



The International Code of Conduct on Pesticide Management



Food and Agriculture
Organization of the
United Nations



World Health
Organization

The International Code of Conduct on Pesticide Management

IOMC

INTER-ORGANIZATION PROGRAMME FOR THE SOUND MANAGEMENT OF CHEMICALS
A cooperative agreement among FAO, ILO, UNEP, UNIDO, UNITAR, WHO, World Bank and OECD

**World Health Organization
Food and Agriculture Organization of the United Nations
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Contents

Foreword by the FAO Director-General José Graziano da Silva	v		
Foreword by the WHO Director-General Margaret Chan	vii		
Article 1	Objectives of the Code	1	
Article 2	Terms and definitions	3	
Article 3	Pesticide management	8	
Article 4	Testing of pesticides	11	
Article 5	Reducing health and environmental risks	13	
Article 6	Regulatory and technical requirements	16	
Article 7	Availability and use	19	
Article 8	Distribution and trade	20	
Article 9	Information exchange	22	
Article 10	Labelling, packaging, storage and disposal	24	
Article 11	Advertising	26	
Article 12	Monitoring and Observance of the Code	28	
Annex 1	International instruments in the field of chemical management, environmental and health protection, sustainable development and international trade, relevant to the Code	31	
	References		33
	Notes		39

Foreword by the FAO Director-General

José Graziano da Silva

This is the fourth version of the *International Code of Conduct on Pesticide Management* that FAO's governing bodies have approved since 1985. It provides a framework that guides government regulators, the private sector, civil society and other stakeholders on best practice in managing pesticides throughout their lifecycle. Its overall structure remains unchanged and covers every aspect of pesticide management from production to disposal.

This version, approved by the 38th FAO Conference in June 2013, incorporates public health pesticides and vector control to broaden the scope of the Code of Conduct beyond agricultural pesticides. It gives greater attention to health and environmental aspects of pesticides, updates a number of definitions and terms and aligns guidance in several technical areas with developments in international chemicals management.

The new Code comes at a time when greater attention is being focused on increasing food production while conserv-

ing and enhancing the natural resources on which that production depends. Healthy ecosystems produce more, prevent or maintain pests and diseases at acceptable levels and are more resilient to shocks. The new strategic framework for FAO has been reoriented to support sustainable agricultural production as one of its strategic objectives. This new Code is an integral component of this objective. In the area of pest and disease management this means using Integrated Pest Management (IPM), which has successfully reduced pesticide use and improved yields, food quality and incomes for millions of farmers.

Providing farmers with access to local supplies of well adapted and good quality seeds and planting material helps to prevent the spread of pests and diseases. Protecting soils and attending to nutrient and water availability to crops produces healthier plants that are more resilient to pest and disease attacks. Such holistic approaches, as embodied in the FAO publication *Save and Grow*¹, help to reduce reliance on pesticides and other ex-

ternal inputs with ensuing economic, health and environmental benefits for farmers and consumers.

The International Code of Conduct on Pesticide Management is a voluntary framework that has been endorsed by the FAO Members, and supported by key pesticide industry associations and civil society organizations. It complements legally binding instruments such as the *Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade*, the *Stockholm Convention on Persistent Organic Pollutants* and the *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal*, and voluntary mechanisms such as the *Strategic Approach to International Chemicals Management (SAICM)*.

Pesticides are an important group of chemicals that need careful management. I encourage all those who have dealings with pest management and pesticides to use this document as a guiding reference in designing their policies, legislative texts and technical approaches. Our partnership with WHO and UNEP and our close collaboration with the private sector and civil society further strengthen the relevance and broad endorsement of work in this area.

I hope that through effective implementation of this new *International Code of Conduct on Pesticide Management* we can achieve significant reduction of risks to health and the environment from pesticides, while improving the productivity, sustainability and livelihoods of farmers everywhere.



José Graziano da Silva

Director-General of the Food and Agriculture
Organization of the United Nations

¹ Save and Grow, FAO, 2011

Foreword by the WHO Director-General

Margaret Chan

The 134th WHO Executive Board has taken note of the *International Code of Conduct on Pesticide Management*. The Code of Conduct provides voluntary standards of conduct for all entities engaged in or associated with the management of pesticides throughout their life-cycle, from production to disposal.

The main objective of the Code of Conduct is to maximize the benefits of pesticides to effectively control pests in public health and agriculture, while protecting human and animal health and the environment from their harmful effects.

The Code of Conduct is designed for use within national legislation. It describes the shared responsibility of many sectors; addresses the need for a cooperative effort; recognizes the need for capacity-strengthening for its implementation; and describes the standards of conduct for pesticide management, complementing the legally binding instruments on chemicals management.

Originally developed by FAO in 1985, the current version of the Code of Conduct,

approved by the 38th FAO Conference in June 2013, was developed through the FAO/WHO joint collaboration on pesticide management, and incorporates public health pesticides and vector control to broaden its scope beyond agricultural pesticides. Of relevance to public health, the Code now focuses on risk reduction by calling on countries to identify and, if necessary, remove from use, highly hazardous pesticides; gives attention to vulnerable groups such as children, women and people affected by HIV/AIDS, emphasizes minimizing the use of pesticides, and strongly recommends the use of integrated vector management for control of vector-borne diseases.

The Code of Conduct will serve as a guiding framework to strengthen the capacity of developing Member States to regulate, evaluate and enforce effective control over pesticides, including those used in public health, that are traded and used in their territories.

