

# **Regulating pesticide risk reduction: the practice and dynamics of legal pluralism**

Nicolien van der Grijp

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the practice and dynamics of legal pluralism

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## Acknowledgements

This thesis is the result of a long process that in fact started in 1987, when I worked as a volunteer at the ‘Chemiewinkel’ of the University of Amsterdam. My task was to compile a database of articles on chemical substances and their impacts. Soon, I became intrigued by the world behind the difficult names of chemicals.

In 1989, I started working as a researcher at the Institute for Environmental Studies (IVM) of the Vrije Universiteit (VU). After having participated in several research projects with a national focus, I became involved in a UNEP project about global product chains and sustainability under the inspirational leadership of the late dr. Konrad von Moltke. In the course of this project, I became acquainted with the ideas behind organic agriculture, attending a conference organised by the International Federation of Organic Agriculture Movements (IFOAM). The positive spirit of this conference was quite an eye-opener to me, and, moreover, I began to understand the potential of organic agriculture for a more sustainable agriculture.

Around 2000, I performed two research projects for the ministry of VROM, commissioned by Michiel Dorenbosch, which focused on the greening of supply chains in the food and retailing industry, and in which I studied non-state actor approaches to pesticide issues in agriculture. In an interview with Willem Hofmans from Albert Heijn, I first learned about the establishment of the European Retailer Working Group (EUREP), which aimed to define standards for fruit and vegetables production. This so-called EurepGAP initiative (now GlobalGAP) has become an important subject in my thesis.

I further strengthened my research emphasis on non-state actor approaches during an EU project, called Sustainability labelling and certification: towards an integrated legal, economic, ecological, and social approach. This was still from a conventional legal perspective. It was professor Francis Snyder in Aix-en-Provence who suggested me to use the theoretical concept of legal pluralism in my work, instead of multi-level governance. His suggestion helped me a great deal further.

All the time, writing a thesis remained a dream. However, this dream became a reality in 2003 when professor Nico Schrijver of the VU Law Faculty was so generous to arrange funding for me from the VU USF in the context of his framework project about the international law of sustainable development. The funding from the VU allowed me to concentrate on my own project for a full year and a half.

Nico Schrijver became my supervisor, together with professor Harmen Verbruggen, then director of IVM, and now dean of the faculty of Economics. With my supervisors, I had regular meetings in the course of the years. They supported me warmly, and gave me the freedom to incorporate my own ideas into the research. Furthermore, they stimulated me to keep working on the thesis, also in periods that I felt overwhelmed by other responsibilities. Combining project work and thesis was not always an easy job. Fortunately, I could benefit from some ‘synergies’ created by the work for the ‘Handboek implementatie Europees milieurecht in Nederland’, and the EU project about Reflexive Governance in the Public Interest.

In April 2008, I stopped working on the thesis and collecting material. However, new developments in the area of pesticides happen in quick succession. Most importantly, it is currently a decisive period for the future direction of pesticide law and policy, certainly at the EU level, because several important new pieces of legislation are still under discussion. With this thesis, I hope to make a contribution to these discussions, and especially to increased awareness about pesticide issues, a more effective pesticide law and policy, and, most importantly, a shift towards a further 'detoxification' of agriculture world-wide.

Turning to my working environment, I am grateful to IVM, and especially my colleagues at the department of Environmental Policy Analysis, for offering such a relaxed atmosphere. I will not mention all their names here, but only of those (ex) colleagues with whom I had the most intensive contact in the past years: Paula van Asperen, Harro van Asselt, Joop de Boer, Jan Boersema, Ella Lammers, Joop van der Linden, Marleen van de Kerkhof, and Frans Oosterhuis. My special thanks go to Joyeeta Gupta, as a colleague and friend, who helped me to improve the structure of my thesis and corrected my English.

Furthermore, in the last few weeks, when finishing the book became a race against time, I was very happy to receive last-minute assistance and support from my supervisors (summaries), Anne Rooseboom (tomato art and straightforward opinions), Ademir Arapovic (front cover), VU Drukkerij (printing of the book), and Eszter Simon who never complained about the paper mess that I created in our shared office.

I dedicate this thesis to my parents Jan en Loes who stimulated my love for nature and learned me respect for the environment. They supported me throughout the whole project. To my immense regret, my father will not witness the fact that I completed my thesis.

Last but not least, I would like to thank my dear friends – Arthur, Dienne, Elsbeth, Gerhard, Ingrid, Judith, Liesbeth, Loïs, Peter Jan, Vera en Wilfred-, and my brother Jan Willem and his wife Madelon for having patience with me, and my often non-communicative and preoccupied state-of-mind, in the past few years. They have greatly supported me, especially in the last difficult year. I am looking forward to spend much more time with them.

It is time for a change, in many respects!

Nicolien van der Grijp

Amsterdam, 5 August 2008

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## Abbreviations

ACP	African, Caribbean and Pacific States signatory to the Cotonou Agreement
ADI	Acceptable daily intake
ArfD	Acute reference dose
BRC	British Retail Consortium
CAC	Codex Alimentarius Commission
CAP	Common Agricultural Policy
COP	Conference of the Parties
CRC	Chemical Review Committee
CSD	Commission on Sustainable Development
DG	Directorate General
DGD	Decision Guidance Document
EAP	Environment Action Programme
EC	European Community
ECJ	European Court of Justice
ECPA	European Crop Protection Association
EEB	European Environment Bureau
EESC	European Economic and Social Committee
EFSA	European Food Safety Authority
EISA	European Initiative for Sustainable Development in Agriculture
EU	European Union
EUREP	European Retailer Produce working group
FAO	Food and Agriculture Organization of the United Nations
FLO	Fairtrade Labelling Organizations International
FVO	Food and Veterinary Office
GAP	Good agricultural practice
GEF	Global Environment Facility
GFSI	Global Food Safety Initiative
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
HACCP	Hazard Analysis and Critical Control Point

IBS	IFOAM basic standards for organic production and processing
ICM	Integrated crop management
IFCS	Intergovernmental Forum on Chemical Safety
IFOAM	International Federation of Organic Agriculture Movements
IOAS	International Organic Accreditation Service
IOBC	International Organization for Biological Control of Noxious Animals and Plants
IFS	International Food Standard
IGO	Intergovernmental Organisation
INC	International Negotiating Committee
IPEN	International POPs Elimination Network
IPM	Integrated pest management
IPPC	International Plant Protection Convention
IRPTC	International Register of Potentially Toxic Chemicals
ISEAL	International Social and Environmental Accreditation and Labelling Alliance
ISO	International Organization for Standardization
ISOFAR	International Society of Organic Agricultural Research
LEAF	Linking Environment and Farming
LOD	Limit of detection
MRL	Maximum residue level
NGO	Non-governmental organisation
NIP	National Implementation Plan
OECD	Organisation for Economic Co-operation and Development
OFPA	Organic Food Protection Act
PAN	Pesticide Action Network
PIC	Prior informed consent
POP	Persistent organic pollutant
POPCIP	Persistent Organic Pollutants Community Implementation Plan
POPRC	Persistent Organic Pollutants Review Committee
QS	Qualität and Sicherheit
RASFF	Rapid Alert System for Food and Feed (of the EU)
SAI	Sustainable Agriculture Initiative
SAICM	Strategic Approach to International Chemicals Management

SARD	Sustainable Agriculture and Rural Development
SPS Agreement	Sanitary and Phytosanitary Agreement
TBT Agreement	Technical Barriers to Trade Agreement
UK	United Kingdom
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNECE	United Nations Economic Commission for Europe
UNCHE	United Nations Conference on the Human Environment
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Programme
US	United States
USA	United States of America
USDA	United States Department of Agriculture
WHO	World Health Organization
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization
WWF	World Wide Fund for Nature



*Uit: Geert Mak (1996), Hoe God verdween uit Jorwerd, Uitgeverij Atlas, Amsterdam, pp. 121-122*

“Bepaalde boeren begonnen zich te richten op zogenaamde ‘duurzame landbouw’. Zij streefden ernaar om op natuurvriendelijke wijze aardappels, peen, witlof en appels te produceren, en ook melk, vlees en eieren. Ze zwoeren kunstmest en bestrijdingsmiddelen af, en begonnen biologisch te boeren. Ze lieten hun varkens weer scharrelen en propageerden ouderwetse omgangsvormen met hun koeien.

Zulke boeren verdienden vaak best een aardige boterham omdat de mensen in de stad langzamerhand graag wilden betalen voor echte natuur. Bovendien hadden ze meestal weinig te vrezen van alle milieumaatregelen die de overheid nog in petto had: ze voldeden daar allang aan. Voor de verkoop van hun producten bleven de eco-boeren echter afhankelijk van het netwerk van natuurwinkels in de grote steden. En die natuurwinkels eisten weer een natuurkeurmerk, een felbegeerd embleem dat de boeren alleen met veel geld en moeite konden verwerven. Maar ze moesten wel, wilden ze toegang krijgen tot de alternatieve markt van de natuurvrienden. Op deze wijze ontsnapten de boeren aan de reguliere bureaucratie van Brussel en Den Haag, om door de alternatieve bureaucratie uit Harderwijk en Marum weer gevangen te worden.”





## Part I The research approach



# 1. The challenge of pesticide risk reduction

## 1.1 Introduction

Synthetic pesticides have become widely used in the past century to combat agricultural pests and diseases, and hence to achieve higher yields.<sup>1</sup> However, their inherently toxic properties are also the reason that pesticides may cause harm to the environment and human health. For example, several highly toxic persistent organic pollutants are now omnipresent in the global environment. These so-called POPs have been found from the icecaps in the Arctic to the rainforests in the tropics, and from the soil to the human body.

Although pesticide risks have long been recognised and less hazardous pesticide products and lower input agricultural production methods have become available, regulatory approaches by state actors have thus far failed to achieve a significant reduction of pesticide risks world-wide.<sup>2</sup> However, it seems that the present broad concern about the quality and safety of food products, fuelled under the influence of increased economic globalisation and international trade, can provide an impetus for the conversion to more sustainable agricultural practices.

The main reasons for this broad concern about food quality and safety have been the occurrence of several food scares during the 1990s, the economic need to prevent new crises emerging, and, more in general, society's commitment to sustainable development.<sup>3</sup> In order to deal with current quality and safety challenges, state and non-state actors have developed a plethora of initiatives that aim to move from an agrifood system with several negative externalities to a system with more beneficial properties. The European Union (EU), for example, has performed a thorough revision of its law and policy on food and agriculture, including the publication of a General Food Law, the establishment of the European Food Safety Authority (EFSA), and the review of the Common Agricul-

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<sup>1</sup> See for an analysis of the state-of-affairs in conventional agriculture: T. Lang & M. Heasman (2004). *Food Wars: The global battle for mouths, minds and markets*. London and Sterling: Earthscan, 365 p. See for a historical overview of the rise of pesticide-based agriculture: P. Hough (1998). *The global politics of pesticides. Forging consensus from conflicting interests*. London: Earthscan, 226 p.; J. Pretty (ed.) (2005). *The pesticide detox: towards a more sustainable agriculture*. London: Earthscan, 240 p.

<sup>2</sup> See for an early diagnosis of the negative impacts of pesticide use: R.L. Carson (1962). *Silent spring*. Boston: Houghton Mifflin, 400 p.

<sup>3</sup> The concept of sustainable development was first broadly endorsed at the international level by: WCED (1987). *Our common future*. Oxford: Oxford University Press, and UNCED (1992). *Rio Declaration on Environment and Development. Report on the United Nations Conference on Environment and Development, Annex I*.

tural Policy (CAP).<sup>4</sup> Environmental and social organisations are organising campaigns to raise public awareness about the environmental, social and health risks of present agricultural practices and to put pressure on public authorities and food industry for more stringent action to stimulate safe and sustainable agricultural techniques. Companies in the food and retail trade, for their part, are increasingly trying to reduce the risk of contamination of food products by actively managing the supply chains of food products.

In order to contribute to the discussion about the management of pesticide risks, the purpose of this study is to investigate the efforts of state and non-state actors to reduce those risks, and make a transition towards the production of safe and sustainable food products. Many of these efforts have regulatory features and can be considered forms of regulation, and arguably an expression of legal pluralism. In this context, the study aims to provide insights in the different manifestations of current regulatory approaches by state and non-state actors, their effectiveness in realising pesticide risk reduction, the level of involvement of the stakeholders concerned, the consequences for competition and trade, the interaction between the different approaches, and the resulting regulatory pattern.

This chapter explains the design of the study. Section 1.2 focuses on the environmental and human health risks of pesticides. Section 1.3 introduces the main elements of the theoretical approach. Section 1.4 elaborates the research objectives and questions. Section 1.5 describes the methodological approach. Section 1.6 outlines the structure of the study.

## 1.2 The environmental and human health risks of pesticides

The basis for modern conventional farming has been established in the early 20<sup>th</sup> century, when new developments in chemical and biological sciences and increased mechanisation created the conditions for a major transformation towards increased farm productivity by the scaling up of production practices.<sup>5</sup> This transformation was again further accelerated by technological advances that had been made during World War II, including the introduction of a range of synthetic pesticides, such as DDT, which led to widespread pesticide use.

Focusing on synthetic pesticides, it is apparent that pesticide use, measured in kilograms of active ingredient per hectare (kg AI/ha), is by far the highest in developed countries

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<sup>4</sup> This study uses the term European Union (EU) where it concerns the regional economic integration organisation of European countries that was established in 1958. This means that the term EU is also used in cases which would strictly speaking fall under the heading of European Community (EC). See for the EU General Food Law and EFSA: Council Regulation (EC) 178/2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety, OJ L031, 01.02.2002. See for the CAP reform e.g.: Communication from the Commission to the Council and the European Parliament. Mid-term review of the common agricultural policy, COM(2002) 394 final, 10.07.2002; Council Regulation (EC) No 1782/2003 of 29 September 2003 establishing common rules for direct support schemes under the common agricultural policy and establishing certain support schemes for farmers and amending several regulations, OJ L270, 21.10.2003.

<sup>5</sup> See for a historical overview e.g.: P. Hough (1998), and J. Pretty. (ed.) (2005).

when compared to countries with economies in transition and developing countries.<sup>6</sup> Taking a closer look at the trends in pesticide use during the 1990s, there has been a relative decrease in developed countries and in countries with economies in transition. This decrease is, however, compensated by the increased use in developing countries, mainly in Asia and Latin America.

According to the definition used in the Joint FAO/WHO Food Standards Programme, a pesticide is:

“any substance intended for preventing, destroying, attracting, repelling, or controlling any pest including unwanted species of plants or animals during the production, storage, transport, distribution and processing of food, agricultural commodities, or animal feeds or which may be administered to animals for the control of ectoparasites.”<sup>7</sup>

Pesticides are often classified as fungicides, herbicides, insecticides and growth regulators.<sup>8</sup> Fungicides are compounds used to protect crops from diseases caused by fungal pathogens. ‘Classical’ fungicides, that need to be applied frequently to maintain a protective layer of active ingredient, still form the backbone of fungal disease control. Modern fungicides are also used for curative action, as they are systemic, i.e. they are able to penetrate the plant tissue and attack the mycelium in the plant cells.

Herbicides are used to control undesirable or noxious plant growth, generally called weeds, in areas dedicated to crop production or in non-crop areas where plant growth is unwanted. Herbicides can be either selective or non-selective in their action. Insecticides are used against insects that threaten the crop. They are applied when a pest incidence is manifest or as protective measure in seed treatments. Growth regulators, a relatively new group of pesticides, are organic compounds that modify or control one or more specific physiological processes within a plant in order to accelerate or retard the rate of normal growth, flowering or reproduction.

The active ingredients in pesticides belong to different classes of chemicals, each with their own toxicological characteristics. The PAN Pesticides Database, for instance, distinguishes 11 different chemical classes of fungicides, 33 classes of herbicides, and 12

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<sup>6</sup> This paragraph is based on an interpretation of the statistical data presented in: FAO Statistics Division (2003). Compendium of agricultural-environmental indicators. 1989-91 to 2000. FAO Rome. In comparison, the trends concerning fertiliser use are highly similar, except that the consumption growth in developing countries more than compensates the reduction in developed countries and countries with economies in transition.

<sup>7</sup> Codex Alimentarius Commission (2006). Procedural manual (16<sup>th</sup> edition). Rome: Joint FAO/WHO Food Standards Programme. The term ‘pesticide’ also includes any substance intended for use as a plant growth regulator, defoliant, desiccant, fruit thinning agent, or sprouting inhibitor and substances applied to crops either before or after harvest to protect the commodity from deterioration during storage and transport. The term normally excludes fertilizers, plant and animal nutrients, food additives, and animal drugs.

<sup>8</sup> The definitions are based on the ones used in: Eurostat & ECPA (2002). The use of plant protection products in the European Union, data 1992-1999. Luxembourg: Office for Official Publications of the European Communities, pp. 107-108, with a reference to the definitions in: C. Tomlin (1997). The pesticide manual: a world compendium. British Crop Protection Council.

classes of insecticides.<sup>9</sup> These classes differ in terms of toxicity, persistence and bio-accumulation. Well-known for their hazardous environmental and/or health characteristics are the classes of carbamates, halogenated organics, organochlorines, organophosphates, and triazines.

Focusing on the EU, the picture is such that regions with the highest pesticide use rates tend to have an important production of fruit and vegetables.<sup>10</sup> Moreover, pesticide use in fruit and vegetable production in the EU-15 has actually grown significantly during the 1990s. According to a report by Eurostat and the European Crop Protection Association (ECPA), the volume of pesticides used has increased from 193,788 to 242,735 tonnes of active ingredients in the period between 1992 and 1999.<sup>11</sup>

The same report shows that the preferences for the four different product groups and the patterns of pesticide use differ significantly between the EU countries, partly depending on climatic zones, pest pressure, and the types of crops being produced. However, even in countries with similar conditions and crops, the choice of pesticide and rate of application may vary considerably, which suggests that there are other conditions that determine the level and type of pesticide use.<sup>12</sup>

The problem with agricultural pesticides is that they are associated with several environmental and human health risks during the different stages of their life-cycle, that in its simplest form consists of the stages of production, marketing, use, and residues.<sup>13</sup> In the production stage, site-specific emissions to the environment may occur as the result of production processes of pesticide substances and products, and workers in pesticide plants and people living in the neighbourhood of such production facilities may be at risk of exposure to hazardous emissions and industrial accidents.

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<sup>9</sup> See at: <http://www.pesticideinfo.org>.

<sup>10</sup> Report from the Commission to the Council on the state of implementation of Regulation (EC) No 2200/96 on the common organisation of the market in fruit and vegetables, COM(2001) 36 final, 24.01.2001.

<sup>11</sup> This paragraph is based on data provided in Eurostat & ECPA (2002). In absolute terms, France and Italy consumed the largest amounts of active ingredients, their shares amounting to 36% and 22% of the total in 1999, respectively. In relative terms of kilograms of active ingredient per hectare, Portugal and Italy were on top of the list. Countries with the lowest consumption levels included the Scandinavian countries. Austria and Denmark were the only countries where pesticide use actually decreased during the 1990s.

<sup>12</sup> The most obvious examples of this phenomenon are the relatively extremely high use of: fungicides in Greece, herbicides in Finland, insecticides in Spain, and growth regulators in Ireland.

<sup>13</sup> See e.g.: R.L. Carson (1962), 400 p.; Th. Colborn, D. Dumanoski & J. Peterson Myers (1996). *Our stolen future: are we threatening our fertility, intelligence, and survival? A scientific detective story*. New York: Dutton, 306 p.; P. Hough (1998); J. Pretty (1999). *The living land: agriculture, food and community regeneration in rural Europe*. London: Earthscan, 336 p.; S. Krimsky (2000). *Hormonal chaos: the scientific and social origins of the environmental endocrine hypothesis*. Baltimore: John Hopkins University Press, 256 p.; M. Jacobs & B. Dinham (2003). *Silent invaders: pesticides, livelihoods and women's health*. London/New York: Zed Books, 342 p., and J. Pretty (ed.) (2005).

In the marketing stage, emissions may take place during transport and by leaching from storage depots. Such depots may form a considerable risk for the local population, especially in developing countries and countries with economies in transition.<sup>14</sup> In the use stage, emissions are related to the fact that pesticides are never used entirely efficiently by the receiving crops. Small but significant quantities of pesticides are lost directly to the environment. Some is vaporised, eventually to be deposited in rainfall, some remains in the soil, while some reaches surface and groundwater by runoff or leaching. Pesticides in groundwater, surface water and drinking water are the most serious environmental problems associated with pesticide use, and may also indirectly result in negative impacts on biodiversity, climate conditions and the ozone layer. People working at farms and those living next to fields and greenhouses may experience damage to their health due to pesticide exposure.<sup>15</sup>

In the residue stage, consumers may be exposed to critical levels of pesticide residues in food that could cause chronic or acute health effects. Despite scientific effort in this area, the debate on the health implications of pesticide residues is still surrounded with many scientific uncertainties.<sup>16</sup> Such uncertainties *inter alia* include the potential of pesticides to cause cancer, to disrupt the hormone and reproductive system, and to bring damage to the nervous system. In general, there is a lack of reliable data on the long-term consequences of exposure to pesticide residues and on the ‘cocktail’ effects of multiple residues. Children are considered to be most vulnerable to the risks of pesticide residues, because their bodies are still developing and they are exposed to relatively higher doses than grown-up people.

In order to help limiting pesticide risks, a wide range of regulatory options for pesticide risk reduction is in principle available, such as pesticide bans, pesticide authorisation decisions, agricultural production standards, traceability schemes, and pesticide maximum residue levels (MRLs). Importantly, agricultural production standards may define several innovative agricultural methods, including: 1) applying good agricultural practice

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<sup>14</sup> In the past decades, stockpiles of pesticides have accumulated in developing countries and countries with economies in transition as the consequence of government procurement policies, development assistance programmes, and dumping of outdated products by pesticide companies.

<sup>15</sup> See e.g.: The annual world health reports by the World Health Organization (WHO), available at: <http://www.who.int>, and more specifically: WHO (2002). The World Health Report 2002 – Reducing risks, promoting healthy life. Geneva: WHO. According to WHO estimations, there are worldwide three million severe cases of pesticide poisoning each year and as many as 20,000 unintentional deaths, primarily in developing countries. In addition to unintentional deaths, there are an estimated 200,000 intentional deaths annually, as a number of pesticides are used for committing suicide, with the highest incidence levels in South-East Asia. See e.g.: M. Eddleston, L. Karalliedde, N. Buckley et al. (2002). Pesticide poisoning in the developing world – a minimum pesticides list. In: The Lancet, vol. 360, pp. 1163, and F. Konradsen (2007). Acute pesticide poisoning – a global public health problem. In: Danish Medical Bulletin, vol. 54, no. 1, pp. 58-59.

<sup>16</sup> See the comprehensive overviews of research as presented in the three-monthly Research Monitors of PAN UK. See also: Th. Colborn, D. Dumanoski & J. Peterson Myers (1996); S. Krimsky (2000); L. Reijnders (2004). Food safety, environmental improvement and economic efficiency in The Netherlands. In: British Food Journal, vol. 106, no. 5, pp. 393-395.

(GAP); 2) keeping control over inputs by systematic registration; 3) applying ‘fewer chemical inputs’, or integrated control, including, for example, integrated pest management (IPM), integrated crop management (ICM), and integrated production, and 4) applying ‘no chemical inputs,’ or organic farming. Notably, the precise definitions and interpretations of these methods may considerably vary, as this study will demonstrate.

Chapters 3, 4 and 5 extensively elaborate on the efforts by state and non-state actors to regulate pesticide risks.

### 1.3 The theoretical approach

The theoretical approach of this study is based on the concept of legal pluralism that stretches the boundaries of law in response to the emergence of new sites and forms of governance in which non-state actors are performing prominent regulatory roles.<sup>17</sup> Such a conception of law implies “a multitude of partial legal orders, both territorial and functional, that cohabit, cooperate and compete within one global legal system”.<sup>18</sup> It thus challenges the monopoly of state law creation. Consequently, legal pluralism promotes a dynamic and flexible interpretation of the sources of law and draws attention to the role of other actors than the state in law-making. It furthermore stresses the importance of interaction between different sites of governance, their procedures and normative output.

One of the main reasons for choosing the theoretical concept of legal pluralism is that the application of legal concepts may deepen the understanding of forms of governance in which non-state actors are involved. Using the words of MacDonald, legal pluralism could offer in the first place “a means to ask the central questions of positive legal analysis across a broader range of normative activity.”<sup>19</sup> In the second place, legal pluralism opens inquiry into the impact of, often conflicting, implicit normative frameworks, since it denies “the local hegemony of national legal orders and [instead] argues for multiple, overlapping, often non-geographically defined legal systems.”<sup>20</sup> In the third place, legal pluralism asks whether more energy ought to be directed to informal regimes, as “the issue is not so much one of constructing new ‘quasi-official’ regimes” but to recognise those regimes that already exist.<sup>21</sup>

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<sup>17</sup> See e.g.: B. de Sousa Santos (1995). *Toward a new common sense: law, science and politics in the paradigmatic transition*. New York/London: Routledge, 614 p.; G. Teubner (1997) (ed.). *Global law without a State*. Aldershot/Brookfield: Dartmouth Publishing Company, 350 p.; K. Günther (2003). *Legal pluralism and the universal code of legality: globalization as a problem of legal theory* (English version of: K. Günther (2001), *Rechtspluralismus und universaler Code der Legalität: Globalisierung als rechtstheoretisches Problem*. In: L. Wingert & K. Günther (eds.), *Die Öffentlichkeit der Vernunft und die Vernunft der Öffentlichkeit, essays in honour of Jürgen Habermas*, Frankfurt am Main, pp. 539-567).

<sup>18</sup> G. Teubner (1997). Foreword: legal regimes of non-state actors In: G. Teubner (ed.), *Global law without a State*. Aldershot/Brookfield: Dartmouth Publishing Company, p. xiii.

<sup>19</sup> R.A. MacDonald (1998). *Metaphors of multiplicity: civil society, regimes and legal pluralism*. In: Excerpt from *Arizona Journal of International and Comparative Law*, vol. 15, pp. 78-79.

<sup>20</sup> *Ibidem*, p. 79.

<sup>21</sup> *Ibidem*, p. 79.



Chapter 2 further explains the theoretical concept of legal pluralism and proposes a research approach consisting of distinct steps.

#### **1.4 The research objectives and questions**

As mentioned above, the study identifies, analyses, and assesses current regulatory approaches by state and non-state actors that aim for pesticide risk reduction. It aims to provide insights in the different manifestations of such approaches, their effectiveness in realising pesticide risk reduction, the involvement of the stakeholders concerned, the consequences for competition and trade, the interaction between the different approaches, and the resulting regulatory pattern. The geographical focus is mainly on the EU, but seen in the larger context of global developments and impacts.

The study has the following research objectives:

- To identify, analyse, and assess current regulatory approaches by state and non-state actors aimed at pesticide risk reduction;
- To analyse the interaction between the different regulatory approaches, and
- To construct the resulting pattern of regulation and identify options for improvement.

Based on these research objectives, the main research question is as follows:

*How are pesticide risks regulated considered from the perspective of legal pluralism and sustainable development and what are the options for improvement?*

In order to address this overarching question, a set of research questions has been developed that will be answered in successive chapters.

- How are pesticide risks regulated at the international level and what assessment can be made of the multilateral approach in terms of effectiveness, inclusiveness and fairness?
- How are pesticide risks regulated at the EU level and what assessment can be made of the European approach in terms of effectiveness, inclusiveness and fairness?
- How are pesticide risks regulated at the transnational level and what assessment can be made of the non-state actor approach in terms of effectiveness, inclusiveness and fairness?
- How do the different regulatory approaches interact with each other and what are the main synergies and conflicts?
- What pattern of global legal pluralism emerges from the combination of the regulatory approaches at different levels? What are the main gaps and overlaps?
- What are the options for improvement?

#### **1.5 The methodological approach**

The methodology combines conventional legal analysis with qualitative approaches from the social sciences. The legal analysis focuses on rules and regulations created by state as well as non-state actors at the international, EU, and transnational level. The study uses legislative and standards documents as main sources, complemented with material from policy documents and literature. Interpretational and comparative techniques have been used for the analysis of regulatory documents. Additional research material has been col-

lected through participation in workshops, conferences, and seminars that focused on regulatory processes in the non-state actor domain.

Two non-comparative case studies have been part of the research design in order to provide insights in the perspectives of state as well as non-state actors that are being confronted with the plethora of rules in daily practice. The first case study focuses on the development of the national law and policy on pesticides in the Netherlands, using the perspective of a national government as it is increasingly confronted with European and non-state actor regulation. A major reason for choosing the Netherlands is that it is one of the major producing and exporting countries of horticultural products in the world and belongs to the most intensive users of pesticides measured in kilograms of active ingredients per hectare.<sup>22</sup> However, the situation in the Netherlands cannot be considered representative for the situation in other countries, as many variables are country-specific, such as political culture, regulatory styles, the organisation of government, and the division of responsibilities. This case study aims to illustrate how regulatory pluralism can impact on governmental policy, and *vice versa*, in a country with a strong agricultural lobby as well as high environmental ambitions. The case study focuses especially on aspects of interaction between the national government and other stakeholders.

The second case study focuses on the perspective of agricultural producers. It uses the example of tomato production to explain what the impacts are of legal pluralism for agricultural producers and how it affects the conditions for production and trading. The tomato is chosen because it is one of the vegetables most produced, traded and consumed on a global basis, and its production circumstances are highly relevant from a social, environmental and economic point of view. In this respect, it can be assumed that the tomato fulfils an exemplary function for other perishable and seasonal products: what happens with the tomato is likely to happen with other fruits and vegetables and also with (agricultural) products in a broader sense. As Harvey *et al.* put it: “The tomato reveals multifaceted changes in contemporary society, but only as one food amongst many, subject to similar changes and in analogous contexts.”<sup>23</sup> The case study focuses especially on aspects of competition and market access.

## 1.6 Outline

The study is organised in four parts. The first part presents the research approach and consists of the two chapters. The current Chapter 1 focuses on the challenge of pesticide risk reduction in agriculture. Chapter 2 explains the theoretical concept of legal pluralism, and develops a structured, step-wise research approach .

The second part is devoted to the components of legal pluralism in the issue-area of pesticide risk reduction, and contains three chapters. Chapter 3 describes the evolution of

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<sup>22</sup> See e.g.: Eurostat & ECPA (2002).

<sup>23</sup> M. Harvey, S. Quilly, and H. Beynon (2002). Exploring the tomato. Transformations of nature, society and economy. Cheltenham/Northampton: Edgar Elgar, p. 9. Indeed, similar developments as in tomato production can be noticed in the production of salads, peppers and strawberries, but also in the chicken meat industry. See also: W.H. Friedland (2006). Tomatoes: a review essay. In: Agriculture and Human Values, vol. 23, no. 2, pp. 253-262.

the international law and policy on pesticides focusing on the legal tenets of the international approach, including the FAO International Code of Conduct on the Distribution and Use of Pesticides (1985), the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (1998), and the Stockholm Convention on Persistent Organic Pollutants (2001). Chapter 4 describes the evolution of the EU law and policy on pesticides focusing on the legal tenets of the EU approach, including Directive 91/414 concerning the placing on the market of plant protection products, Regulation No 396/2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin, and the proposed Directive establishing a framework for Community action to achieve a sustainable use of pesticides. Chapter 5 describes the evolution of regulatory initiatives by non-state actors, focusing on two major transnational certification programmes, including the IFOAM organic guarantee system (1980) and the GlobalGAP programme for fruit and vegetables (2001).

The third part explores the practice of legal pluralism by elaborating two non-comparative case studies that aim to provide insights in the perspective of different stakeholders. Chapter 6 elaborates the case of the Netherlands to illustrate how legal pluralism affects the role of a national government and its interaction with non-state actors. Chapter 7 uses the example of tomato production to explain how legal pluralism affects agricultural producers by influencing the conditions for production and trading.

The fourth part investigates the dynamics of legal pluralism and consists of two chapters. Chapter 8 provides an inventory of regulatory interaction in vertical, horizontal and diagonal directions. In addition, it uses a more dynamic perspective upon regulatory interaction, focusing on the different stages of the life-cycle of pesticides, including production, marketing, use and residues. Chapter 9 draws conclusions about the pattern of regulation in relation to legal pluralism and sustainable development, and formulates the outlines of a normative and procedural framework that could help to achieve a further reduction of pesticide risks.



## 2. The theoretical concept of legal pluralism and its application

### 2.1 Introduction

Legal pluralism as a concept is closely related to the governance approaches that have become dominant in the social sciences in the past 15 years, and can be seen as its legal counterpart.<sup>24</sup> Due to its appeal, governance in all its dimensions is currently being explored by researchers from various disciplines that have given different interpretations of the concept and used it in different contexts.<sup>25</sup> The concept is, for example, being applied at various levels (from international to local) and from various theoretical perspectives (e.g. international relations, economics, law). Despite this diversity, Van Kersbergen en Van Waarden (2004) argue that the concept could function as a bridge between disciplines and that it can become a vehicle for comparison and for mutual learning and theoretical inspiration.<sup>26</sup> One of their arguments is that most of these interpretations have some characteristics in common, such as a pluricentric focus and an emphasis on networks and participatory methods.

This chapter aims to explain the concept of legal pluralism and to elaborate a structured research approach. The concept of legal pluralism recognises different types of normative activity without discriminating between them on the basis of their origin and source. Hence, the concept of legal pluralism advocates a more “liberal” understanding of the sources of law in comparison with traditional legal theory. The chapter is structured as follows. Section 2.2 explains the concept of governance in relation to regulation, and provides a typology of regulation. Section 2.3 elaborates on the concept of legal pluralism and its more specific manifestation that is called ‘global legal pluralism’. Section 2.4 translates the concept of legal pluralism into a structured research approach. Section 2.5 presents conclusions.

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<sup>24</sup> See e.g.: J.N. Rosenau & E.O. Czempiel (1992) (eds.). *Governance without government: order and change in world politics*. Cambridge: Cambridge University Press, 323 p.; L. Finkelstein (1995). *What is global governance?* In: *Global Governance*, vol. 1, no. 3, pp. 367-372, L.A. Kornhauser (2003). *Governance structures, legal systems and the concept of law*. In: *Chicago-Kent Law Review*, vol. 79, pp. 355-381, and I.F. Dekker & W.G. Werner (eds.) (2004). *Governance and international legal theory*. Leiden/Boston: Martinus Nijhoff Publishers, 380 p.

<sup>25</sup> K. van Kersbergen & F. van Waarden (2004). ‘Governance’ as a bridge between disciplines: Cross-disciplinary inspiration regarding shifts in governance and problems of governability, accountability and legitimacy. In: *European Journal of Political Research*, vol. 43, pp. 143-171.

<sup>26</sup> *Ibidem*, pp. 152-153.

## 2.2 Governance and regulation

Governance can be understood as the rules, processes and practices that affect how powers are exercised.<sup>27</sup> This definition implies that governance is meant as a broader category than government. More specifically, the concept of governance highlights the involvement of state as well as non-state actors in the pursuit of objectives that are generally associated with public policy. These non-state actors are, broadly speaking, represented by business and industry, environmental and social organisations, and the scientific community.

Several authors, for example, have observed that non-state actors are playing an increasing role in shaping the international human rights doctrine.<sup>28</sup> Similarly, it has been argued that in the case of international environmental affairs the roles of non-state actors have shifted.<sup>29</sup> More precisely, this evolution can be characterised by four distinct phases: first, non-state actors acquired the right to be consulted; second, they obtained observer status at international negotiations; third, they were allowed to participate in decision-making, and, arguably fourth, they are increasingly performing a semi-regulatory role.

Apart from engaging in individual activities, societal actors have also joined forces in specific initiatives with regulatory features.<sup>30</sup> Business firms are increasingly cooperating in networks, such as associations, working groups and councils, in order to combine resources and to play a role in governance. Similar considerations have led environmental and social NGOs to strengthen their political and bargaining power by creating alliances and umbrella organisations. A clear signal of the latter is the considerable growth of transnational NGOs over the past two decades.<sup>31</sup>

Moreover, partnerships and coalitions uniting divergent interests have been increasingly established in recent years. Several social and environmental organisations, for example, have been willing to engage in a dialogue with the private sector, resulting in concrete

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<sup>27</sup> European Commission (2001). European governance. A white paper, COM(2001) 428 final, 25.07.2001.

<sup>28</sup> See e.g.: A. Bianchi (1997). Globalization of human rights: the role of non-state actors. In: G. Teubner (ed.), *Global law without a State*, Aldershot/Brookfield: Dartmouth Publishing Company, p. 180; R. Sullivan (ed.) (2003). *Business and human rights: dilemmas and solutions*. Sheffield: Greenleaf Publishing, 335 p.

<sup>29</sup> J. Gupta (2003). The role of non-State actors in international environmental affairs, *Heidelberg Journal of International Law*, no. 63, pp. 459-486.

<sup>30</sup> See e.g.: A.C. Cutler, V. Haufler, and T. Porter (eds.) (1999). *Private authority and international affairs*. New York: SUNY, 416 p.; J. Bendell (2001). *Civil regulation: A new form of democratic governance for the global economy*. In: J. Bendell.(ed.) (2001), *Terms of Endearment*. Sheffield: Greenleaf Publishing, pp. 239-255, and V. Haufler (2001). *A public role for the private sector: industry self-regulation in a global economy*. Washington: Carnegie Endowment for International Peace, 157 p.

<sup>31</sup> See e.g.: B. Arts (1998). *The political influence of global NGOs. Case studies of the Climate and Biodiversity Conventions*. Academic dissertation. Utrecht: International Books, 352 p.; B. de Sousa Santos (1995). *Toward a new common sense: law, science and politics in the paradigmatic transition*. New York/London: Routledge, p. 267.

initiatives.<sup>32</sup> This new approach of cooperation and collaboration has been further strengthened by the impetus that the 2002 Johannesburg World Summit on Sustainable Development has given to the idea of partnerships – the so-called Partnerships for Sustainable Development.<sup>33</sup>

The increased emergence of sites of governance where non-state actors are performing regulatory roles has been accompanied by the creation, implementation and enforcement of new forms of governance.<sup>34</sup> They typically include codes of conduct, standards for corporate reporting, and certification programmes. Importantly, many of these new forms of governance have regulatory features.

These developments raise the question why these sites and forms of governance have started to proliferate in the first place. It has been argued that an important reason for non-state actors to become involved in governance has been the weakness of governance at the international and national government levels in relation to environmental, social and health issues. In this respect, some put the emphasis on so-called ‘regulatory’ gaps, others on ‘compliance’ gaps, and a third group points at the occurrence of both.<sup>35</sup> Meidinger, for example, states that “progress through the Westphalian system of nation-state negotiations has been painfully slow, while the growth of serious transnational environmental problems has been remarkably rapid.”<sup>36</sup> He furthermore observes that where treaties exist, their enforceability and adaptability to change often are subject to serious doubt.

A second reason explaining the rise of private actors in governance arrangements is related to the protection and support of economic interests. On the one hand, companies may wish to pre-empt state intervention by developing private governance arrangements. Scholars have called this mechanism ‘the shadow of hierarchy’.<sup>37</sup> On the other hand,

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<sup>32</sup> See e.g.: V. Haufler (2003). New forms of governance: certification regimes as social regulations of the global market. In: E.E. Meidinger, Chr. Elliott and G. Oesten (eds.), *Social and political dimensions of forest certification*, Remagen-Oberwinter: Forstbuch, p. 241.

<sup>33</sup> Report of the World Summit on Sustainable Development, 2002, A/CONF./199/20.

<sup>34</sup> See e.g.: V. Haufler (2003), p. 237; M.A. Hajer, J.P.M. van Tatenhove, & C. Laurent (2004). *Nieuwe vormen van governance: een essay over nieuwe vormen van bestuur met een empirische uitwerking naar de domeinen van voedselveiligheid en gebiedsgericht beleid*. Bilthoven: RIVM rapport 500013004/2004, and R.D. Lipschutz & J.K. Rowe (2005). *Globalisation, governmentality, and global politics: Regulation for the rest of us?* London: Routledge, 272 p.

<sup>35</sup> V. Haufler (2003), p. 240; D. Leipziger (2003). *The corporate responsibility code book*. Sheffield: Greenleaf Publishing, p. 134; E.E. Meidinger (2003). Forest certification as environmental law making by global civil society. In: E.E. Meidinger, Chr. Elliott and G. Oesten (eds.), *Social and political dimensions of forest certification*. Remagen-Oberwinter: Forstbuch, p. 309.

<sup>36</sup> E.E. Meidinger (2003), p. 309.

<sup>37</sup> K. van Kersbergen & F. van Waarden (2004). Governance’ as a bridge between disciplines: Cross-disciplinary inspiration regarding shifts in governance and problems of governability, accountability and legitimacy. In: *European Journal of Political Research*, vol. 43, pp. 146-147.

regulatory initiatives may be used as a strategic instrument of competition, and as a means to influence the division of power in economic relationships.<sup>38</sup>

In order to classify the current forms of regulatory governance by state and non-state actors, Table 2.1 presents a typology of regulation based on source of authority and identity of regulator and regulated.<sup>39</sup>

Table 2.1 Typology of regulation

Type of actor	Own authority	By delegation
State actor (formal)	Primary legislation	Secondary legislation
Non-state actor (informal)	Self-regulation Single-actor regulation Multi-actor regulation	Co-regulation

At the formal level, this typology distinguishes between primary and secondary legislation. Primary legislation is developed, implemented and enforced by national governments, either on their own or in cooperation with other governments. Secondary legislation is the product of legislative activity by actors from the state administration to whom authority has been delegated within a specific mandate. At the informal level, the typology distinguishes between private own-authority regulation and co-regulation. Private own-authority regulation is developed, implemented and enforced by non-state actors, either on their own or in cooperation with other private actors, whereas co-regulation is developed under the responsibility of non-state actors that have been given a specific regulatory task by state authorities.

Focusing on private own-authority regulation, the typology can be refined by focusing on the identity of the regulator and regulated. In case regulator and regulated are identical, the type of private regulation can be classified as self-regulation. If regulator and regulated are not identical, the type of regulation can be considered either single-actor or multi-actor regulation, depending on the number and type of regulating actors involved. Multi-actor regulation typically concerns regulatory activities of partnerships and coalitions that bring stakeholders from various backgrounds together.

The next section will explore how state and non-state actor forms of regulatory governance relate to law according to the concept of legal pluralism.

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<sup>38</sup> See e.g.: G. Gereffi (1999). International trade and industrial upgrading in the apparel commodity chain. In: *Journal of International Economics*, vol. 48, issue 1, pp. 37-70; R. Kaplinsky (2000). Globalisation and unequalisation: What can be learned from value chain analysis? In: *The Journal of Development Studies*, vol. 37, no. 2, pp. 117-146, and T. Reardon, J.-M. Codron, L. Busch, J. Bingen & C. Harris (2001). Global change in agrifood grades and standards: Agribusiness strategic responses in developing countries. In: *International Food and Agribusiness Management Review*, vol. 2, no. 3/4, pp. 421-435.

<sup>39</sup> The following references have been used as a starting point for developing the typology of regulation: V. Hauffer (2003), pp. 237-247, and T. Havinga (2006). Private regulation of food safety by supermarkets. In: *Law and Policy*, vol. 28, no. 4, pp. 515-533.



### 2.3 The concept of legal pluralism

Over the past decade, several legal theorists have developed concepts that try to cope with an emerging body of transnational regulation that has little to do with the law of nation-states. Some believe that the idea of absolute, but geographically fragmented, sovereignties is no longer tenable, since “the number of legal phenomena existing in juxtaposition and superposition to the traditional framework of national sovereignties is multiplying.”<sup>40</sup> It is argued that the understanding of this new world order requires an explanation of its legal structure in pluralist terms, because such a conception of law acknowledges the possibility of the existence of several legal orders equivalent or superior to that of the state, or collaborating with it on an equal footing.<sup>41</sup> Consequently, the constitutional structure of the world is considered one of a global order where various territorial and functional legal orders cohabit in relationships of competition or cooperation in their mission to regulate social life, and hence of legal pluralism.<sup>42</sup>

The concept of legal pluralism was initially developed by legal anthropologists. This so-called ‘classic’ legal pluralism focused on ‘primitive’ societies with more than only one central agency making law, resulting for example in governmental and tribal law.<sup>43</sup> Along similar lines, legal pluralists have been paying attention to colonial, and also post-colonial, legal systems with pluralistic characteristics, where the law of both the colonized and the colonizers coexisted.<sup>44</sup> In the past decade, several legal pluralists have shifted their focus, and discovered strong pluralist traces in the present global societal order. This ‘new’ legal pluralism, or global legal pluralism, holds the view that legal plu-

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<sup>40</sup> J.-P. Robé (1997). Multinational enterprises: the constitution of a pluralistic legal order. In: G. Teubner (ed.), *Global law without a State*, Aldershot/ Brookfield: Dartmouth Publishing Company, p. 47.

<sup>41</sup> *Ibidem*, p. 49 and p. 68, with references to Gurvitch, 1931.

<sup>42</sup> *Ibidem*, pp. 69-70.

<sup>43</sup> See e.g.: F. von Benda-Beckmann (1970). *Rechtspluralismus in Malawi - Geschichtliche Entwicklung und heutige Problematik eines ehemals britischen Kolonialgebietes*. München: Weltforum Verlag; K. von Benda-Beckmann (1985). The use of folk law in West Sumatran State Courts, in: A.N. Allott and G.R. Woodman (eds.): *People’s law and state law. The Belgagio Papers*. Dordrecht: Foris Publications, pp. 77-95, and F. von Benda-Beckmann, K. von Benda-Beckmann & A. Hoekema (1997) (eds.). *Natural resources, environment and legal pluralism*. In: *International Yearbook for Legal Anthropology*, vol. 9, 325 p.

<sup>44</sup> See e.g.: L. Benton (2002). *Law and colonial cultures: legal regimes in world history, 1400-1900*. Cambridge/New York: Cambridge University Press.

ralism is a common social feature and claims that we witness today an increase of legal pluralism and differentiation under the influence of increased economic globalisation.<sup>45</sup>

The Portuguese socio-legal theorist Boaventura de Sousa Santos was one of the first scholars who used the ideas about legal pluralism developed by legal anthropologists in a global context. In his book “Toward a new common sense” from 1995, he first applied the theoretical concept of legal pluralism in his description of the law in a Brazilian *favela* and then used it in his analysis of the emerging transnational law. According to Santos, the present situation is such that “[R]ather than being ordered by a single legal order, modern societies are ordered by a plurality of legal orders, interrelated and socially distributed in different ways.”<sup>46</sup> He further argued that we are now entering the period of postmodern legal pluralism that focuses on “suprastate, transnational legal orders coexisting in the world system with both state and infrastate legal orders.”<sup>47</sup>

In his work, Santos makes a distinction between (a) legal forms which are transnational in origin or which, though national or even local in origin, reproduce themselves transnationally by mechanisms other than those typical of interstate relations; and (b) national legal fields as they are transformed by transnational legal movements.<sup>48</sup> With regard to the latter, he observes that “the national legal field is increasingly interpenetrated by transnational legal forms which unfold in complex relations with both the state legal order and the local legal orders.”<sup>49</sup> However, Santos does not conceive of this “globalization of the legal field”, as he calls it, as a radically new phenomenon but considers that its roots are located in a historical development that has taken place over the past centuries. What is new is the dramatic intensification of transnational practices and interactions, leading to an increased transnationalization of, *inter alia*, the legal field.

When applied to present-day reality, Santos distinguishes seven areas where legal transnationalisation takes place, including nation-state law, law of regional integration, *lex mercatoria*, the law of migrant people, the law of indigenous peoples, human rights law,

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<sup>45</sup> S.E. Merry (1988). Legal pluralism. In: Law and Society Review, vol. 22, no. 5, pp. 869-896; B. de Sousa Santos (1995). Toward a new common sense: law, science and politics in the paradigmatic transition. New York/ London: Routledge, 614 p.; G. Teubner (ed.) (1997). Global law without a state. Aldershot/Brookfield: Dartmouth Publishing Company, 350 p.; F. Snyder (1999). Governing economic globalisation: global legal pluralism and European Law. In: European Law Journal, vol.5, no. 4, pp. 334-374; R.A. MacDonald (1998). Metaphors of multiplicity: civil society, regimes and legal pluralism, excerpt from 15 Ariz. J. Int'l & Comp. Law p. 69; K. von Benda-Beckmann (2002). Globalisation and legal pluralism. In: International Law FORUM du droit international, vol. 4, pp. 19-25, and K. Günther (2003). Legal pluralism and the universal code of legality: globalization as a problem of legal theory, p. 9 (English version of: K. Günther (2001), Rechtspluralismus und universal Code der Legalität: Globalisierung als rechtstheoretisches Problem, in: L. Wingert & K. Günther (eds.), Die Öffentlichkeit der Vernunft und die Vernunft der Öffentlichkeit, essays in honour of Jürgen Habermas, Frankfurt am Main, pp. 539-567.

<sup>46</sup> B. de Sousa Santos (1995), p. 114.

<sup>47</sup> Ibidem, p. 116.

<sup>48</sup> Ibidem, p. 250.

<sup>49</sup> Ibidem, p. 250.

and the law governing the global commons.<sup>50</sup> Within these areas, Santos basically observes the emergence of two types of transnationalisation that are, in fact, opposing forces.<sup>51</sup> The first one is organized by world capitalism in its search for a new global regime of accumulation. The second one is organized “in the name of dominated, exploited or oppressed social groups and interests, as well as degraded, exploited or destroyed natural resources.”

Santos goes on to argue that the transnationalisation of the legal field contains seemingly contradictory elements, such as top-down imposition and bottom-up creation, formal and informal manifestations, and objectives of uniformity as well as differentiation. He thinks that this diversity makes it attractive from a research perspective to analyse the transformation of the legal field in a certain area and to focus on the plurality and diversity of laws (and conceptions of law) within the same geopolitical space. Moreover, the analysis of such transnational legal fields may give an impression of the diversity, complexity, complementarity and conflictuality of transnational interactions.<sup>52</sup>

In the mid-1990s, German socio-legal theorists also adopted the theoretical concept of legal pluralism and started to elaborate it in a global context. In his book “Global law without a state” of 1997, Günther Teubner launched the thesis that “globalization of law creates a multitude of decentred law-making processes in various sectors of civil society, independently of nation-states.”<sup>53</sup> He argued that *lex mercatoria*, the transnational law of economic transactions, is the most successful example of global law without a state, but also observed that various other sectors of world society are developing a global law of their own in ‘relative insulation’ from the state, official international policies and public international law.<sup>54</sup> Among the examples he mentioned are labour law, human rights law, and environmental law. In order to underpin his thesis, Teubner developed three arguments:<sup>55</sup>

1. Global law can only be adequately explained by a theory of legal pluralism.
2. The emerging global (not inter-national!) law is a legal order in its own right which should not be measured against the standards of national legal systems.
3. Its relative distance from international politics will not protect global law from its re-politicization. Yet this will occur in new and unexpected ways.

Teubner believes that “contemporary law *will grow mainly from the social peripheries, not from the political centres of nation-states and international institutions* [italics by Teubner].”<sup>56</sup> The new ‘living law’ of the world is nourished not from stores of traditions but from the ongoing self-reproduction of highly technical, highly specialized, often

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<sup>50</sup> Ibidem, Santos elaborates on these seven areas extensively on the pp. 275-373.

<sup>51</sup> Ibidem, p. 374.

<sup>52</sup> Ibidem, p. 375.

<sup>53</sup> G. Teubner (1997). Foreword: legal regimes of non-state actors. In: G. Teubner (ed.), *Global law without a State*, Aldershot/Brookfield: Dartmouth Publishing Company, p. xiii.

<sup>54</sup> G. Teubner (1997). ‘Global Bukowina’: legal pluralism in the world society. In: G. Teubner (ed.), *Global law without a State*, Aldershot/Brookfield: Dartmouth Publishing Company, p. 3, with a reference to Giddens (1990), pp. 8-9.

<sup>55</sup> Ibidem, p. 4.

<sup>56</sup> Ibidem, p. 4, with references to Teubner, 1992; Luhmann, 1993, Robé, 1997.

formally organized and rather narrowly defined, global networks of an economic, cultural, academic or technological nature.<sup>57</sup> It is therefore logical to expect global law to have characteristics that are significantly different from our experience of the law of the nation-state in relation to boundaries, sources of law, independence, and unity of the law. The phenomenon to be identified, in Teubner's words, is a *self-reproducing, worldwide legal discourse which closes its meaning boundaries by the use of the legal/illegal binary code and reproduces itself by processing a symbol of global (not national) validity* [italics by Teubner].<sup>58</sup> The first criterion – 'binary coding' – delineates global law from economic and other social processes. The invocation of the legal code excludes merely social conventions and moral norms. The second criterion – 'global validity' – delineates global law from national and international legal phenomena.

More recently, Teubner proceeded with his argument of global legal pluralism and launched the thesis of the emergence of a multiplicity of civil constitutions, alongside traditional state constitutions.<sup>59</sup> In his article, he aimed to demonstrate that a situation along the lines of constitutional pluralism beyond the nation-state is moving forward. More specifically, he believes that "civil constitutions are formed in underground evolutionary processes of long duration in which the juridication of social sectors also incrementally develops constitutional norms, although they remain as it were embedded in the whole set of legal norms."<sup>60</sup>

In the same spirit as Teubner, other legal pluralists have also been searching for overarching concepts that do justice to the reality of law-making by a plurality of actors and give a common foundation to it. These efforts to define principles that regulate all law-making bodies are essentially a quest for a constitution for functional as well as territorial law-making. Günther, for example, suggests a legal meta-language of basic legal concepts and rules or, in other words, a universal code of legality<sup>61</sup>, Sand argues for polycontextuality<sup>62</sup>, Schepel notices the development of global principles of 'private administrative law'<sup>63</sup>, whereas Meidinger speaks in terms of an emerging global public law of principles that "regulate plural law-making bodies so as to make their workings suffi-

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<sup>57</sup> Ibidem, pp. 7-8.

<sup>58</sup> Ibidem, p. 12.

<sup>59</sup> G. Teubner (2004). Societal constitutionalism: alternatives to state-centred constitutional theory? In: Ch. Joerges, I-J. Sand and G. Teubner (eds.), *Transnational governance and constitutionalism*, Oxford/Portland Oregon: Hart Publishing, p. 8; Th. Vesting (2004), *Constitutionalism or legal theory: comments on Günther Teubner*. In: Ch. Joerges, I-J. Sand and G. Teubner (eds.), *Transnational governance and constitutionalism*, Oxford/Portland Oregon: Hart Publishing, p. 30.

<sup>60</sup> G. Teubner (2004), p. 18.

<sup>61</sup> K. Günther (2003), pp. 539-567.

<sup>62</sup> I.-J. Sand (2004). Polycontextuality as an alternative to constitutionalism. In: Ch. Joerges, I-J. Sand and G. Teubner (eds.), *Transnational governance and constitutionalism*, Oxford/Portland Oregon: Hart Publishing, pp. 41-65.

<sup>63</sup> H. Schepel (2004). Constituting private governance regimes. In: Ch. Joerges, I-J. Sand and G. Teubner (eds.), *Transnational governance and constitutionalism*, Oxford/Portland Oregon: Hart Publishing, p. 161-188.

ciently compatible to achieve functional governance.”<sup>64</sup> This concise overview shows that the debate among legal pluralists has not crystallised as yet, and has, in fact, just started to evolve.

## 2.4 The application of legal pluralism in research

The application of legal pluralism in research requires a translation of the concept in a concrete research approach. This section outlines such a structured research approach, distinguishing five different stages in its application:

- 1) Identification of sites of governance;
- 2) Description of rule systems;
- 3) Evaluation of rule systems;
- 4) Analysis of interaction between rule systems, and
- 5) Construction of the pattern of legal pluralism.

### 2.4.1 Identification of sites of governance

The first stage of the research approach focuses on the delineation of the issue-area under consideration and the identification of the sites of governance where regulatory activity takes place. A relevant question relates to the characteristics that distinguish a site of governance from an average organisational entity. As a point of departure, the definition of a “semi-autonomous social field” has been used which is a related concept that was introduced by Sally Falk Moore in 1973.<sup>65</sup>

In her famous article, she explained that a semi-autonomous social field is defined by a processual characteristic, namely that “it has rule-making capacities, and the means to induce or coerce compliance; but [that] it is simultaneously set in a larger social matrix which can, and does, affect and invade it, sometimes at the invitation of persons inside it, sometimes at its own instance.”<sup>66</sup> The operation of such a social field is to a significant extent self-regulating, self-enforcing, and self-propelling, however within a certain legal, political, economic and social environment.<sup>67</sup> Falk Moore furthermore observed that some semi-autonomous fields are quite enduring and others only exist briefly, that some are consciously constructed, while others evolve in the marketplace or the neighbourhood or elsewhere out of history of transactions.<sup>68</sup>

Hence, a semi-autonomous social field can be considered a site of governance *avant la lettre* and is in fact a largely identical phenomenon. Based on the definition of Falk

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<sup>64</sup> E.E. Meidinger (2004). Law and constitutionalism in the mirror of non-governmental standards: a comment on Harm Schepel’s ‘Constituting private governance regimes’. In: Ch. Joerges, I-J. Sand and G. Teubner (eds.), *Transnational governance and constitutionalism*, Oxford/Portland Oregon: Hart Publishing, p. 195.

<sup>65</sup> S. Falk Moore (1973). Law and social change: the semi-autonomous social field as an appropriate subject of study. In: *Law and Society Review*, vol. 7, no. 4, pp. 719-746.

<sup>66</sup> *Ibidem*, p. 720.

<sup>67</sup> *Ibidem*, p. 728.

<sup>68</sup> *Ibidem*, p. 745.

Moore, the following criteria can be used in order to identify sites of regulatory governance:

- A sphere of territorial, functional or sectoral competence;
- A membership with rights and obligations;
- An institutional structure to govern internal and external relations;
- An explicit regulatory discourse and output, and
- A mechanism for stimulating compliance.

#### 2.4.2 Description of rule systems

The second stage of the research approach focuses on the description of rule systems that are the product of regulatory activity undertaken by the sites of governance identified in the previous stage. A rule system is, in this respect, defined as a comprehensive set of procedural and normative rules aiming to deal with a certain issue in a coherent way. Such a rule system can be created, implemented and enforced by state as well as non-state actors and can include for example a convention, a directive or a certification programme. Although a rule system and a regulatory instrument will often be identical, a rule system is, in principle, more encompassing as it can unite multiple instruments.

In order to place these rule systems in a certain context, this study will first describe their evolution within a certain period of time. This description will subsequently provide the basis to make a selection of rule systems that qualify for further analysis focusing on the various stages in the regulatory process, including rule-making, rule-implementation and rule-enforcement. In this study, rule-making is defined as the creation of rules and their revision and adaptation. Rule-implementation refers to the transposition, interpretation and operationalisation of rules. Rule-enforcement refers to the monitoring and control of compliance and, in case of non-compliance, the application of sanctions.

#### 2.4.3 Evaluation of rule systems

The third stage of the research approach concerns the evaluation of selected rule systems on the basis of predefined criteria. This evaluation uses criteria that are based on an interpretation of the concept of sustainable development and its environmental, social and economic dimensions.<sup>69</sup>

To achieve a workable result, each dimension of sustainable development will be connected with a specific evaluation criterion. The point of departure have been the principles that are listed in the Rio Declaration on Environment and Development of 1992 and those promoted in the ILA New Delhi Declaration of Principles of International Law re-

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<sup>69</sup> Over the years, it has become common practice to distinguish three dimensions of sustainable development as has been confirmed by: WSSD (2002). Plan of Implementation of the World Summit on Sustainable Development. Johannesburg.

lating to Sustainable Development.<sup>70</sup> Several linkages can be made between these principles and the triple dimensions of sustainable development. Taking into account the particularities of the issue-area of pesticide risk reduction in agriculture, the following linkages are proposed. The environmental dimension will be linked with the principle of effectiveness as well as the principle of a precautionary approach to human health, natural resources and ecosystems. The social dimension will be combined with the principle of public participation and access to information and justice, and the economic dimension with the principle of equity as well as the principle of common but differentiated responsibilities. More concisely, the proposed three linkages can be summarised as the criteria of effectiveness, inclusiveness, and fairness. They will be further elaborated below, explaining their origins in international law, and the interpretations used in this study. Subsequently, these criteria will be used for a qualitative assessment of rule systems at the international, EU and transnational level in the Chapters 3, 4, and 5, respectively.

### Effectiveness

The criterion of effectiveness is interpreted in this study as the extent to which a regulatory approach delivers a contribution towards the objective of reducing the environmental and human health risks associated with pesticide use. This criterion has been derived from Principle 11 of the Rio Declaration, as far as it states that States shall enact effective environmental legislation. This principle has not returned explicitly in the ILA New Delhi Principles, but can be assumed to be an element of several of them, most notably of the principle of good governance.

In a general sense, the criterion of effectiveness relates to goal accomplishment. Consequently, measuring effectiveness is about assessing progress towards that specific goal. Although this may sound straightforward, measuring effectiveness in a concrete case can be a complicated matter, raising a number of questions.<sup>71</sup> The first question is about choosing an appropriate goal against which progress can be assessed. In principle, there

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<sup>70</sup> Rio Declaration on Environment and Development, A/CONF.151/26 (Vol. I), and Resolution 3/2002 of the International Law Association: The ILA New Delhi Declaration of Principles of International Law Relating to Sustainable Development, annex published in UN Doc A/57/329. The Rio Declaration contains in total 27 principles. The 12 core principles are as follows: 1. State Sovereignty, 2. Right to development, 3. Sustainable development, 4. Right to life and a healthy environment, 5. Duty not to cause environmental harm, 6. Intergenerational equity, 7. Precautionary principle, 8. Common but differentiated responsibilities, 9. Duty to assess environmental impacts, 10. Right to public participation, 11. Common heritage of mankind, and 12. Common concern of mankind. The ILA New Delhi Declaration includes a focus on: 1) Duty to ensure sustainable use of natural resources, 2) Equity and the eradication of poverty, 3) Common but differentiated responsibilities, 4) Precautionary approach to human health, natural resources and ecosystems, 5) Public participation and access to information and justice, 6) Good governance, and 7) Integration and interrelationship, in particular in relation to human rights and social, economic and environmental objectives.

<sup>71</sup> See e.g.: M.A. Mehling (2002). *Betwixt Scylla and Charybdis: The concept of effectiveness in international environmental law*. In: Finnish Yearbook of International Law, vol. XIII, pp. 129-182.

is a choice between goals that are internal or external to the rule system investigated. If a goal is internal to a rule system it will be derived from the explicit or implicit objective of that system. If a goal is external to a rule system, it is usually based upon an objective chosen by those performing the evaluation. In this study, the predefined external goal against which effectiveness will be measured is the reduction of pesticide risks in terms of human health and the environment.

The second question is about how to measure progress towards the predefined goal. This requires that the goal needs to be operationalised into measurable indicators. For pesticide risk reduction, there are several indicators conceivable, referring to different stages in the pesticide life-cycle. Such indicators may for example include: figures on production, sales and use of pesticide substances and products, the level of implementation of innovative production methods, the incidence of pesticide residues in food products, the level of emissions to air, water and soil, and the negative impacts on the environment and human health. However, these indicators have in common that they all say something about risk reduction but do not provide a definite answer to the question of goal attainment. In this study, the assessments concerning effectiveness will be based on various indicators, depending on the availability of information. These indicators will at best indicate trends, but do not provide any 'hard' scientific evidence.

The third question is about how to establish causality between the observed impacts and a particular regulatory approach. This is the most difficult question to tackle, because a positive correlation is in most cases almost impossible to prove and it will rather come down to a matter of excluding other explanations.

### Inclusiveness

The criterion of inclusiveness is interpreted as the extent to which a regulatory approach is based upon involvement of the stakeholders concerned in processes of rule-making, rule-implementation, and rule-enforcement. In this respect, a high level of inclusiveness is not considered as a value in itself but as a means to improve the quality of decision-making and more efficient implementation.

The criterion of inclusiveness has been derived from Principle 10 of the Rio Declaration, and has been expanded with a view to the principle of good governance in the ILA New Delhi Declaration and the procedural criteria articulated in the WTO Agreement on Technical Barriers to Trade (TBT Agreement). Principle 10 of the Rio Declaration states that:

Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

Hence, the Rio principle has a strong national focus and is restricted to participation of the public. This means that it does not formulate a general principle of stakeholder par-



ticipation in decision-making. The ILA principle of public participation has kept the same restricted focus as the Rio principle, but has added several new elements, considering public participation a condition for responsive, transparent and accountable governance, and stressing the freedom of opinion and the right of access to information.<sup>72</sup> Furthermore, the restricted focus of the participation principle is partly compensated by the inclusion of the principle of good governance that emphasizes the adoption of democratic and transparent decision-making procedures and respect for the rule of law and human rights in a broader context.<sup>73</sup>

At the specific level of technical regulations and standards, it is also important to refer to the Agreement on Technical Barriers to Trade (TBT Agreement) and its Annex 3 that includes a Code of Good Practice for the preparation, adoption, and application of standards.<sup>74</sup> More specifically, this Code articulates a set of procedural quality criteria that *inter alia* aim to enhance transparency, participation and accountability in rule-making processes, which are important conditions to stimulate inclusiveness. These criteria require, for example, that rule-makers provide copies of draft standards on request to interested parties (provision M); promptly publish adopted standards (provision O); allow interested parties a certain period for the submission of comments on draft standards (provision L), and take the comments they have received into account in the further processing of the standards (provision N).

## Fairness

The criterion of fairness is interpreted as the extent to which a regulatory approach has impacts on the distribution of costs and benefits in the supply chains of agricultural products, and ultimately on the marketing opportunities for agricultural producers. The criterion of fairness has been derived from Principle 7 of the Rio Declaration, which states that:

States should cooperate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. Unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing transboundary or global environmental problems should, as far as possible, be based on an international consensus.

In order to promote this supportive and open international economic system, trade in agricultural products is subject to the rules that have been established in the WTO Agree-

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<sup>72</sup> ILA New Delhi Declaration, Principle 5.

<sup>73</sup> ILA New Delhi Declaration, Principle 6.

<sup>74</sup> These definitions are derived from the 6<sup>th</sup> edition of the ISO/IEC Guide 2: 1991, General Terms and Their Definitions Concerning Standardization and Related Activities and are adapted to the fact that services are excluded from the coverage of the TBT Agreement.

ment on Agriculture of 1995.<sup>75</sup> The Agreement provides for the following liberalisation measures: the elimination of non-tariff barriers by converting them to tariffs (so called tariffication); the binding of all tariffs and their subsequent reduction, and the cutting back of domestic support. It also seeks to prohibit export subsidies as much as possible.

In accordance with Article 20 of the Agreement on Agriculture, the General Council of the WTO launched negotiations to continue the process of trade reform in agriculture in 2000.<sup>76</sup> The agricultural issue constituted the pivotal element of the multilateral trade negotiations, billed as the 'Development Round', that was originally due to be concluded by 1 January 2005, but was stalled after a deadlock was reached in the negotiations.<sup>77</sup>

Significantly, with the increased liberalisation of agricultural trade, there is growing concern that WTO members will increasingly use (or: abuse) measures based on non-trade concerns as a compensation for the loss of quantitative trade restrictive measures.<sup>78</sup> Pesticide risk reduction measures are an example of such measures as they focus on the protection of human health and the environment. Importantly, they can have different manifestations, as they are initiated by state and non-state actors, function at various geographical levels, and focus on various issues in the pesticide life-cycle.

The WTO agreements allow to a certain extent that member states take measures based on non-trade concerns, but provide several safeguards to prevent trade discrimination and unnecessary restrictive measures through provisions in GATT 1994, the TBT Agreement, and the Agreement on Sanitary and Phytosanitary Measures (SPS Agreement). Importantly, the TBT and SPS Agreements are also applicable on forms of regulation by non-state actors, but it is not fully clarified as yet how far this applicability goes.

Despite the principle of non-discrimination, it has been argued by Oxfam that international trade rules are currently loaded against the poor and the environment.<sup>79</sup> More specifically, the report also states that power imbalances in markets at all levels are a leading contributor to the denial of economic rights and that reversing such imbalances can lift millions out of poverty. It is therefore important to focus on the question whether trade flows of agricultural products have changed, or are expected to change, under the influence of the implementation of pesticide risk reduction measures, and, if yes,

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<sup>75</sup> In 1995, GATT as an international organisation ceased to exist, but the text of the treaty (GATT 1947), in an updated form (GATT 1994), is part of the WTO Agreements. Both GATT treaties did already apply to agricultural products but were not a real impetus for a liberalisation of agricultural trade. It allowed GATT Contracting Parties to certain non-tariff measures such as import quotas as well as subsidies. Consequently, trade in agriculture became highly distorted.

<sup>76</sup> WTO Annual Report 2002, p. 64.

<sup>77</sup> S.P. Subedi (2004). The challenge of managing the 'second agricultural revolution' through international law: liberalization of trade in agriculture and sustainable development. In: N. Schrijver & F. Weiss (eds.). International law and sustainable development. Principles and practice. Martinus Nijhoff: Leiden/Boston, p. 161.

<sup>78</sup> See e.g.: V. Jha (2005) (ed.). Environmental regulation and food safety. Studies of protection and protectionism. Edward Elgar/ International Development Research Centre, 232 p.

<sup>79</sup> Oxfam (2002). Rigged rules and double standards. Trade, globalisation, and the fight against poverty. London: Oxfam, 280 p.

whether this will result in extra barriers to trade for specific groups of suppliers, for example from certain regions or countries.

#### 2.4.4 Analysis of interaction between rule systems

The fourth stage of the proposed research approach focuses on the interaction between rule systems. The study of interaction is still in a relatively early stage, but, as argued above, certainly deserves attention when looking through the lens of legal pluralism. One of the more systematic and comprehensive efforts so far has been performed by the political scientists Sebastian Oberthür and Thomas Gehring, who have developed a conceptual framework that allows for a systematic and comparative investigation of the phenomenon of institutional interaction.<sup>80</sup> More precisely, the study by Oberthür and Gehring focuses on interaction between institutions at the international and EU level, and distinguishes horizontal and vertical interaction.<sup>81</sup>

The conceptual framework developed in their book has been applied to ten different issue-areas in the field of global environmental governance. The issue-areas under investigation did not include those of chemicals and/or pesticides, although some of them may have some commonalities with it. In this light, it can be considered an interesting exercise to perform a similar analysis focused on regulatory instruments aimed at pesticide risk reduction. However, before performing such an analysis, this section will first examine to what extent the terminology and perspective used by Oberthür and Gehring need to be adapted to the purposes of a study of interaction that takes the concept of legal pluralism as a starting point.

Oberthür and Gehring's framework is based on what Oran Young calls a 'reductionist' approach where interaction is dissected in its separate components, and where the single

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<sup>80</sup> S. Oberthür & T. Gehring (2006) (eds.). *Institutional interaction in global environmental governance. Synergy and conflict among international and EU policies*. Cambridge/London: The MIT Press, 405 p.

<sup>81</sup> T. Gehring & S. Oberthür (2006). Introduction. In: S. Oberthür and T. Gehring (2006) (eds.). *Institutional interaction in global environmental governance. Synergies and conflict among international and EU policies*. Cambridge/London: The MIT Press, p. 10. This distinction is based on the work of Oran Young who has proposed to distinguish between horizontal interaction between institutions at the same level of social organization and vertical interaction between hierarchically ordered units at different levels of social organization from the local to the international (with a reference to Young et al. 1999, and Young 2002, pp. 113-132).

case of interaction is the principal unit of analysis.<sup>82</sup> According to this framework, institutional interaction essentially refers to a causal relationship between two institutions, with one of these institutions (“the source institution”) exerting influence on the other (“the target institution”) through a unidirectional causal pathway connecting the two institutions.<sup>83</sup> In the absence of any causal influence, there exists a mere co-existence of two or more institutions.

Underlying the causal pathway connecting two institutions are mechanisms at work that may explain how, and under which conditions, governance institutions are capable of exerting influence on each other.<sup>84</sup> Basically, Oberthür and Gehring distinguish interaction affecting the decision-making process of the target institution and interaction affecting the effectiveness of the target institution.<sup>85</sup> Each of these two basic forms of interaction is supposed to be driven by different causal mechanisms. On the one hand, interaction influencing decision-making can be driven by cognitive processes (learning) or through commitment. On the other hand, interaction affecting the effectiveness of another institution takes place at the behavioural or impact-level.

In relation to interaction influencing decision-making, cognitive interaction means that an institution triggers a learning process based on the transfer of information, knowledge, or ideas that leads to purely voluntary adaptation by the other institution.<sup>86</sup> Such processes may occur because in the present-day world the rationality of actors is usually “bounded”, either because the actors do not have all relevant information available or because their information processing capacity is limited. Cognitive interaction may take place between institutions as long as there is a similarity of problems that allows for learning across institutional borders. In contrast, interaction through commitment fea-

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<sup>82</sup> Foreword by O. Young. In: S. Oberthür & T. Gehring (eds.). *Institutional interaction in global environmental governance. Synergy and conflict among international and EU policies*. The MIT Press, Cambridge/London, p. ix. According to Gehring & Oberthür (Introduction, p. 7), the concept of institutional interaction requires that complex interaction situations are analytically disaggregated into a suitable number of individual cases so that clear causal relationships between pairs of institutions can be identified. Hence, Gehring & Oberthür have a rather mechanistic understanding of interaction which especially comes to the surface in their use of the two terms of source institution and target institution. At the same time, they recognise that in real-world situations, a clear-cut causal relationship between two institutions may be difficult to identify – be it because interaction involves more than two institutions, or because influence runs back and forth between two institutions, or because two institutions influence each other in various ways.

<sup>83</sup> T. Gehring & S. Oberthür (2006). Introduction. In: S. Oberthür & T. Gehring (eds.). *Institutional interaction in global environmental governance. Synergy and conflict among international and EU policies*. The MIT Press, Cambridge/London, p. 5-7.

<sup>84</sup> T. Gehring & S. Oberthür (2006). Introduction. In: S. Oberthür & T. Gehring (eds.). *Institutional interaction in global environmental governance. Synergy and conflict among international and EU policies*. The MIT Press, Cambridge/London, p. 7.

<sup>85</sup> *Ibidem*, p. 8.

<sup>86</sup> S. Oberthür & T. Gehring (2006). Conceptual foundations of institutional interaction. In: S. Oberthür & T. Gehring (eds.). *Institutional interaction in global environmental governance. Synergy and conflict among international and EU policies*. Cambridge/London: The MIT Press, pp. 35-37 (with references to Keohane 1984, pp. 100-115; Simon 1972).

tures the effects of commitments on the part of members of one institution upon the preferences of those associated with another institution.<sup>87</sup>

With regard to interaction influencing effectiveness, behavioural interaction implies that behaviour taking place within one institution affects the operation of the other institution. Differently, interaction on the impact level directly affects the ultimate policy goal of the target institution. In the study by Oberthür and Gehring, the latter type of interaction is not considered any further, because patterns of causality in the physical world are deemed too complicated for analysis by social scientists.

The effects of a case of institutional interaction may be beneficial, adverse, or neutral for the institutions involved.<sup>88</sup> Whereas beneficial effects will create synergy between the two institutions involved, adverse effects will result in disruption or conflict because they undermine an institution's effectiveness. Finally, effects may also be indeterminate or neutral. In response to the effects of interaction, the actors concerned may decide to formulate a response action, in order to mitigate disruption or to enhance synergy.<sup>89</sup> The latter is, however, not seen as a necessary component of a case of interaction. Such response actions by the institutions concerned may differ, including several options such as collective decision-making, coordinated decision-making, administrative coordination and exchange of information.

Comparing the conceptual framework developed by Oberthür and Gehring with the approach envisaged in this study, several adaptations of the terminology and perspective are necessary. On the one hand, this study uses a more narrow perspective by focusing on forms of regulation, instead of institutions. Following from this, the term 'regulatory interaction' seems more appropriate than 'institutional interaction'. On the other hand, this study takes a broader perspective on the phenomenon of interaction by including actors from state as well as non-state origin in the analysis. This means that an additional direction of interaction will come into view that will be called diagonal interaction, as

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<sup>87</sup> T. Gehring & S. Oberthür (2006). Comparative empirical analysis and ideal types of institutional interaction. In: S. Oberthür & T. Gehring (eds.). *Institutional interaction in global environmental governance. Synergy and conflict among international and EU policies*. Cambridge/London: The MIT Press, p. 325.

<sup>88</sup> S. Oberthür & T. Gehring (2006). Conceptual foundations of institutional interaction, In: S. Oberthür & T. Gehring (eds.). *Institutional interaction in global environmental governance. Synergy and conflict among international and EU policies*. Cambridge/London: The MIT Press, p. 46.

<sup>89</sup> T. Gehring & S. Oberthür (2006). Comparative empirical analysis and ideal types of institutional interaction. In: S. Oberthür & T. Gehring (eds.). *Institutional interaction in global environmental governance. Synergy and conflict among international and EU policies*. Cambridge/London: The MIT Press, p. 315.

the regulatory approaches concerned do not relate in a horizontal or vertical manner with each other, but follow a different logic.<sup>90</sup>

In sum, these changes in perspective are expected to have certain consequences for the forms of regulatory interaction to be identified and the mechanisms that underlie them.

#### 2.4.5 Construction of the pattern of legal pluralism

The fifth stage of the proposed research approach pulls the different threads together in order to determine the pattern of legal pluralism in the specific issue-area of pesticide risk reduction in agriculture. As Van Kersbergen and Van Waarden (2001) have observed, present-day governance can be characterised by a “complex interweaving of actors operating at different levels of authority”.<sup>91</sup> At best, the different approaches strengthen each other, but it is also possible, as the objectives of the actors concerned do not always converge, that the mutual influences are less favourable, and moreover there is a chance of regulatory competition and even a risk of over-regulation leading to excessive costs for both regulators and regulated.

The analysis of the resulting regulatory pattern will especially focus on the changes that have taken place in the configuration of sites and forms of governance. These shifts in governance will be considered, using several perspectives, such as the division of roles in regulation, the dominant steering modes, the objectives of regulation, and the level of sustainability. Furthermore, the emerging pattern will be used as a point of departure to identify future options for improvement, taking into account the possible roles of state and non-state actors.

### 2.5 Conclusions

This chapter has explained the theoretical concept of legal pluralism and elaborated it in a structured research approach consisting of five different stages. Compared with conventional approaches in legal analysis, the merit of the concept of legal pluralism is that it recognises different types of normative activity without discriminating between them on the basis of their origin and source. By offering such a perspective upon legal phenomena in contemporary society, the concept of legal pluralism emphasises the role of non-state actors in processes of rule-making, rule-implementation, and rule-enforcement. It thus aims to cope with the new phenomena of globalisation of law and transnationalisation of regulation, and increased interaction between different normative orders.

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<sup>90</sup> This typology of vertical, horizontal and diagonal interaction is in line with: H. Schepel (2005). *The constitution of private governance. Product standards in the regulation of integrating markets.* Oxford/Portland Oregon: Hart Publishing. It has also been used in: J. Gupta & N.M. van der Grijp (2004). *The World Summit on Sustainable Development: Turning point in global governance.* In: W.P. Heere (ed.), *From government to governance: the growing impact of non-State actors on the international and European legal system.* Proceedings of the Sixth Hague Joint Conference held in The Hague, The Netherlands, 3-5 July 2003. The Hague: T.M.C. Asser Press, pp. 479-489.

<sup>91</sup> K. van Kersbergen & F. van Waarden (2001). *Shifts in governance: problems of legitimacy and accountability, paper as part of the Strategic Plan 2002-2005 of the Netherlands Organization for scientific research.* Den Haag: Social Science Research Council (MaGW), 77 p.

Recapitulating the structured research approach, the first stage focuses on the delineation of the issue-area under consideration and the identification of the sites of governance occupying it. The second stage includes the description of rule systems created and operated by the sites of governance concerned. The third stage concerns the evaluation of rule systems on the basis of predefined criteria based on an interpretation of the concept of sustainable development, including effectiveness, inclusiveness and fairness. The fourth stage focuses on the interaction between rule systems. The fifth stage concerns the construction of the pattern of legal pluralism and the identification of options for improvement.

This stage-wise research approach has the following implications for the structure of the study. The second part identifies the components of legal pluralism at the international, EU and transnational level. It furthermore describes and assesses a selection of these components. The third part illustrates the practice of legal pluralism from the perspectives of national government as well as agricultural producers. The fourth part focuses on the interaction between the components of legal pluralism, and constructs the pattern of legal pluralism in the issue-area of pesticide risk reduction. It also discusses the contribution of legal pluralism for understanding current forms of regulation, and the lessons to be learnt about the applied research approach.





## Part II The components of legal pluralism



### 3. The multilateral approach to pesticide risk reduction

#### 3.1 Introduction

The first international agreement with relevance for plant protection and pesticide use was the Phylloxera vasatrix Convention that was agreed by 12 countries in 1891, and contained regulatory measures for grapevines.<sup>92</sup> This agreement evolved into a text with a broader scope at the International Conference for Plant Protection held in Rome in 1929 and was finally adopted as the International Plant Protection Convention (IPPC) in 1951 by the Conference of FAO.<sup>93</sup> It came into force one year later.

The 1952 IPPC had the objective of “securing common and effective action to prevent the introduction and spread of pests and diseases of plant and plant products and to promote measures for their control ...”.<sup>94</sup> Its key obligations concerned the establishment of national organizations for plant protection and the use of model phytosanitary certificates for exports of plants and plant products.<sup>95</sup> Most importantly, the contracting Governments were given full authority to regulate the entry of plants and plant products, as long as such measures were made necessary by phytosanitary considerations.<sup>96</sup> Hence, the 1952 Convention aimed at finding a balance between the sovereignty of countries to protect themselves against pests on the one hand and the facilitation of international trade in plants and plant products on the other hand. At that time, the reduction of pesticide risks was not an issue at all. However, this began to change in the 1960s and 1970s when pesticide risks for human health and the environment were first broadly recognised.<sup>97</sup>

This chapter aims to analyse the international law and policy on pesticides.<sup>98</sup> Section 3.2 describes its evolution against the background of the diverging policy objectives at stake. Section 3.3 focuses on the legal tenets of the international approach with explicit objectives of risk reduction, including the FAO International Code of Conduct on the Distri-

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<sup>92</sup> [Http://www.ippc.int](http://www.ippc.int).

<sup>93</sup> Report of the Conference of FAO, 6th Session, Rome, 6 December 1951.

<sup>94</sup> IPPC, Article I.

<sup>95</sup> IPPC, Articles IV and V.

<sup>96</sup> IPPC, Article VI (1) and (2).

<sup>97</sup> An important contribution to the breakthrough in public attention has been provided by: R.L. Carson (1962). *Silent spring*. Boston: Houghton Mifflin, 400 p.

<sup>98</sup> See for discussions of the international environmental law on chemical substances: P. Birnie & A. Boyle (2002). *International law and the environment* (2<sup>nd</sup> edition). Oxford: Oxford University Press, 798 p.; D. Hunter, J. Salzman & D. Zaelke (2002). *International environmental law and policy*. University Casebook Series (2<sup>nd</sup> edition). New York: Foundation Press, 1547 p.; P. Sands (2003). *Principles of international environmental law* (2<sup>nd</sup> edition). Cambridge: Cambridge University Press, 1116 p.; D. Wirth (2007). *Hazardous substances and activities*. In: D. Bodansky, J. Brunnée & E. Hey (eds.), *The Oxford Handbook of International Environmental Law*, Oxford: Oxford University Press, pp. 394-422. See for an extensive treatise on the law of toxic substances: M. Pallemerts (2003). *Toxics and transnational law: international and European regulation of toxic substances as legal symbolism*. Oxford: Hart Publishing, 767 p.

bution and Use of Pesticides, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, and the Stockholm Convention on Persistent Organic Pollutants. Section 3.4 assesses the international law approach to pesticide risk reduction in terms of effectiveness, inclusiveness, and fairness.

### 3.2 The evolution of the international law on pesticides

The first global measures with a potential limiting impact on pesticide risks were international standards set by the Codex Alimentarius Commission (CAC) that was established in 1963 as a subsidiary body of FAO and WHO.<sup>99</sup> The CAC was given the mandate to execute the joint FAO/WHO Food Standards Programme, and to develop standards and codes dealing with basic principles, technical specifications for products and good manufacturing practices, aiming at the protection of consumer health and the promotion of fair practices in food trade.<sup>100</sup> The resulting Codex Alimentarius *inter alia* comprised limits for pesticides residues in traded food products.

During the 1970s, the first environmental agreements with an impact on pesticide use were agreed in the form of a number of regional conventions for the protection of the marine environment.<sup>101</sup> They were established with the objective of reducing emissions of various hazardous substances, including a considerable number of pesticides. These agreements still exist today, but they have all been drastically amended or substituted by new conventions.<sup>102</sup>

#### UN Conference on the Human Environment

The UN Conference on the Human Environment (UNCHE), held in Stockholm in 1972, formed the impetus for a global approach to the environmental problems caused by pesticides.<sup>103</sup> At the conference, the idea of an International Register of Potentially Toxic Chemicals (IRPTC) was launched. The initial aspirations of the newly established United Nations Environment Programme (UNEP) were ambitious about this idea, seek-

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<sup>99</sup> Resolution 16.42, May 1963. Membership is open to all member states of FAO and WHO. Over the years, the membership of the CAC has grown to 167 members. In addition, 149 international non-governmental organizations (INGOs), representing producers, industry and civil society and 58 intergovernmental organizations, have been granted observer status.

<sup>100</sup> See e.g.: M.D. Masson-Matthee (2007). *The Codex Alimentarius Commission and its standards*. Academic dissertation. The Hague: T.M.C. Asser Press, 352 p.

<sup>101</sup> The regional conventions included: the 1972 Oslo Convention on dumping waste at sea; the 1974 Paris Convention on land-based sources of marine pollution; the 1974 Helsinki Convention for the Baltic Sea, and the 1976 Barcelona Convention for the Mediterranean Sea.

<sup>102</sup> The present regional conventions include: the 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention), the 1992 Convention for the Baltic Sea and the 1995 Barcelona Convention for the Mediterranean Sea.

<sup>103</sup> United Nations Conference on the Human Environment, Stockholm, Sweden, 5-16 June 1972. See e.g. Report of the United Nations Conference on the Human Environment and Declaration of the United Nations Conference on the Human Environment.

ing to develop rules ‘as a first step towards a global convention’, but ultimately the IRPTC developed more humbly as a body for facilitating information exchange.<sup>104</sup>

The increasing international trade in chemicals, including pesticides, prompted further efforts by the international community to safeguard people and the environment from the harmful results of such trade.<sup>105</sup> These efforts were not only motivated by concern about the dangers that pesticides could pose in developing countries but also by the recognition of the “circle of poison”, the phenomenon that pesticides of which the use is banned in developed countries are sold to developing countries and return as residues in food products. The growing international concern resulted in the development of the International Code of Conduct for the Distribution and Use of Pesticides by FAO and, more or less in tandem, the London Guidelines for the Exchange of Information on Chemicals in International Trade by UNEP, respectively in 1985 and 1987.<sup>106</sup> Both used as a key reference point the WHO Classification by Hazard of 1975 which distinguishes several classes of pesticide substances based on acute toxicity, including extremely hazardous (IA), highly hazardous (IB), moderately hazardous (II) and slightly hazardous (III) substances, and a class of substances unlikely to present acute hazard in normal use.<sup>107</sup>

Early drafts of the FAO Code had provided for a prior informed consent mechanism for each shipment of pesticides banned or severely restricted in exporting countries, but pressure from industry and a number of producing countries resulted in its deletion.<sup>108</sup> However, in response to continuing concerns of developing countries and NGOs, FAO adopted a resolution in November 1987 that prior informed consent should be incorporated into the Code within two years.<sup>109</sup> In 1989, the Code and also the London Guidelines were amended to include a voluntary prior informed consent procedure, managed jointly by FAO and UNEP, to help countries make informed decisions on the import of chemicals that have been banned or severely restricted in other countries.<sup>110</sup>

With regard to the management of hazardous wastes, which includes waste from pesticide production, states adopted the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal in 1989.<sup>111</sup> The Convention entered into force in 1992. The overall goal of the Basel Convention is to protect human health and the environment from generation and transboundary movements of hazardous wastes, with as main instrument a prior informed consent procedure for waste transport

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<sup>104</sup> P. Hough (1998), p. 111.

<sup>105</sup> P. Hough (1998), p. 110; D. Hunter, J. Salzman & D. Zaelke (2002), p. 869.

<sup>106</sup> UN Doc. M/R8130, E/8/86/1/5000 (1986), and UN Doc UNEP G/C, 14/17, Annex IV (1987). See for an explanation of both documents: D. Hunter, J. Salzman & D. Zaelke (2002).

<sup>107</sup> WHO (1975). The WHO recommended classification of pesticides by hazard and guidelines to classification: 1975.

<sup>108</sup> P. Hough (1998), p. 114; D. Hunter, J. Salzman & D. Zaelke (2002), p. 872.

<sup>109</sup> Resolution 5/87, Report of the Conference of FAO, 24<sup>th</sup> Session, Rome, 7-27 November 1987.

<sup>110</sup> Decision 15/30 of the Governing Council of UNEP of 25 May 1989, and Resolution 6/89, Report of the Conference of FAO, 25<sup>th</sup> Session, Rome, 11-29 November 1989.

<sup>111</sup> See for the official website: <http://www.basel.int>.

that was largely similar to the one embedded in the FAO Code of Conduct and the London Guidelines.

The 1987 Montreal Protocol on Substances that Deplete the Ozone Layer became relevant in relation to pesticides with the Copenhagen meeting in 1992 when the Parties agreed to freeze the production and use of the soil fumigant methyl bromide, which is a significant ozone-depleting agent.<sup>112</sup> Two years later, this provision was turned into a complete phase out of methyl bromide production and use with different deadlines for developed and developing countries.<sup>113</sup>

## UN Conference on Environment and Development

The international approaches of the 1970s and 1980s dealt with a few specific aspects of pesticide use related problems. A turning point towards a more encompassing international approach was the 1992 UN Conference on Environment and Development (UNCED) in Rio de Janeiro.<sup>114</sup> Besides the Rio Declaration, the participating countries agreed upon Agenda 21 that contained an action programme in preparation for the 21<sup>st</sup> century.<sup>115</sup> In general terms, Agenda 21 promoted the idea of a global partnership for sustainable development, in which international, regional and national governmental and non-governmental organisations should play a role, and the broadest participation of all other stakeholders should be encouraged. In concrete terms, Agenda 21 included objectives, activities, and means of implementation in relation to specific programme areas.

Agenda 21 contained two programme areas with specific relevance for the further development of the international law and policy on pesticides. The programme area of sustainable agriculture and rural development (SARD) mentioned integrated pest management (IPM) as the emerging agricultural method of preference, observing that “integrated pest management, which combines biological control, host plant resistance and appropriate farming practices and minimizes the use of pesticides, is the best option for the future, as it guarantees yields, reduces costs, is environmentally friendly and contributes to the sustainability of agriculture.”<sup>116</sup> Furthermore, it was stated that IPM should go hand in hand with appropriate pesticide management, including pesticide regulation and control according to the life-cycle concept, and accordingly, that States should implement the FAO International Code of Conduct on the Distribution and Use of Pesticides no later than the year 2000.<sup>117</sup>

The second relevant programme area of Agenda 21 elaborated an international strategy for action on sound management of chemicals and called on States to achieve, by the

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<sup>112</sup> P. Hough (1998), p. 82.

