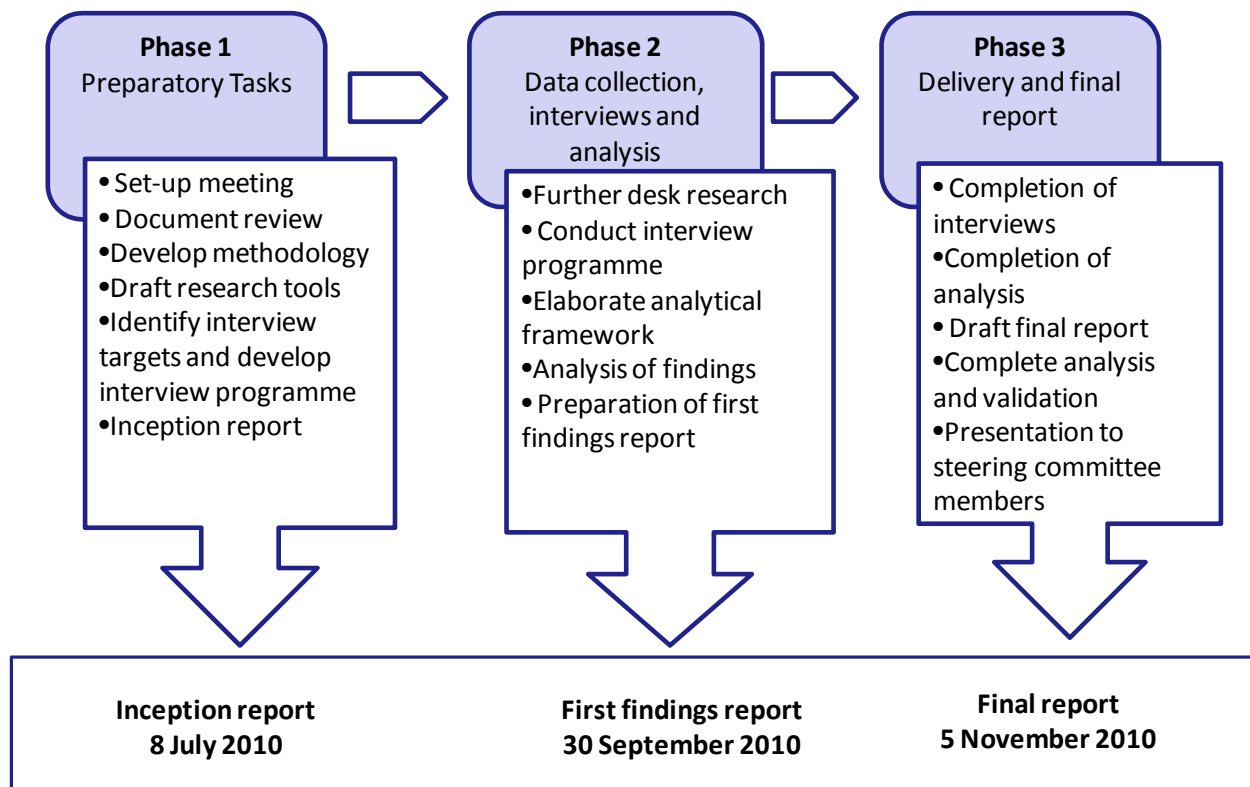
The overall approach adopted for the Evaluation of Regulation (EC) 2003/2003 on Fertilisers was based on three stages

- **Phase 1: Preparatory Tasks** – set up meetings and various preparatory tasks including an initial survey of relevant documents, review of current objectives and indicators and the preparation of research tools, leading to an inception report;
- **Phase 2: Review of objectives & indicators, interviews and analysis** – continuing desk research and an interview programme with officials from DG Enterprise and Industry. The submission of a Progress Report;
- **Phase 3: Further analysis and Final Report** – completion of interview programme and further analysis, in the light of comments made by the Steering Group on the Progress Report. A Final Report will be prepared in the required format
- A presentation will be made of the findings, conclusions and recommendations of the study at a meeting of the Commission Working Group on fertilisers.

The following diagram summarises the methodological approach and work plan adopted:

Introduction

1



1.3 - Structure of the report

The report is structured as follows:

- **Section 1: Introduction**
- **Section 2: Background and Methodology** – examines the policy context, considers the key evaluation issues and presents the evaluation framework;
- **Section 3: Evaluation results** – presents the findings of the study in relation to the key evaluation questions;
- **Section 4: Conclusions and recommendations** - presents the conclusions of the evaluation and the recommendation on the basis of the findings of the evaluation

The appendices include:

Appendix A – The detailed interview programme

Introduction

1

Appendix B – Documents and sources identified and reviewed during the course of the study

Appendix C – Country fiches for the 10 Member States covered in the interview programme

Background and methodology

2

In this section we describe the background of the Fertilisers Regulation 2003/2003 analysing its objectives, the main provisions and the mechanisms and structures of its implementation. On the basis of this we describe the intervention logic of the Regulation that served as the basis for the development of the evaluation framework and describe the methodology followed in the evaluation.

2.1 - Background of the Fertilisers Regulation

Objectives of the legislation

The focus of the evaluation is Regulation (EC) No 2003/2003 of 13 October 2003 on fertilisers (henceforth ‘the Fertilisers Regulation’). In this context ‘Fertiliser’ means ‘material, the main function of which is to provide nutrients for plants’.

The aim of the Regulation at the time of its introduction was to ensure the free circulation on the Internal Market of “EC fertilisers” i.e. those fertilisers that meet the requirements of the legislation in terms of their nutrient content, their safety, and the absence of adverse effects on the environment. The introduction of the new Fertilisers Regulation was in line with the SLIM Initiative (Simpler Legislation for the Internal Market) and was intended to provide greater clarity; it replaced the 18 different European Directives governing mineral fertilisers that had been introduced since 1976. A Regulation at Community level was thought to be the most appropriate legal instrument, since Community legislation on fertilisers is technical in its content and a Regulation imposes precise requirements directly on manufacturers that have to be applied at the same time and in the same manner throughout the Community. The development of a harmonized Regulation should contribute to elimination of trade barriers and lead to an efficient internal market. Additional considerations that were given an important weight in the Fertilisers legislation were intended to ensure avoidance of any adverse effects to the environment and to safeguard human health. Minimizing the risks to public safety was also important in relation to ammonium nitrate fertilisers that can possibly detonate. At the same time the Fertilisers Regulation has to ensure that users of EC fertilisers are provided with adequate information on the fertilisers’ nutrient content.

The initial aim in revising the earlier legislation was to develop a comprehensive regime for all types of fertilisers covering the whole sector. However, discussions that led up to the Fertilisers Regulation were very much overshadowed by the BSE crisis that made the complete harmonisation of the fertiliser market impossible. There was particular sensitivity to the use of organic wastes as raw materials in fertilisers. The Fertilisers Regulation was therefore restricted to inorganic mineral fertilisers, although the separation from organic components is not absolute, in that micro-nutrients, for example, may be chemically linked with an organic molecule.

The Regulation thus relates to inorganic fertilisers that:

- (a) provide nutrients at an adequate level in an effective manner;
- (b) are subject to relevant sampling, analysis, and if required, test methods, and

Background and methodology

2

(c) under normal conditions of use, do not adversely affect human, animal, or plant health, or the environment.

The Fertilisers Regulation does not cover other categories of fertilisers including organic and organo-mineral fertilisers, liming material, growing media, and organic soil improvers. Furthermore, mineral fertilisers with nutrient levels lower than those determined by the Fertilisers Regulation that do not follow the requirements of this Regulation can still be placed on the markets of Member States in accordance with the applicable national legislation i.e. as “national fertilisers”. In effect, producers of mineral fertilisers can choose to market fertilisers as “EC fertilisers” in which case they need to follow the requirements of the Fertilisers Regulation giving access to the EU market or as “national fertilisers”, in which case they need to comply with any relevant national regulations.

National legislations on fertilisers vary significantly even though they all tend to focus on establishing criteria to ensure that contents are innocuous, that there is proper labelling of known ingredients, provision of information to the user and proven agronomic benefit. Furthermore, most of the regulations cover the whole range of fertilisers, liming material, soil improvers and growing media. In some Member States authorisation or registration procedures are required for new products^{2 3}. There is great variation as to the criteria of innocuousness and the corresponding tests necessary and there is also variation relating to which products are considered to be ‘known’ and the corresponding requirement for tests. In a few countries (DK, SE, ES, BG, CZ)⁴ manufacturers are required to register some categories of fertilisers in a national register⁵ or with a specific organisation prior to placing them on the market. This registration may serve simply for information purposes and easier tracing in the market or may be part of an authorisation procedure that may include testing. According to the Fertilisers Regulation there is no similar pre-registration system for EC fertilisers. However, Member States are still allowed to require manufacturers to give information on the nature and tonnage of EC fertilisers they intend to market in their territory in order to facilitate the organisation of the market surveillance of EC fertilisers and their testing in conformity with Article 29 of the Regulation. Finally, the labelling requirements for national fertilisers also vary in accordance with national legislation and in response manufacturers have worked towards a voluntary minimal label standard.

In parallel to that, “national fertilisers” are covered by Regulation (EC) No 764/2008 on mutual recognition which aimed to strengthen the framework for the free movement of goods in the Internal Market. This Regulation obliges a Member State to accept products lawfully marketed in another Member State unless the Member State of destination can demonstrate that the product poses a risk to human health or to the environment. This qualifying provision is based on Article 30 of the Treaty on the Functioning of the European Union (TFEU) that allows restrictions on imports, exports or goods in transit

² Study on Regulation for marketing of fertilisers and growing media, CRITT RITTMO on behalf of the DGAL direction of the French ministry of Agriculture, 2006

³ French contribution on marketing fertilisers, soil improvers and growing media, Document submitted to the European Commission, September 2008

⁴ Registration is also provided in the Italian legislation but it refers to the manufactures, importers or traders of fertilizers as a tool to support market surveillance.

⁵ Based on the legislation reviewed a register of Fertilisers exists at least in Bulgaria, Denmark, Germany, Italy, Spain, and Sweden.

Background and methodology

2

that are justified on grounds such as public morality, public policy or public security, but also the protection of health and the life of humans, animals or plants.

In relation to fertilisers, a number of Member States have made use of Article 30 of the TFEU and more specifically of the corresponding articles in the mutual recognition Regulation and imposed substantial restrictions on the use of the mutual recognition principle. The effect is a considerable variation in the stringency of requirements among Member States. This means that there may be significant differences in the characteristics of the fertilisers approved in each Member State in relation to nutrient content but also the presence of pathogens or heavy metals in some types of fertilisers. Concerns about health and safety, the possibility of unfair competition have been raised by a number of stakeholders. Furthermore, Member States have referred to difficulties in assessing whether imported fertilisers actually fulfil the requirements of the particular Member State where they were initially marketed.

The Provisions of the Fertilisers Regulation

The provisions of the Fertilisers Regulation cover the following areas:

- The right of free circulation in the internal market for fertilisers that comply.
- The definition and composition of the types of mineral fertilisers and their designation
- Rules on the identification, traceability, markings, labelling and packaging of EC fertilisers to be followed by manufacturers in order to be able to place them on the market
- A procedure to be followed in cases where a Member State deems it necessary to restrict the placing on the market of EC fertilisers
- Tolerance levels that are permissible on the declared nutrient contents
- Controls on the compliance of EC fertilisers with requirements concerning quality and composition, carried out by laboratories that are approved by the Member States and notified to the Commission
- Special provisions for ammonium nitrate fertilisers to ensure that there is no risk of detonation with implications for public safety, health and the protection of workers.

The specific categories of mineral fertilisers that fall under the Fertilisers Regulation are determined in Annex I of the Regulation and cover:

- Inorganic straight primary nutrient fertilisers - nitrogenous, phosphatic and potassic fertilisers having a declarable content of only one of the primary nutrient.
- Inorganic compound primary nutrient fertilisers - fertilisers having a declarable content of at least two of the primary nutrients and obtained chemically or by blending or by a combination of both

Background and methodology

2

- Inorganic fluid fertilisers, straight or compound
- Inorganic secondary nutrient fertilisers –namely calcium (Ca), magnesium (Mg), sodium (Na) and sulphur (S). These may be mixed together or combined with primary nutrients
- Inorganic micro-nutrient fertilisers –namely the elements boron (B), cobalt (Co), copper (Cu), iron (Fe), manganese (Mn), molybdenum (Mo) and zinc (Zn) in quantities that are small compared with those of primary and secondary nutrients. The micro-nutrients can be chelated or complexed. They may be mixed together or combined with most primary and/or secondary nutrients.

Member States are responsible for the implementation of the Fertilisers Regulation, its enforcement and the application of the necessary controls to ensure compliance. Human and financial resources are dedicated to this objective. They are also responsible for the adequacy of sampling and analysis to control the fertilisers. These tests are conducted by laboratories that are notified on the basis of their competence. In addition, Member States are expected through national legislation to set and impose penalties on manufacturers that infringe the provisions of the Regulation. At EU level the main activities linked to the implementation concern the inclusion of new fertiliser types and their specifications to Annex I of the Fertilisers Regulation and the development of European Standards by the relevant bodies (CEN) in relation to sampling and analytical methods and the revision of the relevant provisions when this is considered necessary. Additional guidance documents – such as the one concerning the procedures for the addition of new types of fertiliser to Annex I – have also been produced by the Commission. Finally, the Fertilisers Working Group (with participation of the Member States and industry) is the main body where issues are raised and discussed, proposals for solutions and necessary revisions are formulated and where an agreement on a proposal to include new fertilisers types in Annex I is made. The Working group meets normally twice a year.

The procedure for introducing a new type of fertiliser to Annex I so that it can be marketed as an EC fertiliser is defined in Article 31 of the Regulation and further specified in a non-binding guidance document produced by the Commission⁶ in co-operation with Member States experts. The guidance document describes the content of the technical file to be submitted including information relating to health and safety, REACH registration data, information on the agronomic effects, the methods of use and the efficacy of the product and a proposal for an internationally recognised method for analysis of the specific product. The procedure also requires that the application with the technical file is submitted to one of the Member States that will act as rapporteur to the Working Group on Fertilisers on the basis of the tests and review conducted at the national level.