WHO urges countries and other stakeholders to collaborate and exchange in-

formation and experiences to overcome resource constraints and to build needed capacity. FAO and WHO, as the two partner organizations, will further strengthen efforts to work closely with

other United Nations partners, the private sector and civil society to raise awareness and build capacity for effective implementation of the Code of Conduct in developing countries.



Margaret Chan

Director-General of the World Health Organization

Article 1

Objectives of the Code

- 1.1** The objectives of this Code are to establish voluntary standards of conduct for all public and private entities engaged in or associated with the management of pesticides, particularly where there is inadequate or no national legislation to regulate pesticides.
- 1.2** The entities which are addressed by this Code include governments, international organizations, pesticide industry, application equipment industry, traders of pesticides, pest control operators (PCOs), food industry and other industries that use or have an interest in pesticides, pesticide users, and public-interest groups such as environmental groups, consumer groups and trade unions.
- 1.3** The Code is designed for use within the context of national legislation as a basis whereby relevant entities addressed by the Code may determine whether their proposed actions and/or the actions of others constitute acceptable practices.
- 1.4** The Code describes the shared responsibility of many sectors of society to work together so that the benefits to be derived from the necessary and acceptable use of pesticides are achieved without significant adverse effects on human and animal health and/or the environment. To this end, all references in this Code to a government or governments shall be deemed to apply equally to regional groupings of governments for matters falling within their areas of competence.
- 1.5** The Code addresses the need for a cooperative effort between governments of pesticide exporting and importing countries to promote practices that minimize potential health and environmental risks associated with pesticides, while ensuring their effective use.
- 1.6** The Code recognizes that relevant training at all appropriate levels is

an essential requirement in implementing and observing its provisions. Therefore, entities addressed by the Code should give high priority to relevant training and capacity building activities related to each Article of the Code.

1.7 The standards of conduct set forth in this Code:

1.7.1 encourage responsible and generally accepted trade practices;

1.7.2 assist countries which have not yet established regulatory controls on the quality and suitability of pesticide products needed in that country to promote the judicious and efficient use of such products and address the potential risks associated with their use;

1.7.3 promote practices which reduce risks throughout the lifecycle of pesticides, with the aim of minimizing adverse effects on humans, animals and the environment and preventing accidental poisoning resulting from handling, storage, transport, use or disposal, as well as from the presence of pesticide residues in food and feed;

1.7.4 ensure that pesticides are used effectively and efficiently and in a manner that contributes to the sustainable improvement of agriculture, public and animal health and the environment;

1.7.5 adopt the "life-cycle" approach to management of pesticides to address all major aspects related to

the development, registration, production, trade, packaging, labelling, distribution, storage, transport, handling, application, use, disposal and monitoring of pesticides and pesticide residues as well as management of pesticide waste and pesticide containers;

1.7.6 are designed to promote Integrated Pest Management (IPM) and Integrated Vector Management (IVM);

1.7.7 promote participation in information exchange and international agreements identified in Annex 1, in particular the Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides in International Trade⁽¹⁾.

¹ Numbers in brackets throughout the text refer to the references listed at the end of this document.

Article 2

Terms and definitions

For the purpose of this Code:

Active ingredient means the part of the product that provides the pesticidal action.

Advertising means the promotion of the sale and use of pesticides by printed and electronic media, signs, displays, gifts, demonstration or word of mouth.

Application equipment means any technical aid, equipment, implement or machinery which is used for the application of pesticides.

Application technology means the actual physical delivery and distribution process of a pesticide to the target organism or to the place where the target organism comes into contact with the pesticide.

Banned pesticide means a pesticide all uses of which have been prohibited by final regulatory action, in order to protect human health or the environment. It includes a pesticide that has been refused

approval for first-time use, or has been withdrawn by industry either from the domestic market or from further consideration in the domestic approval process, and where there is clear evidence that such action has been taken in order to protect human health or the environment.

Co-formulant means a non-active ingredient component of a formulated product.

Container means any object used to hold a pesticide product.

Disposal means any operation to recycle, neutralize, destroy or isolate pesticide waste, used containers and contaminated materials.

Distribution means the process by which pesticides are supplied through trade channels to local or international markets.

Environment means surroundings, including water, air, soil and their interrela-

tionship as well as all relationships between them and any living organisms.

Equivalence means the determination of the similarity of the impurity and toxicological profile, as well as of the physical and chemical properties, presented by supposedly similar technical material originating from different manufacturers, in order to assess whether they present similar levels of risk.

Extension service means the entities in a country which are responsible for the transfer of information, technology advice and training regarding the improvement of agricultural practices, including production, handling, storage and marketing of agricultural commodities.

Formulation means the combination of various ingredients designed to render the product useful and effective for the purpose claimed and for the envisaged mode of application.

Good Agricultural Practice (GAP) in the use of pesticides includes the officially recommended or nationally authorized uses of pesticides under actual conditions necessary for effective and reliable pest control. It encompasses a range of levels of pesticide applications up to the highest authorized use, applied in a manner which leaves a residue which is the smallest amount practicable.

Hazard means the inherent property of a substance, agent or situation having the

potential to cause undesirable consequences (e.g. properties that can cause adverse effects or damage to health, the environment or property).

Highly Hazardous Pesticides means pesticides that are acknowledged to present particularly high levels of acute or chronic hazards to health or environment according to internationally accepted classification systems such as WHO or GHS or their listing in relevant binding international agreements or conventions. In addition, pesticides that appear to cause severe or irreversible harm to health or the environment under conditions of use in a country may be considered to be and treated as highly hazardous.