<sup>113</sup> In September 1997, the 9<sup>th</sup> Meeting of the Parties to the Montreal Protocol committed the Parties to a timetable for the phase-out of methyl bromide.

<sup>114</sup> United Nations Conference on Environment and Development, Rio de Janeiro, Brazil, 1992. See e.g. Report on the United Nations Conference on Environment and Development, and Rio Declaration on Environment and Development, A.CONF.151/5/Rev. 1.

<sup>115</sup> United Nations Conference on Environment and Development, Rio de Janeiro, Brazil, 1992. See Agenda 21.

<sup>116</sup> Agenda 21, 14.73.

<sup>117</sup> Agenda 21, 14.74 sub a.

year 2000, full participation in and implementation of the prior informed consent procedure.<sup>118</sup> As a follow-up, the FAO Council agreed in November 1994 that the FAO Secretariat should proceed with the preparation of a draft prior informed consent convention as part of the joint FAO/UNEP programme.<sup>119</sup> In May 1995, the UNEP Governing Council authorized the Executive Director to convene, with the FAO, an international negotiating committee (INC) with a mandate to prepare an international legally binding instrument for the application of the prior informed consent procedure in relation to the international trade in pesticides.<sup>120</sup> The negotiation of the Convention has subsequently been completed in five sessions of the INC, and the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade was adopted on 10 September 1998.<sup>121</sup>

The international strategy on sound management of chemicals, as outlined in Agenda 21, also formed the impetus for the development of another treaty dealing with the management of chemicals. More precisely, Agenda 21 called for the “phasing out or banning of toxic chemicals that pose an unreasonable and otherwise unmanageable risk to the environment or human health and those that are toxic, persistent and bio-accumulative and whose use cannot be adequately controlled.”<sup>122</sup>

The momentum to conclude an international convention on these so-called persistent organic pollutants (POPs) further grew with the creation of the Intergovernmental Forum on Chemical Safety (IFCS) in Stockholm in 1994, and the Washington Conference on Land-based Sources of Marine Pollution in 1995.<sup>123</sup> Moreover, the Inuit indigenous people have been strongly advocating the case of a convention on POPs since the levels of these substances turned out to be extremely high in the ecosystems and food chains in the Arctic and Antarctic regions.<sup>124</sup> In early 1997, UNEP adopted Decision 19/13, recommending that the Governing Council establish an INC to negotiate a global instrument regulating persistent organic pollutants.<sup>125</sup> Subsequently, the negotiation of the Convention has been completed in five sessions of the INC, and the Stockholm Convention on Persistent Organic Pollutants was adopted on 22 May 2001.<sup>126</sup>

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<sup>118</sup> Agenda 21, 19.39 sub d, 19.69 sub a and 19.71.

<sup>119</sup> Agreed at the 107<sup>th</sup> Session of the FAO Council.

<sup>120</sup> Decision 18/12 of the Governing Council of UNEP at the 18<sup>th</sup> session.

<sup>121</sup> UN Doc. UNEP/FAO/PIC/CONF/5.

<sup>122</sup> Agenda 21, 19.49 sub b. Previously, several persistent organic pollutants were regulated under the 1998 POPs Protocol of the 1979 UN Economic Commission for Europe Long Range Transport of Air Pollutants Treaty (LRTAP).

<sup>123</sup> See e.g.: P. Hough (2003). Poisons in the system: the global regulation of hazardous pesticides. In: *Global Environmental Politics*, vol. 3, issue 2, p. 19; A.J. Yoder (2003). Lessons from Stockholm: evaluating the global Convention on Persistent Organic Pollutants. In: *Indiana Journal of Global Legal Studies*, vol. 10, issue 2, pp. 124-126.

<sup>124</sup> The reason for the greater vulnerability of the polar zones is that persistent organic pollutants tend to evaporate in warmer climates and condense in colder zones.

<sup>125</sup> Decision 19/13 C of 7 February 1997 of the Governing Council of UNEP to initiate international action to protect human health and the environment through measures which will reduce and/or eliminate emissions and discharges of persistent organic pollutants.

<sup>126</sup> UN doc. UNEP/POPS/CONF/5.

Agenda 21 furthermore provided the official mandate for the development of a Globally Harmonized System of Classification and Labelling of Chemicals (GHS).<sup>127</sup> This non-binding system that was finally introduced in 2002 aims to provide an internationally comprehensible system for hazard communication and facilitate international trade in chemicals and will replace the WHO Classification by Hazard scheme.<sup>128</sup>

### UN World Summit on Sustainable Development

Similarly as 1972 and 1992, the year 2002 was again an important landmark for the development of the international law and policy on pesticides. At the UN World Summit on Sustainable Development (WSSD) in Johannesburg in 2002, the international community renewed its commitment to the sound management of chemicals, “aiming to achieve, by 2020, that chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment.”<sup>129</sup> In order to achieve this aim, the Johannesburg Plan of Implementation considered several actions necessary, including: the ratification and implementation of the Rotterdam and Stockholm Conventions; the further development of the Strategic Approach to International Chemicals Management (SAICM); the implementation of the new Globally Harmonized System for the classification and labelling of chemicals (GHS) ultimately by 2008, and the prevention of illegal trade of hazardous chemicals and wastes.

As a complementary outcome, the Johannesburg Plan of Implementation encouraged the establishment of so-called partnerships for sustainable development. These partnerships, being voluntary, multi-stakeholder initiatives, are specifically linked to the implementation of commitments outlined in Agenda 21, the Programme for the Further Implementation of Agenda 21, and the Johannesburg Plan of Implementation.<sup>130</sup> According to the criteria and guidelines agreed upon at the eleventh session of the Commission on Sustainable Development (CSD), registered partnerships should be new and should add concrete value to the implementation of sustainable development. Several of the partnerships that have been set up, aim to promote sustainable agriculture, and some of them focus on the implementation of international multilateral obligations.

The Johannesburg Summit also formed the impetus to move the multi-stakeholder process that had been launched under the strategic approach to international chemicals man-

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<sup>127</sup> [Http://www.unece.org](http://www.unece.org).

<sup>128</sup> The GHS has been adopted in December 2002 by the Sub-Committee on the Globally Harmonized System of Classification and Labelling of Chemicals (SCEGHS).

<sup>129</sup> Report of the World Summit on Sustainable Development, Johannesburg, 26 August - 4 September 2002, and Plan of Implementation of the World Summit on Sustainable Development, A/CONF. 199/20.

<sup>130</sup> UN Economic and Social Council. Partnerships for Sustainable Development. Report of the Secretary-General. E/CN.17/2004/16. In relation to the sound management of chemicals, the Plan of Implementation of the World Summit on Sustainable Development remarks that partnerships should be encouraged “to promote activities aimed at enhancing environmentally sound management of chemicals and hazardous wastes, implementing multilateral environmental agreements, raising awareness of issues relating to chemicals and hazardous waste and encouraging the collection and use of additional scientific data.”



agement (SAICM) a step forward.<sup>131</sup> Although it was evident during the preparatory process that countries had different visions of what an integrated international chemicals management regime should eventually look like, a commonly agreed approach has been adopted in February 2006.<sup>132</sup>

An additional landmark in the year 2002 was the revision of the FAO Code of Conduct in order to bring it up to date with the entry into force of the Rotterdam Convention, which made the prior informed consent provisions redundant. With this revision, more emphasis has been put on the implementation of IPM, introducing a revised definition and plans for implementing guidelines.<sup>133</sup>

### Concluding remarks

Looking back at several decades of law and policy-making at the international level, it is apparent that the international law on pesticides has evolved from a limited focus on aspects of national plant health protection and trade facilitation towards broader regulatory approaches promoting also objectives of environmental and human health protection. The successive UN Conferences in the areas of environment and sustainable development have performed an important role in this evolutionary process by advancing the development of international legal instruments into new directions. They have also repeatedly made a case for formulating environmental and human health objectives, and linking legal instruments with targets and timetables.

In addition, the UN institutions of FAO and UNEP have fulfilled a crucial role in the development of the international law and policy on pesticides. They have been initiators of many new activities and approaches to pesticide issues and carry responsibility for the facilitation and monitoring of the implementation of several international instruments. Initially working separately, they have increasingly sought cooperation in order to enhance synergies. Furthermore, several other international organisations have performed important roles in shaping a framework of rules and regulations that influence the production, marketing, use, and residue stage of pesticides. As a result, the current instruments cover in principle all stages of the life-cycle of pesticides, but as the Rotterdam and Stockholm Conventions have a limited scope this does not account for the full width of all pesticide substances.

### 3.3 The relevant WTO arrangements

Under WTO law, measures based on non-trade concerns, such as pesticide risk reduction measures, are commonly referred to as ‘technical barriers to trade’, and can be in conflict with the provisions of GATT 1994, the Agreement on Technical Barriers to Trade (TBT

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<sup>131</sup> The SAICM process is based on the Bahia Declaration and Priorities for Action beyond 2000 of the Intergovernmental Forum on Chemical Safety and was endorsed at the WSSD in 2002.

<sup>132</sup> SAICM was adopted by the International Conference on Chemicals Management (ICCM) on 6 February 2006 in Dubai, United Arab Emirates. It comprises three core texts: the Dubai Declaration, the Overarching Policy Strategy, and a Global Plan of Action. Available at <http://www.chem.unep.ch/saicm>.

<sup>133</sup> The amended code was adopted by the FAO Council, on behalf of the FAO Conference, at the 123<sup>rd</sup> session in November 2002.

Agreement) or the Agreement on Sanitary and Phytosanitary Measures (SPS Agreement).<sup>134</sup> Although these three agreements are based on the same principle of non-discrimination, they differ in their elaboration in concrete provisions. More precisely, the rules of the TBT Agreement and the SPS Agreement go beyond the GATT obligations not to discriminate among or against imported products. The relevant WTO arrangements are elaborated below, referring to the outcomes of recent trade disputes and explaining their mutual relationships.<sup>135</sup>

## GATT 1994

It is a basic principle of GATT 1994, and other WTO agreements, that ‘like’ products should not be discriminated between nations.<sup>136</sup> This principle of non-discrimination means that countries are not allowed to discriminate between domestic products and imports, between imports from different countries and between products sold in the domestic market and those exported. It is *inter alia* articulated in the ‘most-favoured nation’ and ‘national treatment’ provisions.<sup>137</sup> It does not allow measures based on so-called process and production measures (PPMs) that involve a restriction on imports based not on the potentially harmful characteristics of the product, but rather by reference to the harm that has been caused by the way in which it has been produced. Different production methods will in general not affect the nature of the product and the resulting products are therefore considered ‘like’ products. Such PPMs are certainly relevant in relation to agricultural products.

However, this non-discrimination principle is not absolute, allowing PPMs under the condition that they meet the criteria of the general exceptions, as provided in Article XX. The first relevant exception is contained in para b, and applies to measures “necessary to protect human, animal or plant life or health”. This exception has been interpreted very narrowly, requiring WTO members to show that there was no alternative, less trade-restrictive, way of achieving similar protection.<sup>138</sup> The second exception, contained in

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<sup>134</sup> See on WTO law in general: J.H. Jackson (1997). *The world trading system*, 2<sup>nd</sup> edition. Law and policy of international economic relations. Cambridge MA: The MIT Press, 453 p.; P. van den Bossche (2005). *The law and policy of the World Trade Organization. Text, cases and materials*. Cambridge: Cambridge University Press, 776 p. See on WTO law in relation to non-trade concerns: P. van den Bossche, N. Schrijver & G. Faber (2007). *Unilateral measures addressing non-trade concerns. A study on WTO consistency, relevance of other international agreements, economic effectiveness and impact on developing countries of measures concerning non-product-related processes and production methods*. The Hague: The Ministry of Foreign Affairs of the Netherlands, Policy Coherence Unit, 261 p.

<sup>135</sup> The decisions, as adopted by the WTO Panels, Appellate Body and more recently the Dispute Settlement Body, do not have precedential effect, they nevertheless tend to create expectations by all those concerned with the WTO.

<sup>136</sup> See e.g.: M. Hilf (2001). *Power, rules and principles – which orientation for WTO/GATT law?* In: *Journal of International Economic Law*, pp. 111-130; B.J. Condon (2006). *Environmental sovereignty and the WTO. Trade sanctions and international law*. New York: Transnational Publishers, 346 p.

<sup>137</sup> GATT 1994, Articles I and II.

<sup>138</sup> *United States - Standards for Reformulated and Conventional Gasoline (US-Gasoline)*. WTO Panel report, WT/DS2/R, 20 May 1996, WTO Appellate Body report, WT/DS/AB/R.

para g, applies to measures “relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption”. This exception has been interpreted less restrictively than the first exception, as is evident from the analysis by the Appellate Body in *US- Shrimp/Turtle*.<sup>139</sup>

However, in this case the measure did not satisfy the requirements of the introductory *chapeau* to Article XX which provides that such measures are not to be applied “in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade.” The Appellate Body in *US-Shrimp Turtle* expressed a clear preference for issues relating to PPMs to be resolved by negotiation and, wherever possible, by the conclusion of multilateral agreements. More precisely, the Appellate Body has decided that trade measures of the WTO Members, designed to follow a legitimate non-economic interest, should be ‘effective’, ‘necessary’, and ‘reasonable’, thus referring to the classical three requirements of the principle of proportionality.<sup>140</sup>

### TBT Agreement

According to the TBT Agreement, the national treatment and the most favoured nation treatment obligations, as incorporated in GATT 1994, also apply to technical regulations, standards and conformity assessment procedures.<sup>141</sup> In this respect, Annex 1.1 defines a technical regulation as:

“... [a] document which lays down product characteristics or their related processes and production methods including the applicable administrative provisions, with which compliance is mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labeling requirements as they apply to a product, process or production method.”

Hence, according to this definition, technical regulations contain mandatory rules established by state actors. In contrast, a standard is a voluntary measure set by state or non-state actors. More precisely, Annex 1.2 of the TBT Agreement defines a standard as:

“... [a] document approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for products or related processes and production methods, with which compliance is not mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method.”

Furthermore, Annex 1.3 defines a conformity assessment procedure as “any procedure used, directly or indirectly, to determine that relevant requirements in technical regulations or standards are fulfilled.” This means that auditing, inspection and certification processes fall under this latter category.

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<sup>139</sup> United States - Import Prohibition of Certain Shrimp and Shrimp Products (US-Shrimp). Recourse to Article 21.5 by Malaysia. WTO Panel report, WT/DS58/RW, 15 June 2001. WTO Appellate Body report, WT/DS58/AB/RW, 22 October 2001.

<sup>140</sup> Hilf (2001), p. 120/121.

<sup>141</sup> TBT Agreement, Articles 2.1 and 5.1.1 and Annex 3 D.

As is evident from these definitions, the TBT Agreement applies to measures relating to products (both industrial and agricultural), and processes and production methods (PPMs). It is, however, a question of much debate whether they include the so-called non-product related processes and production methods, or unincorporated PPMs. The latter term refers to PPMs that do not affect the characteristics of the final product put on the market. It has been argued, that the definitions in the TBT Agreement seem to indicate that technical regulations, standards and conformity assessment procedures relating to unincorporated PPMs do not fall within the scope of application of the TBT Agreement.<sup>142</sup> This means that they should be examined under the more lenient provisions of GATT 1994.

In the cases of *EC-Asbestos* and *EC-Sardines*, the WTO Panels and the Appellate Body have examined whether the contested measures were technical regulations falling within the scope of the TBT Agreement. A key issue in this regard is the interpretation of the term ‘product characteristics and related process and production methods’, as the crucial criterion for a technical regulation is that it must lay down product characteristics. According to the Appellate Body in *EC-Asbestos*, the technical characteristics of a product include:

“... any objectively definable “features”, “qualities”, “attributes”, or other “distinguishing mark” of a product. Such “characteristics” might relate, *inter alia*, to a product’s composition, size, shape, colour, texture, hardness, tensile strength, flammability, conductivity, density or viscosity. ... [Furthermore, they may] include, not only features and qualities intrinsic to the product itself, but also related “characteristics”, such as the means of identification, the presentation and the appearance of a product.”<sup>143</sup>

The Appellate Body has confirmed this ruling in *EC-Sardines* by developing a three-tier test for determining whether a measure is a ‘technical regulation’ under the TBT Agreement: 1) the measure must apply to an identifiable product or group of products, 2) the measure must lay down product characteristics, and 3) compliance with the product characteristics laid down in the measure must be mandatory.<sup>144</sup> However, the rulings in *EC-asbestos* and *EC-sardines* did not elaborate on the notion of related process and production methods.

It is furthermore important to note that, although the TBT Agreement is mainly addressed to central government bodies, it explicitly aims to extend its application to ‘other bodies’ responsible for the establishment of technical regulations, standards, or execution of conformity assessment procedures, including local government and non-governmental bodies. Non-governmental bodies are defined as bodies other than central or local government bodies that “have legal power to enforce a technical regulation.”<sup>145</sup>

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<sup>142</sup> See e.g.: Van den Bossche et al., 2005, p. 7.

<sup>143</sup> European Communities - Measures Affecting Asbestos and Products Containing Asbestos (*EC-Asbestos*). WTO Panel report, WT/DS/135/R, 19 September 2000. WTO Appellate Body report, WT/DS/135/AB/R, 12 March 2001.

<sup>144</sup> European Communities – Trade Description of Sardines (*EC-Sardines*). WTO Panel report, WT/DS231/R, 23 October 2002. WTO Appellate Body report, WT/DS231/AB/R, 23 October 2002.

<sup>145</sup> TBT Agreement, Annex 1.8.

The TBT Agreement extends its application to those ‘other bodies’ by imposing, on WTO Members, the obligation to take such reasonable measures as may be available to them in order to ensure compliance with the TBT Agreement by local government bodies and non-governmental bodies, and to refrain from taking measures that could encourage actions by these other bodies that are inconsistent with the provisions of the TBT Agreement.<sup>146</sup> In addition, Members have, the obligation to take reasonable measures as are available to them to ensure that local and non-governmental standardising bodies also accept and comply with the Code of Good Practice for the Preparation, Adoption and Application of Standards included in Annex 3 to the Agreement.

The core of the TBT Agreement is the provision that technical regulations, standards and conformity assessment procedures “are not prepared, adopted or applied with a view to or with the effect of creating unnecessary obstacles to international trade.”<sup>147</sup> Concerning technical regulations, the TBT Agreement further requires that technical regulations “shall not be more trade-restrictive than necessary to fulfil a legitimate objective, taking account of the risks non-fulfilment would create” and “shall not be maintained if the circumstances or objectives giving rise to their adoption no longer exist or if the changed circumstances or objectives can be addressed in a less trade-restrictive manner.”<sup>148</sup>

In order to provide guidance, the TBT Agreement provides a non-exhaustive list of legitimate objectives, which *inter alia* includes the protection of human health and safety, animal or plant life or health, and the protection of the environment, and mentions several elements that help substantiate the necessity of a technical regulation. In addition, the TBT Agreement obliges WTO Members to “take into account the objective of minimizing negative trade effects”, when determining the appropriate level of protection.<sup>149</sup>

Importantly, the TBT Agreement requires members to use relevant international standards as a basis for their technical regulations.<sup>150</sup> More precisely, it states that a technical regulation that is adopted to achieve one of the legitimate objectives explicitly mentioned and that is in accordance with a relevant international standard is “rebuttably presumed not to create an unnecessary obstacle to international trade.” Following from this emphasis on international standards, members are required to play a full part, within the limits of their resources, in the preparation of international standards for products for which they either have adopted, or expect to adopt, technical regulations.<sup>151</sup>

The TBT Agreement furthermore includes provisions about equivalency of technical regulations, mutual recognition of conformity assessment procedures, and multilateral recognition agreements. With regard to notification, the requirements for technical regulations, standards, and conformity assessment procedures are highly similar, except that there is an additional requirement for central government standardising bodies to pub-

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<sup>146</sup> TBT Agreement, Article 4.

<sup>147</sup> TBT Agreement, Articles 2.2 and 5.1.2 and Annex 3 E.

<sup>148</sup> TBT Agreement, Article 2.2.

<sup>149</sup> TBT Agreement, Article 5.4.

<sup>150</sup> TBT Agreement, Article 2.4. In EC-Sardines, the Panel and Appellate Body have elaborated on the interpretation of Article 2.4 and more specifically the meaning of ‘relevant’ international standard, ‘based on’, ‘effectiveness’ and ‘appropriateness’.

<sup>151</sup> TBT Agreement, Article 2.6.

lish, at least every six months, their work programme and report on the progress regarding the preparation and adoption of standards.<sup>152</sup> In addition, these government bodies are obliged to take measures to ensure that local and non-governmental standardising bodies in their territory also fulfil this requirement.<sup>153</sup>

## SPS Agreement

The aim of the SPS Agreement is to ensure that when sanitary and phytosanitary measures are applied, they are used only to the extent necessary to ensure food safety and animal and plant health, and not to unduly restrict market access for other countries.<sup>154</sup>

According to Annex A sub 1, the SPS Agreement defines sanitary and phytosanitary measures as any measure applied:

“... (a) to protect animal or plant life or health within the territory of the Member from risks arising from the entry, establishment or spread of pests, diseases, disease-carrying organisms or disease-causing organisms; (b) to protect human or animal life or health within the territory of the Member from risks arising from additives, contaminants, toxins or disease-causing organisms in foods, beverages or feedstuffs; (c) to protect human or animal life or health within the territory of the Member from risks arising from diseases carried by animals, plants or products thereof, or from the entry, establishment or spread of pests; or (d) to prevent or limit other damage within the territory of the Member from the entry, establishment or spread of pests.”

In short, this means that SPS measures include a broad range of approaches allowing Members to protect themselves against pests, diseases, and contaminants from other countries, and that it is the purpose of the measure that qualifies it as a sanitary or phytosanitary measure. With regard to pesticides, SPS measures include pesticide risk reduction measures, such as maximum residue levels (MRLs) of pesticides and other food safety measures such as HACCP guidelines. However, they also include plant protection measures that are aimed at preventing or controlling the spread of invasive pests and diseases, and hence may encourage the use of pesticides.

Similarly as the TBT Agreement, the SPS Agreement extends its application to the behaviour of non-state actors. With regard to the latter category, Article 13 specifies that “Members shall take such reasonable measures as may be available to them to ensure that non-governmental entities within their territories, as well as regional bodies in which relevant entities within their territories are members, comply with the relevant provisions of this Agreement”.<sup>155</sup>

The main substantive provisions of the SPS Agreement can be found in Articles 5 and 6. According to Article 5.1, Members shall ensure that their sanitary and phytosanitary

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<sup>152</sup> TBT Agreement, Annex 3 sub J.

<sup>153</sup> TBT Agreement, Article 4.

<sup>154</sup> See e.g.: J. Scott (2007). *The WTO Agreement on Sanitary and Phytosanitary Measures. A commentary*. Oxford: Oxford University Press, 360 p.

<sup>155</sup> The Article goes even further by stating that: “In addition, Members shall not take measures which have the effect of, directly or indirectly, requiring or encouraging such regional or non-governmental entities, or local governmental bodies, to act in a manner inconsistent with the provisions of this Agreement [...]”

measures are based on an assessment, as appropriate to the circumstances, of the risks to human, animal or plant life or health, taking into account risk assessment techniques developed by the relevant international organizations. Article 5.2 provides a number of minimum scientific criteria that Members must take into account in such a risk assessment, whereas Article 5.3 includes economic criteria. Article 5.4 explicitly stipulates that:

“Members should, when determining the appropriate level of sanitary and phytosanitary protection, take into account the objective of minimizing negative trade effects.”

Article 5.5 requires that “... each Member shall avoid arbitrary or unjustifiable distinctions in the levels [of protection] it considers to be appropriate in different situations, if such distinctions result in discrimination or a disguised restriction on international trade.” Article 5.6 stipulates that “Members shall ensure that ... [sanitary or phytosanitary] measures are not more trade-restrictive than required to achieve their appropriate level of sanitary or phytosanitary protection, taking into account technical and economic feasibility.”

Furthermore, they should be based on international standards, guidelines or recommendations, where they exist.<sup>156</sup> More precisely, international standards are presumed to be consistent with the SPS Agreement.<sup>157</sup> Such international standards are defined in an annex to the Agreement.<sup>158</sup> For food safety, the relevant standardising body is the Codex Alimentarius Commission, while for plant health this is the Secretariat of the International Plant Protection Convention in cooperation with regional organisations operating within its framework.

An important question is whether countries are allowed to establish SPS measures that are stricter than those prescribed by international standards. The Agreement indeed permits the establishment of measures resulting in a higher level of sanitary or phytosanitary protection, but stipulates that there must be ‘a scientific justification’ for doing so or a justification on the basis of a risk assessment.<sup>159</sup> However, in general terms, the SPS Agreement can be considered to limit countries’ sovereignty to impose their own rules and standards.

The interpretation of the provision about international standards, and more precisely the term ‘based on the relevant international standards’, has been contested in the *EC-Beef Hormones case*.<sup>160</sup> Interestingly, the Panel’s interpretation of ‘based on’ was reversed by the Appellate Body which held that the SPS Agreement entitled a party to take health measures that adopt more stringent standards than the international standards set out in the Codex recommendations. In particular, the Appellate Body decided that ‘based on’ does not mean the same as ‘conform to’.

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<sup>156</sup> SPS Agreement, Article 3.1.

<sup>157</sup> SPS Agreement, Article 3.2.

<sup>158</sup> SPS Agreement, Annex A, para 3.

<sup>159</sup> SPS Agreement, Articles 5.1-5.8.

<sup>160</sup> European Communities-Measures Concerning Meat and Meat Products (EC- Hormones). WTO Panel report, WT/DS/48/R/CAN, WT/DS/26/R/US, 18 August 1997. WTO Appellate Body report, WT/DS/48/AB/R, WT/DS/26/AB/R, 16 January 1998.

This decision by the Appellate Body is considered of importance in that it justifies, at least in theory, the adoption of higher SPS standards than ‘the relevant international standards’, provided that a valid ‘risk assessment’ is performed. However, in practice it may be very difficult to conduct a risk assessment as specific as that required by the Appellate Body.

In the *Australia-Salmon case*, the Appellate body articulated the criteria for a valid risk assessment, and decided that the Australian measure focusing on the import of fresh, chilled or imported salmon did not fulfil them as it was based on an arbitrary discrepancy with measures concerning the imports of other fish which posed at least an equal risk of the introduction of the diseases to which the contested measure was directed.<sup>161</sup> In contrast, in *EC-Beef Hormones*, the Appellate Body had concluded that there was not such an arbitrary discrepancy because of the absence of any evidence of protectionist intent behind the measure.

In the *Japan-Varietals case*, the Appellate Body decided that there must be a rational relationship between a SPS measure and the available scientific information, which in case did not exist.<sup>162</sup> It furthermore explained that a provisional measure should fulfil four cumulative requirements.<sup>163</sup> First, there must be a situation where the relevant scientific information is insufficient. Second, the measure must be adopted on the basis of available pertinent information. Third, a member might not maintain a provisional measure unless it sought to obtain the additional information necessary for a more objective assessment of risk. Fourthly, the member must review the measure accordingly within a reasonable period of time.

In sum, the SPS Agreement aims to balance economic interests and human health risks by promoting the use of scientific evidence. Focusing on the performance of the SPS Agreement in practice, opinions diverge about its impacts. On the one hand, some argue that it has successfully facilitated international trade, judging from the number of disputes that has been settled. On the other hand, others claim that it has weakened national protection against foreign pests and diseases as is signalled by the increasing global spread of unwanted pests and diseases, and their control costs.

## Relationships between WTO agreements

Focusing on a particular non-trade measure, it is important to determine which of the WTO arrangements are applicable. Most importantly, a distinction should be made between the general category of technical barriers to trade, for which rules have been set out in the TBT Agreement, and the special category of sanitary and phytosanitary measures, for which rules are provided in the SPS Agreement.

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<sup>161</sup> Australia - Measures Affecting the Importation of Salmon. WTO Panel report, WT/DS18/R (1998). WTO Appellate Body report, WT/DS18/AB/R (1998).

<sup>162</sup> Japan - Measures affecting agricultural products (Japan – Varietals). WTO Panel report, WT/DS76/R. 1998. WTO Appellate Body report, WT/DS76/AB/R, 22 February 1999.

<sup>163</sup> SPS Agreement, Article 5.7.



Overlap between the TBT and SPS Agreements is regulated in the TBT Agreement by the explicit exclusion of SPS measures from its scope.<sup>164</sup> This has been confirmed in the *EC-Hormones* dispute.<sup>165</sup> However, the relationship between the TBT Agreement and the GATT is not ruled by WTO law. It has been somewhat clarified in the *EC-Asbestos* case.<sup>166</sup> In this case, the Panel held that where both the GATT 1994 and the TBT Agreement appear to apply to a given measure, a Panel must first examine whether the measure at issue is consistent with the TBT Agreement since this agreement deals ‘specifically and in detail’ with technical barriers to trade. However, should a Panel find a measure to be consistent with the TBT Agreement, it must still examine whether the measure is also consistent with the GATT 1994. In the same case, the Appellate Body pointed out that the TBT Agreement is a specialised legal regime that applies solely to a limited class of measures. However, as the Appellate Body felt unable to complete the analysis of the contested decree’s conformity with the TBT Agreement, the relationship between the TBT Agreement and the GATT must await further clarification.

There can be further complications when a contested measure actually consists of various measures with different characteristics. In such situations, it cannot be excluded that more than one agreement is applicable to the measure as a whole. More precisely, the Panel in the *EC-Biotech* noted that there may be situations where a measure is only partly an SPS measure.<sup>167</sup> In such a case, the SPS part of the measure needs consideration under the SPS Agreement, while the non-SPS parts have to be considered under another WTO agreement, such as the TBT Agreement or the GATT. This is certainly relevant in relation to pesticide risk reduction measures taken by non-state actors, because these are often complex programmes serving various goals.

### 3.4 The legal tenets of the international approach

As Section 3.2 described the broader picture of the international law on pesticides, the current section elaborates on the three instruments, having most relevance from the perspective of environmental and human health protection, including:

- FAO International Code of Conduct on the Distribution and Use of Pesticides (1985);
- Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (1998);
- Stockholm Convention on Persistent Organic Pollutants (2001).

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<sup>164</sup> TBT Agreement, Article 1.5.

<sup>165</sup> European Communities - Measures Concerning Meat and Meat Products (Hormones). WT/DS/48/R/CAN, WT/DS/26/R/US. WTO Panel report 18 August 1997. WTO Appellate Body report, WT/DS/48/AB/R, WT/DS/26/AB/R., 16 January 1998.

<sup>166</sup> European Communities - Measures Affecting Asbestos and Products Containing Asbestos (EC-Asbestos). WTO Panel report, WT/DS/135/R, 19 September 2000. WTO Appellate Body report, WT/DS/135/AB/R, 12 March 2001.

<sup>167</sup> European Communities - Measures Affecting the Approval and Marketing of Biotech Products (EC-Biotech). WTO Panel report, WT/DS291/R, WT/DS292/R, WT/DS293/R, 29 September 2006.

Considered from a life-cycle perspective, these three international instruments have a complementary character. The Stockholm Convention is primarily oriented on the production stage of pesticides, the Rotterdam Convention on the marketing stage, and the FAO Code of Conduct on the use stage.

### 3.4.1 FAO International Code of Conduct on the Distribution and Use of Pesticides

The FAO International Code of Conduct on the Distribution and Use of Pesticides was adopted by the FAO Member States in 1985.<sup>168</sup> According to the Code itself, it is a dynamic text and consequently Governing Bodies should periodically review the relevance and effectiveness of the Code and update it as required.<sup>169</sup> The Code has thus far been amended twice, in 1989 and 2002, respectively.<sup>170</sup>

#### Rule-making

According to Article 1.1 of the 2002 version, the Code aims “to establish voluntary standards of conduct for all public and private entities engaged in or associated with the distribution and use of pesticides, particularly where there is inadequate or no national legislation to regulate pesticides.” Hence, the Code aims to give interim guidance and protection until a country has its own regulations in place.

The 2002 revision of the FAO Code of Conduct included many substantial changes.<sup>171</sup> In comparison with its predecessor, the revised Code puts more emphasis on the use stage of pesticides and especially on the implementation of IPM as the agricultural production method of preference.<sup>172</sup> The definition of IPM has been extended to include the objective of risk reduction in relation to both human health and the environment, and the encouragement to apply natural pest control mechanisms. The revised definition is as follows:

“Integrated Pest Management (IPM) means the careful consideration of all available pest control techniques and subsequent integration of appropriate measures that discourage the development of pest populations and keep pesticides and other interventions to levels that are economically justified and reduce or minimize risks to human health and the en-

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<sup>168</sup> The FAO Code of Conduct was adopted at the 23<sup>rd</sup> Session of the FAO Conference in 1985 by Resolution 10/85, UN Doc. M/R8130, E/8/86/1/5000 (1986). See for discussions of the FAO Code of Conduct: P. Sands, pp. 631-633, and M. Pallemarts (2003), pp. 419-594.

<sup>169</sup> FAO Code of Conduct, Article 12.7.

<sup>170</sup> In 1989, the FAO Code of Conduct was revised by Resolution 6/89, which was adopted at the 25<sup>th</sup> session of the FAO Conference. In 2002, it was revised by Resolution 1/123, which was approved at the 123<sup>rd</sup> session by the FAO Council (with the authorization of the 31<sup>st</sup> Session of the FAO Conference).

<sup>171</sup> Several provisions though has stayed basically the same, including the adequate testing of pesticides before they are put on the market, the implementation of national pesticide registration and control systems, the provision of training and technical assistance; the establishment of a WHO harmonised information system on health aspects of pesticides and pesticide poisoning incidents, the proper packaging and labelling of pesticides, and the avoidance of misleading forms of advertising.

<sup>172</sup> FAO Code of Conduct, Article 1.7.6.

vironment. IPM emphasizes the growth of a healthy crop with the least possible disruption to agro-ecosystems and encourages natural pest control mechanisms.”<sup>173</sup>

Furthermore, the 2002 Code introduced the concepts of good agricultural practice, a life-cycle approach to pesticide management, and product stewardship by the pesticide industry. Other new elements included the establishment of national programmes to monitor pesticide residues in food and the environment, and action plans for the disposal of obsolete and unusable stocks of pesticides and used containers.

### Rule-implementation

As the membership of FAO to date amounts to 187 nations, this means that nearly all countries in the world are committed to comply with the provisions of this voluntary and thus non-binding code. However, the crucial question is how far does this commitment of governments go and what does it mean in practice. This question is not easy to answer, as governmental commitment will differ according to place and time and governmental behaviour is influenced by a myriad of factors. However, the overall conclusion is that many more countries have rules and regulations concerning pesticide management in place than 20 years ago when the code was first adopted. For many of them, the Code and its technical guidelines have been the basis for the development of policies and measures for pesticide management.

The addressees of the Code are primarily governments and the pesticide industry, but also include other stakeholders that are in a position to influence good agricultural practices.<sup>174</sup> Significantly, the revised Code now considers the food industry as a stakeholder and calls on it to help implement its recommendations. More precisely, the food industry, among all other stakeholders, should play a proactive role in the development and promotion of IPM.<sup>175</sup>

With the re-orientation of the FAO Code of Conduct in 2002, and the shifting emphasis toward the use phase of pesticides, the implementation process had to start largely anew at both the FAO and the national level. To start with, the former FAO Panel of Experts on Pesticide Specifications, Registration Requirements, Application Standards and Prior Informed Consent was replaced by a FAO Panel of Experts on Pesticide Management, with an amended mandate to reflect its new tasks.<sup>176</sup> During its final meeting in 2003, the former panel made several recommendations for high priority activities, such as the development of a FAO strategic plan for the implementation of the revised version of the Code, the adoption of a new framework for technical guidelines supporting the Code, the improvement of the process of making guidelines, a review of existing guidelines and

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<sup>173</sup> FAO Code of Conduct, Article 2.

<sup>174</sup> FAO Code of Conduct, Articles 1.5, 3.1, 3.2 and 12.2.

<sup>175</sup> FAO Code of Conduct, Article 3.8.

<sup>176</sup> FAO (2005). FAO Expert Meeting on Pesticide Management. 26-28 October 2004. Rome: FAO, p. 3. In the new Panel of Experts, the governments of 10 countries are represented, including: Tanzania, US, Sweden, Brazil, China, Malaysia, Sri Lanka, Italy, Canada, Germany.

the development of several new ones.<sup>177</sup> However, FAO expected already from the onset that the full realisation of the new framework and the guidelines would come under pressure considering the lack of available finances.<sup>178</sup>

Therefore, it is an open question whether the Code will gain a new significance by the promotion and facilitation of IPM as the agricultural production method of the future. A development in this direction is not very plausible though in the short term, as the implementation of the revised Code is not making swift progress.<sup>179</sup> More specifically, due to restricted financial resources, the realisation of the technical guidelines on IPM has been given a relatively low priority, which means that the first guidelines cannot be expected before 2010.<sup>180</sup> This also means that the implementation process of the necessary provisions at the national level has become delayed.

### Rule-enforcement

According to the FAO Code of Conduct, governments are expected to monitor its observance and report on progress made to FAO, whereas the latter should periodically review the relevance and effectiveness of the Code.<sup>181</sup> In order to provide guidance and to monitor the implementation process of the Code, the FAO Panel of Experts, in its previous as well as its current form, has been meeting on an annual basis to discuss matters related to the Code. In both 1986 and 1993, the Expert Panel has sent out questionnaires to the FAO member countries on the state of implementation of the Code. The major findings included that although significant progress had been made towards compliance with various provisions of the Code, at the same time several serious deficiencies still existed in many countries.<sup>182</sup> Moreover, FAO observed in its 2004 report that overall use of pesticides and particularly their use in developing countries had been steadily increasing over the past decade, and that the use of several more toxic compounds was on the rise.

In addition to the provisions about governmental and FAO monitoring activities, the revised Code gives some concrete suggestions about the assistance that other stakeholders can provide in the monitoring process. For example, the pesticide industry is invited to provide reports on its product stewardship activities related to observance of the Code,

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<sup>177</sup> FAO (2003). FAO Panel of Experts on Pesticide Specifications, Registration Requirements, Application Standards and Prior Informed Consent. Report of the 18<sup>th</sup> Session, 27-31 October 2003. Rome: FAO.

<sup>178</sup> Progress Report on the Implementation of the International Code of Conduct on the Distribution and Use of Pesticides. Presented at the 127<sup>th</sup> Session of the FAO Council, 22-27 November 2004.

<sup>179</sup> FAO (2005). FAO Expert Meeting on Pesticide Management. 26-28 October 2004. Rome: FAO.

<sup>180</sup> Progress Report on the Implementation of the International Code of Conduct on the Distribution and Use of Pesticides, presented at the 127<sup>th</sup> Session of the FAO Council, 22-27 November 2004, and the minutes of the FAO panel of experts on pesticide management (2005), as incorporated in the report of the 1<sup>st</sup> session, Rome: FAO.

<sup>181</sup> FAO Code of Conduct, Article 12.7 and 12.10.

<sup>182</sup> FAO (1996). Analysis of Government Responses to the Second Questionnaire on the State of Implementation of the International Code of Conduct on the Distribution and Use of Pesticides. Available at <http://www.fao.org>.

and other interested parties are invited to monitor activities related to the implementation of the Code and report these to the Director-General of FAO.<sup>183</sup>

The pesticide industry, by way of the industry association CropLife International, has endorsed the previous as well as the current version of the Code.<sup>184</sup> This implies that CropLife demands from its member companies that they observe the spirit as well as the letter of the Code. To stimulate compliance with the Code, CropLife has developed a guide for its member companies, which highlights the most important responsibilities and actions for industry.<sup>185</sup>

Interestingly, the first complaint ever about violation of the Code was delivered by regional groups of the Pesticide Action Network (PAN) in 2004, targeting Syngenta's advertising behaviour on paraquat in Thailand.<sup>186</sup> However, three years later this complaint had not been settled between the parties concerned. Subsequently, NGOs from Asia, Latin America, and Europe submitted a similar complaint to FAO about Syngenta's marketing and sales practices in 2007.<sup>187</sup> In response, the Panel of Experts on Pesticide Management requested FAO invited the pesticide industry to develop a code of ethics regarding pesticide advertising and ensure that no differences exist in these standards among industrialised and developing countries.<sup>188</sup>

### 3.4.2 Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade

The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade was adopted on 10 September

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<sup>183</sup> FAO Code of Conduct, Articles 12.8 and 12.9.

<sup>184</sup> Press Release CropLife International, 3 March 2004: Plant science industry supports new FAO Code of Conduct to further improve responsible use of crop protection products.

<sup>185</sup> CropLife International (2004). Guide for industry on the implementation of the FAO Code of Conduct on the distribution and use of pesticides (revised version). Available at: <http://www.croplife.org>.

<sup>186</sup> See press releases Berne Declaration: Stop unethical advertising of paraquat in Thailand: Syngenta taken to task over violation of International Code of Conduct on marketing of toxic herbicide in complaint to UN FAO (28 July 2004), and Syngenta accused of violating FAO Code of Conduct (1 May 2007). Available at <http://www.evb.ch>.

<sup>187</sup> The NGOs accuse Syngenta of trying to lure Gramoxone (active ingredient: paraquat) buyers in Costa Rica with a contest to win a thousand US-Dollars worth of 'inputs', in Germany with tractors worth 100,000 Euro, and in Thailand with trucks and motorbikes.

<sup>188</sup> FAO/WHO (2007). Report of 1<sup>st</sup> FAO/WHO Joint Meeting on Pesticide Management and 3<sup>rd</sup> session of the FAO Panel of Experts on Pesticide Management, 22-26 October 2007.

1998.<sup>189</sup> On the occasion, representatives from 61 countries signed the Convention.<sup>190</sup> The Convention entered into force five and a half years later on 24 February 2004 after 50 countries had ratified it.<sup>191</sup> During the transition period between 1998 and 2004, there was a voluntary prior informed consent procedure in place in which 172 countries participated. This interim procedure was extended for 2 years from the date of entry into force, i.e. until 24 February 2006, to give more countries the chance to fulfil the ratification requirements of the Convention.<sup>192</sup> More than two years later, the number of participating countries amounted to 120.<sup>193</sup> This is still significantly less than the 172 countries that participated under the voluntary regime. It is expected that several of the so-called Participating States will never become Parties to the Convention.<sup>194</sup>

As decision-making body, the Convention has established a Conference of the Parties (COP) with the task to keep the implementation of the Convention “under continuous review and evaluation.”<sup>195</sup> The COP is being supported by a Secretariat whose functions are jointly performed by UNEP and FAO.

### Rule-making

The Rotterdam Convention aims “to promote shared responsibility and cooperative efforts among Parties in the international trade of certain hazardous chemicals in order to protect human health and the environment from potential harm and to contribute to their environmentally sound use, by facilitating information exchange about their characteristics, by providing for a national decision-making process on their import and export and by disseminating these decisions to Parties.”<sup>196</sup> These objectives largely correspond with those previously incorporated in Article 9 of the FAO Code of Conduct, as the Rotterdam Convention is essentially a legally binding version of the earlier non-binding procedure operated by UNEP and FAO since 1989.

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<sup>189</sup> UN doc. UNEP/FAO/PIC/CONF/5. See for the official website of the Rotterdam Convention: <http://www.pic.int>. The Convention has been amended at COP-1 in 2004. The amendments to Annex III entered into force on 1 February 2005, except the deletion of the existing entries for certain severely hazardous formulations of monocrotophos and parathion that entered into force on 1 January 2006. The new Annex VI entered into force on 11 January 2006. See for discussions of the Rotterdam Convention: D. Hunter, J. Salzman & D. Zaelke (2002), pp. 874-880; P. Hough (2003), pp. 15-16; P. Pallemarts (2003), pp. 419-594, P. Sands (2003), pp. 635-636, and T.L. McDorman (2004). The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade: Some legal notes. In: RECIEL, vol. 13, issue 2, pp. 187-200.

<sup>190</sup> IISD Earth Negotiations Bulletin, vol. 15, no. 105, p. 2.

<sup>191</sup> Rotterdam Convention, Article 26.

<sup>192</sup> UNEP/FAO/RC/COP-1/33.

<sup>193</sup> Status of ratification of the Rotterdam Convention on 1 April 2008. Recent information available at <http://www.pic.int>.

<sup>194</sup> T.L. McDorman (2004), p. 194. According to the state-of-affairs on 1 April 2008, major non-ratifying countries included Indonesia, Israel, the Russian Federation, Turkey, and the US.

<sup>195</sup> Rotterdam Convention, Article 18.

<sup>196</sup> Rotterdam Convention, Article 1.

The main provisions of the Rotterdam Convention concern the implementation of the legally binding prior informed consent (PIC) procedure for certain substances and formulations listed in Annex 3. More precisely, the PIC procedure applies to substances for which final regulatory action has been taken in two or more countries in order to ban or severely restrict the use of the substances concerned for human health or environmental reasons, as well as for certain severely hazardous pesticide formulations. The inclusion of the environment in the definitive text is considered to represent a breakthrough, as opposition was considerable during the negotiations of the Convention.<sup>197</sup>

Importantly, the Convention includes a mechanism for the inclusion of additional substances and formulations. The Convention distinguishes two types of procedures, one for banned or severely restricted chemicals, and another for severely hazardous pesticide formulations.<sup>198</sup> The first procedure obliges Parties to the Convention to issue notification of final regulatory action in case a chemical is banned or severely restricted in their country.<sup>199</sup> When the Secretariat has received at least two of such notifications from different regions concerning the same chemical and these are verified to meet the requirements of Annex I, a procedure is being started to make the chemical in question subject to the prior informed consent procedure and to include it in Annex III. The second procedure is only open to a developing country or a country with an economy in transition that is experiencing problems caused by a severely hazardous pesticide formulation under conditions of use in its territory.<sup>200</sup> In this case, there is only one notification required.

The prior informed consent (PIC) obligations of the Convention are thus made dependent on the listing in Annex III. However, there is one major exception to this rule: prior informed consent obligations also attach to chemicals and pesticides that, not listed in Annex III, are banned or severely restricted in the State seeking to export them.<sup>201</sup>

The PIC procedure itself is based on national decisions taken by Parties as to whether or not they wish to import the chemicals listed in Annex III. In case of the listing of a substance or formulation, Parties should give an import response in the form of a final decision or an interim response.<sup>202</sup> The options for final decisions include 'consent', 'no consent' and 'conditional consent'. Interim responses may vary between an interim final decision, a request for further information, and a request for assistance in evaluating the chemical.

Once a chemical is listed in Annex III, each Party to the Convention has nine months to review the listing and decide whether to consent to import, not to consent, or consent under restrictions.<sup>203</sup> Importantly, if the importing country has not responded after the nine-month review period, the exporting country must assume the importing country does *not*

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<sup>197</sup> P. Hough (1998), pp. 76-77.

<sup>198</sup> Rotterdam Convention, Article 3. See for definitions: Article 2.

<sup>199</sup> Rotterdam Convention, Article 5.

<sup>200</sup> Rotterdam Convention, Article 6.

<sup>201</sup> Rotterdam Convention, Article 12.

<sup>202</sup> Rotterdam Convention, Article 10.

<sup>203</sup> Rotterdam Convention, Article 10.

consent unless the chemical is registered in the importing country, or consent to the import has been given implicitly or explicitly.<sup>204</sup>

The Convention now covers 39 chemicals, including 24 pesticides, 4 severely hazardous pesticide formulations and 11 industrial chemicals.<sup>205</sup> However, since the entry into force of the Convention the subsequent meetings of the COP have not been able to agree on the inclusion of additional substances. This is the more notable in light of the fact that more than 160 substances are on the 'waiting' list, having been notified by one or more countries, which has raised doubts about the effectiveness of the Convention.

During the preparatory process of the Convention, the number of notifications necessary to start the procedure of the inclusion of a substance in Annex III has been the subject of heated debate.<sup>206</sup> After all, this number has a major influence on the nomination of potential substances to be included in Annex III. Under the FAO Code, the listing standard had required the regulatory action of five or more countries, independent of their geographical location. During the negotiations on the Rotterdam Convention, however, there were several arguments raised for a different foundation of the inclusion procedure. In the end, a compromise was reached that two notifications from different regions would trigger the process. The related issue of the number and composition of these so-called PIC regions was postponed to be decided upon in a later stage.<sup>207</sup>

The Convention had delegated the task of installing a Chemical Review Committee (CRC) to the COP. The CRC consists of 31 members, and was established pursuant to decision RC-1/6 of the Rotterdam Convention adopted at COP-1 as the successor of the Interim Chemical Review Committee that had operated since 2000.<sup>208</sup> It is composed of government-designated experts in chemicals management taking into account equitable geographical distribution and a balance between developed and developing countries.<sup>209</sup>

The CRC performs an important preparatory role in the decision-making process.<sup>210</sup> Its main tasks relate to the evaluation of notifications by Parties in order to assess whether

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<sup>204</sup> Rotterdam Convention, Article 11(2).

<sup>205</sup> State-of-affairs on 1 October 2007. When the Rotterdam Convention was concluded, Annex III contained 27 chemicals. COP-1 added 14 chemicals to the Annex, whereas COP-2 and COP-3 added none. COP-4 is planned for October 2008. At 1 October 2007, Annex III included the following 24 pesticide substances: 2,4,5-T, aldrin, binacapryl, captafol, chlordane, chlorobenzilate, DDT, dieldrin, dinoseb and its salts, DNOC and its salts, EDB, ethylene dichloride, ethylene oxide, fluoroacetamide, HCH, heptachlor, hexachlorobenzene, lindane, mercury compounds, monocrotophos, parathion, pentachlorophenol, toxaphene. It furthermore included the following hazardous formulations: dustable powder formulations containing a combination of: benomyl at or above 7 per cent, carbofuran at above 10 per cent, thiram at or above 15 per cent, methamidophos (soluble liquid formulations of the substance that exceed 600 g active ingredient/l), phosphamidon (soluble liquid formulations of the substance that exceed 1000 g active ingredient/l), and methyl-parathion (emulsifiable concentrates at or above 19.5% active ingredient and dusts at or above 1.5% active ingredient).

<sup>206</sup> D. Hunter, J. Salzman & D. Zaelke (2002), p. 876.

<sup>207</sup> Rotterdam Convention, Article 5(5).

<sup>208</sup> UNEP/FAO/PIC/ICRC.1/1, 1 December 1999.

<sup>209</sup> Rotterdam Convention, Article 18(6) sub a.

<sup>210</sup> Rotterdam Convention Articles 5(6) and 6(5), respectively.



the substances and formulations concerned qualify to be brought under the Convention's regime and, if appropriate, to prepare draft decision guidance documents. Much of the work that needs to be done is being prepared by the Bureau of the Committee, consisting of five members. Furthermore, the Committee makes use of so-called open-ended task groups (on individual chemicals) and drafting groups. The meetings of the CRC are open to observers.

For the first meeting of the CRC (CRC-1) in 2005, 29 notifications for eight different candidate pesticide substances had been listed for review.<sup>211</sup> Only three of them were positively reviewed and, hence, accepted as complying with the criteria of the Convention. The Committee noted that many of the new notifications on candidate chemicals did not meet the criteria of Annex II, in particular the criterion that regulatory action must be taken on the basis of a risk evaluation involving prevailing conditions in the notifying Party.

At CRC-2 in 2006, 18 notifications concerning eight different pesticide substances were reviewed, with several of them relating to the same substances as were considered for CRC-1.<sup>212</sup> This time, the acceptance rate had increased as 6 out of 18 notifications were accepted as meeting all the necessary qualifications. Among the accepted notifications was the first one from a developing country, namely Thailand on endosulfan. At CRC-3 in 2007, seven notifications were scheduled and three of them accepted.<sup>213</sup> At CRC-4 in 2008, eight notifications were scheduled and four of them accepted, including one notification from Jamaica on aldicarb.<sup>214</sup> Annex I contains a comprehensive overview of the substances for which notifications have been reviewed by the successive CRC meetings, including details about notifying countries and results of the review.

On the basis of its reviews, the CRC makes recommendations to the COP about inclusion of a chemical or pesticide formulation in Annex III, and prepares a draft decision guidance document.<sup>215</sup> The COP subsequently makes the final decision whether to add the substance to Annex III and approve the decision guidance document.<sup>216</sup> Decisions by the COP to add a substance to Annex III are to be made by a consensus of the Parties.<sup>217</sup> Thus, essentially each Party to the Convention has the power to veto the inclusion of a particular chemical or pesticide formulation.

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<sup>211</sup> Report of the Chemical Review Committee on the work of its first meeting, UNEP/FAO/RC/CRC.1/28, 18 February 2005. At this meeting, a further 31 notifications concerning 6 different industrial chemicals were reviewed.

<sup>212</sup> Report of the Chemical Review Committee on the work of its second meeting, UNEP/FAO/RC/CRC.2/20, 17 February 2006.

<sup>213</sup> Report of the Chemical Review Committee on the work of its third meeting, UNEP/FAO/RC/CRC.3/15, 28 March 2007.

<sup>214</sup> Report of the Chemical Review Committee on the work of its fourth meeting, UNEP/FAO/RC/CRC.4/1, 13 March 2008.

<sup>215</sup> Rotterdam Convention, Article 7(1).

<sup>216</sup> Rotterdam Convention, Article 7(2).

<sup>217</sup> Rotterdam Convention, Article 22(5) sub b. This was a controversial issue during negotiations. See: D. Hunter, J. Salzman & D. Zaelke (2002), p. 876, and M. Pallemarts (2003), p. 578. The general provisions about amendments to the Convention and its annexes are included in the Articles 21 and 22.

In order to move on from the interim to the Convention regime, the first meeting of the COP took place in Geneva in 2004.<sup>218</sup> At this meeting, representatives of Parties to the Convention were present as well as several observers of other States and of 11 non-governmental bodies and agencies.<sup>219</sup> This first COP especially focused on a number of organisational and procedural matters that needed to be solved to make the legally binding PIC procedure operational.<sup>220</sup> With regard to content, COP-1 added 14 chemicals to Annex III of the Convention, and adopted their decision guidance documents.<sup>221</sup> The COP furthermore decided that the functions of the Secretariat were to be performed jointly by UNEP and FAO.<sup>222</sup>

During COP-1, several discussions proceeded with difficulty, especially between developed and developing countries, but overall the conference took place in 'a spirit of compromise'.<sup>223</sup> The most controversial issues can be placed in two groups. The first group related to representation and decision-making power, and focused on voting procedures in cases of non-consensus, the number and composition of the PIC regions, and the size and composition of the CRC. The second group of controversies related to distributive arrangements. Many developing countries were angered about the financial contributions they had to pay as Parties to the Convention and demanded that a technical assistance strategy would be developed and a financial mechanism created to specifically support capacity building activities in developing countries and also in countries with economies in transition. At the closure of COP-1, several of the difficult issues from the first group were solved, with the exception of a decision on voting procedures. The issues of the second group, however, stayed largely unresolved and were postponed to COP-2.

During COP-2 in Rome in 2005, similar tensions emerged between developed and developing countries, focusing on the need for a financial mechanism and technical assis-

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<sup>218</sup> Report of the Conference of the Parties to the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade on the work of its first meeting, UNEP/FAO/RC/COP.1/33, 22 October 2004.

<sup>219</sup> See Rotterdam Convention, Article 18(7) on the status of observers. The following non-governmental organizations were represented at COP-1: CEFIC-European Chemical Industry Council, Crop Life International, Earth Justice, Environmental Health Fund, Foundation for Advancement in Science and Education (FASE), Groupe de Reflexion et d'Action Bien-être Social (GRABS), International Centre for Trade and Sustainable Development (ICTSD), International Council of Chemical Associations (ICCA), International POPs Elimination Network (IPEN), Pesticide Action Network (PAN) and World Wide Fund for Nature International (WWF).

<sup>220</sup> Important items on the agenda of COP-1 included: the adoption of the rules of procedure; the composition of the seven PIC regions; financial rules and contributions; the composition of the Chemical Review Committee; the location of the Secretariat; cooperation with the WTO and the settlement of disputes.

<sup>221</sup> Rotterdam Convention, COP-1, Decision RC-1/3. Most amendments to Annex III have entered into force on 1 February 2005.

<sup>222</sup> Rotterdam Convention, Article 19.

<sup>223</sup> Report of the Conference of the Parties to the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade on the work of its first meeting, UNEP/FAO/RC/COP.1/33, 22 October 2004; IISD Earth Negotiations Bulletin, vol. 15, no. 105, 27 September 2004.

tance.<sup>224</sup> Moreover, the developing countries linked these distributive issues to the debate on the development of a non-compliance mechanism, arguing that they could not adopt a non-compliance mechanism without a financial mechanism to help supporting their implementation of the Convention. The same issues also influenced the discussion on a procedure for adding new chemicals under the Convention regime, as the CRC at its first meeting had not accepted any of notifications of banned or severely restricted chemicals coming from developing countries, for the reason of not meeting the criteria concerned.<sup>225</sup> These rejections strengthened the developing countries in their opinion that they needed additional resources to be able to take part in the regime on an equal basis.

As COP-2 already lacked in progress, COP-3 in 2006 can be considered a near failure, as the Parties did not agree on the inclusion of the industrial chemical chrysotile asbestos in Annex III although it met all the necessary criteria.<sup>226</sup> Its non-inclusion has raised serious doubts about the implications for the further development of the Convention and the other chemicals on the waiting list. Underlying this conflict are different points of view about the meaning of a listing: does a listing only entail a technical measure based on scientific evidence or does it provide a political verdict about the substance concerned? This issue has not been solved as yet and has been postponed to a future COP.<sup>227</sup>

### Rule-implementation

In order to implement the Rotterdam Convention at the national level, the Parties are obliged to take “such measures as may be necessary to establish and strengthen its national infrastructures and institutions.”<sup>228</sup> This provision is one of the greater obstacles for proper implementation because many developing countries do not have the necessary resources to conduct risk assessments of hazardous chemical substances and are dependent on financial and technical assistance provided by developed countries. However, the Convention does not contain any binding requirements concerning the provision of such assistance. Moreover, the provisions about technical assistance to developing countries and countries with economies in transition are formulated in non-committal terms, as is evident from the following fragment: “Parties shall ... cooperate in promoting technical

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<sup>224</sup> Report of the Conference of the Parties to the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade on the work of its second meeting, UNEP/FAO/RC/COP.2/19, 12 October 2005; see also IISD Earth Negotiations Bulletin, vol. 15, no. 129, 3 October 2005.

<sup>225</sup> Report of the Chemical Review Committee on the work of its first meeting, UNEP/FAO/RC/CRC.1/28, 18 February 2005.

<sup>226</sup> Canada as main producer of chrysotile asbestos opposed the listing. The Ukraine, Kyrgyzstan, Iran, Peru, India and the Russian Federation supported Canada, calling for solid scientific evidence on risks. The decision on chrysotile asbestos has been deferred to COP-4.

<sup>227</sup> As of COP-3 in 2006, the meeting schedule has been changed to bi-annual instead of annual. COP-4 is planned for October 2008.

<sup>228</sup> Rotterdam Convention, Article 15.

assistance for the development of the infrastructure and capacity ... to enable implementation of this Convention.”<sup>229</sup>

Following from this lack of a robust commitment, developing countries have argued that without adequate financial and technical assistance many of them will lack the necessary resources to evaluate risks.<sup>230</sup> The latter argument is being underpinned by the fact that most notifications are made by developed countries and that the CRC so far has turned down most notifications from developing countries due to lack of information.<sup>231</sup> This lack of capacity is also being reflected by the fact that many developing countries fail to react to notifications of planned exports of listed chemicals.

To meet the developing countries' call for assistance, the Secretariat of the Convention started to facilitate and support the development of national action plans for the ratification and implementation of the Rotterdam Convention in 2005. In two years time, more than 50 countries in Africa, Asia, Latin America and the Near East have submitted such plans.<sup>232</sup>

In order to keep all Parties well-informed on the implementation of the Rotterdam Convention, the Secretariat publishes a PIC Circular every six months, containing detailed information about: designated national authorities, notifications of final regulatory action to ban or severely restrict a chemical, proposals for inclusion of severely hazardous pesticide formulations, import responses to listings in Annex III, and cases of failure to provide an import response. A screening of the June 2005 PIC Circular showed that the number of notifications of final regulatory action received during the interim PIC procedure and the Convention PIC procedure (September 1998 to 30 April 2005) and verified as meeting the information requirements of Annex I of the Convention, amounted to 475 in total.<sup>233</sup> The majority of these notifications concerned pesticides, 178 of which related to substances or pesticide formulations included in Annex III and 125 to substances or formulations not (yet) included. A further analysis of the data in the PIC Circulars revealed that most notifications are inspired by considerations of human health, or human health in combination with environment. It is apparent that the protection of the environment as such is a less frequent reason for regulatory action.

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<sup>229</sup> Rotterdam Convention, Article 16. The same Article obliges Parties with more advanced programmes for regulating chemicals to provide technical assistance, but does not make this obligation concrete.

<sup>230</sup> D. Hunter, J. Salzman & D. Zaelke (2002), p. 876.

<sup>231</sup> See: Report of the Chemical Review Committee on the work of its first meeting, UNEP/FAO/PIC/CRC.1/28, 18 February 2005; Report of the Chemical Review Committee on the work of its second meeting, UNEP/FAO/RC/CRC.2/20, 17 February 2006; Report of the Chemical Review Committee on the work of its third meeting, UNEP/FAO/RC/CRC.3/15, 28 March 2007, Report of the Chemical Review Committee on the work of its fourth meeting, UNEP/FAO/RC/CRC.4/1, 13 March 2008.

<sup>232</sup> See listing at: <http://www.pic.int>.

<sup>233</sup> In the same period, a total of 61 notifications from 9 different countries (mostly from PDR Lao and Cameroon) had been verified as not meeting the information requirements of Annex I.

The PIC Circulars also give information about the import responses of Parties to the Convention and those of Participating States in case a new substance or formulation is listed in Annex III. The PIC Circular of June 2005 provides evidence that even for the pesticides that have been under the mechanism for a longer period of time, the numbers of failures to respond and also interim decisions are often considerable. Overall, the rate of final decisions by the Parties to the Convention amounted to 65%, whereas, not unexpectedly, this rate was much lower in the group of Participating States (40%). The reason for a failure to respond is not always a lack of information in the country concerned. For example, the US, with its extensive chemical industry, is a notorious non-respondent, as it never reacts to the notifications of listings in Annex III.

As the information in the PIC Circular of June 2005 showed, the overwhelming majority of the final decisions taken by Parties to the Convention and Participating States include a 'no consent' to the import of the substances concerned. However, there were certain Parties with a relatively liberal import policy, such as the Democratic People's Republic of Korea, Ethiopia, the United Republic of Tanzania, and Thailand.

### Rule-enforcement

The Rotterdam Convention itself does not contain provisions about rule-enforcement, but has asked the COP to develop the procedural and institutional mechanisms for determining non-compliance with the provisions of the Convention, and for treatment of Parties found to be in non-compliance.<sup>234</sup> However, the progress on formulating a non-compliance mechanism has been marginal. The disagreement especially focuses on the nature of the trigger mechanism (binding or non-binding) for non-compliance and the corrective measures to be taken in case of non-compliance. Developing countries have stated several times that they feel less inclined to develop such a mechanism if they are not given additional technical and financial support in order to participate on an equal level in the Convention. This means that definitive arrangements have not been made as yet.

### 3.4.3 Stockholm Convention on Persistent Organic Pollutants

The Stockholm Convention on Persistent Organic Pollutants was adopted on 22 May 2001, and signed by representatives from over 120 countries.<sup>235</sup> It entered into force three years later on 17 May 2004 after 50 countries had ratified it.<sup>236</sup> As of 1 April 2008,

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<sup>234</sup> Rotterdam Convention, Article 17.

<sup>235</sup> UN Doc. UNEP/POPS/CONF/5. See for the official website of the Stockholm Convention: <http://www.pops.int>. See for discussions of the Stockholm Convention: P. Hough (2003), pp. 11-24; D. Hunter, J. Salzman & D. Zaelke (2002), pp. 885-892; P.L. Lallas (2001). The Stockholm Convention on Persistent Organic Pollutants. In: *The American Journal of International Law*, vol. 95, no. 3, pp. 692-708; P. Sands, pp. 628-630; A.J. Yoder (2003). Lessons from Stockholm: evaluating the global Convention on Persistent Organic Pollutants. In: *Indiana Journal of Global Legal Studies*, vol. 10, issue 2, pp. 113-156.

<sup>236</sup> Stockholm Convention, Article 26.

the Parties numbered 153, which is significantly more than the 120 Parties to the Rotterdam Convention.<sup>237</sup>

Similarly as with regard to the Rotterdam Convention, major non-ratifying countries include Indonesia, Israel, the Russian Federation, Turkey and the US.<sup>238</sup> The government of the latter repeatedly announced its willingness to ratify the Convention, but ultimately failed to deliver a complete legislative proposal to Congress.<sup>239</sup> Other important non-ratifying countries, that had instead ratified the Rotterdam Convention, include Pakistan, and Saudi Arabia, and the EU Member States Estonia, Hungary, Ireland, Italy, Malta, and Poland.

The Convention has established a Conference of the Parties (COP) with the task of keeping the implementation of the Convention “under continuous review and evaluation.”<sup>240</sup> The COP is being supported by a Secretariat whose functions are performed by UNEP.

### Rule-making

The Stockholm Convention aims to protect human health and the environment from persistent organic pollutants (POPs).<sup>241</sup> These substances “possess toxic properties, resist degradation, bioaccumulate and are transported, through air, water and migratory species, across international boundaries and deposited far from their place of release, where they accumulate in terrestrial and aquatic ecosystems.”<sup>242</sup> The required protection of human health and the environment should take place “mindful of the precautionary approach as set forth in Principle 15 of the Rio Declaration on Environment and Development ...”<sup>243</sup>

The inclusion of the precautionary principle as a basis for decision-making can be considered as a breakthrough in the international law on chemicals, and has happened in spite of strong resistance from certain countries that were in favour of a strict, science-based criterion. The Convention mentions the principle in the preamble and the objective of the Convention, and it returns as part and parcel of the procedure for the inclusion of new substances. The preamble also includes two other principles from the Rio Declaration, including the principle of common but differentiated responsibilities between developed and developing countries, and the polluter-pays principle.

The Convention’s main provisions concern measures to reduce or eliminate releases from intentional production and use of persistent organic pollutants (pesticides) and from

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<sup>237</sup> [Http://www.pops.int](http://www.pops.int).

<sup>238</sup> State-of-affairs on 1 April 2008.

<sup>239</sup> A.J. Yoder (2003), p. 150.

<sup>240</sup> Stockholm Convention, Articles 19 and 20.

<sup>241</sup> Stockholm Convention, Article 1.

<sup>242</sup> See the preamble to the Stockholm Convention.

<sup>243</sup> Rio Declaration on Environment and Development, Annex I to Report of the United Nations Conference on Environment and Development, A/CONF.151/26 (Vol. I). Principle 15: In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

their unintentional production (industrial chemicals).<sup>244</sup> Since unintentional production is not relevant in relation to pesticides, this section does not elaborate on the provisions concerned in the Convention.

In relation to intentional production and use, the Convention distinguishes chemicals listed in Annex A of which the production, use, import and export should be eliminated, and those in Annex B of which the production and use should be restricted.<sup>245</sup> Since the Convention's entry into force, Annex A contains seven pesticide substances, including aldrin, chlordane, dieldrin, endrin, heptachlor, mirex, and toxaphene, and Annex B only one, namely DDT.<sup>246</sup> Early on in the negotiations, the decision had been made not to opt for a broad-based toxics treaty, but to choose for a regime targeting specific substances.<sup>247</sup> However, the scope of the Convention may be extended in the future, as it contains a mechanism for the inclusion of new substances. Presently, several chemicals are under review in order to assess if they fulfill the criteria for inclusion.<sup>248</sup>

Decisions by the COP concerning amendments to the Annexes A and B basically follow the same rules as any other amendment of the Convention.<sup>249</sup> This means that they are preferably adopted by consensus, and otherwise by a three-fourths majority vote.<sup>250</sup> However, Parties may make a declaration when becoming a Party to the Convention that each amendment to these Annexes will be subject to a separate ratification procedure.<sup>251</sup> Several Parties have indeed made such a declaration.<sup>252</sup> Similarly, Parties are allowed to declare that they are unable to accept an additional annex that is proposed after they became Party to the Convention.<sup>253</sup> Both these exceptions thus provide mechanisms to opt out of the Convention regime in due course and have as a consequence that the bindingness of future amendments is not fully secured. This has as a consequence that the commitment of Parties to the Convention can differ, and it may eventually undermine its effectiveness if these exceptions are used on a larger scale.

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<sup>244</sup> Stockholm Convention, Articles 3 and 5, respectively. The 12 POPs, the so-called Dirty Dozen, are grouped into three categories: 1) pesticides: aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, mirex and toxaphene; 2) industrial chemicals: hexachlorobenzene (HCB) and polychlorinated biphenyls (PCBs); and unintentionally produced POPs: dioxins and furans.

<sup>245</sup> Stockholm Convention, Article 3(1).

<sup>246</sup> At COP-1, the Parties decided that the use of DDT continued to be allowed for disease vector control, e.g. malaria, in certain countries.

<sup>247</sup> P.L. Lallas (2001), p. 693, and A.J. Yoder (2003), p. 155.

<sup>248</sup> The following pesticide substances are under review: Decision POPRC-1.4: Chlordecone, Decision POPRC-1/6: Lindane, POPRC-2/7: Pentachlorobenzene, POPRC-2/9: Alpha Hexachlorohexane, POPRC-2/10: Beta Hexachlorohexane. Endosulfan has been proposed for the review procedure.

<sup>249</sup> Stockholm Convention, Articles 21, 22(4), and 25(4).

<sup>250</sup> Stockholm Convention, Article 21(3).

<sup>251</sup> Stockholm Convention, Article 25(4).

<sup>252</sup> On 1 October 2007, declarations about separate ratifications for amendments had been made by: Argentina, Australia, Bahrain, Bangladesh, Botswana, Canada, China, India, Mauritius, Micronesia, Moldova, Slovakia, Slovenia, Vanuatu, and Venezuela.

<sup>253</sup> Stockholm Convention, Article 22(3) sub b. On 1 October 2007, none of such additional annexes had been proposed and approved.

During the preparatory negotiations, the procedure for the inclusion of additional chemicals was one of the more contentious issues, especially as regards the interpretation of the precautionary principle.<sup>254</sup> The agreed procedure gives every Party the right to submit a proposal for the listing of additional chemicals in one of the Annexes.<sup>255</sup> After a verification of the proposal, it will be forwarded to the Persistent Organic Pollutants Review Committee (POPRC) that performs a central role in the subsequent procedure.<sup>256</sup> This Committee will subsequently decide on the basis of a so-called risk profile whether the chemical is “likely as a result of its long-range environmental transport to lead to significant adverse human health and/or environmental effects such that global action is warranted ...”<sup>257</sup> With respect to this procedure, the precautionary principle is explicitly mentioned twice. First, the POPRC is being addressed in the sense that: “Lack of full scientific certainty shall not prevent the proposal from proceeding.”<sup>258</sup> Second, the COP is being instructed that “including any scientific uncertainty, [it] shall decide, in a precautionary manner, whether to list the chemical ... in Annexes A, B and/or C.”<sup>259</sup>

The obligations of Parties concerning substances listed in the Annexes A (elimination) and B (restriction) are not absolute. The Convention allows for country-specific exemptions to be included in a Register.<sup>260</sup> These exemptions will expire five years after their entry into force, but may be extended as the result of a review process. Moreover, for substances listed in Annex B, there is in addition the more general exception of ‘acceptable purpose’. Besides these potentially limiting provisions, the Convention also includes obligations with a broadening effect, including export restrictions that apply to Parties to the Convention vis-à-vis non-Party States.<sup>261</sup>

In contrast to the Rotterdam Convention, the Stockholm Convention contains substantive arrangements concerning the provision of technical and financial assistance by developed countries to developing countries and countries with economies in transition.<sup>262</sup> Most importantly, the Convention prescribes that the developed country Parties shall provide “new and additional financial resources” to the other countries to help them implement the necessary provisions.<sup>263</sup> In order to distribute these resources, a financial mechanism needs to be created that in first instance will be operated by the Global Environment Facility (GEF).<sup>264</sup> During the preparatory negotiations about the Convention, there has been considerable friction between developed and developing countries about the funding commitments and the role of the GEF in the financial mechanism. This fric-

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<sup>254</sup> D. Hunter, J. Salzman & D. Zaelke (2002), p. 886; P.L. Lallas (2001), p. 704.

<sup>255</sup> Stockholm Convention, Article 8.

<sup>256</sup> Stockholm Convention, Article 19. According to 19(6) sub a, the POPRC is composed of government-designated experts in chemical assessment or management, taking into account equitable geographical distribution.

<sup>257</sup> Stockholm Convention, Article 8(7).

<sup>258</sup> Stockholm Convention, Article 8(7) sub a.

<sup>259</sup> Stockholm Convention, Article 8(9).

<sup>260</sup> Stockholm Convention, Article 4.

<sup>261</sup> Stockholm Convention, Article 3(2) sub c and d.

<sup>262</sup> Stockholm Convention, Articles 12, 13 and 14.

<sup>263</sup> Stockholm Convention, Article 13(2).

<sup>264</sup> Stockholm Convention, Articles 13(6) and 14.



tion arose again at COP-1 and the whole issue, that is generally considered a prerequisite for a successful Convention, has been postponed until a later stage.

In order to lay down the basis for the implementation process, the first meeting of the COP was held in Punta del Este, Uruguay, in 2005.<sup>265</sup> At this meeting, representatives of Parties to the Convention were present as well as observers from other States, UN bodies and specialised agencies and more than 60 non-governmental organisations.<sup>266</sup> COP-1 especially focused on a number of organisational and procedural matters, as indicated in the Convention.<sup>267</sup> With regard to content, the Secretariat announced the nomination of four new chemicals, two of them being pesticides.<sup>268</sup> Furthermore, WWF International circulated a list of 20 candidate substances that it deemed suitable for future listing under the Convention.<sup>269</sup>

Similarly as regards the Rotterdam Convention, there were heated debates between developed and developing countries at COP-1 of the Stockholm Convention. These debates essentially centred upon the same issues of representation and distribution of financial resources. With regard to representation, the discussion focused on composition of the POPRC and its terms of reference. However, the learning experiences of the Rotterdam Convention helped to solve the representation problems in a smoother fashion. The distribution issues concerned the role of the GEF and the future financial assistance needs of developing countries. They were more difficult to solve and were largely postponed to COP-2.

During COP-2, taking place in Geneva in 2006, similar tensions emerged between developed and developing countries as had occurred during COP-1.<sup>270</sup> As a result, the negotiations proceeded with difficulty and progress was less than expected. During COP-3,

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<sup>265</sup> Report of the Conference of the Parties of the Stockholm Convention on Persistent Organic Pollutants on the work of its first meeting, UNEP/POPs/COP.1/31, 6 May 2005.

<sup>266</sup> Among others, the following non-governmental organizations were represented: Crop Life International, Environmental Health Fund, Greenpeace International, International POPs Elimination Network (IPEN), Pesticide Action Network (PAN), World Wide Fund for Nature International (WWF) and organizations representing indigenous peoples, UNEP/POPs/COP.1/INF/32.

<sup>267</sup> Important items on the agenda of COP-1 included: the adoption of the rules of procedure; the use of DDT for disease vector control; guidelines for best available techniques and best environmental practices; guidance on national implementation plans; the establishment of the Persistent Organic Pollutants Review Committee (POPRC); the procedure for inclusion of new substances; arrangements for technical assistance and transfer of environmentally sound technologies; the creation of a financial mechanism; reporting obligations of the Parties; the location of the Secretariat, and synergies with other chemicals-related conventions.

<sup>268</sup> The four nominations included: penta-BDE, hexabromobiphenyl, hexachlorocyclohexane (i.e. lindane), and chlordecone. The latter two are pesticides.

<sup>269</sup> Press release WWF International, 28 April 2005: WWF lists 20 chemicals to be added to the POPs treaty. Seven of them are pesticides, including chlordecone, hexachlorocyclohexane (HCH), pentachlorophenol (PCP), endosulfan, hexachlorobutadiene (HCBd), dicofol, and methoxychlor.

<sup>270</sup> Report of the Conference of the Parties of the Stockholm Convention on Persistent Organic Pollutants on the work of its second meeting, UNEP/POPs/COP.2/30, 15 May 2006. See also: IISD Earth Negotiations Bulletin, vol. 15, no. 149, 8 May 2006.

taking place in Dakar in 2007, progress has been made on the issues of effectiveness evaluation (Global Monitoring Programme) and technical assistance, but the issue of non-compliance could not be resolved.<sup>271</sup> However, these three elements together are considered the necessary basis for a successful treaty. Therefore, some doubt has arisen whether the Convention has enough momentum to continue progressing during the two-year intersessional period. Significantly, COP-3 represented the last annual COP of the Stockholm Convention, after which, the Parties will convene only every two years. This means that COP-4 will take place in 2009.

### Rule-implementation

In order to implement the Stockholm Convention at the national level, the Parties are obliged to develop national implementation plans (NIPs), describing how they will meet their obligations under the Convention and integrate these plans in their sustainable development strategies where appropriate.<sup>272</sup> These NIPs needed to be submitted to the Secretariat within two years of joining the Convention.<sup>273</sup> They are in particular meant to establish particular national priorities and to set out detailed action plans. After submission of their NIPs, governments should report every two years on progress towards achieving their goals. In order to give guidance to the development process of NIPs, UNEP in collaboration with the World Bank and the GEF published several documents that outlined the process.<sup>274</sup> The earliest deadline for submission of NIPs was set at 17 May 2006. However, more than half of the Parties that should have submitted their plans failed to do this in time. More than one year later, the percentage of Parties that had not complied had been reduced to 30%.<sup>275</sup> A preliminary analysis of some of these plans showed that the process of collecting information and determining priorities in a participative context can be seen as a major contribution of the planning effort. In several countries, this process has helped to create awareness about the problems to be solved and a first identification of stockpiles of obsolete pesticides.

### Rule-enforcement

Similarly as the Rotterdam Convention, the Stockholm Convention itself does not contain provisions about rule-enforcement, but has asked the COP to develop the procedural and institutional mechanisms for determining non-compliance with the provisions of the

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<sup>271</sup> Report of the Conference of the Parties of the Stockholm Convention on Persistent Organic Pollutants on the work of its third meeting, UNEP/POPs/COP.3/30, 4 May 2007. See also: IISD Earth Negotiations Bulletin, vol. 15, no. 154, 30 April 2007.

<sup>272</sup> Stockholm Convention, Article 7.

<sup>273</sup> Stockholm Convention, Article 7(1).

<sup>274</sup> GEF (2001). Initial guidelines for enabling activities for the Stockholm Convention on Persistent Organic Pollutants. GEF/C.17/4. UNEP and The World Bank Group (2004). Interim guidance for developing a national implementation plan for the Stockholm Convention. Revised. UNEP/GEF (2006). Lessons learned and good practices in the development of national implementation plans for the Stockholm Convention on Persistent Organic Pollutants. Global report.

<sup>275</sup> On 1 October 2007, 68 out of the 113 Parties that should have submitted their NIPs, had actually done so. From the 45 Parties that had not met their deadlines, 34 were already in delay for more than six months. For 34 Parties, the deadlines for submission were still lying ahead.

Convention, and for treatment of Parties found to be in non-compliance. However, definitive arrangements have not been made as yet, as has been explained above.

### 3.5 Assessment

This chapter has focused on the instruments of international law that aim to regulate pesticides in the different stages of their life-cycle, including production, marketing, use and residues. Based on this description, the current section makes an assessment of the multi-lateral regulatory approach in terms of effectiveness, inclusiveness and fairness.

#### Effectiveness

The instruments of the multilateral approach can be considered important achievements from the perspective of pesticide risk reduction, although they have perhaps modest ambitions in their current form. Significantly, the potentially most important instrument is the voluntary, non-binding FAO Code of Conduct, because of its life-cycle approach and periodical review and update.

The current international instruments have a largely complementary character. However, this complementarity does not mean that all risks related to agricultural pesticides are adequately covered. First, the present hard law instruments focus on a selection of hazardous substances and have barely any influence on the availability of other harmful pesticides. Second, the instruments do not provide an enforceable impetus to reduce the dependency on pesticides in agriculture. Third, the instruments provide several options for veto-ing decision-making processes and to opt out from decisions taken. As a consequence, there are gaps in the pattern of regulation, providing loopholes and facilitating the occurrence of negative side-effects, such as the increased use of other hazardous pesticides, and the increased trade in banned pesticides.<sup>276</sup>

#### Inclusiveness

Non-state actors from civil society, business, and the scientific community have performed important roles in the processes that have shaped the international law and policy governing pesticides in the past decades. Civil society has been actively engaged through the international environmental and social NGOs, such as Friends of the Earth, World Wildlife Fund, and Oxfam. Furthermore, several organisations are specifically dedicated to pesticide issues and several of them have grouped themselves in network structures, such as the Pesticide Action Network (PAN) and the International POPs Elimination Network (IPEN).<sup>277</sup> From the business side, the pesticide manufacturers are organised in CropLife International which calls itself the global federation for the plant science industry, and is led by companies such as BASF, Bayer Crop Science, Dow Agro Sciences,

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<sup>276</sup> See e.g.: A.J. Yoder (2003), p. 151. Yoder makes a comparison with the implementation of the Montreal Protocol, which has led to considerable illegal trade in CFCs.

<sup>277</sup> PAN is a network of over 600 non-governmental organizations, institutions and individuals in over 60 countries worldwide. See at: <http://www.pan-international.org>. IPEN includes more than 350 public health, environmental, consumer and other non-governmental organizations in 65 countries. See at: <http://ipen.ecn.cz>.

Du Pont, FMC, Monsanto, Sumitomo and Syngenta.<sup>278</sup> In comparison, the scientific community has a more dispersed character and is not being represented by a specific interest organisation. It consists of a multitude of researchers with various disciplinary backgrounds and operating within different institutional contexts.

Importantly, non-state actors have exercised their influence in the different stages of regulatory processes at the international level, including agenda setting, rule-making, rule-implementation and rule-enforcement. With regard to agenda setting, for example, civil society NGOs have pushed several issues onto the global agenda. In general they have succeeded in bringing human health issues to the fore, focusing public attention, for example, on the many cases of pesticide poisoning in developing countries.<sup>279</sup> To this date, NGOs have been less successful in bringing environmental issues to the table.

Concerning rule-making, non-state actors have become increasingly involved in the preparation and negotiation of legal instruments. This was already the case for the FAO Code of Conduct and the Rotterdam Convention, as PAN and Oxfam, for example, lobbied successfully for the inclusion of the prior informed consent procedure in the 1989 version of the FAO Code of Conduct, and subsequently its adoption in binding law. The most recent case in point is the treaty process of the Stockholm Convention that has been marked by an extraordinary level of participation and contribution by persons, entities, and organizations outside government, and also by representatives of indigenous communities. In order to include as many perspectives as possible in the negotiations, UNEP had invited NGOs as observers in the negotiation process and encouraged to actively participate which has led to concrete results.<sup>280</sup> IPEN, for example, as the forum for developing country NGOs, has performed an important role in the shift in emphasis from management of POPs to their elimination in the final text of the Convention.

As regards rule-implementation, non-state actors are increasingly considered to have their own responsibility for the implementation of internationally agreed measures, and several examples show indeed that a number of them have accepted their new tasks. The FAO Code of Conduct, for example, addresses governments as well as the pesticide industry, but also asks the help of all other stakeholders to promote its implementation. In response to this appeal, the pesticide industry has officially endorsed the Code and has taken responsibility for the implementation of specific parts. Similarly, the Rotterdam Convention promotes shared responsibility and suggests for example the encouragement of initiatives by industry to promote chemical safety and the promotion of voluntary agreements concerning technical assistance to developing countries and countries with economies in transition.<sup>281</sup> The Stockholm Convention explicitly recognises in its preamble the important contribution that the private sector and non-governmental organizations can make to achieve the goals of the Convention, and also underlines the specific responsibility that the manufacturers of persistent organic pollutants should take. Furthermore, the Convention obliges the Parties to consult national stakeholders and organ-

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<sup>278</sup> [Http://www.croplife.org](http://www.croplife.org).

<sup>279</sup> P. Hough (2003), p. 11.

<sup>280</sup> P.L. Lallas (2001), p. 707; A.J. Yoder (2003), p. 134.

<sup>281</sup> Rotterdam Convention, Articles 15(1) sub b and c and 16.

ise participatory processes, when developing, implementing and updating national implementation plans.<sup>282</sup>

Concerning rule-enforcement, non-state actors are increasingly given the opportunity to provide assistance in the monitoring process. The 2002 version of the FAO Code of Conduct, for example, invites non-state actors to monitor activities related to the implementation of the Code and report these to the Director-General of FAO.<sup>283</sup> With respect to the Rotterdam and Stockholm Convention, however, the procedures and institutional mechanisms for determining non-compliance have still to be developed and approved, but are expected to include non-state actors.

The conclusion is that the participation of non-state actors at the international level has expanded enormously, especially in the last decade. However, increased participation may also have its downsides. First, a higher level of participation may conceal the fact that not all stakeholders are organised in such a way that they are able to voice their interests sufficiently. In the case of pesticide risk reduction, agricultural producers and their organisations in developed as well as developing countries are the remarkably absent party, and the same accounts for consumers. Second, increased participation may also have counterproductive effects. In relation to the Stockholm Convention, for example, it has been remarked that perceived over-involvement of non-state actors in sessions of the POPRC reviewing new substances might hinder Parties' willingness to accept the committee's conclusions.<sup>284</sup> In sum, it remains to be seen whether the input of non-state actors will continue to be welcomed as the implementation of the Rotterdam and Stockholm Conventions moves forward.

### Fairness

The instruments of international law contribute in principle to the harmonisation of law and policy worldwide. With its technical guidelines, the FAO Code of Conduct is likely to stimulate harmonisation of national laws and policies. At the same time, the Code states that countries should recognize each others good agricultural practices and accept the accompanying pesticide residues, thereby providing a certain level of flexibility to the system.<sup>285</sup>

The situation is somewhat different for the Rotterdam Convention. Although the Convention has a harmonising effect by creating more equal levels of information, it allows at the same time, or even promotes, the development of national policies and measures. Such national measures may have trade distorting effects, because certain substances may be allowed for use in some countries but prohibited in others. More specifically, the Rotterdam Convention explicitly states that Parties have the right to take action that is more stringently protective of human health and the environment than called for in the Convention.<sup>286</sup> This means that ultimately the decisions relevant to the trade in pesticides and other hazardous chemicals are not taken at the international level but still at the level

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<sup>282</sup> Stockholm Convention, Articles 7(2) and 10(1) sub d.

<sup>283</sup> FAO Code of Conduct, Article 12.9.

<sup>284</sup> IISD Earth Negotiations Bulletin, vol. 15, no. 117, 9 May 2005.

<sup>285</sup> FAO Code of Conduct, Article 6.1.12.

<sup>286</sup> Rotterdam Convention, Article 15(4).

of national governments. In comparison, the Stockholm Convention has a stronger harmonising impact because it provides for worldwide prohibitions of production, trade and use. However, this global applicability is partly undermined by the exemptions allowed to specific countries as well as non-ratifications.

With regard to the creation of equal opportunities, recent developments concerning the Rotterdam Convention provide indications that a shift is taking place towards exerting increased pressure upon developed countries to meet their obligations *vis-à-vis* developing countries. First, the Secretariat of the Rotterdam Convention has started with a “naming-and-shaming” policy by publishing data about the financial pledges of the Parties to the Convention and the extent to which they are being met. Second, the same Secretariat has launched a programme to help developing countries implement the Convention through regional workshops and the development of national action plans.

## 4. The European Union approach to pesticide risk reduction

### 4.1 Introduction

In its first Environment Action Programme (EAP) of 1973, the European Union (EU) already recognised pesticides as a priority area for action.<sup>287</sup> The programme put the emphasis on the need for further research on pesticides and their effects in order to establish environmental quality objectives. The programme furthermore observed that consumers were increasingly paying attention to the quality of foodstuffs and that there was ample evidence to suggest that demand for quality products would further expand. In the same context, it remarked that agricultural producers were increasingly developing so-called ‘biological’ products or products obtained by methods which are ‘closer to natural processes’. Consequently, the programme argued that there was a need to encourage such producers and also to protect consumers against misleading claims about environmental advantages. Following this first EAP, the pesticide issue stayed a priority in EU environmental policy in the decades after, as is demonstrated by the successive EAPs and a range of legislative measures that affect the use of pesticides, either directly or indirectly.

This chapter aims to analyse the EU law and policy on pesticides.<sup>288</sup> Section 4.2 describes its evolution against the background of the diverging policy objectives at stake. Section 4.3 focuses on the legal tenets of the current EU approach, including Directive 91/414 concerning the placing on the market of plant protection products, Regulation No 396/2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin, and the proposed Directive establishing a framework for Community action to achieve a sustainable use of pesticides. Section 4.4 assesses the EU regulatory approach to pesticide risk reduction in terms of effectiveness, inclusiveness and fairness.

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<sup>287</sup> This study uses the term European Union (EU) where it concerns the regional economic integration organisation of European countries that was established in 1958. This means that the term EU is also used in cases which would strictly speaking fall under the heading of European Community (EC). See for the 1973 EAP: Declaration of the Council of the European Communities and of the representatives of the Governments of the Member States meeting in the Council of 22 November 1973 on the programme of action of the European Communities on the environment, OJ C112, 20.12.1973.

<sup>288</sup> See e.g. for discussions of the EU law on chemical substances in general: the respective contributions of C. Garcia Molyneux in: F.F.M. Etty & H. Somsen (eds.), *The Yearbook of European Environmental Law*, vols. 5, 6 and 7; J.H. Jans & H.H.B. Vedder (2008). *European environmental law* (3<sup>rd</sup> revised edition). Groningen: Europa Law Publishing, 496 p., and M. Pallemarts (2006). *EC chemicals legislation: a horizontal perspective*. In: R. Macrory (ed.), *Reflections on 30 years of EU environmental law – a high level of protection?* Groningen: Europa Law Publishing, pp. 197-232. See for an extensive treatise on the law of toxic chemical substances: M. Pallemarts (2003). *Toxics and transnational law: International and European regulation of toxic substances as legal symbolism*. Oxford: Hart Publishing, 767 p.

## 4.2 The evolution of the EU law and policy on pesticides

The very first EU proposal for legislation potentially limiting pesticide risks included a draft Directive on the approximation of the laws, regulations and administrative provisions of Member States relating to the classification, packaging and labelling of pesticides, published in 1975.<sup>289</sup> Focusing more substantively on the marketing and use stages of pesticide substances and products, the European Commission put forward in 1976 two complementary proposals that were meant to form the basis of the EU legislation on pesticides.