Annexes II to IV of the Fertilisers Regulation determine, respectively, tolerances, technical provisions for ammonium nitrate fertilisers of high nitrogen content and methods of sampling and analysis to be used by notified laboratories. The annexes of the Fertilisers Regulation have been subject to revisions and changed four times so far in order to adjust them to technical progress in relation to methods of analysis

⁶ COMMUNICATION FROM THE COMMISSION, Guide to the compilation of a technical file on application to designate a fertiliser as 'EC fertiliser'

http://ec.europa.eu/enterprise/sectors/chemicals/files/fertilizers/2009_02_03_new_guidance_final_en.pdf

Background and methodology

2

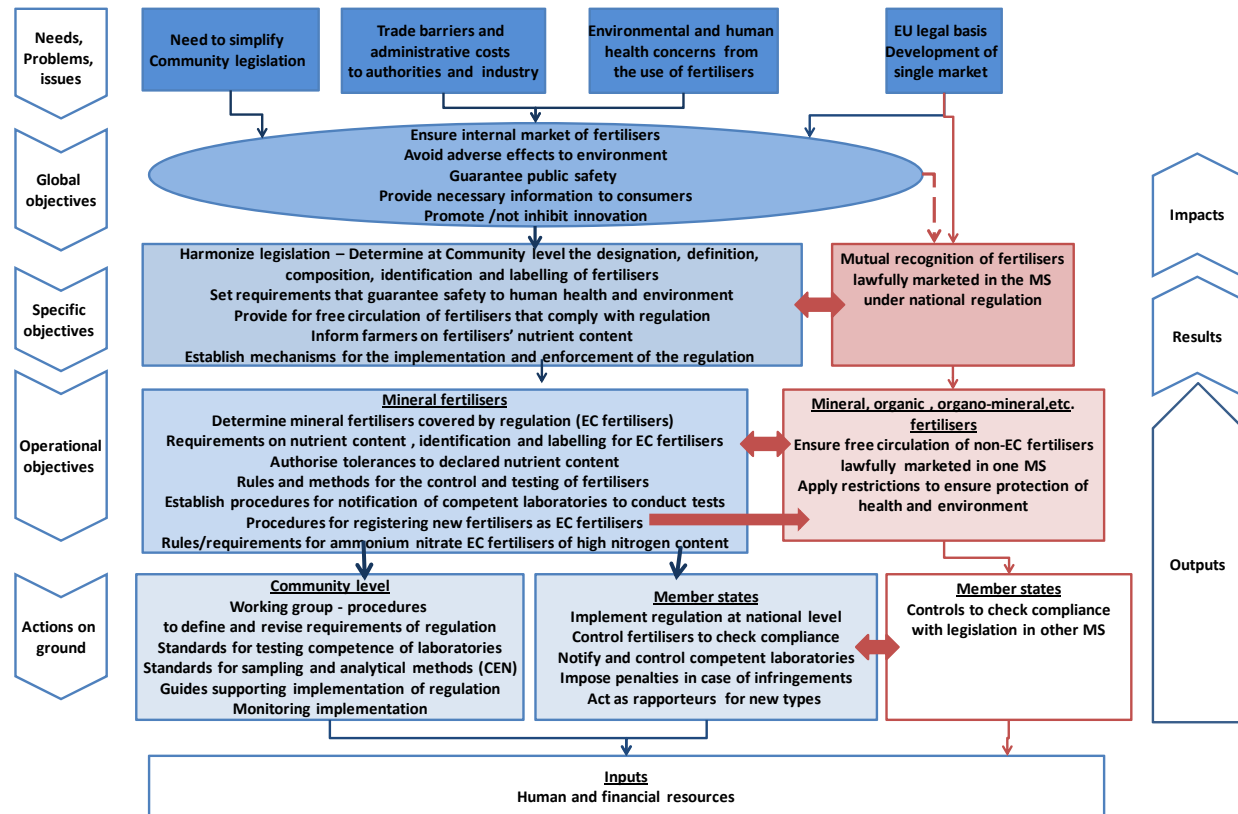
or the decision to introduce new types of mineral fertilisers into Annex I. The most recent revision in 2009 replaced a detailed description of various methods of analysis by a reference to European Standards developed by CEN as part of mandate M/335 from the Commission.

In relation to the cadmium content of phosphate fertilisers, stricter limits based on national legislation have been accepted from three Member States (AT, SE, FI) on the grounds of risks to health or the environment (derogation from the Fertilisers Regulation). The derogation applies until harmonised measures on cadmium in fertilisers are adopted at EU level.

2.2 - Intervention logic of Fertilisers Regulation

On the basis of the above description, CSES has developed an Intervention Logic for the Fertilisers Regulation, the main elements of which can be summarized in the following diagram. The diagram shows how the case for intervention is structured, starting with the initial statement of identified needs through to the objectives at an operational level. The outputs and longer term outcomes of its implementation, not presented here, can be defined as the achievement of the stated objectives that should ultimately lead to an effective and efficient internal market able to adapt to changes in technical innovation while ensuring avoidance of adverse effects on the environment and public safety.

Graph 2.1 – Intervention logic of Fertilisers Regulation and mutual recognition regulation



Background and methodology

2

The diagram also includes reference to the mutual recognition Regulation which is a direct result of the EU legal basis in relation to the operation of the Single Market that potentially provides an alternative approach to achieving some of the global objectives including the development of an Internal Market for fertilisers, the removal of trade barriers the promotion of innovation. It is in effect an alternative procedure for introducing new products onto the market. The relevant specific objective is that of ensuring mutual recognition of fertilisers lawfully marketed in the Member States, although there is a further objective of ensuring the protection of health and the environment. The corresponding operational objectives concern the establishment of the procedures and requirements for mutual recognition and the necessary control at the Member State level. The respective actions on the ground require the use of human and financial inputs from Member State authorities and economic operators.

At the same time, the diagram illustrates the complementarities and the potential overlap of the two approaches. The most important consideration is that mutual recognition applies to all types of fertiliser other than EC fertilisers. In fact this is currently the only approach for the non-mineral fertilisers. In the absence of a harmonised regulation for the other categories, mutual recognition represents the only route for the development of the internal market. In parallel, there is a potential use of mutual recognition for the introduction of new types of fertiliser (including mineral fertilisers) into the market. Companies may select the mutual recognition route instead of going through the procedure of registering a fertiliser as an EC fertiliser and this could – under specific circumstances - operate against the Fertilisers Regulation.

The intervention logic provided the basis for understanding the operation of the Regulation and the interplay with the mutual recognition principle and served as a guide during the analysis of the key evaluation issues.

2.3 - Methodology - The key evaluation Issues

On the basis of the analysis of the Regulation and the intervention logic, the evaluation questions included in the terms of reference were reformulated, making reference to the criteria that are employed in any standard evaluation. These criteria concern the relevance, efficiency, effectiveness, utility, sustainability and added value of the legislation. Based on the previous analysis these key evaluation criteria can be summarised as follows:

- **Relevance of legislation** - the extent to which the provisions of the Fertilisers Regulation (as an exception to the general regime of mutual recognition) have been directed towards meeting the central needs of Europe's citizens, farmers and producers that shape the key policy objectives. These include the effective operation of the Internal Market for mineral fertilisers, the need to promote efficiency and, also the competitiveness of the EU fertilisers industry, while at the same time ensuring the safety of consumers and the absence of adverse effects on the environment
- **Effectiveness** - the extent to which the Fertilisers Regulation, through its provisions and its implementation, has achieved the main objectives of free circulation of fertiliser products and

Background and methodology

2

the development of the Internal Market while, at the same time, ensuring the safety of the public and the absence of adverse effects on the environment.

An important issue of effectiveness concerned the **simultaneous presence in the market of EC and national mineral fertilisers**. The evaluation aimed to identify the share of national and EC fertilisers in the EU market, examine why the sale of 'national mineral fertilisers persists and what is its effect in the development of the Internal Market. A key issue was to identify the reasons that some manufacturers decide to market their mineral fertilisers as national fertilisers and not as EC fertilisers.

Another key element of the effectiveness of the Regulation concerned the extent to which technological innovation has been enhanced – or at least not obstructed.

Finally, effectiveness also concerns the socio-economic effects and administrative burden of the legislation, primarily the extent to which the implementation of the legislation avoids discrimination against smaller businesses.

- **Efficiency** – examines the relationship between the results achieved and the financial and other inputs dedicated to implementing the Fertilisers Regulation by economic operators and Member State authorities (the administrative burden). Linked to this is value for money – could more be achieved with the same level of inputs – including human and financial resources from Member States and enforcement bodies - or, conversely, could the same outputs be achieved with reduced inputs?

A key issue affecting both the effectiveness and the efficiency of the regulation is the **implementation process** – the actions of the Member States and the Commission - that can have a major influence on the effectiveness and efficiency of the Fertilisers Regulation. As presented in the intervention logic these include actions related to the market surveillance and enforcement of the regulation but also the activities at the EU level concerning the development of standards – where necessary – and the operation of the working group.

Additional evaluation questions examined included:

- **Utility** – the extent to which the impacts of the implementation of the Fertilisers Regulation succeed in delivering the anticipated results. Have all the main objectives been achieved, what have been the results in terms of prices to farmers and the quality of the products used?
- **Sustainability** - whether the Fertilisers Regulation provides a clear and firm basis for the future structure and stability of the fertiliser market
- **European added value** – the extent to which the EU level intervention of the Fertilisers Regulation has brought about changes that would not have occurred through Member States acting on their own on the basis of national legislations; the extent of cross border trade that has been generated and any indications of obstructions in certain segments of the market

Background and methodology

2

These questions were examined in parallel with the question of the **adoption and use of the mutual recognition Regulation** (764/2008). As described in the section on the intervention logic the mutual recognition overlaps and has an impact on the Fertilisers Regulation in specific areas. For this reason, the evaluation addressed the following questions:

- Is the mutual recognition principle, as applied by Regulation (EC) No 764/2008, operating effectively for “National fertilisers” and does it provide an adequate base for achieving the objectives of an internal market while ensuring the protection of the environment and public safety?
- What are the possible issues and problems related to its use and its implementation as perceived by the national authorities and manufacturers? What is the actual experience in relation to the stated issues of potential unfair competition or increased administrative burden in the countries that use the mutual recognition Regulation?

Finally, in relation to the basic objective of creating a single market in fertilisers, taking account of the evidence on both approaches, the following questions were addressed:

- What would be the most appropriate approach to achieving the stated objectives, including the extension of the scope of the Fertilisers Regulation?
- What is the support – from Member States and industry – for such a change?
- In such a case, would it be possible to build on the operation of the Fertilisers Regulation?

The various research tools used during the study aimed to provide quantitative or qualitative answers to the questions defined above.

2.4 - Research tools - Fieldwork and data collection

The evaluation was based on the use of a combination of research tools that included desk research and a review of various relevant documents, collection and analysis of relevant data from available statistical sources and an interview programme covering the key stakeholders at the European level and in 10 Member States.

The **document review** included a detailed examination of relevant national legislation made available by the Commission or by national authorities during the interview programme. It also included various studies of the fertilisers’ sectors and other documents made available by the Commission services or identified through desk research (see Appendix C).

Concerning the **collection of data**, the focus was on information concerning the structure of the European fertilisers industry, the levels of production, consumption and trade of mineral and other fertilisers inside the EU and with third countries. The main source has been the EUROSTAT statistical

Background and methodology

2

database. More specifically, the structural business statistics database⁷ provides EU-wide information on the structure of the fertiliser sector (NACE 20.15 – manufacture of fertilisers and nitrogen compounds) including number of firms, production value and number of employees at EU and Member State level. The PRODCOM database⁸ includes data on the volume of production at EU27 and at Member State level with a more disaggregated level under classification code 2015 (Fertilisers and nitrogen compounds) covering most categories of mineral fertilisers. The external trade statistics database⁹ provides data on exports and imports at the EU27 and the national level (volumes and values). EUROSTAT also provides data on the evolution of the price index of fertilisers over the last 15 years¹⁰ and, through the Food Safety Statistics database¹¹ data on the level and intensity of consumption for each category of basic fertiliser.

The data from EUROSTAT have been complemented by data provided by the European Fertiliser Manufacturers Association (Fertilisers Europe), with details of the level of demand and supply of the main categories of fertiliser (straight nitrogenous, phosphatic, potassic fertilisers and compounds). At the national level some authorities and industry associations provided information on the level of production and consumption.

Finally, on the issue of the implementation of the Fertiliser Regulation, a survey across all Member States¹² (15 responses) organised by the Commission provided useful, even though partial, information on their activities in enforcing the Fertilisers Regulation and the main issues they face.

The **interview programme** of the evaluation included face to face or telephone discussions with different stakeholders including the competent authorities of the targeted Member States, trade associations of different types of fertilisers and a small number of producers. Ten countries were covered as agreed with the Commission Services on the basis of a number of selection criteria including geographical coverage but also existing information on the different situation in relation to the implementation of the Fertilisers Regulation (see Table 2.1 below). In total, these 10 countries represented around 75% of the total EU27 fertiliser consumption in 2008¹³.

Table 2.1 – Member States covered by the evaluation interview programme

Romania	Spain
Czech Republic	France
Denmark	Italy
Germany	Poland
Ireland	Sweden

⁷ http://epp.eurostat.ec.europa.eu/portal/page/portal/european_business/data/database

⁸ <http://epp.eurostat.ec.europa.eu/portal/page/portal/prodcom/introduction>

⁹ http://epp.eurostat.ec.europa.eu/portal/page/portal/external_trade/introduction

¹⁰ http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database?piref458_1209540_458_2118_10_211810.node_code=apri_pi00_ina

¹¹ <http://epp.eurostat.ec.europa.eu/portal/page/portal/food/introduction>

¹² EC (2010), Summary of the MS contributions to data collection on Market Surveillance of 'EC Fertilisers', Presentation to the Fertilisers Working Group, 25.03.2010

¹³ 13.5 million tons of active nutrients out of a total of 17.8million tons (Eurostat, 2008).

Background and methodology

2

In total, 46 interviews were conducted providing a good coverage of the 10 targeted countries with at least one national company interviewed in addition to the responsible authorities in the Member States. National associations exist in 6 of the selected countries (France, Italy, Ireland, Germany, Spain, and Romania). In addition, the interviews with the European associations included all categories of fertiliser producers (producers of basic nutrients, blenders, importers) but also the peat and growing media association. Interviews with firms included most of the few very large multinational players with presence in multiple countries, a number of medium size firms dominating the markets of specific countries (e.g. Romania, Poland, Czech Republic) and, in most countries¹⁴, smaller size companies that focus on their domestic markets. In terms of categories of fertilisers covered there is a rather broad coverage including manufacturers of basic nutrients, producers of granulated fertilisers and other categories of complex fertilisers (liquid, secondary and micronutrients), blenders and also a few firms that produce organic fertilisers. The detailed interview programme is presented in Appendix A.

Table 2.2 - Summary of interview completed

Category of stakeholder	Number
European trade associations	4
National trade associations	8
Member States authorities/bodies	13
Companies	20
Others (CEN)	1
Total	46

¹⁴ The interview programme included at least one SME in each of the 10 countries. However in some cases representatives of the companies were not made available despite repeated attempts by CSES.

Evaluation findings

3

This section provides the findings of the study in relation to the evaluation questions set out in the terms of reference and the broader evaluation framework. The aim will be to provide a firm basis for the conclusions and recommendations. The first part provides a brief description of the fertilisers sector and the operation of the market while the second focuses on addressing the key evaluation questions on the basis of the information collected so far.

3.1 -Description of fertilisers market

EUROSTAT data¹⁵ indicate that the total value of the production of fertilisers sector in EU27 in 2007 was close to €17 billion, up from €13.6 billion in 2004. 1,058 enterprises were operating in the mineral fertilisers sector (NACE 20.15) in 2007 in the EU27, with a total of 56,000 employees. Spain, Italy and France have the largest number of enterprises (228, 187 and 175 respectively) but all three countries are dominated by small and medium size companies. In contrast, according to Eurostat, 54 companies in Germany have in total over 10,000 employees and in 2007, represented more than 17% of the total production value of the EU27. Some of the newer Member States (i.e. Poland, Romania, Lithuania and Bulgaria) also have a small number of large sized companies employing on average more than 2,000 employees each. However, the level of production in these countries is rather low and output does not represent more than 3% of the total EU value of production (with the exception of Poland with 8%). Besides Germany, France represents 13% of the total EU production, Netherlands, UK and Italy (each with around 10%) also account for significant parts of the European market.

The fertilisers industry – especially the segment related to the production of the main nutrients - went through a consolidation phase during the late 1980s and early 1990s as a response to changing market conditions and other factors such the costs of the basic raw materials. Currently, the fertilisers industry in Europe can be grouped in three main categories:

- A small number of large multinational companies (not more than 7) with interests in the broader chemical sector and with global networks that focus on transforming the basic elements (nitrogen from air, phosphorous and potassium from mines) into a rather small range of straight or compound mineral fertilisers that are used for major food crops. The use as fertilisers is one category of the possible uses of their chemical products. Some of them sell their products in bulk to smaller companies for blending or further processing but most are also involved in the marketing and sale of their products for agricultural, professional or even consumer use. The information collected during the interviews indicate that 4-5 companies represent more than 80% of total production although there are still some independent national players in specific countries (e.g. Poland, Romania, Greece).
- A number of mainly medium size enterprises (independent or subsidiaries of the larger manufacturers in the previous group) that focus on the production of complex liquid fertilisers and

¹⁵ Structural Business Statistics, EUROSTAT:

http://epp.eurostat.ec.europa.eu/portal/page/portal/european_business/data/database

Evaluation findings

3

other specialty fertiliser types¹⁶. They cover both the professional (agricultural) market but also the so-called hobby sector (gardening) selling directly to consumers. Many of them are focused on the national markets but, based on the small number of interviews, a significant proportion of these firms (more than 30%) also export to other European countries and some also outside the EU. However, more precise data are not available.