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 and animal health and/or the environment. IPM emphasizes the growth of a healthy crop with the least possible disruption to agro-ecosystems and encourages natural pest control mechanisms.

Integrated Vector Management (IVM) means the rational decision-making process for the optimal use of re-

sources for disease vector control. It aims to improve efficacy, cost-effectiveness, ecological soundness and sustainability of disease vector control interventions for control of vector-borne diseases.

International Organization means a public intergovernmental organization including the UN, UN Specialized Agencies and Programmes, Development Banks, and CGIAR Member Centres, International Scientific Bodies such as IUPAC, CIPAC, SETAC.

Label means the written, printed or graphic matter on, or attached to, the pesticide or the immediate container thereof and also to the outside container or wrapper of the retail package of the pesticide.

Life cycle means all the stages a pesticide might pass through from production to its degradation in the environment after use, or its destruction as an unused product. The life cycle includes manufacture, formulation, packaging, distribution, storage, transport, use and final disposal of a pesticide product and/or its container.

Manufacturer means a corporation or other entity in the public or private sector (including an individual) engaged in the business or function (whether directly or through an agent or entity controlled by or under contract with it) of manufacturing a pesticide active ingre-

redient or preparing its formulation or product.

Marketing means the overall process of product promotion, including advertising, product public relations and information services as well as the distribution and sale on local or international markets.

Maximum Residue Limit (MRL) means the maximum concentration of a residue that is legally permitted or recognized as acceptable in or on a food or agricultural commodity or animal feed-stuff.

Packaging means the container together with the protective wrapping used to carry pesticide products via wholesale or retail distribution to users.

Personal protective equipment means any clothes, materials or devices that provide protection from pesticide exposure during handling and application. In the context of this Code, it includes both specifically designed protective equipment and clothing reserved for pesticide application and handling.

Pest means any species, strain or biotype of plant, animal or pathogenic agent injurious to plants and plant products, materials or environments and includes vectors of parasites or pathogens of human and animal disease and animals causing public health nuisance.

Pest Control Operator (PCO) means any person or company that apply pesticides as a profession.

Pesticide means any substance, or mixture of substances of chemical or biological ingredients intended for repelling, destroying or controlling any pest, or regulating plant growth.

Pesticide management means the regulatory and technical control of all aspects of the pesticide life cycle, including production (manufacture and formulation), authorization, import, distribution, sale, supply, transport, storage, handling, application and disposal of pesticides and their containers to ensure safety and efficacy and to minimize adverse health and environmental effects and human and animal exposure.

Poison means a substance that can cause disturbance of structure or function, leading to illness, injury or death when absorbed in relatively small amounts by human beings, plants or animals.

Poisoning means occurrence of damage or disturbance caused by a poison, and includes intoxication.

Product (or **pesticide product**) means the formulated product (pesticide active ingredient(s) and co-formulants), in the form in which it is packaged and sold.

Product stewardship means the responsible and ethical management of a pesticide product from its discovery through to its ultimate use and beyond.

Public Interest Group means (but is not limited to) scientific association, farmer group, citizens' organization, labour union and non-governmental environmental, consumer and health organization.

Public health uses of pesticides means pesticides that are used in the control of pests of public health significance. They include disease vector control pesticides, household pesticide products, and professional pest control pesticides (used by pest control operators in homes and public areas).

Registration means the process whereby the responsible national government or regional authority approves the sale and use of a pesticide following the evaluation of scientific data aimed at demonstrating that the product is effective for its intended purposes and does not pose an unacceptable risk to human or animal health or the environment under the conditions of use in the country or region.

Repackaging means the transfer of a pesticide from any authorized commercial package into any other, usually smaller, container for subsequent sale.

Residue means any specified substances in or on food, agricultural and other types of commodities or animal feed as well as in environmental media including soil, air and water resulting from the use of a pesticide. The term includes any derivatives of a pesticide, such as conversion products, metabolites, breakdown products, reaction products and impurities considered to be of toxicological or ecotoxicological significance. The term "pesticide residue" includes residues from unknown or unavoidable sources (e.g. environmental contamination) as well as known, authorized uses of the chemical.

Responsible authority means the government agency or agencies responsible for regulating pesticides and more generally for implementing pesticide legislation.

Risk is the probability and severity of an adverse health or environmental effect occurring as a function of a hazard and the likelihood and the extent of exposure to a pesticide.

Severely restricted pesticide means a pesticide virtually all use of which has been prohibited by final regulatory action in order to protect human health or the environment, but for which certain specific uses remain allowed. It includes a pesticide that has, for virtually all use, been refused for approval or been withdrawn by industry either from the mar-

ket or from further consideration in the domestic approval process, and where there is clear evidence that such action has been taken in order to protect human health or the environment.

Specification means the parameters and criteria defining the physical appearance and physical and chemical properties of technical and formulated pesticides linked with hazard and risk profiles.

Tender means a formal request for bids in the procurement of pesticides.

Toxicity means a physiological or biological property which determines the capacity of a chemical to do harm or produce injury to a living organism by other than mechanical means.

Trader means anyone engaged in trade, including export, import and domestic distribution.

Vulnerable groups means persons that include pregnant and nursing women, the unborn, infants and children, the elderly, HIV/AIDS affected people and, when subject to high exposure to pesticides over the long term, workers and residents.