The first proposal included a Council Directive concerning the placing of EEC-accepted plant protection products on the market.<sup>290</sup> The second proposal concerned a Council Directive prohibiting the placing on the market and the use of plant protection products containing certain active substances.<sup>291</sup> With regard to both proposals, the Commission considered that “one of the most important methods of protecting plants and plant products and of increasing the productivity of agriculture is to use plant protection products”, but that at the same time “their use may involve risks for man and the environment since, in the main, they are toxic substances or preparations having dangerous effects.” The Commission further remarked that most Member States had established rules governing approval to place plant protection products on the market and a number of them had also introduced restrictions or prohibitions concerning the marketing and use of certain plant protection products. It argued that these national regulations contained differences that constituted obstacles to trade which directly affected the establishment and functioning of the common market. Therefore the Commission saw it as desirable to eliminate these obstacles and to align the legislation of the Member States.

Both proposals were thus primarily aimed at the harmonisation of national legislation of the Member States. However, the Council considered that the Directive outlining an authorisation procedure also had the potential to improve the protection given to the users of plant protection products, to the consumers of plants and plant products, and to the environment.

The proposal concerning the prohibition of certain substances was passed in a relatively high speed. It was first approved without amendment by the European Parliament and then formally adopted by the Council in a more or less unchanged form except for a sharpening of the wording of several articles. Consequently, Council Directive 79/117/EEC of 21 December 1978 prohibiting the placing on the market and use of plant protection products containing certain active substances was published in 1979.<sup>292</sup>

Article 3 formed its core, stating that “Member States shall ensure that plant protection products containing one or more of the active substances listed in the Annex may neither be placed on the market nor used.” This means that although their marketing and use was

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<sup>289</sup> OJ C040, 20.02.1975. The proposal was adopted as Council Directive 78/631/EEC of 26 June 1978 on the approximation of the laws of the Member States relating to the classification, packaging and labelling of dangerous preparations (pesticides), OJ L206, 29.07.1978.

<sup>290</sup> COM(1976) 427, OJ C212, 09.09.1976.

<sup>291</sup> COM(1976) 444.

<sup>292</sup> OJ L033, 08.02.1979, pp. 36-40.



not any longer allowed in the Community, the production of the substances concerned could proceed under the condition that they were marketed and used outside the Community.

At the Directive's entry into force, the Annex contained 13 active substances or groups of them.<sup>293</sup> The Directive further opened up the possibility to include additional substances by amendment if their use gave rise or was likely to give rise to: (a) harmful effects to human or animal health; or (b) unreasonable adverse influence on the environment.<sup>294</sup> In the period from 1983 until 1991, in total 11 substances have been added to the Annex.<sup>295</sup> With respect to these substances, the Directive provided several derogations from the absolute prohibition that was worded in Article 3. Some of these derogations were temporary, others had a more permanent character.

In contrast to the pesticide products containing substances listed in the Annex, other pesticide products could be marketed and used without any authorisation procedure except for the limitations posed by national law. Hence, the first EU legislation was based on the "yes, unless banned" principle: the marketing and use of pesticides was permitted unless the pesticide contained a substance that was banned (negative list).

The other proposal concerning a Community authorisation system for pesticides had a much longer genesis. The original text aimed at a voluntary scheme in which pesticide producers were free to ask for an EEC-acceptance of their products in case they intended to have market access in more than one Member State.<sup>296</sup> Thus, the proposal did not aim for full harmonisation, but was only meant to initiate a first stage in such a process. It argued that "a considerable proportion [of the plant protection products already in circulation in the Member States] were intended only for local or regional agricultural and ecological conditions and needs and therefore should be regulated by the Member States concerned which reflects the application of the principle of subsidiarity."

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<sup>293</sup> The substances in the Annex included: A. Mercury compounds: 1) mercuric oxide; 2) mercurous chloride; 3) other inorganic mercury compounds; 4) alkyl mercury compounds; 5) alkoxyalkyl and aryl mercury compounds; B. Persistent organochlorine compounds: 1) aldrin; 2) chlordane; 3) dieldrin; 4) DDT; 5) endrin; 6) HCH containing less than 99.0 % of the gamma-isomer; 7) heptachlor; 8) hexachlorobenzene.

<sup>294</sup> Directive 79/117/EEC, Article 6(6).

<sup>295</sup> Directive 83/131, (OJ L091, 09.04.1983) added the following substance to category B: 9 camphechlor; Directive 86/355/EEC, (OJ L212, 02.08.1986) added the following substance as a separate category under C: ethylene oxide; Directive 87/181/EEC (OJ L071, 14.03.1987) changed category C into other compounds and added the following substances to it: 2) nitrofen, 3) 1,2-Dibromoethane, and 4) 1,2-Dichloroethane to it; Directive 90/533/EEC (OJ L296, 27.10.1990) added the following substances to category C: 5) dinoseb, its acetate and salts, 6) binapacryl, 7) captafol, 8) dicofol containing less than 78% of p.p.1-dicofol or more than 1 g/kg DDT and DDT related compounds, 9(a) maleic hydrazide and its salts, other than its choline, potassium and sodium salts, 9(b) choline, potassium and sodium salts of maleic hydrazide containing more than 1 mg/kg of free hydrazine expressed on the basis of the acid equivalent, 10) quintozone containing more than 1 g/kg of HCB or more than 10 g/kg pentachlorobenzene.

<sup>296</sup> COM(1976) 444.

One of the core provisions of the proposed Directive was Article 4(1) that listed the criteria for EEC-acceptance of plant production products. Under the condition of proper application for the purpose intended, such products should be sufficiently effective and should not have an unacceptable effect on plants or plant products, a harmful effect on human or animal health or an unreasonable adverse influence on the environment.

The active substances whose inclusion in EEC-accepted plant protection products was permitted were listed in an annex that contained 135 substances. Article 19(2) opened up the possibility to include additional substances if it could be expected that plant protection products based on them would meet the conditions of Article 4(1) and their residues, if constituting a danger to human or animal health, could be measured by methods in general use.

After several consultations and a first reading by the European Parliament, the legislative process came to a halt. This delay was caused by sovereignty claims made by several Member States.<sup>297</sup> It took ten years before the work was continued with a change of the legal basis of the proposal.<sup>298</sup> The new proposal put the emphasis on the establishment of a Community authorisation scheme for active substances to be supplemented by harmonised national authorisation procedures for pesticide products containing approved substances. The legislative process was finalised in due course and Council Directive 91/414/EEC of 15 July 1991 concerning the placing on the market of plant protection products was published in 1991.<sup>299</sup>

### Common Agricultural Policy

An important policy area influencing pesticide risks is the Common Agricultural Policy (CAP), which was initiated by the Treaty of Rome in 1958 and went into effect in 1963.<sup>300</sup> The CAP focused on an increase of production and has been very successful in this respect. Increasingly, however, the EU started to recognise that the intensification of production had led to a significant increase in the use of pesticides and chemical fertilisers.<sup>301</sup> With the 1992 reforms of the CAP, some measures have been introduced that promoted more environment-friendly farming practices, such as subsidies for set-aside agricultural land and agri-environment measures.<sup>302</sup> The latter, for example, created the legal basis for the provision of subsidies to agricultural producers aiming to convert to organic agriculture or integrated control, thus helping to reduce pesticide use related risks. This policy focus has been strengthened with Agenda 2000 that considers farming prac-

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<sup>297</sup> P. Hough (1998), pp. 61-62.

<sup>298</sup> COM(1989) 34 final, 10.04.1989.

<sup>299</sup> OJ L230, 19.08.1991.

<sup>300</sup> See e.g.: R. Ackrill (2000). *The Common Agricultural Policy*. London: Continuum International Publishing Group, 246 p.

<sup>301</sup> Communication from the Commission to the Council, the European Parliament and the Economic and Social Committee, Towards a thematic strategy on the sustainable use of pesticides, COM(2002) 349 final, 01.07.2002.

<sup>302</sup> Regulation of set-aside. Council Regulation (EEC) No 2078/92 of 30 June 1992 on agricultural production methods compatible with the requirements of the protection of the environment and the maintenance of the countryside, OJ L215, 30.07.1992.

tics that protect the environment and preserve the countryside as an integral element of the agreed package of measures.<sup>303</sup>

As a next step, and under the mid-term review of the CAP, the Commission proposed to aim at a decoupling of CAP support and agricultural output, compulsory cross-compliance, and increased expenditure on rural development and agri-environment measures.<sup>304</sup> The final compromise preserved many features of the original proposal but included much greater flexibility for Member States with regard to decoupling and budget restrictions, and consisted of a series of regulations in which the measures were further elaborated. Particularly relevant is Regulation 1782/2003 that provides agricultural producers with annual income support, the Single Farm Payment (SFP), independent of any production they undertake, but conditional upon respecting certain environmental, food safety, animal and plant health and animal welfare standards in EU legislation.<sup>305</sup>

Matching with this aim at more sustainable agricultural practices is the European Action Plan for Organic Food and Farming that the Commission presented in June 2004.<sup>306</sup> The plan sets out 21 actions in relation to the development of the organic production and consumption, but does not provide any timeframe or quantitative targets for the actions presented, thus giving the plan a noncommittal character.

Hence, with the reform of the CAP, a transition has been started from a policy based on quantity towards a policy focused on quality, which *inter alia* favours agri-environment measures such as low-input farming and organic farming. Most importantly in relation to pesticide use, cross-compliance requirements for direct payments under the CAP have been introduced in 2006, which oblige agricultural producers to comply with the principles of good agricultural practice as mentioned in Article 3 of Directive 91/414/EEC.<sup>307</sup> What is important about this latter measure is that it targets in principle all agricultural producers.

### Water policy

An additional impetus to reduce pesticide risks has been provided by the Water Framework Directive (WFD) that marked a change in EU water policy, as it provides a coherent and integrated framework for the management of all surface waters and groundwater.<sup>308</sup> More precisely, this legislation distinguishes between priority substances for

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<sup>303</sup> COM(1998) 158 final, 04.06.1998.

<sup>304</sup> Communication from the Commission to the Council and the European Parliament - Mid-Term Review of the Common Agricultural Policy, COM(2002) 394 final, 10.07.2002.

<sup>305</sup> Council Regulation (EC) No 1782/2003 of 29 September 2003 establishing common rules for direct support schemes under the common agricultural policy and establishing certain support schemes for farmers and amending several regulations, OJ L270, 21.10.2003.

<sup>306</sup> COM(2004) 415 final, 10.06.2004.

<sup>307</sup> Council Regulation 1782/2003/EC of 29 September 2003 establishing common rules for direct support schemes under the common agricultural policy and establishing certain support schemes for farmers, OJ L270, 21.10.2003, p. 1.

<sup>308</sup> Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, OJ L327, 22.12.2000, p. 1.

which measures should be taken that are aimed at their progressive reduction, and priority hazardous substances for which measures should be taken aimed at the cessation or phasing out of discharges, emissions and losses within 20 years after their adoption at Community level. A list of 33 priority substances was adopted in 2001, 13 of which are active substances used in pesticide products.<sup>309</sup> Full implementation of the Water Framework Directive is expected to make a considerable contribution to an overall reduction of risks from pesticides in the aquatic environment.

### Food safety

With regard to the residue stage of the pesticide life-cycle, the European Commission has put in place since 1976 a body of legislation permitting the setting of maximum residue levels (MRLs) based on a shared responsibility between the Commission and the Member States.<sup>310</sup> This EU legislation aimed to facilitate trade in food products by setting common standards. The first directive of 1976 laid down optional MRLs for 43 pesticide substances in combination with specified fruit and vegetables.<sup>311</sup> It was followed by two other directives in 1986 that set MRLs for cereals and foodstuffs of animal origin.<sup>312</sup> A later directive from 1990 embodied a new approach providing the basis for mandatory rather than optional MRLs that were subsequently established in dozens of daughter Directives.<sup>313</sup> Additional major amendments in the residues legislation were realised with Council Directive 97/41/EC that *inter alia* provided for a system to set MRLs in processed products and composite foodstuffs, introduced a coordinated Community monitoring programme, and transferred the competence for setting MRLs from the Council to the Commission.<sup>314</sup>

In response to growing concerns about the adequacy of the level of protection for babies and young children, the Commission established a separate directive for baby food with

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<sup>309</sup> Decision No 2455/2001/EC of the European Parliament and of the Council of 20 November 2001 establishing the list of priority substances in the field of water policy and amending Directive 2000/60/EC, OJ L331, 15.12.2001, p. 1.

<sup>310</sup> The first initiative in this direction was taken by the European Parliament with a resolution being put forward in 1969 (OJ C097).

<sup>311</sup> Council Directive 76/895 of 23 November 1976 relating to the fixing of maximum levels for pesticide residues in and on fruit and vegetables, OJ L340, 09.12.1976.

<sup>312</sup> Council Directive 86/362/EEC of 24 July 1986 on the fixing of maximum levels for pesticide residues in and on cereals, OJ L221, 07.08.1986; Council Directive 86/363/EEC of 24 July 1986 on the fixing of maximum levels for pesticide residues in and on foodstuffs of animal origin, OJ L221, 07.08.1986.

<sup>313</sup> Council Directive 90/642 of 27 November 1990 on the fixing of maximum levels for pesticide residues in and on certain products of plant origin, including fruit and vegetables, OJ L350, 14.12.1990.

<sup>314</sup> Council Directive 97/41/EC of 25 June 1997 amending Directives 76/895/EEC, 86/362/EEC, 86/363/EEC and 90/642/EEC relating to the fixing of maximum levels for pesticide residues in and on, respectively, fruit and vegetables, cereals, foodstuffs of animal origin, and certain products of plant origin, including fruit and vegetables. Germany was the only Member State voting against the proposal.

stricter standards in 1991.<sup>315</sup> This directive on so called ‘infant formulae’ and ‘follow-on formulae’ was fundamentally amended in 1999, placing severe restrictions on the use of pesticides in the production of those foods, and set a common MRL of 0.01 mg/kg for all residues in infant formulae and follow-on formulae.<sup>316</sup> It also prohibited the use of certain pesticides in agricultural production intended for such formulae. In 2003, the Commission further tightened MRLs in infant-formulae and cereal-based baby foods for some particularly toxic pesticides.<sup>317</sup> The new legislation set zero detectability limits for eleven substances being phased out and close to zero limits for another five. Considering the MRLs in the different categories, the remarkable inconsistency is that prepared baby food falls under stricter rules than home-made baby food.

The law and policy concerning pesticide residues has been increasingly influenced by policy measures established in the area of consumer health and more particularly food safety. Due to several food scares in the late 1990s, the development of food safety law and policy became a priority of the European Commission in recent years which resulted in the White Paper on food safety.<sup>318</sup> In this paper, the Commission announced new framework legislation for food relating to all stages of the production, processing and distribution of food and the establishment of an independent European Food Safety Authority (EFSA).<sup>319</sup> The new Regulation *inter alia* contained important provisions about traceability of food products and the division of responsibilities within supply chains. Furthermore, Regulation 852/2004/EC on food hygiene prescribed that as of 2006 any use of pesticides should be recorded in special registers at farm level.<sup>320</sup>

Based on the 6<sup>th</sup> EAP, the European Commission has stepped up its actions in the area of environment and health, having adopted a communication on the issue in June 2003.<sup>321</sup> The communication outlined an integrated approach to address environment and health interactions and their impacts on more vulnerable groups such as children. Subsequently,

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<sup>315</sup> Commission Directive 91/321/EEC of 14 May 1991 on infant formulae and follow-on formulae, OJ L175, 04.07.1991.

<sup>316</sup> Commission Directive 1999/39/EC of 6 May 1999 amending Directive 96/5/EC on processed cereal-based foods and baby foods for infants and young children, OJ L174, 18.05.1999, and Commission Directive 1999/50/EC of 25 May 1999 amending Directive 91/321/EEC on infant formulae and follow-on formulae, OJ L139, 02.06.1999.

<sup>317</sup> Commission Directive 2003/14/EC of 10 February 2003 amending Directive 91/321/EEC on infant formulae and follow-on formulae, OJ L041, 14.02.2003.

<sup>318</sup> COM(1999) 719 final, 12.01.2000.

<sup>319</sup> Regulation (EC) 178/2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety, OJ L031, 28.01.2002.

<sup>320</sup> Regulation (EC) No 852/2004 of the European Parliament and of the Council of 29 April 2004 on the hygiene of foodstuffs, OJ L139, 30.04.2004, and Corrigendum to Regulation (EC) No 852/2004 of the European Parliament and of the Council of 29 April 2004 on the hygiene of foodstuffs, OJ L139, 30.04.2004.

<sup>321</sup> Communication from the Commission to the Council, the European Parliament and the European Economic and Social Committee, A European Environment and Health Strategy, COM(2003) 338 final, 11.06.2003, and Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee, The European Environment & Health Action Plan 2004-2010, COM (2004) 416 Vol. I final, 09.06.2004.

the Commission prepared an Action Plan for the period 2004-2010 that was presented at the 4<sup>th</sup> WHO Ministerial Conference on Environment & Health in Budapest in 2004. Part of the strategy has been the proposal for a new EU regulatory framework for chemicals, the so-called REACH Regulation, with as guiding principles precaution and substitution, which has been finalised at the end of 2006.<sup>322</sup>

### Concluding remarks

Looking back at more than thirty years of EU law and policy on pesticides, it is apparent that the focus has shifted from the facilitation of internal trade of pesticide products and agricultural produce towards a more encompassing approach in which environmental and health objectives have become increasingly important. Important landmarks in this evolution were the establishment of the dual authorisation system for active substances and pesticide products in 1991, and the new legislation on pesticide residues in 2005. Significantly, the European Parliament has fulfilled an important initiating role in the shift in regulatory emphasis.

### 4.3 The legal tenets of the EU approach

As the previous section described the broader picture of EU law and policy related to pesticides, the current section elaborates on the three instruments that have most relevance from the perspective of environmental and human health protection, including:

- Directive 91/414/EEC concerning the placing on the market of plant protection products;
- Regulation (EC) No 396/2005 of the European Parliament and of the Council on maximum residue levels of pesticides in or on food and feed of plant and animal origin.
- Proposal for a Directive establishing a framework for Community action to achieve a sustainable use of pesticides.

Considered from a life-cycle perspective, these three instruments have a complementary character. Directive 91/414/EEC focuses on the marketing and use stages of pesticides, the proposed framework directive is oriented on the use stage of pesticides, and Regulation (EC) No 396/2005 aims to limit the risks of pesticide residues in food products.

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<sup>322</sup> Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, OJ L396, 30.12.2006.

### 4.3.1 Directive 91/414/EEC concerning the placing on the market of plant protection products

#### Rule-making

Council Directive 91/414/EEC concerning the placing of plant protection products on the market was established in 1991, and entered into force two years later.<sup>323</sup> The Directive's main instrument is an authorisation procedure that is dual in nature: active substances are evaluated at Community level whereas the Member States evaluate and authorise pesticide products containing those substances. Authorisation of pesticide products is granted pursuant to either Article 4 or Article 8, to be obtained from the competent authority of each Member State in which a pesticide covered by the Directive is placed on the market.<sup>324</sup>

This Authorisation Directive was a new departure for the Community in two important respects. In the first place, it explicitly placed the protection of human health and the environment above the needs of improving agricultural production. In the preamble to the Directive, the Council formulated this priority as follows: "Whereas the provisions governing authorization must ensure a high standard of protection, which, in particular, must prevent the authorization of plant protection products whose risks to health, groundwater and the environment and human and animal health should take priority over the objective of improving plant production."

In the second place, the underlying principle of the legislation changed from 'yes, unless banned' in 'no, unless approved': the marketing and use of pesticides were not permitted unless both the active substances and the pesticide products involved were authorised according to the appropriate procedures. Thus, Directive 91/414 provided for the establishment of positive lists of active substances and pesticide products for the use in plant protection products, which had been evaluated to be safe for humans and which did not present an unacceptable risk to the environment.

The 'no, unless approved' principle, however, was not a hard principle. The directive provided for several provisional arrangements, derogations and exceptions. Firstly, Article 8(1) contained provisional authorisation arrangements for new active substances. Secondly, Article 8(2) provided for a transitional 12-year programme of reassessments for substances that were already on the market at the moment of the Directive's entry into force in July 1993. Thirdly, Article 8(3) provided for an exception in case of an unforeseeable danger which cannot be contained by other means. Thirdly, Article 9 prescribed a relatively flexible system for extensions of authorisations of plant protection

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<sup>323</sup> Council Directive 91/414/EEC of 15 July 1991 concerning the placing of plant protection products on the market, OJ L230, 19.08.1991. The subject matter of the Directive is very complicated which has urged the Commission to draft a series of guidance documents that explain and elaborate on technical matters. See for a discussion of the Directive: E.M. Vogelzang-Stoute (2003). The authorisation of pesticides in the light of sustainability. In: F. den Hond, P. Groenewegen and N. van Straalen, N. van (eds.), *Pesticides: Problems, Improvements, Alternatives*. Oxford: Blackwell Science, pp. 31-51.

<sup>324</sup> Case C-400/96, Criminal proceeding against Jean Harpegnies, reference for a preliminary ruling, ECR 1998, p. I-05121.

products for minor uses. Fourthly, Article 22 provided for an exception in case of re-search or development purposes. Fifthly, Regulation (EC) No 2076/2002 provided a list of derogations for so-called essential uses of certain substances withdrawn from the market with the argument that efficient alternatives were not yet available.<sup>325</sup> Sixthly, a certain delay is inherent to the update of pesticide authorisations to current scientific standards.<sup>326</sup>

The Directive provided for a transitional 12-year programme of re-assessments for the substances that were already on the market at the moment of the Directive's entry into force in July 1993.<sup>327</sup> This programme concerned 834 active substances (or so-called "existing" substances). Pending the decisions on their inclusion, the pesticide products concerned were permitted to remain on the market ultimately until 26 July 2003 under certain conditions.

The Commission split the review programme into four phases based on the level of concern and use: phase 1 included 90 of the most widely used substances that caused clear concern; phase 2 included 149 substances comprising all those organophosphates and carbamates that were not on the first list as well as other substances of concern and substances for which the pesticide industry had indicated early availability of dossiers; phase 3 comprised the 402 remaining substances of concern but not as widely used as those of phase 2, and phase 4 comprised the 193 remaining substances identified as being of lower concern. The relevant legislation about the review programme is included in Annex 3.

In order to harmonise the authorisation procedures of pesticide products by the national authorities in the Member States, the Directive prescribed the development of a uniform set of risk assessment principles and decision-making criteria that Member States must apply when evaluating products. They were adopted by Council Directive 97/57/EC.<sup>328</sup> An additional harmonisation measure concerned the mutual recognition mechanism which means that a pesticide product authorised in one country should also be authorised in another country "to the extent that agricultural, plant health and environmental (including climatic) conditions relevant to the use of the product are comparable in the regions concerned."<sup>329</sup>

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<sup>325</sup> Commission Regulation (EC) No 2076/2002 of 20 November 2002 extending the time period referred to in Article 8(2) of Council Directive 91/414/EEC and concerning the non-inclusion of certain active substances in Annex I to that Directive and the withdrawal of authorisations for plant protection products containing these substances, OJ L319, 23.11.2002.

<sup>326</sup> E.M. Vogelesang-Stoute (2003), pp. 44-45.

<sup>327</sup> Directive 91/414/EEC, Article 8(2).

<sup>328</sup> Council Directive 97/57/EC of 22 September 1997 establishing Annex VI to Directive 91/414/EEC concerning the placing of plant protection products on the market, OJ L265, 27.09.1997.

<sup>329</sup> Directive 91/414, Article 10.



Directive 91/414 furthermore provided in Article 3(3) that Member States should prescribe that pesticide products must be used properly.<sup>330</sup> Such proper use includes compliance with the conditions established during the evaluation procedure and specified on the label of the pesticide product. Moreover, the article requires “the application of the principles of good plant protection practice as well as, whenever possible, the principles of integrated control”. However, this requirement has remained a rather empty clause since the principles of good plant protection practice as well as those of integrated control have not been elaborated, and furthermore the application of the latter, has been weakened by the addition of the words ‘whenever possible’.<sup>331</sup> Consequently, Member States had the leeway to make their own interpretation or not.

In a progress report on the functioning of Directive 91/414, the Commission observed that the harmonisation of the market for pesticide products hampered, due to the failure of the mutual recognition provisions.<sup>332</sup> Furthermore, it remarked that several important niche pesticide products were in danger of disappearing from the market. In response, the Council and the European Parliament called on the Commission to bring forward proposals for amendments. In order to prepare the legislative proposal, the Commission organised an extensive consultation process of stakeholders and the public.

One of the main issues under debate concerned the introduction of a zoning system to stimulate the further harmonisation of the authorisation of plant protection products and which was meant to solve the failure of the mutual recognition mechanism of Directive 91/414. A zone in this respect is a group of Member States for which it is assumed that the agricultural, plant health, and environmental conditions are relatively similar. Such a zoning structure would simplify the market situation for plant protection products. Instead of as many markets as Member States, there would remain as many markets as zones. A second major issue during the consultation concerned the possible introduction of a substitution principle, including a comparative assessment of substances and products and requiring regulators to favour the least hazardous product for a given use, which could eventually lead to the refusal or withdrawal of authorisations. A third major issue concerned the simplification of the system for protection and sharing of data from industry.

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<sup>330</sup> The full text of Article 3(3) is as follows: Member States shall prescribe that plant protection products must be used properly. Proper use shall include compliance with the conditions established in accordance with Article 4 and specified on the labelling, and the application of the principles of good plant protection practice as well as, whenever possible, the principles of integrated control.

<sup>331</sup> According to Article 2(13), integrated control is defined as: the rational application of a combination of biological, biotechnological, chemical, cultural or plant-breeding measures whereby the use of chemical plant protection products is limited to the strict minimum necessary to maintain the pest population at levels below those causing economically unacceptable damage or loss.

<sup>332</sup> Report from the Commission to the European Parliament and the Council. Evaluation of the active substances of plant protection products (submitted in accordance with Article 8(2) of Council Directive 91/414/EEC on the placing of plant protection products on the market), COM(2001) 444 final, 25.07.2001.

In July 2006, the Commission finally published its proposal for a Regulation of the European Parliament and of the Council concerning the placing of plant protection products on the market.<sup>333</sup> The Commission argued that the use of a regulation, instead of a directive, was justified because it ensures that the provisions are implemented at the same time and in the same way in all Member States.<sup>334</sup> The proposed legal basis of the regulation is Article 37(2) (common agricultural policy) and Article 152(4)(b) (protection of public health). Significantly, the protection of the environment is not mentioned as an explicit objective of the regulation. This has had repercussions for the applicable decision-making procedure.

The proposal maintains the dual system of Directive 91/414 that is based upon authorisation of substances at EU level and of pesticide products at Member State level. However, the new system deviates from Directive 91/414 in a number of ways. First, it distinguishes open field and greenhouse production, and introduces for the former a zoning system and for the latter an EU-wide regime.<sup>335</sup> Under the new zoning system, the territory of the EU will be divided into three separate markets for pesticide products based on zones with comparable geographical conditions, each of which will be governed by fully harmonised authorisation rules. Consequently, mutual recognition of pesticide products within authorisation zones is compulsory, and in case of use in greenhouses or as post-harvest treatment, regardless of zones. Second, the proposal outlines specific procedures for substances of low risk and those of concern. Third, it introduces a mandatory comparative assessment for plant protection products containing a candidate for substitution which is a substance that fulfils a number of health, environmental, economic and resistance criteria. Fourth, it provides stricter rules on packaging, labelling and advertising, and prescribes stricter criteria for approval of active substances.

Concerning the use of plant protection products, the proposed regulation stipulates that plant protection products shall be used properly and that proper use includes compliance with the conditions in the authorisation decision and specified on the labelling, and application of the principles of good plant protection practice as well as, whenever possible, the principles of IPM and good environmental practice, as will be elaborated in a so-called comitology procedure.<sup>336</sup>

In March 2008, the Commission presented an amended proposal for a Regulation concerning the placing of plant protection products on the market, taking into account a number of the amendments proposed by the European Parliament, most notably the in-

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<sup>333</sup> Proposal for a Regulation of the European Parliament and of the Council concerning the placing of plant protection products on the market, COM(2006) 388 final, 12.07.2006.

<sup>334</sup> Explanatory memorandum to the proposal for a Regulation, p. 11.

<sup>335</sup> Proposed Regulation on Authorisation, Article 39. The term greenhouse has not been defined in the proposal. Annex I contains a definition of zones for the authorisation of plant protection products. Zone A – North includes the Member States of Denmark, Estonia, Latvia, Lithuania, Finland, Sweden; Zone B – Centre includes Belgium, Czech Republic, Germany, Ireland, Luxembourg, Hungary, Netherlands, Austria, Poland, Slovenia, Slovakia, United Kingdom, and Zone C- South includes Greece, Spain, France, Italy, Cyprus, Malta, Portugal.

<sup>336</sup> Proposed Regulation on Authorisation, Articles 52 juncto 76(2). With respect to the comitology procedure, the proposal refers to the Standing Committee on the Food Chain and Animal Health, as established by Article 58 of Regulation (EC) No 178/2002.

clusion of the explicit purpose of ensuring a high level of protection of both human and animal health and the environment, the mentioning of the precautionary principle, the definitions of substance of concern and of low risk, additional pesticide use prescriptions, and provisions concerning parallel trade.<sup>337</sup> However, the Commission did not include several of the more radical, concrete amendments proposed by the Parliament and also did not agree with the proposed change of the legal basis of the Regulation.

### Rule-implementation

As mentioned above, the Commission presented a progress report on the implementation of Directive 91/414 ten years after its adoption.<sup>338</sup> By then, it was clear that at least 367 out of the 834 existing active substances were going to be withdrawn from the market because the pesticide producers concerned were not interested to start an authorisation procedure. However, the progress made in reviewing the remaining 467 substances was far behind the expectations, as examinations had only been finalised for 13 substances and started for another 61. Not surprisingly, the report concluded that the 12-year review programme needed to be extended and that 2008 seemed a more appropriate end date than 2003.

Furthermore, the report predicted that the market would experience a sharp change after July 2003, with the loss of up to 500 substances, although this would be partly offset by a progressive increase in the availability of new active substances. More specifically, the Commission remarked that the market for insecticides could become under stress because of a discordance between needs and available products, but that market forces should correct this situation.

Directive 91/414 had to be transposed by the Member States before 26 July 1993. Most Member States adopted the Directive in time or with a moderate delay. A few exceptions, however, urged the Commission to start infringement procedures. Greece was summoned before the ECJ on the grounds that it had failed to fulfil its obligations under the Directive and was in due course condemned.<sup>339</sup> The Commission started a similar action against Germany.<sup>340</sup> Although the federal government was in the process of amending its existing legislation, the Court argued that such legislation cannot be regarded as ensuring transposition into domestic law of a directive, which expressly requires the Member States to adopt provisions containing a reference thereto or accompanied by such reference. Consequently, Germany was found to be in non-compliance.

Other Member States have been summoned before the ECJ on the grounds of not having properly implemented the Directive. The Netherlands, in particular, has been sued sev-

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<sup>337</sup> COM(2008) 93 final, 11.03.2008.

<sup>338</sup> Report from the Commission to the European Parliament and the Council. Evaluation of the active substances of plant protection products (submitted in accordance with Article 8(2) of Council Directive 91/414/EEC on the placing of plant protection products on the market), COM(2001) 444 final, 25.07.2001.

<sup>339</sup> Case C-380/95, Commission of the European Communities v. Hellenic Republic, ECR 1996, p. I-04837.

<sup>340</sup> Case C-137/96, Commission of the European Communities v. Federal Republic of Germany, ECR 1997, p. I-06749.

eral times about its interpretation of the Directive by environmental NGOs (see Chapter 6).

### Rule-enforcement

The responsibility for the enforcement of Directive 91/414 lies mainly with the Member States. They have to perform market controls and see to it that agricultural producers are using pesticide products in accordance with the legal requirements and label instructions. The Commission's Food and Veterinary Office (FVO) carries out audits and inspections in the Member States to control if the appropriate food control systems are in place. Data collected by the European Crop Protection Association (ECPA) show that the enforcement of the legislation is rather weak, which is signalled by the growing illegal trade, marketing and use of pesticides.<sup>341</sup> The incidence of counterfeiting and illegal traffic in plant protection products has increased substantially over the past years, currently accounting for approximately 5 to 7% of the European market for pesticides.

### 4.3.2 Regulation No 396/2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin

#### Rule-making

Regulation No 396/2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin was established in 2005, and entered into force in the same year.<sup>342</sup> This Residues Regulation was developed as a result of the so-called SLIM exercise that *inter alia* focused on reducing the regulatory burden and cost of the legislation in the area of pesticide residues.<sup>343</sup> In the SLIM report, the Commission observed that over the years, 17,000 Community MRLs had been set, relating to 133 active substances, out of a possible total of 160,000 (160 crops in combination with 1,000 pesticides).<sup>344</sup> This meant that for the majority of pesticide/commodity combinations the Member States set and used their own national MRLs, resulting in different MRLs for the same active substance in the EU countries. According to the Commission, this had led to "con-

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<sup>341</sup> ECPA Position Paper (2006). Counterfeiting and illegal trade in plant protection products across the EU and European region. Brussels: ECPA. According to ECPA, in China and India, illegal plant protection products make up about 30% and 20% of the markets, respectively.

<sup>342</sup> OJ L070, 16.03.2005, pp. 1-16.

<sup>343</sup> SLIM is the acronym for Simpler legislation for the internal market. The objective of SLIM is to streamline the operation of the Internal Market by identifying ways in which relevant Community legislation can be simplified and improved. SLIM is being executed under the responsibility of the DG Internal Market. Selected legislation is examined by SLIM teams of experts from different backgrounds. Germany nominated the pesticide residues legislation as a candidate for simplification. The SLIM team consisted of experts from the Member States of Denmark, Germany, Greece, Belgium and Italy and from the interest organisations of ECPA (pesticide producers), PAN Europe (consumers), CEELCA (traders) and COPA-COCEGA (agricultural producers), assisted by DG SANCO.

<sup>344</sup> Report on the outcome of the 5th phase of SLIM, SEC(2001) 1997, 17.12.2001.

tinuing trade problems in the internal market.”<sup>345</sup> The Commission also recognised the existence of trade problems for third countries, and suggested finding solutions for these problems as well.

In order to diminish internal and external trade problems, the draft regulation proposed to set all future MRLs at the European level, to set temporary MRLs for the transitional period, and to use a default value for all substances withdrawn from the market.<sup>346</sup> For produce from third countries, the EU proposed to maintain the current system of ‘import tolerances’ that allows higher MRL limits for imported products in case a Community MRL cannot be reasonably met and hence hampers international trade.

In response to the Commission’s proposal, key stakeholders were encouraged to give their comments. The European Crop Protection Association (ECPA) welcomed the proposal, considering MRLs primarily as trading standards based on the alara-principle.<sup>347</sup> With regard to the proposed default approach, ECPA stated that: “It must be ensured that this tough approach is proportionate to all legitimate and justified human health goals; that procedures are foreseen for widely communicating to the public that, due to their stringent nature, where MRLs are reported as being exceeded there is not necessarily any real cause for health concerns; and finally the consequences of the approach with respect to ensuring free trade must also be carefully considered.”

The Pesticide Action Network Europe (PAN Europe) had already articulated a minority position about the Regulation in the SLIM report stating that the reduction of the exposure of consumers to pesticide residues should prevail in all instances and that the overall objective should be to aim at ‘zero’ level MRLs.<sup>348</sup> PAN Europe remarked that a big advantage of such an approach is that it is in line with market developments where parts of supermarkets and food industry aim for a residue-free product. Furthermore, MRLs should be based on ICM or IPM by giving priority to preventive measures of crop growing and the use of non-chemical practices and methods.

On the occasion of the first reading by the European Parliament, a resolution was drafted that put much stronger emphasis on consumer protection, stating that “the existing legislative proposal risks compromising public health for the sake of trade.”<sup>349</sup> The resolution called for including consumer protection as an explicit aim of the Regulation, and to prioritise public health over crop protection.

Furthermore, the resolution supported the establishment of aggregate MRLs for the combined effects of multiple residues, stating that: “There is an extensive body of scien-

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<sup>345</sup> COM(2003) 117 final, 14.03.2003, p. 7.

<sup>346</sup> Proposal for a Regulation on maximum residue levels of pesticides in products of plant and animal origin, COM(2003) 117 final, 14.03.2003

<sup>347</sup> Press release ECPA, 20 March 2003: ECPA welcomes Commission proposal for a Regulation on pesticide MRLs.

<sup>348</sup> Minority position of PAN Europe on residue legislation, as formulated in Annex 1 to the draft SLIM report on legislation concerning pesticide maximum residue levels (MRLs), 7 November 2001.

<sup>349</sup> Resolution European Parliament, 1<sup>st</sup> reading, P5\_TA(2004)0299, 20.04.2004, and report by the Committee on the Environment, Public Health and Consumer Policy, rapporteur R.W. Sturdy, A5-0260/2004 final, 07.04.2004.

tific literature pointing towards additive and synergistic effects of different plant protection products (for instance paraquat and maneb), and their residues in food. Furthermore, new scientific findings have to be taken into account that indicate the particular vulnerability of children and the unborn.<sup>350</sup> The resolution explicitly mentioned IPM as the future norm in agricultural practice. In order to give body to the definition of IPM, the European Parliament recommended a priority ladder of alternative methods and practices of crop protection that should have preference over the use of chemicals.

During the second reading, the European Parliament, the Council and the Commission entered into negotiations and proposed a series of amendments.<sup>351</sup> The majority of them aimed to strengthen the position of consumers. Most notably, the objective of ensuring a high level of consumer protection was inserted in Article 1, requiring that MRLs are set at the lowest level achievable when applying good agricultural practice as defined in the Regulation.<sup>352</sup>

Regulation No 396/2005 was published in February 2005 and entered into force on 5 April 2005.<sup>353</sup> Its legal basis is provided by Article 37 (common agricultural policy) and Article 152(4)(b) (protection of public health). The preamble to the Regulation mirrors its compromise character, as it is based on different and, arguably, opposing lines of argumentation.

The Residues Regulation is aimed to function as umbrella legislation, requiring further elaboration through follow-up regulations.<sup>354</sup> In order to achieve full harmonisation of MRLs, it establishes uniform MRLs for specific combinations of crops and pesticides applicable in all Member States, distinguishing regular, temporary, and default value MRLs. The existing category of import tolerances will stay in place for imported products from third countries. Notably, the legal figure of the temporary MRL may give the impression of an escape clause because it opens up the possibility to postpone decision-making about definitive MRLs.

The Regulation has three noteworthy features that indicate a break with the past. First, the range of parties allowed to submit an application for a MRL has been extended beyond the pesticide industry to include all parties demonstrating a legitimate interest in health, including civil society organisations, as well as commercially interested parties

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<sup>350</sup> Ibidem.

<sup>351</sup> Opinion of the Commission, COM(2005) 22 final, 25.01.2005.

<sup>352</sup> Resolution European Parliament, 2<sup>nd</sup> reading, P6\_TA(2004)0098, 15.12.2004, and recommendation by the Committee on the Environment, Public Health and Consumer Policy, rapporteur R.W. Sturdy, A6-0049/2004 final, 30.11.2004.

<sup>353</sup> Regulation (EC) No 396/2005 of the European Parliament and of the Council of 23 February 2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin and amending Council Directive 91/414/EEC, OJ L070, 16.03.2005. According to Article 50, the Chapters II, III, V shall apply as from six months from the publication of the last of the Regulations establishing Annexes I, II, III and IV.

<sup>354</sup> The first of these regulations includes: Commission Regulation (EC) No 178/2006 of 1 February 2006 amending Regulation (EC) No 396/2005 of the European Parliament and of the Council to establish Annex I listing the food and feed products to which maximum levels for pesticide residues apply

such as manufacturers, agricultural producers, importers, and producers of products.<sup>355</sup> Second, the Regulation has given a fiat for a “naming-and-shaming” policy by the Member States, allowing the publication of the names of those parties involved trading or marketing agricultural products exceeding MRLs.<sup>356</sup> Third, the distinction between risk assessment and risk management has become more clear-cut. The European Food Safety Authority (EFSA) has been authorised to give reasoned opinions regarding the assessment of applications for MRLs and evaluation reports, whereas the decision-making power stays with the European Commission.<sup>357</sup>

In order to make the Regulation fully operational, EFSA has performed an initial risk assessment screening of proposed temporary MRLs based on available data provided by the European Commission.<sup>358</sup> According to the risk assessment, 92 of the 236 active substances are unlikely to present a chronic or acute risk to consumers. However, for the remaining 144 substances, the first screening could not exclude a potential consumer risk and therefore further scientific assessment and/or risk management considerations were deemed necessary.<sup>359</sup>

### Rule-implementation

The EU and its Member States have established programmes to monitor the incidence of pesticide residues (MRLs) in fresh and processed food products. The monitoring programmes of the Member States differ with regard to sampling methods, number of substances targeted, and laboratory expertise. In addition, MRLs may differ between countries and are being changed on a regular basis as a result of new insights as well as decisions made in authorisation procedures. This lack of consistency makes it difficult to obtain a realistic picture of the residue situation in the EU Member States that could form a solid basis for comparison, and moreover it may obscure less favourable monitoring results.

A comparison of the monitoring results over the period 1996-2005, as presented in Table 4.1, indicates that the percentage of samples containing residues increased from 40 to 48%. Those with residues above national and EU MRLs rose from 3 to 5%. Moreover, the share of samples with multiple residues increased from 13.0 to 26.7%. The highest reported variety of different pesticides in one sample increased to 23 in 2005.

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<sup>355</sup> Regulation No 396/2005, Article 6(2).

<sup>356</sup> Regulation No 396/2005, Article 30(3).

<sup>357</sup> Regulation No 396/2005, Articles 6-17.

<sup>358</sup> See press release EFSA, 15 March 2007: EFSA evaluates proposed temporary EU Maximum Residue Levels for Pesticides, and EFSA (2007), Reasoned opinion on the potential chronic and acute risk to consumers' health arising from proposed temporary EU MRLs. The press release, the reasoned opinion, and its annexes are available at <http://www.efsa.europa.eu>. EFSA's exposure assessment has taken into account the various food consumption patterns across Europe and considered specific vulnerable subgroups of the population such as children and infants.

<sup>359</sup> 110 pesticides will be further assessed for potential chronic health risks, and 109 pesticides for potential acute health risks, which means that 75 of them will be evaluated for both.

It is a general rule that the more pesticide substances are monitored, the more of them are found. Therefore, the increased residue incidences can be partly explained by the improved analytical capabilities of laboratories.<sup>360</sup> However, the figures from the monitoring exercises demonstrate that this relationship is not always straightforward. As is evident from the data, countries can have a high coverage of substances in their monitoring programmes and at the same time a relatively high share of pesticide-free produce.

Table 4.1 Levels of detectable pesticide residues in fresh fruit and vegetables and cereals in the EU (1996-2005)<sup>361</sup>

Samples	1996 (%)	1997 (%)	1998 (%)	1999 (%)	2000 (%)	2001 (%)	2002 (%)	2003 (%)	2004 (%)	2005 (%)
Without residues	60.0	61.0	61.0	64.0	61.0	59.0	56.0	56.0	53.0	52.0
With residues below or at the national and EU MRLs	37.0	36.0	36.0	32.0	35.0	37.0	38.0	38.0	42.0	43.0
With multiple residues	13.0	14.0	14.0	14.1	14.7	18.0	20.7	20.5	23.4	26.7
With residues above national and/or EU MRLs	3.0	3.4	3.3	4.3	4.5	3.9	5.5	5.5	5.0	5.0
With residues above EU MRLs	1.0	2.3	2.1	3.5	3.2	3.2	3.4	3.5	3.0	3.1

A closer look at the monitoring results for the different Member States shows a wide variation, which can be partly explained by the differences in national monitoring programmes concerning, for example, the choice of pesticides, analytical methods, and sampling. However, the data suggest that a major explanation for this variation are diverging patterns of use and agricultural practices.

<sup>360</sup> The enhanced analytical capabilities of the laboratories are reflected by the continuously increasing numbers of pesticides sought in the analytical screens since 1997. In 2004, the analytical capabilities of laboratories in the participating states ranged from 41 to 595. On average 135 substances were sought in the samples. The 2004 monitoring results showed that around 50% of the 677 pesticides analysed for were detected, whereas 33% of them were found relatively frequently, which means that it is particularly important to target the right substances.

<sup>361</sup> Based on the following monitoring reports: report 1996; report 1997; 1998 report, SANCO/2597/00 final; 1999 report, SANCO/397/01 final; 2000 report, SANCO/687/02 final; 2001 report, SANCO/20/03 final; 2002 report, SANCO/17/04 final; 2003 report, SEC(2005) 1399; 2004 report, SEC(2006) 1416, and 2005 report, SEC(2007) 1411.



Besides the national monitoring programmes focusing on pesticide residues in food products, the European Commission also co-ordinates an EU monitoring programme estimating the actual dietary pesticide exposure throughout Europe.<sup>362</sup> The choice of commodities included in this programme is based on the major components of the Standard European Diet of the World Health Organisation (WHO). However, monitoring only takes place as far as values for Acceptable Daily Intake (ADI) and Acute Reference Dose (ARfD) have been established for specific pesticide-crop combinations. The outcomes of the EU co-ordinated monitoring programme of the past few years show that the intake of pesticide residues has remained below the ADI in the examined cases, and that there was no concern of chronic toxicity.<sup>363</sup> However, the indicative assessment of acute exposure, based on worst-case scenarios, showed exceedances of several ARfDs which means that acute health risks cannot always be excluded, especially for vulnerable groups, but also more sporadically for adults.

Apart from the regular national and EU monitoring programmes, residue testing also takes place in case of imports of food products from other Member States and third countries. Where too high pesticide residues are found in imported samples of produce, the EU Rapid Alert System for Food and Feed (RASFF) is set in operation.<sup>364</sup> This system, which is based on notification, is primarily a tool for the exchange of information about serious direct or indirect risks to human health.<sup>365</sup> The Commission evaluates the notifications received and decides whether the criteria for notification are met or if the

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<sup>362</sup> These programmes have been annually published by the Commission in the form of recommendations, starting in 1996, including: Recommendation 96/199/EC, OJ L064, 14.03.1996; Recommendation 97/822/EC, OJ L377, 09.12.1997; Recommendation 1999/333/EC, OJ L128, 21.05.1999; Recommendation 2000/43/EC, OJ L014, 20.01.2000; Recommendation 2001/42/EC, OJ L011, 16.01.2001; Recommendation 2002/1/EC, OJ L002, 04.01.2002; Recommendation 2002/663/EC, OJ L 225, 22.08.2002; Recommendation 2004/74, OJ L016, 23.01.2004; Recommendation of the EFTA surveillance authority No 55/04/COL, OJ L139/20, 02.06.2005; Recommendation 2005/178/EC, OJ L61/31, 08.03.2005; Recommendation 2006/26/EC, OJ L19/23, 24.01.2006.

<sup>363</sup> See the footnote above for a complete listing of the EU monitoring reports.

<sup>364</sup> A first embryonic version of the alert system was established in 1979, followed by a more comprehensive version in 1992 when Council Directive 92/59/EEC on General Product Safety, OJ L 228, 11.08.1992, was introduced. This Directive was later replaced by Directive 2001/95/EC of the European Parliament and the Council of 3 December 2001 on general product safety, OJ L011, 15.01.2002. Since 2002, the legal basis of the RASFF is Article 50 of the Regulation (EC) No 178/2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety, OJ L031, 01.02.2002 (General Food Law).

<sup>365</sup> The RASFF system distinguishes alert and information notifications. Alert notifications are sent when the food or feed presenting the risk is on the market and when immediate action is required. Alerts are triggered by the Member State that detects the problem. Products subject to an alert notification have been withdrawn or are in the process of being withdrawn from the market. Information notifications concern a food or feed for which a risk has been identified, but for which the other Member States do not have to take immediate action, because the product has not reached the market. Consequently, the status of a notification does not say anything about the nature of the hazard involved but indicates the risk of its further spreading.

information transmitted is sufficient. Furthermore, notifying Member States may decide to withdraw a notification if it turns out to be unfounded.

The annual reports about the functioning of the RASFF show that the number of notifications concerning pesticide residues has significantly increased since the system was introduced.<sup>366</sup> However, this does not necessarily mean that the residue situation has worsened. Instead, the Commission has suggested that the increase of notifications could also be due to an increased awareness within the Member States with regard to the use of the RASFF.<sup>367</sup>

### Rule-enforcement

In order to ensure compliance with the legislation on pesticide residues, the 1990 Directive obliged the Member States to inspect produce by check sampling, to draw up programmes laying down the nature and frequency of inspections, and to report about the results. Failure to implement these provisions has urged the Commission to issue several recommendations calling for Member States to take action.<sup>368</sup> In addition, the Commission's experience setting out and implementing the recommendations led to the adoption of a regulation which established detailed rules to ensure the proper functioning of the arrangements for monitoring pesticide residues.<sup>369</sup>

With the new Regulation 396/2005, the enforcement of the legislation on pesticide residues is backed up by "naming-and-shaming" polices of the Member States, providing a powerful instrument to stimulate retailers, traders and agricultural producers to make their products comply with MRLs.

#### 4.3.3 Proposal for a Directive establishing a framework for Community action to achieve a sustainable use of pesticides

The proposal for a Directive establishing a framework for Community action to achieve a sustainable use of pesticides was published in July 2006, as part of the Thematic Strategy on the sustainable use of pesticides.<sup>370</sup> Previously, in July 2002, the Commission had

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<sup>366</sup> See e.g.: European Commission (2006). The Rapid Alert System for Food and Feed (RASFF). Annual Report 2005. Luxembourg: Office for Official Publications of the European Communities.

<sup>367</sup> Some Member States are significantly more active in sending notifications. In 2005, Italy, Germany and Spain were responsible for more than 50% of all notifications in the EU.

<sup>368</sup> See the footnote above for a complete listing of recommendations by the Commission.

<sup>369</sup> Commission Regulation (EC) No 645/2000 of 28 March 2000 setting out detailed implementing rules necessary for the proper functioning of certain provisions of Article 7 of Council Directive 86/362/EEC and of Article 4 of Council Directive 90/642/EEC concerning the arrangements for monitoring the maximum levels of pesticide residues in and on cereals and products of plant origin, including fruit and vegetables, respectively, OJ L078, 29.03.2000.

<sup>370</sup> Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions. A Thematic Strategy on the Sustainable Use of Pesticides, COM(2006) 372, 12.07.2006, and Proposal for a Directive of the European Parliament and of the Council establishing a framework for Community action to achieve a sustainable use of pesticides, COM(2006) 373, 12.07.2006.

published a Communication outlining the key objectives and means of the Thematic Strategy.<sup>371</sup>

The proposed objective of the Thematic Strategy was to reduce the impacts of pesticides on human health and the environment, and more in general to achieve a sustainable use of pesticides, as well as a significant overall reduction in risks and use of pesticides consistent with the necessary level of protection against pests.<sup>372</sup> The proposed objectives of the future strategy were:

- To minimize the hazards and risks to health and environment from the use of pesticides;
- To improve controls on the use and distribution of pesticides;
- To reduce the levels of harmful active substances, in particular by replacing the most dangerous by safer (including non-chemical) alternatives;
- To encourage the use of low-input or pesticide-free crop farming, in particular by raising users' awareness, by promoting codes of good practices and consideration of the possible application of financial instruments;
- To establish a transparent system for reporting and monitoring progress including the development of appropriate indicators.

For each of these objectives, the Commission proposed a number of measures that were subsequently discussed in an extensive two-step process, involving all relevant stakeholders.<sup>373</sup> The first step included a consultation of the European institutions, a public consultation and a stakeholders conference. The second step consisted of an assessment of the economic, social and environmental impacts of the strategy, a public consultation, several technical expert meetings, and a final public consultation about specific options.

Concerning the consultation of the European institutions, the Commission invited them to comment on the Communication and received opinions from the Environment Council, the European Economic and Social Committee (EESC) and a resolution from the European Parliament. In its reaction, the Environment Council welcomed the Communication and called for national reduction programmes with quantifiable objectives and a proposal for an EU framework for the development of IPM and ICM as one of the tools

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<sup>371</sup> Communication from the Commission to the Council, the European Parliament and the Economic and Social Committee. Towards a thematic strategy on the sustainable use of pesticides, COM(2002) 349 final, 01.07.2002.

<sup>372</sup> Decision No 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 laying down the Sixth Community Environment Action Programme, OJ L242 10.09.2002, Article 1.

<sup>373</sup> These measures *inter alia* included: the establishment of national plans to reduce hazards, risks and dependence; the development of environmental and health indicators; specific restrictions on pesticide use in environmentally sensitive areas; a general ban on aerial spraying; monitoring of actual use patterns; increased monitoring of user and consumer health; promotion and development of alternatives to chemical control; and the introduction of the substitution principle. Most importantly, the Commission suggested to link support to farmers under the CAP to compliance with a number of mandatory requirements concerning training of users, safe use and disposal of pesticides and regular inspection of application equipment.

to achieve the sustainable use of pesticides.<sup>374</sup> It furthermore asked the Commission to explore how different stakeholders, such as producers, distributors, users and consumers might contribute to achieving sustainable use of pesticides and to keep in mind the situation in third countries concerning the use of pesticides and to ensure consistency between internal and external policies and relevant international agreements.

The EESC supported in general the Commission's effort to draw up a Thematic Strategy on pesticides along the lines set out in the Communication.<sup>375</sup> It emphasized that the strategy should operate as an umbrella framework for all pesticide policy and that ultimately the long-term objective should be to make farming less dependent on synthetic pesticides. It expressed its hope for a clearer and more detailed description of the benefits and dangers associated with pesticides. More specifically, the Commission should spell out how food prices are influenced by pesticide use. Interestingly, the EESC drew attention to the fact that consumers' choices and, hence, the specific requirements made by commerce and the food industry have a decisive impact on farm production methods and that "market-driven development can encourage reduced use and sustainable development of pesticides, as compared with legislation-driven development." It remarked that the food and retailing industry had its own schemes and regulations in place making demands on pesticide use in agriculture.

The Committee on the Environment, Public Health and Consumer Policy of the European Parliament drew up a report in which it (a) condemned the Commission's lack of ambition in the Communication, the lack of legally binding measures, as well as the proposed timeframe, (b) urged the Commission to design its Thematic Strategy as an umbrella for existing and future legislation, and not as a mere complement to it, and (c) called for clear goals and timetables for each Member State, with a 50% cut in use within 10 years as an overall and indicative target.<sup>376</sup> Furthermore, it argued that the application of IPM, ICM and organic farming should be the cornerstone of the EU-strategy, and that the Common Agricultural Policy (CAP) should be made compatible with the goals of the strategy. The Committee argued that agricultural producers all over the world have shown that adopting alternative pest control methods can be beneficial in economic terms and that such measures will be essential to enhance soil quality, to minimise resistance problems and to reduce secondary pest outbreaks.

On the basis of the report, the European Parliament adopted a resolution along similar lines, but did not include the 50% reduction objective, the levy on pesticides, and the rejection of genetically modified plant varieties as an alternative form of plant protection.<sup>377</sup> The EP's resolution stressed the need for mandatory national programmes aimed at pesticide use and risk reduction, including quantitative reduction targets to be achieved by adopting a mix of mandatory and voluntary measures. The Parliament urged

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<sup>374</sup> 274rd meeting of the Environment Council, 15101/02 (Presse 379), 09.12.2002.

<sup>375</sup> OJ C085, 08.04.2003.

<sup>376</sup> The Committee on the Environment, Public Health and Consumer Policy of the European Parliament adopted an own-initiative report drawn up by rapporteur Kathleen van Brempt. PE A5-0061/2003, 19/02/2003.

<sup>377</sup> The resolution was adopted by 239 votes to 192 with 29 abstentions. PE T5-0128/2003, 27.03.2003.

the Commission to provide clear definitions of IPM and ICM as well as minimum criteria and set deadlines for their mandatory application. It further called on the Commission to amend European trading standards relating to the shape, size and aesthetic qualities of fresh fruit and vegetables, which encourage the intensive use of pesticides. With regard to development cooperation with third countries, the Parliament stressed that the Commission should focus on capacity building and on minimisation of pesticides use by promoting the adoption of organic agriculture, ICM or IPM in developing countries.

In tandem with the consultation of the Community institutions, the Commission organised a public consultation asking for reactions about the Thematic Strategy from all interested parties.<sup>378</sup> More than half of the reactions came from the pesticide industry or affiliated persons and organisations. The industry's main point of criticism concerned the imposition of quantitative reduction targets as it argued that such generic targets would not lead to risk reduction because they do not target the use of the most hazardous pesticides and, hence, would not stimulate innovation. A second and related point of concern of the industry related to an expected worsening of resistance problems if the choice of available products would be restricted. NGOs were represented by several nature and consumer organisations, and PAN Europe. The latter, together with the European Environment Bureau (EEB), used the occasion to present a draft directive on Pesticides Use Reduction in Europe, the so-called PURE directive.<sup>379</sup> Significantly, the reactions from agricultural producers were minimal, with only minor comments from German, Italian, Spanish and Swedish producer organisations. There were no reactions at all from agricultural producers from developing countries or development organisations. Most notably absent were reactions from the food and retailing industry.

During the second step of the preparation process, and as required under the Better Regulation initiative<sup>380</sup>, the Commission asked an independent consultancy to carry out an assessment of the economic, social and environmental impacts of a number of concrete measures for the future strategy.<sup>381</sup> The resulting assessment concluded that with the proposed measures a reduction in pesticide use between 11 to 16% could be achieved in the mid- to long-term for the EU-25.<sup>382</sup> It estimated that the largest reduction potential could be realised by (in decreasing order): the implementation of IPM as a basic requirement, a mandatory check of spraying equipment, and a mandatory training for pes-

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<sup>378</sup> All reactions are available at:  
[http://europa.eu.int/comm/environment/ppps/1st\\_step\\_consul.htm](http://europa.eu.int/comm/environment/ppps/1st_step_consul.htm).

<sup>379</sup> Suggested text for a directive on pesticides use reduction in Europe, presented by PAN Europe and the EEB, 29/05/02. This PURE directive *inter alia* included: mandatory national pesticide use reduction studies and programmes, mandatory application of IPM/ICM standards, and the establishment of research programmes concerning pesticide impacts on human health and the environment.

<sup>380</sup> European governance: better lawmaking, COM(2002) 275 final, 05.06.2002.

<sup>381</sup> The following measures have been assessed: aerial spraying; reduced or PPP-free zones; systematic data collection on use; training and certification of users; technical check of spraying equipment; common framework for IPM; enhanced protection of water, and quantitative use reduction.

<sup>382</sup> BiPRO (2004). Assessing economic impacts of the specific measures to be part of the Thematic Strategy on the Sustainable Use of Pesticides. ENV.C.4/ETU/2003/00094R.

ticide users. Moreover, a reduction in pesticide use would lead to an even more pronounced reduction of environmental and health risks and would bring financial benefits to European agricultural producers, the certification industry and training institutes. However, the consultants expected that the pesticide industry would suffer severe losses in turnover. The consultancy was not in favour of quantitative reduction targets, since this can lead to the substitution with lower dosage, but higher risk pesticides.

In order to collect comments on the consultant's study, the Commission organised a second round of public consultation. The overall pattern of reactions resembled that of the first round, with the pesticide industry accounting for more than half of the contributions.<sup>383</sup> Agricultural producers were more broadly represented than in the first round, as the National Farmers Union from the UK and the European agricultural producers' organisation COPA/COGECA joined the discussions.

Subsequently, the Commission decided to organise an extra round of public consultation, focusing on the possible introduction of quantitative national targets to reduce overall risk posed by pesticides, producer responsibility for collecting obsolete pesticide stocks and used packaging, and an EU pesticide tax.

Based on the outcomes of the consultation exercise, the European Commission published the long awaited EU Thematic Strategy on sustainable pesticide use in 2006, two years later than planned.<sup>384</sup> The proposed Thematic Strategy contains various measures that can be integrated into existing legal instruments and policies. In addition, the Commission also proposed a Directive establishing a framework for Community action to implement those parts of the Thematic Strategy requiring new legislation.<sup>385</sup> It furthermore announced two separate proposals to be adopted at the latest by 2008, concerning a regulation concerning statistics on the marketing and use of plant protection products and a directive on the certification of pesticide application equipment.

A feature of the Thematic Strategy's design is its fragmented approach of the issues at stake. Although it claims to allow the development of a horizontal and cross-cutting approach, well beyond the relatively limited scope of specific legal instruments, its practical elaboration provides evidence of the opposite.<sup>386</sup> Furthermore, the Thematic Strategy does not contain any concrete targets and timetables with respect to the use of pesticides, despite the fact that Article 4(2) of the 6<sup>th</sup> EAP Decision called for their inclusion.<sup>387</sup>

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<sup>383</sup> All reactions are available at:  
[http://europa.eu.int/comm/environment/ppps/2nd\\_step\\_react.htm](http://europa.eu.int/comm/environment/ppps/2nd_step_react.htm).

<sup>384</sup> Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions. A Thematic Strategy on the Sustainable Use of Pesticides, COM(2006) 372, 12.07.2006.

<sup>385</sup> Proposal for a Directive of the European Parliament and of the Council establishing a framework for Community action to achieve a sustainable use of pesticides, COM(2006) 373, 12.07.2006.

<sup>386</sup> COM(2006) 372, pp. 6-7.

<sup>387</sup> According to European Commission, there are a number of legal questions about enforcement and liability hampering the inclusion of quantitative use reduction targets, COM(2006) 372, p. 11.

The proposal for the framework Directive on the sustainable use of pesticides had Article 175(1) EC Treaty about environmental protection as legal basis. Its stated objective is to protect human health and the environment from the possible risks associated with the use of pesticides.<sup>388</sup> In line with the Thematic Strategy, the Directive proposes several new measures, including the establishment of national action plans to “reduce hazards, risks, and dependence on chemical pesticides”, the provision of training facilities for professional users, the inspection of application equipment, a prohibition of aerial spraying, the protection of vulnerable areas, and the promotion of IPM.

Regarding the latter, Article 13 of the proposed Directive stipulates that Community-wide standards of IPM will be developed in a comitology procedure and become mandatory as of 2014. Crop-specific standards for IPM will also be developed at Community level, but their implementation will remain voluntary. In parallel, a system of information exchange will be set up to collect details provided by the Member States about IPM schemes which can be used in a later stage as a basis for guidance documents for the main crops.

In response to the Thematic Strategy and the proposed framework Directive, members of the European Parliament drafted two resolutions giving evidence of the widely diverging points of view between agricultural and environmental interests. On the one hand, the resolution of the Committee on the Environment, Public Health and Food Safety called for a stricter approach consisting of quantitative targets for pesticide use reduction and clear definitions and minimum criteria for IPM and urging the member states to promote low pesticide-input farming and organic farming.<sup>389</sup>

On the other hand, the resolution of the Committee on Agriculture and Rural Development suggested instead a softer two-level approach consisting of uniform binding criteria for good professional practice in pest management and voluntary guidelines for IPM.<sup>390</sup> In order to create a ‘level playing field’ for farmers, these uniform criteria and guidelines were subsequently spelt out in two proposed annexes that put the emphasis on the correct and responsible use of pesticides. In short, these proposed amendments gave a green light for business-as-usual and could at best only lead to a relatively small improvement in risk reduction.

#### 4.4 Assessment

This chapter has focused on the instruments of EU law that aim to regulate pesticides in the different stages of their life-cycle, including production, marketing, use and residues.

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<sup>388</sup> Proposal for a framework Directive, Article 1.

<sup>389</sup> Draft report on the Thematic Strategy on the Sustainable Use of Pesticides (Provisional) 2007/2006(INI), 14.3.2007), European Parliament, Committee on the Environment, Public Health and Food Safety, Rapporteur Irena Belohorská, PR\657643EN.doc, PE 386.500v01-00.

<sup>390</sup> Draft report on the proposal for a directive of the European Parliament and of the Council establishing a framework for C6-0246/2006 – 2006/0132(COD)), European Parliament, Committee on the Environment, Public Health and Food Safety, Rapporteur: Christa Klass, Draftsman: Michl Ebner, Committee on Agriculture and Rural Development. Provisional 2006/0132(COD), 15.3.2007. PR\657645EN.doc, PE 386.502v01-00.

The current section assesses the EU approach in terms of effectiveness, inclusiveness and fairness.

### Effectiveness

The EU has developed a complex system of rules and regulations to deal with pesticide risks in the past decades. However, despite these legislative measures, the progress in pesticide risk reduction has been slow. First, several of the issues that came on the political agenda in the 1970s are still not solved 30 years later. In addition, new issues have emerged, such as pesticide resistance, soil deterioration, and the risks of residues for vulnerable groups

Second, the monitoring data concerning pesticide residues can be considered as indicators of compliance with good agricultural practice, as exceedances may point at the incorrect use of pesticides in terms of non-conformity with prescribed application quantities and rates, and pre-harvest intervals. The data over the period from 1996-2004 suggest that pesticide use in fruit and vegetables production is increasing and more specifically that agricultural producers are using greater quantities or stronger pesticides, and increasingly do not apply them correctly as required by good agricultural practice. Moreover, the data concerning multiple residues suggest that producers are using a growing number of pesticides on each crop.

Third, the delay in the assessment of existing substances at EU level and the establishment of MRLs has been counterproductive to the creation of a consistent and uniform EU law and policy on pesticides. It has also resulted in a situation in which the Member States have been pursuing, to a greater or lesser extent, their own laws and policies on pesticides, with some countries being pro-active in reducing pesticide risks and others lagging behind. In practice, it means that the same substances may be allowed in some Member States but be banned in others. Consequently, the harmonisation of the market for pesticide products has been hampered, as well as the creation of an equal protection level for human health and environment.

Fourth, the EU provisions concerning the application of the principles of good plant protection practice and integrated control have not had any legal implications, as they did not articulate any concrete criteria. Consequently, some Member States have established regulations defining forms of integrated control, such as integrated pest or crop management, but others have not. As a result of these varying policies and measures, pesticide use differs between Member States and significant but uneven changes have occurred among them.<sup>391</sup> More precisely, pesticide use has declined in some Member States, but shown a sharp increase in others. Furthermore, the enforcement of the legislation is weak in several Member States, which is signalled by the increased use of illegal pesticides.

Fifth, the newly planned legislation cannot be expected to speed up the developments in the short term as most of the proposed measures will come into effect several years from now. For example, the deadline for the application of general principles of IPM is set for 2014. Other measures such as the substitution principle and improved control measures

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<sup>391</sup> COM(2006) 373, p. 3.



need to be realised through legislation that still has to be established. Measures for the short term aim to minimise the hazards and risks to health and environment through soft measures, such as voluntary training of professional users and the use of appropriate application equipment.

### Inclusiveness

The EU pesticide legislation can be characterised by an increased stakeholder involvement in the past decades. When the first directives on pesticides were elaborated in the late 1970s, the Commission asked for the assistance of national governmental experts in the fields of agriculture, health and environment, and consulted organisations representing the pesticide industry, traders and consumers on draft versions of the directives. Absent from these consultations were agricultural producers and environmental groups. Nowadays, and under the influence of EU initiatives aimed at better governance and law-making, stakeholder involvement has become an ambitious endeavour. This has culminated in the approach set out for the thematic strategies in the 6<sup>th</sup> EAP, as it requires that such strategies are developed and implemented in close consultation with the relevant parties, such as NGOs, industry, other social partners and public authorities.<sup>392</sup> Moreover, such strategies aim to incorporate new ways of working with the market, involving citizens, enterprises and other stakeholders to induce changes in production and consumption patterns.

Clearly, the Commission has invested in increased stakeholder involvement and participation in decision-making. However, how far does this commitment go and will this exercise deliver a meaningful contribution to the end result? First, the analysis makes clear that there are stakeholders with a voice and those without. During the consultation rounds, the majority of the reactions came from the pesticide industry. Agricultural producers and consumers, as strongly affected parties, were far less represented in the discussions. Second, the outcomes of several stakeholder consultations and participatory processes suggest that the interests of the pesticide industry and agribusiness have a more profound influence on decision-making than those of civil society. Third, the EU seems not to be actively seeking to make the best of possible synergies with non-state actor initiatives focusing on pesticide risk reduction.

### Fairness

The instruments of EU law have had a considerable impact on the competitive position of agricultural producers from EU Member States as well as non-EU countries. For agricultural producers within the EU, the national differences in the law and policy concerning the authorisation of pesticide products and MRLs have thus far not resulted in a harmonised market for pesticide products. However, this situation is expected to change under the influence of the new Regulation on pesticide residues and the proposed Authorisation Regulation for pesticide substances and products, which will force a practically total harmonisation of authorisation decisions and residue norms.

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<sup>392</sup> Article 3(3), Decision No 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 laying down the Sixth Community Environment Action Programme, OJ L242 10.09.2002.

For agricultural producers from outside the EU, the regulatory situation with all kinds of different requirements has not been transparent and has created market barriers for specific groups of producers. Despite the general obligation of trade liberalisation for agricultural products, the EU still has in place an elaborate framework of protectionist measures for fresh and processed agricultural products, consisting of various quantitative and qualitative restrictions for non-EU suppliers. Notably, the marketing standards for fruit and vegetables and the phytosanitary requirements of the EU may function as additional barriers to trade.<sup>393</sup>

With the proposal for the new Residues Regulation, it was initially envisaged to solve third-country trade problems. However, this objective has been watered down during the negotiations. As a consequence of the definitive text of Regulation No 396/2005, the system will become simpler and more transparent, because all MRLs will be set at the EU level. At the same time, several norms will become stricter as the default value for pesticide substances withdrawn from the EU market has been established at the lowest level of determination (LOD). Although this measure may break the so-called circle of poison, it seems unreasonable and unfair as long as the same substances and products are still produced by pesticide manufacturers in the EU and exported to non-EU markets.

The scale of the impacts of Regulation No 396/2005 on market access should be particularly seen in the light of the EU review programme of existing substances. Consequently, hundreds of these substances have been, or are in the process of being, withdrawn from the EU market. This means that for all these substances the EU MRLs have been, or will be, set at the default value of 0,01 mg/kg. As a consequence, non-EU suppliers are confronted with very strict residue requirements concerning these withdrawn substances, unless they request an import tolerance.<sup>394</sup>

Moreover, with regard to the substances that remain on the market, it is plausible that in the future several MRLs will be set at a stricter level because consumer protection has become an explicit objective of the regulation. In fact, the new Regulation with its focus on a high level of consumer protection requires a revision of all existing MRLs to adapt them to the higher standards, which eventually could lead to the creation of extra non-tariff trade barriers for farmers located outside the EU. The potential consequences of the Regulation thus make clear that the health concerns of consumers in the North can create trade barriers for agricultural producers in the South. It is an open question whether the new arrangements are acceptable under the SPS Agreement, as the EU monitoring re-

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<sup>393</sup> Council Regulation 2200/96 of 28 October 1996 on the common organisation of the market in fruit and vegetables, OJ L297, 23.11.1996 and Council Regulation 2201/96 on the common organisation of the market in processed fruit and vegetables, OJ L297, 23.11.1996.

<sup>394</sup> According to Article 3 sub (g) of Regulation (EC) No 396/2005, an import tolerance is defined as an MRL set for imported products to meet the needs of international trade where: the use of the active substance in a plant protection product on a given product is not authorised in the Community for reasons other than public health reasons for the specific product and specific use, or a different level is appropriate because the existing Community MRL was set for reasons other than public health reasons for the specific product and specific use.

sults of 2005 indicate that many of the MRL exceedances notified for imported food relate to commodity/pesticide combinations, where the MRL was set at the LOD.<sup>395</sup>

In order to increase transparency, the Commission has suggested in its 2001 report on the state of implementation of Regulation 2200/96 on the common market organization for fruit and vegetables to regroup all rules and regulations of the EU, including marketing standards and food safety standards, under the same legal framework.<sup>396</sup> According to the Commission, this would not only increase clarity and transparency, but might also lead to a better consistency and co-ordination between different rule systems and control procedures. In this respect, Article 13 of the General Food Law concerning international standards is of additional interest, as it obliges the Community and the Member States to “contribute to the development of international technical standards for food and feed and sanitary and phytosanitary standards” and, most importantly, “give particular attention to the special development, financial and trade needs of developing countries, with a view to ensuring that international standards do not create unnecessary obstacles to exports from developing countries”. Concerning the latter, the conclusion is that the EU performs inadequately.<sup>397</sup>

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<sup>395</sup> The EU monitoring data on 2005 show indeed that the EU MRLs are exceeded more often in samples of produce imported from non-EU countries than in EU produce (6.4% against 2.4%). Contesting the EU Regulation before the SPS Committee, developing countries, for example, could argue that, where available, adherence to Codex MRLs for substances that are withdrawn from the EU market satisfies the objectives of consumer protection sufficiently.

<sup>396</sup> COM(2001) 36 final, 24.01.2001.

<sup>397</sup> Council Regulation (EC) 178/2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety, OJ L031, 01.02.2002.



## 5. The non-state actor approach to pesticide risk reduction

### 5.1 Introduction

In order to enhance the quality and safety of food products, non-state actors have developed a plethora of regulatory initiatives that aim to remedy the negative impacts of conventional agricultural and food systems.<sup>398</sup> Until the late 1990s, the impetus for these approaches was mainly inspired by a concern about environmental and social issues. Initially, agricultural producers' organisations, non-conventional food companies and scientists played a dominant role in them, but under the influence of the emerging concepts of sustainable development and corporate social responsibility, the conventional food and retailing industry became increasingly involved, often framing their initiatives as quality assurance schemes.

The emphasis as regards content started to shift from environmental and social issues to consumer health issues around the year 2000. Initially, this shift was prompted by the urge felt by the food and retailing industry to deal more rigorously with the traditional food safety risks of chemical and bacterial contamination in the face of increased international trade. After the 9/11 attacks in New York and Washington, the consumer health focus was further strengthened out of fear of biological terrorism. More recently, several non-state actors have begun to develop a new strand of regulatory initiatives that promote healthy eating habits in the struggle against obesity and food related diseases, *inter alia* to increase the well-being of people and curb the exploding costs of health care.

This chapter aims to analyse regulatory approaches by non-state actors that are relevant from the perspective of pesticide risk reduction. Section 5.2 describes their evolution, distinguishing the stages of conceptualisation, institutionalisation and harmonisation. Section 5.3 compares major non-state actor approaches at the transnational level. Section 5.4 focuses on two specific transnational programmes, including the IFOAM organic guarantee system and the GlobalGAP programme for fruit and vegetables. Section 5.5 assesses these transnational approaches in terms of effectiveness, inclusiveness, and fairness.

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<sup>398</sup> See e.g.: E. Holleran, M.E. Bredahl & L. Zaibet (1999). Private incentives for adopting food safety and quality assurance. In: *Food Policy*, vol. 24, no. pp. 669-683; N.M. van der Grijp & F. den Hond (1999). *Green Supply Chain Initiatives in the European Food and Retailing Industry*. R-99/07. Amsterdam: Instituut voor Milieuvraagstukken, Vrije Universiteit, 71 p.; T. Marsden, A. Flynn & M. Harrison (2000). *Consuming interests: the social provision of foods*. London: UCL Press, 220 p.; Chr. Ansell & D. Vogel (eds.) (2006). *What's the beef? The contested governance of European food safety*. Cambridge/London: The MIT Press, 389 p., and L. Fulponi (2006). Private voluntary standards in the food system: the perspective of major food retailers in OECD countries. In: *Food Policy*, vol. 31, issue 1, pp. 1-13.

## 5.2 The evolution of non-state actor regulation

### The stage of conceptualisation

The first non-state actor initiatives in response to the rapid takeover by agricultural production methods based on chemical inputs were taken in the 1920s and 1930s.<sup>399</sup> In 1924, the anthroposophist Rudolf Steiner gave a series of eight lectures in Silesia in Germany, marking the beginning of the biodynamic agriculture movement.<sup>400</sup> In these “Spiritual foundations for the renewal of agriculture”, Steiner explained the principles of an alternative approach to agriculture that put the emphasis on the condition of the soil, and that focused on the use of certain preparations for fertilisation purposes, and the positive effects of cosmic forces on crop production. Steiner’s followers subsequently elaborated this agricultural production method and named it biodynamic agriculture.

The concept of organic agriculture has been developed more or less in tandem with that of biodynamic agriculture. It is also a reaction to chemical-based farming practices and focuses on a healthy soil as the basis of sound agricultural production systems. Organic agriculture relies on ecosystem management and favours agronomic, biological, and mechanical methods, as opposed to using external agricultural inputs, such as synthetic fertilisers and pesticides. The British botanist Sir Albert Howard is often referred to as the father of organic agriculture, although the term organic farming is usually credited to Lord Northbourn, who published the book ‘Look to the Land’ in 1940.<sup>401</sup> Initially, organic farming was especially practised in the UK and the US, but it soon received acclaim on the European mainland and in Japan.

Several decades later, the biological control of pests emerged as an alternative to chemical-based control. Biologists, and more precisely entomologists, were its founding fathers.<sup>402</sup> Biological control means the use of living organisms or their products to prevent or reduce the losses or harm caused by pest organisms.<sup>403</sup> Although their focus was on biological control, the scientists involved became soon interested in the development and application of broader concepts that aimed to offer solutions for dealing with pests and diseases in agriculture. These concepts can be summarised under the heading of integrated control, *inter alia* including IPM, ICM, and integrated production. These are all multifaceted strategies that consider a broader range of crop protection measures than

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<sup>399</sup> See for a selected and annotated bibliography: J. Potter Gates (1988). Tracing the evolution of organic/sustainable agriculture, US Department of Agriculture. Available at <http://www.nal.usda.gov/afsic>.

<sup>400</sup> R. Steiner (1993). *Spiritual foundations for the renewal of agriculture. A course of lectures*. Kimberton: Bio-Dynamic Farming and Gardening Association, 310 p.

<sup>401</sup> In the 1940s, several standard works appeared in the UK and the US that explained the potential contributions of organic agriculture to the production of food and feed, e.g. W.E.C.J. Northbourne (1940). *Look to the Land*. London: Dent; E.B. Balfour (1943). *The Living Soil*. London: Faber and Faber; J.I. Rodale (1945). *Pay Dirt: Farming and Gardening with Composts*. New York: Devin-Adair Company.

<sup>402</sup> E.F. Boller (2005). From chemical pest control to Integrated Production. A historical review. Written for the occasion of the 50<sup>th</sup> anniversary of IOBC. Available at <http://www.iobc-global.org>.

<sup>403</sup> Definition according to Art. IIa of the IOBC Statutes.

synthetic pesticides in a more or less integrated context. From these three approaches of integrated control, integrated production is considered to be the production method with the highest level of integration, taking all aspects of farm management into account.<sup>404</sup> In comparison, ICM and IPM aspire to relatively lower levels of integration.

The 1970s also saw the development of the concept of fair trade by a Dutch social NGO rooted in the Catholic church.<sup>405</sup> This happened in response to the growing recognition that benefits from international trade were not necessarily shared by people in all countries, especially those in the so-called Third World. Fair trade products distinguished themselves from regular products in the sense that producers received a guaranteed price reflecting an adequate return on their input of skill, labour and resources.

In the mid-1980s, a group of Italian people interested in gastronomic culture launched the Slow Food concept, as a reaction to fast food culture and the standardisation of food.<sup>406</sup> The Slow Food movement aimed to formulate a response to health, social, ethical and environmental concerns about conventional food production, to 'organoleptic boredom', and to the gradual loss of peoples' cultural identity.<sup>407</sup> The Slow Food movement became an officially international endeavour in 1989, when representatives from 15 countries approved the Slow Food Manifesto at a conference in Paris.

Essentially, the common themes of the Slow Food movement are (a) the education of consumers about taste and (b) the preservation of the global agricultural and food heritage. According to the founder, Carlo Petrini, the world has lost more than 75 percent of agricultural biodiversity since the beginning of the twentieth century, and human consumption is today restricted to 150 plant varieties whereas fewer than 30 plants nourish 95 percent of the world population.<sup>408</sup> The Slow Food movement seeks stronger linkages between producers, consumers and local communities in an effort to challenge the power of the fast food industry. It sees globalisation as an opportunity rather than a threat to promote its own ideas about food of excellent quality.

During the 1990s, under the influence of the Brundlandt report and the Earth Summit in Rio de Janeiro, sustainable development in all its different dimensions became a com-

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<sup>404</sup> The year 1976 is considered as the starting point for the development of integrated production, as a group of five entomologists met in the village of Ovronnaz in the Swiss Alps and produced the so-called Declaration of Ovronnaz. The method of integrated production was further elaborated in: H. Steiner (ed.) (1977). *Vers la production agricole intégrée*. IOBCwprs Bull. 1977/4, 153 p.

<sup>405</sup> N. Roozen & F. van der Hoff (2001). *Fair trade: het verhaal achter Max Havelaar koffie, Oké-bananen en Kuyichi-jeans*. Amsterdam: Van Gennep, 312 p.

<sup>406</sup> C. Petrini (2001). *Slow food: the case for taste*. Translated from Italian by W. McCuaig. New York: Columbia University Press, 155 p. The immediate reason for the birth of Slow Food was a protest that was organised against the opening of a McDonald's restaurant in Rome in 1986.

<sup>407</sup> See for an extensive elaboration on these two themes: C. Nosi & L. Zanni (2004). *Moving from "typical products" to "food-related services": the Slow Food case as a new business paradigm*. In: *British Food Journal*, vol. 106, no. 10/11, pp. 779-792.

<sup>408</sup> C. Petrini (2001). *Slow food: the case for taste*. Translated from Italian by W. McCuaig. New York: Columbia University Press, p. 87 and p. 102.

mon subject on the agenda of state and non-state actors.<sup>409</sup> For many companies, the broad endorsement of the new concept meant that they needed to react to specific requirements from public policy makers, civil society NGOs, consumers and their partners in supply chains. At the same time, several companies started to recognise the advantages of actively shaping the transition towards sustainable production and consumption, using terms such as corporate social responsibility and corporate citizenship.<sup>410</sup>

Most of the concepts and approaches that were developed to promote sustainable development in the business context (e.g. eco-efficiency and industrial ecology) had a broader or different focus than agriculture or food production but can be supposed to have had a more or less indirect impact on creating an overall climate for business action that also influenced the agrifood industry. For example, national organisations of agricultural producers started to interpret sustainable development in the agricultural context and launched the concept of integrated farming, or integrated farm management, which they regarded as an approach to sustainable farming that would be realistic and achievable for the majority of agricultural producers.<sup>411</sup>

### The stage of institutionalisation

Following the conceptualisation of alternative and innovative agricultural approaches, non-state actors began to embed the new concepts in regulatory settings, elaborating them in further detail. In the 1920s and 1930s, several national biodynamic associations were set up that formulated the first standards for biodynamic agriculture and started to use the Demeter logo which still symbolises the movement today.<sup>412</sup> In the late 1960s, the British agricultural producers' organisation Soil Association was the first entity that developed standards for organic production.<sup>413</sup> Soon organic producers' associations in other countries followed.

Switzerland was the pioneer in standard setting for approaches based on integrated control, with a group of fruit producers establishing standards for apples in the late 1970s.<sup>414</sup> Several producers' associations in other countries followed the Swiss example, and by the end of the 1980s production under integrated control had become more broadly institutionalised. Several ambitious programmes were set up and accompanying certification schemes were developed. Most of them were private single-party schemes, based on initiatives of retailers or producer cooperatives, but there were also the first examples of third-party verified schemes in countries, such as the Netherlands (*AgroMilieukeur*) and

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<sup>409</sup> WCED (1987). *Our common future*. Oxford: Oxford University Press, and Report of the United National Conference on Environment and Development, A/CONF.151/26 (Vol. I).

<sup>410</sup> See for an exploration of the issues concerning the implementation of sustainable development in a business context e.g.: P. Vellinga, F. Berkhout & J. Gupta (1998) (eds.). *Managing a material world: perspectives in industrial ecology*. Dordrecht: Kluwer Academic Publishers, 364 p.

<sup>411</sup> [Http://www.sustainable-farming.org](http://www.sustainable-farming.org).

<sup>412</sup> [Http://www.demeter.net](http://www.demeter.net).

<sup>413</sup> [Http://www.soilassociation.org](http://www.soilassociation.org).

<sup>414</sup> EUREP (1998). *Integrated production of fruit and vegetables*. Cologne: EUREPGAP c/o FoodPlus.



the UK (*Assured Produce*).<sup>415</sup> In the same period, and from a scientific perspective, the International Organization for Biological Control of Noxious Animals and Plants (IOBC) became involved in the elaboration of integrated production by formulating a framework of principles and general guidelines.<sup>416</sup> In addition to this framework and its revisions, the IOBC published crop specific guidelines for all major crops in Europe.

As distinct from integrated control, the concept of integrated farming gained support among farmers, as organisations of agricultural producers in several European countries (e.g. the labelling scheme set up by LEAF (Linking Environment And Farming) in the UK and the *Farre Charter* in France).<sup>417</sup>

The Dutch fair trade movement started to institutionalise its activities in the late 1980s, by creating a labelling scheme in order to be able to enter the mainstream market and distinguish its products. This so-called ‘Max Havelaar’ scheme was launched in 1989, and its example has since then been followed by many other national fair trade organisations in developed countries.<sup>418</sup>

The Slow Food movement launched the so-called Ark of Taste on the occasion of the first Salone del Gusto in Turin in 1996.<sup>419</sup> The Ark of Taste is based on the ‘Noah principle’, and is meant to save the ‘universe of flavors’ by documenting traditional products. It is based on a regional approach and aims to prevent the imminent loss of fruits and vegetables, animal species, and food products by trying to resurrect older modes of production and revitalize local economies.<sup>420</sup>

The first criteria for Slow Food’s Ark of Taste were published in the Ark’s official Manifesto in 1997.<sup>421</sup> Interestingly, the Manifesto remarks that “protecting typical and/or traditional quality food and agricultural products must become a transnational operation, given the fact that markets and strategies are growing increasingly globalized and standardized.” Two years later, a scientific committee was formed with the task of further

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<sup>415</sup> The AgroMilieukeur certification programme is being operated by Stichting Milieukeur. More information is available at <http://www.milieukeur.nl>. The Assured Produce certification programme is being operated by the joint British retailers. More information is available at <http://www.assuredproduce.co.uk>.

<sup>416</sup> A. El Titi, E.F. Boller & J.P. Gendrier (1993). Integrated production: Principles and technical guidelines. IOBCwprs Bulletin, vol. 16, no. 1, 96 p.

<sup>417</sup> More information about these initiatives is available at <http://www.leafuk.org> and <http://www.farre.org>, respectively.

<sup>418</sup> In October 2007, there were twenty of such organisations in Europe, North America and Australia. See at <http://www.fairtrade.net>.

<sup>419</sup> The Salone del Gusto is the biannual international exhibition of food products organised by Slow Food.

<sup>420</sup> Petrini (2001), p. 16. Central to the movement is the concept of territory defined as ‘the combination of natural factors (soil, water, slope, height above sea level, vegetation, microclimate) and human ones (tradition and practice of cultivation) that gives a unique character to each small agricultural locality and the food grown, raised, made and cooked there (Petrini (2001), p. 8).

<sup>421</sup> Manifesto Ark of Taste by the Slow Food Foundation for Biodiversity. Available at <http://www.slowfood.com>.

elaborating criteria for products that are being proposed to bring on board of the Ark.<sup>422</sup> At the end of 2005, the Ark of Taste contained more than 750 products from all over the world. In order to strengthen the position of the products in the Ark of Taste, regional 'Presidia' have been set up to protect and encourage specific local products *inter alia* by the creation of market opportunities for them. The Presidia widely diverge in the ways they work. Several of them are using product and production standards and certification as instruments to further their objectives.

Food safety schemes started mushrooming in the late 1990s after several food scandals were feared to damage consumer confidence in the agrifood industry.<sup>423</sup> In reaction to these scandals, several stakeholders from the agrifood industry developed food safety schemes with regulatory features, fuelled by the realisation that the industry lacked control over the previous links in the supply chains of food products and that the commercial risks due to incidents would be difficult to insure. This counted relatively strongly for the large retailers with thousands of products on offer and their special responsibility for retailer own brands, constituting a considerable share of their turnover.<sup>424</sup> For them, the task of managing food safety within their own quality departments was simply too big.

The British Retail Consortium (BRC) has been at the forefront with the development of an integrated safety and quality system for the leading British retailers. This system was based on the HACCP approach developed for the US space programme.<sup>425</sup> This approach focused on preventing hazards that could cause food-borne illnesses by applying science-based controls, from raw material to finished products. The system became known as Hazard Analysis and Critical Control Point (HACCP), and consists of a step-wise approach to identify risks and take preventive measures.<sup>426</sup>

### The stage of harmonisation

As the number of non-state actor standards and guidelines increased, the call for harmonisation became stronger, primarily prompted by trade concerns about the functioning of the market. Harmonisation aims at a convergence of regulatory approaches through

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<sup>422</sup> International Ark Commission Guidelines. Available at <http://www.slowfood.com>.

<sup>423</sup> For example, the discovery of dioxin in animal feed produced in Belgium and the BSE crisis in the UK. See e.g.: T. Lang & M. Heasman (2004). *Food Wars: The global battle for Mouths, minds and markets*. London and Sterling: Earthscan, 365 p., and L. Reijnders (2004). Food safety, environmental improvement and economic efficiency in The Netherlands. In: *British Food Journal*, vol. 106, no. 5, pp. 388-405, and Chr. Ansell & D. Vogel (eds.) (2006).

<sup>424</sup> Presentation Fons Schmidt (Ahold and chairman GFSI) at ISO 22000 seminar, Ede, October 2005.

<sup>425</sup> FDA (2001). HACCP: A state-of-the-art approach to food safety. Available at <http://www.cfsan.fda.gov>.

<sup>426</sup> HACCP involves seven principles: 1) Analyze hazards, 2) Identify critical control points, 3) Establish preventive measures with critical limits for each control point, 4) Establish procedures to monitor the critical control points, 5) Establish corrective actions to be taken when monitoring shows that a critical limit has not been met, 6) Establish procedures to verify that the system is working properly, 7) Establish effective recordkeeping to document the HACCP system.

the creation of an extra layer of overarching rules in order to make content and procedures of participating schemes of standards more uniform.

The International Federation of Organic Agriculture Movements (IFOAM) was the first non-state actor that formulated international standards as a bottom line and common ground for national initiatives.<sup>427</sup> In 1980, it published the first version of the IFOAM basic standards for organic production and processing.<sup>428</sup> These standards have been revised many times since.

The other transnational initiatives for harmonisation were mainly established in the late 1990s, and are still being initiated today. In 1997, the national Demeter organisations for the promotion of biodynamic agriculture formed together Demeter International and developed a system of international standards.<sup>429</sup> Furthermore, Demeter International, as a member of IFOAM, is committed to incorporate the international standards for organic agriculture in its own system. This means that a biodynamic agricultural production operation has to fulfil all requirements of the IFOAM system, and moreover has to comply with specific Demeter criteria.

From the side of business, several initiatives have been launched by coalitions of leading companies in the agrifood sector, representing what Fulponi calls ‘an industry grassroots harmonisation effort’, and indicating that the industry was starting to take a global approach to managing the food system.<sup>430</sup> One of the larger initiatives by the industry was the foundation of the European Retailer Produce Working Group (EUREP) in 1996 by a group of 13 large European retailers aiming to make a first step towards European-wide harmonisation of minimum standards for good agricultural practice.<sup>431</sup> EUREP’s retailer membership has grown over the years, and its aspirations have become global instead of European. It aims to publish sector-oriented protocols of standards for good agricultural practice (GAP) that cover food safety, environmental protection and worker welfare. Initially, they were called EurepGAP protocols but in line with EUREP’s increasingly global ambitions the name of the organisation as well as the programme has been changed into GlobalGAP.<sup>432</sup>

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<sup>427</sup> IFOAM is the international umbrella organisation for organic agriculture that was founded by five national organic farmers’ organisations, and now has more than 700 member organisation in more than 100 countries. More information is available at <http://www.ifoam.org>.