- A large number of small firms – estimated over 800 of the total of 1058 according to Eurostat - that focus exclusively on blending of fertilisers bought from large companies to cover specific needs predominantly in their local market (vineyards, fruit, and vegetables). The number and market focus of these firms varies among countries. The great majority of them focus on local or national markets¹⁷ and very few of them export to other European or third countries. The level of sophistication of the production processes may vary greatly in this sector.
- Use of mineral fertilisers in agriculture represents the main segment of the market. In 2008 the total consumption in agriculture¹⁸ in the EU27 was 17.9 million tons of nutrients¹⁹ (11.2 million tons N, 3.1 million P and 3.6 million K). France, Germany, the UK and Poland consume the largest quantity (nitrogen, phosphate and potash) representing together close to 50% of the total. However, the current levels of production in Europe do not match demand. Europe is a net importer of nitrogenous and phosphatic fertilisers (mainly from Russia, Ukraine, Morocco and Egypt) although it has a positive trade balance as far as potassic fertilisers are concerned (FAO,2009)²⁰.
- At the same time, there has been a significant overall decrease in the use of fertilisers among EU-15 Member States during the last decade (a 14% fall during the period 1997-2008) (see also chart 4.1). In contrast, in most EU-12 Member States total consumption increased between 5% (Hungary) and 240% (Latvia). To a certain extent this reflects changes in the intensity of the use of fertilisers and soil improvers (expressed in terms of spending per hectare of arable land) and the different levels of horticulture and permanent crops in total agricultural land use. The economic crisis led to an even more dramatic decrease in the total consumption of fertilisers. It fell by 23.5% over the period 2008 and 2009 as a result of collapsing agricultural prices and falling agricultural production (Fertilisers

¹⁶ Data available from national statistics databases in four countries (IT, DE, FR, UK) indicate that there are no more than 10-15 medium size companies in the fertilisers production sector in each of them although there is no information on the type of fertilizers they produce.

¹⁷ This picture is not homogeneous across the EU. Data from the national statistics databases in IT and FR and the interviews with the relevant association indicate that there are more than 150 small size companies with a strong local focus. In contrast, in the UK and in Germany – both countries with a comparatively smaller number of firms in the sector – the number of such firms is no more than 20-30 and a few of them (5 in the UK) cover the whole national market.

¹⁸ Data are not available for other uses of fertilizers such as the use in the hobby market.

¹⁹ EUROSTAT Agri-Environmental Indicators,

http://epp.eurostat.ec.europa.eu/portal/page/portal/agri_environmental_indicators/data/database

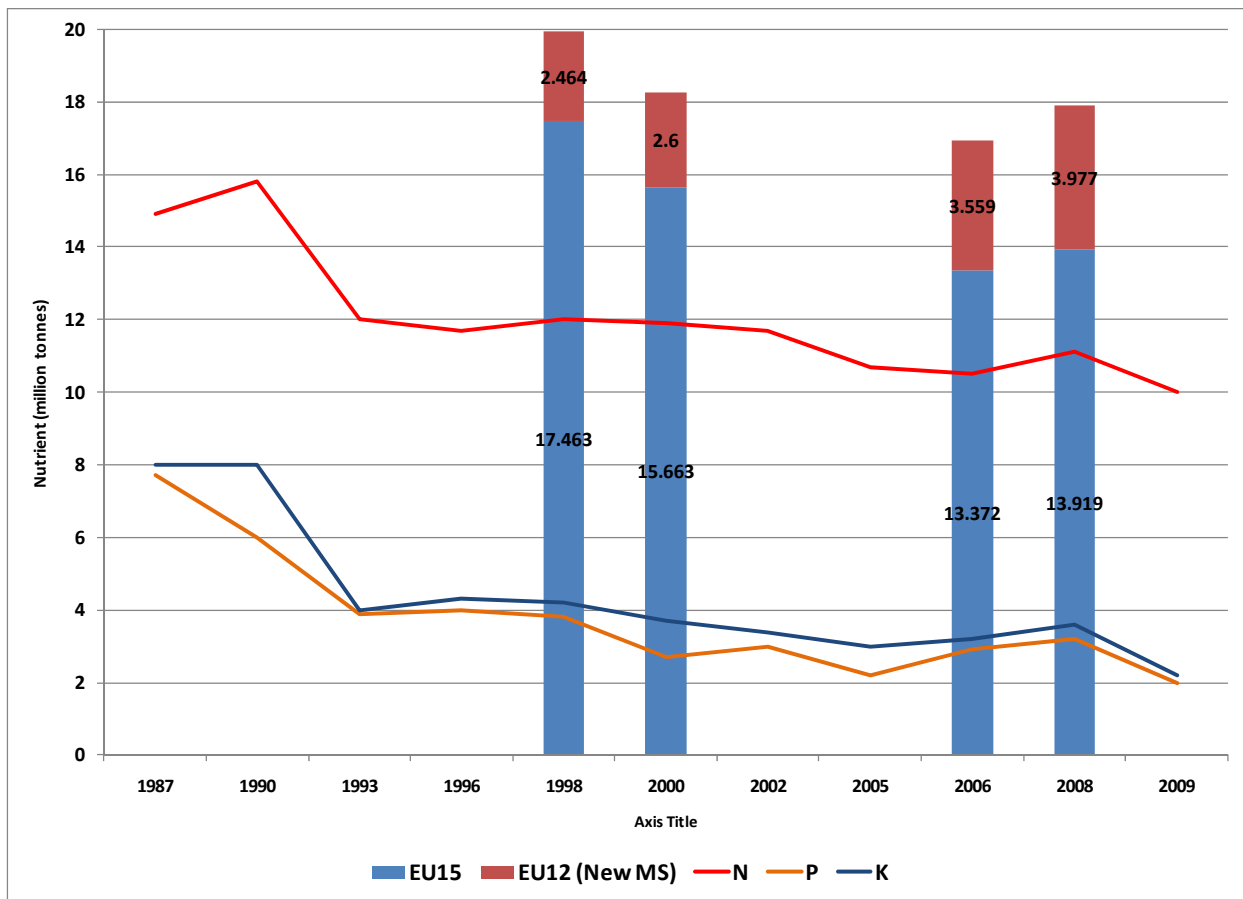
²⁰ FAO (2009), Current world fertilizer trends and outlook to 2013, <ftp://ftp.fao.org/agl/agll/docs/cwfto13.pdf>

Evaluation findings

3

Europe, 2009)²¹. The consumption of nitrogenous fertilisers in the EU27 decreased by 13.5% while that of phosphoric and potassic fertilisers fell approximately by 40%.

- Finally, concerning the price of fertilisers, while the level of demand is an important determinant, energy, raw material and transportation costs also play a very important role in the cost of the production of fertilisers and their respective prices. Natural gas represents 50-70% of total production costs of nitrogenous fertilisers (Fertilisers Europe, 2009). The increase in the price of natural gas during the last years led to an increase in the price of fertilisers in the EU27 by around 25% during the period 2000-2007 and an even higher increase in 2008 (almost doubled in comparison to 2000).
- Chart 3.1 – Evolution of fertilisers consumption in the EU (million tons of active ingredient)**



Source: EFMA,2009 and Eurostat

²¹ Fertilisers Europe, Annual report 2009

Evaluation findings

3

3.2 – Analysis of the Fertilisers Regulation against the key evaluation questions

Relevance

In relation to its main aim of promoting the development of a harmonised internal market, the Fertilisers Regulation appears to have been very relevant. Almost all stakeholders interviewed believed that the implementation of the Fertilisers Regulation was a step in the right direction since it addressed the most important problems evident in the pre-2003 period, the presence of a complicated regulatory environment with considerable differences in the provisions made in the national regulations. The adoption of an EU-wide Regulation – and not a Directive – is seen by almost all stakeholders as the most appropriate tool. It provided the necessary clarity and certainty for the industry and has been an important step towards the harmonisation of legislation across the European market.

However, as will be explained later on in the Report, there is a shortcoming in the Regulation in that it does not cover the whole extent of the fertiliser market. It has left an important and growing part of the market uncovered. As a result, for most stakeholders the Fertilisers Regulation represents only “the first step in the right direction”.

Furthermore, the adequacy of the Regulation is questioned by a number of Member State authorities in relation to its environmental protection and public safety provisions. The great majority of Member State authorities consider that the current provisions of the Regulation do not provide the appropriate answers to important concerns about the protection of the environment especially in relation to heavy metals.

Effectiveness

Efficiently operating internal market for mineral fertilisers?

The interviews with stakeholders – authorities and industry representatives- indicate that the internal market in mineral fertilisers’ market operates efficiently. In comparison to the pre-2003 period the Regulation has, according to all stakeholders, contributed to the simplification and clarification of the applicable regulation and removed the various procedures required by national regulations, thus effectively eliminating trade barriers. In some countries (e.g. in Romania) authorities continue to ask for a registration and certification procedure for EC fertilisers even though, in terms of the Regulation, this is not necessary. Such a practice is clearly a matter of misunderstanding or a tendency to maintain old procedures. According to all the interviews, in practice no trade barriers apply in relation to the circulation of EC labelled fertilisers across the EU27. From the point of view of importers (as expressed by the main association - EFIA²²) the Regulation has clearly simplified the situation for importers from outside EU that have only a single set of technical requirements to comply with.

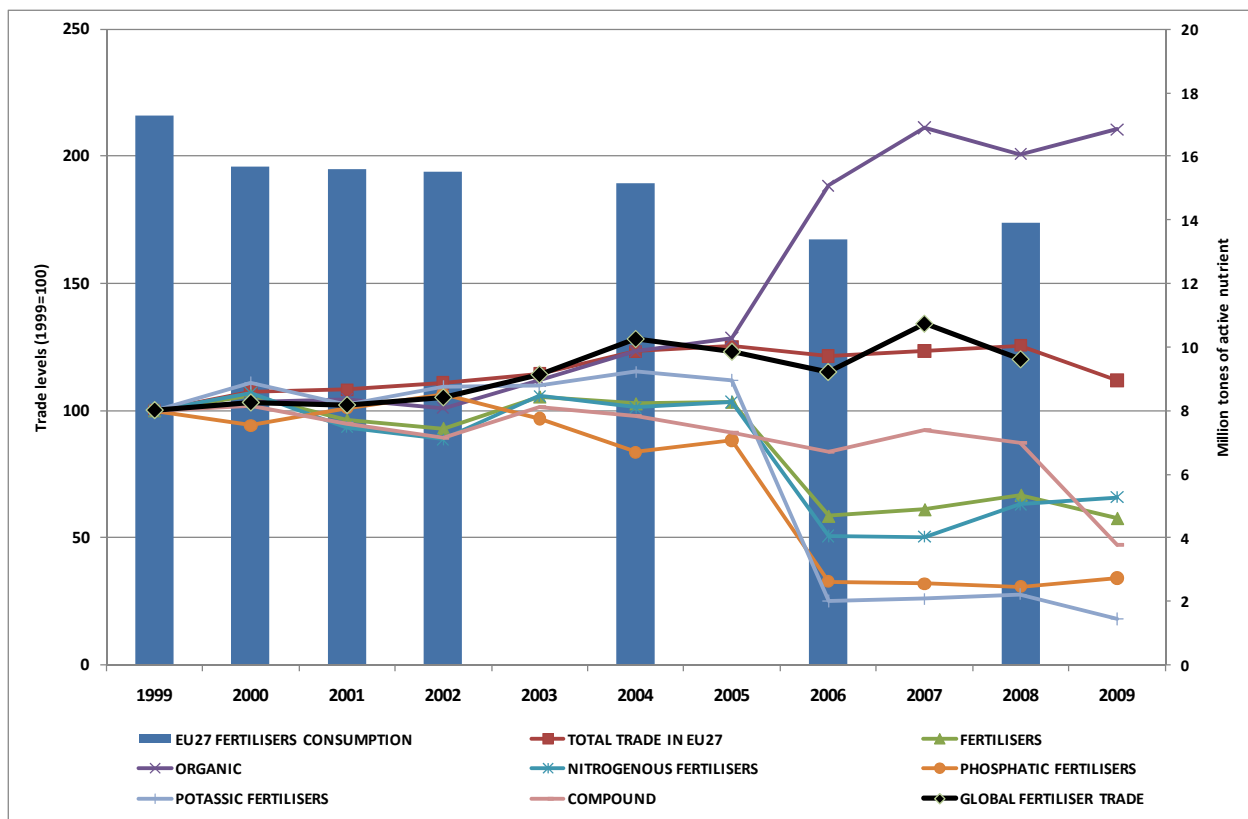
²² European Fertiliser Import Association

Evaluation findings

3

However, the benefits of the Regulation in relation to the operation of the Internal Market are mainly related to the simplification and clarification of the regulatory regime. There is very limited evidence that the introduction of the Regulation brought measurable changes in the level of competition across the EU and, as a consequence, to prices. The data on the level of trade in mineral fertilisers do not provide evidence of an increase in the level of intra-EU27 trade during the last 10 years. On the contrary, during the last 5 years there has been a clear reduction when compared with the volume of overall intra-EU trade (see Chart 3.2) but also against the overall trade in fertilisers worldwide (IFA, 2009)²³. The only notable exception to this is in the category of organic fertilisers²⁴.

Chart 3.2 – Evolution of the trade of different fertiliser categories in EU27 since 1999 (=100) compared to global trade.



Source: Eurostat external trade data (2009)

On the one hand, it has to be remembered that the Regulation replaced earlier legislation designed to promote the Internal Market, so the main Internal Market effect may be judged to have happened

²³ IFADATA, <http://www.fertilizer.org/ifa/ifadata/search>

²⁴ It is important to note that the overall level of trade is also affected by the economic crisis of 2008. The crisis brought a decrease of 23.5% in the consumption of fertilisers (EFMA, 2009). However, the decrease in trade levels can also be observed prior to 2008.

Evaluation findings

3

before 2003. On the other, the effects of the Regulation on the market are clearly overshadowed by other developments, notably the price changes during the last 7-8 years that are driven mainly by the demand for agricultural crops and, less so, the costs of energy (FAO, 2008)²⁵.

A couple of companies interviewed did indicate that the Regulation provided an incentive to introduce their products into new markets in Europe but the general view is that most segments of the EU market were already very competitive even before the introduction of the Regulation. Furthermore, as has already been pointed out, competition in the market for mineral fertilisers is to a large extent affected by transportation costs and the control of distribution networks by the established companies. From this point of view, notable changes should not be expected as a result of the Regulation opening up of the market.

It should be noted that the general picture does not apply in all Member States. The level of intra EU trade has doubled for EU-12 Member States in the period 1999-2009 while it has been reduced to half 1999 levels for EU-15 Member States. This has partially been influenced by the different directions in the amount of consumption (reduction in EU-15 Member States and increase in EU-12 Member States). Furthermore, among the 10 Member States examined, in some of the new Member States (Romania, Czech Republic) a single national producer dominates the market (over 65% of the total share). In this case the Fertilisers Regulation may help to increase competition in the future even though, again, the other market forces may be more important.

In relation to the development of the Internal Market, the main concern of all stakeholders was the partial coverage of the Regulation. This includes new mineral fertiliser formulations or, more generally, types of fertilisers that have not been covered by the Fertilisers Regulation. The interviewees referred mainly to products that combined EC fertilisers with additives or other substances such as nitrification inhibitors. They also referred to the much broader category of organic and organo-mineral fertilisers, soil improvers and growing media. The view of all stakeholders (authorities and industry) is that this part of the fertiliser market is very much more fragmented and that there are important trade barriers. These include the various and different forms of registration procedures, maximum or minimum requirements set by the national authorities on environmental or safety grounds, labelling requirements and other provisions. The fact that the Fertilisers Regulation does not apply to these market segments is, almost unanimously, seen as its greatest weakness.