Article 3

Pesticide management

- 3.1** Governments have the overall responsibility for regulating the availability, distribution and use of pesticides in their countries and should ensure the allocation of adequate resources for this mandate⁽²⁾.
- 3.2** Pesticide industry should adhere to the provisions of this Code as a standard for the manufacture, distribution, sale and advertising of pesticides. This is particularly important in those countries that have not yet established or are unable to effectively operate adequate regulatory schemes and advisory services.
- 3.3** Governments, industry and other entities addressed by this Code, should ensure that the requirements of relevant international agreements are followed.
- 3.4** Governments of pesticide exporting countries should, to the extent possible ensure that good trading practices are followed in the export of pesticides, especially with those countries that have not yet established adequate regulatory schemes:
- 3.5** Pesticide industry and traders should observe the following practices in pesticide management. This is particularly important in those countries that have not yet established or are unable to effectively operate adequate regulatory schemes and advisory services.
- 3.5.1** supply only pesticides of adequate quality, packaged and labelled as appropriate for each specific market⁽³⁾;
- 3.5.2** in close cooperation with procurers of pesticides, adhere closely to the provisions of FAO and WHO guidance on procurement and tender procedures^(4, 5);
- 3.5.3** pay special attention to the choice of pesticide formulations and to presentation, packaging and labelling in order to minimize risks to users, the public and the environment;

- 3.5.4** provide, with each package of pesticide, information and instructions in one or more of the official languages of the country and in a form adequate to ensure effective use, and minimize risks to users, the public and the environment;
- 3.5.5** be capable of providing effective technical support, backed up by full product stewardship to end user level, including advice on and implementation of mechanisms for the effective management of unused and obsolete pesticides and empty pesticide containers;
- 3.5.6** retain an active interest in following their products through their entire life-cycle, keeping track of major uses and the occurrence of any problems arising from the use of their products, as a basis for determining the need for changes in labelling, directions for use, packaging, formulation or product availability.
- 3.6** Pesticides whose handling and application require the use of personal protective equipment that is uncomfortable, expensive or not readily available should be avoided, especially in the case of small-scale users and farm workers in hot climates⁽⁶⁾.
- 3.7** All relevant entities addressed by this Code should take coordinated action to produce and disseminate relevant and clear educational materials through all available media to extension services, agricultural and public health advisory services, farmers and farmers' organizations, pest control operators, public health workers and other entities providing advice on pesticide management. Users should be encouraged to seek educational materials and be helped to understand and follow its advice before handling and applying pesticides.
- 3.8** Concerted efforts should be made by governments to develop and promote the use of IPM/IVM. Furthermore, lending institutions, donor agencies and governments should support the development of national IPM/IVM policies and improved IPM/IVM concepts and practices. These should be based on strategies that promote increased participation of farmers, (including women's groups), extension agents and on-farm researchers, communities, and relevant entities from the public health and other sectors.
- 3.9** All stakeholders, including farmers and farmer associations, IPM/IVM researchers, extension agents, crop consultants, food industry, manufacturers of biological and chemical pesticides and application equipment, PCOs, public health workers, environmentalists and representatives of consumer groups and other

public interest groups should play a proactive role in the development and promotion of IPM/IVM.

3.10 Governments, with the support of relevant international and regional organizations, donor agencies and research funds, should encourage and promote research on, and the development of, alternatives to existing pesticides that pose fewer risks such as biological control agents and techniques; non-chemical pesticides and pest control methods; pesticides that are of low risk to human and animal health and the environment, that as far as possible or desirable, are target-specific, and that degrade into innocuous constituent parts or metabolites after use.

3.11 Governments, pesticide industry and the application equipment industry should develop and promote the use of pesticide application methods (7, 8, 9, 10, 11) and equipment (12, 13, 14, 15, 16) that minimize the risks from pesticides to human and animal health and/or the environment and that optimize efficiency and cost-effectiveness, and should conduct periodic practical training in such activities (17). The application equipment industry should also provide users with information on proper maintenance and use of application equipment.

3.12 Governments, pesticide industry and national and international organizations should collaborate to develop and promote strategies to prevent and manage pest resistance to pesticides in order to prolong the useful life of valuable pesticides and reduce the adverse effects of resistance to pesticides. This should include consideration of the impacts of pesticides used in agriculture on resistance development among disease vectors and public health pests⁽¹⁸⁾.

3.13 Governments whose programmes for regulating pesticides are well developed should, to the extent possible, provide technical assistance, including training, to other countries in developing their infrastructure and capacity to manage pesticides throughout their life-cycle.

Article 4

Testing of pesticides

4.1 Pesticide industry should:

- 4.1.1** ensure that each pesticide and pesticide product is adequately and effectively tested by recognized procedures and test methods so as to fully evaluate its inherent physical, chemical or biological properties, efficacy (19, 20), behaviour, fate, hazard and risk (21, 22) with regard to the various anticipated uses and conditions in regions or countries of use;
- 4.1.2** ensure that such tests are conducted in accordance with sound scientific and experimental procedures and the principles of good laboratory and experimental practice (23);
- 4.1.3** make available copies or summaries of the original reports of such tests for assessment by responsible government authorities in all countries where the pesticide is to be offered for sale or use. If translated documents are provided, their accuracy should be certified;
- 4.1.4** ensure that the proposed use, label claims and directions, packages,

safety data sheets, technical literature and advertising truly reflect the outcome of these scientific tests and assessments;