<sup>428</sup> D. Crucefix (2001). IFOAM accreditation: organic industry self-regulation. In: *The Organic Standard*, issue 2, pp. 15-17.

<sup>429</sup> The Demeter International programme of standards currently consists of the following documents: production standards (June 2005); processing standards (June 2004); labelling standards (June 2004); standards for beekeeping and hive products (June 2004), and standards for the certification of Demeter-beer (June 2005). Available at <http://www.demeter.net>.

<sup>430</sup> L. Fulponi (2006). Private voluntary standards in the food system: the perspective of major food retailers in OECD countries. In: *Food Policy*, vol. 31, issue 1, p. 3.

<sup>431</sup> EUREP (1998). *Integrated production of fruit and vegetables*, Cologne: EUREPGAP c/o FoodPlus.

<sup>432</sup> Press release GlobalGAP, 7 September 2007: EUREPGAP now GLOBALGAP. Available at <http://www.globalgap.nl>. Currently, the protocols of standards cover aquaculture, coffee, combinable crops, cotton, fruit and vegetables, flowers and ornamentals, livestock, and tea.

Meanwhile, the multinational food processing industry developed its own strategy. Unilever, Groupe Danone, and Nestlé officially launched the Sustainable Agriculture Initiative Platform (SAI Platform) in May 2002, to deal with quality and safety problems in food supply chains and to diminish adverse effects on the environment.<sup>433</sup> Increasingly, several other food companies joined the SAI Platform, aiming to jointly develop sustainable agriculture principles and standards through the assessment of practices and experiences.<sup>434</sup> However, the Platform did not aim to set up a certification system. Instead of a top down approach, it claimed to put the priority on creating the right mindset for the implementation of sustainable agricultural practices and to cooperate with producers in order to find practical solutions.

In 2002, the umbrella organisation Fairtrade Labelling Organizations International (FLO) introduced common standards and a common product logo for the national fair trade organisations that were operating labelling schemes.<sup>435</sup> FLO has developed detailed standards on a crop-by-crop basis, distinguishing between small agricultural producers and workers at plantations. The crops covered are all relevant from a developing country perspective.<sup>436</sup> Besides social and trade conditions, the standards also contain environmental criteria focusing especially on pesticide use.

Similarly in the early 2000s, several European organisations of agricultural producers promoting integrated farming joined forces in the European Initiative for Sustainable

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<sup>433</sup> SAI Position paper: Principles, strategy & organisation (SAI Platform, 2002). Available at: <http://www.saiplatform.org>. In this joint statement the founding companies defined sustainable agriculture as ‘productive, competitive and efficient while at the same time protecting and improving the natural environment and conditions of the local community.’

<sup>434</sup> In October 2007, the membership of the SAI Platform consisted of: Campina, CIAA, CIO, the Coca Cola Company, Danisco, Dole, Ecom, Efico, Elders, Fonterra, Findus, Fonterra, Friesland Foods, Groupe Danone, Kemin, Kraft, Lamb Weston Meijer, McCain Europe, McDonalds’s, Nestlé, Neumann Kaffee Gruppe, Sara Lee, Tchibo, Unilever, VOLCAFE. Working groups have been established for cereals, coffee, dairy, fruits, and potatoes and vegetables.

<sup>435</sup> FLO was established in 1997 as an umbrella organisation for national fair trade organisations. More information is available at <http://www.fairtrade.net>.

<sup>436</sup> In October 2007, the following crops and products were being covered by FLO standards: bananas, cocoa, coffee, dried fruit, fresh fruit and vegetables (except bananas), fruit juices, herbs and spices, honey, nuts and oil seeds, quinoa, rice, cane sugar, tea, wine grapes, and seed cotton. See at <http://www.fairtrade.net>.

Development in Agriculture (EISA).<sup>437</sup> The EISA members claimed to be committed to integrated farming, which they defined as “a common sense whole farm management approach that combines the ecological care of a diverse and healthy environment with the economic demands of agriculture to ensure a continuing supply of wholesome, affordable food.”<sup>438</sup> In 2001, EISA published a Common Codex for Integrated Farming listing principles and suggestions for agricultural practice. This Codex has been further elaborated in subsequent years and this resulted in the publication of the EISA Integrated Farming framework in 2006.<sup>439</sup> According to EISA, this framework is not meant as an auditing scheme, but aims to provide guidelines to agricultural producers.<sup>440</sup>

The EISA framework compares the perspectives of good agricultural practice and integrated farming, with the latter supposed to be much more stringent than the former. Concerning the aspect of crop protection, however, the formulation of the integrated farming perspective is ambiguous since it is unclear whether priority is given to the use of pesticides or to other means of crop protection.<sup>441</sup> This means that the guidelines are not explicit how to diminish the environmental impacts of pesticide use.

With regard to food safety, the Hazard Analysis and Critical Control Point (HACCP) system was initially seen as the ideal basis for a global food safety standard, and was as

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<sup>437</sup> The European Initiative for Sustainable Development in Agriculture e.V. (EISA) was founded in 2001. EISA members today are: Arbeitsgemeinschaft Integrierter Pflanzenschutz Österreich, FARRE (Forum de L'Agriculture Raisonnée Respectueuse de L'Environnement, France), FILL (Fördergemeinschaft Integrierte Landbewirtschaftung, Luxemburg), FMTS (Fentartható Mezzgazdasági Termelés Szövetsége), FNL (Fördergemeinschaft Nachhaltige Landwirtschaft, Germany), LEAF (Linking Environment and Farming, UK) and Odling i Balans (Sweden). The work of EISA is supported by the associate members ECPA (European Crop Protection Association), EFMA (European Fertilizer Manufacturers Association), European Landowners Organisation (ELO), and IFAH-Europe (International Federation of Animal Health), all four of them being located in Brussels. More information is available at <http://www.sustainable-agriculture.org>.

<sup>438</sup> This definition has been presented in: EISA (2001). A common codex for integrated farming. Bonn: EISA.

<sup>439</sup> The framework was first launched at an EISA congress in 2003. The current version includes: EISA (2006). European integrated farming framework. A European definition and characterisation of integrated farming as guideline for sustainable development of agriculture. Bonn: EISA. Available at <http://www.sustainable-agriculture.org>.

<sup>440</sup> See preface of EISA (2006). European integrated farming framework. A European definition and characterisation of integrated farming as guideline for sustainable development of agriculture. Bonn: EISA.

<sup>441</sup> Concerning crop protection, the EISA integrated farming framework states that: Crop protection relies principally on cultural, biological and mechanical control mechanisms as a first resort, together with a considerate use of registered crop protection products. These are used with regard to environmental and economic considerations. The framework refers to precision farming as the method of preference in one of its guidelines. It mentions the following advantages of integrated farming above good agricultural practice: the formulation of individual crop protection management plans, staff training in disease and weed identification, and strategies to avoid build-up of resistance.

such recognised by the Codex Alimentarius Commission.<sup>442</sup> However, the food and retailing industry did not consider the HACCP system as a complete answer to their food safety concerns as the system provides a methodology for risk analysis but does not provide a solution for risk management.

Consequently, the retailing industry initiated the Global Food Safety Initiative (GFSI) in the context of the retailer-led business organization CIES – The Food Business Forum.<sup>443</sup> The GFSI originally intended to develop one common food safety standard but did not succeed to develop such a standard that could replace all existing standards. The main reason for this failure is the high value that stakeholders in food supply chains attach to the ownership of a standard, being not easily inclined to give up their own system.<sup>444</sup> In addition, it was not in the interest of the highly competitive certification industry to reduce the number of standards, as the industry's commercial success largely depends on the demand for auditing and certification services.

The GFSI then decided to develop a benchmark system to be able to assess existing schemes against 'a global set of voluntarily but universally accepted standards for food safety, quality and security.'<sup>445</sup> Its Guidance Document of 2001, being repeatedly revised since, is a mix of both public rules and private standards, with the HACCP principles being its core. Interestingly, agricultural producers are required to have an integrated crop management (ICM) or equivalent system in place for the purpose of 'the judicious use of agricultural chemicals during growing and post harvest treatment and to control residues.' The term 'integrated crop management', however, is not further elaborated, nor is reference made to a (minimum) definition elsewhere. Thus far, five standards have been officially recognised by the GFSI.<sup>446</sup>

As the GFSI is dominated by the world's largest retailers, other stakeholders in the agri-food industry felt less inclined to affiliate with the initiative.<sup>447</sup> The International Standardization Organization (ISO) picked up the signal that there was a market opportunity for an international food safety standard which would make other standards superfluous. ISO has chosen to develop a standard on the basis of already existing standards, such as HACCP, and does not contain any new elements. It is complementary to the ISO 9001 series on quality management and the ISO 14001 series on environmental management.

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<sup>442</sup> The Codex Alimentarius Commission adopted a Recommended International Code of Practice General Principles of Food Hygiene including Annex on Hazard Analysis and Critical Control Point (HACCP) System and Guidelines for its Application in 1997.

<sup>443</sup> The number of participants in the GFSI represents more than 65% of food retail revenue world-wide. The GFSI is strongly dominated by retailers in the EU and North America. See for a full list of participants at <http://www.ciesnet.com>.

<sup>444</sup> Presentation of Fons Schmidt (Ahold, chairman of the GFSI) at ISO 22000 seminar, Ede, October 2005.

<sup>445</sup> Press communication of CIES – The Food Business Forum, 31 May 2000.

<sup>446</sup> The GFSI recognised standards include the food safety standards of British Retail Consortium (BRC), International Food System (IFS), Safe Quality Food (SQF), Netherlands HACCP, and EIFIS.

<sup>447</sup> The paragraphs about ISO 22000 are based on the presentations and materials distributed during the ISO 22000 seminar, Ede, October 2005.

The ISO 22000 standard was published in 2005 after agreement was reached between all participating countries, followed by an auditing protocol containing technical specifications for the certification process. The future success of the ISO 22000 standard will depend on its acceptance and implementation by public authorities and business.<sup>448</sup> On the one hand, it is a must for the food processing industry to keep the initiative in its own hands by accepting a harmonised standard that governs its partners in supply chains. On the other hand, one of the major drawbacks of the ISO 22000 standard is that although it provides a common baseline for the agrifood industry, it does not offer a complete solution. For example, it does not contain elaborated models of good practices for specific agrifood sectors. Therefore, it seems plausible that state and non-state actors will develop additional sector-specific standards in addition to the ISO 22000 standard, and that the well-established retailer-led British BRC standard and the German IFS will continue to play a role in the market. This means that the final impact of ISO 22000 could be that, instead of reducing the number of standards, it will be the impetus for a new explosion of standardisation initiatives.

### **5.3 The transnational approaches by non-state actors compared**

Historically, IFOAM, the umbrella organisation of organic agricultural producers, was the first non-state actor that formulated international standards, which happened in 1980. Nineteen years later, in 1999, Demeter International launched its international standards for biodynamic agriculture. The Slow Food movement, uniting producer groups in order to protect agro-biodiversity, followed in 2000, when it developed international criteria for its Ark of Taste. EUREP, a working group of European retailers, followed suit with the promotion of harmonised standards for good agricultural practice through the publication of a production protocol for fruit and vegetables in 2001, first called EurepGAP and later renamed as GlobalGAP. The year 2002 was a culminating point and saw the launch of three different international harmonisation initiatives: the GFSI benchmark system by a global food business network of retailers; the SAI Platform guidelines by multinational food processing corporations, and the FLO international fairtrade standards by national fair trade organisations. The corporate interest organisation ISO published the ISO 22000 food safety standard in 2005, and the European agricultural producers' organisation EISA published its framework for integrated farming in 2006.

Focusing on the dominant stakeholders in these initiatives, it is evident that they have diverse backgrounds. Agricultural producers have prominent roles in the initiatives of IFOAM, Demeter, FLO, Slow Food and EISA and to a lesser extent in GlobalGAP and the SAI Platform. Retailers dominate in the GlobalGAP and GFSI initiatives, whereas the multinational food corporations have taken the lead in the SAI Platform. The crop protection industry is being represented in the initiatives of GlobalGAP and EISA. Scientists contribute to almost all initiatives as they assist in developing new agricultural techniques. Environmental, social, and development NGOs have a supporting role in several initiatives and are, for example, relatively influential in the initiatives of IFOAM, FLO, and Slow Food. However, despite their broad stakeholder involvement, the major-

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<sup>448</sup> Based on discussions during the ISO 22000 seminar, Ede, October 2005.

ity of these initiatives cannot be qualified as multi-stakeholder programmes, because their decision-making tends to be dominated by a specific type of stakeholder.

Comparing the content of the larger international programmes for safe and sustainable agriculture, it is evident that most of them claim to elaborate the concept of sustainable development but use diverging interpretations. Furthermore, the emphasis in many of these programmes has evolved over time. The basic standards of IFOAM, for example, were initially focused on the protection of the environment and agricultural ecosystems, but since the last revision of the protocol the paragraph on social justice has got more substance. A similar scaling up of ambitions has taken place concerning the FLO fair trade standards, as they now encompass not only trade conditions, but also include environmental and labour criteria. The GlobalGAP initiative has strengthened its food safety and hygiene focus. Both SAI Platform and GFSI are in an early stage of development and have largely the same focus as when they started: the former claims to pursue an integrated approach based on a balanced interpretation of sustainable development, whereas the latter has predominantly a food safety focus.

Concerning the agricultural production method of preference, IFOAM, Demeter International, Slow Food and FLO all adhere to a greater or lesser extent to organic agriculture. In contrast, GlobalGAP, SAI Platform, EISA, and GFSI are advocates of integrated control, although they are not always explicit about the practical interpretation of the concept and more specifically what it means for pesticide use.

With regard to procedural aspects, the programmes have different characteristics. First, they differ in their instrumental approaches. IFOAM and FLO are both operating certification programmes. The GlobalGAP programme is a certification scheme as well as a benchmark system for existing standards. The overarching GFSI is only meant for benchmarking purposes. The system of the SAI Platform is based on a partnership model and first and foremost meant to induce a learning process for both food industry as well as agricultural producers. Slow Food operates a system that is based on granting a certain status to specific agricultural products.

Second, the programmes use different hierarchies of standards with varying consequences. IFOAM distinguishes between binding requirements and recommendations. GlobalGAP makes a distinction between major musts, minor musts and recommendations. Recommendations in both systems have the potential to turn into binding requirements in the future, or vice versa, on the occasion of the periodical revisions of standards. FLO distinguishes minimum requirements (or in fact binding requirements or musts) and process requirements, the latter requiring continuous improvement. Instead of standards, the SAI Platform uses guidelines and indicators for monitoring which is a more flexible and less imposing option.

Third, the programmes differ in their specificity. IFOAM and GlobalGAP have both defined bottom line standards that should provide a framework to governmental and non-governmental certification bodies to establish their own standards that are adapted to specific regional and national circumstances. The SAI guidelines and FLO fair trade standards are focused on specific crops, and need no further elaboration. Slow Food criteria are relatively the most specific, focusing on particular varieties of crops.



Fourth, the programmes differ in their communication objectives. The IFOAM and FLO certification systems provide a means of communication with business partners as well as consumers, whereas GlobalGAP and GFSI are essentially focused on business-to-business communication. The SAI Platform and the Slow Food movement do not grant an official certificate or logo to a product.

## **5.4 The transnational certification programmes of IFOAM and GlobalGAP**

As the previous sections described the broader picture of non-state actor regulation related to pesticides, this section focuses on two transnational certification programmes, including the IFOAM organic guarantee system, and the GlobalGAP programme for fruit and vegetables. Both are relatively well-developed and sophisticated systems, and have considerable market success. However, the two programmes have a different issue-focus, and consequently a diverging way of dealing with pesticide issues. More precisely, the IFOAM system is based on the principles of organic agriculture, whereas the GlobalGAP programme aims to interpret good agricultural practice.

### **5.4.1 IFOAM organic guarantee system**

#### **Structure of the programme**

The organic guarantee system of the International Federation of Organic Agriculture Movements (IFOAM) is a farmer-led international certification programme for organic production and processing that was introduced in 1980.<sup>449</sup> Since then, the system has been repeatedly adapted to societal and market developments. The core of the system is formed by the so-called IFOAM norms, including the IFOAM basic standards for organic production and processing (IBS) and the IFOAM accreditation criteria for certification of organic production and processing (IAC).<sup>450</sup>

The IFOAM basic standards reflect the current state of organic production and processing. Consequently, they are seen as work in progress that contributes to the development of organic farming. The standards are revised every two or three years. They emphasise the protection of the environment and the preservation of agricultural ecosystems, and more recently also the social aspects of production.

The IFOAM basic standards provide a framework for certification bodies and standard setting organizations worldwide to develop their own certification standards and cannot be used for certification on their own. They should therefore be considered as ‘standards

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<sup>449</sup> Extensive information about the IFOAM organic guarantee system is available at <http://www.ifoam.org>.

<sup>450</sup> The current versions of the IFOAM norms include: 1) IFOAM basic standards for organic production and processing, version 2005, ratified by the IFOAM General Assembly in Adelaide, 27<sup>th</sup> of September 2005 (IBS 2005), and 2) IFOAM accreditation criteria for bodies certifying organic production and processing, version 2005, approved by the IFOAM World Board, Bonn, 2<sup>nd</sup> of July 2005 (IAC 2005).

for standards'. Member organisations of IFOAM must follow the IFOAM basic standards when defining their own standards and adapting them to local conditions.

In order to ensure equivalency of organic certification programmes worldwide, IFOAM started with an accreditation programme for certification bodies by publishing the IFOAM accreditation criteria for bodies certifying organic production and processing in 1992. In a later stage, IFOAM transferred the programme to the so-called International Organic Accreditation Service (IOAS). Since 1999, the accreditation programme has been strengthened by a label that performs a double function by providing assurance towards business partners as well as consumers.

IFOAM's membership consists of more than 750 affiliated organisations from more than 100 countries.<sup>451</sup> Nearly half of them is located in Europe. Over the years, IFOAM has participated in international forums to promote organic agriculture by, for example, highlighting the positive role it can fulfil in response to global issues, such as food insecurity, loss of biodiversity and climate change. IFOAM has observer status or is otherwise accredited by the following international organisations: FAO, UNCTAD, CAC, UNEP and OECD.

### Framing of the programme

In order to position organic agriculture more clearly in the globalised agrifood system, the framing of the IFOAM programme has been under thorough review since the early 2000s. This framing is determined by (a) the mission of the federation, (b) the principles of organic agriculture, and (c) the definition of organic agriculture. These components have strong interlinkages, and can be considered the normative constitution of the organic movement.

IFOAM's mission has evolved to include the worldwide adoption of ecologically, socially and economically sound systems that are based on the principles of organic agriculture.<sup>452</sup> This mission is radically different from the previous one, combining a higher ambition level with an external orientation.

As the new mission highlights the importance of the principles of organic agriculture, IFOAM decided that they required a thorough review. Subsequently, the basic principles of the movement have been reformulated in a two-year participatory process. They have been made more prominent by placing them in a separate document called Principles of

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<sup>451</sup> According to the IFOAM Statutes of 2002, there are three categories of affiliation with the Federation: members (with voting right), associate and supporter (both without voting right).

<sup>452</sup> IFOAM's new mission was adopted at the Federation's General Assembly in March 2003. It is in fact two-fold: Leading, uniting and assisting the organic movement in its full diversity. Our goal is the worldwide adoption of ecologically, socially and economically sound systems that are based on the principles of Organic Agriculture. Previously, IFOAM's mission included the following: 1) We represent the worldwide movement of organic agriculture and provide a platform for global exchange and co-operation, 2) We are committed to a holistic approach in the development of organic farming systems including a sustainable environment and the needs of humanity, 3) By the expertise of its members IFOAM opens the way for implementation of above aims in every day's life.

Organic Agriculture.<sup>453</sup> Previously, the principles had been part of the document with the basic standards and were called the ‘Principal Aims of Organic Production and Processing’, being a collection of more or less loose principles and ideas with relevance for standard setting.

The newly articulated principles of organic agriculture are meant to form the guiding principles for the IFOAM basic standards as well as for other rule systems from both state and non-state origin. They are defined as follows:

- Principle of health: Organic agriculture should sustain and enhance the health of soil, plant, animal, human and planet as one and indivisible.
- Principle of ecology: Organic agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them.
- Principle of fairness: Organic agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.
- Principle of care: Organic agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment.

Arguably, the principles interpret the concept of sustainable development and its different dimensions, as ecology represents its environmental dimension, health and care the social one, and fairness the economic one. The document mentions pesticides in relation to the principle of health, stating that organic agriculture “should avoid the use of fertilizers, pesticides, animal drugs and food additives that may have adverse health effects.”

It furthermore mentions precaution as a key concern but fails to clarify this term in relation to other terms such as care, responsibility, and prevention. Interestingly, the document declares that scientific knowledge alone is not sufficient and that practical experience, accumulated wisdom and traditional and indigenous knowledge offer valid solutions, tested by time. This points at a rather unconventional interpretation of precaution when compared to the usual science-based interpretations in international law.<sup>454</sup>

Focusing on the IFOAM basic standards (IBS), the section called “Pest, disease, weed and growth management” is of interest. This section has been thoroughly adapted in 2002 and this has resulted in a fundamentally different approach to inputs in organic agriculture. Before 2002, the emphasis was put on what was not allowed, such as the prohibition to use synthetic pesticides, growth regulators and genetically engineered organisms or products thereof.<sup>455</sup> Since 2002, the emphasis is on the biological and cultural

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<sup>453</sup> The Principles of Organic Agriculture were adopted at the Federation’s General Assembly in Adelaide, Australia, in 2005. The principles are available in 13 languages at <http://www.ifoam.org>. See for a discussion about the IFOAM reformulation process: L.W.M. Lutikholt (2007). Principles of organic agriculture as formulated by the International Federation of Organic Agriculture Movements. In: NJAS Wageningen Journal of Life Sciences, vol. 54, no. 4, pp. 347-360.

<sup>454</sup> See e.g.: W.T. Douma (2004). The precautionary principle. Its application in international, European and Dutch law. The Hague: T.M.C. Asser Institute, and G.E. Marchant & K.L. Mossman (2005). Arbitrary and capricious. The precautionary principle in the European Union courts. London: International Policy Press, 108 p.

<sup>455</sup> IBS 2000, Articles 4.5.5, 4.5.6 and 4.5.7.

means that are available to prevent unacceptable losses from pests, diseases and weeds and these means have been elaborated in greater detail than before.

As a general principle, the IBS 2005 states that organic farming systems should use crops and varieties that are well-adapted to the environment and a balanced fertility programme to maintain fertile soils with high biological activity, locally adapted rotations, companion planting, green manures, and other recognised organic practices.<sup>456</sup> More specifically, all organic production systems must display a set of positive processes and mechanisms capable of accounting for management of significant pests, weeds and diseases under normal circumstances. In case these measures are not sufficient, inputs prepared at the farm are allowed as far as they are listed in an appendix on crop protectants and growth regulators. This list of approved inputs is not intended to be definitive and therefore IFOAM has elaborated criteria for amending it.<sup>457</sup> It distinguishes substances from plant and animal origin, mineral origin, micro-organisms and other origins plus traps, barriers and repellents. These inputs need to be evaluated against so-called production input criteria that are based upon the precautionary principle.<sup>458</sup> In the past, it was prohibited to use products carrying a brand name. This is, however, no longer the case, which has opened up new marketing opportunities for the agricultural input industry.

The definition of organic agriculture is the third component framing IFOAM's organic guarantee system. For many years, the definition of organic agriculture used by IFOAM mentioned soil fertility, natural processes, and the exclusion of chemo-synthetic fertilisers, pesticides, and pharmaceuticals as key terms.<sup>459</sup> However, IFOAM changed this definition with the revision of the IBS in 2005 and brought it up to date by putting a stronger emphasis on the positive impacts of applying organic production techniques. Significantly, IFOAM now emphasises that organic agriculture, instead of a production method that excludes certain inputs, is a whole system approach based upon a set of processes resulting in a sustainable ecosystem, safe food, good nutrition, animal welfare and social justice. Currently, the definition of organic agriculture is again under revision

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<sup>456</sup> Section 4.5 of IBS 2005. The recommendations contain a further list of measures to manage pests, diseases and weeds.

<sup>457</sup> IFOAM policy 60: Policy and procedure for revision of the lists of inputs in the IFOAM basic standards.

<sup>458</sup> In this context, the precautionary principle has been defined as follows: "When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically. In this context the proponent of an activity, rather than the public, should bear the burden of proof.' Furthermore: 'The process of applying the precautionary principle must be open, informed and democratic and must include potentially affected parties. It must also involve an examination of the full range of alternatives, including no action.'

<sup>459</sup> According to IBS 2000, organic agriculture was defined as follows: organic agriculture includes all agricultural systems that promote the environmentally, socially and economically sound production of food and fibres. These systems take local soil fertility as a key to successful production. By respecting the natural capacity of plants, animals and the landscape, it aims to optimise quality in all aspects of agriculture and the environment. Organic agriculture dramatically reduces external inputs by refraining from the use of chemo-synthetic fertilisers, pesticides and pharmaceuticals. Instead it allows the powerful laws of nature to increase both agricultural yields and disease resistance.

through stakeholder consultation and participation and will be put forward for approval by the members in the General Assembly in 2008.

Section 8.3.3 will place the definition process of organic agriculture in an EU context, and elaborates upon the roles of state and non-state actors and their mutual interaction.

### Institutional structure

In the more than 30 years of its existence, IFOAM's internal structure has been substantially transformed as the organisation developed from basic to increasingly complex. Its present structure consists of a General Assembly, a World Board and an Executive Board.<sup>460</sup> The General Assembly consists of representatives of all member organisations of IFOAM and meets every three years to decide about the general strategy of the organic movement.

The General Assembly elects the World Board that consists of ten people from all continents. The World Board has decision-making power in all issues not yet determined by the General Assembly, and appoints members to official committees, working groups and task forces. Regional and sector specific interest groups are established by the member organisations.<sup>461</sup> The Executive Board is responsible for day-to-day management and represents the Federation. IFOAM is supported by a Head Office in Bonn, with a small annual budget.

### Rule-making

The IFOAM basic standards for organic production and processing (IBS) form the core of the IFOAM organic guarantee system, as they define how organic products are grown, produced, processed and handled.<sup>462</sup> The IFOAM basic standards document is arranged in chapters that each contain general principles, basic standards, and recommendations.<sup>463</sup> In 2002, a category of derogations was added.<sup>464</sup>

The common procedure for standard setting is that they are developed and revised by the IFOAM Standards Committee, and subsequently approved by the Norms Committee and ratified by the General Assembly. The Standards Committee consists of up to 10 members that represent diverse geographical areas and areas of technical expertise.<sup>465</sup> It

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<sup>460</sup> The internal structure is laid down in the IFOAM Statutes, approved by the General Assembly in Victoria, Canada, August 2002.

<sup>461</sup> The interest groups include: IFOAM Forum of Consultants, IFOAM Trade Forum, IFOAM Farmers Group and IFOAM Aquaculture Group.

<sup>462</sup> The version currently in force is the IFOAM basic standards for organic production and processing, version 2005, ratified by the IFOAM General Assembly in Adelaide, 27<sup>th</sup> of September 2005 (IBS 2005).

<sup>463</sup> IBS 2005 contains the following chapters: organic ecosystems; general requirements for crop production and animal husbandry; crop production; animal husbandry; processing and handling; labelling, social justice, and aquaculture production standards.

<sup>464</sup> With the category of derogations is meant that exceptions can be made to specific sections of the standards under clearly defined conditions.

<sup>465</sup> IFOAM Policy 45 - IFOAM Standards Committee Terms of reference and general rules of procedure, as lastly amended by the EB in Kutztown, September 2006.

is accountable to the World Board through the Norms Management Committee that focuses on the process and management of the organic guarantee system as a whole.

The system contains a special procedure for the revision of the standards that has been outlined in a separate document.<sup>466</sup> Such revisions may address the content, structure and consistency of the standards. Moreover, the system provides for a procedure for urgent standards revision in case serious problems emerge that hamper the functioning of the organic guarantee system.<sup>467</sup>

Rule-making takes place in an open consultation process with two public rounds for comments. In order to enhance transparency, the proposals for change are published at the IFOAM website. In case of a major revision, IFOAM may decide to organise a standards day to discuss specific controversial points. This has happened with the revision of 2002, when the standards were thoroughly re-organised and various new procedural elements were added in order to make the process for norms development more expertly managed and the norms themselves more flexible and attractive to all kinds of international stakeholders.

IFOAM has recognised that the participation by developing countries in the rule-making process is insufficient and that the standards do not always reflect their particular needs or conditions.<sup>468</sup> Hence, IFOAM has developed several activities to improve the position of Southern producers. It operates, for example, a programme called I-GO that promotes smallholder group certification, training and capacity building and development of local and regional markets in developing countries.<sup>469</sup> This has resulted in the development of the concept of a participatory guarantee system, which can be defined as a farmer-own assessment scheme in which colleague agricultural producers perform the inspections and give advice on how to improve the production operation. This participatory approach especially meets the needs of small producers supplying to local markets.

The IFOAM Accreditation Criteria (IAC), introduced in 1992, are based on the international ISO norms for the operation of certification bodies and have been further elaborated to reflect the particular circumstances of the certification process of organic production and processing. In the accreditation process, the separate entity IOAS compares the standards used by the certifier against the IFOAM basic standards and the performance of the certifier against the IFOAM accreditation criteria.<sup>470</sup> An advantage of the accreditation system is that it provides an opportunity for determining equivalence between different certification schemes. In order to establish functional equivalence between

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<sup>466</sup> IFOAM Policy 20 - Policy for the revision of the IFOAM Basic Standards, as lastly amended by the General Assembly in Adelaide, Australia, September 2005.

<sup>467</sup> IFOAM Policy 21 – Policy for urgent standards revision, as lastly amended by the General Assembly in Basel, September 2000.

<sup>468</sup> IFOAM (2002). IFOAM Annual Report 2001. Tholey-Theley: IFOAM, 11 p.

<sup>469</sup> See for multiple documents about smallholder certification in developing countries at <http://www.ifoam.org>.

<sup>470</sup> The Accreditation Criteria have been developed directly from ISO/IEC Guide 65 General requirements for bodies operating product certification systems.

schemes, the IFOAM accredited certification bodies have built a multilateral agreement (MLA) for mutual recognition.<sup>471</sup>

### Rule-implementation

The IFOAM standards cannot be used for certification on their own, but serve instead as a basis for regional or national entities to develop organic certification schemes that are tailor-made to regional or national circumstances. Besides this basic option that is open to anyone, there is also the possibility for standard setting organisations and certification bodies to engage in a stronger commitment to the IFOAM system through IFOAM membership and by participation in the IOAS accreditation programme. The option of membership implies that member organisations involved in standard setting and certification are committed to implement the IFOAM basic standards in their own standards. Moreover, they are obliged to amend their standards within two years of each revision of the IFOAM basic standards. The second option of seeking accreditation implies a potentially stronger level of commitment, requiring a formal recognition of equivalency concerning the content of the standards and the performance of the certification body.

Well-elaborated standards are considered a prerequisite to make the most of organic agriculture in a specific climatic and geographical situation. However, this means that a balance has to be sought between the need for regional variations and international harmonisation. In order to achieve this balance, IFOAM has established a policy on variations in standards.<sup>472</sup> This policy permits regional standards to be developed and go through the procedure of becoming an IFOAM approved standard. The evaluation criteria of this procedure describe under what conditions variations to the IBS are acceptable. Reasons for variation may be based on e.g. climate conditions, geographical conditions, legal requirements, religious and cultural factors, as well as situations where a specific requirement would prevent the further development of organic agriculture.

The elaboration of the IFOAM basic standards demands an enormous input of research and knowledge at field level. For organic agriculture, there are specialised research institutes in many countries. In June 2003, the International Society of Organic Agriculture Research was founded to facilitate scientific exchange on a global level.<sup>473</sup>

Worldwide, there are at least 60 government regulations defining organic agriculture and probably more than 100 private standards.<sup>474</sup> In several countries, public and private organic standards co-exist in parallel. The Member States of the EU have by far the most

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<sup>471</sup> D. Bowen (2004). Current mechanisms that enable international trade in organic products. In: J. Michaud, E. Wynen & D. Bowen (eds.) (2004). Harmonization and equivalence in organic agriculture. Vol. 1: Background papers of the International Task Force on Harmonization and Equivalence in Organic Agriculture. UNCTAD, FAO & IFOAM, p. 32.

<sup>472</sup> IFOAM policy 42: IFOAM approval of certification standards based on the IBS, as approved by the World Board, March 2006.

<sup>473</sup> [Http://www.isofar.org](http://www.isofar.org).

<sup>474</sup> K. Commins (2004). Overview of current status of standards and conformity assessment systems. In: J. Michaud, E. Wynen & D. Bowen (eds.) (2004). Harmonization and equivalence in organic agriculture. Vol. 1: Background papers of the International Task Force on Harmonization and Equivalence in Organic Agriculture. UNCTAD, FAO & IFOAM.

organic schemes in operation. Africa and South-America are the least covered, whereas Asia is an in-between case with several fully implemented national regulations and private schemes in countries, such as China, India and Japan.

A consequence of the proliferation of schemes is that several certification bodies offer certification on the basis of a variety of organic certification programmes. Most certification bodies involved in the certification of organic agricultural practices are small, specialised agencies with a national or regional focus. However, there are also organic certification bodies that are part of large multinational enterprises with a broad portfolio of certification operations.

The first accreditations of organic certification bodies took place in 1994 when three certification bodies became IFOAM accredited. In 2007, 36 certification bodies, operating in all five continents, had acquired IFOAM accreditation, and 3 had applicant status.<sup>475</sup> IFOAM accreditation implies that the certification bodies involved have the obligation to incorporate all IFOAM basic standards in their own schemes and thus makes their commitment to the IFOAM basic standards much stronger than is possible in a situation of membership. Notably, the fact that several retailers announced that in the future they would only buy produce for their own label lines that is certified by IFOAM accredited certification bodies can certainly be assumed to have contributed to the success of the accreditation programme.<sup>476</sup> This has in turn has strengthened the legitimacy of the basic standards.

Hence, due to the status of accreditation, some private certification bodies and their labels have obtained a relatively stronger position in the international market than others. Such a position is, *inter alia*, reflected by the number of re-certifications that a certification body executes at the request of producers and importers in order to qualify for a specific label. Re-certification means taking over the certification of a product that was initially certified by some other certification body and using the data that have been obtained during on-site inspections on the basis of that other programme.

Among these stronger certification programmes for organic agriculture are, for example, the systems operated by the founding organisations of IFOAM, such as the British Soil Association. However, new organisations may also turn out to be relatively influential, such as the Swedish KRAV.<sup>477</sup> Due to their market success, the major certification bodies are often successful in influencing the standard setting in the international context by provided qualified people to occupy key positions in decision-making forums and by pushing their own priority issues on the agenda or veto-ing the ideas of others.

Focusing on the implementation of organic production and consumption in practice, it is evident that organic agriculture has grown steadily since the 1940s and that in the mid-1990s, growth figures started to accelerate. Organic farming is now practised in about

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<sup>475</sup> [Http://www.ioas.org](http://www.ioas.org).

<sup>476</sup> Presentation of Robert Duxbury (Sainsbury's) at IFOAM Conference on international harmonisation and equivalence in organic agriculture, Nuremberg, 18-19 February 2002.

<sup>477</sup> KRAV was founded on 21 February 1985. It is now one of the largest organic certification bodies in the world. It employs around 30 inspectors that carry out almost 8,000 inspection visits annually. More information is available at <http://www.krav.se>.



120 countries worldwide, and the share of agricultural land and farms is still growing.<sup>478</sup> In 2006, the total area managed organically was nearly 31 million hectares worldwide. Of this total, Oceania had the largest share in absolute terms (39%), followed by Europe (23%), Latin America (19%), Asia (9%), North America (7%), and Africa (3%).<sup>479</sup> The relative proportion of organic agriculture in comparison with conventional production is the highest in Europe.

The consumption market for certified organic products is still a niche in the total food sector, although sales have been steadily growing in the past decade. In 2005, the market value of organic products worldwide reached 25.5 billion euro, with the largest share of organic products being marketed in Europe and North America.<sup>480</sup> However, the market for organic products is also developing in other countries, with Brazil and Middle East countries as the most significant examples.

### Rule-enforcement

According to the IFOAM organic guarantee system, certification bodies are obliged to perform at least one inspection of production operations per farm per year. When they detect non-compliance with the standards, the sanctions available consist of a warning, and ultimately the cancellation of the certificate.

This means that the actual decision-making about a producer's compliance with specific standards is often in the hands of non-state actors that are performing inspection and certification services in the country involved. These actors can have a large influence on actual agricultural practices since they interpret the standards at the field or greenhouse level. The decisions taken during the inspection and certification process can have far reaching consequences for producers, as they may be confronted with the refusal, or the loss, of certification. In this respect, it is worthwhile to point to the rise of the certification industry as a result of the present proliferation of auditing processes - a trend that is also visible in sectors other than food and agriculture.<sup>481</sup> Some certification bodies involved are small, specialised agencies, while others are large multinationals, auditing more or less anything.

As a side-effect of the considerable growth of organic agriculture, the sector has become more susceptible to fraud. For example, there have been several cases of labelling fraud and incidents with contamination.<sup>482</sup>

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<sup>478</sup> H. Willer & M. Yussefi (eds.) (2007). *The world of organic agriculture. Statistics and emerging trends 2007* (completely revised edition). Bonn: IFOAM/ Frick: FiBL, 252 p.

<sup>479</sup> In absolute terms, Australia, China and Argentina had the largest acreage. However, Austria, Switzerland and Scandinavian countries led the way in relative terms.

<sup>480</sup> H. Willer & M. Yussefi (eds.) (2007).

<sup>481</sup> M. Power (2003). Evaluating the audit explosion. In: *Law and Policy*, vol. 25, no. 3, pp. 185-2002.

<sup>482</sup> B. Huber (2002). Would analyses prevent contamination scandals? In: *The Organic Standard*, issue 15 (July), p. 19. Contamination can take place through storage in polluted packhouses, pesticide use in neighbouring fields, and GMOs.

## 5.4.2 GlobalGAP programme for fruit and vegetables

### Structure of the programme

The GlobalGAP programme is a retailer-led certification programme that defines good agricultural practice.<sup>483</sup> After the introduction of the first protocol of standards in 2001, the programme has been thoroughly amended in 2004 and 2007. The core of the GlobalGAP system is formed by a modular programme consisting of normative and procedural documents, including general regulations, compliance criteria for different agricultural sectors, and procedures for certification and benchmarking.<sup>484</sup> In addition, GlobalGAP issues guidelines and supporting documents.

The compliance criteria are the actual standards in the GlobalGAP programme. They have a varying status as a distinction is being made between major musts, minor musts and 'shoulds'.<sup>485</sup> For major musts 100% compliance is compulsory, whereas for minor musts this is 95%. 'Shoulds' have the status of recommendations that must be inspected by certification bodies, but are not a prerequisite for the granting of a GlobalGAP certificate. The status of the standards is especially relevant in relation to the sanctions that are available in case of non-compliance.

The GlobalGAP programme provides a basic framework of standards that should be elaborated at the national or regional level by public authorities or private certification bodies. When the appropriate national standards are in place, individual agricultural producers and producer groups can apply for GlobalGAP certification in the country concerned.<sup>486</sup> The certification of a producer can only be achieved through an independent verification by a national inspection or certification body that has received accreditation to perform such activities.<sup>487</sup> Once a positive decision in such a procedure is made, the GlobalGAP certificate will be issued with a restricted validity.<sup>488</sup>

Agricultural producers that have obtained GlobalGAP certification have the right to use the GlobalGAP logo which is a registered trademark only meant for communication in

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<sup>483</sup> In the period between 1997 and 2007, GlobalGAP was called EurepGAP. The change of name indicates its ambitions of global expansion. Extensive information about the GlobalGAP programme for fruit and vegetables and also for other agricultural sectors is available at <http://www.globalgap.org>.

<sup>484</sup> The main documents presently in force include: GLOBALGAP (EUREPGAP). Control points and compliance criteria integrated farm assurance: 1) Introduction, 2) Crops Base, and 3) Fruit and Vegetables; GLOBALGAP (EUREPGAP). General regulations integrated farm assurance. Part I – General information, Part II – Certification body rules, Part III – Producer group certification, Part IV – Benchmarking, and Part V - Training, V.3.0-2\_SEP. All documents are available at <http://www.globalgap.org>.

<sup>485</sup> Article 4.9.3, GLOBALGAP (EUREPGAP). General regulations integrated farm assurance. Part I – General information.

<sup>486</sup> Articles 4.4, GLOBALGAP (EUREPGAP). General regulations integrated farm assurance. Part I – General information.

<sup>487</sup> Article 4.5, GLOBALGAP (EUREPGAP). General regulations integrated farm assurance. Part I – General information.

<sup>488</sup> Article 9, GLOBALGAP (EUREPGAP). General regulations integrated farm assurance. Part I – General information.

the business-to-business area. The organisation has never had plans to communicate with the consumer. Its first aim has been to have the system in place and to work on its integrity. Consequently, the majority of consumers will not be aware of its existence.

GlobalGAP's membership includes retailers and food service companies, suppliers, and associate members, and reflects a strong European dominance. The membership has grown from 20 in 1999 to more than 270 in 2008. Since its inception, the retailer and food service membership of GlobalGAP has been in constant flux, with members joining and leaving, but, overall, has quickly expanded. Currently, more than 30 retailers from several European countries, one from Japan and one from the USA are involved in the initiative.<sup>489</sup> The UK and the Netherlands are relatively strongly represented. More recently, the German influence has shown a sharp increase. Conspicuous by their absence are the large French retailers.

Among the supplier members are agricultural producers and their organisations from all continents, with the majority of them being the major players in the field.<sup>490</sup> The group of associate members is of a varied composition, representing certification bodies and other service companies, and significantly the crop protection and nutrients industry.<sup>491</sup> Furthermore, GlobalGAP has become affiliated with UNCTAD.

### Framing of the programme

GlobalGAP calls itself the Global Partnership for Good Agricultural Practice, and claims to respond to consumer concerns on food safety, animal welfare, environmental protec-

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<sup>489</sup> In 2008, the retailer members included: Aeon Co., Ltd (Japan), Ahold (Netherlands), Albert Heijn (Netherlands), Aldi (Germany), Asda Group Plc. (UK), CBL (Netherlands), Coop Switzerland (Switzerland), Coop Norway (Norway), Delhaize (Belgium), Edeka Fruchtonor (Germany), Eroski (Spain), FEDIS (Belgium), Globus SB Warenhaus Holding (Germany), Grupo Carrefour (Spain), ICA (Sweden), Kaiser's Tengelmann (Germany), Kesko (Finland), Laurus (Netherlands), Lidl Stiftung & Co KG (Germany), Marks & Spencers (UK), Mc Donald's Europe (Germany), Metro Group (Germany), Migros (Switzerland), Musgraves Supervalu Centra (Ireland), NORMA (Germany), Otto (Germany), Plus Warenhandels-gesellschaft (Germany), Rewe (Germany), Sainsbury's (UK), Schuitema (Netherlands), Somerfield (UK), Spar Austria (Austria), Super de Boer (Netherlands), Superunie (Netherlands), tegut ... Gutberlet Stiftung & Co. (Germany), Tesco (UK), Waitrose (UK), Wegmans Food Market (USA), and Wm Morrison (UK).

<sup>490</sup> In 2008, the number of supplier members was around 140. Examples included: Agrexco (Israel), Anecoop (Spain), Apofruit (Italy), Del Monte Fresh Produce Company (USA), Driscolls Strawberry Associates (USA), Fyffes Group Ltd. (UK), McCain Europe (Netherlands), The Greenery International (Netherlands), and Zespri International (New Zealand).

<sup>491</sup> In 2008, the number of associate members was around 100. Several of them belonged to the crop protection industry, including: BASF (Germany), Bayer CropScience AG (Germany), DuPont (France), ECPA (Belgium), Grodan Group (Netherlands), Intervet International (Netherlands), Janssen Pharmaceutica (Belgium), Pokon Chrysal (UK), Syngenta Crop Protection AG (Switzerland), Valagro (Italy), and Yara International ASA (Norway).

tion and worker health, safety and welfare.<sup>492</sup> In order to shape its response, GlobalGAP has introduced a certification programme for agricultural producers based on sector-oriented protocols of standards for good agricultural practice (GAP).

In contrast to the IFOAM organic guarantee system, GlobalGAP does not articulate its principles in a separate document. Instead, the introduction to the standardisation document itself contains the principles of the GlobalGAP programme. A subtle change has taken place in the formulation of these principles over time, as agricultural producers are now directly addressed, suggesting that the responsibility for the proper execution of the programme has been shifted to the participating agricultural producers, instead of being shared with the retailers, as was previously the underlying idea.

According to the present GlobalGAP principles, agricultural producers must be able to demonstrate their commitment to: 1) maintaining consumer confidence in food quality and safety; 2) minimising detrimental impact on the environment, whilst conserving nature and wildlife; 3) reducing the use of agrochemicals; 4) improving the efficiency of natural resource use, and 5) ensuring a responsible attitude towards worker health and safety. Significantly, the reduction of agrochemicals use is mentioned as an explicit objective. Furthermore, the introduction states that:

“GlobalGAP is a means of incorporating Integrated Pest Management (IPM) and Integrated Crop Management (ICM) practices within the framework of commercial agricultural production. Adoption of IPM/ICM is regarded by GlobalGAP members as essential for the long-term improvement and sustainability of agricultural production.”

However, the status of this ‘principle’ is not further clarified.

The 2001 version of the standardisation document included three basic elements related to pesticide risk reduction.<sup>493</sup> First, the protocol prescribed the mandatory application of agricultural methods based on IPM or ICM, which were defined as follows:

”Protection of crops against pests, diseases and weeds must be achieved with the appropriate minimum pesticide input and with minimum adverse environmental impact (volume/type of active ingredients) and with the appropriate employment of non-chemical methods (biological and cultural/mechanical).”

Second, the protocol introduced the notion of traceability by obliging agricultural producers to keep appropriate records “which help to trace the history of products from farm to final consumer.” Third, the standards obliged producers and suppliers of agricultural produce to perform pesticide residue analysis, as they “must be able to provide evidence of residue testing by laboratories accredited by a competent national authority to good laboratory practice (GLP).” These three requirements went beyond usual legal require-

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<sup>492</sup> In September 2007, EurepGAP was renamed GlobalGAP. The global ambitions of EUREP have become stronger over the years, as is perfectly reflected by the press release on the occasion of the 2006 EurepGAP Conference in Prague, 21/9/2006: Conference maps out the way forward for the continuing globalization of the EurepGAP Standard. Previously, EurepGAP called itself the Global Partnership for Safe and Sustainable Agriculture. See also: J.W. Miller, Private food standards gain favour, *The Wall Street Journal*, 11 March 2008.

<sup>493</sup> EUREPGAP Protocol for Fresh Fruit and Vegetables, version September 2001. Cologne: EUREPGAP c/o FoodPLUS.

ments and meant that agricultural producers were made responsible for the risks and costs related to pesticide use. Most importantly, liability for failures was shifted from retailers to producers.

The basic elements have been reprioritised in the 2004 version of the standards for fruit and vegetables.<sup>494</sup> Comparing the 2001 and 2004 versions, it is apparent that a thorough restructuring had taken place, related to form as well as content. In the 2004 version, IPM and ICM were no longer explicitly included as part of good agricultural practice. Whereas in the 2001 version, it was a minor must for agricultural producers to apply recognised IPM techniques, the status of this criterion had been reduced to a recommendation, consequently losing nearly all its force. Instead, the 2004 version stated, in rather vague terms, that the negative impacts of agricultural production on the environment needed to be minimised but did not prescribe a specific agricultural production method to achieve this. Furthermore, the 2004 version declared that the standards were based on food safety criteria, derived from the application of the HACCP principles, which meant that HACCP had turned from a mere recommendation into a basic principle incorporated in the standards.<sup>495</sup>

In the 2004 protocol, the testing of pesticide residues, and hygiene during harvesting and produce handling gained importance. Moreover, the protocol was again amended in October 2004 in response to what was called “the challenges posed by fast changing crop protection product legislation” to include more detailed requirements about residue analysis of pesticides.

In the 2007 version of the standards, there is again more emphasis on hygiene requirements and residue testing, and consequently the formulation of new compliance criteria and shifts of existing ones towards a higher level of obligation (from recommendations to minor musts, and from minor to major musts).<sup>496</sup> Furthermore, a section has been added about IPM, which uses the definition from the FAO Code of Conduct as a baseline.<sup>497</sup>

The core of the new section on IPM standards form the triple requirements that an agricultural producer must be able to show evidence of the implementation of at least one measure that falls in the respective categories of: 1) prevention, 2) observation and moni-

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<sup>494</sup> EUREPGAP Control Points & Compliance Criteria Fruit and Vegetables. Version 2.1-Jan04. Available at <http://www.eurep.org>.

<sup>495</sup> More specifically, the 2001 version stated that: “EUREP supports the principles of and encourages the use of HACCP (Hazard Analysis Critical Control Points).”

<sup>496</sup> GLOBALGAP (EUREPGAP). Control points and compliance criteria integrated farm assurance: 1) Introduction, 2) Crops Base, and 3) Fruit and Vegetables; GLOBALGAP (EUREPGAP). General regulations integrated farm assurance. Part I – General information, Part II – Certification body rules, Part III – Producer group certification, Part IV – Benchmarking, and Part V - Training, V.3.0-2\_SEP. Köln: GlobalGAP c/o FoodPLUS GmbH. All documents are available at <http://www.globalgap.org>.

<sup>497</sup> The definitions of terms used in the GlobalGAP system are included in the following document: GLOBALGAP (EUREPGAP). General regulations integrated farm assurance. Part I – General information, Annex: I. V.3.0-2\_SEP. Köln: GlobalGAP c/o FoodPLUS GmbH. Available at <http://www.globalgap.org>.

toring, and 3) intervention.<sup>498</sup> An annex contains GlobalGAP IPM Guidelines for agricultural producers and certification bodies, explaining that IPM is “an important strategic discipline contributing to food quality, food safety, farmers’ and workers’ health, and quality of the environment.”<sup>499</sup> The guidelines are considered by GlobalGAP as a work in progress, leaving room for the future inclusion of additional measures that are compatible with IPM approaches. Furthermore, GlobalGAP allows certification bodies to make their own local interpretations.

The shifts that have taken place between the different versions of the protocol are being reflected in the number and status of compliance criteria. Although the number of criteria decreased from 254 to 210 between the 2001 and 2004 versions, the latter contained nine new major musts. The 2007 version showed again an increase of compliance criteria to 273 criteria in total, including 11 new major musts. In order to receive certification, a producer of fruit and vegetables must comply with 100% of all 74 major musts and 95% of the applicable 125 minor musts. In addition, there are 37 recommendations.

Looking back at the evolution of the GlobalGAP programme from its inception until now, the conclusion is that the retailer-led initiative has turned from an initiative dealing with various sustainability issues into a programme that is primarily focused on food safety and hygiene. It urges for rationalisation of production through record keeping and obliges suppliers to have strict traceability systems in place. The obvious explanation for this shift in focus is the high priority for food safety issues at EU and national governmental level and the need for retailers to cope with the new regulatory environment as established in the EU General Food Law.<sup>500</sup> Strikingly, the GlobalGAP membership has increased since the food safety focus has been strengthened. This suggests that food safety has been a better vehicle for getting industry-wide support than environment and worker welfare.

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<sup>498</sup> The full text of the triple requirements about IPM is as follows:

CC 7.2: The producer can show evidence of implementing at least one activity that includes the adoption of cultivation methods that could reduce the incidence and intensity of pest attacks, thereby reducing the need for intervention.

CC 7.3: The producer can show evidence of implementing at least one activity that will determine when, and to what extent, pests and their natural enemies are present, and using this information to plan what pest management techniques are required.

CC 7.4: The producer can show evidence that in situations where pest attack adversely affects the economic value of a crop, intervention with specific pest control methods will take place. Where possible, non-chemical approaches must be considered.

<sup>499</sup> According to the annex, the selective use of plant protection products in ways that reduce the risks of resistance includes: the use of approved selective plant protection products which have reduced adverse impact on non-target species (e.g. insect growth regulators, insecticidal soaps, mineral and vegetable oils, plant extracts); the use of plant protective products in a selective manner (e.g. seed treatment; spot treatments in situations where the pest is located in ‘hot spots’, rather than distributed throughout the crop); the use of bait treatment where appropriate, and the systematic alternation of plant protection products from different chemical groups for effective resistance management.

<sup>500</sup> EC Council Regulation 178/2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety, OJ L031, 28.01.2002.

Section 8.3.3 will place the definition process of integrated control in an EU context, and elaborates upon the roles of state and non-state actors and their mutual interaction.

### Institutional structure

In the 10 years of its existence, GlobalGAP's internal structure has evolved into a model of a Board, five Sector Committees, and a Secretariat.<sup>501</sup> Early intentions of the initiators to set up a consultative body representing a broad range of stakeholders have been cancelled.

The Board is the decision-making body of GlobalGAP. Its members include representatives from retailers and suppliers of agricultural products, the chairman of GlobalGAP, and the managing director of FoodPlus that performs the secretarial functions for GlobalGAP.<sup>502</sup> The Sector Committees are constituted of retailer and supplier members. The role of these committees is to review, evaluate and approve normative and procedural documents. Whenever necessary, they may draw on the expertise of external experts to provide advice on specific scientific and technical matters.

GlobalGAP encourages stakeholders to establish national technical workgroups in order to assist in the implementation process of standards and give input to the Sector Committees. Several of such national working groups have been established focusing on the fruit and vegetables sector.<sup>503</sup> Most of these groups have a multi-stakeholder composition and have at least a representation from farmer interest organisations and certification bodies. Formally, they do not belong to the GlobalGAP structure, but their position has become stronger as is, for example, demonstrated by the emphasis that has been put on them in the Global Report 2005. Increasingly, these technical workgroups have become involved in the translation and interpretation of the official GlobalGAP documents, and also engaged in the harmonisation of inspection and certification practices and compliance with national law. Thus, they have become a vital link between GlobalGAP and agricultural producers and certification bodies in a certain country.

The GlobalGAP organisation cooperates with certification bodies on the basis of contracts. Increasingly, GlobalGAP has recognised the need for stricter quality control of certification body performance in order to strengthen the integrity of the GlobalGAP system as a whole.<sup>504</sup> The new measures include an approval process of certification bodies, a certification body reporting system, and most importantly the establishment of a certification body surveillance system.

The GlobalGAP system is largely financed from membership fees and certification body license fees. Due to budget constraints, GlobalGAP proposed in 2006 to introduce a registration fee for agricultural producers to generate additional revenue.<sup>505</sup> However, the

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<sup>501</sup> Previously, the institutional structure of EUREP consisted of a Steering Committee (now Board), a Technical Standards Committee (now 5 Sector Committees), and a Secretariat.

<sup>502</sup> FoodPlus is a not for profit limited company based in Cologne, Germany.

<sup>503</sup> See at <http://www.globalgap.org>.

<sup>504</sup> Nearly half of the budget for 2007 has been reserved for activities enhancing integrity of certification bodies.

<sup>505</sup> Significantly, the revenue from the proposed fees nearly equalled the expenditure reserved for the new measures aimed at enhancing the integrity of certification bodies.

proposal about fees met with resistance from the producers concerned and led to a reduction of the proposed fees, but not their abolishment.<sup>506</sup> This can be seen as a clear illustration of the underlying assumption of the GlobalGAP system that agricultural producers must carry the costs.

### Rule-making

The GlobalGAP documents with control points and compliance criteria form the core of the programme, as they elaborate how the produce needs to be grown, processed and handled from the field to the farm gate. The documents are arranged in sections that mention for every item control points, compliance criteria and their status (major musts, minor musts and recommendations). The total of standards for a producer of fruit and vegetables increased between 2001 and 2007 from around 200 to more than 300.

Rule-making takes place in an open consultation process. However, stakeholder participation does not appear to be very well balanced. Significantly, the governing structure of GlobalGAP is such that retailers and large suppliers have the strongest positions in standard setting. Agricultural producers and environmental and social non-governmental organisations (NGOs) have no voice in the core procedures, although they have the right to comment to draft versions of normative and procedural documents. It is, however, unclear to what extent their comments are taken into account. A complicating factor is the limited transparency of the standard setting process, because the actual decision-making takes place behind closed doors and is difficult to reconstruct.<sup>507</sup>

### Rule-implementation

The implementation of the GlobalGAP standards is a multi-tier process in which retailers, regulators, and agricultural producers each perform distinct roles. At the retailer level, management decisions must be made about the implementation of the standards in the supply chains concerned, including targets and timetables. At the regulator level, action has to be taken to elaborate and adapt the GlobalGAP standards at the national or regional level. At the agricultural producer level, individual producers and producer groups need to decide whether they apply for GlobalGAP certification.

The practice of the implementation of GlobalGAP shows that the time schedule differs for each retailer and that some are explicit about their deadlines and others are not, but overall implementation has been taken seriously.<sup>508</sup> For regulators aiming to bring the appropriate standards in place, there is a choice of options available, diverging from the creation of new rules by state or non-state actors to a formal GlobalGAP recognition of equivalency of an existing scheme. Obvious considerations in such a weighing of options

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<sup>506</sup> EurepGAP press release, 30.08.2006: Deferral of EurepGAP fee increase – Introduction of new EurepGAP fee structure postponed to 1<sup>st</sup> January 2007.

<sup>507</sup> For example, my request for a copy of the draft standards for fruit and vegetables for 2007, as discussed during the EurepGAP conference in Prague in September 2006, was turned down with the argument that my name was not on the list of participants attending the Prague Conference. I was politely suggested to wait for the release of the standards in their final form.

<sup>508</sup> Statement of Nigel Garbutt, chairman of EUREP, EUREPGAP Protocol Review Workshop Madrid, 9-10 September 2002.



are related to the existing regulatory situation in the country concerned, the positioning of the national agriculture and food industry, and the commercial prospects for the certification industry.

In practice, the most common implementation method has been the application and interpretation of the GlobalGAP standards by private certification bodies. In some countries, however, producer and exporter associations have developed national private schemes that are compatible with GlobalGAP. Examples include the SwissGAP, ChileGAP, and KenyaGAP systems.<sup>509</sup> Significantly, the major agricultural producing countries of Brazil, China, Japan, and Mexico have developed legislation incorporating GlobalGAP standards.<sup>510</sup> This means that the private standards of GlobalGAP have been implemented through national legislation, providing state approval and hence an exceptional legitimacy to a non-state actor scheme.

In addition, the GlobalGAP system provides for a benchmark procedure whereby, in case of full compatibility, a national or regional scheme may additionally request a formal recognition of equivalency that strengthens the ties between GlobalGAP and the national organisation and at the same time guarantees the ownership of the scheme. Of these benchmarked schemes, a relatively high proportion has a public or semi-public status and has been developed in response to the market success of GlobalGAP. An example of a country that has followed the benchmark model is New Zealand with its EurepGAP Equivalent New Zealand Fresh Produce Approved Supplier Program.<sup>511</sup>

Stricter ties between GlobalGAP and producers also exist in countries that have the comparative edge of a national technical workgroup that forms a linkage with the GlobalGAP organisational structure. This advantage can be even stronger for agricultural

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<sup>509</sup> See the following press releases of EurepGAP: Progress in benchmarking: Chile, France and Switzerland, 23.06.2004; ChileGAP receives EurepGAP recognition as benchmarked scheme, 06.08.2004; KenyaGAP started the process to benchmark with EurepGAP, 15.03.2005; SwissGAP Fruit and Vegetables successfully benchmarked against EurepGAP, 20.11.2006.

<sup>510</sup> These are called: ChinaGAP, JGAP, and MSQ-GAP, respectively. See the following press releases of EurepGAP: Mexico: commitment to implement EurepGAP certification via its national scheme México Calidad Suprema, 19.07.2004; MexicoGAP to join EurepGAP family, 14.02.2005; Chinese government signed MoU to develop ChinaGAP, 23.05.2005; ChinaGAP ready to start EurepGAP benchmarking procedure, 12.04.2006; Japan publishes JGAP and sign agreement to benchmark, 27.04.2006; Mexico Supreme Quality achieves EurepGAP equivalence, 25.05.2006.

<sup>511</sup> The scheme was launched by the New Zealand Vegetables and Potato Growers Federation in 1999, and was joined by the NZ Fruitgrowers Federation in 2000. The system is supported by the New Zealand Food Safety Authority. More information available at: <http://www.approvedsupplier.co.nz>.

producers in those countries that have developed approved national interpretations of the GlobalGAP standards.<sup>512</sup>

At the end of 2006, there were around 90 certification bodies, active in 60 countries, approved to carry out GlobalGAP certification, and another dozen were in the process of getting accredited.<sup>513</sup> Similarly as is the case for certification bodies involved in certifying organic production operations, the GlobalGAP approved certification bodies differ in size and scope of their operations, but most of them are commercial undertakings, operating in several countries.<sup>514</sup> Some standard owners and certification bodies have a relatively stronger position in the GlobalGAP system. Among the most influential are the British Retailer Consortium (BRC) as a founding organisation of GlobalGAP and the inspirational force behind the system. More recently, the German QS organisation acceded to GlobalGAP after years of competition.<sup>515</sup>

Concerning the implementation of the standards for fruit and vegetables in agricultural practice, the number of certified producers has increased from nearly 4000 producers in 19 countries in 2002 to more than 80,000 producers in more than 75 countries in 2008.<sup>516</sup> Most certified producers are European.<sup>517</sup>

### Rule-enforcement

The GlobalGAP certification programme uses the incentive of market access to convince agricultural producers to meet certification standards and to become certified. More specifically, the crucial incentive for producers is to obtain, and maintain, their license-to-supply to the European supermarkets. Premium prices are generally not paid for Global-

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<sup>512</sup> Countries with interpretation guidelines are France, Italy, and the Netherlands. See the following press releases of EurepGAP: French technical interpretation guide for fruit and vegetables now available, 12.08.2004; French and Italian national interpretation guidelines for fruit and vegetables published, 20.05.2005, and Dutch national interpretation guidelines for fruit and vegetables published, 27.07.2005.

<sup>513</sup> See for a list of approved certification bodies at: <http://www.globalgap.org>.

<sup>514</sup> For example, SGS SA (Switzerland), Control Union (Netherlands), BCS Öko-Garantie GmbH (Germany), Integra BVBA (Belgium), and Moody Certification (France), and CMI (UK) and CERES (Germany).

<sup>515</sup> EurepGAP press release, 13.09.2006: EurepGAP takes a further step in the harmonisation of requirements for producers: QS Germany completes benchmark with EurepGAP.

<sup>516</sup> More precisely, 3,889 producers in 19 countries had obtained EurepGAP certification, corresponding with 61,425 hectares in December 2002. One year later, the number of certified producers had increased to 13,040 in 41 countries, corresponding with more than 445,000 hectares. At the end of 2005, the number of certified producers had reached the 30,000, covering more than 830,000 ha in more than 60 countries. Based on information in: EUREPGAP Press Release, 12/12/2002: Press release EUREP, 4/1/2004: Latest EUREPGAP certification numbers – end of 2003 statistics; EurepGAP Global Report 2005, presentation of Kristian Möller at the 2006 EurepGAP Conference in Prague, and GlobalGAP Newsletter, February 2008.

<sup>517</sup> By 2007, Italy had the highest number of certified agricultural producers followed by Germany and Spain. From the developing countries, South Africa and Chile were doing well. From the non-EU members in the Mediterranean basin, Israel, Turkey, Morocco and Egypt had the highest numbers of certified agricultural producers.

GAP certified products, although the producers concerned have to make additional costs to adapt their production operation to the GlobalGAP requirements and must pay for the certification process.

Participating agricultural producers have rights and obligations. The key obligation includes the producer's responsibility for compliance of the certified products to the GlobalGAP protocol. In addition, producers must also take responsibility for any subcontractors employed. When a certification body detects non-compliance with the standards or other contractual obligations, it can give a warning, suspend the certificate or cancel it.<sup>518</sup> This means that the ultimate consequence of non-compliance is exclusion from the supply chain.

In response to accusations of non-compliance to GlobalGAP standards, agricultural producers may appeal to the certification body involved, and in case this body does not respond satisfactorily, the complaint can be addressed to the GlobalGAP secretariat. As may be expected in such sensitive matters, information about actual non-compliance by producers is not publicly available, and it is therefore difficult to assess how strictly the system is being operated in practice.

## 5.5 Assessment

This chapter has focused on non-state actor initiatives, especially at the transnational level, that aim to regulate pesticides in the different stages of their life-cycle, including production, marketing, use and residues. Based on this description, the current section makes an assessment of the transnational approach in terms of effectiveness, inclusiveness and fairness.

### Effectiveness

Non-state actor regulation has been for many agricultural producers a convincing impetus to change their agricultural production methods and to work actively on pesticide risk reduction. In this context, it is important to note that the IFOAM organic guarantee system and the GlobalGAP programme for fruit and vegetables are based on diverging interpretations of what safe and sustainable agriculture actually means in practice and more specifically what sustainable crop protection entails.

IFOAM makes a case for the worldwide adoption of organic agriculture. With respect to crop protection, the IFOAM standards suggest a number of cultural and biological measures. Where these measures are insufficient, non-chemical inputs may be used that are listed in an appendix on crop protectants and growth regulators. The use of inputs in organic agriculture is a controversial issue and has been the subject of fierce debate during IFOAM meetings. Discussions focused on the issue of inputs in a general sense as well as the use of specific substances.<sup>519</sup> The issue of inputs is one of the main reasons that

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<sup>518</sup> Article 6, GLOBALGAP (EUREPGAP). General regulations integrated farm assurance. Part I – General information.

<sup>519</sup> For example, presentations by Eckhard Reiners and Brian Baker at the IFOAM standards day, 17 February 2002.

IFOAM aims to keep the definition of organic agriculture within the organic movement, because its integrity is at stake.

GlobalGAP's ambitions are more modest as it requires that agricultural producers demonstrate commitment to the application of good agricultural practice. Thus far, the interpretation of good agricultural practice has been ambivalent, certainly with respect to crop protection. Although the adoption of IPM is regarded as essential since the programme's inception, the standards concerned have only been incorporated in the 2007 version and have the status of minor musts. This means that producers are not obliged to convert to such techniques. Consequently, compliance to the GlobalGAP standards can mean more or less anything in relation to the use of pesticides as long as maximum residue limits for produce are not exceeded. However, the mere fact that IPM standards have been formulated may indicate that they will obtain a higher status in the longer term.

Overall, it seems not to be a too far-fetched assumption that the GlobalGAP initiative has indeed a certain effect on the behaviour of producers with regard to pesticides. It may also be instrumental in reducing producers' dependency on pesticide products. The first research results concerning the implementation of the GlobalGAP programme have shown indeed that producers participating in it have an inclination to reduce pesticide use and experiment with alternative practices.<sup>520</sup> In this respect, the food safety focus of the GlobalGAP programme can be considered a catalyst for environmental improvement, as it raises awareness about pesticide issues and promotes rationalisation of production.

Comparing the programmes of IFOAM and GlobalGAP with the paradigms that Lang and Heasman (2004) have developed in their book *Food Wars*, it seems obvious that the IFOAM programme represents the so-called ecologically integrated paradigm, that has as core assumption the recognition of mutual dependencies in agricultural production, symbiotic relationships and more subtle forms of manipulation, and that furthermore aims to preserve ecological diversity.<sup>521</sup> It is, however, more difficult to classify the GlobalGAP initiative. In its present state, it belongs to the life sciences integrated paradigm because it is driven by science-led integration of food supply chains dominated by retailers and relies on intensive agriculture. However, GlobalGAP may also have the potential to develop in the direction of the ecologically integrated paradigm, under the condition that the environmental content of the programme will be strengthened and a choice will be made for more rigorous pesticide risk reduction strategies.

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<sup>520</sup> N.M. van der Grijp, T. Marsden & J.S. Barbosa Cavalcanti (2005). European retailers as agents of change towards sustainability: the case of fruit production in Brazil. In: *Environmental Sciences*, vol. 2, no. 4, pp. 445-460.

<sup>521</sup> T. Lang & M. Heasman (2004). *Food Wars: The global battle for mouths, minds and markets*. London and Sterling: Earthscan, 365 p. In the first chapter of their book, Lang & Heasman explain the Food Wars thesis and three food system paradigms. They argue that two possible science-informed visions for the future are emerging, that are competing paradigms for the future of food both seeking to transform the productionist paradigm that became dominant after World War II. One is what they call the life sciences integrated paradigm and the other the ecologically integrated paradigm. In fact, the life sciences integrated paradigm resembles the older productionist paradigm but claims to remedy a number of its limitations by a more scientifically sound approach.

## Inclusiveness

The IFOAM and GlobalGAP certification programmes both claim to be based on democratic principles, arguing that rule-making takes place in a participatory process. IFOAM is based on a federation model, in which all members have in principle an equal vote through the General Assembly or a delegated vote through the World Board. Furthermore, it has pledged to comply with the Code of Good Practice for Setting Social and Environmental Standards that has been published by the ISEAL Alliance. This Code is a specification of the work on standardisation done by ISO and the WTO, and, *inter alia*, contains criteria for participation in the standard development process.

GlobalGAP considers itself a partnership between retailers and suppliers, but although many of the suppliers concerned belong to the largest in a global perspective, there is a certain power asymmetry in favour of the retailers. The governing structure of GlobalGAP is such that retailers and large suppliers have the strongest positions in standard setting, and other stakeholders have no vote in the core procedures. Furthermore, GlobalGAP does not participate in the ISEAL Alliance.

## Fairness

Non-state actor regulation can have positive as well as negative impacts on market access, which partly relates to the distribution of costs. In the IFOAM system, agricultural producers carry a large part of the operational and adaptational costs. However, these costs are compensated by the premium prices that are being paid for organic produce. Furthermore, IFOAM has introduced new forms of certification, such as smallholder group certification and participatory guarantee systems, in order to reduce the financial burden for small producers.

According to the GlobalGAP programme, agricultural producers carry nearly all costs of the regulatory system without the compensation of price premiums. More precisely, farmers are responsible for the costs of adapting their production operation to the standards, for the costs of the certification process, and increasingly for the costs of the operation and maintenance of the GlobalGAP system as such. Besides these direct costs, the system is organized in such a way that liability for product failure is shifted to farmers.

In addition to costs, it is a crucial question whether producers have the capabilities and the resources to comply with the standards for safe and sustainable agricultural production imposed by the large retailers. This counts the most strongly for small producers in developing countries. A first problem is that many developing countries do not have the institutional infrastructure that is necessary for participation in certification programmes. Certification bodies, for example, play an important role in the implementation and elaboration of standards at the regional and local level, but many developing countries do not have such bodies. Increasingly, however, international certification bodies are establishing local branches in developing countries or are using local inspectors, and in some developing countries local certification bodies are being established. Another infrastructure problem may be related to the lack of laboratory facilities that are equipped to conduct the testing of pesticide residues.

These unequal market opportunities may result in tensions between developed and developing countries, and also between larger and smaller agricultural producers. Significantly, the GlobalGAP programme is currently being scrutinized by the WTO, more precisely the SPS Committee, on the basis of trade concerns formulated by St Vincent and the Grenadines, and supported by Jamaica, Peru, Ecuador, and Argentina.<sup>522</sup> The complainants have argued that the GlobalGAP standards for bananas are stricter than governmental requirements in the EU, and therefore not in line with the SPS Agreement.

The complainants have called for a clarification of Article 13 of the SPS Agreement. This Article puts the responsibility for the observation of the Agreement upon the WTO members, and this responsibility does not only cover the behaviour of governmental actors but also of non-governmental entities. With regard to the latter category, the Article specifies that “[...] Members shall take such reasonable measures as may be available to them to ensure that non-governmental entities within their territories, as well as regional bodies in which relevant entities within their territories are members, comply with the relevant provisions of this Agreement [...]”.<sup>523</sup> The interpretation of this Article has raised several questions, including how far state responsibility goes and under what conditions a non-governmental entity can be considered as not complying with the provisions of the agreement.

In a first reaction to the complaint, the EU insisted on a narrow interpretation of Article 13 by arguing that it is not in a position to intervene in the GlobalGAP initiative because the private sector organisation concerned claims that its standards reflect consumer demand. According to the EU, concerns should therefore be raised with the organization itself. In response, however, Mexico cautioned that this is a complex “systemic issue”, and members should not reach hasty conclusions.

The issue was brought back as a separate agenda item during the meeting of the SPS Committee in 2007.<sup>524</sup> The debate focused again on the question whether private sector standards fall under the SPS Agreement. In addition, the economic implications of such standards have been discussed. Some members argued that private standards can create trade because exporters meeting the standards can sell their products more easily.<sup>525</sup> Other members observed that (a) the proliferation of standards that are set without any consultation poses a challenge for small economies, (b) meeting the standards raises costs, and (c) private standards often conflict with those set by governments or international organisations.<sup>526</sup> It was also argued that in practice these voluntary private standards can have certain effects as if they were compulsory: if a supplier does not comply, this may lead to exclusion from the market.<sup>527</sup> Other members, instead, put forward that

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<sup>522</sup> G/SPS/R/37/Rev.1, paras 16-20.

<sup>523</sup> The Article goes even further by stating that: “In addition, Members shall not take measures which have the effect of, directly or indirectly, requiring or encouraging such regional or non-governmental entities, or local governmental bodies, to act in a manner inconsistent with the provisions of this Agreement [...]”.

<sup>524</sup> G/SPS/R/43, paras 40-42.

<sup>525</sup> E.g. Chile and the EU.

<sup>526</sup> E.g. St Vincent and the Grenadines, Bahamas, Egypt, Cuba, and Brazil.

<sup>527</sup> E.g. Argentina.

the focus should not be too much on private norms but that the priority should be to help developing countries comply with official standards. Subsequently, the SPS Committee decided to organise an informal information session and to invite a number of the private sector organizations concerned.

At this joint UNCTAD/WTO information session on private standards, representatives from the GFSI, GlobalGAP, ISO and the British retailer Tesco were present, as well as representatives from Uganda, Malaysia, and Brazil.<sup>528</sup> The session focused on the implication of private standards in terms of relevance for market access, development issues, and WTO trade rules. The SPS Committee is expected to table this issue again in a next meeting. For several developing countries, the issue has raised in importance since EurepGAP turned into GlobalGAP and the first retailer from the USA became member.

However, producers in developing countries do not only experience problems when confronted with private standards from developed countries. Research in Ghana, for example, has shown that producers experienced fundamental benefits of GlobalGAP certification.<sup>529</sup> First, the training in applying good agricultural practice, provided by an NGO in the context of development assistance, has improved the quality and safety of Ghanaian produce in a cost-effective manner. Second, traceability systems have helped producers to trace back agricultural problems to their origin, making it easier to find solutions. Third, certification has offered a defence against wrongful claims about poor quality by exporters and importers. Fourth, certification has provided considerable prestige and personal pride to the producers involved. This example of Ghana shows that there can be important advantages for developing country producers linked to the participation in private certification programmes.

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<sup>528</sup> The joint UNCTAD/WTO informal information session on private standards, Geneva, 25 June 2007.

<sup>529</sup> M. Hatanaka, C. Bain & L. Busch (2005). Third-party certification in the global agrifood system. In: *Food Policy*, vol. 30, issue 3, pp. 362-363.





## Part III The practice of legal pluralism



## 6. The perspective of national government: the case of the Netherlands

### 6.1 Introduction

National governments are increasingly operating within frameworks of rules that have been formulated by state and non-state actors in the context of international law, regional agreements, and non-state actor regulation. This chapter uses the example of the Netherlands to explain how legal pluralism affects a national government and the national conditions for effective law and policy making.

The chapter is structured as follows. Section 6.2 describes the elaboration of the Dutch governmental law and policy on pesticides in the decades prior to 2000. Section 6.3 focuses on its erosion in the period from 2000 until 2005. Section 6.4 discusses the contestation of several Dutch regulatory measures before the European Court of Justice (ECJ). Section 6.5 focuses on the reformulation of the Dutch law and policy on pesticides. Section 6.6 gives an indication about the level of pesticide risk reduction. Section 6.7 presents conclusions.

### 6.2 The elaboration of governmental law and policy

In the Netherlands, the governmental responsibilities for the pesticide-related issues are divided among: the ministry of Agriculture, Nature and Food Quality (*Landbouw, Natuurbeheer en Voedselkwaliteit*, or LNV) for agricultural and food safety aspects; the ministry of Housing, Spatial Planning and Environment (*Volksgezondheid, Ruimtelijke Ordening en Milieu*, or VROM) for environmental aspects; the ministry of Transport and Water Management (*Verkeer en Waterstaat, V&W*) for water quality; the ministry of Social Affairs (*Sociale Zaken*, or SZ) for working conditions; the ministry of Economic Affairs (*Economische Zaken*) for energy aspects, and the ministry of Foreign Affairs (*Buitenlandse Zaken*) for miscellaneous international aspects.<sup>530</sup>

#### Pesticides Act

The Pesticides Act 1962 (*Bestrijdingsmiddelenwet 1962*) forms the pivot of the Dutch law and policy on pesticides.<sup>531</sup> Its main objective is to regulate the marketing and use of pesticides as well as the protection against possible harmful side-effects. Initially, these side-effects included the protection of workers and consumers, but since 1975 the Act also incorporates the objective of environmental protection.<sup>532</sup>

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<sup>530</sup> The names and portfolios of several ministries have changed over the years.

<sup>531</sup> Parts of this section have been inspired by my work for a manual about the implementation of EU environmental law and policy in the Netherlands. See: F.H. Oosterhuis, H. van Asselt, N.M. van der Grijp, M. van Munster, L.A.J. Spaans, I. van Dun-van den Bosch, M. Jacobs & M.E.D. Mathee (2004). *Handboek implementatie EG-milieubeleid in Nederland*. Amsterdam. Available at: <http://www.vrom.nl/eu-milieubeleid>.

<sup>532</sup> Amendment of the Pesticides Act, Stb. 1975, 381.

The most important instrument of the Dutch Pesticides Act is the authorisation procedure of pesticide products prior to their marketing and use.<sup>533</sup> The instrument is not only being regulated in the Pesticides Act, but also in a series of regulations stemming from this Act (see Annex 4). The Board for the Authorisation of Pesticides (*College voor de toelating van bestrijdingsmiddelen*, or CTB) has been designated to decide on the authorisation of individual pesticide products.<sup>534</sup>

The first Dutch governmental policy document with respect to the environmental aspects of pest control was published in 1983.<sup>535</sup> The immediate reasons for action were the pollution of drinking water by the widespread use of methyl bromide as soil disinfectant, and the negative impacts of various pesticides on bird populations. The main objective of the policy document was to reduce the volume of pesticides used. However, the policy did not have the intended impact, mainly because the sector did not consider it in its own interest to support its implementation.<sup>536</sup>

The next policy document, issued in 1987, had a more distinct impact and introduced the objective of a reduction of pesticide dependency in addition to the volume reduction objective.<sup>537</sup> Most importantly, it formed the foundation of the major policy plan on crop protection that became a landmark in the development of pesticide policy in the Netherlands.

### Multi-Year Crop Protection Plan

This landmark policy plan was called the Multi-Year Crop Protection Plan (*Meerjarenplan Gewasbescherming*, or MJPG), and was published in 1991 for a validity period of 10 years.<sup>538</sup> The basic idea underlying the plan was to develop a more integral policy approach to crop protection.<sup>539</sup> It aimed at: (1) a reduction of the total pesticide volume, (2) a diminishing of pesticide dependency, and (3) a reduction of the environmental impact of pesticide use.<sup>540</sup>

In order to ensure a proper implementation of the MJPG, and as requested by Parliament, the relevant ministers and the representatives of the agricultural business community signed a covenant (*Bestuursvereenkomst*) in 1993, which elaborated the objectives

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<sup>533</sup> Pesticides Act, Articles 2-7.

<sup>534</sup> The status of the CTB has changed in the course of its existence. Initially, the CTB was a body of the ministry of LNV. In a later stage, it became an independent public authority consisting of experts designated by the ministers involved (Stb. 1998, 689). Extensive information about the CTB is available at <http://www.ctb-wageningen.nl>.

<sup>535</sup> Ministry of Agriculture and Fisheries (1983). *Nota Gewasbescherming in Nederland*. Den Haag: L&V.

<sup>536</sup> A.M.C. Loeber (2003). *Practical wisdom in the risk society. Methods and practice of interpretive analysis on questions of sustainable development*. Academic dissertation. Amsterdam: University of Amsterdam, p. 214.

<sup>537</sup> Ministry of Agriculture, Nature Conservation and Fisheries (LNV) (1987). *Naar een taakstellend meerjarenplan voor de gewasbescherming*. Den Haag: LNV.

<sup>538</sup> Parliament, TK 1990-1991, 21 677, nrs. 3-4.

<sup>539</sup> A.M.C. Loeber (2003), p. 215.

<sup>540</sup> Parliament, TK 1990-1991, 21 677, no. 5.

of the MJP-G in detail.<sup>541</sup> Furthermore, the parties agreed to organize a mid-term review of the policy plan. According to this review in 1995, progress had been made in the areas of reduced volume and impacts but not in relation to the dependency objective, as most improvements were the result of technical adaptations and did not result from a fundamental change in agricultural production methods.<sup>542</sup> Consequently, the government suggested shifting the policy emphasis towards the objective of dependency reduction.

### EU Directive 91/414

In 1991, after long and strenuous deliberations, the EU had finally established Directive 91/414 concerning the placing of plant protection products on the market (see Section 4.3.1).<sup>543</sup> In order to implement this Authorisation Directive, the Pesticides Act 1962 was amended in 1994, exceeding the deadline for transposition by more than one year.<sup>544</sup> A complicating factor in the transposition process was the existing legislation on the authorisation of pesticide products. Consequently, the implementation could not take place in a 'one-to-one' manner, but was carried out in a similar spirit as propagated by the Directive. A comparison of the Directive and the relevant Dutch legislation shows that the terminology differs at certain points and that the procedures are not totally equivalent in form and substance. In her extensive study of the Dutch pesticides legislation, Vogelezang points, for example, at the broadly defined competences of the minister of LNV and the CTB, especially in relation to the transitional provisions.<sup>545</sup>

Overall, Directive 91/414 has given an impetus to major changes in the authorisation practice of pesticide products in the Netherlands, mainly because it defined stricter criteria for the protection of human health and environment than were incorporated in the Pesticides Act 1962. Moreover, the Dutch government decided in 1995 that in the light of the urgent need to address the extremely high use of pesticides in Dutch agriculture and the correspondingly high environmental burden, to anticipate to the future EU regime by immediately applying the European authorisation criteria in all procedures, even when the review of the substances concerned had not been finalised by the European Commission.<sup>546</sup>

Besides its positive environmental impacts, the Directive also had a negative impact on the authorisation practices in the Netherlands. On the occasion of the transposition of Directive 91/414 into national law, the government decided to delete the substitution prin-

<sup>541</sup> Parliament, TK 1991-1992, 21 677, no. 10; A.M.C. Loeber (2003), pp. 217-218.

<sup>542</sup> Parliament, TK 1995-1996, 21 677, no. 24. See e.g.: P.J.M. van den Heuvel, P. Leroy, R.S.E.W. Leuven & P.H. Nienhuis (1997). *Chemische gewasbescherming dertig jaar na 'Zilveren sluiers en verborgen gevaren'*. In: *Milieu*, vol. 12, no. 2, pp. 50-57.

<sup>543</sup> OJ L230, 19.08.1991, pp. 1-32.

<sup>544</sup> Wet van 15 december 1994 tot wijziging van de Bestrijdingsmiddelenwet en de op deze wet gebaseerde regels (Stb. 1995, 4). The final date for transposition had been set at 26.07.1993.

<sup>545</sup> E.M. Vogelezang-Stoute (2004). *Bestrijdingsmiddelenrecht: een rechtsvergelijking*. Academic dissertation. Amsterdam: University of Amsterdam, 824 p. See especially: pp. 751-758.

<sup>546</sup> Parliament, TK 1995-1996, 21 677, no. 24. See e.g.: H. de Heer & A. van Straten (2001). *Ontwikkelingen in the Europese en nationale toelatingsbeleid voor gewasbeschermingsmiddelen*. In: *Gewasbescherming*, vol. 32, nrs. 4/5, p. 98.

ciple (*alternatieventoets*), which had been adopted one year earlier. This principle obliged the CTB to consider in its authorisation decisions whether a suitable alternative pesticide product with significantly less harmful side-effects was available in the market that could replace the product in question.<sup>547</sup> According to the government, the Directive did not allow to perform such assessments, and the deletion of the provision seemed therefore the obvious solution.

### 6.3 The erosion of governmental law and policy

#### Exception of essential use

In the late 1990s, the implementation of Directive 91/414, and especially the stringent policy that the Dutch government pursued with regard to the authorisation of pesticide products, began to show its first impacts on the number of pesticide products available in the Dutch market. The authorisation of several pesticide products had been terminated because they did not comply with the environmental criteria of the new Article 3 of the Pesticides Act. However, several of the products involved were considered essential by the agricultural sector for the continued production of certain crops. Under increasing pressure from the sector, the government finally decided to pull back by allowing certain exceptions and amended the Pesticides Act accordingly.<sup>548</sup>

With the amendment of 2001, the exception of essential use became an explicit element of the Pesticides Act. In order to give guidance to the interpretation of the exception, an annex contained 11 substances that were considered to be potentially essential in combination with certain crops. However, the authorisations for more than half of these substances expired soon afterwards, because the manufacturers did not submit the necessary dossiers in time, indicating that the communication between the actors involved was less than optimal.<sup>549</sup> As the issue of the so-called essential pesticide products turned out highly contentious and several court cases were started by environmental organisations,

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<sup>547</sup> E.M. Vogelezang-Stoute (2001). De EG-richtlijnen inzake de toelating van bestrijdingsmiddelen. In: Bestrijdingsmiddelen, Verslag van de 68ste ledenvergadering van de Vereniging voor Milieurecht op 27 juni 2000. Den Haag: Boom Juridische Uitgevers, p. 21. Many years later, the Parliament proposed to re-introduce the substitution principle, but the minister of LNV decided again that such an approach was not in accordance with Directive 91/414.

<sup>548</sup> With the amendment of 25 January 2001, Article 25c (exception of essential use) was added to the Pesticides Act (Stb. 2001, 68). This exception did not apply for substances not allowed according on the basis of Community law. Vogelezang (2001) calls the exception of essential use a mirror image of the substitution principle.

<sup>549</sup> The expirations may leave doubt about the essential nature of the pesticide products concerned. However, another explanation may be that the manufacturers involved did not consider these applications feasible from a commercial point of view. In this respect, De Heer & Van Straten (2001) have argued that the present expansion of the pesticide industry and its decreasing profit margins would have an impact on the availability of crop protection products, which could especially hamper the so-called 'minor applications'.

the minister decided to issue a separate decree containing criteria for the definition of essential use.<sup>550</sup>

In reaction to the Dutch notification of this latter decree to the European Commission, Germany objected about its content, arguing that the loosening up of environmental criteria was not consistent with the objective of Directive 91/414.<sup>551</sup> Furthermore, the German government feared distortion of competition because the Netherlands allowed the use of pesticide products that were already banned in anticipation in other Member States. However, the minister of LNV claimed that the Directive allowed the use of less stringent criteria as long as the substances in question had not been reviewed in the European context.

Subsequently, the position of the “essential” as well as of non-reviewed pesticide products became stronger with amendments of the Pesticides Act.<sup>552</sup> This legal facilitation of practices that were unlawful in a strict sense was effectuated by a combination of two measures.<sup>553</sup> First, the CTB was given the authority to set its own priorities in its review programme of pesticide products. Second, the prohibition to use non-reviewed pesticide products was made less absolute.

These amendments met with resistance from the environmental organisations. For example, Rutteman of the *Zuidhollandse Milieufederatie* (or ZHM) questioned whether the new provisions were in line with the precautionary principle and Directive 91/414.<sup>554</sup> He argued that it is difficult to maintain that the amendments of the Pesticides Act were in accordance with the high level of environmental protection that the Directive aspired, and the precedence of the protection of health and environment over the aim of improved plant production. In Rutteman’s view, the legal situation for the majority of pesticide products was back to the situation before 1975, when environmental objectives were first introduced in the Pesticides Act.

### Strategic plan on integrated management

As the Multi-Year Crop Protection Plan (MJP-G) was going to expire in 2000, the government started preparing a follow-up strategic plan that was called ‘Integrated management, the way ahead, crop protection policy up to 2010’ (*Zicht op gezonde teelt*, or ZOGZ).<sup>555</sup> It marked a drastic change in approach, aiming at integrated management on certified farms by 2005, and addressing individual agricultural producers, instead of the

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<sup>550</sup> Regeling toelatingseisen landbouwkundig onmisbare gewasbeschermingsmiddelen (Stcrt. 2001, 41).

<sup>551</sup> Spain also objected about the Dutch decree, but according to the minister of VROM, the Spanish had possibly misunderstood the legal basis of the measures concerned.

<sup>552</sup> CTB Besluit prioritering werkzame stoffen 2002, Stcrt. 2002, 178.

<sup>553</sup> This legal facilitation of unlawful practices is called in Dutch: formeel gedogen.

<sup>554</sup> J. Rutteman (2002). De toelating van bestrijdingsmiddelen: terug naar 1975? In: *Milieu & Recht*, no. 12, pp. 316-317.

<sup>555</sup> Parliament, TK 2000-2001, 27 858, no. 2. Integrated management is used here as a collective term for integrated approaches to crop protection, and is as such comparable with the term integrated control.

sector as a whole. Although the plan had been carefully prepared with ample room for consultation and participation of the stakeholders involved, it failed dramatically.

To deal with the pesticide dependency problem, the plan introduced the instrument of a public certification scheme as a means to define standards for integrated management, and to implement and enforce them. In order to specify the appropriate ambition level of standards, a distinction was made between average farms and around 20% of more innovative farms. The standards matching with both levels were to be established as 'progressive norms' that would be formulated more strictly, step-by-step, in the years to come.<sup>556</sup> This new policy focusing on certification was to be supported by a combination of 'carrots and sticks', ranging from financial incentives for cooperative producers to strict enforcement for those lagging behind.<sup>557</sup> Furthermore, the government expressed the hope that the key market players would assist in managing the introduction of integrated management, but remained vague about the ways in which this could take place. Notably, it did not refer to existing private certification schemes at all, turning a blind eye to market practices that had become increasingly common.

With a view to the emission objectives in ZOGZ, the government expected that they could be largely achieved by the full implementation of the existing policies for the authorisation of pesticide products and emission reduction.<sup>558</sup> The objective concerning maximum acceptable risk (*Maximaal Toelaatbaar Risico*) could be expectedly realised with a minor effort, and an extra reduction of the environmental burden in the direction of negligible risk (*Verwaarloosbaar Risico*) was possibly feasible in the longer term.