Balance of EC and national fertilisers in the market

One of the tasks of the evaluation was to collect information concerning the balance of EC and national fertilisers in the market. In most countries national authorities could provide rough estimates of the balance of EC and nationally labelled mineral fertilisers. These were cross-checked with industry representatives when possible. However, accurate numbers are not available in any country. As a result the numbers provided here are estimates or best guesses.

²⁵ Food and Agriculture Organization of the United Nations (2008), current world fertilizer trends and outlook to 2012

Evaluation findings

3

The picture appears rather mixed. In the case of Denmark and Sweden sales of designated EC fertilisers represent no more than 5% of the market. Mineral fertilisers with national labels dominate the market. In the Czech Republic one company dominates with more than 70% of the national market and, due to their preference for national labelling, less than 25% are EC fertilisers. A similar balance of EC versus national fertilisers is evident in Romania where it can be estimated that no more than 35% are labelled as EC fertilisers. A rather more equal balance of EC and national labelled fertilisers was reported in France. Finally, in Germany, Spain, Ireland and Italy EC fertilisers represent between 80% and 100% of the total volume of mineral fertilisers sold annually. In these countries, companies and Member States authorities have shown a clear preference for using the Fertilisers Regulation in full.

Table 3.1– Share of EC and national mineral fertilisers in 10 EU member states (estimates)

Member state	Total volume of mineral fertilisers consumed in 2008 (million tonnes of active nutrients)	Share of EC designated fertilisers in total mineral fertilisers	Share of national fertilisers in total mineral fertilisers
Czech Republic	0.378	20-30%	70-80%
Denmark	0.305	0%	≈100%
France	3.823	≈50%	≈50%
Germany	2.522	80-90%	10-20%
Ireland	0.502	≈100%	0%
Italy	1.380	95%	5%
Poland	2.011	n.d.	n.d.
Spain	1.938	90-95%	5-10%
Sweden	0.264	1-5%	95-99%
Romania	0.331	20-35% ²⁶	65-80%
Total	13.454 (75% of EU27)	60-70%	30-40%
EU27	17.897		

Source: CSES elaboration based on data from interviews with Member States authorities

The information collected suggests the presence of distinct groups of countries with quite different profiles and different reasons for the dominance of EC or national fertilisers. The interviews indicate that some Eastern European countries have a greater share of national labelled fertilisers. Formally, on the basis of the numbers from these 10 countries that represented 75% of the total mineral fertiliser consumption in 2008, we can estimate that between 60-70% of mineral fertilisers sold in Europe are sold and labelled as EC fertilisers.

This share can be expected to increase only gradually in the near future. In some countries (i.e. Denmark, Sweden) nationally labelled fertilisers should be expected to dominate for some time.

²⁶ Estimated based on information on labelling of mineral fertilisers produced in Romania (100% national) and assumption that mineral fertilisers imported from other EU countries are EC fertilisers.

Evaluation findings

3

However, even in these countries, the influence of the Regulation remains very important. Danish regulations make use of the text of the EU Fertilisers Regulation for the provisions relating to mineral fertilisers and, in practice, Danish producers and suppliers comply with most of the terms of the EU Regulation. Similarly, in Sweden, many of the provisions of the Regulation are in practice applied since all fertilisers are imported by major multinational producers whose products abide by the Regulation requirements.

Reasons for manufacturers to market their mineral fertilisers as national fertilisers and not as EC fertilisers

There are various reasons why manufacturers in European countries may prefer to trade their products under national regulations. In the case of the Czech Republic, the dominant player in the country (representing over 70% of the national market) still uses the national legislation that is seen as being more flexible in terms of the provisions for nutrient content levels. A number of products already in the market before 2003 do not comply with the EC limits but there is still strong demand for them in the national market. Companies in France and Romania stated that they produce both EC and nationally labelled fertilisers in order to satisfy existing demand for mineral fertiliser types that are not included in Annex I. While there is a stated preference for the use of the EC label, French national regulation is also used by companies because it provides greater flexibility and allows firms to respond to demand for fertilisers of lower nutrient content. Given the time and procedures required for having a product listed in Annex I of the Regulation (see analysis below) the national route is seen as a preferable option. Furthermore, from an environmental perspective it would not be appropriate to apply a higher nutrient EC fertiliser when a lower nutrient national fertiliser would satisfy crop requirements.

In contrast, in the case of Denmark and Sweden the information provided suggests that the use of the national regulation reflects the preference and familiarity of consumers with the national label. However, given that in both countries mineral fertilisers are imported by large European multinational companies that follow the EC regulation (and in Danish legislation the provisions relating to mineral fertilisers are the same as in the Regulation), in practice most of the fertilisers fulfil the Regulation requirements even though they are not labelled as such.

From a rather different perspective, most of the major fertiliser manufacturers that market only EC fertilisers claim that there are no apparent reasons for using national labels unless the objective is to produce lower quality products. From their point of view, this is an attempt by some firms to maintain their market sectors in domestic markets where low standards may be accepted by authorities as mechanisms to protect national producers.

Is this picture compatible with the development of the Internal Market?

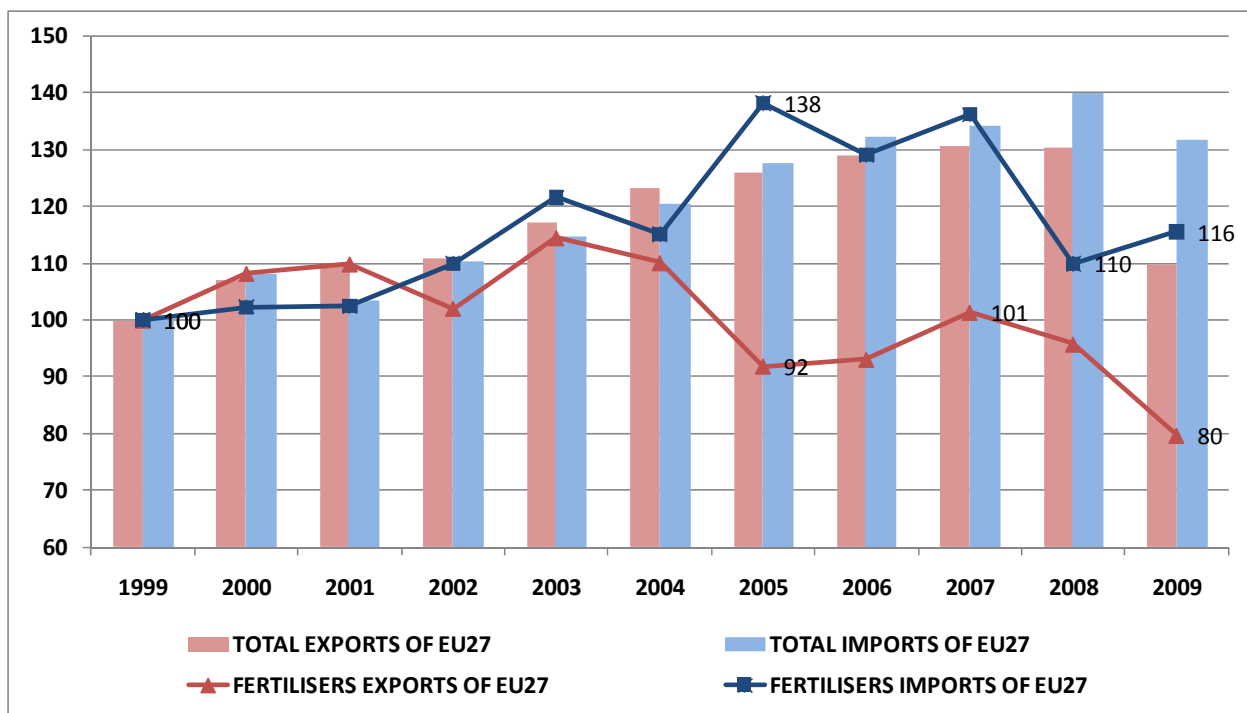
The information collected does not indicate particular problems in the overall development of the Internal Market in the case of mineral fertilisers. As far as the main part of the mineral fertiliser sector is concerned, most of the multinational firms and the other smaller exporting firms have shifted their production towards EC fertilisers. For the existing categories of fertiliser covered by the Regulation, this

Evaluation findings

3

facilitates the smooth operation of the Internal Market with limited problems reported. It has also facilitated the import of fertilisers from outside the EU as reported by the importers association (EFIA). In addition, according to a couple of manufacturers, it supports the export of EC-labelled mineral fertilisers that are accepted without additional tests or documentation requirements by a number of third countries (inside and outside Europe). Still, such a benefit from the Regulation is not able to counterbalance the generally negative trend in the EU exports of fertilisers during the last decade (see Chart 3.3 below) that reflects, primarily, the lower production costs in certain third countries (e.g. Russia) due to cheaper basic inputs (energy, transport).

Chart 3.3 – Evolution of extra-EU trade in fertilisers (all categories) in EU27 (1999=100). Comparison with evolution of total imports and exports²⁷



Source: Eurostat, External trade statistics, 2010

In summary, the choice of the national label in some countries appears to reflect the presence of an existing market for lower nutrient level mineral fertilisers which the Fertilisers Regulation does not cover. It also arises because various new products with additional ingredients (additives, coating agents) are only partially or not yet covered by the Regulation.

²⁷ The general trend may hide specific areas where exports have increased primarily concerning specific categories of fertilisers (e.g. CAN, diammonium phosphate or potassium magnesium sulphate)

Evaluation findings

3

Thus, from the point of view of national authorities and most parts of the industry, the problems for the development of the Internal Market stem from the fact that the Regulation does not cover all segments of the fertiliser market. It is the “non-coverage” of the remaining segments of the market and the important problems in trading them cross-border that is considered to be the main weakness of the existing regulatory framework.

Ensuring the safety of the public and the absence of adverse effects on the environment.

Another key objective of the Regulation was to ensure public safety and the protection of the environment. In this respect the picture provided is rather mixed. The views of industry and most of the Member State authorities deviate significantly in this respect.

From the industry point of view, the Regulation provides an adequate level of protection with the necessary level of flexibility. However, the majority of Member State authorities appear rather critical particularly in relation to the absence of provisions concerning the presence of heavy metals in mineral fertilisers²⁸. Some of them suggested that, in comparison to the previous national regulations on mineral fertilisers and the existing national requirements for other categories of fertiliser, the Fertilisers Regulation has essentially weakened the level of protection of the environment and public safety. The provisions of article 15 that allow for temporary prohibition of placing on the market is not considered adequate by some Member States. In that respect three Member States (Austria, Sweden and Finland) have asked and been granted derogation in accordance with Article 114 of the Treaty of the Functioning of the European Union to maintain national limits for cadmium in EC phosphate fertilisers. The interviews with most Member State authorities suggested that the introduction of specific limits in the text of the Regulation is necessary.

In addition, a couple of Member States authorities suggested that the use of new raw materials, (especially those derived from recycling) and other residues present in mineral fertilisers and other additives that are not covered by the current list in Annex I may pose a risk to public health and this issue needs to be addressed.

In relation to cadmium, the Commission had attempted to introduce upper limits to cadmium in the past (2003) but no specific action was taken. Recently (2009) the Commission presented possible options for regulating the presence of cadmium in phosphate fertilisers (EC and non-EC) during a stakeholder meeting. In addition, in 2007, the Commission organised a working group to examine the introduction of limits to the presence of heavy metals in EC fertilisers. The Fertilisers Working Group reached a consensus on heavy metal limits for primary, secondary and micro-nutrient fertilisers. However, the introduction of heavy metal limits would require a substantial change in the Fertilisers Regulation and the Commission is therefore awaiting a future revision to include them.

²⁸ Arsenic, Cadmium, Chromium, Lead, Mercury and Nickel

Evaluation findings

3

Finally, concerning the case of ammonium nitrate and the limits imposed to ensure public safety²⁹, there were no particular concerns raised by stakeholders. The only comment made was that the limits were probably too strict and beyond what might be considered necessary, but this view is not broadly shared.

Role of the Fertilisers Regulation in the development of innovation

The information concerning the contribution of the Fertilisers Regulation to innovation indicates that this represents the second weakest point of the Regulation. The overwhelming majority of stakeholders – including authorities, business associations and companies – agree that, so far, the introduction of the Regulation and the development of the Internal Market have not created incentives but, on the contrary, have in some cases operated as an obstacle to the introduction of new mineral fertiliser formulations to the market.

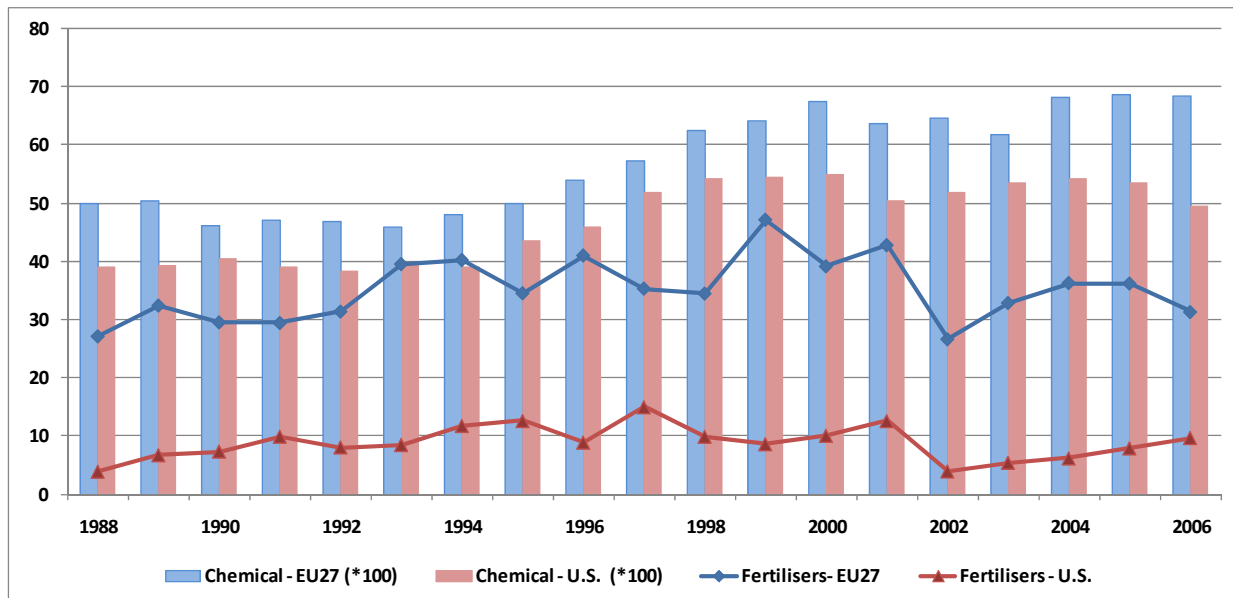
It is important, however, to put the discussion on the impact of innovation into a broader context of innovation activity in the sector. The Commission has received 18 requests for the registration of new fertiliser types since 2003. The fertilisers industry is a rather mature industry with a relatively small number of nutrients required for plant growth. Innovation in the sector is related mainly to the presence of additives that modify the nutrient release pattern and this is generally rather limited. This is corroborated by data on patent applications for the fertilisers sector (see Chart 4.3 below). Patent applications to the European Patent Office from the European fertilisers industry have remained at a level of less than 40 annually for most of the last 15 years. This represents a very small fraction of the patent activity of the total chemical industry (6,831 in 2006 for EU-27) which has been slightly increasing. At the same time though, the fertiliser industry in the EU27 remains more innovative than the respective US industry.