- 4.1.5** provide, at the request of a country, methods for the analysis of any active ingredient, co-formulant or relevant impurity or formulation that they manufacture, and provide the necessary analytical standards;
 - 4.1.6** provide advice and assistance in the training of technical staff involved in the relevant analytical work. Formulators should actively support this effort;
 - 4.1.7** conduct residue trials prior to marketing, at least in accordance with Codex Alimentarius and FAO guidelines on good analytical practice (16) and on crop residue data (17, 18, 19) in order to provide a basis for establishing appropriate maximum residue limits (20).
- 4.2** Each country should possess or have access to facilities to verify and exercise control over the quality of pesticides offered for sale or

export, to establish the quantity of the active ingredient or ingredients and the suitability of their formulation, according to FAO or WHO recommended specifications or national specifications, when available (21). Where a country lacks suitable facilities, access to laboratories in another country should be considered.

4.3 International organizations and other interested bodies should, within available resources, consider assisting in the establishment of analytical laboratories, or strengthening existing laboratories, in pesticide importing countries, either on a national or a regional basis. All such laboratories should be set up in a manner that assures their economic and technical sustainability beyond the scope of assistance provided by international organizations and other interested bodies. These laboratories should adhere to sound scientific procedures and guidelines for good laboratory practice, should possess the necessary expertise and should have adequate analytical equipment and supplies of certified analytical standards, solvents, reagents and appropriate, up-to-date analytical methods.

4.4 Exporting governments and international organizations should play an active role in assisting develop-

ing countries in training personnel and providing guidance on the design and conduct of trials, the interpretation and evaluation of test data, and risk/benefit analysis. They should also promote maximum availability to, and use by developing countries of, appropriate international, regional and national assessments and evaluations of pesticide hazards and risks.

4.5 Pesticide industry and governments should collaborate in post-registration surveillance and conducting monitoring studies to determine the fate of pesticides and their health and environmental effects under operational conditions (31).

Article 5

Reducing health and environmental risks

5.1 Governments should:

- 5.1.1 implement a pesticide policy, and a pesticide registration and control system along the lines set out in Article 6;
- 5.1.2 regularly review the pesticides marketed in their country, their acceptable uses and their availability to each sector of the public, and conduct special reviews when indicated by scientific evidence;
- 5.1.3 carry out health surveillance programmes of those who are occupationally exposed to pesticides and investigate, as well as document, poisoning cases;
- 5.1.4 provide guidance and instructions to health workers, physicians and hospital staff on the diagnosis and treatment of suspected pesticide poisoning as well as on the prevention of exposure and poisoning, and the reporting and recording of incidences;
- 5.1.5 establish national or regional poisoning information and control centres at strategic locations to provide immediate guidance on first aid and

medical treatment, accessible at all times (33);

- 5.1.6 utilize all possible means for collecting reliable data and maintaining statistics on health effects of pesticides and pesticide poisoning incidents, using harmonized tools where available and submit, where appropriate, the Rotterdam Convention Human Health Incident Report Forms on Severely Hazardous Pesticide Formulations (SHPF), to the relevant designated national authority (34). Suitably trained personnel and adequate resources should be made available to ensure the accuracy of information collected;
- 5.1.7 provide extension services, agricultural and public health advisory services, farmers and farmers' organizations, pest control operators, public health workers and other entities providing advice on pest and/or vector management with adequate information about practical IPM/IVM strategies and methods, pesticide risk reduction

measures, as well as the range of all methods available for use, including information on risks, hazards and mitigation measures in case of exposure or accident;

- 5.1.8 with the cooperation of the pesticides industry, limit the availability of pesticides that are sold to the general public through non-specialized outlets, to low hazard products (WHO Class U) or low risk and ready to use products that require no dilution or other preparation, and can be applied with limited need for personal protective equipment;
- 5.1.9 require that pesticides be physically segregated from other merchandise to prevent contamination or mistaken identity and where appropriate require that pesticides are clearly marked as hazardous materials. Every effort should be made to publicize the dangers of storing pesticides and foodstuffs together;
- 5.1.10 utilize all possible means for collecting reliable data, maintaining statistics on environmental contamination and adverse effects, and reporting specific incidents related to pesticides. Where appropriate, governments should submit the Rotterdam Convention Environmental Incidents Reporting Forms on Severely Hazardous Pesticide Formulations (SHPF) to the designated national authority (34). Suitably trained personnel and adequate resources should be made

available to ensure the accuracy of information collected;

- 5.1.11 implement a programme to monitor pesticide residues in food, feed, drinking water, the environment and habitations where pesticides have been applied.
- 5.2 Even where a control scheme is in operation, pesticide industry should:
 - 5.2.1 cooperate in the regular reassessment of the pesticides which are marketed;
 - 5.2.2 provide poison-control centres and medical practitioners with information about pesticide hazards, toxicity of active ingredients and co-formulants and on suitable treatment of pesticide poisoning;
 - 5.2.3 provide users and environmental authorities with information on appropriate remediation measures in case of spills and accidents;
 - 5.2.4 make every reasonable effort to reduce risks posed by pesticides by:
 - 5.2.4.1 making less toxic formulations available;
 - 5.2.4.2 introducing products in ready-to-use packages;
 - 5.2.4.3 developing application methods and equipment that minimize exposure to pesticides;
 - 5.2.4.4 using returnable and refillable containers where effective container collection systems are in place;
 - 5.2.4.5 using containers that are not attractive for subsequent reuse and promoting programmes to discour-

age their reuse, where effective container collection systems are not in place;

5.2.4.6 using containers that are not attractive to or easily opened by children, particularly for domestic use products;

5.2.4.7 using clear and concise labelling.