However, as mentioned above, the implementation of ZOGZ stagnated soon, as the plan was boycotted by the agricultural sector. As a matter of fact, the government officially abandoned ZOGZ in its second year of existence. This failure was caused by the deadlock position that was reached in the simultaneous discussion between the government and the sector about the future availability of the so-called essential pesticide products. Subsequently, preparations were started to replace ZOGZ by a less ambitious policy document. To this end, the government took the initiative to start negotiations about the

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<sup>556</sup> In preparation of the implementation of the ZOGZ policy document, the ministry of LNV commissioned field trials in order to elaborate the concept of integrated management in unambiguous, practicable and verifiable standards for specific crops. The trials demonstrated that such an elaboration was certainly feasible but that the possible level of detail strongly differed for each crop. In addition, the study concluded that a further transition towards integrated control would only be feasible in combination with the availability of an appropriate set of crop protection products. Moreover, the government was advised to seek alliance with existing market-based initiatives such as EurepGAP. But above all, according to the study, the ministry of LNV should give priority to a restoration of confidence of the sector in the government. See for the report on the field trials: L. den Boer, H. Balkhoven, E. van der Wal & P. Lentjes (2002). *Kijk op de praktijk. Eindrapportage praktijkproef 2001 Zicht op gezonde teelt. CLM536-2002*. Utrecht: CLM Onderzoek en Advies.

<sup>557</sup> It was the intention of the government to evaluate the new policy in 2004. In case of a lower percentage of certified farms than 90%, the government announced that it would consider the option of incorporating a legal obligation in the Pesticides Act that only certified farmers were allowed to use chemical pesticides.

<sup>558</sup> Parliament, TK 2000-2001, 27 858, nr. 2.



outlines of a future policy concerning sustainable crop protection with the parties involved. Consensus was reached fairly quickly and led, as a first step, to the conclusion of a covenant in 2003 (*Afsprakenkader gewasbescherming*).

With the covenant, the government aimed to overcome the policy deadlock and reach a formal agreement with the sector about the results to be achieved. Participants in the covenant included: the national farmers' organisation LTO, the ministries of LNV, VROM, SZW and VWS, the environmental NGO *Stichting Natuur en Milieu*, the association of drinking water companies *Vewin* and the association of pesticide distributors (*Agrodis*). In a later stage, *Stichting Natuur en Milieu* withdrew from the covenant, and the Union of Water Boards (*Unie van Waterschappen*) and the association of pesticide manufacturers *Nefyto* became new parties to it.

According to the covenant, the national farmers' organisation LTO adopted responsibility for the formulation of sectoral plans concerning sustainable crop protection that should be reported upon on an annual basis. Furthermore, the LTO committed itself to stimulate the adoption of integrated management through participation in certification schemes operated by market parties. Hence, the establishment of the covenant indicated that the government had dropped the idea of developing a public certification scheme.

### Strategic plan on sustainable crop protection

In his letter of 4 April 2003, the minister of LNV officially abandoned the previously formulated policy plan and announced the publication of a new policy document to replace ZOGZ.<sup>559</sup> One year later, in May 2004, the new policy document, called Strategic plan on sustainable crop protection (*Nota Duurzame Gewasbescherming*), was presented by the government to Parliament.<sup>560</sup> Hence, in comparison with the previous plan, the term 'integrated management' was replaced by 'sustainable crop protection'.

In the introduction, the minister of LNV explained that the government had reconsidered the policy in ZOGZ, because the support from the agricultural sector as well as Parliament was disappointing. The major criticism from the sector was that the pesticide authorisation policy pursued by the Dutch government impeded the implementation of integrated control. More precisely, the sector claimed that the implementation of such approaches required the availability of an appropriately broad spectrum of pesticide products. Moreover, the sector alleged that the government did not fully appreciate the negative impacts of the current authorisation policy on the competitive position of Dutch agricultural producers, and it even declared that there existed a crisis of confidence.

The Strategic plan on sustainable crop protection provided the building blocks for the implementation of the covenant. Hence, the proposed measures related to the issues of the authorisation of pesticide products, the development of sectoral crop protection plans by the farmers' organisation LTO, and the encouragement of the estimated 10% of producers that were lagging behind. Furthermore, the minister stipulated to maintain the reduction targets from ZOGZ, including a reduction of emissions by 95% in 2005, in com-

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<sup>559</sup> Letter d.d. 4 April 2003 by the ministry of LNV to Parliament concerning the agreement on crop protection (Parliament, TK 2002-2003, 27 858, no. 39).

<sup>560</sup> Parliament, TK 2003-2004, 27 858, no. 47.

parison to 1998. Most remarkably, and in full contrast to ZOGZ, the new policy considered certification as a responsibility of business.

In order to solve the issue of the essential pesticide products, the governmental Plant Protection Service of the Netherlands (*Plantenziektenkundige Dienst*) was asked to make an inventory of the so-called bottlenecks in current agricultural practice. To this end, the Service focused on the crops for which the sector claimed that appropriate pesticide products were not available in the market, and identified 110 of such 'bottlenecks'. Subsequently, the authorisation authority CTB assessed the risks involved of granting exemptions for the crop/pesticide combinations concerned. Based on the advice of the CTB, the responsible authorities decided to grant 59 exemptions.<sup>561</sup> For the remaining 51 bottlenecks, however, exemptions were not considered an appropriate solution, with as main reasons: 1) incompatibility with norms concerning consumer and worker health, 2) incapability of estimating the risks involved, and 3) loss of interest of the manufacturer of the product involved in its further marketing. Subsequently, the exemptions approved by the CTB have been backed up by a series of legal provisions that have been issued on an annual basis since 2003.<sup>562</sup>

### Principles of integrated control

In order to support the new policy on pesticides as established in the Strategic plan on sustainable crop protection, the minister of LNV articulated the principles of integrated control in a separate decree in 2004 (*Besluit beginselen geïntegreerde gewasbescherming*).<sup>563</sup> In the explanatory memorandum, the Minister stated that the Decree was meant to implement Article 3(3) of Directive 91/414 that obliges producers to apply the principles of good plant protection practice, and whenever possible, the principles of integrated control. In the previous years, the government had interpreted this provision as an obligation for the agricultural sector to perform a demonstrable effort (*inspanningsverplichting*) that did not need to be explicitly transposed in Dutch law. However, with the establishment of the Decree in 2004, the government obviously changed its opinion after more than 10 years.

The Decree *inter alia* aimed at the reduction of environmental pollution caused by pesticides through the prevention and limitation of their use.<sup>564</sup> It addressed in principle all producers but especially targeted those that are lagging behind in the conversion to integrated control. In order to achieve its objective, the Decree required that producers using pesticides comply with the general principles of integrated control. More specifically, they should account for their agricultural practices by drawing up individual crop protection plans as well as a monitoring reports, both on an annual basis.<sup>565</sup> Whereas the crop protection plan should contain an elaboration of the methods and measures that a producer had in mind to implement the principles of integrated control, the monitoring

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<sup>561</sup> Letter d.d. 9 May 2003 of the minister of LNV to Parliament concerning a total overview of the bottlenecks in crop protection.

<sup>562</sup> See the ministerial decrees in Annex 4 that are called 'Vrijstellingen ...'.

<sup>563</sup> Stb. 2004, 485.

<sup>564</sup> Decree on the principles of integrated crop protection, Article 1.

<sup>565</sup> Decree on the principles of integrated crop protection, Article 2.

report should give account of its actual implementation and the ways in which a producer had eventually departed from it.

An annex to the Decree prescribed a number of measures to guide producers in elaborating a crop protection plan. These measures were based on the ‘no, unless principle’, which considered chemical crop protection as a measure of last resort. The principle implied a preferential order in crop protection strategies, ranging from prevention of pests, technical measures, warning systems, non-chemical crop protection techniques to the application of pesticide products, and reduction of emissions.<sup>566</sup> In order to further elaborate the concept of integrated control in ‘progressive’ norms, the Decree delegated legislative power to the minister of LNV.<sup>567</sup> However, the minister later cancelled the idea of elaborating measures of integrated control after members of the Parliament had tabled a resolution to repeal the Decree in its entirety.<sup>568</sup> In response to this resolution, the minister decided to partly meet the Parliamentary criticism by abolishing the obligation to keep a ‘logbook’ for self-monitoring but maintaining the crop protection plan.

### Organic agriculture

A similar toning down of ambitions can be observed in the Dutch governmental policy *vis-à-vis* the development of organic agriculture. Since the early 1990s, the EU has stimulated the conversion to this production method, adopting a Regulation defining organic agriculture as well as a Regulation facilitating the payment of subsidies to agricultural producers converting to less environmentally harmful practices under the scope of agri-environment schemes.<sup>569</sup> In order to implement the EU legislation and to stimulate conversion to organic agriculture, the Dutch government issued a specific regulation that designated the private organisation SKAL to inspect and certify organic food production

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<sup>566</sup> See the explanatory memorandum to the Decree on integrated crop protection providing a broader view upon Dutch crop protection policy by the Minister of LNV. The step-wise approach to crop protection is comparable with the strategy pursued in the Dutch law and policy concerning waste that became known as the ‘Ladder of Lansink’, after the member of Parliament who first formulated such an approach.

<sup>567</sup> Decree on the principles of integrated crop protection, Article 4.

<sup>568</sup> Parliamentary Resolution: Parliament, TK 2005-2006, 30300 XIV, no. 38, and Letter of the Minister of LNV d.d. 26 January 2006, Parliament, TK 2005-2006, 27858, no. 55.

<sup>569</sup> Council Regulation No 2092/91 of 24 June 1991 on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs, OJ L198, 22.07.1991, pp. 1-15, and Council Regulation No 2078/92 of 30 June 1992 on agricultural production methods compatible with the requirements of the protection of the environment and the maintenance of the countryside, OJ L215, 30.07.1992, pp. 85-90. The latter regulation was repealed by Council Regulation No 1257/1999 of 17 May 1999 on support for rural development from the European Agricultural Guidance and Guarantee Fund (EAGGF) and amending and repealing certain Regulations, OJ L160, 26.06.1999, pp. 80-102. In turn, this regulation was repealed by Council Regulation No 1698/2005 of 20 September 2005 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD), OJ L277, 21.10.2005, pp. 1-40.

in the Netherlands.<sup>570</sup> It furthermore issued a compensation scheme in 1994, which provided financial support to producers in conversion (*Regeling Stimulering Biologische Productiemethode*).<sup>571</sup> However, the scheme did not have the expected effect on the growth rate of organic agriculture because the premiums were generally considered too low.

Subsequently, the ministry of LNV launched an action plan for organic agriculture (*Plan van Aanpak Biologische Landbouw*) in November 1996.<sup>572</sup> A major reason to come up with the action plan was the observation that the developments in the Netherlands were lagging behind in comparison to neighbouring countries.<sup>573</sup> The action plan did not contain any targets and timetables. Unlike neighbouring European countries, the Dutch government held the opinion that market forces would determine which share of organic production was feasible in the Netherlands.<sup>574</sup>

Together with the publication of the action plan, the minister of LNV proposed to raise the conversion premiums, which resulted in a new scheme that entered into force in 1999.<sup>575</sup> Moreover, the ministry developed several activities to engage the conventional food and retailing industry in organic production, such as a quality programme for organic products (*Kwaliteitsprogramma Biologische Producten*). As a consequence, the prospects for organic production and consumption looked favourable, but did not have the chance to fully materialise.

With a change of government in 2000, the commitment of the ministry of LNV to organic agriculture diminished. This is reflected in the policy document on organic agriculture that was published by the minister of LNV in 2000 (*Beleidsnota biologische landbouw 2001-2004: Een biologische markt te winnen*).<sup>576</sup> This document further strengthened the previously chosen market-based approach and announced the abolishment of conversion subsidies after 2002. This meant that the Netherlands was the first country in the EU that decided not to use the European funds made available for the conversion to organic agriculture. Notwithstanding this lack of commitment, the minister observed in the policy document that it would credit the Netherlands to achieve the following in

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<sup>570</sup> Landbouwkwaliteitsbesluit biologische produktiemethode (Stb. 1992, 661). Several specific issues have been elaborated in the Landbouwkwaliteitsregeling biologische productiemethode 1996 (Stcrt. 1996, 137). The regulation of organic agriculture in the Netherlands actually dates back to 1985 when the non-state actor *Stichting Eko-merk Controle* formulated the first organic standards.

<sup>571</sup> Regeling stimulering biologische productiemethode (Stcrt. 1994, 96).

<sup>572</sup> Parliament, TK 1996-1997, 25 127, no. 1.

<sup>573</sup> See e.g.: N.M. van der Grijp & F. den Hond (1999). Green supply chain initiatives in the European food and retailing Industry. R-99/07. Amsterdam: Instituut voor Milieuvraagstukken, Vrije Universiteit; N.M. van der Grijp, J. de Boer & F. den Hond (2001). Initiatieven vanuit de Nederlandse voedingssector ter beperking van het bestrijdingsmiddelengebruik (Initiatives of the Dutch food industry to reduce pesticide use). R-01/03. Amsterdam: Instituut voor Milieuvraagstukken, Vrije Universiteit.

<sup>574</sup> In other EU countries, the government set ambitious targets for organic agricultural production and consumption, hence signalling a clear preference.

<sup>575</sup> Stcrt. 1999, 55.

<sup>576</sup> Parliament, TK 1999-2000, 27 416, no. 2.

2010: 1) a 10% share of agricultural area under organic production; 2) Dutch consumers as top users of organic products in Europe, and 3) the realisation of several successful organic brands by the food industry. However, the Minister did not provide any resources to help the organic sector achieve these goals, except funding for communication and consultation.

### The pro-active role of retailer Albert Heijn

Focusing on the role of non-state actors, the retailer Albert Heijn was one of the first conventional non-state actors that became actively involved in initiatives that were aimed at a reduction of pesticide use in fruit and vegetables production.<sup>577</sup> The company, owned by Ahold, is the largest food retailer in the Netherlands with a market share of 27.5% in 2006.<sup>578</sup> The company has always positioned itself as a high-quality supermarket, attracting a relatively large share of the better educated, middle and higher income groups of the Dutch population. Part of its quality policy has been the early embrace of strategies to reduce pesticide use.

In the early 1990s, Albert Heijn introduced a programme to reduce pesticide use in fruit and vegetable production that was based on integrated control (*Aarde & Waarde*). The publication of the governmental Multi-Year Crop Protection Plan (*Meerjarenplan Gewasbescherming*) in 1991 formed the immediate reason to launch the programme. Albert Heijn was in the position to consider such an effort, because it had traditionally exercised a tight control over its supply chains which was supported by its policy of favouring long-term relationships with suppliers. In the context of the programme, and with the assistance of a research institute (*Centrum voor Landbouw en Milieu*, or CLM), criteria were developed for each different crop and subsequently implemented in agricultural practice. In the late 1990s, an estimated 95% of crops from Dutch origin were produced under standards of integrated control.

Apart from its commitment to integrated control, Albert Heijn has also dedicated attention to the development of an organic product line, reportedly after a consumer petition including such a request.<sup>579</sup> More specifically, Albert Heijn launched a specific home brand for organic products (*AH Biologisch*), and asked its suppliers if they were able to supply organic products besides the conventional lines. Many of its suppliers reacted positively to the request and became involved in the organic market. By creating a home brand, Albert Heijn aimed to demonstrate to its customers as well as suppliers that its commitment to the marketing of organic products was a serious business.

In the past years, the interest in the issue of pesticide residues has increased at various levels. For example, environmental and consumer organizations have pointed at the uncertainty surrounding the safety of current MRLs, especially with a view to young children, the unknown risks of combinations of substances, and the exceedances of MRLs.<sup>580</sup> In response to these growing concerns, Albert Heijn announced in 1999 to aim at offering residue-free fresh produce, produced under either protocols of either integrated con-

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<sup>577</sup> The following paragraphs are largely based on Van der Grijp and Den Hond (1999).

<sup>578</sup> ACNielsen, 27 May 2007, available at: <http://www.company-case.com>.

<sup>579</sup> HP/De Tijd, 17 July 1998.

<sup>580</sup> See e.g.: 'Weet wat je eet' campaign at <http://www.weetwatjeet.nl>.

trol or organic production, by 2005. However, it has not succeeded as yet in achieving this goal.

#### 6.4 The contestation of specific legal measures

Since the introduction of the environmental objective in the Pesticides Act in 1975, many decisions by the Dutch government concerning the authorisation of pesticide products have been contested in national courts. It goes beyond the scope of this study to examine these cases in detail. Moreover, Voegelzang (2004) provides an extensive overview of them in her book about pesticide law in the Netherlands.<sup>581</sup> However, three recent cases require attention here, since they concerned the legality of the Dutch law and policy on pesticides in the light of Directive 91/414 concerning the placing of plant protection products on the market.<sup>582</sup> These cases have all been referred under Article 234 EC Treaty for a preliminary ruling to the European Court of Justice (ECJ), requesting an interpretation of the transitional provisions of the Directive.

In the first of these cases, the South Holland Environmental Association Foundation (*Stichting Zuidhollandse Milieufederatie*, or ZMF) lodged a complaint against the decision of the Pesticides Authorisation Board (*College voor de Toelating van Bestrijdingsmiddelen*, or CTB) to designate a number of active substances under the newly established Article 25d of the Pesticides Act 1962.<sup>583</sup> This designation amounted in practice to an automatic re-authorisation by operation of law for substances whose authorisation had just expired or was on the brink of doing so, without the full assessment that would be otherwise required under the Pesticides Act.<sup>584</sup> The validity of that decision was contested by the ZMF, *inter alia* on the basis that Article 25d was not compatible with Directive 91/414, because it did not provide for a full procedure as required by the Directive.

After the CTB declared the objections of the ZMF unfounded, the latter appealed to the Administrative Court for Trade and Industry (*College van Beroep voor het Bedrijfsleven*, or CBB), which decided to stay the proceedings and refer several questions about the interpretation of the transitional provisions of Directive 91/414 to the ECJ for a preliminary ruling.<sup>585</sup> In response, the ECJ ruled, in line with the opinion of Advocate-General

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<sup>581</sup> E.M. Voegelzang-Stoute (2004).

<sup>582</sup> OJ L230, 19.08.1991.

<sup>583</sup> CTB decision on prioritisation of active substances 12 June 2002 (CTB-besluit prioritering werkzame stoffen, C-122).

<sup>584</sup> Article 25d of the Pesticides Act 1962 is worded as follows in the English translation used by Advocate General Jacobs in his opinion in Case C-316/04, para 37:

1. A pesticide whose active substance or active substances have been designated by the CTB shall, by way of derogation from the provisions laid down by or under Articles 3 and 3a and Articles 4(1) and 5(1), be authorised or registered by operation of law with effect from the time referred to in paragraph 3.
2. Where an active substance within the meaning of paragraph 1 is designated, regard shall be had to the effect of the active substance concerned referred to in Article 3(1)(a)(3) to.
3. The authorisation or registration referred to in paragraph 1 shall take effect on the date of termination of the authorisation or registration granted under Article 4 ...

<sup>585</sup> CBB AWB 04/185, LJN: AQ4871, 22 juli 2004.

Jacobs, that the Directive did not require a full procedure for the substances concerned and that the national court should assess whether the evaluation provided for in Article 25d corresponded to the review procedure within the meaning of the Article 8(3) of the Directive.<sup>586</sup> Subsequently, the national court decided that the procedure of Article 25d was not equivalent to the review procedure of the Directive, and annulled the 2002 Decision from the CTB, which made dozens of re-authorisations legally not valid.<sup>587</sup>

The second case questioned the compatibility of Article 16aa of the Pesticides Act with the transitional provisions of Directive 91/414. This Article had been included in the Pesticides Act in 2002, and allowed certain exemptions of specific pesticide products from the obligation to obtain an authorisation according to Article 8(2), based on considerations of essential use.<sup>588</sup> After having lodged in vain an objection at the minister of LNV about a specific decision adopted under Article 16aa, the ZMF appealed at the CBB, contesting the validity of that decision on the basis that Article 16aa was not in conformity with Directive 91/414.<sup>589</sup> Subsequently, the CBB decided to bring the case before the ECJ by requesting a preliminary ruling.<sup>590</sup> The questions posed were similar to those of the first case, except for the specific wording in relation to Article 16aa.

Advocate General Sharpston of the ECJ delivered her opinion on 4 May 2006, being very critical about the course of action taken by the Dutch government.<sup>591</sup> She noted that during the transitional period of Directive 91/414 the Netherlands had successively amended its national legislation for the regulation of plant protection products three times: first, by anticipating upon the stricter criteria used for Community assessment; second, by loosening up the assessment regime through the introduction of a specific authorisation procedure for 'agriculturally essential products', and third, by loosening up

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<sup>586</sup> Case C-316/04, OJ C010, 14.01.2006, p. 4: Stichting Zuid-Hollandse Milieufederatie v. College voor de toelating van bestrijdingsmiddelen. 3M Nederland BV intervened in the case, together with 81 companies in the Netherlands plant protection and biocidal products sector. Furthermore, observations were submitted on behalf of the Netherlands Government, the Danish Government, the French Government, and the European Commission. Mr. Advocate General F.G. Jacobs delivered his opinion on 14 July 2005.

<sup>587</sup> CBB AWB 04/185, LJN: BA4400, 4 May 2007.

<sup>588</sup> According to the English translation in the opinion delivered by Advocate General Sharpston in Case C-138/05, Artikel 16aa provides that 'where the interests of agriculture so urgently require' the competent minister may grant an exemption or derogation from the prohibition on marketing and use which would otherwise apply with regard to products containing an active substance which (a) was on the market before 26 July 1993, (b) is not designated by the Plant Protection Products Directive and (c) in respect of which the review referred to in Article 8(2) of that directive is being commenced or in progress after 26 July 2003 (para 28).

<sup>589</sup> Decision on Exemptions for Plant Protection Products 2004, minister of LNV, 21 April 2004, as amended on 28 April 2004 (Vrijstellingen gewasbeschermingsmiddelen, Strct. 2004, 77 and 82).

<sup>590</sup> CBB AWB 04/876, LJN: AT2557, 22 March 2005.

<sup>591</sup> Opinion of Advocate General Sharpston delivered on 4 May 2006 in Case C-138/05, Stichting Zuid-Hollandse Milieufederatie v. Minister van Landbouw, Natuur en Voedselkwaliteit. Written observations had been submitted by the ZMF, by the Danish, French, Greek and Netherlands Governments and by the Commission.

the regime even more rigorously, through the introduction of a series of exemptions for agriculturally essential pesticide products.<sup>592</sup>

Sharpston went on to argue that Community law requires that during the transitional period prescribed in Article 8(2) the Member States must refrain from adopting any measures liable seriously to compromise the result prescribed by Directive 91/414, and that it is for the national court to determine whether that is the case.<sup>593</sup> She observed that according to the recitals to the Directive the whole system of authorisations is based on a high level of protection of health, groundwater, and environment and that it is to be assumed that the Community legislator did not intend the leeway afforded to Member States under the various provisions contained in Article 8 to undermine that objective.<sup>594</sup> She subsequently concluded that “measures establishing a system that does not require a dossier to be submitted, and that not contain a binding requirement for the competent authority to take into account the effect of the product on health, groundwater and the environment, are to be regarded as measures that are likely seriously to compromise the result prescribed by the Directive.”<sup>595</sup>

In addition, Advocate General Sharpston observed that “during a transitional period a Member State may not replace its measures for implementation with new measures that provide for a lesser degree of implementation of the directive, and that would come down to a change of legislation in a ‘retrograde’ way, i.e. to introduce new provisions that are further from, rather than closer to, what the directive ultimately requires.”<sup>596</sup> In this respect, the Advocate General concluded that the new exemption in the Dutch Pesticides Act reflected the aims and objectives of the Directive less adequately than its predecessors and that such a measure is liable seriously to compromise the result prescribed by the Directive.<sup>597</sup> Finally, and in anticipation of the judgment to be made by the national court, Sharpston argued that the examination provided for in Article 16aa of the Pesticides Act is not a ‘review’ within the meaning of Article 8(3).<sup>598</sup>

Subsequently, the case was referred to the CBB for a final judgment. In May 2007, the CBB decided that the procedure of Article 16aa was not equivalent to the review procedure of the Directive, and repealed the 2004 decision of the minister of LNV.<sup>599</sup>

The third case brought before the ECJ for a preliminary ruling was about the scope of the exception of essential use in relation to decisions of non-inclusion of active substances according to Directive 91/414. Such decisions generally imply that the Member States are obliged to withdraw pesticide products containing such a substance from the market.

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<sup>592</sup> Ibidem, para 3 (summarised in my own words).

<sup>593</sup> Ibidem, para 63. Sharpston mentions in particular the second paragraph of Article 10 EC (which she calls ‘the duty of loyal cooperation’) and the third paragraph of Article 249 EC.

<sup>594</sup> Ibidem, para 76.

<sup>595</sup> Ibidem, para 83.

<sup>596</sup> Ibidem, para 85 and 86.

<sup>597</sup> Ibidem, para 90.

<sup>598</sup> Ibidem, para 96.

<sup>599</sup> CBB AWB 04/876, LJN: BA4402, 4 May 2007.



In this particular case, Decision 2003/199 included the non-inclusion of the substance ‘aldicarb’ and the withdrawal of authorisations concerning this active substance.<sup>600</sup>

In order to implement the decision concerning aldicarb, the CTB decided to withdraw all authorisations for placing pesticide products containing the substance concerned on the market, however, with the exception of authorisations issued for essential use of those products.<sup>601</sup> In response, the ZMF and the Foundation for Nature and Environment (*Stichting Natuur en Milieu*, or SNM) lodged a complaint against the CTB for making this exception. After the complaint was declared unfounded by the CTB, the two environmental organisations appealed to the CBB.<sup>602</sup> Subsequently, the CBB requested a preliminary ruling from the ECJ whether an exception to immediate market withdrawal for specific applications was valid in the context of the Directive.<sup>603</sup> In the wording of the ECJ, the national court was essentially asking “whether Article 2(3) of Decision 2003/199 is consistent with Article 8 of Directive 91/414.”<sup>604</sup>

Subsequently, the ECJ ruled that: “Article 2(3) of Decision 2003/199 must ... be interpreted as allowing, under certain conditions, the Member States specified in column A of the annex to that decision to maintain in force until 30 June 2007 authorisations to place plant protection products containing the active substance ‘aldicarb’ on the market for essential uses.”<sup>605</sup> It went on to argue that “the principle of establishing different time-limits for the withdrawal of authorisations ... cannot be considered to be inconsistent with the provisions of that directive”, and that “within the context of ... the principle of proportionality, having regard to the broad discretion enjoyed by the Council in adopting Decision 2003/199, the legality of that measure can be affected only if the measure is

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<sup>600</sup> Council Decision 2003/199/EC of 18 March 2003 concerning the non-inclusion of aldicarb in Annex I to Council Directive 91/414/EEC and the withdrawal of authorisations for plant protection products containing this active substance, OJ 2003 L076, p. 21.

<sup>601</sup> CTB Decision of 11 July 2003, as amended on 1 August 2003.

<sup>602</sup> CTB Decision of 20 February 2004.

<sup>603</sup> CBB AWB 04/300, LJN: AT4368, 19 April 2005.

<sup>604</sup> Article 2(3) of Council Decision 2003/199/EC is worded as follows:

[Member States shall ensure that]: ... 3. in relation to the uses listed in column B of the Annex, a Member State specified in column A may maintain in force authorisations for plant protection products containing aldicarb until 30 June 2007 provided [instead of 18 March 2003] that it:

- a. ensures that such plant protection products remaining on the market are relabelled in order to match the restricted use conditions;
- b. imposes all appropriate ... measures to reduce any possible risks in order to ensure the protection of human and animal health and the environment; and
- c. ensures that alternative products or methods for such uses are being seriously sought, in particular, by means of action plans

<sup>605</sup> Case C-174/05, 9 March 2006. *Stichting Zuid-Hollandse Milieufederatie and Stichting Natuur en Milieu v. College voor de toelating van bestrijdingsmiddelen. Bayer CropScience BV* intervened in the case. Furthermore, observations were submitted on behalf of the College voor de Toelating van Bestrijdingsmiddelen, the Netherlands Government, the Belgian Government, the Greek Government, the European Council, and the European Commission. Whereas the English version of Article 2(3) used the term ‘maintain in force’, the Dutch version used ‘verstrekken’ (grant).

manifestly inappropriate having regard to the objective which the Council seeks to pursue.”<sup>606</sup>

The Court concluded that “all factors showed that the Council carried out a global assessment of the advantages and drawbacks of the system to be established and that that system was not on any view manifestly inappropriate in the light of the objectives pursued”, and thus that Article 2(3) of Decision 2003/199 was valid. The case was then referred back to the CBB to decide whether the Dutch provisions of the exception were in line with the one incorporated in the Decision.

In sum, the three above-mentioned cases demonstrate that the Netherlands government has explored the boundaries of what is acceptable and lawful in the context of the EU legislation on pesticides, and has occasionally exceeded these boundaries in the opinion of the ECJ.

## 6.5 The formulation of a new act

In response to the ongoing legal conflicts and the resulting legal uncertainty, the minister of LNV and the state secretary of VROM announced the preparation of a new law on pesticides in 2004.<sup>607</sup> Shortly afterwards, they proposed a framework act aiming to serve three purposes.<sup>608</sup> First, the structure of the new act would be more simple and accessible than its predecessor. Second, the act would be in full conformity with the EU directives concerned, and make use of dynamic references to ensure future compatibility. Third, the new framework act would create a ‘level playing field’ for Dutch agricultural producers in the European context.

The act itself is meant as a framework, concentrating on the key issues, and will be further elaborated in executive decrees. Although the minister had stipulated that the legislative proposal could be published in the first half of 2005, the drafting process was delayed, and the proposal was sent to Parliament in March 2006.<sup>609</sup> The new act was published in February 2007 and will enter into force stage-wise (*Wet gewasbeschermingsmiddelen en biociden*).<sup>610</sup>

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<sup>606</sup> Case C-174/05, para 32.

<sup>607</sup> The first announcement of the governmental intention to start a legislative process for a new act on pesticides was made in a letter of the minister of LNV (Parliament, TK 2004-2005, 27 858, no. 51).

<sup>608</sup> In December 2004, the minister of LNV and the state secretary of VROM sent a working document to Parliament, in which they explained the approach and structure of a new act on plant protection products and biocides (Parliament, TK 2004-2005, 27 858, no. 53).

<sup>609</sup> Parliament, TK 2005-2006, 30 474, nrs. 1-4. The proposal is accompanied by an extensive explanatory memorandum dealing with the history of Dutch pesticide policy. According to the explanatory memorandum, the proposal for the new act on crop protection does not contain any substantial changes in comparison with its predecessor.

<sup>610</sup> *Wet gewasbeschermingsmiddelen en biociden* (Stb. 2007, 125).

## 6.6 The level of pesticide risk reduction

The Dutch government has chosen the option of integrated control as the most realistic form of sustainable agriculture for the Netherlands, considering each producer farming organically as a bonus. However, the ministry of LNV has thus far not defined what integrated control entails. Since governmental guidance did not exist in this field, companies in the food and retailing industry have chosen their own interpretation of the concept. Several of them established their own norms, whereas other companies implemented the standards formulated in the context of national or international certification programmes introduced by non-state actors.<sup>611</sup> With the policy document on public certification (*ZOGZ*), the government attempted to define bottom line standards itself, but, due to the failure of the plan, the definition of integrated control is back into private hands.

The current state-of-affairs is that many Dutch growers have a GlobalGAP certification, which has become a bottom line requirement for supplying the major European retailers. A major reason for the successful implementation of GlobalGAP in the Netherlands is that the growers' marketing cooperative The Greenery anticipated the system in an early stage by making its member growers accustomed to keeping an input administration.

With regard to pesticide residues, the newly established Food and Consumer Product Safety Authority (*Voedsel- en Warenautoriteit*, or VWA) is responsible for the enforcement of the legislation concerned and also carries out the annual monitoring programme of the European Commission.<sup>612</sup> The data submitted by the Member States show that agricultural products available in the Dutch market contain residues more often than the European average and score extremely high in the category of multiple residues.<sup>613</sup> Moreover, the EU MRLs are more often exceeded in the Netherlands than in other Member States.

According to the VWA, there may be several reasons for a higher percentage of deviance in the Netherlands than in other countries.<sup>614</sup> First, the VWA argued that the Dutch monitoring effort is one of the more comprehensive in Europe as regards the numbers of samples and monitored substances. Second, the VWA claimed that its sampling strategy is very efficient. Third, the VWA stressed that the highest level of exceedances is found in agricultural products imported from non-EU countries. Fourth, the VWA suggested that a high level of exceedances could be an indication of problems in agricultural practice.

However, the data from the EU monitoring exercise do not fully confirm the first two arguments of comprehensiveness and efficiency. Although it is a general rule that the more

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<sup>611</sup> N.M van der Grijp, J. de Boer & F. den Hond (2001). *Initiatieven vanuit de Nederlandse voedingssector ter beperking van het bestrijdingsmiddelengebruik* (Initiatives of the Dutch food industry to reduce pesticide use). R-01/03. Amsterdam: Instituut voor Milieuvraagstukken, Vrije Universiteit, 149 p.

<sup>612</sup> Previously, the tasks of monitoring and enforcing pesticide residue limits were performed by the *Keuringsdienst van Waren*.

<sup>613</sup> In 2005, 45% of Dutch samples contained multiple residues against the EU average of 26.7%.

<sup>614</sup> Dossier bestrijdingsmiddelen, Voedsel en Warenautoriteit, <http://www.vwa.nl>.

substances are monitored, the more residues are found, this does not necessarily mean that countries with a higher number of monitored substances have a higher level of exceedances. For example, Germany monitors more substances than the Netherlands but has relatively less samples with residues above EU limits.

## 6.7 Conclusions

The Dutch government has experienced considerable difficulties in pursuing a consistent law and policy on pesticides. In the period from 1962 until 1990, the government prepared the groundwork for a law and policy on pesticides with a dual objective, including the promotion of agricultural production as well as the protection of the environment and human health. From 1990 until 2001, the government further raised its ambitions in the environmental field with a strategic policy plan and the decision to anticipate on EU policy. However, it had to pull back as the pressure from the agricultural sector increased.

In the years between 2001 until 2005, the government reversed several of its earlier decisions, loosening up the regulatory regime for pesticide authorisations. In addition, the government was forced by the horticultural sector to replace a carefully prepared strategic policy plan introducing a public certification scheme based on integrated management by a less ambitious plan that considered certification a responsibility of business. In this period, the effort of the Dutch government can be characterised as ‘zigzagging’ between the wish to diminish environmental risks on the one hand, and the interests of the horticultural sector to continue current production practices on the other hand. This difficulty to balance diverging interests has also become apparent in occasional frictions between the responsible ministries. Furthermore, it has had as a consequence that time and again the government has been ‘corrected’ by legal rulings in court cases.

A new period began around 2005 when in response to increased legal uncertainty about the previous amendments of the Pesticide Act, the minister of LNV decided to start a legislative procedure for a new act on pesticides aiming to simplify the complex web of rules that had been established over the years and implement the EU legislation in a consistent manner. As a consequence, pressure will be taken from the national government. Moreover, with the strong emergence of private certification schemes, national and foreign market parties have started formulating their own rules for food quality and safety, which means that the regulatory ‘battlefield’ has been largely relocated.

In sum, increased legal pluralism has meant for the Dutch national government that it has become increasingly ‘overruled’ by EU legislation and non-state actor regulation, urging the government to redefine its responsibilities and to adapt to the new circumstances.

## 7. The perspective of agricultural producers: the case of tomato production

### 7.1 Introduction

Agricultural producers are increasingly confronted with requirements to upgrade their production in terms of food quality and safety. These requirements are formulated by a broad range of state and non-state actors and take many different forms. This chapter uses the example of tomato production to explain how legal pluralism affects agricultural producers by influencing the conditions for production and trading. It especially highlights aspects of competition, and market access. Its geographical focus is mainly on Europe and the Mediterranean basin, although seen in the larger context of global developments and impacts.

The chapter is structured as follows. Section 7.2 examines the concept of governance in relation to supply chain management. Section 7.3 describes the market for tomatoes and identifies the key players. Section 7.4 explains the major production regimes and the main sustainability issues associated with them. Section 7.5 considers the tomato as object of regulation in the different stages of its life-cycle. Section 7.6 deals with the competitive position of tomato producers. Section 7.7 presents conclusions.

### 7.2 Supply chain governance

The international trade in agricultural and food products has become increasingly competitive and globalised under the influence of trade liberalisation.<sup>615</sup> This observation accounts relatively stronger for the fruit and vegetables sector. One of the decisive factors in the globalisation process of this sector has been the ever-growing market share of large food producers and retailers in combination with their increased global sourcing practices. On top of that, the food and retailing sector is subjected to ongoing processes of horizontal and vertical concentration.<sup>616</sup> This implies that a relatively small number of economic actors exercises a major influence over the other stakeholders in the supply chain, and is able to influence production circumstances and product choice.

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<sup>615</sup> See e.g.: L. Busch (2000). The moral economy of grades and standards. In: *Journal of Rural Studies*, vol. 16, issue 3, pp. 273-283; P. Atkins and I. Bowler (2001). *Food in society. Economy, culture, geography*. London: Arnold Publishers, and T. Reardon, J.-M. Codron, L. Busch, J. Bingen & C. Harris (2001). Global change in agrifood grades and standards: Agribusiness strategic responses in developing countries. In: *International Food and Agribusiness Management Review*, vol. 2 (3/4), pp. 421-435. See for more general explanations of the mechanisms of globalisation: T.L. Friedman (2000). *The Lexus and the Olive Tree. Understanding Globalization*. New York: Random House, originally published in somewhat different form in 1999 by Farrar, Strauss and Giroux, New York, US; N. Klein (2000). *No Logo*. London: Flamingo; N. Hertz (2001). *The silent takeover: Global capitalism and the death of democracy*. London: William Heinemann.

<sup>616</sup> EHI (2005). *Retail fact book*. Cologne: EHI, 232 p.

This chapter uses insights from political economy, and more precisely from global commodity chain analysis and global value chain analysis in order to explain these changes in supply chain governance.<sup>617</sup> These analytical tools help to understand the way in which economic actors participate in the global economy. They are useful when explaining restructuring and transition processes in specific economic sectors. In comparison with traditional sectoral analysis, which tends to be static, they apply a more dynamic approach focusing on interlinkages within the productive sector.

Commodity chain analysis and value chain analysis put the emphasis on power relations in product and service chains, and the dynamics of rent distribution along these chains. These approaches stress the importance of global buyers, particularly retailers and brand-name companies, as shapers of production, distribution and marketing systems, and pay attention to the factors that determine global sourcing relationships with producers, especially in developing countries. Gereffi has observed the emergence of two distinct types of international economic networks: ‘producer-driven’ and ‘buyer-driven’ commodity chains.<sup>618</sup> His thesis is that most industrial sectors belong to either one of these types, but that overall a transition towards buyer-driven chains has taken place. Along similar lines, Kaplinsky and Morris have argued that value chains have shifted from a “supplier-push” to a “market-pulled” nature in the past decades.<sup>619</sup> They stress that markets have become much more demanding as competitive pressures increased, making it increasingly important for economic actors to upgrade their products and production processes.

The concept of governance is central to the two approaches of global commodity chain analysis and global value chain analysis, as it is considered one of the determinants of competitive advantage.<sup>620</sup> Governance encompasses internal as well as external rules. The first set of rules is set, implemented and enforced by the stakeholders in value chains themselves. This form of governance ensures that interactions between firms along a value chain exhibit some reflection of organisation rather than being simply random.

In concrete terms, this means that stakeholders in value chains are determining product and production criteria that have consequences up or down the value chain. These rules are primarily sector-oriented.

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<sup>617</sup> See e.g.: G. Gereffi (1999). International trade and industrial upgrading in the apparel commodity chain, in *Journal of International Economics* vol. 48, pp. 37-70, and R. Kaplinsky (2000), Globalisation and unequalisation: What can be learned from value chain analysis? In *The Journal of Development Studies*, vol. 37, no. 2, pp. 117-146.

<sup>618</sup> According to Gereffi (1999), producer-driven commodity chains are those in which large, usually transnational, manufacturers play the central roles in coordinating production networks (including their backward and forward linkages). Buyer-driven commodity chains refer to those industries in which large retailers, branded marketers, and branded manufacturers play the pivotal roles in setting up decentralized production networks in a variety of exporting countries, typically located in the Third World.

<sup>619</sup> R. Kaplinsky & M. Morris (2001). *A handbook for value chain research*. Ottawa: IDRC, p. 55.

<sup>620</sup> See e.g.: R. Kaplinsky & M. Morris (2001), and G. Gereffi, J. Humphrey & T. Sturgeon (2005). The governance of global value chains. In: *Review of International Political Economy*, vol. 12, no. 1, pp. 78-104.

The second set of rules is being established by actors outside value chains that do not have a direct stake in the value chain involved. These rules have a more generic character, and can create all kinds of institutional mechanisms that influence the power relationships within value chains and the distribution of costs and benefits. They determine the general legal setting. Most of these rules are set by governments and public international organisations, but they can also have a non-state origin.

This contemporary reality of a multiplicity of internal and external rules makes governance a multi-faceted phenomenon for the participants in many supply chains.<sup>621</sup> At any one point in time, a number of different actors may be setting rules, auditing performance, and assisting producers to achieve the required standards. As a consequence of this multiplicity, there are interactions between different sets of rules, which is essentially a similar idea as promoted by the concept of legal pluralism.

Dolan and Humphrey have been looking at the changing governance patterns in the trade in fresh vegetables between Africa and the UK.<sup>622</sup> They concluded that these changes are mainly caused by the behaviour of large retailers that have adopted competitive strategies based on quality, year-round-supply, and product differentiation, and have implemented risk control approaches. Interestingly, their research shows that the regulatory environment created during the 1990s by the UK government and the EU played a crucial role in the creation of the new governance structures in the supply chains for fruit and vegetables, but that this issue has not got proper attention in global commodity chain and global value chain analyses hitherto. Furthermore, they point the attention to the increased influence of standard setting bodies, both public and private, on value chain governance.

García Martínez and Poole have come to similar conclusions on the basis of research they have done about the increasing demands for food safety and quality by European food retailers and their implications for Southern Mediterranean producers. In their article, they speak of “a new paradigm for stakeholder relationships characterised by complex interactions between public and private modes of regulation.”<sup>623</sup> They observe that the increasing globalisation of food production and consumption makes it difficult for national governments to exert comprehensive controls over the entire supply chain and that this has led to the resulting shift of responsibility towards the private sector. They go on to suggest that the interaction between self-regulation and public regulation could even provide a superior outcome, as industry and firms are more knowledgeable regarding product quality, and public regulation can generate reputation-based incentives to monitor quality, in the form of public exposure.<sup>624</sup>

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<sup>621</sup> *Ibidem*, p. 33.

<sup>622</sup> C. Dolan & J. Humphrey (2004). Changing governance patterns in the trade in fresh vegetables between Africa and the United Kingdom. In: *Environment and Planning A*, vol. 36 issue 3, pp. 491-509.

<sup>623</sup> M. García Martínez & N. Poole (2004). The development of private fresh produce safety standards: implications for developing Mediterranean exporting countries. In: *Food Policy* 29, issue 3, pp. 229-255.

<sup>624</sup> *Ibidem*, with a reference to Nuñez (2001).

Buller and Morris have also recognised shifting regulatory influences between the market and the state in their article about market-oriented initiatives for environmentally sustainable food production.<sup>625</sup> More precisely, they notice a critical interplay and interrelationship of public policy and market forces in achieving environmentally sustainable forms of agriculture. They argue that market-oriented approaches do not constitute a regulation-free alternative to public policy and that the traditional division of responsibilities is being reversed to a new situation in which public policy increasingly plays the role of facilitator and the market that of regulator. Their final conclusion is that a new regulatory regime is being established and that this raises a number of questions concerning the attainment of public policy objectives, their effects on competition in the food industry, and the division of power and the distribution of benefits in food supply chains.<sup>626</sup>

The next sections will explore the rules governing the supply chains of fresh-market tomatoes, and the way these rules influence the competitive position of tomato producers.

### 7.3 The market for tomatoes

The tomato belongs to the family of *Solanaceae*, also known as the nightshade family, and the genus of *Lycopersicon*.<sup>627</sup> The only edible part of the tomato plant is the fruit. It is therefore classified as a fruiting vegetable, together with, for example, peppers and aubergines.<sup>628</sup>

The tomato as we know it today has come a long way from a plant growing in the wild to a species subject to intense domestication, hybridisation, and lately genetic modification. The origin and early history of the cultivated tomato are not definitive. Several authors claim that the tomato, or *xitomatl*, was originally a wild growing plant in the Andes in South America that became cultivated by the people living in the area.<sup>629</sup> What is certain is that the tomato was first domesticated on a larger scale in Mexico and brought to Europe by Spanish conquistadores in the 16th century. Its first use was as an ornamental plant in gardens because as a member of the nightshade family it was believed to be poisonous. However, starting in Southern Europe, the tomato was increasingly appreciated

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<sup>625</sup> H. Buller & C. Morris (2004). Growing goods: the market, the state and sustainable food production, in: *Environment and Planning A*, vol. 36, issue 6, pp. 1065-1084.

<sup>626</sup> *Ibidem*, pp. 1079-1080.

<sup>627</sup> J.M. Costa & E. Heuvelink (2005). Introduction: the tomato crop and industry. In: E. Heuvelink (ed.), *Tomatoes*, Oxfordshire/Cambridge: CABI Publishing, p. 1-19.

<sup>628</sup> C.A. Wright (2001). *Mediterranean vegetables: a cook's ABC of vegetables and their preparation in Spain, France, Italy, Greece, Turkey, the Middle East, and North Africa*, with more than 200 authentic recipes for the home cook. Boston: The Harvard Common Press. He claims that the tomato, being a fruit, was officially declared a vegetable in the United States by the Supreme Court in a decision made in 1893 because of a tariff dispute.

<sup>629</sup> See e.g.: C.A. Wright (2001); M. Harvey, S. Quilly & H. Beynon (2002). *Exploring the tomato. Transformations of nature, society and economy*. Cheltenham/Northampton: Edgar Elgar, especially chapter 2 "From nature into culture and economy", pp. 25-43, and J.M. Costa & E. Heuvelink (2005). The latter book aims to give an update of the 661-page 'tomato-bible' published in 1986: J.G. Atherton and J. Rudich (eds.) (1986). *The tomato crop: a scientific basis for improvement*. London: Chapman & Hall, 661 p.



for consumption.<sup>630</sup> It was only in the late 19th century that the tomato was recognised as a common ingredient in the cuisine of European countries. Subsequently, Europeans introduced the tomato to other parts of the world, such as China and the USA, where it soon became accepted as part of the national diet.<sup>631</sup>

A next landmark in the triumphal progress of the tomato was the development of canning technology in the USA, which was the impetus for the marketing of pre-processed tomato products, such as soups and sauces.<sup>632</sup> These products are pre-eminently symbolised by the two icons of tomato mass consumption that emerged in the 20th century, including Heinz tomato ketchup and Campbell's condensed tomato soup. As Harvey *et al.* observe, canning was a critical step towards mass cultivation, and made it possible for the tomato to become available throughout the year, either in fresh or processed form.<sup>633</sup>

Nowadays, there are many varieties of tomatoes, although basically five major types can be distinguished, including classic round tomatoes, cherry and cocktail tomatoes, plum and baby plum tomatoes, beefsteak tomatoes, and vine or truss tomatoes. In addition to these basic types, commercial tomato breeders have developed tomatoes with specific properties that are more easy to handle and harvest, or fulfil other criteria. In order to achieve this, specific traits from the wild *Lycopersicon* species have been extensively studied and used to alter the tomato, for example in terms of fruit size, disease resistance, taste, colour, shelf-life, but also nutritional value.<sup>634</sup>

Regarding nutrition, tomatoes are thought to deliver particular benefits to human health, because of their high level of lycopene, a nutrient that may work as a powerful antioxidant protecting against a number of diseases.<sup>635</sup> Several experiments of the seed industry have subsequently sought to enhance the natural lycopene content of the tomato, including genetic modification.

The same technique has also been used to prolong the shelf-life of tomatoes and this has resulted in the creation of the FlavrSavr™ tomato by the British company Zeneca in 1994.<sup>636</sup> However, the marketing of this 'Methusalem tomato', as Petrini called it, has been stopped as supermarkets in Europe decided to withdraw all genetically modified products in 1997.<sup>637</sup>

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<sup>630</sup> According to Wright (2001), for example, it was in 1790, with the publication by the Neapolitan chef Francesco Leonardi's *l'Apicio moderno* (The Modern Apicius) that the spaghetti and tomato sauce of today emerged.

<sup>631</sup> Siemonsma & Piluek (1993) as referred to in J.M. Costa & E. Heuvelink (2005).

<sup>632</sup> M. Harvey, S. Quilly & H. Beynon (2002), p. 36.

<sup>633</sup> *Ibidem.*

<sup>634</sup> Stevens & Rick (1986) as referred to in J.M. Costa & E. Heuvelink (2005).

<sup>635</sup> See e.g.: V. Rao & S. Agarwal (2000). Role of antioxidant lycopene in cancer and heart disease. In: *Journal of American College of Nutrition*, vol. 19, no. 5, pp. 563-569.

<sup>636</sup> M. Harvey, S. Quilly & H. Beynon (2002), p. 130.

<sup>637</sup> See: C. Petrini (2001). *Slow food: the case for taste*. Translated from Italian by W. McCuaig. Columbia University Press, New York, p. 100, and M. Harvey, S. Quilly & H. Beynon (2002), p. 147.

As concerns statistics, the annual worldwide production of tomatoes in 2003 has been estimated at 110 million tonnes with a total production area of about 4.2 million ha.<sup>638</sup> In the same year, the global trade of tomatoes and tomato products reached US\$ 4.2 billion.<sup>639</sup> In 2003, the four leading producers were China, the USA, Turkey, and India, whereas the USA, Italy, Spain and Turkey dominated the world processing industry for tomatoes. However, China is catching up fast, investing heavily in processing technology.

In this respect, it should be noted that tomato production has increasingly become a globalised business under pressure of demand for year-round supply. Consequently, the tomato industry has started to cross national borders and become multinational. This multinationalisation can take several forms. First, tomato producers may conclude strategic alliances with producers in countries with favourable production circumstances, such as a mild climate, cheap labour, or less strict regulations. Second, tomato producers may start production operations themselves in those countries.

Focusing on tomato consumption, it is evident that it has increased dramatically and nearly doubled since the 1970s, although patterns of consumption widely differ between countries.<sup>640</sup> This increase has been stimulated by the fact that tomatoes are suitable for various uses. Nowadays, tomatoes are eaten fresh, in raw as well as prepared form. In addition, they are marketed in a multiple of processed forms, such as (i) tomato preserves (e.g. peeled, juice, pulp, past, pulp, and pickled), (ii) dried tomatoes (e.g. powder, flakes, and fruits), and (iii) tomato-based foods (e.g. soups, sauces, and convenience foods).

In sum, it can be concluded that the market for fresh as well as processed tomatoes is blossoming. It is, however, also in turmoil and far from stable, as there is a fierce competition between tomato producers and prices are under downward pressure. This has urged producers to look for a competitive edge in order to be able to ask for higher prices and has been a major impetus for a trend towards more differentiation in fresh tomatoes and processed tomato products on offer.

## 7.4 Production systems and sustainability

Many factors determine successful production of tomatoes, such as climate, soil, exposure to sun, quality of seeds or seedlings, geography, exposure to wind, rainfall and so forth. The favourite climatic conditions for the tomato plant include temperate and subtropical zones where it is not exposed to temperatures below 12°C.<sup>641</sup> However, these conditions are not favourable everywhere and this had led to the development of covered production spaces that make production circumstances more controllable. More specifically, glasshouses, a technology that had previously only been used in private gardens, was introduced on a commercial basis in the late 19<sup>th</sup> century, first in the UK and later

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<sup>638</sup> Production figures are based on FAO data, available at <http://apps.fao.org>. See for Eurostat figures at <http://ec.europa.eu/eurostat>.

<sup>639</sup> Trade figures are based on FAS/USDA data, available at <http://www.fas.usda.gov/htp>.

<sup>640</sup> M. Harvey, S. Quilly & H. Beynon (2002), p. 67.

<sup>641</sup> J.M. Costa & E. Heuvelink (2005), p. 3.

also in the Netherlands and Belgium.<sup>642</sup> The production in glasshouses soon took off and its success was the impetus to the development of new technologies making production increasingly efficient and allowing the growing season to be extended.

In the present-day tomato industry, processing tomatoes, as a rule, are grown in open field systems where they are harvested mechanically. Fresh-market varieties are grown in both the open field and greenhouses. These greenhouses may vary widely, from simple plastic structures and shade houses to high-tech glasshouses. Harvesting of these tomatoes is mainly done by hand. On a global scale, the share of fresh-market tomatoes produced in greenhouses has shown a fast increase at the expense of field tomatoes grown for the fresh market.<sup>643</sup> The relatively uniform appearance of greenhouse tomatoes and their stable production volumes are the major reasons for their appeal to especially the retail industry.

The European production of greenhouse tomatoes can be divided into two major production systems that diverge in region, season, production method, and type of tomato.<sup>644</sup> The Northern European system is capital and input intensive, and takes place in high-tech glasshouses. The system is highly productive, and focused on fresh tomato production. The season generally starts in Winter and ends in late Autumn, but there is a tendency for year-round production with the help of artificial light. The Netherlands and Belgium are the leaders in this Northern system of tomato production. Most of their produce is exported, with Germany and the UK as major markets.

The Southern system of the Mediterranean countries is focused on fresh tomatoes that are grown in plastic-covered structures that diverge from very simple to high-tech.<sup>645</sup> More precisely, the Southern system has been in transition over the past years from lower to higher technology, leading to ever higher yields, and increasingly resembles the

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<sup>642</sup> M. Harvey, S. Quilly & H. Beynon (2002), p. 38/39.

<sup>643</sup> R. Cook & L. Calvin (2005). Greenhouse tomatoes change the dynamics of the North American fresh tomato industry. Economic Research Service USDA, 81 p.

<sup>644</sup> See e.g.: M. Harvey, S. Quilly & H. Beynon (2002), p. 69, and Costa & Heuvelink (2005). Four recent documentary films focus on tomato production: 1) J. Demmer (2003). *Tarifa Traffic - Death in the straits of Gibraltar*. The film is about illegal African immigrants trying to reach Tarifa in Southern Spain by boat and aiming to work in the greenhouses in Southern Spain. Awards: Prix Suisse TSR Visions Du Réel Nyon, Audience Award For Best Film Duisburger Filmwoche, 1er Prix Du Concours Européen Du 1er Film Documentaire Du Réel Le Mans, Medienpreis Der Evangelischen Kirche Germany; 2) N. Geyhalter (2005). *Our daily bread*. Special jury prizes at IDFA Amsterdam 2005 and International Documentary Festival Toronto 2006. The film shows images of tomato-growing under plastic in the region of Almería in Spain and the production under glass of Tasty Tom-tomatoes in the Netherlands. Information about the film is available at <http://www.ourdailybread.at>; 3) E. Wagenhofer (2005). *We feed the world*. A part of this film is dedicated to tomato production under plastic in the Almería region in Spain, with a specific focus on the miserable living and working conditions of immigrant labourers from Africa. Information about the film is available at <http://www.we-feed-the-world.at>, and 4) E. Hirvonen (2007). *Paradise - Three journeys in this world*. This film focuses on illegal African immigrants crossing the Mediterranean Sea, working in the greenhouses of Almería.

<sup>645</sup> See e.g.: Costa & Heuvelink (2005), p. 6.

Northern system. Its season starts in late Summer and ends in late Spring, with the majority of the produce being exported to Northern European countries. The Southern system is being practised along the coast of the Mediterranean, especially in Spain (provinces of Almería and Murcia, and Canary Islands), Portugal (Algarve), Italy (Sicily), and Greece (Crete).<sup>646</sup> Increasingly, this type of production is also taking place in other countries in the Mediterranean basin, such as Turkey (region of Antalya), and Morocco (regions of Fez, El-Jadida, Safi and Atlas), and to a lesser extent in Syria, Israel, Jordan, Egypt, and Tunisia.

A similar division of roles can be recognised in North America, where the main players include Canada, Mexico, and the USA, especially the states of California and Florida.<sup>647</sup> The main difference is that the position of field-grown tomatoes is still relatively stronger than in Europe, which is demonstrated by the fact that they have an important market share in the fresh tomato market and are also exported. However, this situation may change as Mexico is expanding its greenhouse area fast in order to supply the US and Canadian market.

Overall, the different systems of covered tomato production have a number of environmental problems in common, including the pollution of water, soil and air, soil degradation, and loss of biodiversity.<sup>648</sup> These problems are to a large extent related to the use of pesticides and fertilisers. Furthermore, the appreciation of the landscape may drastically change in areas with a proliferation of greenhouses and production under plastic. Other problems are more specific to the climatic region where production takes place and the production system in use. The major specific impacts of Northern glasshouse production are caused by the high use of energy for heating purposes, and the use of artificial lighting at night-time. Southern greenhouse production has specific problematic effects because of the extensive use of scarce water resources for irrigation, the creation of large amounts of plastic waste, and the surpluses of tomatoes that must be withdrawn from the market.

With regard to the social aspects of production, it should be noted that horticulture is a relatively labour intensive sector and that the income per work unit is often low. Moreover, this type of work has a highly seasonal character that makes it attractive to use ille-

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<sup>646</sup> This information is based on articles in the Dutch weekly 'Groenten en Fruit' and my own observations through Google Earth, which distributes photos of the earth's surface that are made by satellites. Areas with a dense concentration of plastic production are easily identifiable by their pale blue colour.

<sup>647</sup> R. Cook & L. Calvin (2005).

<sup>648</sup> See e.g.: Report from the Commission to the Council on the state of implementation of Regulation (EC) No 2200/96 on the common organisation of the market in fruit and vegetables, COM(2001) 36 final, 24.1.2001, M. Harvey, S. Quilly & H. Beynon (2002), especially chapter "The fabrication of nature", pp. 102-129, and Costa & Heuvelink (2005).

gal workers, often immigrants, who are a flexible workforce without any rights.<sup>649</sup> An important economic issue is related to the distribution of income in food supply chains and the price that producers get for their produce. In the past decade, agrochemical companies, food industry and retailers have been capturing much more of the financial benefits in food supply chains than they used to do.<sup>650</sup> As a result, producers are getting relatively lower prices for their produce. Moreover, as competition further increases between the large retailers, it can be expected that prices at farm level may come under greater downward pressure.

Concerning human health aspects, there is evidence that pesticide poisoning is not a problem of developing countries only. The example of California in the US, with its considerable acreage of tomato production, shows that farmworkers in major developed countries can also experience major health problems as the result of pesticide use in tomato production.<sup>651</sup> In addition, consumers may be exposed to pesticide residues in fresh and processed tomato products.<sup>652</sup>

Focusing on pesticide use, it is important to note that the tomato plant and its fruits are vulnerable to diseases and pests.<sup>653</sup> In order to achieve more stable yields, governments and industry started to promote the use of chemicals for soil sterilisation and pest control already in the 1950s and 1960s. This has had as a consequence that many agricultural producers followed their advice and the chemical regime became ubiquitous.<sup>654</sup> As a result, tomato production became synonymous with high levels of chemical inputs.

Since the late 1970s, new agricultural production methods have become increasingly available in reaction to the negative impacts of chemical-based agricultural practices. The development of techniques of integrated control and organic agriculture have both

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<sup>649</sup> Presentation by Beatrice Knerr, University of Kassel, Germany, at a workshop about foreign labour migrants in the EU, at the EAAE congress in Zaragoza, 28 August 2002; F. Lawrence (2004). *Not on the label: What really goes into the food on your plate*. London: Penguin Books, see e.g. at pp. 64-76; Fabrizio Gatti (2006). *Io schiavo in Puglia (I was a slave in Puglia)*. In: *L'Espresso*, 1 September 2006. Available at <http://espresso.repubblica.it>. Gatti has won the 2007 EU award 'For diversity – against discrimination' for his undercover account of exploited foreign workers in southern Italy. In similar terms: F. Lawrence (2006). *Bitter Harvest*. In: *The Guardian*, 19 December 2006.

<sup>650</sup> J. Pretty (1999). *The living land: agriculture, food and community regeneration in rural Europe*. London: Earthscan, 336 p.

<sup>651</sup> Californians for Pesticide Reform (CPR). *Fields of poison: California farmworkers and pesticides*. June 1999. Revised in 2002. In California, 102 cases of acute poisoning were reported for tomato production on an annual basis in the period 1991-1996. This amount decreased in the following years but continued to threaten California farmworker health and wellbeing.

<sup>652</sup> Most remarkably, it has been argued that the Spanish cooking oil scandal of 1990 was in fact a cover-up by multinational interests to conceal that tomatoes grown in the province of Almería had been heavily polluted by organophosphate pesticides. See: B. Woffinden (2001). *Cover-up*. In: *The Guardian*, 25 August 2001.

<sup>653</sup> The most common insect pests of tomatoes are aphids, whiteflies, thrips, spider mites, and several nematodes and worms. Diseases *inter alia* include fusarium and pepino mosaic virus. See e.g.: M. Harvey, S. Quilly & H. Beynon (2002), p. 119.

<sup>654</sup> M. Harvey, S. Quilly & H. Beynon (2002), p. 40.

benefitted from technological developments concerning biological control which has gained many proponents among producers in closed production systems (see Chapter 5).

However, despite the availability of a range of alternative agricultural techniques, pesticide use is still widespread in tomato production leading to risks for the environment and human health.<sup>655</sup> The use of pesticides in tomato production is also reflected by the presence of pesticide residues in fresh tomatoes. Particularly relevant here is the EU co-ordinated monitoring programme that enables the estimation of the actual dietary pesticide exposure throughout Europe.<sup>656</sup> The programme is annually elaborated in detail through recommendations that select the fruits and vegetables to be investigated. Tomatoes have been part of the EU-coordinated programme in 1996, 2001 and 2004, respectively.<sup>657</sup>

As shown in Table 7.1, the share of residue-free tomatoes in the EU market amounted to 64% in 2004. However, the results widely diverged between countries.<sup>658</sup> Several countries (8 out of 25) reported exceedances of EU MRLs, varying between 0.3 and 10.5%.<sup>659</sup>

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<sup>655</sup> On the basis of the monitoring results of the EU coordinated programme, it can be concluded that several pesticide products with a problematic record are still being used in tomato production.

<sup>656</sup> The programme has as legal basis Article 7 of Council Directive 86/362/EEC and Article 4 of Council Directive 90/642/EEC. More detailed rules have been established in Commission Regulation (EC) No 645/2000 of 28 March 2000 and the recommendations that are being issued on an annual basis.

<sup>657</sup> See for an explanation of the choice of commodities and substances: Commission Recommendation of 1 March 1996 concerning a coordinated programme of inspections in 1996 to ensure compliance with maximum levels of pesticide residues in and on certain products of plant origin, including fruit and vegetables, OJ L064, 14.03.1996; Commission Recommendation concerning a coordinated Community monitoring programme for 2001 to ensure compliance with maximum levels of pesticide residues in and on cereals and certain products of plant origin, including fruit and vegetables, OJ L011, 16.01.2001, and Commission Recommendation of 9 January 2004 concerning a coordinated Community monitoring programme for 2004 to ensure compliance with maximum levels of pesticide residue in and on cereals and certain other products of plant origin, OJ L016, 23.01.2004. See for the monitoring results: Monitoring for pesticide residues in the European Union and Norway, Report 1996; Monitoring of pesticide residues in products of plant origin in the European Union, Norway, Iceland, and Liechtenstein, 2001 report, SANCO/20/03 final, and Monitoring of pesticide residues in products of plant origin the European Union, Norway, Iceland, and Liechtenstein, 2004 report, SEC(2006) 1416.

<sup>658</sup> The shares of residue-free tomatoes in EU Member States diverged between 33 and 100% in 2004.

<sup>659</sup> Tomatoes performed rather well in the 2004 programme in comparison with other fruit and vegetables. In 2004, the highest percentage of MRL exceedances was found in lettuce (3.3%), followed by strawberries (2.8%), head cabbage (2.3%), and apples (1.8%).

Table 7.1 Results of the EU co-ordinated monitoring programme for tomatoes

Samples	1996 (314 samples, 9 substances) (%)	2001 (2016 samples, 37 substances) (%)	2004 (2665 samples, 47 substances) (%)
Without residues	69	65	64
With residues below or at the national and EU MRLs	31	33	36
With residues above national and/or EU MRLs	0.3	1.5	0.9
With residues above EU MRLs	-	1.5	0.8

In 2004, tomatoes contained residues of most of the substances sought for.<sup>660</sup> Compared with the results of 2001, there had been a relative decrease of some problematic substances, but simultaneously an increase of other hazardous substances. It is therefore not possible to draw an unambiguous conclusion on the reduction of pesticide risks in tomato production.

## 7.5 The tomato as object of regulation

The tomato, like other fruit and vegetables, is the object of multiple rules as it passes through the different stages of its life-cycle, including: the manufacturing of seed; the cultivation of propagating and planting material; the production of agricultural produce; the marketing of fresh and processed products, and consumption.

Focusing on the EU and its Member States, it is evident that in the past decade the number of applicable rules has significantly increased in practically all stages of the tomato life-cycle. For many years, rules were almost exclusively set by state actors, initially at national level and later increasingly at EU level. These rules especially focused on the production and marketing stages. Increasingly, however, state actors have extended their legislative activities towards the earlier stages in the tomato life-cycle, including the manufacturing of seed and the cultivation of propagating and planting material.

Importantly, the International Treaty on Plant Genetic Resources for Food and Agriculture was adopted in 2001, and entered into force on 29 June 2004.<sup>661</sup> It provides a legally binding global framework for access to agricultural plant genetic resources and the sharing of benefits from their use. At the EU level, relevant legislation on plant variety rights

<sup>660</sup> The tomato samples most often contained residues of (in decreasing order): procymidone, chlorotalonil, iprodione, bromopropylate, endosufan, and cyprodinil.

<sup>661</sup> The Treaty was adopted by FAO Conference Resolution 3/2001. See for the official website of the Treaty at <http://www.planttreaty.org>.

exists since 1994.<sup>662</sup> This legislation recognises intellectual property rights for plant varieties developed by the seed industry, and provides at the same time an exemption for farmer saved seeds. By the end of 2005, 37 varieties of tomato plants had been granted protection by the Community Plant Variety Office (CPVO) pursuant to the Regulation.<sup>663</sup>

The plant variety legislation is complemented by rules on the marketing of vegetable seed stipulating that vegetable seed of registered varieties may only be marketed if it has been officially examined and certified.<sup>664</sup> This legislation has significantly strengthened the position of the seed industry, which is for a considerable part located in the Netherlands and shows some overlap with the multinational corporations that are active in the production of pesticide products. Furthermore, additional rules exist for the marketing of vegetable propagating material in order to guarantee that some minimum conditions are met concerning quality, labelling, and packaging.<sup>665</sup>

In addition to these new areas, state actors have also strengthened their legislative activities in the more traditional fields of production and marketing, as a series of new international standards and EU legislation demonstrates. The Codex Alimentarius Commission, for example, set marketing standards for tomato concentrate in 1972 and for canned tomatoes in 1981.<sup>666</sup> Since 1999, the Codex Committee on Fresh Fruit and Vegetables (CCFFV) has also been preparing a Codex standard for fresh tomatoes, but due to differ-

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<sup>662</sup> EC Council Regulation No 2100/94 of 27 July 1994 on Community plant variety rights, OJ L227, 01.09.1994, pp. 1-30. See also: Commission Regulation (EC) No 1239/95 of 31 May 1995 establishing implementing rules for the application of Council Regulation (EC) No 2100/94 as regards proceedings before the Community Plant Variety Office; Commission Regulation (EC) No 1238/95 of 31 May 1995 establishing implementing rules for the application of Council Regulation (EC) No 2100/94 as regards the fees payable to the Community Plant Variety Office, and Commission Regulation (EC) No 1768/95 of 24 July 1995 implementing rules on the agricultural exemption provided for in Article 14(3) of Council Regulation (EC) No 2100/94 on Community plant variety rights.

<sup>663</sup> Community Plant Variety Office (2006). Annual report 2005. Office for Official Publications of the European Communities, Luxembourg. The total number of plant varieties protected under the Community system was 11,505 on 31 December of 2005, with more than one third in the hands of seed companies located in the Netherlands. 31 out of the 37 titles for tomato seed had been granted to Dutch seed companies, including Rijk Zwaan, Syngenta Seeds, SVS Holland, Marcel Bruins, and Enza Zaden.

<sup>664</sup> Council Directive 2002/55/EC of 13 June 2002 on the marketing of vegetable seed, OJ L193/33, 20.07.2002.

<sup>665</sup> Council Directive 92/33/EEC of 28 April 1992 on the marketing of vegetable propagating and planting material, other than seed, OJ L157, 10.06.1992.

<sup>666</sup> Codex Standard for Canned Tomatoes, Codex Stan 13-1981; Codex Standard for Processed Tomato Concentrates, Codex Stan 57-1981, formerly CAC/RS-1972.



ences of opinion the finalisation of this standard has been postponed.<sup>667</sup> More precisely, the Netherlands has proposed to remove the commercial type of cherry tomatoes from the standard, but has met with strong objections from Italy, the largest producer of this type of tomatoes. The consequence of considering cherry tomatoes as ordinary round tomatoes is that price premiums paid for the former will level off, because they will then compete in the market of round tomatoes which has many more suppliers.

Quality standards for tomatoes have existed in the EU since 1983. As these standards were considered no longer in line with market and regulatory developments, the Commission, introduced a Regulation containing a marketing standard for tomatoes in 2000.<sup>668</sup> According to the Commission, “applying these standards should result in products of unsatisfactory quality being removed from the market, bringing production into line with consumer requirements and facilitating trade relationships based on fair competition, thereby helping improve the profitability of production.” The standards in the EU regulation are largely similar to those in an earlier UN/ECE standard.<sup>669</sup>

The EU standard contains a definition of tomato produce and provisions concerning quality, sizing, tolerances, presentation, and marking. The standard applies to tomatoes to be supplied fresh to the consumer.<sup>670</sup> Tomatoes for industrial processing are excluded. The standard distinguishes four different commercial types, including round tomatoes, ribbed tomatoes, oblong or elongated tomatoes, and cherry tomatoes, including cocktail tomatoes. Each package of tomatoes should bear the following information: identification of the packer and/or dispatcher; nature of produce (e.g. ‘tomatoes’ or ‘trusses of tomatoes’), and their commercial type, origin of produce, commercial specifications, and official control mark (optionally).

With regard to pesticide residues, tomato producers must comply with the MRLs based on good agricultural practice, that have been set by the Codex Alimentarius Commission (CAC), the EU, and its Member States. More precisely, the CAC has set residue levels for 65 different substances in relation to tomatoes, and the EU for 186 substances.

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<sup>667</sup> The 8<sup>th</sup> Session of the CCFFV agreed that Mexico, assisted by the US, would elaborate a proposed draft Codex Standard for Tomatoes. The Codex Alimentarius Commission approved this decision, and encouraged the CCFFV to perform this task in close collaboration with the UN/ECE. Moreover, the 9<sup>th</sup> Session of the CCFFV suggested in order to avoid duplication of effort that UN/ECE standards should be used as a starting point for draft Codex standards where appropriate and that Brazil should also provide assistance in the work.

<sup>668</sup> EC Commission Regulation No 790/2000 of 14 April 2000 laying down the marketing standard for tomatoes, OJ L095, 15.04.2000, p. 24. According to the earlier Council Regulation No 2200/96 of 28 October 1996 on the common organisation of the market in fruit and vegetables, OJ L297, 23.11.1996, marketing standards must be adopted for certain products, one of them being tomatoes.

<sup>669</sup> UN/ECE Standard FFV-36 concerning the marketing and commercial quality control of tomatoes moving in international trade between and to UN/ECE member countries. TRADE/WP.7/2000/11/Add.14, 13 December 2000. The standard was first published in 1961 and has been revised in 1997 and 2000.

<sup>670</sup> Of the varieties (cultivars) grown from *Lycopersicon lycopersicum* (L.) Karsten ex Farw./*Lycopersicon esculentum* Mill.

Comparing the 34 MRLs covering the same tomato/substance combinations, it is evident that EU levels are more stringent for half of them and equal in one third.<sup>671</sup>

As a consequence of the limited harmonisation of MRLs at the EU and international level, the specific levels that are applicable largely depend on the country where a tomato is produced and the country where a tomato is marketed. As a result, complicated situations may occur as a tomato produced according to the regulations of country A may not be marketed in country B, when it has been treated with a substance that is not allowed in production in country B and contains residues of that treatment. This means that residue requirements imposed by one country may influence the choice of pesticide products in another country.

In order to protect consumers, residues are monitored in relation to food imports from other EU Member States and third countries. According to the EU Rapid Alert System for Food and Feed (RASFF), exceedances of MRLs should be notified to other Member States. In contrast to previous years, there have been several alerts with regard to tomatoes in 2007.<sup>672</sup> It should be noted though that, inherently to its design, the RASFF system does not show more than the tip of the iceberg.<sup>673</sup>

In addition to this intensification of rule-making by state actors, non-state actors have developed regulatory approaches to specify safe and sustainable production practices for their own specific purposes. Most of these non-state actor initiatives are, in fact, supply chain arrangements that are proposed by participants in the supply chains concerned, individually or in partnerships, stipulating the use of certain agricultural production methods, thereby aiming to realise specific quality and safety attributes of food products. Such arrangements may vary from simple contractual requirements to comprehensive programmes defining and implementing production practices. Several of these initiatives are supported by a specific marketing approach that is targeted towards specific groups of buyers and/or consumers.

The regulatory approaches of the private sector are often framed as quality assurance programmes. The most significant and long-standing examples are the programmes of British retailers such as Coop UK, Marks and Spencer, Sainsbury's, and Tesco, that work with specific standards about the types of pesticides allowed in production, and the

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<sup>671</sup> More precisely, for 12 out of 34 tomato/pesticide combinations CAC and EU MRLs are identical, for 18 of them the EU MRLs are more stringent, and for 4 of them the CAC MRLs are stricter.

<sup>672</sup> See the annual reports about the Rapid Alert System for Food and Feed at <http://ec.europa.eu/food/food/rapidalert>.

<sup>673</sup> This statement has been confirmed by the 2004 EU co-ordinated programme which points out that of the 28 samples for which an exceedance of the ARfD was estimated only 4 cases had been notified through the RASFF system and that the reason for non-notification of the remaining 24 samples could not be explained. See for a similar observation the VWA report covering monitoring of pesticide residues in the Netherlands in 2004.

residue levels permitted in produce.<sup>674</sup> More recently, and under the pressure of a Greenpeace study, the German retailers Aldi and Lidl have formulated their own rules for aggregate MRLs that are stricter than those required by law.<sup>675</sup> Participation in these initiatives is in principle voluntary, although market circumstances may provide a strong impetus for producers to comply with the rules concerned.

In addition, retailers have begun to develop initiatives that promote healthy eating habits in the struggle against obesity and food related diseases. Many of these initiatives have a communicative form and consist of logos and labels that indicate the nutritional value of the food products involved.<sup>676</sup> In general, fresh fruit and vegetables, including tomatoes, benefit from such initiatives because they have a relatively high nutritional value in comparison to most processed food products.

Hence, the conclusion is the number of rules applicable in each stage of the tomato life-cycle has sharply increased in the past decade. Traditionally, state actors focused on the production and marketing stages, but have started to increasingly regulate the stages of seed manufacturing and the cultivation of propagating and planting material. Non-state actors, for their part, initially focused primarily on the production stage, but have shifted their regulatory activity more recently to other stages.

## 7.6 The competitive position of tomato producers

As explained in the previous section, agricultural producers are increasingly confronted with rules and regulations governing the different stages of the tomato life-cycle. This section investigates the response of agricultural producers to the increased ‘rulification’ of the tomato life-cycle. This response should be seen in the light of the fierce competition that fresh tomatoes experience as the market is often on the brink of oversupply. Such competition does not go without tensions, as the so-called tomato wars between the US, Canada, and Mexico have shown in recent years.<sup>677</sup>

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<sup>674</sup> See e.g.: M. Harvey, S. Quilly & H. Beynon (2002), especially chapters 9 “Growing new routes”, pp. 201-227, and 10 “Supermarket tomato”, pp. 228-252. See for details about the specific retailer initiatives at their websites: <http://www.co-op.co.uk>, [www.marksandspencer.com](http://www.marksandspencer.com), [www.sainsburys.co.uk](http://www.sainsburys.co.uk), and [www.tesco.co.uk](http://www.tesco.co.uk).

<sup>675</sup> See for information about the successful lobbying by Greenpeace at <http://www.greenpeace.de>.

<sup>676</sup> For example, English retailers have developed a ‘traffic light’ system and the Dutch retailer Albert Heijn uses the logo of a cloverleaf to indicate food products delivering benefits to health.

<sup>677</sup> See e.g.: A.B. Peschard (1996). The U.S.-Mexico fresh winter tomato trade dispute. The broader implications. Washington: The Center for Strategic and International Studies; B. Simon (2001). U.S.-Canada tomato war heats up. In: *The New York Times*, 7 December 2001. See for the role of tomatoes as a means of post-war reconstruction effort: USAID (2006). Agriculture: program works to improve Iraq’s tomato production, 3 March 2006, available at <http://www.portaliraq.com>. The article explains that the U.S. Agency for International Development (USAID) is executing an Agriculture Reconstruction and Development Program for Iraq (ARDI), supplying highly productive hybrid tomato seeds and teaching Iraqi farmers modern methods of tomato cultivation.

In general terms, the patterns of trade for tomatoes are still strongly regional for both fresh and processed tomatoes.<sup>678</sup> This means that Europe and the other continents have their own distinctive configurations. The regional trade patterns, however, are far from stable and there are degrees of complementarity and conflict, interpenetration and sharpening differentiation.

In Europe, the market for fresh tomatoes is dominated by the greenhouse tomato. Until 1995, the Netherlands was the leading exporting country of fresh greenhouse tomatoes.<sup>679</sup> Spain took then over as the dominant exporter and has kept this position until today. However, in the next few years, more competition is expected from Turkey, Eastern Europe, and the Southern Mediterranean countries. As labour costs are lower in those countries, the prices for 'ordinary' tomatoes are increasingly coming under downward pressure. In reaction to these developments, producers in traditional tomato growing countries in the EU-15 try to strengthen their competitive position by aiming at higher quality segments of the market.

Tomato producers in the Netherlands, for example, have chosen in the mid-1990s to diversify on the basis of tomato variety. This choice was closely connected to the deteriorating reputation that the Dutch tomato experienced in the German market in the early 1990s. Around that time, it was being nicknamed "Wasserbombe", because of its tastelessness, which threatened to negatively affect its market position in a major export market and was the impetus for several changes in the industry.

In response to the reputation problems, a number of producer associations were established that each specialised in one specific tomato variety, enabling the introduction of tomato varieties such as the vine tomato, the cherry tomato and the roma tomato.<sup>680</sup> This focus on particular varieties was a reason for closer linkages between producer associations and seed manufacturers than before. Several of these producer organisations started to use the newly established cooperative The Greenery International as a marketing organisation.

Ten years after the establishment of The Greenery in 2006, the Netherlands counted 21 producer associations for tomatoes, with seven of them, especially the larger ones, being a member of The Greenery.<sup>681</sup> Overall, most Dutch tomato producers had one or more certifications.<sup>682</sup> More specifically, one third of Dutch tomato producers had a GlobalGAP certification, which has become a bottom line requirement for supplying the major European retailers. A major reason for the successful implementation of GlobalGAP in

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<sup>678</sup> M. Harvey, S. Quilly & H. Beynon (2002), p. 68.

<sup>679</sup> Ibidem, p. 72.

<sup>680</sup> Ibidem, pp. 82-92.

<sup>681</sup> Groenten en Fruit, no. 11, 17 March 2006. Tomato producers cover at least 1200 hectares.

<sup>682</sup> See Annex to the Dutch weekly *Groente en Fruit* about tomato production in the Netherlands.

the Netherlands is that The Greenery anticipated the system at an early stage by making its members accustomed to keeping an input administration.<sup>683</sup>

Besides taking part in quality assurance programmes, several Dutch producer associations for tomatoes have started growing special tomato varieties for niche markets, often supplying them under a brand name. These special tomatoes have several features, either visible or invisible, that should give them an extra value in comparison with an ordinary tomato. Such features usually include flavour and taste, colouring, model, type of flesh, but may also relate to the content of nutrients or the level of pesticide residues in the produce.

With respect to product differentiation, Dutch producers are in an advantageous position because several of the major players of the global seed industry are located in the Netherlands, offering the opportunity of close cooperation in the development of new hybrid seeds. For example, the Dutch seed company De Ruiter Seeds has recently developed a tomato variety with a higher lycopene content that distinguishes itself visually by carrying a zebra-style striped design.<sup>684</sup> Appropriately, it is being called the Safari tomato. Other successful examples of this new trend of tomato branding include: the Red Star Cupido, the Delitom, the Tasty Tom, the Roma Vine, the Bonchita, the Pick-a-Tommy (*Pluktomaatje*), the Marzanino, and the Sweet Vine.

The new hybrid seeds are often marketed with the help of marketing specialists that work for the seed companies trying to interest potential customers for the newly developed varieties. Interestingly, the seed industry not only approaches agricultural producers, but also retailers in order to create partnerships covering all stages of the tomato's life-cycle. By organising the support of the main stakeholders involved, the seed industry ensures that its products will enter the market under the best circumstances for market success. Significantly, these partnership initiatives aimed at marketing brandname tomatoes are being widely promoted in the Netherlands for their innovative potential and contribution to improved competitiveness. In the past few years, many of the awards in the agricultural sector that aim to encourage innovative and excellent entrepreneurship have been given to tomato producers that have developed brandname products.<sup>685</sup>

The launching of the Marzanino tomato is especially an interesting phenomenon because it is a variety of the traditional Italian San Marzano Pomodoro, a tomato with a special status in the EU as it carries the mark of Protected Designation of Origin (PDO).<sup>686</sup> The PDO status is meant to protect against unfair competition and the misleading of consumers. The traditional San Marzano tomato has furthermore been given a special status by the Slow Food movement, as it has been included in the Ark of Taste that aims to protect

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<sup>683</sup> See for more information about The Greenery: N.M. van der Grijp, J. de Boer & F. den Hond (2001). *Initiatieven vanuit de Nederlandse voedingssector ter beperking van het bestrijdingsmiddelengebruik* (Initiatives of the Dutch food industry to reduce pesticide use). R-01/03. Amsterdam: Instituut voor Milieuvraagstukken, Vrije Universiteit, 149 p.

<sup>684</sup> *Groenten & Fruit*, no. 43, 2005. More information available at <http://www.deruiterseeds.com>.

<sup>685</sup> Examples include: Hillenraad top 100 and the Grower of the Year award.

<sup>686</sup> EC Council Regulation (EC) No 2081/92 of 14 July 1992 on the protection of geographical indications and designations of origin for agricultural products and foodstuffs.

traditional products.<sup>687</sup> At this stage, it cannot be predicted if the new tomato variety Marzanino, developed by De Ruiter Seeds and grown by Dutch producers, will triumph in the market at the expense of the traditional San Marzano tomato from Italy. In any case, the British retailer Tesco has decided to give the Dutch Marzanino a chance by offering it in its UK shops.

As mentioned in Section 7.4, Spain took over from the Netherlands as the leading exporting country of fresh greenhouse tomatoes around 1995 and has kept this position until today. A major factor has been the so-called miracle of Almería that started to take place in the 1980s when groundwater resources were found in one of the driest and poorest provinces of Spain. This miracle has turned the province in a 'sea of plastic', with thousands of hectares of tomato production under plastic, the so-called *plasticultura*.

Over the years, this intensive type of production caused enormous environmental pressure in the area because of heavy pollution from several problematic pesticides and of the limited water resources. In addition, social stress in the area increased because of bad working conditions and the influx of immigrants from Africa.<sup>688</sup> Increasingly, however, agricultural producers have started to implement more sustainable agricultural production techniques, such as integrated control and organic production. This happened under the influence of stricter rules at EU level and especially the demand from the large retailers in the UK and Germany. The spectacular growth of Spanish organic acreage has been supported by targeted legislation of the autonomous regions. Considerable residue problems in the production of peppers in the 2006/2007 growing season have formed an additional impetus to accelerate the transition towards integrated control and organic production, which is now being supported by financial injections from the government.

The area of Koundoura in Southern Crete in Greece provides an example of a relatively small group of Mediterranean producers seeking marketing opportunities under a situation of increased competition from neighbouring Mediterranean countries.<sup>689</sup> In order to improve their market position, producers of vegetables, mainly tomatoes, founded a cooperative called Selino. The cooperative set up a programme to enhance the quality of production and produce, and focused on the reduction of pesticide use. It chose to work with the certification body AgroCert that is operating a certification scheme based on ISO 9000 as well as criteria of integrated control. Interestingly, the cooperative considered the GlobalGAP programme too weak from an environmental perspective. Production under the AgroCert protocol started in 2001 and the first certifications were granted

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<sup>687</sup> See for the Ark of Taste at: <http://www.slowfoodfoundation.com>. The other five Italian tomato varieties included in the Ark of Taste are the Belmonte tomato, the Corbara Plum tomato, the Piennolo small tomato, the Rotonda tomato, and the Sorrentino tomato. Petrini, 2001. In order to strengthen the position of the products in the Ark of Taste, several regional 'Presidia' have been set up to protect and encourage specific local products *inter alia* by the creation of market opportunities for them. Such a presidium also exists for the San Marzano tomato.

<sup>688</sup> See e.g.: F. Lawrence (2004). *Not on the label: What really goes into the food on your plate*. London: Penguin Books, 272 p.

<sup>689</sup> These paragraphs are based on information collected during a visit to the area, including a conversation with a Cretan tomato producer who has been one of the initiators of the quality programme (11 September 2004).

in 2002. More recently, producers in the area have also started to convert to organic production.

A major reason for the cooperative to start with the quality programme was the competition experienced from agricultural producers in countries such as Turkey, Morocco and Syria, who work for much lower prices but are assumed to have lower quality standards. Hence, a quality assurance programme is seen as an effective means to improve the region's competitive position and to receive a certain minimum price for the produce. Moreover, the cooperative considers it essential to develop a longer-term vision that entails a broad-scale conversion to organic production. However, the financial position of poor producers from the mountains is a barrier for the full implementation of the quality programme in the region. The short-term priority of these producers is to earn a decent income and they are less interested in upgrading production in the longer-term.

Morocco provides an example of a Southern Mediterranean country that is increasingly seeking opportunities to export greenhouse tomatoes to the EU market. However, trade in tomatoes (and some other agricultural products) between the EU and Morocco is subject to certain rules that form a restriction on the principle of free trade, but are allowed according to the WTO Agreement on Agriculture. These rules have been established as part of the Association Agreement that the EU and Morocco have concluded in 2000.<sup>690</sup> One of the main aims of the Agreement is to establish the conditions for the gradual liberalisation of trade in goods, services and capital, stating that the EU and Morocco "shall gradually implement greater liberalisation of their reciprocal trade in agricultural and fishery products".<sup>691</sup>

For certain products, one of which is tomatoes, specific provisions have been established. According to Protocol 1 on the arrangements applying to imports into the EU of agricultural products originating in Morocco, the country is allowed to export a maximum quatum of tomatoes between 1 October to 31 March of each year, divided in monthly portions, against an agreed entry price. It is further obliged to notify the Commission of weekly exports of tomatoes.

A comparison of the trade figures for tomatoes of the EU and the maximum Moroccan export quota of recent years shows that, although these quota are relatively small, Morocco is one of the more important non-EU suppliers of tomatoes. Moreover, the production of tomatoes for export delivers a substantial contribution to Moroccan national income. Interestingly, Moroccan producers have started to convert to more sustainable agricultural practices in recent years. In the process, they have experienced several barriers, such as the lack of national certification bodies and fully equipped laboratories.

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<sup>690</sup> OJ L070/2, 18.03.2000. In the period previously to the Association Agreement, when a Cooperation Agreement was in force, the regime for imports of tomatoes originating in and imported from Morocco was established by way of an agreement in the form of an exchange of letters, OJ L048, 03.03.1995, pp. 21-25. The maximum quantity was set at 130 000 tonnes between 1 October to 31 March, against an agreed entry price.

<sup>691</sup> Association Agreement, Articles 1(1) and 16.

## 7.7 Conclusions

This chapter has investigated the plethora of rules that producers of fruit and vegetables have to deal with to be able to participate in national and international supply chains. At a more general level, the chapter has described the emergence of a regulatory pattern that increasingly favours the economic interests of multinational companies in the pesticide industry, seed industry, and food and retailing industry, as it facilitates a consolidation of market share and power through the establishment of additional governance structures. This bias has led to an increased standardisation and commoditisation of agricultural produce resulting in increasingly homogeneous products and, at the same time, to the development of specialty products based on high-technology. Both developments have taken place at the expense of traditional agricultural biodiversity.

At a more specific level, and in order to make the argument more concrete, the example of the fresh tomato has been used to illustrate how pluralism of rules works out in practice and how it affects the conditions for production and trading. By means of the tomato, it has been shown why a tomato is no longer just a tomato, but can have many different appearances.

Drawing all the strands together of regulatory approaches that are relevant for tomato production, trade and consumption, a pattern of regulation emerges in which both state and non-state actors play important roles and are engaged in complex interactions. It seems that legal pluralism is a reality in the field of tomato production and that tomato producers are highly affected by this reality. However, most EU tomato producers do not object against the high priority that is given to food safety in Europe, because it provides them, for the time being, with an opportunity to protect their competitive position against producers in the Southern Mediterranean, Turkey, and China that do not comply with strict MRLs.

For several EU tomato producers, the profusion of rules has provided an opportunity for product differentiation securing market access and under some circumstances higher prices. This differentiation focuses on a broad variety of quality, safety and sustainability aspects. However, despite this new trend of tomato differentiation and branding, the certified tomato fulfilling all criteria of being tasteful, as well as nutritious, residue-free, produced under decent labour conditions, and paid a fair price, has not entered the market as yet.



## Part IV The dynamics of legal pluralism



## 8. Regulatory interaction in the issue-area of pesticide risk reduction

### 8.1 Introduction

This chapter investigates the interaction between state and non-state actor approaches in order to determine the mutual influences and whether these are beneficial, adverse or neutral from the point of view of pesticide risk reduction. At the international level, the emphasis is on the FAO International Code of Conduct on the Distribution and Use of Pesticides, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, and the Stockholm Convention on Persistent Organic Pollutants. At the level of the EU, the main instruments include Directive 91/414/EEC concerning the placing on the market of plant protection products; Regulation (EC) No 396/2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin, and the proposed framework directive on the sustainable use of pesticides. At the transnational level, the focus is on the IFOAM organic guarantee system, and the GlobalGAP program for fruit and vegetables.

Using these instruments as a starting point, this chapter makes an analysis of regulatory interaction based on two distinctive approaches. Section 8.2 provides a multilevel approach of regulatory interaction in vertical, horizontal and diagonal directions. Section 8.3 uses a more dynamic approach, focusing on the stages of the pesticide life-cycle. Section 8.4 presents conclusions.

### 8.2 A multi-level perspective upon regulatory interaction

As explained in Section 2.4.4, the multi-level perspective distinguishes between regulatory interaction in vertical, horizontal, and diagonal directions. Vertical interaction takes place between regulatory approaches at different levels and is based upon a formalised hierarchical relationship. Horizontal interaction, in contrast, refers to interaction between regulatory approaches at the same level that are in principle independent from each other. Diagonal interaction follows a different logic, taking place between state and non-state actor approaches at multiple levels without any formal relation.