²⁹ Entry 58 of Annex XVII to Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 relating to REACH. OJ L 396, 30.12.2006, p1

Evaluation findings

3

Chart 3.4 - Number of patent applications to the European Patent office in the period 1988-2006 – Fertiliser manufacturing and Chemical sectors in Europe and the U.S. (Numbers for total chemical industry are divided by 100).



Source: Eurostat, R&D Statistics, 2008

By far the most important underlying reason is, according to almost all stakeholders interviewed, the lengthy – and for some of them rather unclear – procedures necessary for the registration of a new type of product in Annex I of the Regulation.

The comments received during the discussions with most of the stakeholders indicate that the typical period required until the final entry of a new product in Annex I is 4-5 years. This usually includes a period of 1-1.5 years for getting approval at the national level and, subsequently, 2-3 more years before managing to get the new product into Annex I. One firm referred to a total period of 7 years indicating that they have still not managed to get their product approved. Fertilisers Europe suggested that this is the case more generally for new categories of additives (e.g. urease and nitrification inhibitors).

Most firms believe that the period of 4-5 years is not in line with the innovation cycle in the industry³⁰ that does not last for more than 1-2 years. By itself, this is considered as a particular obstacle to innovation and a few of the firms interviewed indicated that in view of this long procedure, they have decided not to move into the introduction of a new product or, more often, to focus only on the national market. Still, in the case of genuinely new ingredients, even a period of 7 years compares favourably to the period of 10-14 years required in the pharmaceuticals industry. Similarly, concerning other related sectors, the current provisions of the Pesticide legislation do not specify any timeline for

³⁰ From the time of invention to the development of a final product with all the necessary internal tests)

Evaluation findings

3

the inclusion of authorised substances although such rules have been introduced in the new plant protection products legislation³¹ that will be enforced in 2011.

From the practical side, there are multiple reasons for the long processes identified by stakeholders that are linked with these delays. The most commonly stated were:

- The relatively slow procedures for the development of European Norm for the determination of appropriate analytical methods including the ring tests carried out in different EU accredited laboratories
- The infrequent meetings of the Working Group where a decision for entry into Annex I is prepared. Stakeholders suggest that the long agenda of topics that need to be discussed during these meetings means that there is a need for prioritisation and no time for discussion of all applications. If a decision for a specific product is not taken during one Working Group meeting due to a question or issue raised by one Member State authority then the application may not be examined in the working group meeting – after six months - and be delayed for a year or more. However, a written procedure is allowed under the Regulatory Committee's rules of procedure that allows Member States experts to express their opinion on a legislative proposal by exchange of emails with the Commission. This procedure has been already used twice during the last three years.
- The fact that the new product cannot be placed in the market before it is included in Annex I of an amended version of the Regulation. This represents an additional and largely unnecessary delay according to some stakeholders.

In addition to the long procedures, a number of firms and authorities argued that the information required in the technical files is not stipulated in a clear format. According to stakeholders in different countries, this means confusion but can also lead to additional delays as firms and national authorities may not be able to provide all the information required by the European Commission and the Member States. This unclear picture concerning the requirement is despite the existence of a guidance document developed by the European Commission. Critically, not all interviewees were aware of its existence. One Member State representative went as far as to say that too many technical files submitted were of a poor quality and that there ought to be mandatory requirements relating to their format and content. These requirements would specify more precisely the nature of the information to be provided and how this information should be presented.

Besides these two reasons, both largely related to the implementation procedures in place, a couple of firms producing micronutrients and additives indicated that the Regulation is rather restrictive in terms of the types of mineral fertiliser it allows. In combination with the long procedures for introducing new types it is clearly seen as an obstacle to innovation.

³¹ Regulation (EC) N°1107/2009 concerning the placing of plant protection products on the market, OJ 24.11.2009, L309, p.1

Evaluation findings

3

The particular problems and delays linked with the introduction of new categories of product into Annex I are clearly important. One interviewee commented: "...initially the list in Annex 1 covered all fertiliser types that existed at that time (i.e. 2003). But nowadays it struggles to cope with the changes in the market and this causes significant problems". Even though this may represent a rather stark view of the current situation, it does reflect the concerns of some parts of the industry that are active in the development of new, rather sophisticated fertiliser products.

Discrimination against smaller businesses

As part of the evaluation we also asked the various stakeholders to indicate whether the Regulation has any specific adverse effects on SMEs. While only a small number of SMEs participated in the interview programme, the feedback from these and other sources does not indicate any discrimination against smaller business. On the contrary, SMEs with an interest in trading in other EU or even non-EU countries find that the Regulation has provided some small cost savings in relation to the administrative procedures and the costs of labelling. In principle these savings should be greater – in proportional terms – for SMEs.

Efficiency

Issues of efficiency do not appear to be particularly critical in relation to the Fertilisers Regulation. The resources dedicated to the implementation of the Regulation are rather limited both from the side of the authorities and the companies in the sector.

Market surveillance in all countries is a responsibility of regional or national authorities that are also responsible for other products relating to plant protection. All representatives of government authorities interviewed indicated that the additional administrative costs dedicated to the enforcement of the Regulation have been very limited and that the human and financial resources used have not changed dramatically.

It should be noted though that in most cases the level of market surveillance by authorities has been adapted to the resources and the budget available rather than the other way round. The typical approach adopted – as also confirmed by the results of the consultation by the Commission³² - is for the market surveillance plans to be based on the examination of a sample of EC fertilisers with a greater focus on specific types and those considered the most risky. One Member State authority (France) suggested that market surveillance could be improved in terms of the frequency of tests or the time required for the results from the analytical tests to be produced, but most of the others considered that there are no particular problems. In Sweden there is a system of self-certification with no further testing for national fertilisers and although there are provisions for testing EC fertilisers, the fact that there is only a small amount marketed means that no testing has taken place. From the side of the industry, the interviews in Germany, Denmark, the Czech Republic, Spain, Ireland and Italy suggested that market surveillance does take place in a reasonably consistent and appropriate format.

³² Summary of the Member State consultation on market surveillance on EC fertilisers, Fertilisers Working group meeting, 25.03.2010

Evaluation findings

3

In terms of the level of conformity, on the basis of 12 responses, the consultation indicated that the level of non-compliance was around 15% of the number of products checked (ranging from 5% to 30%), similar to the numbers provided during the interviews (see Annex D for data on specific countries). Incorrect labelling or non-conformity with the requirements for the levels of nutrient content are the most common reasons for non compliance.

Concerning the certified laboratories responsible for the tests, in most cases these pre-existed and, with few exceptions, there has been no need for additional investment. However, at least in the case of Spain accreditation of all regional laboratories with each of the 50 or more methods of analysis has not been financially and technically feasible and, as a result, there may be a few problems in the efficient control actions in Spain.

From the industry side, the introduction of the Fertilisers Regulation has been linked with possible cost savings related to the potential for use of common labelling for trading across the EU27. It also brought savings on other administrative costs arising from compliance with national regulations (paperwork, possible human resources to follow changes to requirements, registration of products in some of the countries) but also, according to a couple of firms even for extra-EU exports in a number of countries that accept EC fertilisers without requiring additional tests or documentation. Almost all interviewees recognised the presence and benefit from such savings but indicated that they were rather marginal – although nobody could provide monetized values - and in most cases the savings are one-off. Only one multinational firm suggested substantial savings from the introduction of the legislation on the basis that the common requirements for mineral fertilisers across the EU allow them to co-ordinate the production at different production sites and to better address changes in demand. From the company side this represents an important cost saving. Rather surprisingly, no other company or industry association made similar claims.

Concerning the resources available at the EU level, a number of stakeholders suggested that the human resources dedicated to administration of the Regulation are rather limited. This observation was linked with the ineffective and long procedures for the introduction of new types of products in Annex I of the Regulation. For many interviewees the two working group meetings per year are inadequate especially since not all participants in the meetings have the necessary technical expertise.

A number of ways of dealing with the technical files were suggested by stakeholders ranging from a scientific/technical sub-committee to examine the technical files, the Commission taking on the responsibility for doing more technical assessments rather than each Member State having to commission their own work, to the possibility of having a European Agency being responsible for the analysis or even for approval of fertilisers (as in the case of pharmaceutical products). In any event, it is widely thought that current procedures can be improved.

Another element related to the efficiency of the Regulation concerns the role of CEN. CEN standards cover sampling and analytical methods and the interviews did not identify any issues or problems related to them. Currently CEN is working on the development of standards concerning the appropriate methods for sampling from static heaps, standards in relation to heavy metals and standards for

Evaluation findings

3

analytical methods. In general, it is considered that CEN work has helped standardize the approaches among Member States although it is also suggested that the procedures for updating the standards are rather long. From the side of the CEN representative, it is recognised that the procedures are indeed relatively long and this is linked with their necessarily rather bureaucratic approach. But it is suggested that the funding provided by the Commission is not adequate to support its operation and that additional requests for the development of standards may be difficult to address. Furthermore, at least in one Member State (FR) the authorities appeared sceptical about any reference in the legislation to standards that companies need to pay for, since this represents an obstacle to effective implementation. Still, taken as a whole, there is no evidence that the involvement of CEN, in its present role, creates any significant obstacle in the implementation of the Regulation.

Overall, it is clear that issues of efficiency are not particularly problematic for the implementation of the Fertilisers Regulation although there are areas for improvement, especially in relation to the EU level procedures. The key issue is the registration of new products where additional resources may be necessary to achieve a more satisfactory level of output. The additional resources dedicated by Member States for implementation and enforcement are rather limited but still adequate in most respects. For firms, there are also some – rather limited - costs savings, especially for those most active in several Member States. These savings should increase if the Regulation extends its application to cover additional categories of fertiliser.

Utility

Based on the analysis provided so far it can be argued that the Fertilisers Regulation has succeeded in delivering one of the key anticipated results, the simplification and harmonisation of the regulation of mineral fertilisers. Through the harmonisation of the legislation it has clearly contributed to the operation of the Single Market and benefited industry even though it has had little observable impact in terms of intensifying the level of competition across the EU or a reduction in the price of fertilisers. There has been an elimination of the trade barriers that still characterise the remaining categories of fertilisers and growing media. Registration procedures, specific requirements and variations in the limits for specific substances that still apply for these categories have been essentially eliminated for over 70-90% of the mineral fertilisers sector.

There is very limited evidence of an increasing level of trade across EU-Member States borders, primarily because the main producers of basic fertilisers were already operating at a global scale prior to 2003 while most producers of complex and granulated fertilisers and, even more, blenders of fertilisers tend to focus on the local or national markets. Furthermore, as suggested by most interviewees, the level of competition in the industry is high and profit margins are rather limited. The prices are very much dependent on the changes in demand linked with changing patterns of agricultural production, the impact of EU policies like the CAP, the imports of cheap fertilisers from third countries outside the EU but also events such as the recent economic crisis. At the same time, the cost of fertilisers' production is determined primarily by energy and transportation costs and, in most sectors, competition is based on the access to distributions networks and on marketing. On this basis, the potential for

Evaluation findings

3

changes to the level of competition and prices attributable to the Fertilisers Regulation was already rather limited, when the legislation was adopted.

Sustainability

The information collected during the interviews indicates that for most stakeholders the Fertilisers Regulation represents a good starting point for the full harmonisation of the fertiliser market in the EU. Indeed, as already suggested, the main weakness of the Regulation is considered to be its rather limited coverage of fertilisers. There is a very limited questioning of the appropriateness of a regulatory approach that determines specific types of fertiliser and relative minimum and maximum limits. In contrast, a New Approach legislative format setting requirements concerning the properties of the fertilisers in relation to environment, safety, efficacy is not favoured by the great majority of stakeholders (authorities, and industry).

While there are differences and additional issues raised concerning the regulation of organic and organo-mineral fertilisers, liming material, EC-type regulation is generally favoured by all stakeholders as providing the basis for addressing the problems of a currently fragmented market in these sub-sectors. The difficulties in reaching agreement concerning the appropriate lists and limits for the various types of raw materials and substances contained in organic and organo-mineral fertilisers in order to ensure the protection of the environment, health and safety or the appropriate analytical methods are generally thought to be considerable and it is recognised that such a process may take some time. The climatic and geological differences among the Member States also mean that different maximum and minimum levels will be appropriate.

European added value

On the basis of the evidence brought forward earlier it is clear that the EU level intervention and the introduction of a Fertilisers Regulation has brought changes that could not have occurred through Member States acting on their own. There would be only a limited possibility for coordinated action by the Member States to establish common basic standards in national legislation, in the absence of co-ordination at a European level. . In most cases, environmental and public safety considerations are being utilised, more or less justifiably, to introduce different limits and requirements that relate to national circumstances. From the point of view of the development of the Internal Market these represent trade barriers that, according to almost all stakeholders, only an EU-wide regulation can effectively address.

Strengths and weaknesses of the Fertilisers Regulation

In this section we bring together the main points from the previous sections and make reference to additional points and issues raised in relation to specific provisions of the Regulation:

Strengths

- The most important strength of the Regulation is that it has effectively simplified and clarified the regulatory framework concerning mineral fertilisers. This by itself is an important achievement and

Evaluation findings

3

it is a point that stakeholders would like to see repeated in any future regulation concerning other categories of fertilisers.

- The simplification has also brought some, albeit limited, cost savings for manufacturers relating to the packaging and labelling of products and the costs of staying up-to-date with multiple numbers of regulations. In certain cases, economies of scale for firms may also materialise from the more effective management of production.
- The overwhelming evidence is that trade barriers in relation to the intra-EU trade of mineral fertilisers have been effectively eliminated. This has not been linked with an evident increase in the level of trade or a reduction of prices but there are other key parameters (price of energy, level of demand) that play a much more important role in this respect.
- The implementation and enforcement of the Regulation as far as the surveillance of the market is concerned appears to be both effective and quite efficient. Extensive data are not available to check this conclusion but the feedback of authorities and industry does not indicate any problems in relation to EC fertilisers and surveillance does take place in parallel to that for national fertilisers.

Weaknesses

- The key weakness of the implementation of the Fertilisers Regulation is the long period (4-5 years on average) required for the introduction of a new type of fertiliser into Annex I. It reflects a rather ineffective procedure that requires multiple stages – a national and a European one – which, especially at the second stage can be rather slow. The period required is not in line with the cycle for the development of a fertiliser product and, in specific circumstances and for certain types of products, it may present an obstacle to innovation. Furthermore, it appears that it may lead to some firms preferring the combination of national approval and a mutual recognition path, thus – as discussed in more detail in section 3.3 - operating against the key objective of the Regulation, which is the harmonisation of the Internal Market.
- Another weakness, as indicated by almost all Member State authorities, is the ineffective addressing of their environmental concerns, primarily in relation to the issue of the presence of heavy metals. For most authorities, the absence of provisions concerning the presence of heavy metals needs to be addressed by the Regulation.
- The strength of the Regulation in achieving the harmonisation of the legislation for EC fertilisers is at the same time a weakness when it comes to the remaining categories of fertilisers, growing media and soil improvers that are still not covered by it.
- Stakeholders in certain countries referred to specific unclear or unsatisfactory provisions in the Regulation concerning:

Evaluation findings

3

- the definition of the term manufacturer with no differentiation between producer, importer and distributor of EC fertilisers.
- slow/controlled release fertiliser products are covered by the Fertilisers Regulation. However, the authorities in France do not consider that the coated form of slow release fertilisers are covered but their experience is that manufacturers from other countries place them on the French market using the CE mark.

3.3 - Mutual recognition Regulation

To what extent do companies make use of Regulation (EC) No 764/2008 on mutual recognition?

On the basis of the data and the information collected during the various interviews with government authorities and companies it appears that there has so far been very limited use of the mutual recognition regulation by companies in the mineral fertilisers sector.