5.2.5 halt sale and recall products as soon as possible when handling or use pose an unacceptable risk under any use directions or restrictions and notify the government.

5.3 Government and industry should cooperate in further reducing risks by:

5.3.1 promoting the use of personal protective equipment which is suitable for the tasks to be carried out, appropriate to the prevailing climatic conditions and affordable (6);

5.3.2 making provisions for safe storage of pesticides at wholesale, retail, warehouse and farm level (26, 27);

5.3.3 establishing services to collect and safely dispose of used containers and small quantities of left-over pesticides (28);

5.3.4 protecting biodiversity and minimizing adverse effects of pesticides on the environment (water, soil and air) and on non-target organisms;

5.3.5 raising awareness and understanding among pesticide users about the importance and ways of protecting health and the environment

from the possible adverse effects of pesticides.

5.4 Entities addressed by the Code should consider all available facts and should promote responsible information dissemination on pesticides and their uses, risks and alternatives.

5.5 In establishing pesticide production facilities of a suitable standard in developing countries, manufacturers and governments should cooperate to:

5.5.1 adopt engineering standards and operating practices appropriate to the nature of the manufacturing operations and the hazards involved, and ensure the availability of appropriate protective equipment;

5.5.2 take all necessary precautions to protect workers, bystanders, nearby communities and the environment;

5.5.3 ensure the proper siting of manufacturing and formulating plants as well as their stores and adequately monitor and control wastes, emissions and effluents in accordance with national and regional regulations where available, or in accordance with relevant international guidelines;

5.5.4 maintain quality-assurance procedures to ensure compliance with the relevant standards of purity, performance, stability and safety.

Article 6

Regulatory and technical requirements

6.1 Governments should:

- 6.1.1 introduce the necessary policy and legislation for the regulation of pesticides, their marketing and use throughout their life cycle, and make provisions for its effective coordination and enforcement, including the establishment of appropriate educational, advisory, extension and health-care services, using as a basis FAO and WHO guidelines and, where applicable, the provisions of relevant legally binding instruments. In so doing, governments should take full account of factors such as local needs, social and economic conditions, levels of literacy, climatic conditions, availability and affordability of appropriate pesticide application and personal protective equipment;
- 6.1.2 as recommended by the International Partnership for Cooperation on Child Labour in Agriculture² introduce legislation to prevent the use of pesticides by and sale of pesticides to children. The use of

pesticides by children in a work situation should be included in National Hazardous Work Lists for children under ILO Convention No. 182 on the Worst Forms of Child Labour in countries which have ratified it;

- 6.1.3 establish regulatory schemes such as licenses or permits for pest control operators;
- 6.1.4 establish pesticide registration schemes and infrastructures under which each pesticide product is registered before it can be made available for use;

² A partnership of: International Labour Organization (ILO), Food and Agriculture Organization (FAO), International Fund for Agricultural Development (IFAD), International Food Policy Research Institute (IFPRI) of the Consultative Group on International Agricultural Research (CGIAR), International Union of Food, Agricultural, Hotel, Restaurant, Catering, Tobacco and Allied Workers' Associations (IUF).

- 6.1.5** conduct risk evaluations and make risk management decisions based on all relevant available data and information, as part of the pesticide registration process (21, 22);
- 6.1.6** as part of the registration process establish Good Agricultural Practice in line with the definition of GAP in article 2, for each pesticide that is registered for agricultural use;
- 6.1.7** use the principles described in the Manual on Development and Use of FAO and WHO Specifications for Pesticides for determining equivalence of pesticides (27);
- 6.1.8** promote the advantages of, and cooperate with other governments in, the establishment of harmonized (regionally or by groups of countries) pesticide registration requirements, procedures and evaluation criteria, taking into account appropriate, internationally agreed technical guidelines and standards, and where possible incorporate these standards into national or regional legislation (32, 33);
- 6.1.9** Allow for re-evaluation and establish a re-registration procedure to ensure the regular review of pesticides, thus ensuring that prompt and effective measures can be taken if new information or data on the performance or risks indicate that regulatory action is needed;
- 6.1.10** improve regulations in relation to collecting and recording data on import, export, manufacture, formulation, quality and quantity of pesticides;
- 6.1.11** collect and record data on the import, export, manufacture, formulation, quality, quantity and use of pesticides in order to assess the extent of any possible effects on human and animal health and/or the environment, and to monitor trends in pesticide use for economic and other purposes;
- 6.1.12** permit pesticide application equipment and personal protective equipment to be marketed only if they comply with established standards (5, 8, 9);
- 6.1.13** detect and control counterfeiting³ and illegal trade in pesticides through national inter-agency and intergovernmental cooperation and information sharing;
- 6.1.14** Regulate and monitor pesticide residues in food in accordance notably with the recommendations of the Codex Alimentarius. In the absence of Codex standards, national or regional standards should be used. This should be done in a manner that is consistent with WTO requirements and will not lead to technical barriers in trade.

³ As of the time of finalization of the Code of Conduct WHO uses the expression substandard/spurious/false-labelled/falsified/counterfeit with regard to medical products.