#### 8.2.1 Vertical interaction

##### Interaction between instruments of international and EU law

Focusing on the instruments of international and EU law, several cases of vertical interaction can be identified, with some of them providing synergy and others conflict. In the international context, the EU has a specific position as a supranational organisation uniting 27 Member States. The legal basis for the EU to conclude international agreements in the environmental field is provided by Article 174(4) of the EC Treaty. The general policy adopted by the Commission is to seek EU participation wherever it can establish EU 'competence'. However, determining competence can be a complex matter. According to several rulings of the ECJ, the major criterion for competence is whether the EU

has adopted measures, which cover the same aspects as those in the Convention concerned.<sup>692</sup>

As a member organisation of FAO, the EU is formally committed to comply with the requirements of the FAO Code of Conduct. The same accounts for the Member States. The clearest evidence of EU adherence to the Code is the fact that the European Commission has adopted the FAO definition of IPM in the proposal for a framework directive on the sustainable use of pesticides, and previously had implemented the PIC procedure. Overall, however, the commitment of the EU to the Code seems not well developed, as is apparent from the fact that the implementation and observance of the Code are not regularly discussed by the EU institutional bodies. Moreover, the EU is not represented in the FAO Panel of Experts bearing responsibility for the implementation of the Code. However, the Member States Germany, Italy and Sweden have each representatives in the Panel.

With regard to the Rotterdam Convention, the EU was the first, and is still the only, regional economic organisation that became a Party to the Rotterdam Convention. According to Article 25(2), the EU is as such bound by all obligations under the Convention.<sup>693</sup> To formalise its participation, the Council deposited the instrument of ratification, together with a declaration of competence, with the Secretary-General of the United Nations on 20 December 2002.<sup>694</sup> The Member States also ratified the Convention, with the exception of Malta.

Concerning the implementation of the substantive provisions of the Rotterdam Convention, it should be noted that the PIC procedure was already implemented in the EU under Regulation No 2455/92 on the export and import of certain dangerous chemicals.<sup>695</sup> The main revisions that were needed with a view to a proper implementation of the Rotterdam Convention related to timing and frequency of prior export notification, the level of information required, and the introduction of provisions relating to technical assistance for developing countries. In order to take account of these additional requirements of the

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<sup>692</sup> See e.g.: N. Haigh (ed.), Introduction to the chapter on International Environmental Agreements, in *Manual of Environmental Policy*, release 24, November 2003. A significant case in this respect concerns: C-22/70 ERTA.

<sup>693</sup> Rotterdam Convention, Article 25. According to Article 25(2), the EU is as such bound by all obligations under the Convention. Furthermore, the EU and its Member States being a Party shall decide on their respective responsibilities for the performance of their responsibilities under the Convention and not exercise their rights concurrently.

<sup>694</sup> Council Decision 2003/106/ EC of 19 December 2002 concerning the approval, on behalf of the European Community of the Rotterdam Convention on the Prior Informed Consent procedure for certain hazardous chemicals and pesticides in international trade, OJ L063, 06.03.2003, pp. 27-28.

<sup>695</sup> OJ L251, 29.08.1992, pp. 13-22.

Convention, Regulation No 304/2003 concerning the export and import of dangerous chemicals was adopted in January 2003, repealing the previous Regulation.<sup>696</sup>

Interestingly, Regulation No 304/2004 went beyond the scope of the Convention in certain respects, as it extended the scope of export notification to all those chemicals that are banned or severely regulated in the Community, which, *inter alia*, refers to non-authorised pesticide substances, and it prescribed appropriate labelling of all chemicals exported from the Community.<sup>697</sup>

However, the Regulation has been annulled in 2006, because its legal basis was judged inadequate by the ECJ. During the preparation of the decision for approval of the Convention and the substantive regulation to implement it, there had already been discussion about the proper legal basis in the EC Treaty: whether it should be common commercial policy (Art. 133) or environmental policy (Art. 175(1)).<sup>698</sup> The choice of legal basis is important, not only because it determines the dominant subject-area concerned, but also since it has consequences for the voting procedure and the extent of the competence of the European Parliament in the decision-making process. Or in the words of Advocate General Kokott:

“The choice of the correct legal basis is of considerable practical and institutional, indeed constitutional importance. It determines not only the legislative procedure applicable (rights of Parliament to participate, unanimity or qualified majority in the Council) but also whether the Community’s competence to legislate and conclude an international agreement is exclusive or is to be shared with the Member States.”<sup>699</sup>

After consultation with the Parliament, the Council decided, in opposition to the Commission, to give both measures an environmental policy basis.

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<sup>696</sup> Regulation (EC) No 304/2003 of the European Parliament and of the Council of 28 January 2003 concerning the export and import of dangerous chemicals, OJ L063/1, 06.03.2003. See also the series of amendments aimed to update the list of chemicals for which an export notification is obligatory as the result of the decisions taken during COP-1 of the Rotterdam Convention, and the decisions concerning non-inclusion of substances under Directive 91/414: Commission Regulation (EC) No 1213/2003 of 7 July 2003 amending Annex I to Regulation amending Annex I to Regulation (EC) 304/2003 of the European Parliament and of the Council concerning the export and import of dangerous chemicals, OJ L169, 08.07.2003; Commission Regulation (EC) No 775/2004 of 26 April 2004 amending Annex I to Regulation amending Annex I to Regulation (EC) 304/2003 of the European Parliament and of the Council concerning the export and import of dangerous chemicals, OJ L123, 27.04.2007; Commission Regulation (EC) No 777/2006 of 23 May 2006 amending Annex I to Regulation (EC) 304/2003 of the European Parliament and of the Council concerning the export and import of dangerous chemicals, OJ L136, 24.05.2006.

<sup>697</sup> Regulation No 304/2004, Articles 6 and 16.

<sup>698</sup> Both proposals by the Commission were based on Article 133, but the Council decided after consultation of the European Parliament that Article 175 was more appropriate and acted accordingly.

<sup>699</sup> Opinions delivered by Advocate General Kokott on 26 May 2005 with respect to the cases C-94/03 and C-178/03.

Subsequently, the Commission took action against the Council, contesting the legal basis of both the Decision and the Regulation before the ECJ. On 10 January 2006, the Court delivered two separate judgments providing a compromise between the two viewpoints. First, the Court annulled the Council Decision, ruling that there should have been a dual legal base including both articles, and not a single one.<sup>700</sup> Second, the Court also chose to annul the Regulation, using a largely similar argumentation.<sup>701</sup> Both rulings were contrary to the opinion of the Advocate General Kokott who had proposed that the Court should dismiss both applications of the Commission, while considering Article 175(1) the correct basis for the Decision as well as the Regulation in the light of the objectives and content of the Convention and the context in which it was concluded.<sup>702</sup>

These annulments did not have many practical effects. In the first case, the Court decided that the annulment of the Decision did not affect the original Community ratification of the Convention and the EU remained a Party in accordance with the Vienna Convention.<sup>703</sup> In the second case, the Court ruled that Regulation No 304/2003 maintained its effects until the adoption, within a reasonable period, of a new regulation founded on appropriate legal bases.<sup>704</sup> This so-called *ex tunc* nullity of both the Regulation and the Decision can be considered as a means to limit the potential consequences for the legal relationships that were built upon the Regulation since its entry into force in 2003.<sup>705</sup>

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<sup>700</sup> Case C-94/03, OJ C048/2, 25.02.2006: Commission v. Council. The Council was supported in its opinion by the French Republic, the Kingdom of the Netherlands, the Republic of Austria, the Republic of Finland, the United Kingdom of Great Britain and Northern Ireland, and the European Parliament.

<sup>701</sup> Case C-178/03, Commission v. European Parliament and Council. The Parliament and Council were supported by the French Republic, Republic of Finland, United Kingdom of Great Britain and Northern Ireland.

<sup>702</sup> See opinion of Advocate-General Kokott delivered on 26 May 2005 in case C-178/03, para 45.

<sup>703</sup> See the considerations preceding the proposal for a Council Decision on the conclusion, on behalf of the European Community, of the Rotterdam Convention on the Prior Informed Consent Procedure for certain hazardous chemicals and pesticides in international trade, COM(2006) 250 final, 30.06.2006.

<sup>704</sup> Final summary of the Judgment of the Court of Justice (Second Chamber) in C-178/03. In response to the two rulings of the ECJ, the European Commission tabled a draft decision to re-adopt the Rotterdam Convention in June 2006, which is aimed to take effect in retroaction from the date at which the original approval decision was adopted: Proposal for a Council Decision on the conclusion, on behalf of the European Community, of the Rotterdam Convention on the Prior Informed Consent Procedure for certain hazardous chemicals and pesticides in international trade, COM(2006) 250 final, 30.06.2006. The argument for a retroactive effect is to ensure legal certainty and to avoid a legal void. Furthermore, the Commission announced to come up with a separate proposal containing amendments to Regulation No 304/2003.

<sup>705</sup> D. Schaffrin (2006). Dual legal bases in EC environmental law revisited: note on the judgments of the European Court of Justice in the cases C-94/03 (Commission of the European Communities v. Council of the European Union) and C-178/03 (Commission of the European Communities v Council of the European Union). In: RECIEL vol. 15, no. 3, pp. 339-343.

The importance of these rulings relates to the fundamental disagreement between the EU institutional bodies on the “centre of gravity” of the Rotterdam Convention and the sphere of policy it should be allotted to, having regard to its content, aims and context.<sup>706</sup> In particular, the discussion is about the essence of the PIC procedure, whether it is an instrument of commercial or environmental policy. Most notably, similar discussions about the correct legal basis have taken place concerning other EU policies and measures regarding pesticides. It seems that the legislative role of the Parliament in pesticide policy issues is at stake, because Article 133 (commercial policy) and also Article 37 (agriculture) only allow for a consultative role of Parliament, whereas Article 175(1) (environment) requires co-decision. The argument of the Court that the two legislative procedures are compatible with each other, taking the specific circumstances of these two cases into account, seems an artificial construction supporting a different purpose rather than solving the issue at stake.

Subsequently, the Commission published a proposal for a new Regulation implementing the Rotterdam Convention that introduced a dual legal base, and also included a number of so-called technical amendments.<sup>707</sup> The Commission explained these amendments by referring to a report on the implementation experiences of the Member States.<sup>708</sup>

More specifically, the Commission proposed to amend the provisions of explicit consent for the substances that are banned or severely restricted under EU law but which are not yet covered by the Rotterdam Convention. The proposed amendment included a replacement by a less strict regime allowing the export of the substances concerned in case a request for explicit authorisation to import a substance does not receive a sufficiently prompt response.<sup>709</sup> Hence, this less strict regime would allow tacit consent. The latter amendment has been contested by the rapporteur of the European Parliament, arguing that it was not in line with the aim of the Regulation, i.e. the protection of states which are less able or even unable to assess the hazardous chemicals concerned.<sup>710</sup> However, the draft legislative resolution seems to have been submitted to no avail due to a low MEP turnout for the vote.<sup>711</sup> This means that with the change of the legal basis of the

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<sup>706</sup> See opinion of Advocate-General Kokott delivered on 26 May 2005 in case C-178/03, para 36.

<sup>707</sup> Proposal for a Regulation of the European Parliament and of the Council, COM(2006) 745, 30.11.2006.

<sup>708</sup> Report from the Commission to the Council and the Parliament on the operation of Regulation (EC) No 304/2003 concerning the export and import of dangerous chemicals, COM(2006) 747, 30.11.2006.

<sup>709</sup> The argument brought forward by the European Commission was that the experiences of the previous years had shown that in around half of the cases, no response had been forthcoming from the importing countries, despite the efforts made by the designated national authorities (DNAs) of the exporting Member States to obtain explicit consent. As a result, exports could not proceed, causing difficulties for exporters and exporting DNAs without necessarily affording greater protection to importing countries. According to the report, it concerned 31 chemicals or chemical groups.

<sup>710</sup> Draft report on the proposal for a regulation of the European Parliament and of the Council concerning the export and import of dangerous chemicals, rapporteur Johannes Blokland, COM(2006)0745 – C6-0439/2006 – 2006/0246(COD), 24.07.2007.

<sup>711</sup> ENDS Europe DAILY 2417, 26.10.2007: Institutions seek rapid deal on chemical exports.

Regulation, the Commission also chose to change its content in favour of commercial considerations.

In order to coordinate export and import notifications, the EU has created a database called EDEXIM in which data are collected about exporting and importing countries and the substances concerned.<sup>712</sup> From the database, it can be concluded that the number of export notifications has significantly increased since the Regulation entered into force.<sup>713</sup> From the EU Member States, Germany has submitted the highest number of notifications for pesticide substances, to dozens of different countries.<sup>714</sup>

Similarly as regards the Rotterdam Convention, the EU was the first, and is still the only, regional economic organisation that became a Party to the Stockholm Convention.<sup>715</sup> By its Decision of 14 October 2004, the Council approved the Convention on behalf of the European Community.<sup>716</sup> Most of the Member States have also ratified the Convention, with the exception of Estonia, Hungary, Ireland, Italy, Malta and Poland.<sup>717</sup>

At the first Conference of the Parties (COP-1) in 2005, the European Parliament submitted a resolution on the EU strategy for the Punta del Este Conference on Persistent Organic Pollutants.<sup>718</sup> The Parliament urged the EU to take an active role in the negotiations by means of effective cooperation between the Commission, the Council and Parliament.

Subsequently, the EU has implemented the Stockholm Convention by establishing Regulation No 850/2004 on persistent organic pollutants, with Article 175(1) (environment)

<sup>712</sup> The EDEXIM database is available at <http://ecb.jrc.it/Edex>.

<sup>713</sup> More precisely, the number of export notifications rose from 223 up to 1414 in the period between 2003 and 2006. The Member States with the highest number of export notifications are (in decreasing order): Germany, the Netherlands, Spain, the UK, and France. Major countries of planned destination included (in decreasing order): Switzerland, Turkey, the United States, China, South Africa, Israel, and Taiwan. In addition, export notifications have been sent to a broad variety of countries. However, import notifications have been received from only a limited number of them, including Switzerland, the United States, Canada, Korea, Bulgaria, Romania, and the Russian Federation.

<sup>714</sup> The export notifications from Germany between 2003 and 2006 *inter alia* concerned fenthion, endosulfan, tridemorph, chlorvinphos, permethrin, ethylene oxide, DNOC, amitraz, metoxuron, lindane and methamidophos. The notifications from the UK mainly referred to dicofol, permethrin, amitraz, and cyhalothrin, those from Spain to zineb, those from France to permethrin, atrazine, endosulfan, and fenthion, and those from the Netherlands to permethrin.

<sup>715</sup> Stockholm Convention, Article 26.

<sup>716</sup> OJ L209/1, 31.07.2006. The instrument of approval was deposited on 17 November 2004. However, it took nearly two years, before the decision was published in the Official Journal of the European Communities, which may be a signal that the legal basis of the Decision has come under discussion under the influence of the Court proceedings concerning the Rotterdam Convention.

<sup>717</sup> According to Article 25(2), the EU is as such bound by all obligations under the Convention. Furthermore, the EU and its Member States being a Party shall decide on their respective responsibilities for the performance of their responsibilities under the Convention and not exercise their rights concurrently

<sup>718</sup> P6\_TA(2005)0154, C 45 E, pp. 146-147.



as legal basis.<sup>719</sup> The Regulation entered into force on 20 May 2004 and is directly applicable in all Member States, including those which are not a Party. A second instrument implementing the Convention is Regulation No 304/2003 concerning the export and import of dangerous chemicals, which includes the prohibition of export of the persistent organic pollutants (POPs) currently listed in the Stockholm Convention, in accordance with the provisions therein.

As regards the obligation to prevent marketing and use of new POP-like pesticides in agriculture, Directive 91/414 is of particular importance. However, production of new substances with POP characteristics cannot be prevented by this Directive. The stage of production will be covered by the REACH Regulation and will be included in the revised EU legislation on pesticides.<sup>720</sup>

Furthermore, the Convention obliged the EU to submit its implementation plan before 14 February 2007. The EU experienced a minor delay and issued its plan on 19 March 2007.<sup>721</sup> It is based on an integration of the national implementation plans (NIPs) of the Member States, as far as finalised before that date.<sup>722</sup> It is important to note that the non-ratifying Member States were not obliged to submit a NIP.

According to the Persistent Organic Pollutants Community Implementation Plan (POPCIP), the EU has achieved substantial progress in limiting the use of POPs and in reducing their emissions to the environment.<sup>723</sup> However, it recognised that there are on-going releases to the environment as well as a constant cycling of substances released in

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<sup>719</sup> Regulation No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC, OJ L158, 30.04.2004, pp. 7-49. The Regulation was corrected two months later by way of a Corrigendum: OJ L229, 29.06.2004, pp. 5-22.

<sup>720</sup> Regulation No 1907/2006, OJ L396, 30.12.2006, p. 1. REACH is the acronym of the Registration, Evaluation, Authorisation and Restriction of Chemicals.

<sup>721</sup> Community Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants. SEC(2007) 341, 09.03.2007. The plan also covers the substances that are included in the UNECE Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on Persistent Organic Pollutants. The UNECE Protocol on POPs focuses currently on a list of 16 substances comprising 11 pesticides, 2 industrial chemicals, and 3 unintentional byproducts, among which the 12 POPs from the Stockholm Convention.

<sup>722</sup> State-of-affairs on 1 October 2007. Member states that have submitted their NIPs include: Bulgaria (27.09.2006), Czech Republic (08.05.2006), Denmark (18.05.2006), Finland (17.05.2006), France (26.02.2007), Germany (01.05.2006), Liechtenstein (25.04.2007), the Netherlands (30.05.2006), Romania (12.04.2006), Slovakia (12.12.2006), Spain (20.03.2007), Sweden (23.05.2006), and the UK (17.04.2007). From this group, France, Slovakia, and Spain had been more than six months too late in submitting their NIPs. Austria, Luxembourg, Portugal, and Slovenia had not submitted their NIPs, with the former three exceeding their deadlines already with more than six months. The NIPs for several other EU Member States were due in a later stage, including Belgium (23.08.2008), Croatia (30.04.2009), Cyprus (05.06.2007), and Greece (01.08.2008). In this respect, it is important to note that the Member States not being a Party to the Convention are not obliged to submit a NIP.

<sup>723</sup> Community Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants, SEC(2007) 341, 09.03.2007, pp. 11-12.

former times. Most pesticides listed in the Stockholm Convention have been phased out in the EU several years ago. Exceptions include lindane that was allowed for use until the end of 2007 as public health and veterinary topical insecticide, and the use of DDT as an intermediate for the production of dicofol which is being manufactured in Spain.<sup>724</sup> Concerning stockpiles of obsolete pesticides containing POPs, the estimations amounted to a surplus of 5,370 t, mainly located in Poland (4,500 t). However, the Commission suspects that the total amount is largely underestimated and that the historical contamination of the soil by especially lindane is on a much larger scale than estimated in the POPCIP context.<sup>725</sup>

In its POPCIP, the Commission stressed several times that the EU and the Member States aim to have additional POP substances included under the Stockholm Convention in order to achieve the 2020 chemicals target adopted at the Johannesburg Summit in 2002. To this end, the EU has officially nominated chlordecone to the POPRC and is considering nominations of endosulfan, dicofol, trifluralin, and pentachlorophenol.

Concerning the provision of new and additional financial resources to assist developing countries with the implementation of the Convention, the Commission stated in the POPCIP that the Community is not a country Party and thus not directly obliged by Article 13.2 to provide financial resources to developing countries and countries with economies in transition. It furthermore argued that: "So far, development partners have not requested funding for POPs relevant investments or technical assistance at the country level and this is unlikely to change in the near future since few developing country governments see a strong link between the Stockholm Convention and meeting the Millennium Development Goals that are the major determinant of aid priorities."<sup>726</sup> However, this argument seems a less appropriate excuse because the provision about new and additional funds requires that financial and technical assistance for the implementation of the Stockholm Convention should be paid out of other funds than those reserved for development assistance.

## Conclusion

As this section has shown, the vertical interaction between the international and EU level has stimulated the progressive development of the international law governing pesticides to some extent. Without the Stockholm Convention a production ban of specific hazardous substances would probably not have been feasible in the EU. However, progress is less evident where it concerns issues of financial and technical assistance to developing countries. Furthermore, there is a certain friction between the objectives set at the multi-lateral and the EU level. For example, the EU Regulation implementing the Rotterdam Convention has the additional objective of supporting commercial policy, which may

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<sup>724</sup> The produced amount of dicofol is estimated at 3,000 t/y.

<sup>725</sup> POPCIP (2007), p. 44. According to the POPCIP (2007), p. 15, a more recent study (IHPA, 2006) gives additional information on the amounts of lindane in the EU environment. This study indicates that about 300,000 t of lindane have been used within the EU between 1950 and 2000, and concludes that the amount of 10,000 t for the HCH residuals is not at all reflecting the reality and is of an other order of magnitude too low.

<sup>726</sup> POPCIP (2007), p. 57.

prove difficult to combine with the objectives of environmental and human health protection.

## 8.2.2 Horizontal interaction

### Interaction between instruments of international law

At the international level, several cases of synergetic horizontal interaction can be identified between the FAO Code of Conduct, the Rotterdam Convention and the Stockholm Convention. First, learning experiences in the context of the Rotterdam Convention concerning representation and distributive issues have inspired similar solutions with regard to the Stockholm Convention. An example includes the composition of the Chemical Review Committee (CRC) under the Rotterdam Convention that has been a model for the Persistent Organic Pollutants Review Committee (POPRC) under the Stockholm Convention. Second, the secretariats of the conventions dealing with hazardous chemicals are increasingly exploring options for the mutual use of information in relation to substances with global effects.<sup>727</sup> This so-called bridging of information relates, for example, to risk evaluations made under global multilateral environmental agreements such as the Montreal Protocol and the Stockholm Convention and their applicability under the Rotterdam Convention.

Third, priority setting can be influenced by decision-making under other regimes. For example, the Rotterdam Convention will assign lower priority in future work of the CRC to chemicals that are already covered under the Stockholm Convention and for which ongoing trade cannot be confirmed.<sup>728</sup> Fourth, and more in general, FAO, UNEP, and WHO intend to increasingly look for opportunities for collaboration and work sharing to provide unified guidance to countries, instead of working in isolation from each other.<sup>729</sup>

### Interaction between instruments of EU law

At the EU level, a limited number of cases of horizontal interaction can be identified between the instruments of pesticide law. More precisely, the potential for synergetic interaction at the EU level has not been fully recognised and utilized thus far, but is likely to

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<sup>727</sup> See: UNEP/FAO/RC/CRC.1/11, para 60: In the case of the Swiss data about methyl bromide, the final regulatory action was based on data related to assessments carried out under the Montreal Protocol. Some experts were concerned about the use of such data as they did not necessarily take into account prevailing conditions within the Party taking the action (criterion b (iii)). Others considered that the effect of ozone depleting substances were of global concern and did not require individual national assessment. See also: Report of the Chemical Review Committee on the work of its third meeting, 28 March 2007, UNEP/FAO/RC/CRC.3/15. The Conference of the Parties has indicated at its third meeting that the Committee should consider risk evaluations under the Stockholm Convention on Persistent Organic Pollutants and the Montreal Protocol on Substances that Deplete the Ozone Layer as adequate support for meeting criteria (b) (i) and (b) (ii).

<sup>728</sup> Report of the Chemical Review Committee on the work of its third meeting, 28 March 2007, UNEP/FAO/RC/CRC.3/15.

<sup>729</sup> FAO Panel of Experts on Pesticide Management (2007). Report of the 2<sup>nd</sup> session, 7-10 November 2006. Rome: FAO.

be increasingly exploited in the near future as a result of the revision of the EU legislation on pesticides, in combination with the reform of the CAP, and the implementation of the Water Framework Directive. Most significantly, the EU institutional bodies increasingly aim for policy integration and coherence by linking of the mechanisms for monitoring.

Concerning the specific instruments of EU pesticide legislation, there has been some interaction between the Directive on authorisation of pesticide substances and products and the legislation on pesticide residues. This interaction has mainly focused on the coordination of procedures for authorisation of pesticide substances and products and the setting of MRLs. However, for many years the coordination of procedures did not deliver the expected results because of the major delays in the assessment of existing substances and the establishment of MRLs.

Since the early 2000s, however, the EU efforts for a coherent and integrated regulatory framework covering pesticides have been strengthened and will ultimately lead to a completely renewed legislative regime for pesticides. In 2005, a new Regulation on maximum residue levels was introduced, streamlining procedures and, *inter alia*, introducing temporary MRLs for substances that have not yet been reviewed. Furthermore, the European Commission has proposed a Thematic Strategy on the sustainable use of pesticides based upon a strengthening of existing policies and legislation through integrative measures, and a draft Directive establishing a framework for Community action to achieve a sustainable use of pesticides and a new Regulation concerning the placing of plant protection products on the market. Both proposals are expecting finalisation in 2008.<sup>730</sup>

The measures proposed in the Thematic Strategy and the draft legislation aim to contribute to the CAP reform and especially target an improvement of systems for monitoring compliance. First, the Commission aims to amend the current Article 17 of Directive 91/414 in order to be able to monitor compliance with good agriculture practice (GAP). Second, Member States will be required to report on pesticide poisoning incidents involving operators, bystanders, residents, consumers, and wildlife. Third, integration will be sought with the Water Framework Directive that provides instruments for monitoring environmental emissions on the basis of water quality standards that need to be complied with by the Member States. Fourth, the new Regulation No 396/2005 on maximum residue levels of pesticides in food and feed provides for a reinforcement of annual monitoring programmes which provide indications of compliance with good agricultural practice, as prescribed in the Authorisation Directive.

### Interaction between regulatory approaches of non-state actors

Focusing on the transnational level, several cases of interaction can be identified between regulatory initiatives by non-state actors. A major driving force for this interaction is the consolidation of economic power and competitive advantage. Some actors are using such initiatives to create favourable alliances, whereas other actors are using them to distinguish themselves in the market. Significantly, the emergence of a regulatory initia-

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<sup>730</sup> COM(2006) 372 final, 12.07.2006; COM(2006) 373 final, 12.07.2006, and COM(2006) 388 final, 12.08.2006, respectively.

tive may provoke the establishment of a competing initiative, as standard setting is one of the means to get control in the industry. This mechanism can be illustrated by the power struggle that is presently going on between the large retailers and the multinational food corporations, which focuses on the dominance of the corporate brand over the retailer own brand, and *vice versa*.<sup>731</sup> The introduction of the GlobalGAP protocol for fruit and vegetables by the European retailers, and the subsequent launching of the SAI Platform by the multinational food companies, can be seen in this light. An additional example is the current competition between food safety schemes for market dominance.

An example of alliance seeking is provided by ECPA that has asked assistance from different stakeholders at both the governmental and non-governmental level in order to combat the problem of counterfeiting and illegal trade in pesticides.<sup>732</sup> Most notably, ECPA has asked for the help of the food industry in its fight against illegal pesticides by calling on production and distribution chains to report incidents of illegal products and trade to authorities and the crop protection industry and by requesting that the 'food chain' actively promotes the use of registered and approved products in their farmer supplier contracts.

## Conclusion

As this section has shown, horizontal interaction at the international, EU and transnational level is still in an early stage but increasingly aspired by state and non-state actors. Most of this interaction may stimulate synergy, but in other cases, especially at the non-state actor level it may lead to conflict and arguably over-regulation.

### 8.2.3 Diagonal interaction

#### Interaction between instruments of international law and non-state actor regulatory approaches

Focusing on the instruments at the international and transnational level, several cases of diagonal interaction can be observed, with most of them providing synergy. On the one hand, international agreements have been used as input for the private standard setting process. Examples include the ILO conventions on labour conditions, and the UN Agenda 21 recommendations on sustainable agriculture and responsible management of chemicals. On the other hand, private standards have provided inspiration for public policy makers, such as the IFOAM organic guarantee system that has been used as input for the guidelines developed by the Codex Alimentarius Commission.

Most notable is the interaction between the FAO Code of Conduct and the initiatives of the pesticide industry, and, more recently, the food industry. To stimulate compliance with the Code, CropLife has developed a guide for its member companies, which high-

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<sup>731</sup> See e.g.: M. Harvey, S. Quilly, and H. Beynon (2002), especially chapter 8 "The battle of tomato identities: the rise of supermarket own-label", pp. 174-200.

<sup>732</sup> ECPA Position Paper (2006). Counterfeiting and illegal trade in plant protection products across the EU and European region. Brussels: ECPA.

lights the most important responsibilities and actions for industry.<sup>733</sup> Furthermore, the Code invites the pesticide industry to provide reports on its product stewardship activities related to observance of the Code, and other interested parties are invited to monitor activities related to the implementation of the Code and report these to the Director-General of FAO.<sup>734</sup>

Furthermore, the Code explicitly calls on the food industry to help implement its recommendations and to play a proactive role in the development and promotion of IPM.<sup>735</sup> Interestingly, the FAO Expert Panel has referred to food industry initiatives such as the Sustainable Agriculture Initiative (SAI Platform) and GlobalGAP, as well as activities initiated by individual companies.<sup>736</sup> The Panel noted in this respect that the food industry's need for long-term supply of safe raw materials, and consumer requirements with respect to food safety and quality, are in clear agreement with the general objectives of the Code of Conduct. Consequently, the Panel concluded that the food industry and FAO member countries have a common interest in enhancing implementation of the Code of Conduct. In concrete terms, the Panel has requested the SAI Platform to consider possibilities to explicitly refer to the Code of Conduct in its principles for sustainable agriculture.<sup>737</sup> This means that the Panel is actively seeking interaction with multinational food corporations, applying a rather restricted interpretation of the term food industry.

### Interaction between instruments of EU law and non-state actor regulatory approaches

Focusing on the interaction between the EU and the transnational level, it is apparent that the EU institutions increasingly consider non-state actor initiatives as full-fledged alternatives for rule-making by state actors. However, in some areas private regulatory efforts may be competitive with EU law and policy and leading to over-regulation of the norm addressees. In this respect, it is interesting to notice how carefully retailers express themselves about the nature of their initiatives. One British retailer remarked that its “programme does not supersede the regulatory approach but provides a parallel model for development”, and another said that “it does not want to be a quasi-regulator ... but that there is maybe not one system that suits all users today”.<sup>738</sup>

In other areas, non-state actor initiatives may go against EU law and policy, as the example of the struggle of the Slow Food movement with the EU food hygiene rules illus-

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<sup>733</sup> CropLife International (2004). Guide for industry on the implementation of the FAO Code of Conduct on the distribution and use of pesticides (revised version). Available at: <http://www.croplife.org>.

<sup>734</sup> FAO Code of Conduct, Articles 12.8 and 12.9.

<sup>735</sup> FAO Code of Conduct, Article 3.8.

<sup>736</sup> FAO Panel of Experts on Pesticide Management, Report of the 2<sup>nd</sup> session, 7-10 November 2006, Rome: FAO, 2007.

<sup>737</sup> According to the list of attendees, mr. Eduard Bruckner of Nestlé, representing the SAI Platform, participated in the 2<sup>nd</sup> session of the FAO Panel of Experts.

<sup>738</sup> See: D. Croft (2002). Removing pesticides from the food chain. In: Pesticides News, no. 58, pp. 9-10, and D. Buffin (2001). Food retailer aims to restrict pesticide use. In: Pesticides News, no. 54, p. 3.

trates.<sup>739</sup> Slow Food argues that these EU rules are written for larger corporations operating internationally, and that it is not fair to demand compliance from small producers. More in general, Slow Food observes problems for small producers caused by the way in which subsidy systems, regulations, and supply chains are organised.

## Conclusion

As this section has shown, diagonal interaction has significantly increased in the past decade, providing synergy as well as conflict. The synergetic forms of interaction are based on mutual learning as well as imitation. The more conflictuous ones are especially grounded in power struggles, focused on regulatory initiative and ownership. Overall, diagonal interaction tends to favour the interests of multinational corporations, as rules are a more common form of market communication for them than for smaller companies.

## 8.3 A life-cycle perspective upon regulatory interaction

This section provides a more dynamic perspective on regulatory interaction by clarifying the mutual influences between state and non-state actors and highlighting the evolutionary nature of many interaction processes. For each of the different stages in the pesticide life-cycle, including production, marketing, use, and residues, this section explores the pattern of rules and regulations and pays attention to the distinctive roles of the state and non-state actors involved and the way in which they influence each other.

### 8.3.1 Production stage

The current pattern of regulation in the production stage of pesticide substances and products is straightforward with dominant roles for state actors. The production stage is hardly regulated at the international level, except for a phase out of the production of a few selected substances under the Montreal Protocol and the Stockholm Convention. Instead, the regulatory centre of gravity is located at the national government of the country where a production facility is located, or planned to be set up. Consequently, national public authorities decide about issues of protection of human health and the environment.

In addition, non-state actors pursue their own policies to reduce the negative impacts of pesticide production. Companies producing pesticides have developed their own initiatives for risk management, inspired by notions of corporate social responsibility and sustainable development. A well-known example is the Responsible Care programme promoted by the chemical industry. Furthermore, social and environmental NGOs are scrutinizing corporate activity, especially in developing countries.<sup>740</sup>

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<sup>739</sup> C. Honoré (2004). *In praise of slow. How a worldwide movement is challenging the cult of speed*. London: Orion Books Ltd. With backing from Slow Food, artisanal cheese-makers formed a Europe-wide alliance in 2003 to fight for the right to work with raw milk, pp. 54-55.

<sup>740</sup> Examples include Bhopal Watch, Berne Declaration, and PAN.

### 8.3.2 Marketing stage

Unlike the production stage, the regulatory pattern in the marketing stage of pesticide substances and products is complex and fragmented, with state and non-state actors at different levels performing regulatory roles. As a consequence, the regulatory pattern is different per country and per pesticide product. In some, mainly developed countries, the marketing of pesticides is densely regulated, whereas in others, especially developing countries, marketing is more or less unregulated.

The regulatory pattern in the marketing stage can be investigated more thoroughly by comparing the status of specific pesticide substances under different evaluation and authorisation systems. Such an analysis makes clear whether the regulatory systems in place have converging tendencies or instead deliver mixed messages about the risks for the environment and human health of the substances concerned.

In order to perform this exercise, data from several sources have been combined in one comprehensive table that is included in Annex 5. More precisely, the table contains an overview of active ingredients used in pesticide products and their status under different regulatory regimes from state as well as non-state origin. As a starting point, active ingredients have been listed that have been assessed under the 1<sup>st</sup> and 2<sup>nd</sup> stages of the EU work programme for the gradual examination of active substances that were available on the market two years after the date of notification of Directive 91/414.<sup>741</sup> In addition, the table also includes the substances that have been prohibited before 1991 on the basis of Directive 79/117.<sup>742</sup> In total, the table contains 239 entries of pesticide substances, arguably representing the most hazardous products.

About the selection criteria of the substances for the different stages of the work programme under Directive 91/414, the Commission has remarked the following in the preamble of Regulation No 3600/92:

“Whereas, given the very high number of active substances on the market on that date [23 July 1993], a selection has already been made, taking into account in a balanced manner such aspects as health and/or environmental concern, the possibility of residues in treated products, the importance of the preparations containing these substances for agriculture, any manifest data gaps (or, conversely, the presence of a complete, updated data package), and any similarity of chemical or biological properties ...”

However, the exact criteria used by the Commission to distinguish between the different stages of the EU work programme remain unclear. It seems that other than risk-based criteria have also played a role. A first scan of the existing substances still awaiting review revealed that several problematic ones among them, as the examples of chlormequat, dicofol, and methyl bromide clearly demonstrate.

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<sup>741</sup> OJ L170, 25.06.1992.

<sup>742</sup> OJ L033, 08.02.1979.



Initially, the deadline for the assessment of the work programme in its entirety had been set at 2003, but was extended due to the delay in the review of substances.<sup>743</sup> In September 2007, the assessment of the substances from the 1<sup>st</sup> and 2<sup>nd</sup> stages of the work programme was finalised.<sup>744</sup> Concerning the 90 substances of the 1<sup>st</sup> stage of the work programme, the Commission had received notifications from producers on 89 of the 90 active substances in the preceding years. Such notifications are a prerequisite for starting the review process.<sup>745</sup> Of these 89 substances, 59 were positively reviewed and received an authorisation to be marketed and used, whereas 30 were to be withdrawn from the market. Interestingly, there have been a number of cases before the ECJ in which decisions of the EU concerning inclusion or non-inclusion of specific substances have been contested.<sup>746</sup>

Concerning the 148 substances of the 2<sup>nd</sup> stage of the work programme, the Commission received 63 notifications that indicated the interest of producers to continue marketing pesticide products containing the active ingredients concerned.<sup>747</sup> The review of these notified substances resulted in the authorisation of 31 substances and the non-inclusion of 27 substances. In addition, 5 substances will be withdrawn as soon as alternatives become available but are for the time being allowed under conditions of restricted use.

The information in the table in Annex 5 has been complemented by data based on reviews of substances under other regulatory regimes. These other regimes include the WHO Classification of Pesticides by Hazard, international environmental conventions,

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<sup>743</sup> Report from the Commission to the European Parliament and the Council. Evaluation of the active substances of plant protection products (submitted in accordance with Article 8(2) of Council Directive 91/414/EEC on the placing of plant protection products on the market), COM(2001) 444 final, 25.07.2001; Commission Regulation No 2076/2002 of 20 November 2002 extending the time period referred to in Article 8(2) of the Directive and concerning the non-inclusion of certain active substances in Annex I to that Directive and the withdrawal of authorisations for plant protection products containing these substances, OJ L319, 23.11.2002, and Commission Decision of 25 July 2003 extending the time period provided for in Article 8(2) of the Directive, OJ L192, 31.07.2003.

<sup>744</sup> SANCO DOC 3010 – Directive 91/414/EEC, rev. October 2007.

<sup>745</sup> See: Commission Regulation No 3600/92 of 11 December 1992 laying down the detailed rules for the implementation of the first stage of the programme of work referred to in Article 8 (2) the Directive, OJ L366, 15.12.1992, and Commission Regulation No 933/94 of 27 April 1994 laying down the active substances of plant protection products and designating the rapporteur Member States for the implementation of Commission Regulation (EEC) No 3600/92, OJ L107, 28.04.1994.

<sup>746</sup> Examples include: case T-229/04 (inclusion of paraquat annulled), case T-475/07 (suspension of non-inclusion of trifluralin refused), and case C-326/05 (non-inclusion of metalaxyl annulled).

<sup>747</sup> See: Commission Regulation No 451/2000 of 28 February 2000 laying down the detailed rules for the implementation of the second and third stages of the work programme referred to in Article 8(2) of the Directive Commission, OJ L055, 29.02.2002, and Commission Regulation No 703/2001 of 6 April 2001 laying down the active substances of plant protection products to be assessed in the second stage of the work programme referred to in Article 8(2) of the Directive and revising the list of Member States designated as rapporteurs for those substances, OJ L098, 07.04.2001.

EU legislation in the field of water policy, retailer schemes, and schemes established by environmental and social NGOs. The criteria in these regimes are, partly or totally, based on considerations of human health and environment protection but use different interpretations of risk.

The WHO Classification of Pesticides by Hazard system distinguishes several classes of pesticide substances based on acute toxicity, including extremely hazardous (IA), highly hazardous (IB), moderately hazardous (II) and slightly hazardous (III) substances, and a class of substances unlikely to present acute hazard in normal use.<sup>748</sup> In addition, certain chemicals are designated by the WHO as obsolete or discontinued for use as pesticides. However, the WHO itself has stated, that it is sometimes difficult to establish whether all commercial activity in a substance has ceased. In fact, some of these 'obsolete' pesticides are contained in pesticide products that are currently registered for legal use in the US.<sup>749</sup>

Under the heading of international environmental conventions, the table summarises data based on the Rotterdam Convention and the Stockholm Convention. With regard to the Rotterdam Convention, the table contains information about the substances or pesticide formulations listed in Annex III, the notifications accepted by the CRC, and notifications of final regulatory action for banned or severely restricted chemicals verified to meet the requirements of Annex I. In respect to the Stockholm Convention, the table lists information about the pesticide substances included in the Annexes A and B, and those that are nominated for inclusion.

Concerning EU water policy, information has been added about priority substances in the context of the Water Framework Directive as has been decided on the basis of Decision No 2455/2001/EC.<sup>750</sup> More precisely, this legislation distinguishes between priority substances for which measures should be taken that are aimed at their progressive reduction and priority hazardous substances for which measures should be taken aimed at the cessation or phasing out of discharges, emissions and losses within 20 years after their adoption at Community level.

Under the heading of retailer schemes, data from the GlobalGAP standards of the joint European retailers and the individual initiatives of Coop UK and Marks and Spencer have been collected. Concerning the choice of pesticide products, the GlobalGAP standards prescribe compliance with national legislation and do not elaborate substance-specific rules. There are, however, a few important exceptions. First, GlobalGAP prohibits the use of the ozone depleting substance methyl bromide as a soil fumigant, which is

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<sup>748</sup> WHO (2005). The WHO recommended classification of pesticides by hazard and guidelines to classification: 2004. Corrigenda published by 12 April 2005 incorporated. Geneva: WHO. According to the classification, class Ia contains 28 substances (extremely hazardous), class Ib contains 56 substances (highly hazardous), class II contains 117 substances (moderately hazardous), and class III contains 119 substances (slightly hazardous). The class of substances unlikely to present acute hazard in normal use contains 249 substances.

<sup>749</sup> See PAN database available at <http://www.pesticideinfo.org>.

<sup>750</sup> Decision No 2455/2001/EC of the European Parliament and of the Council of 20 November 2001 establishing the list of priority substances in the field of water policy and amending Directive 2000/60/EC, OJ L133, 15.12.2001.

a requirement that goes beyond current European legislation. Second, the retailer initiative is instrumental in extending the scope of prohibitions of the most hazardous substances partly outside the European territory. More precisely, GlobalGAP prohibits its suppliers worldwide from using substances that have been banned for marketing and use in the European context under Directive 79/119/EEC.

The Co-op UK initiative consists of two lists: one of substances that suppliers are not allowed to use and the other contains those substances that can be used with permission only. Substances qualify for inclusion in the list of banned substances if their use has been shown to be harmful to humans or that they are toxic at very low levels and thus prevent a risk to vulnerable members of society, particularly babies, infants and young children.<sup>751</sup> The substances on the other list can still be used but only after the producer has received written authorisation from the retailer. Permission is only granted for an individual crop grown by a particular producer and only after checking to make sure there is no suitable alternative. Each individual use has to be approved. Co-op considers these substances as candidates for an overall ban in the longer term.

Marks & Spencer uses a highly similar approach as Co-op, making a distinction between banned substances and those that can be used with permission only, the so-called red and amber lists.<sup>752</sup> Its criteria are based on whether substances are dangerous to aquatic life, have endocrine disrupting impacts or are linked to problems associated with the human nervous system.

The last column with data about NGO schemes uses information based on the list of chemicals that WWF considers candidates for inclusion in the Annexes of the Stockholm Convention, the database of PAN that contains detailed information about hundreds of pesticide substances, and the black, grey and yellow lists of Greenpeace Germany.<sup>753</sup> PAN uses a classification based on environmental and human health considerations. PAN uses the term PAN Dirty Dozen for a small group of substances, that are highly persistent and toxic. Many more substances have received the status of PAN Bad Actor, which indicates that they are: 1) known or probable carcinogens, 2) reproductive or developmental toxicants, 3) neurotoxic cholinesterase inhibitors, 4) known groundwater contaminants, or 5) of high acute toxicity. Because there are no authoritative lists of endocrine disrupting chemicals as yet, PAN does not use this criterion in its classification but only indicates whether chemicals are suspected of having endocrine disrupting impacts. Greenpeace uses fourteen toxicological and ecotoxicological criteria in its assessment of approximately 1100 pesticide substances. It distinguishes between a blacklist of especially hazardous substances, a grey list of hazardous substances without specific

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<sup>751</sup> [Http://www.co-op.co.uk](http://www.co-op.co.uk).

<sup>752</sup> [Http://www.marksandspencer.com](http://www.marksandspencer.com).

<sup>753</sup> See press release WWF International, 28 April 2005: WWF lists 20 chemicals to be added to the POPs treaty. The PAN database is available at <https://www.pesticideinfo.org>. Greenpeace Germany has produced three reports, providing listings of substances and a ranking of leading agrochemical companies: L. Neumeister & W. Reuter (2008). *Die schwarze Liste der Pestizide*. Hamburg: Greenpeace Germany, p. 166. See also: G. Lach (2008). *Grenzen der Pestizidanalytik*. Hamburg: Greenpeace Germany, 82 p.

dangerous properties, and a yellow list of substances about which hardly anything is known.

This exercise of combining data from several sources makes clear that the world-wide progress in limiting the use of the most dangerous substances has been slow in the past decades. Although the EU prohibited the marketing and use of certain substances in its own territory in the late 1970s and 1980s, several of them have remained in use in other continents. More precisely, under Directive 79/114 the EU has prohibited the marketing and use of 20 substances in total. 15 out of these substances now fall under the scope of the Rotterdam Convention and 6 of them are being phased out under the Stockholm Convention, including aldrin, camphechlor (toxaphene), chlordane, dieldrin, endrin, and heptachlor. A seventh substance, DDT, is being phased out for agricultural use but will be allowed for continued use to combat vector diseases. Significantly, retailer initiatives have been instrumental in extending the scope of the prohibitions under Directive 79/114 partly outside the European territory.

Table 8.1 Substances reviewed by the EU under the Directives 79/117 and 91/414 and their classification in the WHO system

WHO class of hazard	Substances prohibited to be marketed and used	Substances allowed to be marketed and used	Substances allowed for restricted use	Total
Extremely hazardous (1A)	11	1	-	12
Highly hazardous (1B)	23	6	3	32
Moderately hazardous (II)	29	20	1	50
Slightly hazardous (III)	9	16	-	25
Unlikely to be hazardous in normal use (U) <sup>754</sup>	17	33	1	51
Obsolete <sup>755</sup>	43	-	-	43
Fumigants (FM) <sup>756</sup>	5	-	-	5
Unclassified	14	7	-	21
Total	151	83	5	239

Comparing the outcomes of the review process by the EU with the results from the hazard classification by WHO, as shown in Table 8.1, it is evident that the European Commission has succeeded in reducing the number of different substances available in the EU market and has especially achieved a strong reduction in the classes of the more hazardous substances. However, it also shows that several hazardous substances from the classes IA, IB and II, which are considered by WHO as candidates for a total phase out, are continued to be allowed for marketing and use in the EU.

<sup>754</sup> Unlikely to have hazardous impacts.

<sup>755</sup> Obsolete, not classified.

<sup>756</sup> Fumigant, not classified.

When the EU review results are compared with the status of the same substances according to the PAN system, the analysis shows that half of the authorised substances are Bad Actors in PAN terms. Furthermore, a considerable overlap can be noticed between the WHO classification and the PAN Bad Actor system. This is reflected by the fact that most PAN Bad Actors are classified in the WHO system as hazardous. However, a number of PAN Bad Actors are classified by the WHO as unlikely to have hazardous impacts, or are not listed at all. Conversely, looking at the data from the WHO perspective, it is a marked fact that several substances from the WHO classes II and III have been explicitly assessed by PAN as not being Bad Actors. The explanation for these differences lies in the criteria that have been used and the differences in the interpretation of evaluation results.

### 8.3.3 Use stage

Similarly as in the marketing stage, the regulatory pattern in the use stage of pesticides is complex and fragmented. This section examines the interaction between state and non-state actors through a description of the definition processes of innovative agricultural production methods. In order to get a better understanding of the issues at stake, this section unravels the definition processes of organic agriculture as well as integrated control, emphasizing the distinctive roles of state and non-state actors and the way they influence each other, especially in the European context. In addition, the dilemmas and controversies that underlie the definition processes of these innovative agricultural production methods are identified.

#### The definition process of organic agriculture

Over the past 50 years, the definition of organic agriculture has evolved in a continuous process of interaction between state and non-state actors. As explained in Chapter 5, the concept of organic agriculture was first developed by pioneering agricultural producers in the UK and US in the 1940s. In Europe, the concept was further institutionalised by organic producers' organisations that created common standards for organic production that could provide assurance to consumers and prevent fraudulent claims and unfair competition.<sup>757</sup>

Unlike Europe, the US followed a state-actor dominated model of rule-making for organic agriculture, with state actors taking the regulatory initiative and largely keeping it. In response to the growing interest in the organic agricultural production method from the 1960s onwards, several states adopted legislation defining organic agriculture. In 1973, Oregon became the first state to pass a law regulating organic food as a response to reports of fraud and inconsistencies in terms of organic claims.<sup>758</sup> In due course, sev-

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<sup>757</sup> K. Commins (2004). Overview of current status of standards and conformity assessment systems. In: J. Michaud, E. Wynen & D. Bowen (eds.) (2004). Harmonization and equivalence in organic agriculture. Vol. 1: Background papers of the International Task Force on Harmonization and Equivalence in Organic Agriculture. UNCTAD, FAO & IFOAM, p. 10.

<sup>758</sup> M. Boström & M. Klintman (2006). State-centered *versus* nonstate-driven organic food standardization: A comparison of the US and Sweden. In: Agriculture and Human Values, vol. 23, no. 2, p. 171.

eral other states followed the Oregon example, and increasingly non-state actors also chose the regulatory track.

The initiative for the establishment of international organic standards was taken by the International Federation of Organic Agriculture Movements (IFOAM), in response to the increase of private standards and public regulations worldwide. This non-state actor saw the need for harmonisation at the international level, *inter alia*, in order to facilitate trade in organic products. It consequently decided to develop the IFOAM basic standards for organic production and processing, which were published in 1980, and contained the first ever international definition of organic agriculture:

“Organic agriculture includes all agricultural systems that promote the environmentally, socially and economically sound production of food and fibres. These systems take local soil fertility as a key to successful production. By respecting the natural capacity of plants, animals and the landscape, it aims to optimise quality in all aspects of agriculture and the environment. Organic agriculture reduces external inputs by refraining from the use of chemical-synthetic fertilisers, pesticides and pharmaceuticals. The use of genetically modified organisms is excluded.”<sup>759</sup>

As the area under organic production further increased, the EU started to regulate organic agriculture and its products. In 1991, the EU established Regulation No 2092/91 that aimed to provide the basis for the regulation of organic agriculture in the Member States.<sup>760</sup> Key considerations of the EU to come up with legislation were to ensure fair competition between organic producers, to enhance transparency at all stages of production and processing, and to improve credibility in the eyes of consumers. The first version of the legislation only applied to unprocessed agricultural products of vegetable origin as well as processed food products composed of one or several ingredients. In a later stage, the scope of the legislation was extended towards agricultural products from animal origin as well.<sup>761</sup>

The EU Regulation required Member States to set up an inspection system operated by one or more designated inspection authorities and/or approved private bodies.<sup>762</sup> Hence, the EU system explicitly allowed non-state actors to be involved in inspection and certification activities. Following the implementation requirements of the regulation, all EU Member States have designated certification bodies, which work with their own organic standards, inspection schemes and symbols (consumer labels) under the condition that they comply with the bottom line set by the EU.

In the US, the great variety of legislative schemes across states, in combination with the fact that organic agriculture remained unregulated in several other states, urged the fed-

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<sup>759</sup> [Http://www.ifoam.org](http://www.ifoam.org).

<sup>760</sup> Council Regulation No 2092/91 of 24 June 1991 on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs, OJ L198, 22.07.1991, pp. 1-15.

<sup>761</sup> Council Regulation (EC) No 1804/1999 of 19 July 1999 supplementing Regulation (EEC) No 2092/91 on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs to include livestock production, OJ L222, 24.08.1999.

<sup>762</sup> Council Regulation No 2092/91, Article 9.

eral government to move toward a nationally standardized system.<sup>763</sup> An additional motive for regulation at the federal level were the interests of US agricultural actors who wished to move closer to EU organic standards for economic and trade reasons.<sup>764</sup> As a result of its legislative effort, the federal government incorporated the Organic Food Protection Act (OFPA) into the 1990 Farm Bill. With this Act, the government shifted most authority to itself, and more precisely to the US Department of Agriculture (USDA).<sup>765</sup> This means that from that moment on a state was no longer allowed to require higher organic standards than the USDA did federally, unless specific environmental conditions necessitated stricter state standards.<sup>766</sup> Moreover, the US system left no space for autonomous standardisation by non-state entities.<sup>767</sup>

The initial Organic Food Protection Act (OFPA) followed the IFOAM and EU models closely. In 1997, however, it seemed that the US government was on a collision course with the organic movement, as the USDA proposed a thorough amendment of the Act aiming to allow the use of genetically modified organisms and sewage sludge in organic production, and irradiation of organic food products.<sup>768</sup> The proposal about the so-called Big Three created considerable controversy among the stakeholders concerned. Under considerable opposition of the public, USDA finally abandoned it. Moreover, this governmental U-turn may be inspired by the guidelines on organic agriculture that were in the process of being developed by the Codex Alimentarius Commission in that same period. These Codex guidelines did not allow for the use of the Big Three.

The Codex Alimentarius Commission had started to develop its guidelines in the course of the 1990s, when the market share of organic food products began to increase worldwide. In order to provide clear information to consumers, the Commission decided to ask the Codex Committee on Food Labelling to develop guidance on claims about organic agriculture and food products. In a process that took several years, the Committee developed the Guidelines for the Production, Processing, Marketing and Labelling of Organically Produced Foods. They were first adopted in 1999, and subsequently amended in 2001.<sup>769</sup> The Guidelines were intended to facilitate the harmonisation of requirements for organic products at the international level, and to provide assistance to governments wishing to establish national regulations in this area.

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<sup>763</sup> M. Boström & M. Klintman (2006).

<sup>764</sup> Golan et al., 2000, as cited by Boström and Klintman, 2006.

<sup>765</sup> USDA (2005). Organic Food Production Act of 1990: Title XXI of the Food, Agriculture, Conservation, and Trade Act of 1990 (Public Law 101-624).

<sup>766</sup> M. Boström & M. Klintman (2006), p. 172.

<sup>767</sup> M. Boström & M. Klintman (2006), p. 174: USDA accredits certifiers who may be state or private agencies. These agencies do not have the authority to establish organic standards, only to make certain that the standards are followed.

<sup>768</sup> M. Klintman & M. Boström (2004). Framings of science and ideology: organic food labelling in the US and Sweden. In: *Environmental Politics*, vol. 13, issue 3, pp. 612-634.

<sup>769</sup> Codex Alimentarius Commission, GL 32 – 1999, Rev. 1 – 2001. The first version was adopted at the 23<sup>rd</sup> Session of the Codex Alimentarius Commission in 1999. The second version was adopted at the 24<sup>th</sup> Session of the Codex Alimentarius Commission 2001. A major amendment concerned the inclusion of sections concerning livestock and livestock products and bee keeping and bee products.

Returning to the situation in Europe, it can be concluded that Regulation No 2092/91 on organic production has had two distinct impacts on the organic movement. On the one hand, and in combination with the funding provided by the European Commission on the basis of the agri-environment scheme, the Regulation has given an important impetus to the growth of organic agriculture in the Member States, and has provided an increased legitimacy to the regulatory activities of non-state actors. On the other hand, the involvement of the EU in the definition process of organic agriculture has made the organic movement more vulnerable to outside influences as there is a threat that the EU will gradually remove the power to define what is organic from the organic movement.<sup>770</sup> This tension has become apparent in the revision process of Regulation No 2092/91.

The revision process started with the publication of the European Action Plan on Organic Food and Farming by the European Commission in June 2004, in which it announced a major overhaul of the regulatory framework defining organic agriculture.<sup>771</sup> After a short consultation round, the Commission published a proposal for a Council Regulation on organic production and labelling of organic products in December 2005.<sup>772</sup> This proposal had the character of framework legislation that needed to be further elaborated by so-called implementing measures. According to the Commission, the revised Regulation especially aimed to improve clarity for both consumers and agricultural producers.

One of the issues debated in the revision process concerned the proposed restriction on ownership of standards and use of logos by non-state actors. However, IFOAM has lobbied successfully in order to safeguard its position and that of its member organisations. From the start, IFOAM has chosen an active position in the decision-making process about the EU legislation. Through its IFOAM EU group, it first formulated its comments in a paper on 'grave concerns', asking for a less tight timeline for the finalisation of the regulation. Subsequently, IFOAM pursued a constructive approach by actively helping to find solutions for several of the contested issues.<sup>773</sup>

Importantly, the Austrian and Finnish Presidencies of the EU have played a major role in bringing the diverging viewpoints together by tabling several compromise proposals. On 19 December 2006, the Agricultural Council reached agreement on the so-called general approach of the new regulation on organic production. This meant that the legislative process was close to finalisation and that in the last stage the Commission was only al-

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<sup>770</sup> Cp. M. Boström & M. Klintman (2006), p. 169 (about KRAV and EU).

<sup>771</sup> COM(2004) 415 final, 10.06.2004.

<sup>772</sup> Proposal for a Council Regulation on organic production and labelling of organic products, COM(2005) 671 final, 21.12.2005.

<sup>773</sup> According to IFOAM, several issues remained contested, such as the fact that the objectives and principles of the Regulation were not in line with those of the organic sector, the centralization of decision-making power at Community level, and restrictions on the operation of private inspection and certification bodies with regard to advertising use of private logos (marks of conformity).



lowed to make minor technical changes in the text of the proposal. The new regulation was published in early 2007 and will come into force on the 1<sup>st</sup> of January 2009.<sup>774</sup>

The preparatory process of the revised EU Regulation demonstrates the fragile position of rules made by non-state actors as they may be overruled at any time through intervention by the state. Moreover, state actors may choose different priorities and solutions for the issues at stake. With regard to the EU Regulation, for example, a number of issues have not been solved to the satisfaction of IFOAM, including the rules about stakeholder involvement in procedures, GMOs, the mandatory use of the EU logo, the link to the food and feed control regulation and the exclusion of catering and non-food products from the scope of the regulation.<sup>775</sup>

In a parallel development, the EU introduced an amendment of the old scheme for imports of organic products from non-EU Member States in late 2006.<sup>776</sup> The old scheme, which was incorporated in Article 11 of Regulation No 2092/91, had been in force for more than 15 years and has been criticized for the cumbersome procedures that it created and its negative effects on international trade. The new import scheme constitutes a revision of Article 11 of Regulation No 2092/91 by extending the marketing possibilities for non-EC exporters as it introduces a list of recognized inspection bodies and authorities that carry out inspection in countries that are not on the list of recognized third countries. Thus, the new provisions explicitly place state and non-state actors at an equal level.

Reviewing the definition process of organic agriculture, the conclusion is that the organic agriculture movement has managed to create a united front worldwide over the past 35 years and keep the definition of organic agriculture essentially within the movement. Moreover, IFOAM has succeeded in creating a system of standards that has influenced the development of organic agriculture worldwide and has influenced rule-making by state as well as non-state actors to a large extent.

One of the greatest dilemmas for the organic agriculture movement nowadays is the increased involvement of the conventional food industry and the emergence of large players in the organic market. This involvement has been termed the 'conventionalisation' of organic production, as it has become increasingly dependent on, and integrated into, conventional agribusiness structures and processes.<sup>777</sup> On the one hand, the involvement of the conventional industry is one of the major reasons for the growth of organic agriculture worldwide. On the other hand, the pressure from the food industry could, over time, lead to a watering down of ambitions and a weakening of standards, and eventually

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<sup>774</sup> Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91, OJ L189/1, 20.07.2007.

<sup>775</sup> Press release IFOAM EU Group, 20.12.2006: Organic sector on new regulation: Strong concerns about GMOs, EU logo and lack of stakeholder involvement but glad Council could be convinced to allow private standards.

<sup>776</sup> Council Regulation (EC) No 1991/2006 of 21 December 2006 amending Regulation (EEC) No 2092/91 on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs, OJ L411/18, 30.12.2006.

<sup>777</sup> J. de Wit & H. Verhoog (2007). Organic values and the conventionalisation of organic agriculture. In: NJAS Wageningen Journal of Life Sciences, Special issue Values in organic agriculture, vol. 54, no. 4, pp. 347-360.

regulatory capture by non-adherents of organic principles.<sup>778</sup> With regard to pesticides, such conventionalisation could mean that non-synthetic pesticides are increasingly used as substitutes for chemicals. As a consequence, the quality of organic products could suffer and the original aims of the organic movement gradually undermined. Therefore, the challenge for the organic movement is the reconciliation of the principles of organic production with the practice of intensive and industrial forms of agriculture. At the practical level, this means that a number of issues need to be addressed such as the compatibility of large scale farming operations with the principles of organic agriculture, the compatibility of long distance transport of produce, the minimum percentage of organic ingredients in processed products, and the use of non-synthetic inputs.

In contrast to this threat of a possible erosion of standards, it has also become apparent that a number of large market players, from conventional as well as non-conventional origin, has sought to raise the ambition level of organic standards and enhance the quality of products.<sup>779</sup> In order to achieve their aims, these market players usually follow one of the following routes, or a combination of them. First, they can choose to stipulate that suppliers deliver products certified on the basis of accredited schemes. Second, they can demand certification on the basis of schemes that contain more stringent requirements than the average. Third, they can create own organic-plus systems that articulate specific requirements on top of the regular organic standards.

As a side-effect, this sharpening up of rules by individual or groups of actors has led to an increased diversity of standards and, hence, an undermining of harmonisation. The EU has tried, with its revision proposal of Regulation No 2092/91, to limit diversity by prohibiting the creation of more demanding certification schemes. In its first legislative proposal, the option of establishing more stringent standards was explicitly excluded, but in the face of fierce criticism from the organic movement the EU revoked this proposal in a later stage.

Besides the challenge of keeping up an autonomous and distinct identity in the face of increased globalisation and market growth, the organic movement is also challenged by issues that are raised from within, such as the needs of small producers supplying local markets. In response to their needs, IFOAM has recently developed the participatory guarantee system, which is an informal verification system. This system can be considered as a softer variant of a conformity assessment procedure as the verification is performed by the farmer community to which the agricultural producer belongs and not by a third party.

In order to face the above mentioned challenges, scholars have started to explore the philosophical underpinning of organic agriculture, identifying the core values that constitute the essence of organic agriculture. One of these contributions specifically focused on the value of 'naturalness' distinguishing three aspirational levels, including the no-chemicals, agro-ecological and integrity approaches.<sup>780</sup> IFOAM itself has developed sev-

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<sup>778</sup> M. Boström & M. Klintman (2006), p. 168.

<sup>779</sup> Examples include the retailer Sainsbury's and the food processing company Heinz.

<sup>780</sup> H. Verhoog, E.T. Lammerts van Bueren, M. Matze & T. Baars (2007). The value of 'naturalness' in organic agriculture. In: NJAS Wageningen Journal of Life Sciences, special issue: values in organic agriculture, vol. 54, no. 4, pp. 333-345.

eral activities to strengthen its profile and keep the regulatory initiative, which is in line with Boström and Klintman who argue that “an independent cognitive platform with well-developed framings and a firm collective identity implies systematic and reflexive awareness of one’s own (rather than another’s) priorities.”<sup>781</sup> Besides the recent reformulation of its mission and principles, and partly related to it, IFOAM has decided to articulate a new definition of organic agriculture which will be put forward for approval by the membership in 2008.

### The definition process of integrated control

Compared with organic production, the definition process of agricultural production approaches based on integrated control is of a more recent date and relatively less well crystallized. As explained in Chapter 5, the concept of integrated control was first introduced in the 1970s when scientists interested in biological control of pests developed several multifaceted strategies that consider synthetic pesticides as one, but not the only method, to combat pests and diseases. These strategies aim at minimising the use of fertilisers and pesticide products by using additional measures, such as natural predators, crop rotation and mechanical weeding, and strive for a certain level of integration of different agricultural practices.

Integrated control should be seen as an umbrella concept that accommodates a range of different production methods aimed at different ambition levels of integration. In accordance with these levels, a basic distinction can be made between IPM, ICM, and integrated production. Whereas integrated production aims for the relatively highest grade of integration, taking all aspects of farm management into account, ICM and IPM have a relatively more narrow focus, targeting the integrated management of crops and pests, respectively. It is important to note that the scope of these concepts has implications for the role of synthetic pesticides in the agricultural production process, and more specifically for the hierarchy of crop protection measures.

The first guidelines for integrated control were developed by non-state actors in the 1970s. Towards the end of the 1980s, these definition processes had reached the stage that the first labelling and certification schemes were established. In the early 1990s, the International Organisation for Biological Control of Noxious Animals and Plants (IOBC) developed guidelines for integrated control, and suggested that the EU should develop a minimum regulation for integrated control similar to that for organic agriculture.<sup>782</sup> The EU, however, did not pick up the issue.

The pioneering schemes for integrated control were mostly initiated by non-state actors in a single- or two-party context. Most of them can be characterised as self-regulation. However, as these schemes developed further, taking additional stakeholders on board and establishing third-party verification, it can be argued that somewhere along this trajectory, some of them transformed from self-regulation into multi-actor regulation. The level of integration promoted by these schemes diverged from bottom-line to highly in-

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<sup>781</sup> M. Boström & M. Klintman (2006), p. 168.

<sup>782</sup> Presentation of Antonio Mexía, IOBC, at the EUREPGAP review workshop, Madrid, Spain, 9-10 September 2002.

tegrated, using different terms to indicate the specificity of a certain agricultural production method.

In contrast, state actors seemed to pursue a more uniform model of integration, favouring the conversion to IPM. Importantly, the promotion of IPM has been given a strong impetus in the international context by the FAO International Code of Conduct on the Distribution and Use of Pesticides since 1989, and the Rio Conference on Environment and Development in 1992. According to the 1989 version of the Code of Conduct, IPM was recommended as the agricultural production method appropriate for a proper management of pesticides, using the following definition:

“A pest management system that, in the context of the associated environment and the population dynamics of the pest species, utilizes all suitable techniques and methods in as compatible a manner as possible and maintains the pest populations at levels below those causing economically unacceptable damage or loss.”

This preference for IPM has been further emphasized by Agenda 21 that was adopted at the Rio Conference in 1992. However, the Agenda 21 definition went much further by explicitly articulating the objective of a minimisation of pesticide use:

“Integrated pest management, which combines biological control, host plant resistance and appropriate farming practices and minimizes the use of pesticides, is the best option for the future, as it guarantees yields, reduces costs, is environmentally friendly and contributes to the sustainability of agriculture.”<sup>783</sup>

10 years after the Rio Conference, in 2002, FAO gave a new impetus to the worldwide implementation of IPM, with its drastic revision of the FAO Code of Conduct. In comparison with its predecessor, the revised Code puts much more emphasis on IPM as the agricultural production method of preference.<sup>784</sup> In comparison with the 1989 version, the definition of the concept includes the objective of risk reduction in relation to both human health and environment, and the encouragement of natural pest control mechanisms. However, it does not contain the objective of use minimisation as included in Agenda 21. The revised FAO definition is as follows:

“Integrated Pest Management (IPM) means the careful consideration of all available pest control techniques and subsequent integration of appropriate measures that discourage the development of pest populations and keep pesticides and other interventions to levels that are economically justified and reduce or minimize risks to human health and the environment. IPM emphasizes the growth of a healthy crop with the least possible disruption to agro-ecosystems and encourages natural pest control mechanisms.”<sup>785</sup>

As this definition only gives an indication about what IPM entails, it needs further elaboration in technical guidelines in order to give practical guidance to agricultural producers. As yet, the formulation of these guidelines has not been given priority by FAO due to political will and a lack of finances.

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<sup>783</sup> Agenda 21, 14.73.

<sup>784</sup> FAO Code of Conduct, Article 1.7.6.

<sup>785</sup> FAO Code of Conduct, Article 2.

In comparison, it is interesting to see how the debate in the EU institutional bodies has developed, or arguably, how it has failed to develop. The definition of integrated control is an issue, which the EU has been postponing to tackle for several years and still seems unlikely to solve. The discussion started with the establishment of Directive 91/414 and got a new impetus in the early 2000s with the preparation of the Thematic Strategy on the Sustainable Use of Pesticides and the proposals for new legislation.<sup>786</sup>

To start with, Directive 91/414 introduced the triple concepts of the proper use of plant protection products, the principles of good plant protection practice, and the principles of integrated control. According to Directive 91/414, the proper use of plant protection products *inter alia* includes the application of the principles of good plant protection practice as well as, whenever possible, the principles of integrated control. In this respect, integrated control is defined as:

“The rational application of a combination of biological, biotechnological, chemical, cultural or plant-breeding measures whereby the use of chemical plant protection products is limited to the strict minimum necessary to maintain the pest population at levels below those causing economically unacceptable damage or loss.”<sup>787</sup>

With the proposed regulation for an authorisation scheme, the EU has maintained the concept of proper use but framed it differently. In its new formulation, proper use includes the application of the principles of good plant protection practice as well as, whenever possible, the principles of IPM and good environmental practice. Hence, what is new about the proposal is that the EU now uses the term IPM instead of integrated control. Notably, the EU definition of IPM is similar to the definition used in the FAO Code of Conduct, which implies a shift from use limitation as an objective to risk reduction.

In its proposal for a framework Directive on the sustainable use of pesticides, the Commission goes a small step further by proposing that general standards for IPM shall be developed in a ‘comitology’ procedure and shall become mandatory as of 2014.<sup>788</sup> Additionally, the Commission proposes that Community-wide specific IPM standards shall be developed for particular crops. However, the Commission does not specify for which crops and based on what criteria. Moreover, the Commission has taken the sting out of this requirement by stating, without giving any arguments, that the implementation of specific IPM standards will remain voluntary.

During the preparatory process of the framework Directive and also of other pesticide-related legislation, members of the European Parliament have drafted several resolutions giving evidence of their widely diverging points of view about the definition of IPM and

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<sup>786</sup> See: COM(2002) 349 final, 01.07.2002, COM(2006) 373, 12.07.2006, and COM(2006) 388 final, 12.07.2006.

<sup>787</sup> Directive 91/414, Article 3(3) iuncto Article 2(13).

<sup>788</sup> COM(2006) 373, see especially the proposed Article 13.

other integrated approaches.<sup>789</sup> A member for the Committee on Agriculture and Rural Development, for example, suggested a softer two-level approach consisting of uniform binding criteria for good professional practice in pest management and voluntary guidelines for IPM.<sup>790</sup> These uniform criteria and guidelines were subsequently spelt out in two proposed annexes that put the emphasis on the correct and responsible use of pesticides, instead of pesticide use reduction and awareness campaigns.

From a totally different perspective, PAN Europe had already earlier extensively elaborated on the definition of IPM/ICM in an annex to the draft SLIM report, distinguishing ten key criteria:

- 1) A soil structure serving as an adequate buffering system for agriculture;
- 2) A crop rotation frequency enhancing a balanced population of soil organisms preventing outbreak of soil-bound pests;
- 3) The use of the best available pest-resistant crop varieties;
- 4) Use of optimal crop distance and crop management to prevent growth of fungi;
- 5) Availability of refugia for natural enemies of pests and for the prevention of pesticide-resistant pests;
- 6) Economical nutrient management on the basis of information of already present nutrients in the soil and of the soil structure, and dosage only on the crop;
- 7) In principle only use of mechanical weeding (or other non-chemical methods like the use of heat); only exception in case of bad weather conditions;
- 8) Use of pesticides based on information of presence of pests (scouting, sensors, on-line services) and only the use of selective pesticides (non harming beneficial organisms);
- 9) Priority is given to the use of 'green' pesticides and pest-preventive substances, and
- 10) Minimal material resources input.<sup>791</sup>

Subsequently, PAN Europe, together with the European Environment Bureau (EEB) drafted a 'directive' on Pesticides Use Reduction in Europe, the so-called PURE directive, which prescribed the mandatory application of IPM/ICM standards.<sup>792</sup>

Significantly, GlobalGAP has added a section about IPM with the 2007 revision of the standards.<sup>793</sup> Interestingly, the GlobalGAP definition of IPM uses the FAO definition as incorporated in the FAO Code of Conduct as a starting point for the development of IPM guidelines, whilst recognising the need for local interpretation of the guidelines by the certification bodies in charge. Hence, the formulation of these IPM guidelines means that a non-state actor has claimed the regulatory initiative to define the concept of IPM in concrete measures.

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<sup>789</sup> See e.g.: Draft report on thematic Strategy on the Sustainable Use of Pesticides (Provisional) 2007/2006(INI), 14.3.2007), European Parliament, Committee on the Environment, Public Health and Food Safety, Rapporteur Irena Belohorská, PR\657643EN.doc, PE 386.500v01-00, and Draft report on the proposal for a directive of the European Parliament and of the Council establishing a framework for the sustainable use of pesticides, European Parliament, Committee on the Environment, Public Health and Food Safety, Rapporteur: Christa Klass.

<sup>790</sup> See resolution drafted by Michl Ebner, Committee on Agriculture and Rural Development. Provisional 2006/0132(COD), 15.03.2007. PR\657645EN.doc, PE 386.502v01-00.

<sup>791</sup> Report on the outcome of the 5th phase of SLIM, SEC(2001) 1997 , 17.12.2001.

<sup>792</sup> Suggested text for a directive on pesticides use reduction in Europe, presented by PAN Europe and the EEB, 29/05/02.

<sup>793</sup> Definitions of terms used in the GlobalGAP scheme are listed in the following document: Code Ref: IFA 3.0 GR I, Version: V3.0-Mar07, Annex: I.1.

The core of the new section on IPM standards form the triple requirements that an agricultural producer must be able to show evidence of implementation of at least one activity that falls in the categories of a) prevention, b) observation and monitoring, and c) intervention.<sup>794</sup> For an explanation of the requirements about IPM, the protocol refers to an annex containing GlobalGAP IPM Guidelines that is meant for agricultural producers and certification bodies alike. This annex explains that GlobalGAP sees IPM as “an important strategic discipline contributing to food quality, food safety, farmers’ and workers’ health, and quality of the environment.” It elaborates that:

- 1) Prevention includes measures of crop rotation, pest exclusion and soil management, selection of appropriate plant varieties and planting material, and good crop hygiene.
- 2) Observation and monitoring are about crop monitoring and using decision-support systems as a means to identify the need for, and/or timing, of intervention strategies.
- 3) Intervention includes, where possible, the consideration of non-chemical approaches. In concrete terms, it encourages the selective use of plant protection production in ways that reduce the risk of pesticide resistance, the use of natural enemies and other commercially-available biological methods of control, and the use of other methods, such as mechanical weeding and use of traps for insect pest control.<sup>795</sup>

In sum, the last word has not been said about the interpretation of IPM and other approaches of integrated control. The regulatory vacuum in relation to precise definitions already exists for many years and is likely to persist in the years to come. As the situation is now, the retailer working group GlobalGAP has taken the first steps in the further definition process of IPM by formulating guidelines, thereby possibly capturing the regulatory initiative.

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<sup>794</sup> The full text of the triple requirements is as follows:

CC 7.2: The producer can show evidence of implementing at least one activity that includes the adoption of cultivation methods that could reduce the incidence and intensity of pest attacks, thereby reducing the need for intervention.

CC 7.3: The producer can show evidence of implementing at least one activity that will determine when, and to what extent, pests and their natural enemies are present, and using this information to plan what pest management techniques are required. In addition three standards have been grouped under the heading of ‘Integrated Pest Management’ that were previously placed under the heading of ‘Basic elements of crop protection’ and that can be considered an elaboration of good agricultural practice.

CC 7.4: The producer can show evidence that in situations where pest attack adversely affects the economic value of the crop, intervention with specific pest control methods will take place. Where possible, non-chemical approaches must be considered.

<sup>795</sup> According to the annex, the selective use of plant protection products in ways that reduce the risks of resistance includes: the use of approved selective plant protection products which have reduced adverse impact on non-target species (e.g. insect growth regulators, insecticidal soaps, mineral and vegetable oils, plant extracts); the use of plant protective products in a selective manner (e.g. seed treatment; spot treatments in situations where the pest is located in ‘hot spots’, rather than distributed throughout the crop); the use of bait treatment where appropriate, and the systematic alternation of plant protection products from different chemical groups for effective resistance management.

The lack of generally agreed and well-elaborated definitions has as a consequence that claims based upon integrated control can mean more or less anything in terms of pesticide risk reduction. As long as the definition of the concept does not contain a priority ladder of crop protection measures, it can be even argued that there is not a significant difference with the concept of good agricultural practice. Moreover, the diversity of approaches that are practiced under the heading of integrated control has led to a confusion of terminology, which has obscured the discussion for many years and is possibly a reason for the lack of actual progress at the farm level.

#### 8.3.4 Residue stage

The reduction of pesticide residues in agricultural products can be achieved either by limiting the application of pesticides during production or by ensuring that pesticides have broken down sufficiently before food products are sold in the market. In order to give guidance to agricultural producers about acceptable risks, pesticide residues have been traditionally regulated by state actors, mostly on a national basis. The necessary guidance has been provided through the establishment of maximum residue levels (MRLs) based on good agricultural practice, and values indicating acceptable daily intakes (ADIs) and acute reference doses (ARfDs).

In recent years, the Codex Alimentarius Commission and the EU have started to aim for a harmonisation of national MRLs. This trend of harmonisation has been strengthened with the entry into force of the SPS Agreement. A comparison of matching Codex and EU MRLs in 2001 revealed that the EU MRLs were stricter or equal, and seldom less stringent than the Codex MRLs.<sup>796</sup>

Hence, most of the state actor approaches to pesticide residues focus on the determination of limit values for individual substances. However, non-state actors, and especially the large retailers, have increasingly chosen other lines of approach. First, GlobalGAP has made producers responsible for pesticide residue analysis, resulting in increased producer awareness and a shift of costs and liability. Second, Aldi and Lidl have chosen to limit the accumulation of pesticide residues on a single product by providing an aggregated limit value. Significantly, several retailers consider setting the limit value at zero, indicating a preference for residue-free produce.

### 8.4 Conclusions

As this chapter has shown, regulatory interaction in the issue-area of pesticide risk reduction in agriculture has increased in the past decades in vertical, horizontal and diagonal directions. Vertically, there has been an increased use of mechanisms to stimulate implementation such as obligations for monitoring, reporting and development of implementation plans. Between the international and EU level, there is a certain amount of synergy as the EU complies with its international obligations and is active in the preparation of proposals for the inclusion of new substances under the Rotterdam and Stock-

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<sup>796</sup> J.S. Buurma, M.J.B. Mengelers, A.J. Smelt and E. Muller (2001). Developing countries and products affected by setting new maximum residue limits (MRL's) of pesticides in the EU. LEI, RIKILT, and PD.



holm Conventions. However, the EU seems less inclined to provide assistance to developing countries to enable them to implement the necessary measures.

Horizontally, there has been a stronger emphasis on integration and coherence. At the international level, there is an increased aim for the 'bridging' of information, institutional learning, and work sharing between the convention secretariats. The same is true for the EU level, where environmental policy integration has become an objective with a legal status and has been codified in the EU Treaty.

Diagonally, there has been an increased emphasis on cooperation between state and non-state actors. It is evident that food industry initiatives are increasingly formally recognised by international organisations such as the Codex Alimentarius Commission, FAO, UNCTAD, and WTO and, hence, have become part of the global framework of rules. Significantly, state actors explicitly require assistance from non-state actors in processes of rule-implementation and rule-enforcement, and are providing legitimacy to non-state actor initiatives by giving private standards a legal status through codification.

From the analysis of the definition processes of organic production and integrated control, it is evident that the definitions concerned are being established in complicated processes of interaction between state and non-state actors, which may result in weaker or stronger versions dependent on the position of the dominant stakeholders in the final decision-making. Thus far, the definition process of organic agriculture has been primarily farmer-driven and can be characterised by a clear leadership role performed by IFOAM and a relatively strong definition of organic agriculture. However, the risk of regulatory capture has increased for IFOAM by the conventionalisation of organic agriculture, thus urging the movement to formulate and reformulate its basic principles and aims.

With regard to the definition process of integrated control, the distribution of roles and responsibilities has been less clear-cut. The development of the concept of integrated control was initially scientist-driven, but increasingly other actors started to give their own interpretations to the concept which has led to much confusion and lack of clarity. Since 1992, FAO has taken a leadership role by adopting a formal definition of IPM. This definition has been amended in 2002, still lacking concrete criteria. More recently, GlobalGAP has taken the definition process a step further by developing IPM guidelines. However, compared with organic agriculture, the definition process of IPM, and even more so of the other forms of integrated control, is still in its infancy.

In sum, the relationships between actors at different sites of governance have become increasingly dynamic, mutually influencing the emergence of each other's substantive and procedural rules. Moreover, it is apparent that most of this regulatory interaction has strengthened the integration of environmental and human health dimensions in pesticide risk regulation.



## 9. Towards a global law on pesticide risk reduction in agriculture

### 9.1 Introduction

This study has addressed the way in which pesticide risk reduction in agriculture is regulated, using the perspectives of legal pluralism and sustainable development. In concrete terms, this means that the different elements of the regulatory regime governing pesticide risk reduction have been described at the international, EU, and transnational level, and subsequently assessed against the criteria of effectiveness, inclusiveness and fairness. In addition, two non-comparative case studies have been presented, focusing on the positions of national government and agricultural producers, respectively. Furthermore, an analysis has been made of the interaction between the different elements of the regulatory regime, using a multi-level as well as a life-cycle approach.

As a last stage of the research, this chapter pulls the different threads together in order to determine the pattern of pesticide risk regulation and its current reconfiguration. It furthermore aims to identify future options, taking into account the possible roles of state and non-state actors. In addition, conclusions are drawn about the application of the concept of legal pluralism in research. Section 9.2 examines the pattern of regulation and its reconfiguration from the point of view of legal pluralism. Section 9.3 elaborates upon the pattern of regulation from the perspective of sustainable development. Section 9.4 explores the way forward by outlining a normative and procedural framework to achieve a progressive reduction of pesticide risks. Section 9.5 considers in retrospect the concept of legal pluralism and its application in research. Section 9.6 presents final observations.

### 9.2 The pattern of pesticide risk regulation and legal pluralism

In the past decades, the pattern of pesticide risk regulation has become increasingly diverse and complex. This section examines this pattern and its reconfiguration from the point of view of legal pluralism. First, it discusses the division of regulatory roles between state and non-state actors. Second, it looks at the dominant sources of authority, and the identity of regulator and regulated. Third, it elaborates on the dominant steering modes in the different stages of regulation. Fourth, it examines the concept of bindingness in relation to the regulatory approaches concerned.

#### Division of regulatory roles

Focusing on the division of regulatory roles, the pattern of pesticide risk regulation and its reconfiguration can be characterised by shifting roles of state and non-state actors in processes of rule-making, rule-implementation and rule-enforcement. More specifically, an increased regulatory involvement of non-state actors can be identified in the public as well as private domain. With regard to rule-making, it is evident that non-state actors are increasingly participating in legislative processes by state actors and that, in addition, they are increasingly taking over the regulatory initiative by developing their own forms of regulation, be it self-regulation, single-actor regulation or multi-actor regulation.

In relation to rule-implementation, a similar dual shift has taken place. Public regulation increasingly addresses non-state actors to assist with the implementation of rules and regulations, as the examples of the FAO International Code of Conduct on the Distribution and Use of Pesticides, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade and the Stockholm Convention on Persistent Organic Pollutants demonstrate. In addition, national non-state actors are increasingly implementing transnational standards, such as the IFOAM organic guarantee system and the GlobalGAP programme for fruit and vegetables. This is reflected in the rise of the private certification industry that can be considered to fulfill the function of the executive power in relation to private regulation. However, compared with public administrations, these private administrative bodies are less independent, as they may find themselves in an ambivalent position because they assess the performance of their customers and, at the same time, have an interest in securing customer loyalty. Moreover, they can be tied to the standard setting entity through accreditation, which makes their split responsibilities even more difficult to combine.

With regard to rule-enforcement, there is a similar trend of enhanced non-state actor involvement. Whereas state actors increasingly request non-state actors to assist in the monitoring of the implementation of public regulation, non-state actors increasingly develop provisions for monitoring, control and sanctioning as a component of their own rule systems. Significantly, private regulation based on own authority may strengthen the enforcement of public regulation by emphasizing its content and backing it up with market-based sanctions. The GlobalGAP system, for example, requires compliance with the national legislation concerning authorised substances and MRLs in the country of production and, if relevant, the country of destination. It thus gives a stronger backing to state regulation by adding its own monitoring and control mechanisms to the state actor repertoire, plus the powerful sanction of withdrawing a producer's license-to-supply.

### Source of authority

Focusing on source of authority, the pattern of pesticide risk regulation and its reconfiguration can be characterised by a relatively stronger emphasis on the development of private own-authority regulation in accordance with the typology introduced in Section 2.2. This typology, based on source of authority and identity of regulator and regulated, distinguishes primary and secondary legislation at the state level, and private own-authority regulation and co-regulation at the non-state level. With regard to private own-authority regulation, the typology has been refined into self-regulation, single-actor regulation, and multi-actor regulation.

Applying this typology to the IFOAM organic guarantee system, it is evident that the regulating entity is formally constituted by the member organisations, mostly consisting of organic farmers' associations and companies that deliver services to organic producers, whereas the regulated party are the same producers and organisations. A further inspection of the functioning of the system makes clear that organic producers determine its actual core in all stages of the regulatory process, as rule-making is ultimately in the hands of the IFOAM World Board consisting of organic producers' associations, and rule-implementation is mostly the responsibility of dedicated organic certification bodies, with the quality of the performance of certification bodies controlled by a voluntary

accreditation programme operated by a subsidiary of IFOAM. Furthermore, rule-enforcement is performed by the same certification bodies, which carry responsibility for rule-implementation. In sum, it is therefore argued that the IFOAM system is a form of self-regulation, as the structure of the system is such that regulator and regulated are essentially identical.

Taking a closer look at the GlobalGAP programme, it is clear that the regulating entity is formally constituted by a combination of retailers and agricultural producers, whereas the regulated party are the producers. However, there is a certain power asymmetry in favour of the retailers, which reveals itself in the different stages of the regulatory process. With regard to rule-making, the governing structure of GlobalGAP is such that retailers and the world's largest suppliers have the strongest positions in standard setting. Concerning rule-implementation, certification bodies are in charge of elaborating and applying the standards. However, they have to operate within the strict boundaries set by GlobalGAP, as exemplified by the requirement of mandatory GlobalGAP accreditation and the strict GlobalGAP quality programme for certification bodies. Most importantly, certification bodies are dependent on the retailers for their license-to-operate. In relation to rule-enforcement, the retailers of GlobalGAP dispose of the most effective sanction to stimulate the adherence to rules and regulations, namely the threat of withdrawing a producer's license-to-supply. In sum, it is therefore argued that the GlobalGAP system is a form of single-actor regulation, as the structure of the system is largely influenced by the apparent power asymmetry.

The application of this typology based on source of authority can thus provide clarity about issues of power distribution in private regulation. Notably, the rise of private regulation based on own authority evokes questions about the procedural safeguards for those regulatory variations and the dispute settlement mechanisms in place. Procedural safeguards for public regulation consist of constitutional provisions and principles and rules of administrative law. In contrast, procedural safeguards for private regulation cannot be found in legislation specifically established to serve this goal, but are scattered over various sources, as is summarised in Table 9.1.

Table 9.1 Procedural safeguards for private regulation of pesticide risks

Type of private regulation	State actor safeguards	Non-state actor safeguards
Self-regulation	TBT Agreement	ISO
	SPS Agreement	ISEAL Code of Conduct
	Civil law	
Single-actor regulation	TBT Agreement	ISO
	SPS Agreement	
	Civil law	
Multi-actor regulation	TBT Agreement	ISO
	SPS Agreement	ISEAL Code of Conduct
	Civil law	
Co-regulation	TBT Agreement	-
	SPS Agreement	
	State and administrative law	

The TBT and SPS Agreements of the WTO provide several procedural safeguards that are also applicable to forms of private regulation. It is however unclear how far this ap-

plicability goes, as is demonstrated by the current investigation of the GlobalGAP initiative by the SPS Committee. Furthermore, forms of private regulation fall under the umbrella of general provisions of civil law, providing a safety net based on, for example, tort law, contract law, liability law, and competition law. Although it is true that civil law does not provide the procedural safeguards comparable to those embedded in administrative law, this is to some extent compensated by the corrective mechanisms provided by corporate assets such as shareholder value, credibility and reputation. Interestingly, several scholars of international law and international relations argue that a global administrative law is emerging, consisting of principles that aim to do justice to the interests of all the actors concerned.<sup>797</sup> So far, these principles have been quite implicit and it is uncertain whether they can be invoked before a court. They are, for example, incorporated in the procedural requirements in ISO standardisation documents and the ISEAL Code of Conduct for Setting Social and Environmental Standards.

### Steering modes of regulation

Focusing on steering modes, the pattern of pesticide risk regulation and its reconfiguration can be characterised by a shift from hierarchy-based towards non-hierarchical steering modes based on market mechanisms and consensus-seeking. This shift is strongly related to the fact that non-state actors from the private sector and civil society are increasingly performing regulatory roles. In order to provide insights into the regulatory consequences of this shift, Table 9.2 combines the steering modes of hierarchy, market, and consensus-seeking with the different stages in regulatory processes.

Table 9.2 Basic regulatory mechanisms in the issue-area of pesticide risk reduction in agriculture

Steering mode/stage	Rule-making	Rule-implementation	Rule-enforcement
Hierarchy-based	Imposition	Public law rights and obligations	Public sanctions
Market-based	Negotiation	Civil law rights and obligations	Private sanctions
Consensus-based	Deliberation	Voluntary commitment	Social sanctions

In the hierarchy-based steering mode, rules are imposed from above based on the principle of democratic representation, implemented through rights and obligations based on public law, and enforced through public law mechanisms that are linked to the privilege of citizenship. In the market-based steering mode, rules are made through negotiation based on market power, implemented through rights and obligations based on civil law,

<sup>797</sup> See e.g.: H. Schepel (2005); C. Harlow (2006). Global administrative law: the quest for principles and values. In: *The European Journal of International Law*, vol. 17, no. 1, pp. 187-214; N. Krisch & B. Kingsbury (2006). Introduction: Global governance and global administrative law in the international legal order. In: *The European Journal of International Law (EJIL)*, vol. 17, no. 1, pp. 1-13. The articles of Harlow and Krisch & Kingsbury are part of a special issue of the *European Journal of International Law* that is devoted to issues of good governance, rule of law, pluralism etc. Essentially, these articles focus on the development of an overarching framework of principles and values for private regulation.

and enforced through private mechanisms that are linked to the privilege of market access. In the consensus-based mode of regulation, rules are made through deliberation based on common interests, implemented through commitment, and enforced through social mechanisms that are linked to the privilege of participation.

The sanctions available in case of non-compliance are linked to the deprivation of the privileges and rights that are specific for each steering mode. This means that: non-compliance with hierarchical rules may ultimately lead through public sanctions to a limitation of citizenship, that non-compliance with market-based rules may lead through private sanctions to a limitation of market access, and that non-compliance with consensus-based rules may lead through social sanctions to a limitation of participation. This distinction between different types of sanctions is related to the so-called license model according to which corporate behaviour can be explained by interactions between regulatory, economic and social licenses-to-operate resulting in the overarching idea of the multi-faceted license.<sup>798</sup>

Importantly, there can be in practice a less clear dividing line between the steering modes of public and private regulation than may appear at first sight. As this study has shown, private regulation based on own-authority increasingly takes place within a triangle of hierarchy, market, and consensus-seeking steering modes. This is certainly relevant in a situation of asymmetrical relationships where a private regulator dominates a regulated party through market power, and consequently a situation has arisen of actual hierarchy. The same blurring of dividing lines can be recognised in certain forms of public regulation that use market-based instruments to achieve public policy goals.