The data collected indicate that in most countries, there have not been more than 5-10 products per year sold on this basis. In a number of countries the authorities indicated that they were not aware of any cases. We should note though that data on products using mutual recognition are very limited. Companies may place products on the market of another EU Member State without going through an application procedure. Member States become aware of their presence either as part of their surveillance of the market or in the case of enquiries to the authorities from companies. However, the interviews with manufacturers and trade associations corroborate the view that, in general, there has been a very limited use of mutual recognition. Only in the Czech Republic are there indications of a more extensive use of the regulation with more than 20 cases of products in 2010 – as reported by the responsible authority. Two of the three companies interviewed in the Czech Republic indicated that they have already used or are intending to use mutual recognition to place products on the market of other countries. In a few (3-4) more interviews, producers indicated that they were considering the use of mutual recognition as an alternative approach to applying for entry in Annex I (for mineral fertilisers) or registering according to national regulations. However, most of the firms are rather sceptical about the use of mutual recognition. Many of them showed limited familiarity with the requirements of the Regulation (EC) No 764/2008 and expressed fear that Member States may still block the entry of their products in the national markets.

Table 3.2 – Number of known cases where the mutual recognition regulation has been used – Data from 10 Member States

Country	Number of cases
Czech Republic	20 (2010)
Denmark	1 possible case (2009-2010)
France	No data available
Germany	8 (2009), ~10 (2010)
Ireland	0
Italy	No data available

Evaluation findings

3

Country	Number of cases
Poland	0
Spain	4 (2009-2010) ³³
Sweden	0
Romania	0
Total	<50 (estimate)

Source: CSES survey

Reasons for use of mutual recognition by firms

As already suggested there is limited experience of the use of the mutual recognition Regulation and, in their great majority, firms were negative about its use. Among those that are considering the use of mutual recognition for mineral fertilisers the main reason is the alternative it provides for trading new types of fertilisers that are not covered by the Fertilisers Regulation. While all firms indicate that they would prefer to trade their products under the EC label, the very long procedure for introduction is considered as an important problem to which mutual recognition provides a possible alternative.

In the case of non-mineral fertilisers, the trade associations and the firms interviewed again considered it as a route that provides an alternative to the existing national controls and procedures. However, there are worries that national authorities will use environment and public safety safeguards to block mutual recognition and Member State authorities have confirmed that they are particularly concerned about environmental issues that may arise with the use of mutual recognition for organic fertilisers and related products. In all cases (organic and organo-mineral, liming material, soil improvers, growing media) there is a broad consensus that an EU-wide regulation is by far the best option.

Effectiveness of mutual recognition regulation for internal market and protection of the environment

Given the limited experience of the use of mutual recognition it is not possible to make a proper assessment of its contribution in achieving the objectives of developing a harmonised market. What we can point to though is the negative views of the great majority of stakeholders towards the application of the mutual recognition on the basis of some real or potential issues and problems.

Industry representatives do not consider that the mutual recognition regulation has the potential to support the development of an effectively operating internal market. For the majority of them the mutual recognition Regulation has come rather as a surprise and it has created confusion in the market which could work against the development of harmonisation. One firm stated rather clearly: "...it has the potential to create chaos in the market". Even more negative are the views of almost all the authorities, particularly in relation to the effectiveness of the mutual recognition Regulation in ensuring the protection of the environment and public safety. With a few exceptions, this is seen as the main

³³ These are the cases that the Spanish ministry is familiar with as they have been communicated through various channels. There is no complete information available.

Evaluation findings

3

danger arising from its use and the prime reason for Member State authorities to have concerns about its application in the fertiliser sector.

Issues and problems related to the use of mutual recognition

The main potential issues brought forward are the fears concerning the quality of the products and the inability to control whether the new products will meet environment and public safety concerns. While CSES attempted to collect hard evidence on the various concerns raised, in most cases interviewees could not provide specific examples or cases to support the claims generally made. The fact that the mutual recognition Regulation has only been applied during the last 2 years is the main reason for this.

For most industry representatives – as expressed by Fertilisers Europe but also the great majority of firms interviewed – there is a danger of some firms using countries with the most relaxed regulation as an entry point to the EU market. This could push the quality of fertilisers towards the lowest common denominator creating unfair competition for firms that abide by the higher quality standards of advanced national fertiliser regulation. In addition it has been argued that it creates some form of regulatory unfair competition between countries, with those with less stringent norms being more popular as the location for registering products. It has to be noted though that it has not proven possible to identify the countries that are considered to be posing a threat. It is rather common for companies operating in EU-15 Member States to consider that the quality standards in some of EU-12 Member States are lower but this is not based on concrete evidence and it is not applicable across the board.

From the side of Member State' authorities, the main issue raised – with the exception of the authorities in the Czech Republic and Romania - is that the mutual recognition regulation poses threats to the protection of environment and public safety. There are important variations in the needs of different countries on the basis of climatic and geological considerations and the clear concern of a large number of authorities is that mutual recognition will lead to inappropriate or low quality products entering the market.

From a more practical side, authorities indicate also that the control of fertilisers and certification that they comply with the regulation of other Member States can be particularly problematic. It is expected to create a significant additional workload. The French authorities reported to have already experienced an increase in queries from companies in relation to the use of mutual recognition. It will require authorities to be familiar with the national regulations on fertilisers in each of the other 26 Member States which are usually not available in all official languages. At the same time, official controls will be much more difficult as the analytical methods to check compliance with the various regulations may not be known.

Deviating from this negative perspective on mutual recognition, the authorities in the Czech Republic suggest that they have not experienced any problems so far. If a company can produce some type of certificate of conformity with the national regulations of another Member State there should not be any of the problems described above. Still, compliance with the requirements of the Czech regulation concerning the protection of environment and safety is necessary – thus the mutual recognition is not

Evaluation findings

3

seen as operating against the capacity of the authorities to protect the environment - and the appropriate labelling in Czech language is also required. From the manufacturers' point of view the need to comply with the national regulation is not removed even though some steps and procedures are simplified. Although there is very limited experience, the authorities in Romania also appear rather supportive of mutual recognition and have recently made the necessary changes to the national legislation to remove any obstacles to its use.

Finally, a separate issue raised by the authorities in Italy and France is that some producers of phytosanitary products try to bypass the national regulation on such products by branding them as fertilisers. It is claimed (although again not supported with specific evidence) that in some countries authorities inappropriately recognise phytosanitary products as fertilisers giving them the opportunity to use mutual recognition to enter other national markets and avoid the stricter controls and tests required.

3.4 - Assessment of existing support for changes

As part of the interview programme we asked stakeholders to indicate what, based on their experience, would be the most appropriate route for a further harmonisation of the fertilisers market, including their views relating to other categories not currently covered by the Fertilisers Regulation.

As already suggested there is a clear support for the introduction of an EU-wide regulation to cover the different categories of fertilisers. The positive experience of the concerning EC fertilisers is considered as providing a strong basis for such a solution and it very much preferred to a solution based on the application of the mutual recognition regulation. Given the expected problems that may come from mutual recognition, an EU wide regulation is seen as the only alternative.

However, there is no clear view as to how this should be implemented. Not all stakeholders agree that an extension of the current Fertilisers Regulation to cover the remaining categories of fertilisers and growing media represents the best option. There is still no consensus in relation to establishing common maximum limits for heavy metals, the possible presence of pathogenic material in organic fertilisers and the efficacy of some categories of fertilisers in different climatic conditions. The importance of the different climatic and geological conditions should, according to most MS authorities, be taken into consideration in the case of fertilisers with organic content. The most commonly supported proposal (8/10 MS) is for an umbrella regulation covering all categories and including additional specific provisions for each sub-sector. It is also proposed that the provisions of a future regulation on organic fertilisers should give Member States flexibility to decide on the specific maximum levels of specific substances in the context of the Regulation. According to the proposal put forward by one Member State, minimum or maximum levels can be specified for different geographical zones inside the EU. Finally, in relation to non-fertiliser products (growing media and peat) the industry expressed fears that any proposal for a regulation that will aim to cover all categories may take a very long time before it is eventually adopted. A separate regulation would, in their view, provide greater flexibility allowing regulation to be adopted much faster in areas where there is, as suggested, broad consensus.

Evaluation findings

3

In a rather different direction, the German authorities indicated that a future Regulation should not define types or categories of fertiliser on the basis of nutrient content as it does currently. It is considered preferable to set requirements relating to the necessary properties of the fertilisers in relation to environment, safety, efficacy and other technical considerations. This would make the Regulation more flexible, allowing a much easier coverage of any new types of fertiliser. The role of European standards in this case would be much more important, as is the case with all new approach directives. However, the support for such an approach is limited especially from some manufacturers associations. The current specification of types on the basis of nutrient content is considered to be a safeguard of minimum quality and a standard that is set for all the industry. Established manufacturers consider that unless any standards specify certain types of fertiliser, the alternative approach would provide an open door for the introduction of low quality fertilisers.

Conclusions and recommendations

5

In this section we provide the main conclusions of the evaluation and make recommendations concerning possible changes in provisions of the Regulation, the implementation procedures or the extension of the regulation.

4. - Conclusions and recommendations

Effectiveness of the Fertilisers Regulation

The findings of the evaluation indicate that the Fertilisers Regulation has been **effective in meeting one of its main objectives**, to simplify and harmonise the regulatory framework in relation to an important part of the fertiliser market. Trade barriers, as existed before the entry of the Regulation into force have essentially been eliminated and trade across the EU is, with very few exceptions, conducted efficiently.

60-70% of the 17.8 million tons of mineral fertilisers consumed in 2008 in the EU are labelled as EC fertilisers although there is great variation of the share of EC versus national fertilisers among Member States. Still, even in countries with high shares of nationally labelled fertilisers, in practice an important part of the market follows the requirements of the Regulation. The main reasons for not using the EC label are the continuing presence of demand in certain Member States for products with lower nutrient content or lower quality standards, tradition or, more importantly, the greater flexibility provided by national regulation in some Member States for the marketing of new products that currently do not comply with the existing provisions of the EC Regulation.

However, the development of the Internal Market cannot **be linked directly with an increase in the level of trade, increased competition or a reduction of prices in the market**. The mineral fertilisers sector had already consolidated at an earlier period and competition, in most of its segments, is quite intensive. Furthermore, other key parameters (level of demand for agricultural crops, energy prices) play a much more important role in this direction. In this respect, new Member States may benefit more from the Regulation in the future but there is not such evidence so far. Still, **the Regulation has brought some, albeit limited, cost savings for manufacturers** concerning the packaging and labelling of products and the costs of staying up-to-date with a multiple number of regulations and has simplified the regulatory environment in which the sector's enterprises operate. In certain cases, economies of scale may also materialise for firms and result in the more effective management of production.

However, the Regulation appears **less effective in relation to two other key objectives, the protection of the environment and the promotion of innovation**. In relation to the first objective, the main problem, as indicated by almost all Member State authorities, is that the addressing of the environmental concerns arising from the presence of heavy metals in some fertilisers is seen to be ineffective. The absence of maximum limits is perceived to be a clear limitation of the Regulation and an area where Member States would like to see specific provisions in place. In relation to the second objective, the actual problem concerns the implementation process of the Regulation that is slow and not in line with the innovation cycle in the industry. It is a combination of technical files not always being properly prepared by applicants, but also the delays of the Fertilisers Working Group that only meets twice a year; it has a very demanding agenda and is not necessarily a body that is appropriate for making

Conclusions and recommendations

5

the required technical assessments. Thus, under certain circumstances the procedures may pose an obstacle to innovation. It is also possible that it may lead firms to prefer the national approval and mutual recognition path, thus operating against the development of the Internal Market.

Recommendation 1 – The Commission should push forward the inclusion of provisions concerning maximum levels of heavy metals in the Fertilisers Regulation.

Recommendation 2 – The Commission should make efforts to reduce the period required for the processing of an application for inclusion of a new type of fertiliser in Annex I of the Regulation. This can include an updated and more detailed guide (with examples) for an application. The Commission should also consider the creation of a technical committee comprised of experts covering the whole range of disciplines for the examination of the technical files of applications. This committee would examine the applications and make recommendations to the Fertilisers Working Group members that would then focus on taking decisions on the approval or not of specific applications.

Recommendation 3- In order to address the use of additives in mineral fertilisers that represents the main area of innovation, a new section in the regulation should be developed defining a list of permitted additives and the mineral fertilisers in Annex I they can be used in conjunction with. This list will be subject to defined safety criteria, application rates and other technical considerations.

Finally, as far as the enforcement of the Regulation and the surveillance of the market are concerned, no problems stand out at this point. They both appear to be effective and relatively efficient and it is difficult to see additional resources being dedicated at this point.

The main weakness of the Regulation concerns the areas not currently covered where the market appears to be very fragmented. There is an increasing demand by stakeholders across the board for a more extensive coverage of the fertiliser sector by an EU wide Regulation.

Mutual recognition Regulation

There is, so far, **limited experience concerning the use of the mutual recognition (MR) Regulation**. The information collected indicates that there are not more than 50 products for which the Regulation has been used to trade across Member States. While it is possible that more companies have used the MR Regulation than the authorities are aware of, **most of the industry is either unaware of or very sceptical about its use, as is the great majority of Member State authorities**. Only in two countries, the Czech Republic and Romania, did we find a more positive approach towards the use of the mutual recognition principle as an alternative tool to facilitate free trade across the Internal Market.

Conclusions and recommendations

5

The limited experience of the use of mutual recognition means that it is not possible to make a real assessment of its effectiveness. However, the position of almost all stakeholders is that **it does not represent an appropriate mechanism to support the development of the Internal Market**. It is seen as creating confusion and **operating against the desired harmonisation of the Internal Market** for all categories of fertilisers. For the authorities, there are fears concerning their capacity to ensure the quality of products on the market and control whether new products will meet national environmental and public safety concerns. There are also practical considerations from almost all authorities that it will create additional work and that it will be a demanding task to check whether fertilisers abide by the national regulations of at least one of the other 26 Member States. For industry, the main fear is the possibility of unfair competition, if there is registration in countries with less stringent provisions.

On the other hand, for a few firms, the use of **mutual recognition provides a useful alternative as a way of overcoming some of the obstacles to the free movement of national fertilisers**. These may include the various registration procedures and possible tests required in the different Member States. Mutual recognition does not provide the opportunity to avoid compliance with provisions aiming to protect the environment and public safety or to label the product in the national language. But it simplifies part of the process. For mineral fertilisers it also offers an alternative path to applying for inclusion of products in Annex I of the Fertilisers Regulation.

However, rather irrespective of their position, the mutual recognition Regulation will continue to apply to fertilisers until a regulation covering all categories is adopted. It is thus important that a minimum common base is established during that period.

Recommendation 4 – The Commission should aim to increase the clarity concerning the application of the mutual recognition Regulation and possibly promote some common rules of practice through the issuing of a guidance document.

Irrespective of views of the use of mutual recognition, there is **overwhelming support for the use of EU-wide regulation as the best way to achieve the harmonisation of the market for the broader range of fertilisers**, beyond mineral fertilisers. However, the extension of the 2003/2003 Fertilisers Regulation is not supported by all stakeholders. Potential difficulties are foreseen in agreeing on requirements, such as in the case of pathogenic material in organic fertilisers or for addressing the different concerns of countries in relation to the efficacy of some fertilisers categories in different climatic and geological conditions. A separate regulation for each category is an alternative approach that has some support by the European Growing Media producers association. A Regulation based on essential requirements for the properties of the fertilisers in relation to the environment, safety, efficacy and other technical considerations and a more extensive use of standards is not broadly supported.

Recommendation 5 – The Commission should continue to pursue the objective of extending the Regulation to cover all categories of fertilisers and liming material which is the most effective way to eliminate existing trade barriers for fertilising materials that are outside the scope of the current Regulation and to address the problems related to mutual recognition. The extended Regulation should be formed in such a way so as to provide flexibility for the gradual inclusion of the various categories.

Conclusions and recommendations

5

The Regulation should set basic rules applying to all categories and include different sections laying down the specific rules applicable to each category. These rules may be developed by expert task forces nominated by the Commission working in parallel and be inserted and further adopted in the regulation when agreement is reached. Delays and differences in one category should not affect progress in the remaining categories.