6.2 Pesticide industry should:

- 6.2.1** provide an objective assessment together with the necessary supporting data on each product, including sufficient data to support risk assessment and to allow a risk management decision to be made;
- 6.2.2** provide national regulatory authorities with any new or updated information that could change the regulatory status of the pesticide, as soon as it becomes available;
- 6.2.3** ensure that the active ingredient and co-formulants of pesticide products being marketed correspond in identity, quality, purity and composition to the ingredients of the registered pesticide product that have been tested, evaluated and cleared for toxicological and environmental acceptability;
- 6.2.4** ensure that technical grade and formulated pesticide products conform with applicable national standards or FAO recommended specifications for agricultural pesticides, and with WHO recommended specifications for public health pesticides, when available;
- 6.2.5** verify the quality and purity of pesticides offered for sale;
- 6.2.6** when problems with pesticides occur, voluntarily take corrective action and, when requested by governments, help find solutions to difficulties;
- 6.2.7** provide their national governments with clear and concise data on export, import, manufacture, formula-

tion, sales, quality and quantity of pesticides.

- 6.3** Relevant international organizations and bilateral agencies should be encouraged to give high priority to requests for assistance from developing countries which do not yet have the facilities and expertise for pesticide management and control systems.

Article 7

Availability and use

- 7.1** Responsible authorities should give special attention to drafting legislation on the availability and use of pesticides. These should be compatible with existing levels of user training and expertise. The parameters on which decisions on the availability and use of pesticides are based vary widely and should be left to the discretion of each government.
- 7.2** When determining the risk and degree of restriction appropriate to the product, the responsible authority should take into account the type of formulation, method of application and its uses. Governments should, where appropriate, take note of and may consider using the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) or the WHO Recommended Classification of Pesticides by Hazard as the basis for their regulatory measures and associate the hazard class with well-recognized hazard symbols.
- 7.3** Availability of pesticides may be restricted by the responsible authority in different ways, such as not registering a product or, as a condition of registration, restricting the availability to certain groups of users or certain uses in accordance with a national assessment of the hazards involved in the use of the product.
- 7.4** Governments and industry should ensure that all pesticides made available to the general public are packaged and labelled in a manner which is consistent with FAO/WHO or other relevant guidelines on packaging and labelling (3) and with appropriate national or regional regulations.
- 7.5** Prohibition of the importation, distribution, sale and purchase of highly hazardous pesticides may be considered if, based on risk assessment, risk mitigation measures or good marketing practices are insufficient to ensure that the product can be handled without unacceptable risk to humans and the environment.

Article 8

Distribution and trade

8.1 Governments should:

8.1.1 develop legislation and implement licensing procedures relating to the sale of pesticides, so as to ensure that those involved are capable of providing buyers with sound advice on risk reduction, as well as judicious and efficient use;

8.1.2 encourage, to the extent possible, a market-driven supply process, as opposed to government purchasing, to reduce the potential for accumulation of excessive stocks. However, when governments, parastatals, aid programmes or other agencies purchase pesticides, the procurement should be based on FAO and WHO guidance on tender and procurement for pesticides (4, 5);

8.1.3 ensure that any pesticide subsidies or donations do not lead to excessive or unjustified use which may divert interest from more sustainable alternative measures.

8.2 Pesticide industry should:

8.2.1 take all necessary steps to ensure

that pesticides traded internationally conform at least to:

8.2.1.1 relevant international conventions and regional, sub-regional or national regulations;

8.2.1.2 relevant FAO or WHO recommended specifications, where such specifications have been developed;

8.2.1.3 principles embodied in GHS and relevant FAO, and/or WHO guidelines on classification and labelling;

8.2.1.4 rules and regulations on packaging, marking and transportation laid down by the UN Recommendations on the Transport of Dangerous Goods (46), and by international organizations concerned with specific modes of transport (e.g. ICAO⁴, IMO⁵, RID⁶, ADR⁷ and IATA⁸).

8.2.2 ensure that pesticides manufactured for export are subject to the same quality requirements and standards as those applied to comparable domestic products;

8.2.3 ensure that pesticides manufac-

tured or formulated by a subsidiary company meet appropriate quality requirements and standards. These should be consistent with the requirements of the host country and of the parent company;

- 8.2.4** encourage importing agencies, national or regional formulators and their respective trade organizations to cooperate in order to achieve fair practices as well as marketing and distribution practices that reduce the risks posed by pesticides, and to collaborate with authorities in stamping out any unethical practice within the industry;
- 8.2.5** recognize that a pesticide may need to be recalled by a manufacturer and distributor when its use, as recommended, represents an unacceptable risk to human and animal health or the environment, and act accordingly;
- 8.2.6** endeavour to ensure that pesticides are traded by and purchased from reputable traders, who should preferably be members of a recognized trade organization;
- 8.2.7** ensure that persons involved in the sale of pesticides are trained adequately, hold appropriate government permits or licences (where they exist) and have access to sufficient information, such as safety data sheets, so that they are capable of providing buyers with advice on risk reduction as well as judicious and efficient use;
- 8.2.8** provide, consistent with national,

sub-regional or regional requirements, a range of pack sizes and types that are appropriate for the needs of small-scale farmers, household and other local users, in order to reduce risks and to discourage sellers from repackaging products in unlabelled or inappropriate containers;

- 8.2.9** not knowingly supply pesticides that are restricted for use by particular groups of users, for sale to unauthorized users.
- 8.3** Procurers of pesticides should establish purchasing procedures to prevent the oversupply of pesticides and consider including requirements relating to pesticide storage, distribution and disposal services in a purchasing contract (4, 5).

⁴ International Civil Aviation Organization.