### Bindingness

Focusing on bindingness, the pattern of pesticide risk regulation and its reconfiguration can be characterised by an increased emphasis on voluntary and, hence, non-binding forms of regulation. In principle, primary and secondary legislation and co-regulation are mandatory and, hence, binding forms of regulation, whereas private regulation has a voluntary and thus non-binding nature. However, this distinction between mandatory and voluntary regulation is in practice more ambiguous. Figure 9.1 aims to illustrate these nuances in bindingness. Whereas the horizontal axis refers to the distinction between public and private regulation, the vertical axis provides a distinction between *de facto* binding and *de facto* non-binding. As a result, the figure proposes the following categorisation: public regulation that is legally binding (hard regulation), public regulation that is binding in theory but non-binding in practice ('soft' hard regulation), private regulation that is non-binding in theory and practice (soft regulation), and private regulation that is non-binding in theory but binding in practice ('hard' soft regulation). Looking back at several decades of pesticide risk regulation, it is apparent that most regulatory developments have taken place in the private domain and hence can be characterised as soft or 'hard' soft regulation.

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<sup>798</sup> N. Gunningham (2007). Regulatory reform beyond command and control. Paper presented at the Amsterdam Conference on the Human Dimensions of Global Environmental Change, Earth System Governance: Theories and Strategies for Sustainability, 24-26 May 2007, 17 p.

<i>De facto</i> binding	
<b>'Hard' soft regulation</b> Single-actor regulation  Private regulation	<b>Hard regulation</b> International conventions EU legislation National legislation  Public regulation
Self-regulation Multi-actor regulation Regulation by international organisations  <b>Soft regulation</b>	Mandatory rules that are not being monitored and/or enforced  <b>'Soft' hard regulation</b>
<i>De facto</i> non-binding	

Figure 9.1 Variations in *de facto* bindingness of pesticide risk regulation

### 9.3 The pattern of pesticide risk regulation and sustainable development

This section draws conclusions about the pattern of pesticide risk regulation and its re-configuration from the point of view of sustainable development. First, it focuses on regulatory objectives. Second, it examines regulatory activity in relation to the different stages in the pesticide life-cycle. Third, it investigates the effectiveness, inclusiveness, and fairness of state and non-state actor regulation.

#### Regulatory objectives

Focusing on regulatory objectives, the pattern of pesticide risk regulation and its re-configuration can be characterised by an increased variety of interests and objectives. Whereas the initial focus of pesticide risk regulation was almost exclusively on the protection of national agriculture against pests from other countries and thus an increase of national agricultural production, the emphasis has subsequently shifted in the direction of international economic interests, such as the harmonisation of the market for pesticide products, the facilitation of trade in agricultural products, and the stimulation of employment in the chemical industry. Simultaneously, objectives of environmental and human health protection have also come to the fore.

Thus far, the argument of consumer health protection has been the main point of leverage for non-state actors to establish regulation aimed at pesticide risk reduction. Worker health and environment have had a secondary priority. Looking at the near future, it can be expected that consumer health protection will remain a high priority as new scientific evidence is continuously emerging, for example about hormone disruptive substances and substances potentially triggering Parkinson's disease. In some respects, consumer health can be instrumental in reducing pesticide risks for the environment as well as worker health, but this is not necessarily the case.

A recurrent theme in the debates on the regulation of pesticides concerns the determination of risk and the interpretation of scientific evidence. The interpretation of the actual risks involved and potential hazards differs widely between actors across levels and there



are also differences of opinion about the safety margins to be taken into account in decision-making and the level of precaution to be considered. This divergence of interpretations and opinions is, for example, illustrated by the different status of pesticide substances under different regulatory regimes.

In addition, actors may differ in their ideas about risk management options. A major issue concerns the question whether the ultimate objective of pesticide law and policy should be risk reduction as such, or combined with dependency and/or use reduction. As can be concluded from this study, the present pattern of regulation reflects a broad consensus about the objective of risk reduction but less agreement about the reduction of dependency and use. At the national level, however, regulatory patterns can be radically different, as the examples of the Scandinavian countries demonstrate, putting considerable emphasis on dependency and use reduction.

The consequence of multiple, and often opposing, interests and objectives is that they have to be weighed against each other in decision-making processes. As this study has shown, state actors at governmental level have experienced difficulties to find a balance between the diverging interests at play in the past decades. At different levels, state actors have been muddling through in establishing a coherent and effective law and policy on pesticides. This is, for example, demonstrated by the fact that the decisions concerning the objectives of legislation and their interpretation are often controversial and the definition process of crucial concepts postponed, as is evident from the case study of the Netherlands, but also from the EU legislation on pesticides, the FAO Code of Conduct and the Rotterdam Convention. In response to this paralysis of state actors, non-state actors have increasingly taken over the regulatory initiative in pesticide risk reduction matters, arguably better equipped to reconcile diverging objectives. In their new role, they increasingly claim to function as 'agents of change' in the process towards food safety and sustainability.

A side-effect of the current regulatory pattern, as pointed out in the case study on tomato production, is that it favours the economic interests of multinational companies in the pesticide industry, seed industry, and food and retailing industry, because it facilitates a consolidation of market share and power through the establishment of additional governance structures. The increased influence of multinational companies has led to two opposing trends. On the one hand, it has resulted in an increased standardisation and commodification of the bulk of agricultural produce by creating increasingly homogeneous products. On the other hand, it has led to de-commodification through the development of specialty products based on high-technology for niche markets. Both developments have taken place at the expense of traditional agricultural biodiversity.

### Life-cycle of pesticides

Focusing on the pesticide life-cycle, the pattern of pesticide risk regulation and its reconfiguration can be characterised by a shift towards greater involvement of non-state actors in the stages of production, marketing, use and residues. The pattern in the production stage has relatively changed the least and is still primarily being determined by state actors. Concerning the marketing stage, the pattern has become more diverse over the years, with state and non-state actors both regulating the status of pesticide substances, but with state actors still in the dominant position. In the use stage, the pattern has be-

come equally diverse but with an arguably increased dominance of non-state actors. The regulatory pattern has also changed considerably in the residue stage, and is now being determined by state as well as non-state actors.

Looking at the regulatory activity in the different stages of the pesticide life-cycle, it is apparent that state actors have concentrated so far on the marketing and residue stages, whereas non-state actors have focused especially on the use and residue stages. Notably, the group of non-state actors is far from homogeneous and consequently the focus of their activities diverges. From the examination of non-state actor initiatives, it is evident that civil society initiatives primarily focus on the use stage of pesticides whereas corporate initiatives put the emphasis on food safety aspects, such as pesticide residues in food products.

As a result of the regulatory activity of state and non-state actors, the density of rules is relatively high in relation to residues which from the point of view of regulatory efficiency can be seen as counterproductive because the more advanced the stage in the life-cycle, the higher the costs of monitoring and enforcement. However, as long as consumer health is a higher priority on the agenda of politicians and broader society than the protection of the environment and worker health, the incidence of residues will remain the main point of leverage for enacting new rules and regulations by state and non-state actors.

In contrast to the high regulatory activity in the residue stage, the level of activity is relatively low in the production stage. As the experience with persistent organic pollutants has demonstrated, it takes many years before even the most hazardous substances can be eliminated. In this respect, it is important to note that as long as a substance is being produced, it can always make a re-entry in agricultural production. In the end, a production ban at the international level is the most effective instrument to reduce pesticide risks. In this respect, the Stockholm Convention on Persistent Organic Pollutants has finally provided the means for the demise of several of the most hazardous substances by phasing out their production, marketing and use.

Significantly, the current distribution of regulatory activity and rule density may indicate that a lack of production regulation at the international level leads to compensation through the regulation of the marketing, use and residues stages at other levels. Hence, the regulation of these stages may function in fact as a substitute for a global production ban, but leads at the same time to uneven levels of protection of the environment and human health worldwide.

### Effectiveness, inclusiveness and fairness

As defined in Section 2.4.3, the criterion of *effectiveness* refers to the contribution that a regulatory approach delivers towards the objective of reducing environmental and human health risks associated with pesticide use. At the international level, the conclusion is that although the instruments of international law have a complementary character from a life cycle perspective, this does not mean that pesticide risks are adequately covered. First, these instruments focus on a selection of the more hazardous substances, many of which are no longer significant in agriculture, and have barely any influence on the production, marketing and use of the majority of 'regular' harmful pesticides. Sec-

ond, the instruments do not provide an impetus for agricultural producers to change their behaviour and become less pesticide dependent, as they do not provide an alternative perspective on how to deal with pest related problems. Third, the design of these instruments is such that their implementation may induce negative side-effects, such as the increased use of other hazardous pesticides and increased illegal trade in banned pesticides.

At the EU level, the conclusion is that despite a range of legislative measures that affect the different stages of the pesticide life-cycle, progress towards pesticide risk reduction has been slow. There are even indications that pesticide use in fruit and vegetables production is on the increase and the EU residue monitoring exercises suggest that agricultural producers are using a growing number of different pesticide products on each crop. The inadequacy of the EU pesticide legislation has several reasons. First, the EU instruments do not provide a sufficient incentive for agricultural producers to change their pesticide use patterns and become less pesticide dependent. Second, the residues legislation does not provide aggregate MRLs for multiple residues and does not take into account the possibility of synergistic health effects. Third, the compliance and enforcement mechanisms of the legislation have been insufficient, which is signalled by the increased use of illegal substances.

At the transnational level, the conclusion is that the emergence of private regulation has certainly been a positive step forward to reduce pesticide risks and has helped to create a favourable climate for a transition towards more sustainable forms of agriculture. As is evident from the examples of the IFOAM organic guarantee system and the GlobalGAP programme for fruit and vegetables, such regulation has been an impetus for agricultural producers to change their agricultural production methods in various positive ways.

In sum, the combined regulatory approaches by state and non-state actors have provided a certain impetus to reduce environmental and human health risks in the different stages of the pesticide life-cycle. In addition, the effectiveness of these regulatory approaches has been further strengthened by synergetic interaction in vertical, horizontal and diagonal directions. However, on a global scale the progress achieved can be considered marginal. The experiences of the past 50 years have shown that the environmental and human health risks of pesticides are difficult to control and that an adequate level of protection is not evenly shared between all countries and citizens. More precisely, the current regulatory pattern mostly benefits the protection of the environment and human health in developed countries, but is lesser effective for developing countries with emerging economies and those with economies lagging behind. For example, despite the introduction of less harmful pesticides through technological innovation, the use of older substances from the highest WHO hazard classes is still commonplace in poorer countries that often have less strict authorisation rules and enforcement. In order to improve the effectiveness of the complex of rules, their adequacy needs additional attention.

As defined in Section 2.4.3, the criterion of *inclusiveness* refers to the involvement of the stakeholders concerned in processes of rule-making, rule-implementation and rule-enforcement. At the international level, the conclusion is that the participation of non-state actors in processes of rule-making and -implementation has expanded enormously in the last decade, but is not evenly shared. First, the procedures for inclusion of new substances under the Rotterdam and Stockholm Conventions provide a number of barri-

ers for developing countries. Second, a higher level of participation may conceal the fact that not all stakeholders are organised in such a way that they are able to voice their interests sufficiently. Concerning pesticide risk regulation, farmers and farmers' organisations in both developed and developing countries are most often absent.

At the EU level, the conclusion is that the EU has clearly invested in increased stakeholder involvement and participation in decision-making. It remains, however, unclear how far this commitment goes and if the EU's efforts deliver a meaningful contribution to the end result. First, the experiences so far reveal that there are stakeholders with a voice, and those without. Second, it is not transparent to what extent the outcomes of stakeholder consultations and participatory processes affect the actual decision-making.

At the transnational level, the conclusion is that although the programmes of IFOAM and GlobalGAP both claim to adhere to democratic principles, their level of stakeholder involvement and participation is widely divergent in practice. Importantly, IFOAM has pledged to comply with the ISEAL Code of Good Practice for Setting Social and Environmental Standards that contains criteria for participation in standard development processes. It furthermore has a fully transparent procedure for the revision of standards. GlobalGAP, in contrast, is not a member of the ISEAL Alliance. Although the stakeholders concerned have in principle the right to comment on draft versions of normative and procedural documents, it is not transparent to what extent their comments are taken into account.

In sum, it is evident that both state and non-state actors are increasingly aiming at higher levels of inclusiveness in regulatory processes. However, increased inclusiveness does not automatically lead to better decisions and better compliance. In order to enhance the inclusiveness of the complex of rules, the quality of participatory processes needs additional attention.

As defined in Section 2.4.3, the criterion of *fairness* refers to the impacts of a regulatory approach on the distribution of costs and benefits in the supply chains of agricultural products, and ultimately on the marketing opportunities for agricultural producers. At the international level, the conclusion is that the harmonising effects of the Rotterdam and Stockholm Conventions outweigh potential distorting impacts on trade. It should be noted that MEAs are the preferred approach by the WTO, as they have in principle harmonising effects, although these can be hampered by non-ratifications and national exceptions.

At the EU level, the conclusion is that the regulatory situation in the EU with all kinds of different types of rules and regulations at EU and Member State levels is confusing and not transparent. With the new regulation on pesticide residues, the system has become simpler and more transparent, because all MRLs are set at the EU level. At the same time, the norms have become stricter as the default value for pesticide substances withdrawn from the Community market has been established at the lowest level of determination. Moreover, with its focus on a high level of consumer protection, the legislation asks in fact for a revision of all existing MRLs, which could eventually lead to the creation of extra non-tariff trade barriers for agricultural producers located outside the EU. Notably, it has not been clarified as yet to what extent the new EU Residues Regulation is compatible with the WTO provisions.

At the transnational level, the conclusion is that private regulation may have positive as well as negative impacts on market access. Such initiatives may open up market opportunities for some groups of producers and may provide barriers for others. This depends on a broad variety of factors, such as institutional infrastructure, qualified laboratories, skilled personnel, competitive structures, and costs of labour and capital. Interestingly, development assistance organisations increasingly refer to specific forms of private regulation in their cooperation projects with developing countries. In general, however, the positive impacts of such regulation is more strongly felt by large producers and the negative impacts more strongly by small producers.

Focusing on financial aspects, it is one of the main characteristics of non-state actor regulation that the costs of regulation and compliance are shifted to the regulated. With regard to the IFOAM system, agricultural producers carry a large part of the operational and adaptation costs, but these costs are compensated by the premium prices that are being paid for organic produce. In addition, IFOAM has introduced new forms of certification, such as smallholder group certification and participatory guarantee systems, in order to reduce the financial burden for small producers,

In relation to GlobalGAP, agricultural producers carry nearly all costs of the regulatory system without the compensation of price premiums. More precisely, producers are responsible for the costs of adapting their production operation to the applicable standards, for the costs of the certification process, and increasingly for the costs of the operation and maintenance of the GlobalGAP system as such. Besides these direct costs, the system is organized in such a way that liability for product failure is shifted to producers. Significantly, GlobalGAP is currently being scrutinized by the WTO, more precisely the SPS Committee, about what has been called by Mexico a 'systemic issue'. Notably, it seems that the WTO agreements are not tailored to deal with global certification programmes because the trade rules address national governments, which are powerless in the face of transnational regulation by non-state actors. Hence, these programmes operate more or less in a legal vacuum. In order to enhance the fairness of the complex of rules, the position of small producers needs additional attention.

#### **9.4 The outlines of a normative and procedural framework**

The previous sections have discussed several characteristics of the pattern of pesticide risk regulation and its current reconfiguration. Among the main shifts in governance have been a shift towards increased regulation at the international and transnational level, a shift towards increased involvement of non-state actors in regulatory processes, a shift towards an emphasis on non-binding forms of regulation, and a shift towards the increased regulation of further advanced stages of the pesticide life-cycle.

In order to achieve the objective of responsibly dealing with pesticides by 2020, as agreed during the Johannesburg Summit on Sustainable Development in 2002, it is necessary to strengthen the normative and procedural framework for pesticide risk reduction. In particular, the emphasis should be on how to improve the balance of regulatory power, the adequacy of rules, the quality of participation, and the position of small agricultural producers.

## Balance of regulatory power

In order to restore the balance of regulatory power, the current division of authority and responsibility between state and non-state actors needs reconsideration. From the public policy perspective, private regulation can be assumed to have certain advantages in comparison with public regulation, such as greater flexibility and adaptability of rules and the availability of expert knowledge. An additional argument in favour of private regulation is that the costs of rule-making, rule-implementation and rule-enforcement are shifted to the regulated concerned. Under certain conditions, this can be considered as a form of internalisation of costs and, hence, an application of the polluter-pays principle. Furthermore, private regulation can fulfil several functions in the 'shadow of the law', such as providing a testing ground for regulation, preparing a suitable environment for regulation, and offering adequate mechanisms for compliance and control.<sup>799</sup>

However, there are also important limitations to the potential of private regulation to help solve public policy problems. First, the scope of private regulation is limited, as the norm addressees are often a selected group. The addressees of the GlobalGAP programme, for example, are the agricultural producers that already have a relationship with the European retailers, or are in the race to capture such a position. Thus, the programme will not reach those suppliers who use other distribution channels to sell their produce. Second, it is important to recognise that some functions can only be performed by the state, such as ensuring the balance of regulatory power and the coordination of regulatory efforts.<sup>800</sup> The example of pesticide risk regulation has shown that state actors experience difficulties with the execution of these functions and have increasingly transferred the regulatory initiative into the hands of the private sector, arguably losing control.

The limitations of private regulation have as a consequence that non-state actors can at best perform a transitional or complementary function in achieving public policy objectives. Thus, private regulation can be considered part of the solution but not the solution in itself. In order to respond to these limitations of private regulation, it is argued that state actors should take back their primary responsibility for regulation, and develop a longer-term vision on pesticide risk reduction strategies to be established in appropriate frameworks of normative and procedural rules. In addition, state actors should adapt to the present regulatory reconfiguration by strengthening their steering and coordination capacities and applying the possibilities that competition and anti-trust legislation offer more rigorously.

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<sup>799</sup> See e.g.: G. Salmon (2002). Voluntary sustainability standards and labels (VSSLs): the case for fostering them. Background paper for the Round Table on Sustainable Development. OECD: Paris.

<sup>800</sup> F. Snyder (2004). Introduction: international food security and global legal pluralism. In: F. Snyder (ed.). International food security and global legal pluralism. Brussels: Bruylant, pp. 13-20, and N. Gunningham (2007). Regulatory reform beyond command and control. Paper presented at the Amsterdam Conference on the Human Dimensions of Global Environmental change, Earth System Governance: Theories and Strategies for Sustainability, 24-26 May 2007, 17 p.

Hence, state actors should aim to resume their responsibility as main regulators. At the same time, they should take advantage of the initiatives developed by non-state actors. Most importantly, the co-existence of state and non-state actor approaches could be the ideal starting point for developing a ‘smart’ mix of instruments to help agricultural producers make a transition towards sustainable agriculture. Accordingly, Gunningham (2007) has argued that “there is not one solution, but it is essentially about seeking the right combination of partial solutions at different levels.”<sup>801</sup>

As part of this smart mix, non-state actors can contribute to a further reduction of pesticide risks by developing competing initiatives using self-regulatory or multi-stakeholder approaches. The latter approaches could be based on existing models, such as a stewardship council, a commodity roundtable, or a community-based initiative.<sup>802</sup>

### Adequacy of rules

In order to enhance the adequacy of rules, it is necessary to further develop the normative framework for pesticide risk reduction and make it more ambitious, encompassing and coherent. The main argument to regulate pesticide issues as much as possible at the international level is to achieve harmonisation not only in terms of trade opportunities but also in relation to the protection of the environment and human health.<sup>803</sup> Importantly, regulatory activity at other levels should take place within certain boundaries imposed by international law and in accordance with the principles of sovereignty and subsidiarity.

For a framework of normative rules, the FAO Code of Conduct on the Distribution and Use of Pesticides could serve as a point of departure, since it covers in principle all stages of the pesticide life-cycle and targets all pesticide substances. In addition, such a global law on pesticide risk reduction should consist of the following basic elements at least:

- Production stage: To phase out the hazardous substances from the WHO hazard classes of extremely hazardous (IA), highly hazardous (IB), moderately hazardous (II), and, as far as feasible, slightly hazardous (III) substances.
- Marketing stage: To apply the precautionary and substitution principles more strictly during authorisation of pesticide substances and products.
- Use stage:
  - To give an increased priority to the elaboration of internationally harmonised guidelines for IPM and their implementation in practice;
  - To start developing internationally harmonised definitions and guidelines for agricultural production methods aiming at higher levels of integration;

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<sup>801</sup> N. Gunningham (2007).

<sup>802</sup> Examples of multistakeholder approaches include: the Forest Stewardship Council (FSC), the Marine Stewardship Council (MSC), the Roundtable on Sustainable Palm Oil (RSPO), the Sustainable Commodity Initiative (SCI), and Community Supported Agriculture (CSA).

<sup>803</sup> S. Karlsson (2000). Multilayered governance. Pesticides in the South – environmental concerns in a globalised world. Academic dissertation. Linköping: Linköping University, 397 p. J. Gupta & D. Huitema (eds.) (forthcoming). Scale in environmental governance. Cambridge, MA: The MIT Press.

- To apply the polluter pays principle more widely, for example by taxing the production, marketing and/or use of hazardous, patent-free pesticide products and to deposit the revenues in the Global IPM Facility.
- To stimulate non-state actors to develop programmes using self-regulatory and multi-stakeholder approaches.
- Residue stage: To formulate aggregate MRLs and a final goal of residue-free produce.

With a view to the use stage of pesticides, it is important for the longer-term that state actors develop a vision on the transition towards sustainable agricultural production methods. Such a transition can only happen step by step and will take many years. Therefore, this vision should be accompanied with concrete targets and timetables. Considering the conversion to IPM as a first step in a process towards further risk reduction, it is important, with a view to the progressive development of norms in the longer term, to examine the content of concepts with a higher level of integration.

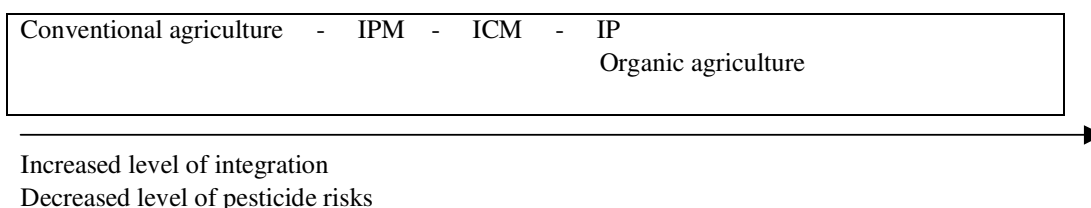


Figure 9.2

As a general rule, and as pointed out in Figure 9.2, it is argued that the higher the level of integration, the lower the level of pesticide risks. However, this statement needs some nuance as the extent of risk reduction largely depends on the definitions of the concepts concerned and their application in agricultural practice. There are strong and weak definitions in place for innovative agricultural production methods, such as organic agriculture and integrated control. Such weak definitions may have counterproductive effects. For example, a weak definition of organic agriculture, that does not restrict the use of off-farm inputs, could increase the risk that non-synthetic pesticides are increasingly used as substitutes for synthetic pesticide products. A weak definition of integrated control that does not include a priority ladder of measures could have the effect that agricultural producers will go on with business-as-usual.

### Quality of participation

In order to improve the quality of participation, it is important to develop minimum criteria for participatory processes, covering aspects of representation, due process, and deliberation.<sup>804</sup> More precisely, these criteria should include that: a) the relevant stake-

<sup>804</sup> See e.g.: J.S. Dryzek (2002). *Deliberative democracy and beyond: liberals, critics, contestations*. Oxford: Oxford University Press, 306 p, and S. Courville (2003). *Social accountability audits: challenging or defending democratic governance*. In: *Law and Policy*, vol. 25, no. 3, pp. 269-297,



holders are represented in the decision-making process in a balanced manner, b) the appropriate procedural arrangements are in place, and c) the exchange of arguments preceding decision-making represents a certain deliberative quality.

Currently, there is no principle of international law covering all these different aspects of inclusiveness in a broad and encompassing manner. However, several principles and procedural rules have some common features and could offer a first point of departure. The principle of participation in the Rio Declaration, for example, covers the involvement of the citizens concerned.<sup>805</sup> In addition, the principle of good governance in the ILA New Delhi Declaration emphasizes the adoption of democratic and transparent decision-making procedures and respect for the rule of law and human rights.<sup>806</sup> Furthermore, aspects of inclusive decision-making are partly incorporated in the procedural rules that have been defined by the TBT Committee, ISO and the ISEAL Alliance.

Linking up with these existing rules, there are several options for improving the procedural framework. These options are not mutually exclusive but could be complementary. The first option includes the adaptation of the principles of the international law on sustainable development and specifically aims at the further evolution of the principle of participation as incorporated in the Rio Declaration and ILA New Delhi Declaration. The second option relates to the formulation of criteria of good regulation, which is essentially a further elaboration of the TBT Agreement, and more specifically the Code of Good Practice. The third option implies a code of conduct for participatory processes aimed at the procedural upgrading and harmonisation of standard setting processes by non-state actors. Significantly, the International Social and Environmental Accreditation and Labelling Alliance (ISEAL Alliance) published a Code of Good Practice for Setting Social and Environmental Standards in 2004, that is a further specification of the work done by ISO and the WTO in relation to standardisation.<sup>807</sup> The ISEAL Code contains procedural requirements for the development of standards, elaborates on their effectiveness, relevance and international harmonisation, and gives criteria for participation in the standard development process. The development of this code means that non-state actors themselves are making an effort to exercise control over the quality of standard setting by private entities.

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<sup>805</sup> Rio Declaration, principle 10.

<sup>806</sup> ILA New Delhi Declaration, principle 6.

<sup>807</sup> ISEAL Code of Good Practice for Setting Social and Environmental Standards, P005 Final Public Draft, Version 3, January 2004. Available at <http://www.isealalliance.org>. More precisely, the Code draws on ISO/IEC Guide 2: 1996 Standardization and related activities – General vocabulary, ISO/IEC Guide 59: 1994 Code of Good Practice for Standardization, ISO/IEC Guide 14024: 1999 Environmental labels and declarations – Type 1 environmental labelling – Principles and procedures, OECD GD(97)137, Processes and production methods (PPMs): conceptual framework and considerations on use of PPM-based trade measures; WTO Agreement on the Application of Sanitary and Phytosanitary Measures (SPS), WTO Agreement on Technical Barriers to Trade (TBT) Annex 3 Code of Good Practice for the preparation, adoption, and application of standards, and WTO Agreement on Technical Barriers to Trade (TBT) Second Triennial Review Annex 4: Principles for the Development of International Standards, Guides and Recommendations with Relation to Articles 2, 5 and Annex 3 of the Agreement.

### Position of small producers

In order to improve the position of small producers, it is necessary to emphasize the implementation of the principle of common but differentiated responsibilities, as formulated in the Rio Declaration and the ILA New Delhi Declaration.<sup>808</sup> In the context of developed and developing countries, such implementation should include at least: a) a more even sharing of knowledge and information, b) a more generous provision of technical and financial assistance, and c) a more strict legislation on global competition.<sup>809</sup> Most importantly, however, it is argued that the relevance of the dividing line between developed and developing countries is shifting, as multinational companies are increasingly taking over agricultural export production in developed as well as developing countries. In terms of human and financial resources, they are generally better equipped for dealing with additional regulatory requirements. This means that the critical distinctive criterion has increasingly become the ownership structure of agricultural undertakings instead of geographical location, which again provides an argument for stricter competition and anti-trust legislation on a global scale.

### 9.5 The concept of legal pluralism in retrospect

The theoretical concept of legal pluralism has been used in this study to analyse patterns and processes of regulation. By offering a pluralist perspective, the concept emphasizes the dynamics of regulatory processes and thus aims to cope with the globalisation of law and transnationalisation of regulation. Focusing on the issue-area of pesticide risk reduction, it is evident that the approaches developed by non-state actors are indeed sophisticated rule systems. Moreover, they perform similar functions as those established by state actors and are perceived by the addressees as having at least a similar binding force. A merit of the concept of legal pluralism is that it stimulates to take these forms of private regulation seriously in a legal context and to understand that they are lasting phenomena. It thus draws the attention to issues related to the distribution of power and responsibility for steering. Moreover, the concept provides a bridge between law and social sciences, in particular political sciences, and can open up new opportunities for mutual understanding and exchange between the disciplines.

Returning to the observation of Santos that in fact two types of transnationalisation are emerging in the legal field, one organized by “world capitalism” and the other by the “dominated, exploited and oppressed social groups and interests”, this study concludes that the transnational rules in the issue-area of pesticide risk reduction are indeed being determined by two different groups of non-state actors. However, the actual contrast between the two groups is arguably less dramatic than phrased by Santos. Notably, the rise of organic agriculture certification has shown that a bottom-up regulatory system created by small farmer and consumer movements can serve as a catalyst in launching a viable

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<sup>808</sup> Rio Declaration, principle 8, and ILA New Delhi Declaration, principle 3, respectively.

<sup>809</sup> W. Sachs & T. Santarius (2007). *Slow trade – sound farming. A multilateral framework for sustainable markets in agriculture*. Berlin: Heinrich Böll Foundation and Aachen: Misereor. Available at <http://www.ecofair-trade.org>.

alternative for conventional agriculture, as has been increasingly recognised by state actors and international organisations.<sup>810</sup>

Teubner has argued that contemporary law will grow mainly from the social peripheries, not from the political centres of nation-states and international institutions. Although there may be some truth in this statement, it deserves at the same time to be put in perspective and to be carefully scrutinized, as this study has shown. More specifically, it should be realised that regulation by non-state actors is not merely a spontaneous form of rule-making but that the legal order created by state actors has facilitated, or even stimulated, the emergence of non-state actor regulation. The reason that non-state actor approaches have started to proliferate can indeed be found in the hesitance of state actors to develop normative frameworks for the protection of the environment and human health at the international level, as has been the case in the issue-area of pesticide risk reduction. Moreover, regulatory initiatives of the private sector have been fuelled by the lack of mechanisms to restrain economic power. Thus, the argument is that state actors have at least been accomplice to the rise of private governance.

The question remains whether private regulation can be called law, as this term has hitherto been reserved for legislative activity originating in the state. Asking this question means returning to earlier debates about what law essentially is and refers to the standard work by Hart about the concept of law.<sup>811</sup> More precisely, the discussion is about the crucial criterion for determining what constitutes law: form or function. In this context, it is without doubt that legal pluralists put function above form, and that legal positivists prefer the reverse. Consequently, private regulation based on own authority is law in the perception of legal pluralists and non-law for positivists. This difference of opinion is of such a fundamental nature that it seems nearly impossible to provide a definitive answer. It is therefore argued to formulate a compromise and stay on the safe side, preferably using the term regulatory pluralism instead of legal pluralism. At the same time, the insights developed by the proponents of legal pluralism should be recognised as extremely valuable for developing solutions to contemporary problems of unsustainable economic globalisation.

Focusing on the five-step research approach applied in this study, the conclusion is that it has provided a useful tool for understanding regulatory processes in which state and non-state actors fulfil important, and often complementary, roles. During the research, several adaptations have been made to the approach based on the following lessons learned. With regard to step 1, the identification of sites of governance, it is important to limit the issue-area under consideration as strictly as possible in order to make it possible to do more in-depth research. In order to get an overview of the area under research, it can be helpful to describe the evolution of law and policy in the specific area. With regard to step 2, the description of rule systems, it is important to focus not only on content but especially on the institutional structure and the division of power in the different stages of the regulatory process in order to be able to place the initiative in a larger context.

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<sup>810</sup> See e.g.: N. Scialabba & C. Hattam (2002). *Organic agriculture, environment and food security*. Environment and Natural Resources series No. 4. FAO: Rome, 258 p, and N. Scialabba (2007). *Organic agriculture and food security*. FAO: Rome, 22 p.

<sup>811</sup> H.L.A. Hart (1961). *The concept of law*. Oxford: Oxford University Press, 315 p.

With regard to step 3, the evaluation of rule-systems, it is important to develop clearly defined subcriteria in an early stage of the research. With regard to step 4, the analysis of interaction, it is important to focus on specific themes, and analyse processes of mutual interaction emphasizing the roles of state and non-state actors. With regard to step 5, the construction of the regulatory pattern, it is important to choose various points of view in order to highlight the main shifts in governance.

## 9.6 Final observations

This study has given an example of the regulatory reconfiguration that is currently taking place in the relationships between state and non-state actors in a broader context. Comparable phenomena as have been found in the issue-area of pesticide risk reduction can be found in other issue-areas. More precisely, this reconfiguration can be considered an expression of increased tendencies at deregulation and privatisation, which can be aptly summarised as the globalisation of law. In the new configuration, rules have increasingly become an arena of competition, an important means of obtaining and maintaining economic power.

From the perspective of law, the challenge is to find new answers to deal with “creeping globalisation, seemingly unstoppable and impossible to fully comprehend.”<sup>812</sup> However, one of the pitfalls in responding to the current explosion of rules is the creation of additional layers of rules in a haphazard way.<sup>813</sup> The option for the longer term should preferably be a move towards comprehensive frameworks at the international level that are based more strongly on values of equity, sustainability, and stewardship.

Saving a last remark for pesticide risk reduction: this study has argued that considerations of consumer health have thus far been the main vehicle for regulatory approaches targeting pesticides. Due to new scientific findings about linkages between pesticides and major diseases, and fuelled by increasing concerns of the public, it can be expected that these considerations will gain additional strength in the next couple of years. However, it is not unthinkable that a fresh impetus for an accelerated conversion to more sustainable forms of agriculture will also come from different angles, as the evidence of the nutritional differences between conventional and organically produced agricultural products is mounting in favour of organic produce.<sup>814</sup> In addition, the current debate about the limitation of food miles is pushing local agricultural production. Such a shift could have as side-effect that patterns of agricultural production and pesticide use will change.

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<sup>812</sup> The citation is borrowed from an announcement for Interdependence Day of the New Economics Foundation in 2007, and slightly reworded. The announcement is available at <http://www.neweconomics.org>.

<sup>813</sup> See for a comparable diagnosis: M. Power (2003). Evaluating the audit explosion. In: *Law and Policy*, vol. 25, no. 3, pp. 185-202

<sup>814</sup> See e.g.: A.E. Mitchell, Y-J. Hong, E. Koh, D.M. Barrett, D.E. Bryant, R.F. Denison, and S. Kaffka (2007). Ten-year comparison of the influence of organic and conventional crop management practices on the content of flavonoids in tomatoes. In: *Journal of Agricultural and Food Chemistry*, vol. 55, pp. 6154-6159.

## Bibliography

- Ackrill, R. (2000). *The Common Agricultural Policy*. London: Continuum International Publishing Group, 246 p.
- Ansell, Chr. & D. Vogel (eds.) (2006). *What's the beef? The contested governance of European food safety*. Cambridge/London: The MIT Press, 389 p.
- Arts, B. (1998). *The political influence of global NGOs. Case studies of the Climate and Biodiversity Conventions*. Academic dissertation. Utrecht: International Books, 352 p.
- Atherton, J.G. & J. Rudich (eds.) (1986). *The tomato crop. A scientific basis for improvement*. London: Chapman & Hall, 661 p.
- Atkins, P. & I. Bowler (2001). *Food in society. Economy, culture, geography*. London: Arnold Publishers, 328 p.
- Balfour, E.B. (1943). *The Living Soil*. London: Faber and Faber, 270 p.
- Bendell, J. (2000). *Civil regulation. A new form of democratic governance for the global economy*. In: J. Bendell (ed.), *Terms of Endearment*. Sheffield: Greenleaf Publishing, pp. 239-255.
- Benton, L. (2002). *Law and colonial cultures: legal regimes in world history, 1400-1900*. Cambridge/New York: Cambridge University Press, 304 p.
- Bianchi, A. (1997). *Globalization of human rights: the role of non-state actors*. In: G. Teubner (ed.), *Global law without a State*. Aldershot/Brookfield: Dartmouth Publishing Company, 179-212.
- Birnie, P. & A. Boyle (2002). *International law and the environment (2<sup>nd</sup> edition)*. Oxford: Oxford University Press, 798 p.
- Boller, E.F. (2005). *From chemical pest control to Integrated Production. A historical review*. Written for the occasion of the 50<sup>th</sup> anniversary of IOBC. 23 p. Available at <http://www.iobc-global.org>.
- Boström, M. & M. Klintman (2006). *State-centered versus nonstate-driven organic food standardization: A comparison of the US and Sweden*. In: *Agriculture and Human Values*, vol. 23, no. 2, pp. 163-180.
- Bowen, D. (2004). *Current mechanisms that enable international trade in organic products*. In: J. Michaud, E. Wynen & D. Bowen (eds.) (2004). *Harmonization and equivalence in organic agriculture. Vol. 1: Background papers of the International Task Force on Harmonization and Equivalence in Organic Agriculture*. UNCTAD, FAO & IFOAM.
- Browne, A.W, P.J.C. Harris, A.H. Hofny-Collins, N. Pasiecznik & R.R. Wallace (2000). *Organic production and ethical trade: definition, practice and links*. In: *Food Policy* 25, pp. 69-89.
- Buller, H. & C. Morris (2004). *Growing goods: the market, the state and sustainable food production*. In: *Environment and Planning A* 2004, vol. 36, issue 6, pp. 1065-1084.
- Busch, L. (2000). *The moral economy of grades and standards*. In: *Journal of Rural Studies*, vol. 16, issue 3, pp. 273-283.
- Buurma, J.S., M.J.B. Mengelers, A.J. Smelt and E. Muller (2001). *Developing countries and products affected by setting new maximum residue limits (MRL's) of pesticides in the EU*. LEI, RIKILT, and PD.
- Carson, R.L. (1962). *Silent spring*. Boston: Houghton Mifflin, 400 p.
- Colborn, Th., D. Dumanoski & J.P. Myers (1996). *Our stolen future: are we threatening our fertility, intelligence, and survival? A scientific detective story*. New York: Dutton, 306 p.

- Commins, K. & O. Kung Wai (2002). Status of national organic regulations. In: Reader IFOAM conference on organic guarantee systems: International harmonisation and equivalence in organic agriculture. Nuremberg: IFOAM, 17-19 February 2002, pp. 8-11.
- Commins, K. (2004). Overview of current status of standards and conformity assessment systems. In: J. Michaud, E. Wynen & D. Bowen (eds.) (2004). Harmonization and equivalence in organic agriculture. Vol. 1: Background papers of the International Task Force on Harmonization and Equivalence in Organic Agriculture. UNCTAD, FAO & IFOAM.
- Condon, B.J. (2006). Environmental sovereignty and the WTO. Trade sanctions and international law. New York: Transnational Publishers, 346 p.
- Cook, R. & L. Calvin (2005). Greenhouse tomatoes change the dynamics of the North American fresh tomato industry. Economic Research Service USDA, 81 p.
- Costa, J.M. & E. Heuvelink (2005). Introduction: the tomato crop and industry. In: E. Heuvelink (ed.), Tomatoes, Oxfordshire/Cambridge: CABI Publishing, pp. 1-19.
- Courville, S. (2003). Social accountability audits: challenging or defending democratic governance. In: Law & Policy, vol. 25, no. 3, pp. 269-297.
- Crucefix, D. (2001). IFOAM accreditation: organic industry self-regulation. In: The Organic Standard, issue 2, pp. 15-17.
- Cutler, A.C., V. Haufler & T. Porter (eds.) (1999). Private authority and international affairs. New York: SUNY, 416 p.
- Dekker, I.F. & W.G. Werner (eds.) (2004). Governance and international legal theory. Leiden/Boston: Martinus Nijhoff Publishers, 380 p.
- den Boer, L. den, H. Balkhoven, E. van der Wal & P. Lentjes (2002). Kijk op de praktijk. Eindrapportage praktijkproef 2001 Zicht op gezonde teelt. CLM536-2002. Utrecht: CLM Onderzoek en Advies.
- de Wit, J. & H. Verhoog (2007). Organic values and the conventionalisation of organic agriculture. In: NJAS Wageningen Journal of Life Sciences, Special issue Values in organic agriculture, vol. 54, no. 4, pp. 347-360.
- Dibb, S. (2002). Consumers demand residue-free food. In: Pesticides News 58, pp. 8-9.
- Dolan, C. & J. Humphrey (2004). Changing governance patterns in the trade in fresh vegetables between Africa and the United Kingdom. In: Environment and Planning A 2004, vol. 36 (3), pp. 491-509.
- Douma, W.T. (2004). The precautionary principle. Its application in international, European and Dutch law. The Hague: T.M.C. Asser Institute.
- Dryzek, J.S. (2002). Deliberative democracy and beyond: liberals, critics, contestations. Oxford: Oxford University Press, 306 p.
- Eddleston, M., L. Karalliedde, N. Buckley et al. (2002). Pesticide poisoning in the developing world – a minimum pesticides list. In: The Lancet, vol. 360, pp. 1163-1167.
- El Titi, A, E.F. Boller & J.P. Gendrier (1993). Integrated production: Principles and technical guidelines. IOBCwprs Bulletin, vol. 16, no. 1, 96 p.
- Engle Merry, S. (1988). Legal pluralism. In: Law and Society Review, vol. 22, no. 5, pp. 869-896.
- EUREP (1998). Integrated production of fruit and vegetables. Cologne: EUREPGAP c/o Food-Plus.
- Falk Moore, S. (1973). Law and social change: the semi-autonomous social field as an appropriate subject of study. In: Law and Society Review, vol. 7, no. 4, pp. 719-746.
- Finkelstein, L. (1995). What is global governance? In: Global Governance, vol. 1, no. 3, pp. 367-372.

- Friedland, W.H. (2006). Tomatoes: a review essay. In: *Agriculture and Human Values*, vol. 23, no. 2, pp. 253-262.
- Friedman, T.L. (2000). *The Lexus and the Olive Tree. Understanding Globalization*. New York: Random House. Originally published in somewhat different form in 1999 by Farrar, Strauss and Giroux, New York.
- Fulponi, L. (2006). Private voluntary standards in the food system: the perspective of major food retailers in OECD countries. In: *Food Policy*, vol. 31, issue 1, pp. 1-13.
- García Martínez, M. & N. Poole (2004). The development of private fresh produce safety standards: implications for developing Mediterranean exporting countries. In: *Food Policy*, vol. 29, issue 3, pp. 229-255.
- Garcia Molyneux, C. (2005). Chemicals. In: T.F.M. Etty & H. Somsen (eds.), *The Yearbook of European Environmental Law*, vol. 5, pp. 327-370.
- Garcia Molyneux, C. (2006). Chemicals. In: T.F.M. Etty & H. Somsen (eds.), *The Yearbook of European Environmental Law*, vol. 6, pp. 287-317.
- Garcia Molyneux, C. (2007). Chemicals. In: T.F.M. Etty & H. Somsen (eds.), *The Yearbook of European Environmental Law*, vol. 7, pp. 331-366.
- Gehring, T. & S. Oberthür (2006). Introduction. In: S. Oberthür and T. Gehring (2006) (eds.). *Institutional interaction in global environmental governance. Synergies and conflict among international and EU policies*. Cambridge/London: The MIT Press, pp. 1-18.
- Gehring, T. & S. Oberthür (2006). Comparative empirical analysis and ideal types of institutional interaction. In: S. Oberthür & T. Gehring (eds.). *Institutional interaction in global environmental governance. Synergy and conflict among international and EU policies*. Cambridge/London: The MIT Press, pp. 307-371.
- Gereffi, G. (1999). International trade and industrial upgrading in the apparel commodity chain. In: *Journal of International Economics*, vol. 48, issue 1, pp. 37-70.
- Gereffi, G., J. Humphrey & T. Sturgeon (2005). The governance of global value chains. In: *Review of International Political Economy*, vol. 12, no. 1, pp. 78-104.
- Gunningham, N. (2007). Regulatory reform beyond command and control. Paper presented at the Amsterdam Conference on the Human Dimensions of Global Environmental change, Earth System Governance: Theories and Strategies for Sustainability, 24-26 May 2007, 17 p.
- Gupta, J. (2003). The role of non-State actors in international environmental affairs. In: *Heidelberg Journal of International Law*, no. 63, pp. 459-486.
- Gupta, J. & N.M. van der Grijp (2004). The World Summit on Sustainable Development: Turning point in global governance. In: W.P. Heere (ed.), *From government to governance: the growing impact of non-State actors on the international and European legal system*. Proceedings of the Sixth Hague Joint Conference held in The Hague, The Netherlands, 3-5 July 2003. The Hague: T.M.C. Asser Press, pp. 479-489.
- Gupta, J. & D. Huitema (eds.) (forthcoming). *Scale in environmental governance*. Cambridge, MA: The MIT Press.
- Günther, K. (2003). Legal pluralism and the universal code of legality: globalization as a problem of legal theory. English version of: K. Günther (2001), *Rechtsppluralismus und universaler Code der Legalität: Globalisierung als rechtstheoretisches Problem*, in: L. Wingert & K. Günther (eds.), *Die Öffentlichkeit der Vernunft und die Vernunft der Öffentlichkeit*, essays in honour of Jürgen Habermas, Frankfurt am Main, pp. 539-567.
- Hajer, M.A., J.P.M. van Tatenhove, & C. Laurent (2004). *Nieuwe vormen van governance: een essay over nieuwe vormen van bestuur met een empirische uitwerking naar de domeinen van voedselveiligheid en gebiedsgericht beleid*. Bilthoven: RIVM rapport 500013004/2004.
- Harlow, C. (2006). Global administrative law: the quest for principles and values. In: *The European Journal of International Law*, vol. 17, no. 1, pp. 187-214.

- Hart, H.L.A. (1961). *The concept of law*. Oxford: Oxford University Press, 315 p.
- Harvey, M., S. Quilly & H. Beynon (2002). *Exploring the tomato. Transformations of nature, society and economy*. Cheltenham/Northampton: Edgar Elgar, 304 p.
- Hatanaka, M., C. Bain & L. Busch (2005). Third-party certification in the global agrifood system. In: *Food Policy* no. 30, issue 3, pp. 354-369.
- Haufler, V. (2001). *A public role for the private sector: industry self-regulation in a global economy*. Washington, D.C.: Carnegie Endowment for International Peace, 157 p.
- Haufler, V. (2003). New forms of governance: certification regimes as social regulations of the global market. In: E.E. Meidinger, Chr. Elliott and G. Oesten (eds.), *Social and political dimensions of forest certification*, Remagen-Oberwinter: Forstbuch, pp. 237-245.
- Havinga, T. (2006). Private regulation of food safety by supermarkets. In: *Law and Policy*, vol. 28, no. 4, pp. 515-533.
- Henson, S. & R. Loader (2001). Barriers to agricultural exports from developing countries: the role of sanitary and phytosanitary measures. In: *World Development*, vol. 29, no. 1, pp. 85-102.
- Hertz, N. (2001). *The silent takeover: Global capitalism and the death of democracy*. London: William Heinemann, 242 p.
- Hilf, M. (2001). Power, rules and principles – which orientation for WTO/GATT law? In: *Journal of International Economic Law*. Oxford University Press, pp. 111-130.
- Holleran, E., M.E. Bredahl & L. Zaibet (1999). Private incentives for adopting food safety and quality assurance. In: *Food Policy*, vol. 24, no. pp. 669-683.
- Honoré, C. (2004) *In praise of slow. How a worldwide movement is challenging the cult of speed*. London: Orion Books Ltd, 352 p.
- Hough, P. (1998). *The global politics of pesticides. Forging consensus from conflicting interests*. London: Earthscan Publication Ltd, 226 p.
- Hough, P. (2003). Poisons in the system: the global regulation of hazardous pesticides. In: *Global Environmental Politics*, vol. 3, issue 2, pp. 11-24.
- Huber, B. (2002). Would analyses prevent contamination scandals? In: *The Organic Standard*, issue 15, p. 19.
- Hunter, D., J. Salzman & D. Zaelke (2002). *International environmental law and policy. University Casebook Series (2<sup>nd</sup> edition)*. New York: Foundation Press, 1547 p.
- Jackson, J. H. (1997). *The world trading system, 2<sup>nd</sup> edition. Law and policy of international economic relations*. Cambridge MA: The MIT Press, 453 p.
- Jacobs, M. & B. Dinham (2003). *Silent invaders: pesticides, livelihoods and women's health*. London/New York: Zed Books, 342 p.
- Jans, J.H. & H.H.B. Vedder (2008). *European environmental law (3<sup>rd</sup> revised edition)*. Groningen: Europa Law Publishing, 496 p.
- Jha, V. (2005) (ed.). *Environmental regulation and food safety. Studies of protection and protectionism*. Edward Elgar/ International Development Research Centre, 232 p.
- Jones, P., P. Shears, D. Hillier, D. Comfort & J. Lowell (2003). Return to traditional values? A case study of Slow Food. *British Food Journal*, vol. 105, nrs. 4/5, pp. 297-304.
- Kaplinsky, R. (2000). Globalisation and unequalisation: What can be learned from value chain analysis? In: *The Journal of Development Studies*, vol. 37, no. 2, pp. 117-146.
- Kaplinsky, R. & M. Morris (2001). *A handbook for value chain research*. Ottawa: IDRC, p. 29.
- Karlsson, S. (2000). *Multilayered governance. Pesticides in the South – environmental concerns in a globalised world. Academic dissertation*. Linköping: Linköping University, 397 p.
- Klein, N. (2000). *No Logo*. London: Flamingo, 490 p.



- Klintman, M. & M. Boström (2004). Framings of science and ideology: organic food labelling in the US and Sweden. In: *Environmental Politics*, vol. 13, issue 3, pp. 612-634.
- Konradsen, F. (2007). Acute pesticide poisoning – a global public health problem. In: *Danish Medical Bulletin*, vol. 54, no. 1, pp. 58-59.
- Kornhauser, L.A. (2003). Governance structures, legal systems, and the concept of law. In: *Chicago-Kent Law Review*, vol. 79, pp. 355-381.
- Krimsky, S. (2000). *Hormonal chaos: the scientific and social origins of the environmental endocrine hypothesis*. Baltimore: John Hopkins University Press, 256 p.
- Krisch, N. & B. Kingsbury (2006). Introduction: Global governance and global administrative law in the international legal order. In: *The European Journal of International Law (EJIL)*, vol. 17, no. 1, pp. 1-13.
- Lach, G. (2008). *Grenzen der Pestizidanalytik*. Hamburg: Greenpeace Germany, 82 p.
- Lallas, P.L. (2001). The Stockholm Convention on Persistent Organic Pollutants. In: *The American Journal of International Law*, vol. 95, no. 3, pp. 692-708.
- Lang, T. & M. Heasman (2004). *Food Wars: The global battle for mouths, minds and markets*. London and Sterling: Earthscan, 365 p.
- Lawrence, F. (2004). *Not on the label: What really goes into the food on your plate*. London: Penguin Books, 272 p.
- Leipziger, D. (2003). *The corporate responsibility code book*. Sheffield: Greenleaf Publishing, 512 p.
- Lipschutz, R.D. & J.K. Rowe (2005). *Globalisation, governmentality, and global politics: Regulation for the rest of us?* London: Routledge, 272 p.
- Liu, P, I. Boto, R. Kortbech-Olesen, B. Vrolijk, and P. Pilkauskas (eds.) (2001). *World markets for organic fruit and vegetables: opportunities for developing countries in the production and export of organic horticultural products*. Rome: FAO/ITC/CTA.
- Loeber, A.M.C. (2003). *Practical wisdom in the risk society. Methods and practice of interpretive analysis on questions of sustainable development*. Academic dissertation. Amsterdam: University of Amsterdam.
- Luttikholt, L.W.M. (2007). Principles of organic agriculture as formulated by the International Federation of Organic Agriculture Movements. In: *NJAS Wageningen Journal of Life Sciences, Special issue Values in organic agriculture*, vol. 54, no. 4, pp. 347-360.
- MacDonald, R.A. (1998). Metaphors of multiplicity: civil society, regimes and legal pluralism. In: *Arizona Journal of International and Comparative Law*, vol. 15, pp. 69-91.
- McDorman, T.L. (2004). The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade: Some legal notes. In: *RECIEL*, vol. 13, issue 2, pp. 187-200.
- Mak, G. (1996). *Hoe God verdween uit Jorwerd*. Amsterdam: Uitgeverij Atlas.
- Marchant, G.E. & K.L. Mossman (2005). *Arbitrary and capricious. The precautionary principle in the European Union courts*. London: International Policy Press, 108 p.
- Marsden, T., A. Flynn & M. Harrison (2000). *Consuming interests: the social provision of foods*. London: UCL Press.
- Masson-Matthee, M.D. (2007). *The Codex Alimentarius Commission and its standards*. Academic dissertation. The Hague: T.M.C. Asser Press, 352 p.
- McDonald, J. (2005). Domestic regulation, international standards, and technical barriers to trade. In: *World Trade Review*, vol. 4, nr. 2, pp. 249-274.
- Mehling, M.A. (2002). Betwixt Scylla and Charybdis: The concept of effectiveness in international environmental law. In: *Finnish Yearbook of International Law*, vol. XIII, pp. 129-182.

- Meidinger, E.E. (2003). Forest certification as a global civil society regulatory institution In: E. Meidinger, Ch. Elliott & G. Oesten (eds.), *Social and political dimensions of forest certification*. Remagen-Oberwinter: Forstbuch, pp. 265-289.
- Meidinger, E.E. (2003). Forest certification as environmental law making by global civil society. In: E.E. Meidinger, Ch. Elliott & G. Oesten (eds.), *Social and political dimensions of forest certification*, Remagen-Oberwinter: Forstbuch, pp. 293-329.
- Meidinger, E.E. (2004). Law and constitutionalism in the mirror of non-governmental standards: a comment on Harm Schepel's 'Constituting private governance regimes'. In: Ch. Joerges, I.-J. Sand & G. Teubner (eds.), *Transnational governance and constitutionalism*. Oxford/Portland Oregon: Hart Publishing, pp. 189-198.
- Merry, S.E. (1988). Legal pluralism. In: *Law and Society Review*, vol. 22, no. 5, pp. 869-896.
- Michaud, J., E. Wynen & D. Bowen (eds.) (2004). *Harmonization and equivalence in organic agriculture*. Vol. 1: Background papers of the International Task Force on Harmonization and Equivalence in Organic Agriculture. UNCTAD, FAO & IFOAM.
- Mitchell, A.E., Y-J. Hong, E. Koh, D.M. Barrett, D.E. Bryant, R.F. Denison, and S. Kaffka (2007). Ten-year comparison of the influence of organic and conventional crop management practices on the content of flavonoids in tomatoes. In: *Journal of Agricultural and Food Chemistry*, vol. 55, pp. 6154-6159.
- Morris, C. and M. Winter (1999). Integrated farming systems: the third way for European agriculture? In: *Land Use Policy*, vol. 16, no. 4, pp. 193-205.
- Neumeister, L. & W. Reuter (2008). *Die schwarze Liste der Pestizide*. Hamburg: Greenpeace Germany, p. 166.
- Northbourne, W.E.C.J. (1940). *Look to the Land*. London: Dent, 128 p.
- Nosi, C. & L. Zanni (2004). Moving from "typical products" to "food-related services": the Slow Food case as a new business paradigm. In: *British Food Journal*, vol. 106, nrs. 10/11, pp. 779-792.
- Oberthür, S. & T. Gehring (eds.) (2006). *Institutional interaction in global environmental governance. Synergies and conflict among international and EU policies*. The MIT Press, Cambridge/London, 405 p.
- Oberthür, S. & T. Gehring (2006). Conceptual foundations of institutional interaction. In: S. Oberthür & T. Gehring (eds.), *Institutional interaction in global environmental governance. Synergy and conflict among international and EU policies*. Cambridge/London: The MIT Press, pp. 35-37.
- Oosterhuis, F.H., H. van Asselt, N.M. van der Grijp, M. van Munster, L.A.J. Spaans, I. van Dunvan den Bosch, M. Jacobs & M.E.D. Matthee (2004). *Handboek implementatie EG-milieubeleid in Nederland*. Amsterdam. Available at: <http://www.vrom.nl/eu-milieubeleid>.
- Oxfam (2002). *Rigged rules and double standards. Trade, globalisation, and the fight against poverty*. London: Oxfam, 272 p.
- Pallemaerts, M. (2003). *Toxics and transnational law: International and European regulation of toxic substances as legal symbolism*. Oxford: Hart Publishing, 767 p.
- Pallemaerts, M. (2006). EC chemicals legislation: a horizontal perspective. In: R. Macrory (ed.), *Reflections on 30 years of EU environmental law – a high level of protection?* Groningen: Europa Law Publishing, pp. 197-232.
- Parrott, N. & T. Marsden (2002). *The real Green Revolution: organic and agroecological farming in the South*. London: Greenpeace Environmental Trust, 147 p.
- Petrini, C. (2001). *Slow food: the case for taste*. Translated from Italian by W. McCuaig. New York: Columbia University Press, 155 p.

- Potter Gates, J. (1988). Tracing the evolution of organic/sustainable agriculture. A selected and annotated bibliography, US Department of Agriculture. Available at <http://www.nal.usda.gov/afsic>.
- Power, M. (2003). Evaluating the audit explosion. In: *Law and Policy*, vol. 25, no. 3, pp. 185-202.
- Pretty, J. (1999). *The living land: agriculture, food and community regeneration in rural Europe*. London: Earthscan, 336 p.
- Pretty, J. (ed.) (2005). *The pesticide detox: towards a more sustainable agriculture*. London: Earthscan, 240 p.
- Rao, V. & S. Agarwal (2000). Role of antioxidant lycopene in cancer and heart disease. In: *Journal of American College of Nutrition*, vol. 19, no. 5, pp. 563-569.
- Reardon, T. J.-M. Codron, L. Busch, J. Bingen & C. Harris (2001). Global change in agrifood grades and standards: Agribusiness strategic responses in developing countries. In: *International Food and Agribusiness Management Review*, vol. 2 (3/4), pp. 421-435.
- Reijnders, L. (2004). Food safety, environmental improvement and economic efficiency in The Netherlands. In: *British Food Journal*, vol. 106, no. 5, pp. 388-405.
- Robé, J.-P. (1997). Multinational enterprises: the constitution of a pluralistic legal order. In: G. Teubner (ed.), *Global law without a State*. Aldershot/Brookfield: Dartmouth Publishing Company, pp. 45-78.
- Rodale, J.I. (1945). *Pay Dirt: Farming and Gardening with Composts*. New York: Devin-Adair Company, 260 p.
- Roozen, N. & F. van der Hoff (2001). *Fair trade: het verhaal achter Max Havelaar koffie, Oké-bananen en Kuyichi-jeans*. Amsterdam: Van Genneep, 312 p.
- Rosenau, J.N. & E.O. Czempiel (1992) (eds.). *Governance without government: order and change in world politics*. Cambridge: Cambridge University Press, 323 p.
- Rutteman, J. (2002). De toelating van bestrijdingsmiddelen: terug naar 1975? In: *Milieu & Recht*, no. 12, pp. 312-317.
- Sachs, W. & T. Santarius (2007). *Slow trade – sound farming. A multilateral framework for sustainable markets in agriculture*. Berlin: Heinrich Böll Foundation and Aachen: Misereor. Available at <http://www.ecofair-trade.org>, 96 p.
- Salmon, G. (2002). Voluntary sustainability standards and labels (VSSLs): the case for fostering them. Background paper for the Round Table on Sustainable Development. Paris: OECD, 14 p.
- Sand, I.-J. (2004). Polycontextuality as an alternative to constitutionalism. In: Ch. Joerges, I.-J. Sand and G. Teubner (eds.) (2004), *Transnational governance and constitutionalism*. Oxford/Portland Oregon: Hart Publishing, pp. 41-65.
- Sands, P. (2003). *Principles of international environmental law* (2<sup>nd</sup> edition). Cambridge: Cambridge University Press, 1116 p.
- Santos, B. de Sousa (1995). *Toward a new common sense: law, science and politics in the paradigmatic transition*. New York/London: Routledge, 614 p.
- Schaffrin, D. (2006). Dual legal bases in EC environmental law revisited: note on the judgments of the European Court of Justice in the cases C-94/03 (Commission of the European Communities v. Council of the European Union) and C-178/03 (Commission of the European Communities v Council of the European Union). In: *RECIEL* vol. 15, no. 3, pp. 339-343.
- Schepel, H. (2004). Constituting private governance regimes. In: Ch. Joerges, I.-J. Sand and G. Teubner (eds.), *Transnational governance and constitutionalism*, Oxford/Portland Oregon: Hart Publishing, pp. 161-188.

- Schepel, H. (2005). *The constitution of private governance. Product standards in the regulation of integrating markets.* Oxford/Portland Oregon: Hart Publishing, 449p.
- Schmid, O. (2002). Comparison of EU Regulation 2092/91, Codex Alimentarius Guidelines for Organically Produced Food 1999/2001, and IFOAM Basic Standards 2000. In: Reader IFOAM conference on organic guarantee systems: International harmonisation and equivalence in organic agriculture. Nuremberg: IFOAM, 17-19 February 2002, pp. 12-18.
- Schrijver, N. & F. Weiss (eds.) (2004). *International law and sustainable development. Principles and practice.* Leiden/Boston: Martinus Nijhoff, 714 p.
- Scialabba, N. & C. Hattam (2002). *Organic agriculture, environment and food security.* Environment and Natural Resources series No. 4. FAO: Rome, 258 p
- Scialabba, N. (2007). *Organic agriculture and food security.* FAO: Rome, 22 p.
- Scott, J. (2007). *The WTO Agreement on Sanitary and Phytosanitary Measures. A commentary.* Oxford: Oxford University Press, 360 p.
- Snyder, F. (1999). Governing economic globalisation: global legal pluralism and European Law. In: *European Law Journal*, vol.5, no. 4, pp. 334-374.
- Snyder, F. (2004). Introduction: international food security and global legal pluralism. In: F. Snyder (ed.). *International food security and global legal pluralism.* Brussels: Bruylant, pp. 13-20.
- Steiner, H. (ed.) (1977). *Vers la production agricole intégrée.* IOBCwprs Bull. 1977/4, 153 p.
- Steiner, R. (1993). *Spiritual foundations for the renewal of agriculture. A course of lectures.* Kimberton: Bio-Dynamic Farming and Gardening Association. 310 p.
- Stewart, K. (2006). *It's a long road to a tomato. Tales of an organic farmer who quit the big city for the (not so) simple life. With illustrations by Flavia Bacarella.* New York: Marlowe & Company, 276 p.
- Subedi, S.P. (2004). The challenge of managing the 'second agricultural revolution' through international law: liberalization of trade in agriculture and sustainable development. In: N. Schrijver & F. Weiss (eds.). *International law and sustainable development. Principles and practice.* Leiden/Boston: Martinus Nijhoff, pp. 161-184.
- Sullivan, R. (ed.) (2003). *Business and human rights: dilemmas and solutions.* Sheffield: Greenleaf Publishing, 335 p.
- Teubner, G. (ed.) (1997). *Global law without a state.* Aldershot/Brookfield: Dartmouth Publishing Company, 350 p.
- Teubner, G. (1997). Foreword: legal regimes of non-state actors In: G. Teubner (ed.), *Global law without a State.* Aldershot/Brookfield: Dartmouth Publishing Company, p. xiii.
- Teubner, G. (1997). 'Global Bukowina': legal pluralism in the world society. In: G. Teubner (ed.), *Global law without a State,* Aldershot/Brookfield: Dartmouth Publishing Company, pp. 3-30.
- Teubner, G. (2000). Global private regimes: neo-spontaneous law and dual constitution of autonomous in world society? In: K-H. Ladeur (ed.), *Globalization and public governance.* Aldershot: Ashgate, pp. 71-87.
- Teubner, G. (2004). Societal constitutionalism: alternatives to state-centred constitutional theory? In: Ch. Joerges, I-J. Sand and G. Teubner (eds.), *Transnational governance and constitutionalism.* Oxford/Portland Oregon: Hart Publishing, pp. 3-28.
- van Amstel-van Saane, M. (2007). *Twilight on self-regulation. A socio-legal evaluation of conservation and sustainable use of agrobiodiversity by industry self-regulation.* Academic dissertation. Utrecht: Koninklijk Nederlands Aardrijkskundig Genootschap/ Copernicus Institute for Sustainable Development and Innovation, 166 p.
- van den Bossche, P. (2005). *The law and policy of the World Trade Organization. Text, cases and materials.* Cambridge: Cambridge University Press, 776 p.

- van den Bossche, P., N. Schrijver & G. Faber (2007). Unilateral measures addressing non-trade concerns. A study on WTO consistency, relevance of other international agreements, economic effectiveness and impact on developing countries of measures concerning non-product-related processes and production methods. The Hague: The Ministry of Foreign Affairs of the Netherlands, Policy Coherence Unit, 261 p.
- van der Grijp, N.M. & F. den Hond (1999). Green supply chain initiatives in the European food and retailing Industry. R-99/07. Amsterdam: Instituut voor Milieuvraagstukken, Vrije Universiteit, 71 p.
- van der Grijp, N.M., J. de Boer & F. den Hond (2001). Initiatieven vanuit de Nederlandse voedingssector ter beperking van het bestrijdingsmiddelengebruik (Initiatives of the Dutch food industry to reduce pesticide use). R-01/03. Amsterdam: Instituut voor Milieuvraagstukken, Vrije Universiteit, 149 p.
- van der Grijp, N.M., M. Campins Eritja, J. de Boer, J. Gupta, and V.M. Sánchez Sánchez (2004). A comparative analysis of cross-cutting issues. In: M. Campins Eritja (ed.), Sustainability labelling and certification. Madrid: Marcial Pons, pp. 371-386.
- van der Grijp, N.M., M. Campins Eritja, J. Gupta, L. Brander, X. Fernandez Pons, J. de Boer, L. Gradoni & J. Montanari (2004). Addressing controversies in sustainability labelling and certification. In: M. Campins Eritja (ed.), Sustainability labelling and certification. Madrid: Marcial Pons, pp. 387-404.
- van der Grijp, N.M., T. Marsden & J.S. Barbosa Cavalcanti (2005). European retailers as agents of change towards sustainability: the case of fruit production in Brazil. In: *Environmental Sciences*, vol. 2, no. 4, pp. 445-460.
- van Kersbergen, K. & F. van Waarden (2001). Shifts in governance: problems of legitimacy and accountability. Paper as part of the Strategic Plan 2002-2005 of the Netherlands Organization for scientific research. Den Haag: Social Science Research Council (MaGW), 77 p.
- van Kersbergen, K. & F. van Waarden (2004). 'Governance' as a bridge between disciplines: Cross-disciplinary inspiration regarding shifts in governance and problems of governability, accountability and legitimacy. In: *European Journal of Political Research*, vol. 43, pp. 143-171.
- Vaupel, S. (2001). Chaos or harmony? Interface of national, international, and private sector standards. In: *The Organic Standard*, issue 2, pp. 8-12.
- Vellinga, P., F. Berkhout & J. Gupta (1998). Managing a material world: perspectives in industrial ecology. Dordrecht: Kluwer Academic Publishers, 364 p.
- Verhoog, H., E.T. Lammerts van Bueren, M. Matze & T. Baars (2007). The value of 'naturalness' in organic agriculture. In: *NJAS Wageningen Journal of Life Sciences*, special issue: values in organic agriculture, vol. 54, no. 4, pp. 333-345.
- Vesting, Th. (2004). Constitutionalism or legal theory: comments on Gunther Teubner. In: Ch. Joerges, I-J. Sand & G. Teubner (eds.), *Transnational governance and constitutionalism*. Oxford/Portland Oregon: Hart Publishing, p. 29-39.
- Vogelezang-Stoute, E.M. (2001). De EG-richtlijnen inzake de toelating van bestrijdingsmiddelen. In: *Bestrijdingsmiddelen*. Verslag van de 68ste ledenvergadering van de Vereniging voor Milieurecht op 27 juni 2000. Den Haag: Boom Juridische Uitgevers, pp. 9-22.
- Vogelezang-Stoute, E.M. (2003). The authorisation of pesticides in the light of sustainability. In: Hond, F. den, Groenewegen, P. and Straalen, N. van (eds.), *Pesticides: Problems, Improvements, Alternatives*. Oxford: Blackwell Science, pp. 31-51.
- Vogelezang-Stoute, E.M. (2004). *Bestrijdingsmiddelenrecht. Een rechtsvergelijking*. Academic dissertation. Amsterdam: Universiteit van Amsterdam, 824 p.

- von Benda-Beckmann, F. (1970). *Rechtspluralismus in Malawi - Geschichtliche Entwicklung und heutige Problematik eines ehemals britischen Kolonialgebietes*. München: Weltforum Verlag. Pages
- von Benda-Beckmann, F. and K. & A. Hoekema (1997) (eds.). *Natural resources, environment and legal pluralism*. In: *International Yearbook for Legal Anthropology*, vol. 9, 325 p.
- von Benda-Beckmann, K. (1985). *The use of folk law in West Sumatran State Courts*, in: A.N. Allott and G.R. Woodman (eds.): *People's law and state law. The Bellagio Papers*. Dordrecht: Foris Publications, pp. 77-95.
- von Benda-Beckmann, K. (2002). *Globalisation and legal pluralism*. In: *International Law FORUM du droit international*, vol. 4, pp. 19-25.
- von Moltke, K., O. Kuik, N. van der Grijp, Ch. Salazar, T. Banuri, Ch. Mupimpila, C. Inman, M. Mesa, R. Oleas, & J.J. de los Santos (1998). *Global product chains: Northern consumers, Southern producers and sustainability*. Geneva: UNEP, 303 p.
- Walker, N. (2002). *The idea of constitutional pluralism*. In: *The Modern Law Review*, vol. 65, no. 3, pp. 317-359.
- Yoder, A.J. (2003). *Lessons from Stockholm: evaluating the global Convention on Persistent Organic Pollutants*. In: *Indiana Journal of Global Legal Studies*, vol. 10, issue 2, pp. 113-156.
- Willer, H. & M. Yussefi (eds.) (2007). *The world of organic agriculture. Statistics and emerging trends 2007 (completely revised edition)*. Bonn: IFOAM/ Frick: FiBL, 252 p.
- Wirth, D. (2007). *Hazardous substances and activities*. In: D. Bodansky, J. Brunnée & E. Hey (eds.). *The Oxford Handbook of International Environmental Law*. Oxford: Oxford University Press, pp. 394-422.

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## Summary

### **Regulating pesticide risk reduction: the practice and dynamics of legal pluralism**

#### **The challenge of pesticide risk reduction**

Synthetic pesticides have become widely used in the past century to combat agricultural pests and diseases, and hence to achieve higher yields. However, their inherently toxic properties are also the reason that pesticides may cause harm to the environment and human health during the different stages of their life-cycle, that in its simplest form consists of the stages of production, marketing, use, and residues. In the production stage, site-specific emissions to the environment may occur as the result of production processes of pesticide substances and products, and workers in pesticide plants and people living in the neighbourhood of such production facilities may be at risk of exposure to hazardous emissions and industrial accidents.

In the marketing stage, emissions may take place during transport and by leaching from storage depots. Such depots may form a considerable risk for the local population, especially in developing countries and countries with economies in transition. In the use stage, emissions are related to the fact that pesticides are never used entirely efficiently by the receiving crops. Small but significant quantities of pesticides are lost directly to the environment, and may also result in negative impacts on biodiversity, climate conditions and the ozone layer. People working at farms and those living next to fields and greenhouses may experience damage to their health due to pesticide impacts.

In the residue stage, consumers may be exposed to critical levels of pesticide residues in food that could cause chronic or acute health effects. Despite scientific effort in this area, the debate on the health implications of pesticide residues is still surrounded with many scientific uncertainties. Such uncertainties *inter alia* include the potential of pesticides to cause cancer, to disrupt the hormone and reproductive system, and to bring damage to the nervous system. In general, there is a lack of reliable data on the long-term consequences of exposure to pesticide residues and on the 'cocktail' effects of multiple residues. Children are considered to be most vulnerable to pesticide residues, because their bodies are still developing and they are exposed to relatively higher doses than grown-up people.

#### **The research objectives and question**

In order to contribute to the discussion about the management of pesticide risks, this study aims to investigate the regulatory efforts of state and non-state actors to reduce those risks and make a transition towards the production of safe and sustainable food products. The study has the following objectives:

- To identify, analyse, and assess current regulatory approaches by state and non-state actors aimed at pesticide risk reduction;
- To analyse the interaction between the different regulatory approaches, and

- To construct the resulting pattern of regulation and identify options for improvement.

Based on these research objectives, the study has the following overarching research question:

*How is pesticide risk reduction regulated considered from the perspectives of legal pluralism and sustainable development and what are the options for improvement?*

### **The concept of legal pluralism and its application**

The theoretical approach of this study is based on the concept of legal pluralism that stretches the boundaries of law in response to the emergence of new sites and forms of governance, in which non-state actors are performing prominent regulatory roles. Importantly, it recognises different types of normative activity without discriminating between them on the basis of their origin and source. This means that all normative activities are considered to operate on an equal level, which makes it possible to focus the attention to the interaction between different normative orders, thus providing a dynamic perspective and more depth to the analysis of contemporary societal reality.

In order to apply the theoretical concept of legal pluralism to the concrete issue-area of pesticide risk reduction, the study has elaborated a structured approach, consisting of five steps: 1) the delineation of the issue-area under consideration and the identification of the regulating actors, 2) the description of rule systems created and operated by the sites of governance concerned, 3) the evaluation of rule systems on the basis of criteria derived from an interpretation of the concept of sustainable development, including effectiveness, inclusiveness, and fairness, 4) the analysis of interaction between rule systems, and 5) the construction of the resulting pattern of regulation and the identification of options for improvement.

In addition, the study has explored the practice of legal pluralism by elaborating two non-comparative case studies. The first case study described the development of pesticide law and policy in the Netherlands from the perspective of a national government that is increasingly confronted with European and also private regulation. The second case study used the example of tomato production to explain how legal pluralism affects agricultural producers by influencing the conditions for production and trading.

### **The components of legal pluralism**

The study has focused on a selection of rule systems that have been identified as the main components of the complex of rules aimed at pesticide risk reduction. The legal tenets of the multilateral approach include the FAO International Code of Conduct on the Distribution and Use of Pesticides (1985), the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (1998), and the Stockholm Convention on Persistent Organic Pollutants (2001). The legal tenets of the EU approach include Directive 91/414 concerning the placing on the market of plant protection products, Regulation No 396/2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin, and the proposed Directive establishing a framework for Community action to achieve a sustainable use of pesticides. The most important components of the transnational approach

include the IFOAM organic guarantee system and the EurepGAP programme for fruit and vegetables.

### **The pattern of pesticide risk regulation and legal pluralism**

Drawing the different threads of the analysis together, it is evident that the pattern of pesticide risk regulation has become increasingly diverse and complex in the past decades. Focusing on the division of regulatory roles, an increased regulatory involvement of non-state actors is evident in the public as well as private domain. Furthermore, the analysis shows that the relationships between actors at different sites of governance have become increasingly dynamic, mutually influencing the emergence of each other's substantive and procedural rules.

The greater involvement of non-state actors is reflected in a stronger emphasis on the development of private regulation. Notably, the rise of private regulation at the transnational level evokes questions about the procedural safeguards for those regulatory variations and the dispute settlement mechanisms in place. Such safeguards cannot be found in legislation specifically established to serve this goal, but are scattered over various sources. Interestingly, several scholars of international law and international relations argue that a global administrative law is emerging, consisting of principles that aim to do justice to the interests of all the actors concerned. So far, these principles have been quite implicit and it is uncertain whether they can be invoked before a court.

Strongly related to the fact that non-state actors from the private sector and civil society are increasingly performing regulatory roles, it is apparent that there has been a shift from hierarchy-based towards non-hierarchical steering modes based on market mechanisms and consensus-seeking. Importantly, the dividing line between the different steering modes is in practice less clear-cut than the distinction suggests. As this study has shown, private regulation increasingly takes place within a triangle of hierarchy, market, and consensus-seeking steering modes. This is certainly relevant in a situation of asymmetrical relationships where a private regulator dominates a regulated party through market power, and consequently a situation has arisen of actual hierarchy. Therefore, this type of regulation can be considered 'hard' soft regulation which is legally non-binding but binding in practice.

### **The pattern of pesticide risk regulation and sustainable development**

Focusing on sustainability content, it is apparent that the pattern of pesticide risk regulation and its reconfiguration can be characterised by an increased variety of interests and objectives. Whereas the initial focus of pesticide risk regulation was almost exclusively on the protection of national agriculture against pests from other countries and thus an increase of national agricultural production, the emphasis has subsequently shifted in the direction of serving international economic interests, such as the harmonisation of the market for pesticide products, the facilitation of trade in agricultural products, and the stimulation of employment in the chemical industry. Simultaneously, objectives of environmental and human health protection have come to the fore.

The consequence of multiple, and often opposing, interests and objectives is that they have to be weighed against each other in decision-making processes. As this study has shown, state actors at governmental level have experienced difficulties in the past dec-

ades to find a balance between those diverging interests and objectives at play. This is, for example, demonstrated by the fact that the decisions concerning the objectives of legislation and their interpretation are often controversial and the definition process of crucial concepts postponed, as is evident from the case study of the Netherlands, but also from the EU legislation on pesticides, the FAO Code of Conduct, and the Rotterdam Convention. In response to this paralysis of state actors, non-state actors have increasingly taken over the regulatory initiative in pesticide risk reduction matters, arguably better equipped to reconcile diverging objectives. In their new role, they increasingly claim to function as 'agents of change' in the process towards food safety and sustainability.

Thus far, the argument of consumer health protection has been the main point of leverage for non-state actors to establish regulation aimed at pesticide risk reduction. Worker health and environment have had a secondary priority. Looking at the near future, it can be expected that consumer health protection will remain a high priority as new scientific evidence is continuously emerging, for example about hormone disruptive substances and substances potentially triggering Parkinson's disease. In some respects, consumer health can be instrumental in reducing pesticide risks for the environment as well as worker health, but this is not necessarily the case.

The shift towards greater involvement of non-state actors is evident in nearly all stages of production, marketing, use and residues. However, state actors have concentrated so far on the marketing and residue stages, whereas non-state actors have focused especially on the use and residue stages. As a result, the density of rules about residues is relatively high which from the point of view of regulatory efficiency can be seen as counterproductive because the more advanced the intervention takes place in the pesticide life-cycle, the higher the costs of monitoring and enforcement.

In contrast to the residue stage, the level of regulatory activity and density has relatively changed the least in the production stage and is primarily determined by state actors. As the experience with persistent organic pollutants demonstrates, it takes many years before even the most hazardous substances are eliminated. In this respect, it is important to note that as long as a substance is produced, it can always make a re-entry in the market. Importantly, the Stockholm Convention has finally provided the means for the demise of several of the most hazardous substances by phasing out their production, marketing and use.

Significantly, the current distribution of regulatory activity may indicate that a lack of regulation of the production stage at the international level leads to compensation through the regulation of the marketing, use and residues stages at regional and national levels. Hence, the regulation of these stages may function in fact as a substitute for a global production ban, leading at the same time to uneven levels of protection of the environment and human health worldwide.

With a view to the effectiveness of the complex of rules, the conclusion is that the combined regulatory approaches by state and non-state actors have provided an impetus to reduce environmental and human health risks in the different stages of the pesticide life-cycle. Moreover, it is apparent that the regulatory interaction has strengthened the integration of environmental and human health dimensions in pesticide risk regulation. In particular, the emergence of private regulation has been a positive step forward to reduce



pesticide risks and has helped to create a favourable climate for a transition towards more sustainable forms of agriculture. As is evident from the examples of the IFOAM organic guarantee system and the GlobalGAP programme for fruit and vegetables, such regulation has been an impetus for agricultural producers to change their agricultural production methods in various positive ways.

However, on a global scale the progress achieved can be considered marginal. The experiences of the past decades have shown that the environmental and human health risks of pesticides are difficult to control and that an adequate level of protection is not evenly shared between all countries and citizens. More precisely, the current regulatory pattern mostly benefits the protection of the environment and human health in developed countries, but is lesser effective for developing countries with emerging economies and those with economies lagging behind. For example, despite the introduction of less harmful pesticides through technological innovation, the use of older substances from the highest WHO hazard classes is still commonplace in poorer countries that often have a less strict authorisation and enforcement regime. Hence, in order to improve the effectiveness of the complex of rules, their adequacy needs additional attention.

With a view to the inclusiveness of the complex of rules, the conclusion is that the participation of non-state actors in processes of rule-making and -implementation has expanded enormously, but is not evenly shared. In addition, increased inclusiveness does not automatically lead to better decisions and better compliance. Hence, in order to enhance the inclusiveness of the complex of rules, the quality of participatory processes needs additional attention.

With a view to the fairness of the complex of rules, the conclusion is that transnational certification programmes may open up market opportunities for some groups of producers and may provide barriers for others. This depends on a broad variety of factors, such as institutional infrastructure, qualified laboratories, skilled personnel, competitive structures, and costs of labour and capital. Interestingly, development assistance organisations increasingly refer to specific private certification programmes in their cooperation projects with developing countries. In general, however, the positive impacts of such certification programmes are more strongly felt by large producers and the negative impacts more strongly by small producers. Notably, it seems that the WTO agreements are not tailored to deal with transnational certification programmes because the trade rules address national governments, which are relatively powerless in the face of transnational regulation by non-state actors. This means that these programmes operate more or less in a legal vacuum. Hence, in order to enhance the fairness of the complex of rules, the position of small producers needs additional attention.

### **The outlines of a normative and procedural framework**

In order to achieve the objective of responsibly dealing with pesticides by 2020, as agreed during the Johannesburg Summit on Sustainable Development in 2002, it is necessary to strengthen the normative and procedural framework for pesticide risk reduction. In particular, the emphasis should be on the improvement of the balance of regulatory power, the adequacy of rules, the quality of participation, and the position of small agricultural producers.

In order to restore the balance of regulatory power, the current division of authority and responsibility between state and non-state actors needs reconsideration. Because of the limitations of private regulation, it is argued that state actors should take back their primary responsibility for regulation, and develop a longer-term vision on pesticide risk reduction strategies. In addition, state actors should adapt to the present regulatory reconfiguration by strengthening their steering and coordination capacities and applying the possibilities that competition and anti-trust legislation offer more rigorously.

At the same time, state actors should take advantage of the initiatives developed by non-state actors. Most importantly, the co-existence of state and non-state actor approaches could be the ideal starting point for developing a 'smart' mix of instruments to help agricultural producers make a transition towards sustainable agriculture. As part of this smart mix, non-state actors can contribute to a further reduction of pesticide risks by developing competing initiatives using self-regulatory or multi-stakeholder approaches. The latter approaches could be based on existing models, such as a stewardship council, a commodity roundtable, or a community-based initiative.

In order to enhance the adequacy of rules, the normative framework for pesticide risk reduction needs further development by making it more ambitious, encompassing and coherent. The main argument to regulate pesticide issues as much as possible at the international level is to achieve harmonisation not only in terms of trade opportunities but also in relation to the protection of the environment and human health. For a framework of normative rules, the FAO Code of Conduct on the Distribution and Use of Pesticides could serve as a point of departure, since it covers in principle all stages of the pesticide life-cycle and targets all pesticide substances. In addition, such a global law on pesticide risk reduction should consist of the following basic elements at least:

- Production stage: To phase out the hazardous substances from the WHO hazard classes of extremely hazardous (IA), highly hazardous (IB), moderately hazardous (II), and, as far as feasible, slightly hazardous (III) substances.
- Marketing stage: To apply the precautionary and substitution principles more strictly during authorisation of pesticide substances and products.
- Use stage:
  - To give an increased priority to the elaboration of internationally harmonised guidelines for IPM and their implementation in practice;
  - To start developing internationally harmonised definitions and guidelines for agricultural production methods aiming at higher levels of integration;
  - To apply the polluter pays principle more widely, for example by taxing the production, marketing and/or use of hazardous, patent-free pesticide products and to deposit the revenues in the Global IPM Facility.
  - To stimulate non-state actors to develop programmes using self-regulatory and multi-stakeholder approaches.
- Residue stage: To formulate aggregate MRLs and a final goal of residue-free produce.

In order to improve the quality of participation, minimum criteria for participatory processes need to be developed. Such criteria could *inter alia* include the following: a) the relevant stakeholders are represented in the decision-making process in a balanced manner, b) the appropriate procedural arrangements are in place, and c) the exchange of ar-

guments preceding decision-making represents a certain deliberative quality. Linking up with existing rules, there are several options for establishing such criteria: 1) the adaptation of the principles of the international law on sustainable development, specifically the principle of participation as incorporated in the Rio Declaration and the ILA New Delhi Declaration, 2) the formulation of criteria of good regulation, which is essentially a further elaboration of the TBT Agreement, and more specifically its Code of Good Practice, and 3) a code of conduct for participatory processes aimed at the procedural upgrading and harmonisation of standard setting processes by non-state actors. These options are not mutually exclusive but could be complementary.

In order to improve the position of small producers, the implementation of the principle of common but differentiated responsibilities needs further emphasis. In the context of developed and developing countries, such implementation should include at least: a) a more even sharing of knowledge and information, b) a more generous provision of technical and financial assistance, and c) a more strict legislation on global competition. Most importantly, however, it should be noted that the relevance of the dividing line between developed and developing countries is shifting, as multinational companies are increasingly taking over agricultural export production in developed as well as developing countries. This means that the critical distinctive criterion has become the ownership structure of agricultural undertakings instead of geographical location, which again provides an argument for stricter competition and anti-trust legislation on a global scale.

### **Final remarks**

This study has given an example of the regulatory reconfiguration that is currently taking place in the relationships between state and non-state actors in a broader context. Comparable phenomena as have been found in the issue-area of pesticide risk reduction can be found in other issue-areas. More precisely, this reconfiguration can be considered an expression of the globalisation of law. In the new configuration, rules have increasingly become an arena of competition, an important means of obtaining and maintaining economic power. However, one of the pitfalls in responding to the current explosion of rules is the creation of additional layers of rules in a haphazard way. The option for the longer term should preferably be a move towards comprehensive frameworks at the international level that are based more strongly on values of equity, sustainability and stewardship.



## Samenvatting

### **Reguleren van risico's van bestrijdingsmiddelen: de praktijk en dynamiek van pluralisme van regelgeving**

#### **De noodzaak tot beperking van risico's van bestrijdingsmiddelen**

Vanwege hun toxische eigenschappen zijn synthetische bestrijdingsmiddelen in de afgelopen eeuw op steeds ruimere schaal toegepast in de landbouw om ziekten en plagen te bestrijden en daardoor grotere oogsten te bewerkstelligen. Diezelfde eigenschappen kunnen echter ook de reden zijn dat bestrijdingsmiddelen in de diverse stadia van hun levenscyclus schade veroorzaken aan mens en milieu. Zo treden tijdens de productie van bestrijdingsmiddelen locatie-specifieke emissies op naar het milieu en kunnen werknemers in chemische bedrijven en de bevolking in de nabijheid van deze locaties hieraan worden blootgesteld. Bovendien bestaat het risico van industriële ongevallen.

Tijdens de fase van het op de markt brengen van bestrijdingsmiddelen vinden emissies plaats bij transport en door uitloging vanuit opslagplaatsen. Dergelijke opslagplaatsen kunnen een aanzienlijk risico vormen voor de lokale bevolking, zeker in ontwikkelingslanden en de voormalige Oostbloklanden. Tijdens het gebruik van bestrijdingsmiddelen treden evenzeer emissies op doordat deze middelen nooit volledig efficiënt worden opgenomen door landbouwgewassen. Kleine, maar significante, hoeveelheden bestrijdingsmiddelen komen in het milieu terecht en veroorzaken, behalve vervuiling van bodem, water en lucht, ook indirecte negatieve effecten op biodiversiteit, klimaatomstandigheden en de ozonlaag. Daarnaast kunnen mensen die op landbouwbedrijven werken of daar dichtbij wonen gezondheidsschade oplopen als gevolg van blootstelling aan emissies van bestrijdingsmiddelen.

Tijdens de consumptie van voedingsmiddelen en drinkwater worden consumenten blootgesteld aan bestrijdingsmiddelenresiduen, die mogelijk chronische of acute gezondheidseffecten oorzaken. Ondanks de wetenschappelijke inspanningen op dit gebied wordt het debat over de mogelijke gezondheidseffecten van blootstelling nog steeds gekenmerkt door vele onzekerheden. Dergelijke onzekerheden betreffen onder meer het risico dat bestrijdingsmiddelen kanker veroorzaken, het hormoon- en voortplantingssysteem verstoren en schade veroorzaken aan het zenuwstelsel. In het algemeen is er een tekort aan betrouwbare gegevens over de lange-termijn consequenties van de blootstelling aan bestrijdingsmiddelenresiduen en de mogelijke 'cocktail' effecten van combinaties van meerdere stoffen. Kinderen worden in dit verband gezien als het meest kwetsbaar, omdat zij nog in de groei zijn en aan relatief grotere doses worden blootgesteld dan volwassenen.

#### **De onderzoeksdoelen en vraagstelling**

Met deze studie is beoogd om een bijdrage te leveren aan de discussie over het beperken van risico's van bestrijdingsmiddelen. Daartoe zijn verschillende vormen van regulering van statelijke en niet-statelijke actoren onderzocht die erop zijn gericht om deze risico's

te verminderen en een transitie te stimuleren naar de productie van veilige en duurzame voedingsmiddelen. Meer specifiek heeft deze studie de volgende doelen:

- Het identificeren, analyseren, en beoordelen van vormen van regulering door statelijke en niet-statelijke actoren gericht op het beperken van de risico's van bestrijdingsmiddelen;
- Het analyseren van de wisselwerking tussen de verschillende vormen van regelgeving, en
- Het construeren van het resulterende patroon van regelgeving en het identificeren van opties ter verbetering.

Op basis van deze doelen is de volgende overkoepelende onderzoeksvraag geformuleerd:

*Hoe wordt de beperking van bestrijdingsmiddelen gereguleerd, gezien vanuit het perspectief van pluralisme van regelgeving en duurzame ontwikkeling, en wat zijn de opties ter verbetering?*

### **Het concept van pluralisme van regelgeving en de toepassing**

De theoretische benadering van deze studie is gebaseerd op het concept van pluralisme van regelgeving dat de grenzen van het recht oprekt in reactie op de nieuwe vormen van maatschappelijke sturing waarin niet-statelijke actoren een prominente regulerende rol vervullen. Dit concept erkent verschillende soorten van normatieve activiteit zonder een verschil te maken naar bron en betrokken actoren. De consequentie daarvan is dat verschillende normatieve benaderingen op een zelfde niveau worden geacht te opereren, waardoor het meer voor de hand liggend is om aandacht te besteden aan de onderlinge wisselwerking. Hierdoor biedt het concept van pluralisme van regelgeving een dynamisch perspectief en diepgang aan de analyse van processen van regulering.