Recommendation 6 – The adoption of a separate EU legislation concerning non-fertilisers products such as growing media and peat should also be promoted. Unless this appears to lead to unnecessary delays, it could also be part of the extended Fertilisers Regulation.

Interview programme

A

No.	Country	Name of association /organisation	Type
1	Europe	CEN	Standardisation body
2	Europe	Fertilisers Europe	European trade Association
3	Europe	EPAGMA: European Peat and growing Media Association	European trade Association
4	Europe	EFBA – European Fertilisers Blenders Association	European trade Association
5	Europe	European Fertilisers Import Association	European trade Association
8	Europe	YARA	Multinational manufacturer
9	Europe	Timac – Groupe Roullier	Multinational manufacturer
10	Europe	BASF	Multinational manufacturer
11	Czech Republic	Central institute for Supervising and Testing	Government body
12	Czech Republic	Agra Group	SME
13	Czech Republic	Agro CS	SME
14	Czech Republic	Lovochemie	Large national manufacturer
15	Denmark	Ministry of Food Agriculture and Fisheries – Plant directorate	National authority
16	Denmark	Flex Godning	SME
17	France	Fertilisers and Growing Media Regulatory office	Government body
18	France	Ministry of Economy Industry and Employment	National authority
19	France	ANPEA (Association nationale engrais et amendements)	Trade association
20	France	UPJ - represents the producers of organic and organo mineral fertilisers	Trade association
21	France	UNIFA	Trade Association
22	France	GPN	Large manufacturer
23	Germany	Federal Ministry of Food, Agriculture and Consumer Protection (BMELV)	National authority
24	Germany	VCI –Chemical Industry Association –Fertilisers division	Trade association
25	Germany	Aglukon	SME
26	Germany	Compo	Large Manufacturer
27	Ireland	Department of Agriculture Fisheries and Food	National authority
28	Ireland	Fertilisers Association of Ireland	Trade Association
29	Ireland	Target Fertilisers	SME
30	Italy	Ministry of Agriculture Food and Forestries Policies	National authority
31	Italy	Puccioni	SME
32	Italy	Valagro	Large manufacturer
33	Italy	Assofertilizzanti	Trade association
34	Poland	Ministry of Economy - Economy Development Department Chemistry and Pharmacy Unit	National authority
35	Poland	ANWIL	Large Manufacturer
36	Poland	TOP FARMS NAWOZY SP.	SME
37	Romania	Ministry of Economy – DG Industrial policy	National authority
38	Romania	Nitrofosfor	Trade association
39	Romania	Azomures	Large Manufacturer
40	Romania	Interagro	SME

Interview programme

A

No.	Country	Name of association /organisation	Type
41	Spain	Ministry of environment, rural and Marine	National authority
42	Spain	ANFFE	Trade association
43	Spain	Fertiberia	Large Manufacturer
44	Spain	Tessenderlo Chemie	SME
45	Spain	YARA Espana	Large manufacturer
46	Sweden	Swedish Board of Agriculture	Government body

Country fiches

B

Czech Republic

Total production	Value: no data Capacity – 260-300K tonnes (source: estimate on the basis of capacity of main company in sector)
Total consumption	380K tonnes of active ingredient (total) - 290k N, 50k P, 40k K (around 1.3billion tonnes of final product) Low intensity (27 Euro/hectare)
Imports/Exports	Intra EU trade : 524K tonnes imports, 535K exports in 2009 (Eurostat,2009) ³⁴ Extra EU trade limited
Number of firms (large, small)	12 : (1 company represents 70-80% of market) plus a few smaller specialised producers (AGRO CS)
Number of employees	No official data (estimate <1,500)
National Regulation (requirements etc., registry, enforcement requirements, procedures for EC and national fertilisers)	The national regulation (act 156/1998) as amended in 2009 is not very different from EU regulation. It is however stricter on heavy metals. National regulation also includes more strictly/specifically defined labelling requirements Registration or notification procedure for placing fertilisers in the market – does not apply for EC fertilisers. Fertilisers that correspond to the types (as defined described in Decree 474/2000) may be placed on the market following notification and approval by the Central Institute for Supervising and Testing in Agriculture (CISTA). Provided that neither this approval is sent to an applicant within 30 days from the day the notification is delivered to CISTA nor the ban on placing fertiliser on the market is delivered to the applicant it is considered that CISTA issued the approval. Alternatively a producer/importer/trade can register a fertiliser on the basis of Act.158/1998. If the fertiliser belongs to types described in the Decree the process is completed in 60 days. If the fertiliser does not belong to the given types of fertilisers, CISTA carries out assessment or examination of its properties using biological trials and tests or may accept an assessment or results of assessment carried out by other expert establishment. CISTA shall decide in that case within 6 months (no tests), 18 months (pot tests) or 36 months (field tests). Subsequently fertiliser is registered as a non-type one. Registration of fertilisers costs 3000 CZK and an applicant meets the costs of sample analysis, eventually of biological tests, which are carried out by CISTA.
Share of EC vs. National fertilisers in market	Currently estimated at 25% EC-75% national based on the fact that the company dominating the market indicates that not more than 20% are EC. However the share of EC fertilisers is gradually increasing. National fertilisers are still preferred: <ul style="list-style-type: none"> - for firms only present in the domestic market - because it give greater flexibility in relation to EC fertilisers in terms of tolerances and capacity to have products that do not fit with EC specifications

³⁴ Important part is imported as basic fertilisers and exported in processed form

Country fiches

B

Position of stakeholders in relation to a harmonised regulation	Czech authorities and companies are in general in favour of an EU wide legislation for fertilisers as it shall provide greater clarity. They point out though that the appropriateness depends on the content and quality of legislation.
Mutual recognition (position of government, level of use, problems reported)	Views on mutual recognition are generally positive – The ministry considers that it provides a solution to avoid the long procedures for adding to annex 1 new substances. Use by CZ companies is still limited but they see it as a positive mechanisms for the future given their negative experience with main export partners (mainly PL, HU) To date, there have been 20 cases of foreign firms using mutual recognition. There are no particular problems taking place and do not worry of substandard quality products (if there is some form of certificate they are ready to accept – if not (like products from the UK) they do not
Other important issues raised concerning EC or national fertilisers	The Regulation is not considered flexible in terms of adding new types and new testing methods. The labelling requirements for EC are not considered very clear – national regulation is seen as more appropriate

Denmark

Total production	Value: €16.8 million (2007) Represent less than 0.1% of total European production
Total consumption	305K tonnes of active ingredient (2008) (205 N, 29 P, 70 K) (approximately 1billion tonnes of final product) Moderate level of consumption per hectare (€63/ha)
Imports	755 K tonnes of final product (655K intra EU27, 100K tonnes extra EU27)
Exports	57.5 thousand tonnes of final product (53K tonnes intra EU27 , 4.5K tonnes extra EU27)
Number of firms	8 – mainly subsidiaries of major multinational companies. Small number of producers of liquid fertiliser
Number of employees	29 (2007)
National Regulation (requirements etc., registry, enforcement requirements, procedures for EC and national fertilisers)	The Executive Order on fertiliser and soil improvers etc of 12/03/2010 implements Danish legislation on fertilisers. The law reproduces Regulation 2003/2003 with respect to mineral fertilisers, with additional provisions for organic fertilisers, soil improvers and other products. The law includes also provisions for registration, marking and packaging. There is another relevant regulation covering heavy metals. The system of tests is seen as efficient and notified laboratories give results in a timely manner.
Share of EC vs. National fertilisers in market	The products sold in Denmark are almost exclusively marketed as national fertilisers, but comply with the Regulation, since the Danish law uses the same provisions. Producers tend to prefer national markings to avoid labelling and packaging issues
Position of stakeholders in relation to a harmonised regulation	Overall, harmonisation and simplification of fertilisers' regulation is seen as a positive move. Innovation is not an issue either as there is no intention from domestic producers to introduce product beyond those already recognised.

Country fiches

B

Mutual recognition (position of government, level of use, problems reported)	There are some concerns about environmental standards but there is little experience of mutual recognition (1 case) up to now.
Other important issues raised concerning EC or national fertilisers	Two main issues are: <ul style="list-style-type: none"> - the import of raw material from outside the EU being subject to anti-dumping laws - the heavy burden of some security procedures in handling sulphur. - Some doubts were raised about CEN standardisation procedures. Since the standards are largely agreed among industry representatives, there is a danger that broader environmental and social issues may not find their proper place.

France

Total production	Value: € 3.3billion – 13% of EU27 400,000 tonnes of organic soil improvers are produced annually
Total consumption	Total consumption: 3.8 million tonnes of active ingredients - 22% of EU27 (2.4N, 0.6P, 0.8K) – around 12.1 billion tonnes of final product Total of 7.9 million tonnes of mineral fertilisers used in the 2008-2009 High intensity of use (€93/hectare) 3 million tonnes liming material
Imports	3 million tonnes of final product (1.3m intra EU27, 1.7m extra EU27) – 0.45m organic 330,000 tonnes of soil improvers are imported annually
Exports	0.33 million tonnes of final product (0.2m intra EU27, 0.13m extra EU27)
Number of firms (large, small)	175 companies, including 3 or 4 very large firms including GPN, YARA, TIMAC
Number of employees	5,400
National Regulation (requirements etc., registry, enforcement requirements, procedures for EC and national fertilisers)	The normal system of putting fertilisers on the market in France is homologation, where a product needs to prove both efficiency and safety (<i>innocuité</i>) factors. Homologation usually takes 6 to 9 months, and the final decision is taken by a committee composed of experts and representatives of different ministries and managed by ANSES. Legally, only two types of products are exempt from going through homologation: <ul style="list-style-type: none"> • Those explicitly covered by Regulation 2003/2003 • Those covered by a French standard (Norme Francaise rendue d'application obligatoire), covered by the decree 42/001. All national fertilisers are authorised by the ministry of agriculture.
Share of EC vs. National fertilisers in market	Around 50% of fertilisers in France are EC fertilisers, 45% abide to French norms and 5% have been put on the market through homologation
Position of stakeholders in relation to a harmonised regulation	All stakeholders are positive of the move towards harmonisation underlying the 2003/2003 regulation. While there is an agreement that further harmonisation should take place for different types of fertilisers, French stakeholders stress that it will be a long process and are keen on ensuring stringent health, consumer protection and safety rules.
Mutual recognition (position of	Mutual recognition has arrived as a surprise for all stakeholders in

Country fiches

B

government, level of use, problems reported)	France. France has one of the strictest regulatory regimes for non EC fertilisers and some products that were considered fraudulent before the introduction of 764/48 now have to be legally accepted. All stakeholders argue that free trade in fertilisers might be important but they should not be treated as any other products – fertilisers are different and any mistake can have far-reaching consequences. There is a fear (without evidence) that some products not recognised by France as fertilisers enter the French market under mutual recognition for fertilisers (especially phytosanitary products)
Other important issues raised concerning EC or national fertilisers	There is an issue surrounding the use of CEN standards. Although they are seen as very positive and useful, the fact they need to be bought is an issue. The French constitution stipulates that “no-one should be unaware of the law”; having legislation referring to CEN standard for which they are charged goes against this principle. Some aspects of the regulation need to be clarified for products such as time-lagged fertilisers.

Germany

Total production volume	Value: €3.3 billion (2007) Capacity close to 4million tonnes 17.6% of total EU27
Total consumption	1.9 million tonnes of active ingredient (2008) - 1.5million tonnes N, 0.174 P, 0.179 K in 2008 (around 8 million tonnes of final product) Moderate levels of consumption intensity (€73/hectare)
Imports	4.1million tonnes of final product (3.4m intra EU27,0.7m extra EU27)
Exports	5.8million tonnes of final product (3.5m intra EU27, 2.3m extra EU27)
Number of firms (large, small)	50-70 in total 13 producers of basic fertiliser types BASF, K+S, Compo (part of K+S) and YARA are the main producers of basic fertilisers – They are large multinational players with many subsidiaries. Blenders and other producers are smaller in size
Number of employees in sector	10,500 (2007)
National Regulation (requirements etc., registry)	Strict environmental regulation. There is no registration process. The national regulation is stricter in relation to EC in terms of heavy metals requirements and organic pollutants.
Share of EC vs. National fertilisers	Around 80-90% of mineral fertilisers in the market are EC according to the national authorities.
Market surveillance (issues with implementation, data on controls and non-compliance)	Around 10% of the fertilisers examined on a random sampling basis did not comply with minimum nutrient content requirements. 15% did not comply with labelling requirements.
Mutual recognition	Experience so far remains limited. There is information for 8 enquiries by companies in relation to mutual recognition in 2009 and of a similar number to date in 2010. Germany is opposed to mutual recognition based on the fear that it will undermine national regulation and the Fertilisers Regulation. It will operate against the development of a harmonised market because of increasing confusion.

Country fiches

B

	<p>Surveillance authorities will hardly be able to certify that a given fertiliser complies with the regulation of another country (as claimed by the producer/importer).</p> <p>For firms, mutual recognition will lead to distortion of the market and unfair competition. Additionally it creates a risk to lower product quality: some recycling companies from inside and outside the EU, which are not fertiliser producers, may try to put low quality standards products (in terms of agronomic efficiency and contaminants) on the market, or even to get rid of substances as fertilisers</p>
Position of stakeholders in relation to a harmonised regulation	<p>Positive view for an EU wide regulation for all categories. The German authorities and all companies support a full harmonisation of the fertiliser legislation. The new regulations should, from the outset, comprise all types of fertilisers, soil improvers, growing media and plant strengtheners. Especially with regard to products containing organic material, the Member States could be authorised to allow for a limited transitional period a placing on the market that would be limited in terms of geography and time. This period could be used for drawing up some standards such as uniform substance lists for allowed raw materials throughout the EU.</p>
Other important issues raised concerning EC or national fertilisers	<p>There are a number of missing/weak points from the current regulation concerning effectiveness and harmlessness: requirements on maximum levels of heavy metals needs to be introduced/strengthened with labelling requirements in order to inform users.</p> <p>The national authorities consider that the Regulation – based on the approval of types of fertilisers on the basis of the nutrient content - as quite inflexible and problematic. It recommends a new approach type regulation based on requirements on the properties of the fertilisers in relation to effectiveness and efficacy and environment, safety.</p> <p>The long procedures for introducing a product under Annex 1 – with experience of up to 7 years mentioned - are seen as an obstacle to innovation, especially when necessity to create new product categories (for example, urea and nitrification inhibitors).The German approach allowing for a provisional entry in the market before a new publication of the legislation is considered as a minimum step.</p>

Italy

Total production	Value: € 1.6 billion – around 9% of EU27
Total consumption	1.38 million tonnes of active ingredient– 7.7% of EU27 (around 3.3 million tonnes of final product – source: ASSOFERTILIZZANTI) Moderate intensity (€ 77/hectare)
Imports	1.8 million tonnes of final product (0.23m intra EU27, 1.5m extra EU27)
Exports	0.6 million tonnes of final product (0.5m intra EU27, 0.1m extra EU27)
Number of firms (large, small)	There are 190 firms in Italy, with SIPCAM and Valagro being the main producers. Other companies include small family-owned producers and other smaller mainly subsidiaries of main international players
Number of employees	2,600 (2007)
National Regulation (requirements etc., registry,	Decree 478/84 last updated in 2010 covers all fertilisers in the country. All sellers of fertilisers in the country need to register a legal person

Country fiches

B

enforcement requirements, procedures for EC and national fertilisers)	responsible in case of fraud or illegality. Italian legislation is very similar to the 2003/2003 regulation. All companies importing or selling fertilisers in Italy must register with the Ministry of Agriculture. The ministry is also responsible for market surveillance. Italian marking includes two sections. The first one is the obligatory CE explanation. The second part is more descriptive, can claim more than what is permitted in the first part but cannot counter what is written in the first part. Adding products to Annex I is seen as too time consuming, including because of the too few number of meeting of the WG Fertilisers.
Share of EC vs. National fertilisers in market	95% of fertilisers sold are EC fertilisers, with only 5% national ones.
Position of stakeholders in relation to a harmonised regulation	All stakeholders are very keen on harmonising legislation and believe that it should be extended. There is a concern regarding the effect of certain types of fertilisers in different climatic area. Some threshold could be adapted to specific 'regions' rather than at EU level – similarly to the regulation governing phytosanitary products.
Mutual recognition (position of government, level of use, problems reported)	Mutual recognition is seen as very problematic by all stakeholders. First of all it is seen as a dent in the internal market, with product not complying with the Italian legislation able to enter the country, putting Italian companies at a disadvantage. Mutual recognition harms the process of market surveillance as the Italian system is geared to function with registered companies. Overall mutual recognition creates competition between different countries and thus undoes the positive aspects of the 2003/2003 regulation.
Other important issues raised concerning EC or national fertilisers	The ministry of Agriculture sees a problem in the way CEN charges for its standards. It believes there should be a mechanism according to which government official could access the standards free of charge. One of the issues of the regulation and of the mutual recognition is that some producers of phytosanitary products try to bypass the legislation on such products by branding them as fertilisers.

Ireland

Total production	295 million tonnes (1.7% of EU27)
Total consumption	0.5 million tonnes of active ingredient (2008) (around 1.3 million tonnes of final product) Moderate intensity (61Euro/hectare)
Imports	1.05 million tonnes of final product (0.7m intra EU27, 0.35m extra EU27)
Exports	0.48 million tonnes of final product (0.02m intra EU27, 0.46m extra EU27)
Number of firms (large, small)	12 (Eurostat, 2007) 5 (Irish Fertilisers Association). There is not production of basic fertilisers since 2001. Only blending
Number of employees	370 (Eurostat, 2007)
National Regulation (requirements etc., registry, enforcement requirements, procedures for EC and national fertilisers)	The legal basis for fertilisers in Ireland was enacted in 1978 (S.I. 248 of 1978). It mainly refers to ground limestone, with provisions for minimum content in low nutrient fertilisers. Legislation on organic fertilisers refers mainly to food and feed safety (veterinary) issues. Data collection mechanisms are currently being developed. The largest

Country fiches

B

	source of non-compliance is lower levels of nutrients than claimed. Problems are usually corrected after the first notification and no company has been prosecuted to date. The inclusion of new products in Annex I does not pose problems to stakeholders as Irish manufactures are only blending.
Share of EC vs. National fertilisers in market	EC fertilisers are close to 100%. All basic fertilisers are imported as EC fertilisers.
Position of stakeholders in relation to a harmonised regulation	Irish stakeholders see harmonisation as positive step and would be positive towards an extension of the Regulation to all categories fertilisers.
Mutual recognition (position of government, level of use, problems reported)	Ireland (and Irish companies) has no real experience with mutual recognition. However, this is not seen as posing any problem.
Other important issues raised concerning EC or national fertilisers	Ireland would like to see an all encompassing fertilisers' regulation, covering organic fertilisers as well. Growing media could also be included in such a regulation but this is of no great significance to Ireland due to the small size of the horticultural sector.

Poland

Total production	Value: 2.6 million tonnes of active nutrients, 1.4 billion Euro, 8% of EU27 Capacity: 1.6 million tonnes N ³⁵
Total consumption	2 million tonnes active nutrients (1.1 million tonne N, 0.4 million tonnes P, 0.5 million tonnes K) Low intensity 39Euro/hectare
Imports	1.2 million tonnes of final product (0.7m intra EU27, 0.5m extra EU27)
Exports	1.44 million tonnes of final product (1.07m intra EU27, 0.38 m extra EU27)
Number of firms (large, small)	83
Number of employees	9,500 (2007)
National Regulation (requirements etc., registry, enforcement requirements, procedures for EC and national fertilisers)	The Act of 10 July, 2007 on Fertiliser and Fertilising (Journal of Laws, 2007 No 147, item 1033), concerning mineral fertilisers, mineral-organic fertilisers and organic fertilisers as well as additives for plant raising, is in force in Poland. National requirements concerning mineral fertilisers are generally less stringent in comparison to EC Fertilisers. However, there are some requirements concerning content of heavy metals.
Share of EC vs. National fertilisers in market	n/a
Position of stakeholders in relation to a harmonised regulation	Poland supports the Commission activities contributing to harmonization of provisions concerning products such as: liming products, organic and organic-mineral fertilisers. In case of liming products it supports the initiative of including them into the Regulation. As far as gardening bases and organic and mineral organic fertilisers are concerned the ministry thinks that the inclusion of those shall cause complications and chaos in

³⁵ Nitrogen and Phosphate Fertiliser Industries in Poland, The International Fertiliser Society - Proceeding 512 (2003), <http://www.fertiliser-society.org/proceedings/uk/Prc512.HTM>

Country fiches

B

	the specification of fertilisers types, analytical methods applied as well as problems concerning controlling them on the market. Poland would like to see separate legal acts independent of the Fertilisers Regulation should govern such issues.
Mutual recognition (position of government, level of use, problems reported)	The mutual recognition is seen as positively as its principle facilitates the marketing of national fertilisers.
Other important issues raised concerning EC or national fertilisers	<p>The regulation is generally seen in a positive light. It facilitates the trade of mineral fertilisers between member states and the launch of fertilisers on the market. Specifically, the unification of research methods of mineral fertilisers is seen as very positive.</p> <p>The Fertilisers Regulation increased the level of competition since it facilitates the launch of fertilisers compliant with the EC requirements onto the market</p> <p>The Fertilisers Regulation has improved situation of mineral fertilisers gathering, storage and application used.</p> <p>One of the barriers concerning the circulation of EC fertilisers is the internal introduction of stringent limits on the content of heavy metals in fertilisers by some countries. The introduction of stringent limits on cadmium in phosphorus fertilisers by Austria- 75 mg, Finland - 22 mg, Sweden- 44 mg Cd/kg P₂O₅, hinders the launch of the products onto the market by some countries including Poland.</p> <p>The harmonization of provisions for Member States contributes to the simplification of operation principles on the EU territory through the unification of requirements and nomenclature and analytical methods applied.</p>

Romania

Total production	Value: 520 million Euro (around 2 million tonnes), representing 3% of EU27
Total consumption	330 K tonnes of active ingredient (around 1.1million tonnes of final product) Use: Low intensity (39Euro/hectare) but increasing
Imports	1.3 million tonnes of final product (0.72m intra EU27, 0.48 m extra EU27) – mainly N and compound
Exports	1.5 million tonnes of final product (1.1m intra EU27, 0.4 m extra EU27) The bulk of urea and liquid fertiliser produced in Romania is aimed at the export market. The share of domestic/export destination for complex fertilisers ammonium nitrate is around 50/50.
Number of firms (large, small)	22 - InterAgro , a consortium of companies is the largest producer in the country, amounting to 70% of all chemical fertilisers' production. Since the early 1990s, the number of companies in the country has greatly reduced.
Number of employees	5,600 (2007)
National Regulation (requirements etc., registry,	Fertilisers are covered by Order 6/22 2004 most recently updated on 31 st August 2010. Fertilisers produced in Romania can either have a CE

Country fiches

B

enforcement requirements, procedures for EC and national fertilisers)	marking or a RO marking. Although they are equivalent, producers do continue to market domestically fertilisers as RO rather than EC.
Share of EC vs. National fertilisers in market	25% RO marked 75% EC Marked
Position of stakeholders in relation to a harmonised regulation	All stakeholders see harmonisation as a positive step and are supportive of further extension.
Mutual recognition (position of government, level of use, problems reported)	Mutual recognition has not had a big impact in the country. National producers are not considering using it, as all their products are EC compliant. The situation in Romania was not totally compliant with the mutual recognition regulation until the changes made to the Ordin 22/6 on 31 st August 2010.
Other important issues raised concerning EC or national fertilisers	Producers have noted some new possibilities of entering some markets (France, Germany) due to the regulation although this does not affect the total sold much because of the saturation of those markets. No issues were reported in terms of innovation of protection of consumers, the environment and public safety One issue mentioned by large producers is the need to increase the maximum level of nitrate and ammonium nitrate in liquid fertilisers

Spain

Total production	Value: 1.3 billion Euro (2007)- 6.7% of EU27 Volume: 3.2 million tonnes of fertilisers – 1.9 N, 0.05 P, 0.6 K, 0.6 complex
Total consumption	2009: 1.2 million of active ingredients – 0.78 N, 0.26 P, 0.16 K (3.3 million tonnes of fertilisers – 2 N, 0.08P, 0.07 K, 1 complex) Low intensity (39Euro/hectare)
Imports	1.7 million tonnes of final product (0.6m intra EU27, 1.1m extra EU27)
Exports	1.1 million tonnes of final product (0.7m intra EU27, 0.4 m extra EU27)
Number of firms (large, small)	230 (maximum) (Eurostat) Trade Association: ANFFE (fertilisers producers – not basic nutrients): 15 members
Number of employees	3,500 (2007) ANFEE firms occupy 1,600 employees
National Regulation (requirements etc., registry, enforcement requirements, procedures for EC and national fertilisers)	National regulations are rather strict in comparison to EU average in relation to the limits for heavy metals and pathogens for organic fertilisers. There is a registry of organic and other fertilisers under national regulation. The objective of the national regulation is to be able to control the possible environment and other risks related to the organic fertilisers
Share of EC vs. National fertilisers in market	Around 90% of mineral fertilisers are EC (source: Ministry)
Market surveillance (issues with	Market surveillance is the responsibility of regional authorities. According

Country fiches

B

implementation, data on controls and non-compliance)	to the majority of firms, surveillance is adequate and poses no problems. One company stated though that regional authorities still do not have a clear understanding of the difference between national and EC fertilisers and in 4 cases they have asked for registration number for EC fertilisers
Position of stakeholders in relation to a harmonised regulation	Much in favour of this approach – they prefer an overall coverage of fertilisers that will lead to harmonisation
Mutual recognition (position of government, level of use, problems reported)	Authorities are against mutual recognition as it will not allow for the development of a harmonised market. Furthermore, they will not be able to control compliance with other national regulation and there are clear issues of safety and environment as countries have different standards. There were 4 cases that were brought in their intention and in all four the products had exceeded the limits for heavy metals. The industry is also strongly against the use of mutual recognition as it seen as working against the desired harmonisation of the internal market and introduces a risk for unfair competition from products of low quality. One company stated that it is an alternative that will be examined in the future.
Other important issues raised concerning EC or national fertilisers	The only issue concerns the non coverage of heavy metals. There are long processes for introducing EC fertilisers in the market (2-3 years following 1 year at the national level). This is clearly an obstacle to innovation although it cannot be claimed that has led companies not to introduce a product in the market The Spanish authorities and the industry consider the definition of the term “manufacturers” in the regulation as not appropriate and would like different definitions for importers, distributors, producers.

Sweden

Total production	Value: no data Volume: 168.6 thousand tonnes (2008/9)
Total consumption	0.27 million tonnes of active ingredient (0.19 N, 0.03 P, 0.04 K) Moderate (65Euro/hectare)
Imports	0.65 million tonnes of final product (0.5m intra EU27, 0.15m extra EU27)
Exports	0.38 million tonnes of final product (0.34m intra EU27, 0.04m extra EU27)
Number of firms (large, small)	17 companies exist in Sweden; the 5 largest control 95% of market
Number of employees	No data (Estimate <50)
National Regulation (requirements etc., registry, enforcement requirements, procedures for EC and national fertilisers)	No legislation specifically on mineral fertilisers, which are covered by legislation on chemicals (including limits on the use of heavy metals). Registration and self-declaration is required. There are special provisions, including registration with the Board of Agriculture for producers or importers of EC fertilisers who market over 100 kg per year. The technical files required to add a product to Annex I is not adequate, they should be of a higher quality. In addition, the WG Fertilisers only meet twice a year, and should meet more often.
Share of EC vs. National fertilisers in market	EC fertilisers a very small part of the market, estimated to be less than 1%. The regulation has not increased competition, with YARA having such

*Country fiches***B**

	a dominant position, that other companies follow the standards set by the company. In addition, an estimated 5% of total fertilisers used in the country are imported by users who purchase them directly abroad.
Position of stakeholders in relation to a harmonised regulation	The Board of Agriculture sees harmonised legislation as a positive step. They would however like to see more stringent provisions relating to environmental issues.
Mutual recognition (position of government, level of use, problems reported)	Worried that mutual recognition could lead to lower standards. The Board is not currently aware of any product having entered the market through mutual recognition.
Other important issues raised concerning EC or national fertilisers	Sweden has limits on heavy metals in fertilisers

Documents and data sources reviewed

C

Legislation or documents describing legislation

BG	Bulgarian legislation and national standards related to non EC fertilisers
CY	Law on fertilisers
CZ	474/200 decree of the ministry of agriculture dated 13 December 2000 on the specification of requirements for fertilisers
DE	Regulation on the marketing of fertilisers, soil additives, culture media and plant additives
DK	Act no 318 of 31 march 2007 on fertiliser and soil improvers
EE	Fertilisers act
ES	Spanish legislation concerning fertilisers and soil improvers Spanish legislation concerning organic and organ-mineral fertilisers
FR	L.255-1 à L-256-3 du code rural. Décret n°80-478 du 16 juin 1980 du code de la Consommation Arrêté du 21 décembre 1998 (homologation) – Arrêté du 5 septembre 2003 (mise en application obligatoire de normes) et les arrêtés suivants modifiant l'arrêté du 5 septembre 2003
IE	S.i. no. 248/1978 — marketing of non-EEC fertilisers regulations, 1978
IT	Italian legislation concerning organic and organ-mineral fertilisers
LV	Law on circulation of fertilisers

Documents/Studies

- Communication from the Commission, Guide to the compilation of a technical file on application to designate a fertiliser as ‘EC fertiliser’
http://ec.europa.eu/enterprise/sectors/chemicals/files/fertilizers/2009_02_03_new_guidance_final_en.pdf
- Study on Regulation for marketing of fertilisers and growing media, CRITT RITMO on behalf of the DGAL direction of the French ministry of Agriculture, 2006
- Summary of MS contributions to data collection on Market Surveillance of EC Fertilisers, Fertilisers working group meeting – 25.03.2010
- Minutes of the seminar “International seminar on marketing regulations for fertilisers, soil improvers and growing media” (in DVD), Paris, 09/09/2009
- French contribution on marketing fertilisers, soil improvers and growing media, Document submitted to the European Commission, September 2008

Data Sources

- PRODCOM Database (Data on production and trade), EUROSTAT:
<http://epp.eurostat.ec.europa.eu/portal/page/portal/prodcom/data/database>
- Price indices of the means of agricultural production, EUROSTAT:
http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database?piref458_120954_0_458_211810_211810.node_code=apri_pi00_ina

Documents and data sources reviewed

C

- Agri-Environmental Indicators, EUROSTAT
http://epp.eurostat.ec.europa.eu/portal/page/portal/agri_environmental_indicators/data/database
- Structural Business Statistics, EUROSTAT:
http://epp.eurostat.ec.europa.eu/portal/page/portal/european_business/data/database
- Current world fertiliser trends and outlook to 2012, Food and Agriculture Organization of the United Nations
- Fertiliser Supply Statistics, International Fertiliser Industry Association,
<http://www.fertilizer.org/ifa/Home-Page/STATISTICS/Fertilizer-supply-statistics>
- Consumption, production capacity and trade statistics, Fertilizers Europe,
<http://www.efma.org/subcontent.asp?id=2&sid=41&ssid=48>
- ANFFE (2009), Desarrollo del Mercado de los Fertilizantes en España 2005-2009
- Fertilisers Europe (2009), Annual report 2009
- International Fertilisers Association, IFADATA, <http://www.fertilizer.org/ifa/ifadata/search>