Om het concept toe te kunnen passen op het concrete onderwerp van de beperking van risico's van bestrijdingsmiddelen is in de studie een onderzoeksbenadering uitgewerkt, bestaande uit vijf stappen: 1) afbakening van het onderwerp en identificering van de regulerende actoren, 2) beschrijving van de systemen van regels die door de betreffende actoren zijn gecreëerd en in stand worden gehouden, 3) beoordeling van systemen van regels op basis van criteria ontleend aan het concept van duurzame ontwikkeling, te weten effectiviteit, inclusiviteit en rechtvaardigheid, 4) analyse van de wisselwerking tussen systemen van regels, en 5) constructie van het resulterende patroon van regelgeving en identificeren van opties ter verbetering.

Daarnaast is in de studie de praktijk van pluralisme van regelgeving verkend door het uitwerken van twee verschillende case studies. De eerste case studie beschrijft de ontwikkeling van het recht en beleid inzake bestrijdingsmiddelen in Nederland vanuit het perspectief van een nationale overheid die in toenemende mate met Europese en private regulering wordt geconfronteerd. De tweede case studie legt aan de hand van de tomaten uit welk effect pluralisme van regelgeving heeft op agrarische producenten doordat de condities voor productie en handel worden beïnvloed.

### **De componenten van pluralisme van regelgeving**

De studie is gericht op een selectie van systemen van regels die zijn geïdentificeerd als de belangrijkste componenten van het complex van regels voor het beperken van de risi-

co's van bestrijdingsmiddelen. De belangrijkste componenten van de multilaterale benadering zijn: de FAO Internationale gedragscode voor de distributie en het gebruik van gewasbeschermingsmiddelen (1985), het Verdrag van Rotterdam inzake de toepassing van de procedure met betrekking tot voorafgaande geïnformeerde toestemming ten aanzien van bepaalde gevaarlijke chemische stoffen en pesticiden in de internationale handel (1998), en het Verdrag van Stockholm inzake persistente organische verontreinigende stoffen (2001). De belangrijkste componenten van de Europese benadering zijn: Richtlijn 91/414 betreffende het op de markt brengen van gewasbeschermingsmiddelen, Verordening No 396/2005 tot vaststelling van maximumgehalten aan bestrijdingsmiddelenresiduen in of op levensmiddelen en diervoeders van plantaardige en dierlijke oorsprong, en het voorstel voor een richtlijn tot vaststelling van een kader voor communautaire actie ter verwezenlijking van een duurzaam gebruik van pesticiden. De belangrijkste componenten van de transnationale benadering zijn: het IFOAM biologische garantiesysteem en het GlobalGAP programma voor groente en fruit.

### **Het patroon van regelgeving en de rolverdeling tussen statelijke en niet-statelijke actoren**

De integratie van de verschillende onderdelen van de analyse maakt duidelijk dat het patroon van regelgeving inzake het beperken van risico's van bestrijdingsmiddelen in de afgelopen jaren steeds gevarieerder en ingewikkelder is geworden. Wat betreft de rolverdeling in reguleringsprocessen blijkt dat er een toenemende betrokkenheid van niet-statelijke actoren is in zowel het publieke als het private domein. Verder laat de analyse zien dat de relaties tussen de verschillende actoren steeds dynamischer zijn geworden en dat zij elkaars normatieve en procedurele regels in toenemende mate beïnvloeden.

De grotere betrokkenheid van niet-statelijke actoren vindt zijn weerslag in een sterkere nadruk op de ontwikkeling van private regulering, met inbegrip van zelfregulering, één-actor regulering en multi-actor regulering. De opkomst van private regulering, en met name van de transnationale vormen waarin één actor een dominante rol heeft, roept vragen op over de procedurele waarborgen en de beschikbare mechanismen voor conflictoplossing. Dergelijke waarborgen kunnen niet worden aangetroffen in specifieke wetgeving die voor dit doel is vastgesteld, maar zijn verspreid over verschillende bronnen. Verscheidene wetenschappers van internationaal recht en internationale betrekkingen hebben er echter op gewezen dat zich momenteel een mondiaal administratief recht ontwikkelt, gestoeld op principes die beogen recht te doen aan de belangen van de bij private regulering betrokken actoren. Tot dusverre zijn deze principes vrij impliciet en het is onduidelijk of zij kunnen worden ingeroepen voor een rechterlijke instantie.

In samenhang met het feit dat niet-statelijke actoren in toenemende mate een regulerende rol zijn gaan spelen kan worden geconcludeerd dat er een verschuiving heeft plaatsgevonden van hiërarchische naar niet-hiërarchische sturingsvormen die zijn gebaseerd op marktmechanismen en het zoeken naar consensus. De scheidingslijn tussen de verschillende sturingsvormen is echter in de praktijk minder scherp dan het onderscheid suggereert. Zoals deze studie heeft laten zien vindt private regulering in toenemende mate plaats binnen de driehoek van hiërarchie, markt en consensus. Deze constatering is zeker relevant in een situatie van asymmetrische verhoudingen waarin de regulerende partij de gereguleerde overheerst op basis van economische macht, en als gevolg daarvan een

situatie is ontstaan van feitelijke hiërarchie. Deze laatste vorm van regulering kan daarom als ‘harde’ zachte regulering worden gekenschetst aangezien de regels in juridische zin niet bindend zijn maar wel een hoge mate van feitelijke binding blijken te hebben.

### **Het patroon van regelgeving en duurzaamheid**

Vanuit de optiek van duurzaamheid is uit de analyse gebleken dat de regelgeving inzake het beperken van risico's van bestrijdingsmiddelen in de afgelopen jaren steeds meer uiteenlopende belangen en doelen is gaan dienen. Terwijl de aanvankelijke focus vrijwel uitsluitend was gericht op de bescherming van de eigen nationale landbouw tegen ziekten en plagen uit andere landen en daarmee op een vergroting van de nationale agrarische productie is de nadruk vervolgens verschoven in de richting van internationale economische belangen, zoals de harmonisering van de markt voor bestrijdingsmiddelen, de bevordering van de handel in landbouwproducten, en het stimuleren van de werkgelegenheid in de chemische industrie. Tegelijkertijd zijn doelstellingen van bescherming van mens en milieu meer op de voorgrond getreden.

De consequentie van meerdere, vaak tegenstrijdige, belangen en doelen is dat zij tegen elkaar moeten worden afgewogen in besluitvormingsprocessen. Deze studie heeft laten zien dat statelijke actoren in de afgelopen jaren moeilijkheden hebben ondervonden bij het vinden van een balans tussen die belangen en doelen. Dit blijkt bijvoorbeeld uit het feit dat beslissingen betreffende de doelen van wetgeving en hun interpretatie vaak controversieel zijn en de definiëring van cruciale concepten wordt uitgesteld, zoals de case studie over Nederland laat zien, maar ook naar voren komt uit de gang van zaken rond de Europese regelgeving inzake bestrijdingsmiddelen, de FAO Gedragscode en het Verdrag van Rotterdam. In reactie op deze verlamming van statelijke actoren hebben niet-statale actoren in toenemende mate het initiatief tot regulering overgenomen met het argument dat zij beter in staat zouden zijn om uiteenlopende belangen met elkaar te verzoenen. In hun nieuwe rol maken zij er aanspraak op te functioneren als ‘aanjagers van verandering’ in het transitieproces naar veilige en duurzame voedingsmiddelen.

Tot dusverre is de bescherming van de gezondheid van consumenten de belangrijkste aanleiding geweest voor niet-statale actoren om regels tot stand te brengen die zijn gericht op het beperken van risico's van bestrijdingsmiddelen. Overwegingen over het milieu en de gezondheid van werknemers hebben een secundaire prioriteit gehad. Voor de nabije toekomst kan worden verwacht dat de gezondheid van consumenten een hoge prioriteit zal houden, aangezien regelmatig nieuwe wetenschappelijke inzichten worden gepubliceerd, bijvoorbeeld over hormoonverstorende stoffen en stoffen die de ziekte van Parkinson zouden kunnen teweegbrengen. In dit verband is het van belang dat de doelstelling van bescherming van de gezondheid van consumenten in sommige opzichten instrumenteel kan zijn bij het beperken van risico's van bestrijdingsmiddelen voor het milieu en de gezondheid van werknemers, maar dat dit niet noodzakelijkerwijs het geval hoeft te zijn.

In vrijwel alle stadia van de levenscyclus van bestrijdingsmiddelen heeft een verschuiving plaatsgevonden naar een grotere betrokkenheid van niet-statale actoren. Statale actoren hebben zich tot dusverre geconcentreerd op de stadia van het op de markt brengen en de residuen, terwijl niet-statale actoren zich vooral hebben gericht op het



gebruik en de residuen. Als gevolg daarvan is de dichtheid aan regels inzake residuen relatief hoog, hetgeen vanuit het gezichtspunt van efficiëntie averechts werkt, omdat in het algemeen kan worden gesteld dat hoe verder de ingreep plaats vindt in de levenscyclus van bestrijdingsmiddelen, des te hoger de kosten zijn van controle en handhaving.

Vergelijkenderwijs is het patroon van regelgeving en de dichtheid van regels in het stadium van productie het minst veranderd en wordt dan ook nog steeds voornamelijk bepaald door statelijke actoren. De ervaringen met persistente organische verontreinigde stoffen hebben laten zien dat het vele jaren kan duren voordat zelfs de meest gevaarlijke stoffen zijn geëlimineerd. In dit verband is het belangrijk te realiseren dat zolang een stof wordt geproduceerd, deze altijd opnieuw een herintrede in de markt kan doen. Het is daarom een belangrijke mijlpaal dat het Verdrag van Stockholm eindelijk de mogelijkheid heeft verschaft om de meest gevaarlijke stoffen uit te bannen door de productie, het op de markt brengen en het gebruik ervan te verbieden.

Het huidige patroon van regelgeving wijst erop dat een gebrek aan regulering van de productie van bestrijdingsmiddelen op internationaal niveau leidt tot compensatie op regionaal en nationaal niveau door het reguleren van het op de markt brengen, het gebruik en de residuen van bestrijdingsmiddelen. Dit betekent dat de regulering van deze stadia in de levenscyclus in feite functioneert als een substituuut voor een mondiaal productieverbod en leidt tot ongelijke niveaus van bescherming van mens en milieu wereldwijd.

Met het oog op de effectiviteit van het complex aan regels kan worden geconcludeerd dat de gecombineerde benaderingen van statelijke en niet-statale actoren een impuls hebben gegeven tot een beperking van de risico's voor mens en milieu in de verschillende stadia van de levenscyclus van bestrijdingsmiddelen. Bovendien komt uit de studie naar voren dat de wisselwerking tussen verschillende vormen van regulering de integratie van de bescherming van mens en milieu heeft versterkt. Het valt met name op dat de opkomst van private regulering heeft geholpen om een gunstig klimaat te creëren voor een transitie naar meer duurzame vormen van landbouw. De voorbeelden van het IFOAM biologische garantiesysteem en het GlobalGAP programma voor groente en fruit hebben laten zien, dat dergelijke regulering zeker een impuls kan geven aan agrarische producenten om hun productiemethoden op een positieve manier te veranderen.

Ondanks de genoemde ontwikkelingen is de vooruitgang mondiaal gezien echter beperkt. De ervaringen van de afgelopen jaren laten zien dat de risico's van bestrijdingsmiddelen voor mens en milieu moeilijk zijn te controleren en dat een adequaat niveau van bescherming niet gelijkmatig wordt gedeeld in alle landen en door alle burgers. Het huidige patroon van regelgeving bevoorrecht met name de bescherming van mens en milieu in ontwikkelde landen, maar is minder effectief voor ontwikkelingslanden en voormalige Oostbloklanden. Ondanks de ontwikkeling van minder schadelijke bestrijdingsmiddelen door technologische innovatie is bijvoorbeeld het gebruik van oudere stoffen uit de hoogste gevaarclassen volgens de WHO nog steeds gebruikelijk in armere landen met een minder strict toelatings- en handavingsregime. Ter verbetering van de effectiviteit van het complex aan regels is er daarom extra aandacht nodig voor de adequaatheid van de regelgeving.

Met het oog op de inclusiviteit van het complex aan regels kan worden geconcludeerd dat de participatie van niet-statale actoren bij het maken, implementeren en handhaven

van regels enorm is uitgebreid, maar dat de mogelijkheden tot het geven van een zinvolle inbreng niet gelijkelijk zijn verdeeld tussen de verschillende actoren. Hierbij moet tevens de kanttekening worden gemaakt dat een toegenomen inclusiviteit niet automatisch leidt tot betere beslissingen en nakoming. Ter verbetering van de inclusiviteit van het complex aan regels is er daarom extra aandacht nodig voor de kwaliteit van participatieve processen.

Met het oog op de rechtvaardigheid van het complex aan regels kan worden geconcludeerd dat de toename van private regulering ertoe heeft geleid dat zich voor sommige groepen van agrarische producenten nieuwe mogelijkheden tot vermarkten voordoen, terwijl er voor andere groepen handelsbarrières ontstaan. Dit hangt van een grote verscheidenheid van, veelal nationale, factoren af, zoals de institutionele infrastructuur, gekwalificeerde laboratoria, geschoold personeel, concurrentieverhoudingen, en de kosten van arbeid en kapitaal. In het algemeen kan echter worden gesteld dat de positieve effecten van private regulering vooral worden ondervonden door grotere producenten en de negatieve door de kleinere. Gezien het risico van een toenemende marginalisering van deze laatste groep is het in dit verband verontrustend dat de WTO verdragen niet zijn toegesneden op transnationale regulering omdat de handelsregels zijn geadresseerd aan nationale regeringen die relatief machteloos zijn ten opzichte van grensoverstijgende regulering door niet-statelijke actoren. Daarom opereren dergelijke programma's in meer of mindere mate in een juridisch vacuüm. Ter verbetering van de rechtvaardigheid van het complex van regels is er daarom extra aandacht nodig voor de concurrentieverhoudingen en met name de positie van kleine agrarische producenten.

### **De contouren van een normatief en procedureel kader**

Tijdens de Wereldtop voor Duurzame Ontwikkeling in Johannesburg in 2002 is afgesproken om uiterlijk in 2020 verantwoord om te gaan met chemische stoffen waaronder bestrijdingsmiddelen. Om deze doelstelling tijdig te bereiken, is het nodig om het normatieve en procedurele kader voor de beperking van risico's van bestrijdingsmiddelen te versterken. In het bijzonder zou de nadruk moeten liggen op de regie in reguleringsprocessen, de adequaatheid van regels, de kwaliteit van participatie, en de positie van kleine agrarische producenten.

Ter verduidelijking van de regie in reguleringsprocessen zou de huidige rolverdeling tussen statelijke en niet-statelijke actoren moeten worden heroverwogen. Vanwege de beperkingen van private regulering is het nodig dat statelijke actoren de eerste verantwoordelijkheid voor regulering terugnemen en een langere termijn visie ontwikkelen over strategieën voor het beperken van risico's van bestrijdingsmiddelen. Daarnaast verdient het aanbeveling dat statelijke actoren hun sturende en coördinerende bevoegdheden versterken en de wetgeving inzake mededinging en concurrentieverhoudingen strikter toepassen.

Tegelijkertijd kunnen statelijke actoren profijt hebben van de initiatieven die door niet-statelijke actoren zijn ontwikkeld. Het naast elkaar bestaan van statelijke en niet-statelijke benaderingen zou het ideale uitgangspunt kunnen zijn voor het ontwikkelen van een 'slimme' mix van instrumenten die agrarische producenten kunnen helpen bij het maken van een transitie naar een veilige en duurzame landbouw. Als onderdeel van die slimme mix zouden niet-statelijke actoren kunnen bijdragen aan een beperking van

risico's van bestrijdingsmiddelen door het ontwikkelen van concurrerende initiatieven die bij voorkeur zijn gebaseerd op een multi-actor benadering.

Ter verbetering van de adequaatheid van regels is het nodig dat het normatieve kader voor de het beperken van risico's van bestrijdingsmiddelen verder wordt ontwikkeld om het meer ambitieus, omvattend en samenhangend te maken. Het belangrijkste argument om dit onderwerp zoveel mogelijk op internationaal niveau aan te pakken is dat daarmee de harmonisering is gebaat, niet alleen in de zin van handelskansen maar ook in relatie tot de bescherming van mens en milieu gezondheid. De FAO Gedragscode kan bij het ontwikkelen van dit kader als uitgangspunt dienen, aangezien deze in principe alle stadia in de levenscyclus van bestrijdingsmiddelen omvat en op alle bestrijdingsmiddelen is gericht. Een dergelijk kader zou op zijn minst de volgende elementen moeten bevatten:

- Productie: Het uitbannen van stoffen die behoren tot de WHO gevaarklassen van uiterst gevaarlijk (IA), hoogst gevaarlijk (IB), matig gevaarlijk (II) en, voorzover mogelijk, beperkt gevaarlijk (III).
- Op de markt brengen: Het strikt toepassen van de beginselen van voorzorg en substitutie tijdens de toelatingsprocedure van bestrijdingsmiddelen.
- Gebruik:
  - Het geven van een hoge prioriteit aan de uitwerking van internationale richtlijnen voor geïntegreerde ziektebestrijding en de implementatie ervan.
  - Het ontwikkelen van internationale definities en richtlijnen voor agrarische productiemethoden die zijn gericht op een hoger niveau van integratie.
  - Het toepassen van het beginsel van de vervuiler betaalt, bijvoorbeeld door een heffing in te stellen op de productie, het op de markt brengen en/of gebruik van patentloze bestrijdingsmiddelen en de opbrengsten te gebruiken voor het stimuleren van geïntegreerde productiemethoden.
  - Het stimuleren van niet-staatelijke actoren om programma's te ontwikkelen die bij voorkeur zijn gebaseerd op multi-actor benaderingen.
- Residuen: Het formuleren van geaggregeerde maximumgehalten van residuen van bestrijdingsmiddelen en het uiteindelijke doel van residu-vrije voedingsmiddelen.

Ter verbetering van de kwaliteit van participatie is het nodig om minimum criteria voor participatieve processen te ontwikkelen die onder meer het volgende inhouden: a) de betrokken actoren moeten op een evenwichtige manier in het besluitvormingsproces zijn vertegenwoordigd, b) de benodigde procedurele voorschriften moeten tot stand zijn gebracht, c) de wijze van uitwisseling van argumenten moet voldoen aan een bepaalde kwaliteitsnorm voor beraadslaging. Aanhakend bij bestaande initiatieven zijn er verschillende opties om dergelijke criteria vast te leggen: 1) de aanpassing van de beginselen van het internationale recht van duurzame ontwikkeling en in het bijzonder van het beginsel van participatie, zoals deze zijn opgenomen in de Rio Verklaring en de ILA New Delhi Verklaring, 2) de formulering van criteria van goede reguleringspraktijken, hetgeen neerkomt op een verdere uitwerking van het TBT Verdrag en met name de bijbehorende Code van Goede Praktijken, en 3) de opstelling van een gedragscode voor participatieve processen die is gericht op het verbeteren en harmoniseren van reguleringsprocessen van niet-staatelijke actoren.

Ter verbetering van de positie van kleine agrarische producenten is het nodig om de implementatie van het beginsel van gemeenschappelijke doch gedifferentieerde verantwoordelijkheden uit het internationale recht meer nadruk te geven. Die versterkte implementatie zou in de context van ontwikkelde en ontwikkelingslanden op zijn minst het volgende moeten inhouden: a) het meer gelijkelijk delen van kennis en informatie; b) het meer rijkelijk verschaffen van technische en financiële assistentie, en c) het tot stand brengen van strengere regels over mondiale concurrentieverhoudingen. Het is echter belangrijk om te realiseren dat het onderscheid tussen ontwikkelde en ontwikkelingslanden wellicht aan relevantie verliest op dit terrein, aangezien multinationale bedrijven in toenemende mate zich richten op agrarische productie voor exportdoeleinden, in zowel ontwikkelde als ontwikkelingslanden. Dit betekent dat het belangrijkste onderscheidende criterium de eigendomsstructuur is van agrarische bedrijven in plaats van geografische locatie, hetgeen opnieuw een argument is voor striktere regulering van concurrentieverhoudingen op internationaal niveau.

### **Slotopmerkingen**

In deze studie is naar de veranderingen gekeken die plaats vinden in de verhoudingen tussen statelijke en niet-statale actoren op het gebied van regulering van risico's van bestrijdingsmiddelen. Vergelijkbare verschijnselen kunnen worden waargenomen op andere terreinen. In het algemeen kan worden gesteld dat het toenemende pluralisme van regelgeving kan worden beschouwd als een uitdrukking van de globalisering van het recht. In de nieuwe situatie zijn de regels afkomstig van niet-statale actoren in toenemende mate een middel om economische macht te verkrijgen en te behouden. Mede daarom is het contraproductief om in reactie op de huidige explosie van regels lukraak nieuwe lagen van regels te creëren. De voorkeur voor de langere termijn is een omvattend raamwerk op internationaal niveau dat sterker is gebaseerd op waarden van rechtvaardigheid, duurzaamheid en rentmeesterschap.

## Annex 1 Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade: listings and notifications

### **Pesticide substances listed under the Rotterdam Convention in Annex III (april 2008)**

- 2,4,5-T
- Aldrin
- Binacapryl
- Captafol
- Chlordane
- Chlorobenzilate
- DDT
- Dieldrin
- Dinoseb and its salts
- DNOC and its salts
- EDB
- Ethylene dichloride
- Ethylene oxide
- Fluoroacetamide
- HCH
- Heptachlor
- Hexachlorobenzene
- Lindane
- Mercury compounds
- Monocrotophos
- Parathion
- Pentachlorophenol
- Toxaphene

### **Hazardous pesticide formulations listed under the Rotterdam Convention in Annex III**

- Dustable powder formulations containing a combination of: benomyl at or above 7 per cent, carbofuran at above 10 per cent, thiram at or above 15 per cent
- Methamidophos (soluble liquid formulations of the substance that exceed 600 g active ingredient/l)
- Phosphamidon (soluble liquid formulations of the substance that exceed 1000 g active ingredient/l)
- Methyl-parathion (emulsifiable concentrates at or above 19.5% active ingredient and dusts at or above 1.5% active ingredient).

**Notifying countries under the Rotterdam Convention**

	CRC-1	CRC-2	CRC-3	CRC-4	Total	Accepted notifications
Brazil	3	-	-	-	3	-
Bulgaria	-	2	2	-	4	-
Canada	-	5	1	-	6	4
Cote d'Ivoire	4	1	-	-	5	-
Dominican Republic	-	-	-	1	1	-
El Salvador	2	-	-	-	2	-
EU	2	-	1	3	6	6
Gambia	1	-	-	-	1	-
Guyana	-	-	-	2	2	-
Korea	3	-	-	-	3	-
Japan	4	4	-	-	8	-
Jamaica	-	-	-	1	1	1
Jordan	2	-	-	1	3	-
Netherlands	2	2	-	-	4	3
Nigeria	-	1	1	-	2	-
Norway	1	-	-	-	1	-
Panama	3	-	-	-	3	-
Romania	1	1	-	-	2	-
Switzerland	3	-	1	-	4	-
Peru	1	-	-	-	1	-
Thailand	3	2	1	-	6	1

**Notifications of pesticides reviewed by the CRC under the Rotterdam Convention**

Pesticide substances	Old notifications	New notifications	Accepted	Reason for non acceptance
<b>CRC-1</b>				
Chlordecone		Switzerland	No	(b) (iii)
		Thailand	No	(b) (iii)
Endosulfan	Jordan		No	(b) (iii)
	Netherlands		Yes	
	Norway		No	(b) (iii)
		Cote d'Ivoire	No	(b) (iii), (c) (i) (ii)
Endrin	Jordan		No	(b) (iii)
	Peru		No	(b) (i) (ii) (iii)
		Japan	No	(b) (iii), (c) (iv)
		Korea	No	(b) (iii), (c) (iv)
		Romania	No	(b) (iii), (c) (iv)
		Switzerland	No	(b) (iii), (c) (iv)
Methamidophos		Brazil	No	(b) (iii), (c) (i), (iii)
		Cote d'Ivoire	No	(b) (i) (ii) (iii)
		El Salvador	No	(b) (iii), (c) (i) (iii)
		Panama	No	(b) (iii), (c) (i) (iii)
		Thailand	No	(b) (iii)
Methyl bromide		Korea	No	(b) (iii)
		Netherlands	Yes	
		Switzerland	No	(b) (iii)
Methyl parathion		Brazil	No	(b) (iii)
		Cote d'Ivoire	No	(b) (i) (ii) (iii), (c) (i) (ii) (iii)
		El Salvador	No	(b) (iii), (c) (i) (ii)
		EU	Yes	
		Gambia	No	(b) (iii)
		Japan	No	(b) (iii)
		Panama	No	(b) (iii), (c) (i) (ii)
Phosphamidon		Brazil	No	
		Cote d'Ivoire	No	
		Japan	No	

		Panama	No	
		Thailand	No	
Tributyltin	EU			(b) (iii)
		Japan	No	
		Korea	No	(b) (iii)
<b>CRC-2</b>				
Alachlor		Canada	Yes	
		Netherlands	No	(b) (iii)
Cyhexatin		Canada	Yes	
		Japan	No	(b) (iii)
DBCP		Canada	No	(b) (iii), (c) (iv)
		Japan	No	(b) (iii), (c) (iv)
Dicofol		Japan	No	(b) (iii)
		Netherlands	Yes	
		Romania	No	(b) (iii)
Endosulfan	Jordan		No	(b) (iii)
	Netherlands		Yes	
	Norway		No	(b) (iii)
	Cote d'Ivoire		No	(b) (iii), (c) (i) (ii)
	Netherlands		Yes	
		Thailand	Yes	
Methyl parathion	EU		Yes	
		Bulgaria	No	(b) (i) (ii) (iii)
		Cote de Ivoire	No	(b) (i) (ii) (iii)
		Nigeria	No	(b) (iii)
		Thailand	No	(b) (iii)
Mirex		Bulgaria	No	(b) (iii)
		Canada	Yes	
		Japan	No	(b) (iii)
Tributyltin	EU		Yes	
	Japan		No	(b) (iii)
	Korea		No	(b) (iii)
		Canada	Yes	
<b>CRC-3</b>				
Endosulfan	Cote d'Ivoire		No	(b) (iii), (c) (i) (ii)
	Jordan		No	(b) (iii)
	Netherlands		Yes	
	Norway		No	(b) (iii)
	Thailand		Yes	
		EU	Yes	
Endrin	Jordan		No	(b) (iii)
	Japan		No	(b) (iii), (c) (iv)



	Korea		No	(b) (iii), (c) (iv)
	Peru		No	(b) (i) (ii) (iii)
	Romania		No	(b) (iii), (c) (iv)
	Switzerland		No	(b) (iii), (c) (iv)
		Canada	No	(b) (i) (ii) (iii), c (iii) (iv)
		Bulgaria	No	(b) (i) (ii) (iii), c (i) (ii) (iii) (iv)
Methamidophos	Brazil		No	(b) (iii), (c) (i), (iii)
	Cote d'Ivoire		No	(b) (i) (ii) (iii)
	El Salvador		No	(b) (iii), (c) (i) (iii)
	Panama		No	(b) (iii), (c) (i) (iii)
	Thailand		No	(b) (iii)
		Bulgaria	No	(b) (i) (ii) (iii)
		Nigeria	No	(b) (iii)
Mirex	Bulgaria		No	(b) (iii)
	Canada		Yes	
	Japan		No	(b) (iii)
		Switzerland	No	(b) (iii)
		Thailand	No	(b) (iii)
<b>CRC-4</b>				
Alachlor	Canada		Yes	
	Netherlands		No	(b) (iii)
		EU	Yes	
Aldicarb		EU	Yes	
		Jamaica	Yes	
Carbaryl		EU	Yes	
		Jordan	No	(b) (i) (ii) (iii), (c) (iii)
Methyl parathion	Bulgaria		No	(b) (i) (ii) (iii)
	Cote d'Ivoire		No	(b) (i) (ii) (iii)
	El Salvador		No	(b) (iii), (c) (i) (ii)
	EU		Yes	
	Gambia		No	(b) (iii)
	Japan		No	(b) (iii)

	Nigeria		No	(b) (iii)
	Panama		No	(b) (iii), (c) (i) (ii)
	Thailand		No	(b) (iii)
		Dominican Republic	No	(b) (i) (ii) (iii)
		Guyana	No	(b) (i) (ii) (iii)
Mirex	Bulgaria		No	(b) (iii)
	Canada		Yes	
	Japan		No	(b) (iii)
	Switzerland		No	(b) (iii)
	Thailand		No	(b) (iii)
		Guyana	No	(b) (iii) (c) (iv)

## Annex 2 Stockholm Convention on Persistent Organic Pollutants: listings and nominations

Pesticide substances listed under the Stockholm Convention:

- Aldrin
- Chlordane
- DDT
- Dieldrin
- Endrin
- Heptachlor
- Mirex
- Toxaphene

Nominations of pesticides reviewed by the POPRC under the Stockholm Convention:

- Hexachlorocyclohexane (HCH), i.e. lindane
- Chlordecone



## Annex 3 EU Authorisation Directive (91/414) and related legislative measures

### *Legislation concerning the programme of work referred to in Article 8(2) of Directive 91/414*

3600/92 (OJ L366, 15.12.1992)	Commission Regulation (EEC) No 3600/92 of 11 December 1992 laying down the detailed rules for the implementation of the first stage of the programme of work referred to in Article 8 (2) the Directive
933/94 (OJ L107, 28.04.1994)	Commission Regulation (EC) No 933/94 of 27 April 1994 laying down the active substances of plant protection products and designating the rapporteur Member States for the implementation of Commission Regulation (EEC) No 3600/92
491/95 (OJ L049, 04.03.1995)	Amendment of Regulation (EEC) No 3600/92 and Regulation (EC) No 933/94, in particular with regard to the integration of the designated public authorities and the producers in Austria, Finland and Sweden
2230/95 (OJ L225, 22.09.1995)	Amendment of Regulation (EC) No 933/94
1199/97 (OJ L170, 28.06.1997)	Amendment of Regulation (EEC) No 3600/92
1972/1999 (OJ L244, 16.09.1999)	Amendment of Regulation (EEC) No 3600/92
451/2000 (OJ L055, 29.02.2000)	Commission Regulation (EC) No 451/2000 of 28 February 2000 laying down the detailed rules for the implementation of the second and third stages of the work programme referred to in Article 8(2) of the Directive
2266/2000 (OJ L259, 13.10.2000)	Amendment of Regulation (EEC) No 3600/92
703/2001 (OJ L098, 07.04.2001)	Commission Regulation (EC) No 703/2001 of 6 April 2001 laying down the active substances of plant protection products to be assessed in the second stage of the work programme referred to in Article 8(2) of the Directive and revising the list of Member States designated as rapporteurs for those substances
1112/2002 (OJ L168, 27.06.2002)	Commission Regulation (EC) No 1112/2002 of 20 June 2002 laying down the detailed rules for the implementation of the fourth stage of the programme of work referred to in Article 8(2) of the Directive
1490/2002 (OJ L224, 21.08.2002)	Commission Regulation (EC) No 1490/2002 of 14 August 2002 laying down further detailed rules for the implementation of the third stage of the programme of work referred to in Article 8(2) of the Directive and amending Regulation (EC) No 451/2000
2076/2002 (OJ L319, 23.11.2002)	Commission Regulation (EC) No 2076/2002 of

	20 November 2002 extending the time period referred to in Article 8(2) of the Directive and concerning the non-inclusion of certain active substances in Annex I to that Directive and the withdrawal of authorisations for plant protection products containing these substances
1044/2003 (OJ L151, 19.06.2003)	Commission Regulation (EC) No 1044/2003 of 18 June 2003 amending Regulations (EC) No 451/2000 and (EC) No 1490/2002
1336/2003 (OJ L187, 26.07.2003)	Commission Regulation (EC) No 1336/2003 of 25 July 2003 amending Regulation (EC) No 2076/2002 as regards the continued use of the substances listed in Annex II
2003/565 (OJ L192, 31.07.2003)	Commission Decision 2003/565/EC of 25 July 2003 extending the time period provided for in Article 8(2) of the Directive
2004/129 (OJ L037, 10.02.2004)	Commission Decision 2004/129/EC of 30 January 2004 concerning the non-inclusion of certain active substances in Annex I to the Directive 91/414/EEC and the withdrawal of authorisations for plant protection
771/2004 (OJ L123, 27.04.2007)	Commission Regulation (EC) No 771/2004 of 23 April 2004 laying down transitional measures with regard to continued use of plant protection products containing certain active substances following the accession of new Member States to the European Union
1765/2004 (OJ L315, 14.10.2004)	Commission Regulation (EC) No 1765/2004 of 13 October 2004 amending Regulation (EC) No 2076/2002 as regards the continued use of the substances listed in Annex II
2229/2004 (OJ L379, 24.12.2004)	Commission Regulation (EC) No 2229/2004 of 3 December 2004 laying down further detailed rules for the implementation of the fourth stage of the programme of work referred to in Article 8(2) of the Directive
835/2004 (OJ L127, 29.4.2004)	Commission Regulation (EC) No 835/2004 of 28 April 2004 adapting Regulation (EC) No 2076/2002 and Decisions 2002/928/EC, 2004/129/EC, 2004/247/EC and 2004/248 as regards the continued use of certain active substances not included in Annex I to Directive 91/414/EEC, by reason of the accession of the Czech Republic, Estonia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia and Slovakia
1335/2005 (OJ L211, 13.08.2005)	Commission Regulation (EC) of 12 August 2005 amending Regulation (EC) No 2076/2002 and Decisions 2002/928/EC, 2004/129/EC, 2004/140/EC, 2004/247/EC and 2005/303/EC as regards the time period referred to in Article 8(2)

1980/2006 (OJ L368, 23.12.2006)

of Council Directive 91/414/EEC and the continued use of certain substances not included in its Annex I

Commission Regulation (EC) No 1980/2006 of 20 December 2006 laying down transitional measures amending Regulation (EC) No 2076/2002 and Decisions 2001/245/EC, 2002/928/EC and 2006/797/EC as regards the continued use of certain active substances not included in Annex I to Directive 91/414/EEC by reason of the accession of Bulgaria

2024/2006 (OJ L384, 29.12.2006)

Commission Regulation (EC) No 2024/2006 of 22 December 2006 laying down transitional measures derogating from Regulation (EC) No 2076/2002 and Decisions 98/270/EC, 2002/928/EC, 2003/308/EC, 2004/129/EC, 2004/141/EC, 2004/247/EC, 2004/248/EC, 2005/303/EC and 2005/864/EC as regards the continued use of plant protection products containing certain active substances not included in Annex I to Directive 91/414/EEC by reason of the accession of Romania

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*Commission Decisions withdrawing authorisation for plant protection products with certain active ingredients*

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94/643/EC (OJ L249, 24.09.1994)	Cyhalothrin
95/276/EC (OJ L170, 20.07.1995)	Ferbam and azinphos-ethyl
96/586/EC (OJ L257, 10.10.1996)	Propham
98/269/EC (OJ L117, 21.04.1998)	Dinoterb
98/270/EC (OJ L117, 21.04.1998)	Fenvalerate
99/164/EC (OJ L054, 02.03.1999)	DNOC
2000/233/EC (OJ L073, 22.03.2000)	Pyrazophos
2000/234/EC (OJ L073, 22.03.2000)	Monolinuron
2000/626/EC (OJ L263, 18.10.2000)	Chlozolinat
2000/725/EC (OJ L292, 21.11.2000)	Tecnazene
2000/801/EC (OJ L324, 21.12.2000)	Lindane
2000/816/EC (OJ L332, 28.12.2000)	Quintozene
2000/817/EC (OJ L332, 28.12.2000)	Permethrin
2001/245/EC (OJ L088, 28.03.2001)	Zineb
2001/520/EC (OJ L187, 10.07.2001)	Parathion
2001/697/EC (OJ L249, 19.09.2001)	Chlorfenapyr*
2002/478/EC (OJ L164, 22.06.2002)	Fentin acetate
2002/479/EC (OJ L164, 22.06.2002)	Fentin hydroxide
2002/928/EC (OJ L322, 27.11.2002)	Benomyl
2002/949/EC (OJ L328, 05.12.2002)	Azafenidin*
2003/166/EC (OJ L067, 12.03.2003)	Parathion-methyl
2003/199/EC (OJ L076, 22.03.2003)	Aldicarb
2003/219/EC (OJ L082, 29.03.2003)	Acephate
2003/308/EC (OJ L113, 07.05.2003)	Metalaxyl
2004/140/EC (OJ L046, 17.02.2004)	Fenthion
2004/141/EC (OJ L046, 17.02.2004)	Amitraz
2004/247/EC (OJ L078, 16.03.2004)	Simazin
2004/248/EC (OJ L078, 16.03.2004)	Atrazine
2004/401/EC (OJ L123, 27.04.2004)	Mefluidide
2005/864/EC (OJ L317, 03.12.2005)	Endosulfan
2006/797/EC (OJ L324, 23.11.2006)	8-hydroxyquinoline, ammonium sulphamate, hexaconazole, and sodium tetrathiocarbonate
2006/966/EC (OJ L397, 30.12.2006)	Alachlor
2006/1009/EC (OJ L379, 28.12.2006)	Dimethenamid
2006/1010/EC (OJ L379, 28.12.2006)	Phosalone
2007/355/EC (OJ L133, 25.05.2007)	Carbaryl
2007/356/EC (OJ L133, 25.05.2007)	Trichlorfon
2007/366/EC (OJ L139, 31.05.2007)	Thiodicarb
2007/379/EC (OJ L141, 02.06.2007)	Fenitrothion
2007/387/EC (OJ L145, 07.06.2007)	Dichlorvos
2007/389/EC (OJ L146, 08.06.2007)	Malathion
2007/392/EC (OJ L148, 09.06.2007)	Oxydemeton-methyl
2007/393/EC (OJ L148, 09.06.2007)	Diazinon
2007/415/EC (OJ L156, 16.06.2007)	Carbosulfan
2007/416/EC (OJ L156, 16.06.2007)	Carbofuran
2007/417/EC (OJ L156, 16.06.2007)	Diuron
2007/428/EC (OJ L160, 21.06.2007)	Cadusafos
2007/437/EC (OJ L163, 23.06.2007)	Haloxypop-R
2007/615/EC (OJ L246, 21.09.2007)	Benfuracarb



2007/619/EC (OJ L249, 25.09.2007)	1,3-dichloropropene
2007/628/EC (OJ L255, 29.09.2007)	Methomyl
2007/629/EC (OJ L255, 29.09.2007)	Trifluralin

*Commission Directives including certain active substances in Annex I (the positive list of authorised active ingredients)*

97/73/EC (OJ L353, 24.12.1997)	Imazalil
98/47/EC (OJ L191, 07.07.1998)	Azoxystrobin*
1999/1/EC (OJ L021, 28.01.1999, corrigendum OJ L145, 10.06.1999)	Kresoxim-methyl*
1999/73/EC (OJ L206, 05.08.1999, corrigendum OJ L221, 21.08.1999)	Spiroxamine*
1999/80/EC (OJ L210, 10.08.1999)	Azimsulfuron*
2000/10/EC (OJ L057, 02.03.2000)	Fluroxypyr
2000/49/EC (OJ L197, 03.08.2000)	Metsulfuron-methyl
2000/50/EC (OJ L198, 04.08.2000)	Prohexadione-calcium*
2000/66/EC (OJ L276, 28.10.2000)	Triasulfuron
2000/67/EC (OJ L276, 28.10.2000)	Esfenvalerate
2000/68/EC (OJ L276, 28.10.2000)	Bentazone
2000/80/EC (OJ L309, 09.12.2000)	Lambda-cyhalothrin
2001/21/EC (OJ L069, 10.03.2001)	Amitrole, diquat, pyridate, thiabendazole
2001/28/EC (OJ L113, 24.04.2001)	Fenhexamid*
2001/47/EC (OJ L175, 28.06.2001)	Paecilomyces fumosoroseus*
2001/49/EC (OJ L176, 29.06.2001)	Flupyr-sulfuron-methyl*
2001/87/EC (OJ L276, 19.10.2001)	Acibenzolar-s-methyl, cyclanilide, ferric phosphate, pymetrozine, pyraflufen-ethyl*
2001/99/EC (OJ L304, 21.11.2001)	Glyphosate, thifensulfuron-methyl
2001/103/EC (OJ L313, 30.11.2001)	2,4-dichlorophenoxy acetic acid (2,4-D)
2002/18/EC (OJ L055, 26.02.2002)	Isoproturon
2002/37/EC (OJ L117, 04.05.2002)	Ethofumesate
2002/48/EC (OJ L148, 06.06.2002)	Iprovalicarb, prosulfuron and sulfosulfuron*
2002/64/EC (OJ L189, 18.07.2002)	Cinidon-ethyl, cyhalofop butyl, famoxadone, florasulam, metalaxyl-M and picolinafen*
2002/81/EC (OJ L276, 12.10.2002)	Flumioxazine*
2003/5/EC (OJ L008, 14.01.2003)	Deltamethrin
2003/23/EC (OJ L081, 28.03.2003)	Imazamox, oxasulfuron, ethoxysulfuron, foramsulfuron, oxadiargyl and cyazofamid*
2003/31/EC (OJ L101, 23.04.2003)	2,4-DB, beta-cyfluthrin, cyfluthrin, iprodione, linuron, maleic hydrazide and pendimethalin
2003/39/EC (OJ L124, 20.05.2003)	Propineb and propyzamide
2003/68/EC (OJ L177, 16.07.2003)	Tryfloxystrobin, carfentrazone-ethyl, mesotrione, fenamidone and isoxaflutole*
2003/70/EC (OJ L184, 23.07.2003)	Mecoprop, mecoprop-P and propiconazole
2003/79/EC (OJ L205, 14.08.2003)	Coniothyrium minitans*
2003/81/EC (OJ L224, 06.09.2003)	Molinate, thiram and ziram
2003/84/EC (OJ L247, 30.09.2003)	Flurtamone, flufenacet, iodosulfuron, dimethenamid-p, picoxystrobin, fosthiazate and silthiofam*
2003/112/EC (OJ L321, 06.12.2003)	Paraquat
2003/119/EC (OJ L325, 12.12.2003)	Mesosulfuron, propoxycarbazone and zox-

2004/20/EC (OJ L070, 09.03.2004)	amide*
2004/30/EC (OJ L077, 13.03.2004)	Chlorpropham
2004/58/EC (OJ L120, 24.04.2004)	Benzoic acid, flazasulfuron and pyraclostrobin*
2004/60/EC (OJ L120, 24.04.2004)	Alpha-cypermethrin, benalaxyl, bromoxynil, desmedipham, ioxynil and phenmedipham
2004/62/EC (OJ L125, 28.04.2004)	Quinoxifen*
2004/71/EC (OJ L127, 29.04.2004)	Mepanipyrim*
2004/99/EC (OJ L309, 06.10.2004)	Pseudomonas chlororaphis*
2005/2/EC (OJ L020, 22.01.2005)	Acetamiprid and thiacloprid*
2005/3/EC (OJ L020, 22.01.2005)	Ampelomyces quisqualis and Gliocladium catenulatum*
2005/34/EC (OJ L125, 18.05.2005)	Imazosulfuron, laminarin, methoxyfenozide and s-Metolachlor*
2005/53/EC (OJ L241, 17.09.2005)	Etoxazol and tepraloxymid*
2005/54/EC (OJ L244, 20.09.2005)	Chlorotalonil, chlorotoluron, cypermethrin, daminozide and thiophanate-methyl
2005/57/EC (OJ L246, 22.09.2005)	Tribenuron
2005/58/EC (OJ L246, 22.09.2005)	MCPA and MCPB
2005/72/EC (OJ L279, 22.10.2005)	Bifenazate and milbemectin*
2006/5/EC (OJ L012, 18.01.2006)	Chlorpyrifos, chlorpyrifos-methyl, mancozeb, maneb, metiram
2006/6/EC (OJ L012, 18.01.2006)	Warfarin
2006/10/EC (OJ L025, 28.01.2006)	Tolyfluanid
2006/16/EC (OJ L036, 08.02.2006)	Forchlofenuron and indoxacarb*
2006/19/EC (OJ L044, 15.02.2006)	Oxamyl
2006/39/EC (OJ L104, 13.04.2006)	1-methylcyclopropene*
2006/41/EC (OJ L187, 08.07.2006)	Clodinafop, pirimicarb, rimsulfuron, tolclofos-methyl and triticonazole
2006/45/EC (OJ L130, 18.05.2006)	Clothianidin and pethoxamid*
2006/64/EC (OJ L206, 27.07.2006)	Propoxycarbazone* (change of specification)
2006/74/EC (OJ L235, 30.08.2006)	Clopyralid, cyprodinil, fosetyl and trinexapac
2006/75/EC (OJ L248, 12.09.2006)	Dichlorprop-P, metconazole, pyrimethanil and triclopyr
2006/85/EC (OJ L293, 24.10.2006)	Dimoxystrobin*
2006/131/EC (OJ L349, 12.12.2006)	Ethephon and fenamiphos
2006/132/EC (OJ L349, 12.12.2006)	Methamidophos
2006/133/EC (OJ L349, 12.12.2006)	Procymidone
2006/134/EC (OJ L349, 12.12.2006)	Flusilazole
2006/135/EC (OJ L349, 12.12.2006)	Fenarimol
2006/136/EC (OJ L349, 12.12.2006)	Carbendazim
2007/5/EC (OJ L035, 08.02.2007)	Dinocap
2007/6/EC (OJ L043, 15.02.2007)	Captan, folpet, formetanate and methiocarb
2007/25/EC (OJ L106, 24.04.2007)	Metrafenone, <i>bacillus subtilis</i> , spinosad and thiamethoxam*
2007/52/EC (OJ L214, 17.08.2007)	Dimethoate, dimethomorph, glufosinate, metribuzin, phosmet and propamocarb
	Ethoprophos, pirimiphos-methyl and fipronil

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(\*) new substances that have been introduced after 26 July 1993

In addition to the legislation listed above, Directive 91/414 distinguishes the following types of decisions:

- Commission Decisions recognizing in principle the completeness of dossiers submitted for detailed examination relating to the inclusion of various active substances in Annex I of Directive 91/414
- Commission Decisions recognizing the potential inclusion of certain active substances in Annex I (the positive list of authorized active ingredients)
- Commission Decisions allowing Member States to extend provisional authorizations granted for new active substances



## Annex 4 National legislation on pesticides issued in the Netherlands

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Bestrijdingsmiddelenwet 1962	Stb. 1962, 288
Besluit milieutoelatingseisen bestrijdingsmiddelen	Stb. 1995, 37
Besluit uitvoer bestrijdingsmiddelen	Stb. 1995, 101
Besluit wijziging toelatingsvoorschriften bestrijdingsmiddelen	Stb. 1995, 103
Besluit uniforme beginselen gewasbeschermingsmiddelen	Stb. 1995, 241
Besluit andere taken College voor de toelating van bestrijdingsmiddelen	Stb. 1999, 503
Regeling samenstelling bestrijdingsmiddelen (voorheen: Beschikking/Regeling indeling, verpakking en etikettering bestrijdingsmiddelen)	Stb. 1980, 43
Wijzigingsbesluit Besluit milieutoelatingseisen bestrijdingsmiddelen (aanvullende milieucriteria)	Stb. 2000, 136
Besluit regels verlenging communautaire overgangstermijn gewasbeschermingsmiddelen	Stb. 2003, 274
Besluit beginselen geïntegreerde gewasbescherming	Stb. 2004, 485
Wijziging Besluit uniforme beginselen gewasbescherming	Stb. 2005, 413
Uitvoeringsregeling bestrijdingsmiddelen	Stcrt. 1976, 157
Regeling uitzondering bestrijdingsmiddelen	Stcrt. 1978, 98
Regeling uitvoering milieutoelatingseisen bestrijdingsmiddelen	Stcrt. 1995, 29
Regeling toelating bestrijdingsmiddelen 1995	Stcrt. 1995, 41
Regeling toelatingseisen landbouwkundige onmisbare gewasbeschermingsmiddelen	Stcrt. 2001, 41
Regeling tijdelijke vrijstelling gewasbeschermingsmiddelen ter bestrijding van valse meeldauw bij uien	Stcrt. 2002, 142
Regeling tijdelijke vrijstelling gewasbeschermingsmiddelen met cis-dichloorpropeen	Stcrt. 2002, 151
Regeling vrijstelling I gewasbeschermingsmiddelen teeltseizoen 2003	Stcrt. 2003, 54
Regeling vrijstelling II gewasbeschermingsmiddelen teeltseizoen 2003	Stcrt. 2003, 74
Regeling vrijstelling III gewasbeschermingsmiddelen teeltseizoen 2003	Stcrt. 2003, 80
Regeling tijdelijke vrijstelling gewasbeschermingsmiddelen ter bestrijding van valse meeldauw bij uien 2003	Stcrt. 2003, 124

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Regeling tijdelijke vrijstelling gewasbeschermingsmiddelen met cis-dichloorpropeen 2003	Stcrt. 2003, 126
Regeling tijdelijke vrijstelling gewasbeschermingsmiddelen ter bestrijding van trips in prei 2003	Stcrt. 2003, 155
Regeling tijdelijke vrijstelling gewasbeschermingsmiddelen ter bestrijding van de maïswortelkever 2003	Stcrt. 2003, 157
Regeling vrijstelling chloorthalonil teeltseizoen 2003	Stcrt. 2003, 234; ingetrokken Stcrt. 2003, 250
Regeling tijdelijke vrijstelling gewasbeschermingsmiddelen eerste kwartaal 2004	Stcrt. 2003, 246
Regeling vrijstelling zilverthiosulfaat 2004	Stcrt. 2003, 249
Intrekking Regeling vrijstelling chloorthalonil teeltseizoen 2003	Stcrt. 2003, 250
Vrijstellingen gewasbeschermingsmiddelen eerste kwartaal 2004	Stcrt. 2004, 71
Vrijstellingen gewasbeschermingsmiddelen 2004	Stcrt. 2004, 77
Wijziging Vrijstellingen gewasbeschermingsmiddelen 2004	Stcrt. 2004, 82
Besluit tijdelijke vrijstelling gewasbeschermingsmiddelen met cis-dichloorpropeen	Stcrt. 2004, 126
Wijziging Vrijstellingen gewasbeschermingsmiddelen 2004	Stcrt. 2004, 139
Wijziging Vrijstellingen gewasbeschermingsmiddelen 2004	Stcrt. 2004, 149
Wijziging Vrijstellingen gewasbeschermingsmiddelen 2004	Stcrt. 2004, 168
Tarievenbesluit CTB 2005	Stcrt. 2004, 245
Vrijstellingen gewasbeschermingsmiddelen 2005	Stcrt. 2005, 4
Wijziging besluit vrijstellingen gewasbeschermingsmiddelen 2005	Stcrt. 2005, 37
Tarievenbesluit CTB 2006	Stcrt. 2005,42
Wijziging besluit vrijstellingen gewasbeschermingsmiddelen 2005	Stcrt. 2005, 73
Besluit tijdelijke vrijstelling gewasbeschermingsmiddelen met deltamethrin 2005	Stcrt. 2005, 159
Regeling houdende CTB-besluit wijziging prioritering werkzame stoffen 2004	Stcrt. 2005, 237
Vrijstellingen gewasbeschermingsmiddelen 2006	Stcrt. 2005, 246
Regeling uitwerking uniforme beginselen gewasbeschermingsmiddelen	Stcrt. 2005, 248
Wijziging besluit vrijstellingen gewasbeschermingsmiddelen 2006	Stcrt. 2006, 40
Wijziging besluit vrijstellingen gewasbeschermingsmiddelen 2006	Stcrt. 2006, 67
Derde wijziging van het besluit vrijstellingen gewasbeschermingsmiddelen 2006	Stcrt. 2006, 82

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Vrijstelling verbod <i>Bacillus Thuringiensis</i> Israëliensis	Stcrt. 2006, 102
Wijziging regeling uitzondering bestrijdingsmiddelen	Stcrt. 2006, 118
Vierde wijziging van het besluit vrijstellingen gewasbeschermingsmiddelen 2006	Stcrt. 2006, 119
Ontheffing verbod permethrin 2006 II	Stcrt. 2006, 149
Vrijstelling verbod deltamethrin ter bestrijding <i>Culicoïdes</i> mug	Stcrt. 2006, 163
Vrijstelling verbod deltamethrin en permethrin ter bestrijding <i>Culicoïdes</i> II	Stcrt. 2006, 171
Vrijstellingen gewasbeschermingsmiddelen 2007	Stcrt. 2006, 243
Vrijstelling verbod deltamethrin en permethrin ter bestrijding <i>Culicoïdes</i> III	Stcrt. 2006, 248
Besluit bekendmaking Beleidsregels inzake de toelating van biociden en gewasbeschermingsmiddelen (Handleiding toelating bestrijdingsmiddelen versie 1.0)	Stcrt. 2006, 248
Wijziging vrijstellingen gewasbeschermingsmiddelen 2007	Stcrt. 2006, 249
Vrijstelling ter bestrijding van de aardappel-spindelknolviroïde (PSTVd)	Stcrt. 2006, 250
Wijziging regeling tarieven Plantenziektenkundige Dienst en Regeling toelating bestrijdingsmiddelen 1995	Stcrt. 2006, 252
Tarievenbesluit CTB 2007	Stcrt. 2006, 252
Lijst van aangewezen stoffen als bedoeld in artikel 25d Bestrijdingsmiddelenwet 1962	Stcrt. 2006, 253
Ontheffing verbod permethrin 2007/I	Stcrt. 2007, 25
Wijziging vrijstellingen gewasbeschermingsmiddelen 2007	Stcrt. 2007, 41
Vrijstelling verbod deltamethrin en permethrin ter bestrijding <i>Culicoïdes</i> 4	Stcrt. 2007, 69
Ontheffing verbod permethrin 2007/II	Stcrt. 2007, 76
Wijziging regeling toelating bestrijdingsmiddelen 1995 en Regeling risicobeoordeling nieuwe stoffen Wet milieugevaarlijke stoffen	Stcrt. 2007, 93
Ontheffing verbod permethrin 2007/III	Stcrt. 2007, 148
Beleidsnota Zicht op gezonde teelt	TK 2001-2002, 27 858, no. 1
Nota Duurzame gewasbescherming	TK 2003-2004, 27 858, no. 47

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Regeling milieukwaliteitseisen gevaarlijke stoffen oppervlaktewateren, Stcrt. 2004, 237

Legislation concerning pesticide residues

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Bestrijdingsmiddelenwet 1962	Stb. 1962, 288
Residubesluit	Stb. 1964, 319
Regeling residuen van bestrijdingsmiddelen	Stcrt. 1984, 54
Warenwetregeling zuigelingenvoeding	Stcrt. 1993, 183
Warenwetregeling babyvoeding	Stcrt. 1997, 19
Warenwetregeling verontreinigingen in levensmiddelen	Stcrt. 1999, 30
Beleidsnota Zicht op gezonde teelt	TK 2001-2002, 27 858, no. 1
Nota Duurzame gewasbescherming	TK 2003-2004, 27 858, no. 47

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In addition, there are dozens of amendments of the Regeling residuen van bestrijdingsmiddelen covering changes of MRLs.



## Annex 5 Status of active ingredients used in pesticide products under state and non-state actor regimes

This table presents a compilation of data concerning the status of active ingredients used in pesticide products under different regulatory regimes from state as well as non-state origin. As a starting point, active ingredients have been listed that have been assessed under the 1<sup>st</sup> and 2<sup>nd</sup> stages of the EU work programme for existing substances under Directive 91/414/EEC. In addition, the table also includes the substances that have been prohibited before 1991 on the basis of Directive 79/117/EEC. In total, the table contains 239 entries of pesticide substances, arguably representing the most hazardous products.

The EU data have been complemented by data based on reviews of substances under other regulatory regimes. These other regimes include the WHO Classification of Pesticides by Hazard, international environmental conventions, EU legislation in the field of water policy, retailer schemes, and schemes established by environmental and social NGOs. The criteria in these regimes are, partly or totally, based on considerations of human health and environment protection but use different interpretations of risk.

### **Abbreviations used in the table:**

PS = priority substance WFD

PHS = priority hazardous substance WFD under Decision No 2455/2001

EQS = proposed environmental quality standards for priority substances and certain other pollutants in surface water according to COM(2006) 397 final

GP = Greenpeace

M&S = Marks and Spencer

Active ingredient	WHO class	Status under international environmental conventions	Status under EU legislation	Status according to retailer schemes	Status according to NGO schemes
1,2-dichloropropane	Obsolete as pesticide, not listed	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor
1,3-dichloropropene	Fumigant, not classified	-	Restricted use: Regulation No 2076/2002; non-inclusion Decision 2007/619/EC	-	PAN Bad Actor; GP black list
1,3-dichloropropene (cis)	-	-	Non-inclusion: Regulation No 2076/2002	-	-
2-(dithiocyanomethylthio)-benzothiazol	-	-	Non-inclusion: Regulation No 2076/2002	-	-
2,4-D → see 2,4-dichlorophenoxy acetic acid					
2,4-dichlorophenoxy acetic acid (2,4-D)	II	-	Inclusion: Directive 2001/103/EC	-	PAN Bad Actor
2,4-DB	III	Rotterdam Convention: 1 notification	Inclusion: Directive 2003/31/EC	-	PAN Bad Actor; GP black list
2,4,5-T → see 2,4,5-trichlorophenoxy					
2,4,5-trichlorophenoxy (2,4,5-T)	Obsolete as pesticide, not classified	Rotterdam Convention: Annex III	Non-inclusion: Regulation No 2076/2002	M&S banned	PAN Dirty Dozen; PAN Bad Actor
4-t-pentylphenol	-	-	Non-inclusion: Regulation No 2076/2002	-	-
Acephate	III	Rotterdam Convention: 1 notification	Non-inclusion: Decision 2003/219/EC	-	PAN Bad Actor
Alachlor	III	Rotterdam Convention: 3 notifications, 2 accepted	Non-inclusion: Decision 2006/966/EC; PS under Decision No 2455/2001	M&S banned	PAN Bad Actor; GP black list
Aldicarb	IA	Rotterdam Convention: 2 notification, 2 accepted	Non-inclusion: Decision 2003/199/EC	Co-op permission	PAN Dirty Dozen; PAN Bad Actor; GP

					black list
Aldrin	Obsolete, not classified	Rotterdam Convention: Annex III; Stockholm Convention: Annex A	Prohibition: Directive 79/117/EEC; Regulation No 850/2004; EQS part B	M&S banned; Cop banned; GlobalGAP banned	PAN Dirty Dozen; PAN Bad Actor
Alpha-cypermethrin	-	-	Inclusion: Directive 2004/58/EC	-	Not listed as PAN Bad Actor; GP black list
Amitraz	III	Rotterdam Convention: 1 notification	Non-inclusion: Decision 2004/141/EC	-	PAN Bad Actor; GP black list
Amitrole	U	Rotterdam Convention: 1 notification	Inclusion: Directive 2001/21/EC	-	PAN Bad Actor; GP black list
Ampropylofos	-	-	Non-inclusion: Regulation No 2076/2002	-	Not listed as PAN Bad Actor; GP yellow list
Atrazine	U	Rotterdam Convention: 1 notification	Non-inclusion: Decision 2004/248/EC; PHS under Decision No 2455/2001	M&S banned	PAN Bad Actor; GP black list
Azamethiphos	III	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP black list
Azinphos-ethyl	IB	Rotterdam Convention: 1 notification	Non-inclusion: Decision 95/643/EC	-	PAN Bad Actor; GP black list
Azinphos-methyl	IB	Rotterdam Convention: 1 notification	Non-inclusion: Regulation 1355/2005	M&S permission	PAN Bad Actor; GP black list
Barban	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	Not listed as PAN Bad Actor
Benalaxyl	U	-	Inclusion: Directive 2004/58/EC	-	Not listed as PAN Bad Actor; GP grey list
Bendiocarb	II	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP black list
Benfuracarb	II	-	Non-inclusion: Decision	-	PAN Bad Actor

			2007/615/EC		
Benomyl	U	Rotterdam Convention: listed as hazardous pesticide formulation	Non-inclusion: Decision 2002/928/EC, essential use 835/2004	Co-op permission	PAN Bad Actor; GP black list
Bentazone	III	Rotterdam Convention: 1 notification	Inclusion: Directive 2000/68/EC	-	Not listed as PAN Bad Actor; GP grey list
Beta-cyfluthrin	-	-	Inclusion: Directive 2003/31/EC	-	Not listed as PAN Bad Actor; GP black list
Binapacryl	Obsolete as pesticide, not classified	Rotterdam Convention: Annex III	Prohibition: Directive 90/533/EEC	M&S banned; GlobalGAP banned	PAN Bad Actor
Bromocyclen	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	Not listed as PAN Bad Actor
Bromophos	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor
Bromophos-ethyl	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor
Bromoxynil	II	Rotterdam Convention: 1 notification	Inclusion: Directive 2004/58/EC	M&S banned	PAN Bad Actor; GP black list
Bronopol	II	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP grey list
Butocarboxim	IB	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP black list
Butoxycarbozim	IB	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP yellow list
Cadusaphos	IB	-	Non-inclusion: Decision 2007/428/EC	Co-op banned	PAN Bad Actor; GP black list
Campechlor → Toxaphene					
Captafol	IA	Rotterdam Convention:	Prohibition: Directive	M&S banned; Co-	PAN Bad Actor

		Annex III	90/533/EEC	op banned; GlobalGAP banned	
Captan	U	-	Inclusion: Directive 2007/5/EC	Co-op permission	PAN Bad Actor; GP grey list
Carbaryl	II	Rotterdam Convention: 2 notifications, 1 accepted	Non-inclusion: Decision 2007/355/EC	M&S permission	PAN Bad Actor; GP black list
Carbendazim	U	-	Inclusion: Directive 2006/135/EC	Co-op permission	Not listed as PAN Bad Actor; GP black list
Carbophenothion	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP grey list
Carbofuran	IB	Rotterdam Convention: listed as hazardous pesticide formulation	Non-inclusion: Decision 2007/416/EC	M&S permission	PAN Bad Actor; GP black list
Carbosulfan	II	-	Non-inclusion: Decision 2007/415/EC	-	PAN Bad Actor; GP black list
Chloral-bis-acylal	-	-	Non-inclusion: Regulation No 2076/2002	-	Not listed as PAN Bad Actor
Chloral-semi-acetal	-	-	Non-inclusion: Regulation No 2076/2002	-	Not listed as PAN Bad Actor
Chlordane	II	Rotterdam Convention: Annex III; Stockholm Convention: Annex A	Prohibition: Directive 79/117/EEC and Regulation No 850/2004	M&S banned; Co-op banned; GlobalGAP banned	PAN Dirty Dozen; PAN Bad Actor
Chlordecone	Obsolete as pesticide, not classified	Rotterdam Convention: 2 notifications, none accepted; Stockholm Convention: nomination by the EU	Not regulated	M&S banned; Co-op banned	PAN Bad Actor; WWF candidate POPs list
Chlordimeform	Obsolete as pesticide, not classified	Rotterdam Convention: Annex III	Regulation No 304/2003	M&S banned; Co-op permission	PAN Dirty Dozen; PAN Bad Actor

Chlorfenprop	-	Rotterdam Convention: 1 notification	Non-inclusion: Regulation No 2076/2002	-	Not listed as PAN Bad Actor
Chlorfenvinphos	IB	-	Non-inclusion: Regulation No 2076/2002; essential use: Regulation No 835/2004; PS under Decision No 2455/2001	M&S banned; Co-op banned	PAN Bad Actor; GP black list
Chlormephos	IA	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP black list
Chlorobenzilate	Obsolete as pesticide, not classified	Rotterdam Convention: Annex III	Non-inclusion: Regulation No 2076/2002	M&S banned	PAN Dirty Dozen; PAN Bad Actor
Chlorotalonil	U	-	Inclusion: Directive 2005/53/EC	Co-op permission	GP black list
Chlorotoluron	U	-	Inclusion: Directive 2005/53/EC	-	Not listed as PAN Bad Actor
Chloroxuron	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	Not listed as PAN Bad Actor
Chlorpropham	U	-	Inclusion: Directive 2004/20/EC	-	Not listed as PAN Bad Actor; GP grey list
Chlorpyrifos	II	-	Inclusion: Directive 2005/72/EC; PHS under Decision No 2455/2001	-	PAN Bad Actor; GP black list
Chlorpyrifos-methyl	U	-	Inclusion: Directive 2005/72/EC	-	PAN Bad Actor; GP black list
Chlorthiophos	Obsolete as pesticide, not classified	Rotterdam Convention: 1 notification	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor
Chlozolate	U	Rotterdam Convention: 1 notification	Non-inclusion: Decision 2000/626/EC	-	Not listed as PAN Bad Actor; GP grey list
Clodinafop	-	-	Inclusion: Directive 2006/39/EC	-	Not listed as PAN Bad Actor;

					GP black list
Clopyralid	U	-	Inclusion: Directive 2006/64/EC (OJ L206, 27.07.2006)	-	PAN Bad Actor; GP grey list
Cyanazine	II	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor
Cyfluthrin	II	-	Inclusion: Directive 2003/31/EC	-	Not listed as PAN Bad Actor; GP black list
Cyhalothrin	II	-	Non-inclusion: Decision 94/643/EC	-	Not listed as PAN Bad Actor; GP black list
Cypermethrin	II	-	Inclusion: Directive 2005/53/EC	-	Not listed as PAN Bad Actor; GP grey list
Cyprodinil	-	-	Inclusion: Directive 2006/64/EC	-	Not listed as PAN Bad Actor; GP grey list
DADZ → Zinc-dimethyldithiocarbamate					
Daminozide	U	-	Inclusion: Directive 2005/53/EC	Co-op permission	PAN Bad Actor
DBCP → Dibromochloro-propane					
DDT → Dichlorodiphenyl-trichloroethane					
Deltamethrin	II	-	Inclusion: Directive 2003/5/EC	-	Not listed as PAN Bad Actor; GP black list
Demeton-S-methyl	IB	Rotterdam Convention: 1 notification	Non-inclusion: Regulation No 2076/2002	M&S banned; Co-op banned	PAN Bad Actor; GP grey list
Demeton-S-methyl sulphone	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor
Desmedipham	U	-	Inclusion: Direc-	-	Not listed

			tive 2004/58/EC		as PAN Bad Actor; GP grey list
Di-allate	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor
Dialifos	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor
Diazinon	II	-	Non-inclusion: Decision 2007/393/EC	M&S permission	PAN Bad Actor; GP black list
Dibromochloropropane (DBCP)	Obsolete as pesticide, not classified	Rotterdam Convention: 2 notifications	Not regulated	-	PAN Dirty Dozen; PAN Bad Actor
Dichlofenthion	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor
Dichloro-diphenyl-trichloroethane (DDT)	II	Rotterdam Convention: Annex III; Stockholm Convention: Annex B – severely restricted	Prohibition: Directive 79/117/EEC; Regulation No 850/2004; EQS part B	M&S banned; Co-op banned; GlobalGAP banned	PAN Dirty Dozen; PAN Bad Actor
Dichlorprop	III	-	Non-inclusion: Regulation No 2002/2076	-	PAN Bad Actor; GP black list
Dichlorprop-P	-	-	Inclusion: Directive 2006/74/EC	-	PAN Bad Actor; GP grey list
Dichlorvos (DDVP)	IB	-	Non-inclusion: Decision 2007/387/EC	M&S permission	PAN Bad Actor; GP black list
Dicrotophos	IB	Rotterdam Convention: 1 notification	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP black list
Dieldrin	Obsolete as pesticide, not classified	Rotterdam Convention: Annex III; Stockholm: Annex A	Prohibition: Directive 79/117/EEC; Regulation No 850/2004; EQS part B	M&S banned; Co-op banned; GlobalGAP banned	PAN Dirty Dozen; PAN Bad Actor
Difenoxuron	Obsolete as pesticide, not	-	Non-inclusion: Regulation No 2076/2002	-	Not listed as PAN Bad Actor



	classified				
Dimefox	Obsolete as pesticide, not classified	Rotterdam Convention: 2 notifications	Non-inclusion: Regulation No 2076/2002	-	Not listed as PAN Bad Actor
Dimethenamid	-	-	Non-inclusion: Decision 2006/1009/EC	-	Not listed as PAN Bad Actor; GP grey list
Dimethoate	II	-	Inclusion: Directive 2007/25/EC	M&S permission	PAN Bad Actor; GP black list
Dimethomorph	U	-	Inclusion: Directive 2007/25/EC	-	Not listed as PAN Bad Actor; GP grey list
Dinocap	III	-	Inclusion: Directive 2006/136/EC	-	PAN Bad Actor; GP black list
Dinoseb	Obsolete as pesticide, not classified	Rotterdam Convention: Annex III	Prohibition: Directive 90/533/EEC	M&S banned; GlobalGAP banned	PAN Bad Actor
Dinoterb	IB	Rotterdam Convention: 3 notifications	Non-inclusion: Decision 98/269/EC	M&S banned	PAN Bad Actor; GP black list
Dioxacarb	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor
Dioxathion	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor
Diquat	II	-	Inclusion: Directive 2001/21/EC	-	Not listed as PAN Bad Actor
Disulfoton	IA	Rotterdam Convention: 1 notification	Non-inclusion: Regulation No 2076/2002	M&S banned; Co-op permission	PAN Bad Actor; GP black list
Ditalimfos	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor
Diuron	U	-	Non-inclusion: Decision 2007/417/EC; PHS under Decision No		PAN Bad Actor; GP black list

			2455/2001		
DNOC	IB	Rotterdam Convention: Annex III	Non-inclusion: Decision 99/164/EC	M&S banned	PAN Bad Actor; GP black list
EDB → ethylene dibromide					
EDC → ethylene dichloride					
Endosulfan	II	Rotterdam Convention: CRC recommendation for inclusion in Annex III	Non-inclusion: Decision 2005/864/EC; PHS under Decision No 2455/2001	M&S permission; Co-op permission	PAN Bad Actor; WWF candidate POPs list; GP black list
Endrin	Obsolete as pesticide, not classified	Rotterdam Convention: 8 notifications, none accepted; Stockholm Convention: Annex A	Prohibition: Directive 79/117/EEC and Regulation No 850/2004; Export ban: Regulation No 304/2003; EQS part B	M&S banned; Co-op banned; GlobalGAP banned	PAN Dirty Dozen; PAN Bad Actor
Esfenvalerate	II	-	Inclusion: Directive 2000/67/EC	-	Not listed as PAN Bad Actor; GP black list
Ethephon	U	-	Inclusion: Directive 2006/85/EC	-	PAN Bad Actor; GP black list
Ethiofencarb	IB	-	Non-inclusion: Regulation No 2076/2002	M&S banned	PAN Bad Actor; GP grey list
Ethion	II	-	Restricted use: Regulation No 2076/2002; essential use	-	PAN Bad Actor; GP black list
Ethoate-methyl	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor
Ethofumesate	U	-	Inclusion: Directive 2002/37/EC	-	Not listed as PAN Bad Actor; GP grey list
Ethoprophos	IA	-	Inclusion: Directive 2007/52/EC	Co-op banned	PAN Bad Actor; GP black list
Ethylene dibromide	Fumigant,	Rotterdam	Prohibition: Di-	M&S	PAN Dirty

(EDB)	not classified	Convention: Annex III	Directive 87/181/EEC	banned; GlobalGAP banned	Dozen; PAN Bad Actor
Ethylene dichloride (EDC)	Fumigant, not classified	Rotterdam Convention: Annex III	Prohibition: Directive 87/181/EEC	M&S banned; GlobalGAP banned	PAN Bad Actor
Ethylene oxide	Fumigant, not classified	Rotterdam Convention: Annex III	Prohibition: Directive 86/355/EEC	M&S banned; GlobalGAP banned	PAN Bad Actor
Etrimfos	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	M&S banned	PAN Bad Actor
Fenamiphos	IB	-	Inclusion: Directive 2006/85/EC	Co-op banned	PAN Bad Actor; GP black list
Fenarimol	U	-	Inclusion: Directive 2006/134/EC	-	Not listed as PAN Bad Actor; GP black list
Fenitrothion	II	-	Non-inclusion: Decision 2007/379/EC	M&S permission	PAN Bad Actor; GP black list
Fenthion	II	Rotterdam Convention: 1 notification	Non-inclusion: Decision 2004/140/EC	-	PAN Bad Actor; GP black list
Fentin acetate	II	Rotterdam Convention: 1 notification	Non-inclusion: Decision 2002/478/EC	M&S banned; Co-op permission	Not listed as PAN Bad Actor
Fentin hydroxide	II	Rotterdam Convention: 1 notification	Non-inclusion: Decision 2002/479/EC	Co-op permission	PAN Bad Actor
Fenvalerate	II	-	Non-inclusion: Decision 98/270/EC	-	Not listed as PAN Bad Actor; GP black list
Ferbam	U	-	Non-inclusion: Decision 95/276/EC	Co-op permission	Not listed as PAN Bad Actor; GP grey list
Fipronil	II	-	Inclusion: Directive 2007/52/EC	-	Not listed as PAN Bad Actor; GP black list
Fluorodifen	Obsolete	-	Non-inclusion:	-	Not listed

	as pesti- cide, not classified		Regulation No 2076/2002		as PAN Bad Actor
Fluroxypyr	U	-	Inclusion: Direc- tive 2000/10/EC	-	Not listed as PAN Bad Actor; GP grey list
Flusilazole	III	-	Inclusion: Direc- tive 2006/133/EC; suspended ECJ	-	Not listed as PAN Bad Actor; GP black list
Folpet	U	Rotterdam Convention: 1 notification	Inclusion: Direc- tive 2007/5/EC	-	PAN Bad Actor; GP black list
Fonofos	Obsolete as pesti- cide, not classified	Rotterdam Convention: 1 notification	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP grey list
Formetanate	IB	-	Inclusion: Direc- tive 2007/5/EC	-	PAN Bad Actor; GP black list
Formothion	Obsolete as pesti- cide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP grey list
Fosetyl	U	-	Inclusion: Direc- tive 2006/64/EC	-	Not listed as PAN Bad Actor; GP grey list
Furathiocarb	IB	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP black list
Furfural	-	Rotterdam Convention: 1 notification	Non-inclusion: Regulation No 2076/2002	-	Not listed as PAN Bad Actor; GP grey list
Glufosinate	III	-	Inclusion: Direc- tive 2007/25/EC	-	Not listed as PAN Bad Actor; GP black list
Glyphosate	U	-	Inclusion: Direc- tive 2001/99/EC	-	Not listed as PAN Bad Actor; GP grey list
Haloxyfop	II	-	Non-inclusion: Regulation No	-	Not listed as PAN

			2076/2002		Bad Actor; GP grey list
Haloxypop-R	-	-	Non-inclusion: Decision 2007/437/EC	Co-op banned	Not listed as PAN Bad Actor; GP yellow list
HCB → see hexachlorobenzene					
HCH → see hexachlorocyclo-hexane					
Heptachlor	Obsolete as pesticide, not classified	Rotterdam Convention: Annex III; Stockholm Convention: Annex A	Prohibition: Directive 79/117/EEC and Regulation No 850/2004	M&S banned; Co-op banned; GlobalGAP banned	PAN Dirty Dozen; PAN Bad Actor
Heptenophos	IB	-	Non-inclusion: Regulation No 2076/2002	M&S banned	PAN Bad Actor; GP grey list
Hexachlorobenzene (HCB)	1A	Rotterdam Convention: Annex III	Prohibition: Directive 79/117/EEC and Regulation No 850/2004; PHS under Decision No 2455/2001	M&S banned; Co-op banned; GlobalGAP banned	PAN Bad Actor
Hexachlorocyclohexane (HCH)	II	Rotterdam Convention: Annex III; Stockholm Convention: nomination by Mexico	Prohibition: Directive 79/117/EEC and Regulation No 850/2004; PHS under Decision No 2455/2001	M&S banned; GlobalGAP banned	PAN Dirty Dozen; PAN Bad Actor; WWF candidate POPs
Imazalil	II	Rotterdam Convention: 1 notification	Inclusion: Directive 97/73/EC	-	PAN Bad Actor; GP black list
Iodofenphos	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor
Ioxynil	II	-	Inclusion: Directive 2004/58/EC	-	Not listed as PAN Bad Actor; GP black list
Iprodione	U	-	Inclusion: Directive 2003/31/EC	-	PAN Bad Actor; GP black list
Isazofos	Obsolete as pesti-	-	Non-inclusion: Regulation No	-	PAN Bad Actor

	cide, not classified		2076/2002		
Isocarbamide	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	Not listed as PAN Bad Actor; GP yellow list
Isofenphos	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP yellow list
Isoproturon	III	-	Inclusion: Directive 2002/18/EC; PHS under Decision No 2455/2001	-	Not listed as PAN Bad Actor; GP grey list
Isoxathion	IB	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP black list
Lambda-cyhalothrin	II	-	Inclusion: Directive 2000/80/EC	-	Not listed as PAN Bad Actor; GP black list
Lindane (gamma-HCH)	II	Rotterdam Convention: Annex III; Stockholm Convention: nominated by Mexico	Non-inclusion: Decision 2000/801/EC; PHS under Decision No 2455/2001	M&S banned; Co-op banned	PAN Dirty Dozen; PAN Bad Actor; GP black list
Linuron	U	Rotterdam Convention: 1 notification	Inclusion: Directive 2003/31/EC	Co-op permission	PAN Bad Actor; GP black list
Malathion	III	-	Non-inclusion: Decision 2007/389/EC	M&S permission	PAN Bad Actor; GP black list
Maleic hydrazide	U	Rotterdam Convention: 1 notification	Inclusion: Directive 2003/31/EC	-	Not listed as PAN Bad Actor
Mancozeb	U	-	Inclusion: Directive 2005/72/EC	Co-op permission	PAN Bad Actor; GP black list
Maneb	U	-	Inclusion: Directive 2005/72/EC	M&S permission; Coop permission	PAN Bad Actor; GP black list
MCP → see 1-methylcyclopropene (MCP)					
MCPA	III	Rotterdam Convention: 1	Inclusion: Directive 2005/57/EC	-	PAN Bad Actor; GP

		notification			grey list
MCPB	III	Rotterdam Convention: 1 notification	Inclusion: Directive 2005/57/EC	-	Not listed as PAN Bad Actor; GP black list
Mecarbam	IB	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP grey list
Mecoprop	III	-	Inclusion: Directive 2003/70/EC	-	Not listed as PAN Bad Actor; GP grey list
Mecoprop-P	III	Rotterdam Convention: 1 notification	Inclusion: Directive 2003/70/EC	-	PAN Bad Actor; GP yellow list
Mephospholan	Obsolete as pesticide, not classified	Rotterdam Convention: 1 notification	Non-inclusion: Regulation No 2076/2002	M&S banned	PAN Bad Actor
Mercury and its compounds	IA, IB & II	Rotterdam Convention: Annex III	Prohibition: Directive 79/117/EEC; PHS under Decision No 2455/2001	M&S banned; Co-op permission; GlobalGAP banned	PAN Bad Actor; GP black list
Metalaxyl	III	-	Non-inclusion: Decision 2003/308/EC; annulled by ECJ	Co-op permission	Not listed as PAN Bad Actor; GP black list
Metconazole	III	-	Inclusion: Directive 2006/74/EC	-	Not listed as PAN Bad Actor; GP black list
Methamidophos	IB	Rotterdam Convention: listed as hazardous pesticide formulation; 7 notifications of substance, none accepted	Inclusion: Directive 2006/131/EC	M&S banned	PAN Bad Actor; GP black list
Methidathion	IB	-	Non-inclusion: Decision 2004/129/EC; essential use: Regulation 835/2004	-	PAN Bad Actor; GP black list

Methiocarb	IB	-	Inclusion: Directive 2007/5/EC	-	PAN Bad Actor; GP black list
Methomyl	IB	-	Non-inclusion: Decision 2007/629/EC	M&S permission	PAN Bad Actor; GP black list
Methoxychlor	U	-	Non-inclusion: Regulation No 2076/2002	Co-op permission	Not listed as PAN Bad Actor; WWF candidate POPs list; GP black list
Methyl parathion → Parathion-methyl					
Metiram	U	-	Inclusion: Directive 2005/72/EC	Co-op permission	PAN Bad Actor; GP black list
Metolachlor	III	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP grey list
Metribuzin	II	-	Inclusion: Directive 2007/25/EC	-	PAN Bad Actor; GP black list
Metsulfuron-methyl	U	-	Inclusion: Directive 2000/49/EC	-	Not listed as PAN Bad Actor; GP grey list
Mevinphos	IA	Rotterdam Convention: 2 notifications	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP black list
Molinate	II	-	Inclusion: Directive 2003/81/EC	-	PAN Bad Actor; GP black list
Monocrotophos	IB	Rotterdam Convention: Annex III	Non-inclusion: Regulation No 2076/2002	M&S banned	PAN Bad Actor; GP black list
Monolinuron	U	-	Non-inclusion: Decision 2000/234/EC	-	Not listed as PAN Bad Actor; GP grey list
Naled	II	-	Non-inclusion: 2005/788	-	PAN Bad Actor; GP black list
Naphtylacetic acid hydrazide	-	-	Non-inclusion: Regulation No 2076/2002	-	-
Nitrofen	Obsolete as pesti-	Rotterdam Convention: 2	Prohibition: Directive	M&S banned;	PAN Bad Actor; GP



	cide, not classified	notifications	87/181/EEC	GlobalGAP banned	yellow list
Noruron	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	Not listed as PAN Bad Actor; GP yellow list
Omethoate	1B	-	Non-inclusion: Regulation No 2076/2002	Co-op banned	PAN Bad Actor; GP black list
Oxamyl	1B	-	Inclusion: Directive 2006/16/EC	-	PAN Bad Actor; GP black list
Oxydemeton-methyl	1B	-	Non-inclusion: Decision 2007/392/EC	-	PAN Bad Actor; GP black list
P-chloronitrobenzene	-	-	Non-inclusion: Regulation No 2076/2002	-	-
Paraquat	II	Rotterdam Convention: 1 notification	Inclusion: Directive 2003/112/EC; annulled by ECJ	-	PAN Dirty Dozen; PAN Bad Actor; GP black list
Parathion(-ethyl)	IA	Rotterdam Convention: Annex III	Non-inclusion: Decision 2001/520/EC	M&S banned	PAN Dirty Dozen; PAN Bad Actor; GP black list
Parathion-methyl	IA	Rotterdam Convention: listed as hazardous pesticide formulation; 12 notifications of substance, 1 accepted	Non-inclusion: Decision 2003/166/EC	M&S permission	PAN Dirty Dozen; PAN Bad Actor; GP black list
PCP → see pentachlorophenol					
Pendimethalin	III	-	Inclusion: Directive 2003/31/EC	-	Not listed as PAN Bad Actor; GP black list
Pentachlorophenol (PCP)	1B	Rotterdam Convention: Annex III	Non-inclusion: Regulation No 2076/2002; PHS under Decision No 2455/2001	M&S banned	PAN Dirty Dozen; PAN Bad Actor; WWF candidate POPs list;

					GP black list
Permethrin	II	-	Non-inclusion: Decision 2000/817/EC	M&S permission	Not listed as PAN Bad Actor; GP black list
Phenmedipham	U	-	Inclusion: Directive 2004/58/EC	-	Not listed as PAN Bad Actor; GP grey list
Phorate	IA	Rotterdam Convention: 1 notification	Non-inclusion: Regulation No 2076/2002	Co-op banned	PAN Bad Actor; GP black list
Phosalone	II	-	Non-inclusion: Decision Directive 2006/1010/EC	M&S banned	PAN Bad Actor; GP grey list
Phosmet	II	-	Inclusion: Directive 2007/25/EC	-	PAN Bad Actor; GP black list
Phosphamidon	IA	Rotterdam Convention: listed as hazardous pesticide formulation, 5 notification as substance, none accepted	Non-inclusion: Regulation No 2076/2002	M&S banned; Co-op banned	PAN Bad Actor; GP black list
Pirimicarb	II	-	Inclusion: Directive 2006/39/EC	-	PAN Bad Actor; GP black list
Pirimiphos-ethyl	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor
Pirimiphos-methyl	III	-	Inclusion: Directive 2007/52/EC	-	PAN Bad Actor; GP black list
Procymidone	U	-	Inclusion: Directive 2006/132/EC	-	PAN Bad Actor; GP black list
Profenofos	II	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP black list
Promecarb	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor
Prometryn	U	-	Non-inclusion:	-	PAN Bad

			Regulation No 2076/2002; essential use Regulation No 835/2004		Actor; GP black list
Propamocarb	U	-	Inclusion: Directive 2007/25/EC	-	Not listed as PAN Bad Actor; GP yellow list
Propazine	U	-	Non-inclusion: Regulation No 2076/2002	-	Not listed as PAN Bad Actor; GP black list
Propetamphos	IB	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP grey list
Propham	U	-	Non-inclusion: Decision 96/586/EC	-	Not listed as PAN Bad Actor; GP grey list
Propiconazole	II	-	Inclusion: Directive 2003/70/EC	-	PAN Bad Actor; GP black list
Propineb	U	-	Inclusion: Directive 2003/39/EC	Co-op permission	PAN Bad Actor; GP black list
Propoxur	II	-	Non-inclusion: Regulation No 2076/2002	M&S banned	PAN Bad Actor; GP black list
Propyzamide	U	-	Inclusion: Directive 2003/39/EC	-	PAN Bad Actor; GP black list
Prothiocarb	O	-	Non-inclusion: Regulation No 2076/2002	-	Not listed as PAN Bad Actor
Prothiophos	II	-	Non-inclusion: Regulation No 2076/2002	Co-op banned	PAN Bad Actor; GP yellow list
Prothoate	Obsolete as pesticide, not classified	Rotterdam Convention: 1 notification	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor
Pyraclofos	II	-	Non-inclusion: Regulation No 2076/2002	-	Not listed as PAN Bad Actor; GP yellow list
Pyrazophos	II	Rotterdam Convention: 1	Non-inclusion: Decision	M&S banned	PAN Bad Actor; GP

		notification	2000/233/EC		black list
Pyridafenthion	III	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP black list
Pyridate	III	-	Inclusion: Directive 2001/21/EC	-	Not listed as PAN Bad Actor; GP grey list
Pyrimethanil	U	-	Inclusion: Directive 2006/74/EC	-	Not listed as PAN Bad Actor; GP grey list
Quinalphos	II	-	Non-inclusion: Regulation No 2076/2002	M&S banned	PAN Bad Actor; GP black list
Quintozene (PCNB)	U	Rotterdam Convention: 3 notifications	Prohibition as formulation: Directive 90/533/EEC; Non-inclusion as substance: Decision 2000/816/EC	M&S banned; GlobalGAP banned	Not listed as PAN Bad Actor; GP black list
Rimsulfuron	U	-	Inclusion: Directive 2006/39/EC	-	Not listed as PAN Bad Actor; GP grey list
Simazine	U	Rotterdam Convention: 2 notifications	Non-inclusion: Decision 2004/247/EC; essential use Regulation No 835/2004; PHS under Decision No 2455/2001	M&S permission	PAN Bad Actor; GP black list
Sodium diacetoneketogulonate	-	-	Non-inclusion: Regulation No 2076/2002	-	Not listed as PAN Bad Actor
Sodium dimethyldithiocarbamate	-	-	Non-inclusion: Regulation No 2076/2002	Co-op permission	PAN Bad Actor
Sodium silver thiosulphate	-	-	Restricted use: Regulation No 2076/2002	-	Not listed as PAN Bad Actor
Sulfotep	IA	Rotterdam Convention: 1 notification	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP black list
Sulprofos	Obsolete as pesti-	-	Non-inclusion: Regulation No	-	PAN Bad Actor

	cide, not classified		2076/2002		
Tecnazene	U	Rotterdam Convention: 1 notification	Non-inclusion: Decision 2000/725/EC	M&S banned	Not listed as PAN Bad Actor; GP black list
Temephos	U	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP black list
Terbufos	IA	-	Non-inclusion: Regulation No 2076/2002	Co-op banned	PAN Bad Actor; GP black list
Terbutryn	U	-	Non-inclusion: Regulation No 2076/2002	-	Not listed as PAN Bad Actor; GP black list
Tetrachlorvinphos	U	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP black list
Thiabendazole	U	Rotterdam Convention: 1 notification	Inclusion: Directive 2001/21/EC	-	PAN Bad Actor; GP black list
Thifensulfuron-methyl	U	-	Inclusion: Directive 2001/99/EC	-	Not listed as PAN Bad Actor; GP grey list
Thiodicarb	II	-	Non-inclusion: Decision 2007/366/EC	-	PAN Bad Actor; GP black list
Thiofanox	IB	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP black list
Thiometon	IB	-	Non-inclusion: Regulation No 2076/2002	M&S banned	PAN Bad Actor; GP black list
Thionazin	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor
Thiophanate-methyl	U	-	Inclusion: Directive 2005/53/EC	Co-op permission	PAN Bad Actor; GP black list
Thiram	III	Rotterdam Convention: listed as hazardous pesticide formulation	Inclusion: Directive 2003/81/EC	Co-op permission	PAN Bad Actor; GP black list
Tolclofos-methyl	U	-	Inclusion: Direc-	-	PAN Bad

			tive 2006/39/EC		Actor; GP black list
Tolyfluanid	U	-	Inclusion: Directive 2006/6/EC	-	PAN Bad Actor; GP black list
Toxaphene (camphchlor)	Obsolete as pesticide, not classified	Rotterdam Convention: Annex III, Stockholm Convention: Annex A	Prohibition: Directive 83/131/EEC	M&S banned; Co-op permission; GlobalGAP banned	PAN Dirty Dozen; PAN Bad Actor
Triasulfuron	U	-	Inclusion: Directive 2000/66/EC	-	Not listed as PAN Bad Actor; GP grey list
Triazamate	II	-	Non-inclusion: Regulation No 2076/2002	-	Not listed as PAN Bad Actor; GP grey list
Triazophos	IB	-	Restricted use: Regulation No 2076/2002; essential use	-	PAN Bad Actor; GP black list
Tribenuron	U	-	Inclusion: Directive 2005/54/EC	-	Not listed as PAN Bad Actor; GP grey list
Trichlorfon	II	-	Non-inclusion: Decision 2007/356/EC	M&S banned	PAN Bad Actor; GP black list
Trichloronate	Obsolete as pesticide, not classified	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor
Triclopyr	III	-	Inclusion: Directive 2006/74/EC	-	Not listed as PAN Bad Actor; GP yellow list
Trifluralin	U	-	Non-inclusion: Decision 2007/629; PHS under Decision No 2455/2001	-	Not listed as PAN Bad Actor; GP black list
Trinexapac	-	-	Inclusion: Directive 2006/64/EC	-	Not listed as PAN Bad Actor; GP yellow list

Triticonazole	U	-	Inclusion: Directive 2006/39/EC	-	Not listed as PAN Bad Actor; GP black list
Vamidothion	IB	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor; GP black list
Vinclozolin	U	Rotterdam Convention: 2 notifications	Non-inclusion: Regulation No 1355/2005	M&S permission; Co-op permission	PAN Bad Actor; GP black list
Warfarin	IB	-	Inclusion: Directive 2006/5/EC	-	PAN Bad Actor; GP black list
Zinc-dimethyl-dithiocarbamate (DADZ)	-	-	Non-inclusion: Regulation No 2076/2002	-	PAN Bad Actor
Zineb	U	Rotterdam Convention: 1 notification	Non-inclusion: Decision 2001/245/EC)	Co-op permission	PAN Bad Actor; GP black list
Ziram	III	-	Inclusion: Directive 2003/81/EC	Co-op permission	PAN Bad Actor; GP black list