⁵ International Maritime Organization.

⁶ Regulations concerning the international carriage of dangerous goods by rail.

⁷ European Agreement concerning the international carriage of dangerous goods by road.

⁸ International Air Transport Association.

Article 9

Information exchange

9.1 Governments should:

9.1.1 promote the establishment or strengthening of networks for information exchange on pesticides and IPM/IVM through national institutions, international, regional and sub-regional organizations and public interest groups;

9.1.2 facilitate the exchange of information between regulatory and implementing authorities to strengthen cooperation. The information to be exchanged should include:

9.1.2.1 actions taken to ban or severely restrict a pesticide in order to protect human health or the environment, and additional information upon request;

9.1.2.2 scientific, technical, economic, regulatory and legal information concerning pesticides including toxicological, environmental and safety data;

9.1.2.3 the availability of resources and expertise associated with pesticide regulatory activities;

9.1.2.4 cases of counterfeit⁹ and ille-

gal pesticides being traded;

9.1.2.5 poisoning and environmental contamination incidents data.

9.2 In addition, governments are encouraged to develop:

9.2.1 legislation that permits public access to information about pesticide risks and the regulatory process, while safe-guarding intellectual property;

9.2.2 administrative procedures to provide transparency and facilitate the participation of the public in the regulatory process, while safe-guarding intellectual property;

9.3 International organizations should, within available resources, provide information on specific pesticides (including guidance on methods of analysis) through the provision of criteria documents, fact sheets, training and other appropriate means.

9.4 All entities addressed by this Code should:

- 9.4.1** support the process of information exchange and facilitate access to information on matters including pesticide hazards and risks, residues in food, drinking water and the environment, the use of pesticides in or on non-food products, IPM/IVM, pesticide efficacy, alternatives to highly hazardous pesticides and related regulatory and policy actions;
- 9.4.2** encourage collaboration between public interest groups, international organizations, governments and other interested stakeholders to ensure that countries are provided with the information they need to meet the objectives of the Code.

⁹ As of the time of finalization of the Code of Conduct WHO uses the expression substandard/spurious/falsely-labelled/falsified/counterfeit with regard to medical products.

Article 10

Labelling, packaging, storage and disposal

- 10.1** All pesticide containers should be clearly labelled in line with relevant regulations or GHS (45) and/or FAO/WHO guidelines on good labelling practice for pesticides (3).
- 10.2** Pesticide Industry should use labels that:
- 10.2.1** comply with registration requirements and include recommendations consistent with those of the relevant authorities in the country of sale;
 - 10.2.2** include appropriate symbols and pictograms whenever possible, with their signal words or hazard and risk phrases, in addition to written instructions, warnings and precautions in the appropriate language or languages;
 - 10.2.3** comply with national labelling requirements or, in the absence of more detailed national standards, with the GHS, the FAO/WHO guidance on pesticide labelling, and other relevant international labelling requirements;
 - 10.2.4** include, in the appropriate language or languages, a warning against the reuse of containers and instructions for decontamination and the safe disposal of used containers;
- 10.2.5** identify each lot or batch of the product in numbers or letters that can be understood without the need for additional code references;
- 10.2.6** clearly show the release date (month and year) of the lot or batch (21), expiry date (as appropriate) and contain relevant information on the storage stability of the product.
- 10.3** Pesticide industry, in cooperation with government, should ensure that:
- 10.3.1** packaging, storage and disposal of pesticides conform in principle to the relevant FAO, UNEP, WHO guidelines or regulations (34, 35, 47, 49, 50) or to other international guidelines, where applicable;
 - 10.3.2** packaging or repackaging is carried out only on licensed premises that

comply with safety standards where the responsible authority is satisfied that staff are adequately protected against toxic hazards, that adequate measures are in place to avoid environmental contamination, that the resulting product will be properly packaged and labelled, and that the content will conform to the relevant quality standards.

10.4 Governments should take the necessary regulatory measures to prohibit the repackaging or decanting of any pesticide into food, beverage, animal feed or other inappropriate containers and rigidly enforce punitive measures that effectively deter such practices.

10.5 Governments, with the help of pesticide industry and with multilateral cooperation, should inventory obsolete or unusable stocks of pesticides and used containers, establish and implement an action plan for their disposal, or remediation in the case of contaminated sites (40), and record these activities.

10.6 Governments should ensure that the treatment and disposal of hazardous pesticide waste are carried out in an environmentally sound manner that complies with national and regional regulations, relevant international standards and Multi-

national Environmental Agreements, in particular the Basel Convention.

10.7 Pesticide industry should, with multilateral cooperation, assist in disposing of any banned or obsolete pesticides and of used containers, in an environmentally sound manner, including reuse or recycling, with minimal risk where approved and appropriate.

10.8 Governments, pesticide industry, international organizations, the agricultural community and vector control programmes should implement policies and practices to prevent the accumulation of obsolete pesticides and used containers (36).

Article 11

Advertising

- 11.1** Governments should approve and implement legislation to regulate the advertising of pesticides in all media to ensure that it is in line with the conditions of registration as regards label directions and precautions, particularly those relating to proper maintenance and use of application equipment, appropriate personal protective equipment, special precautions for vulnerable groups and the dangers of reusing containers (45).
- 11.2** Pesticide industry should ensure that:
- 11.2.1** all statements used in advertising are technically justified;
 - 11.2.2** advertisements do not contain any statement or visual presentation which, directly or by implication, omission, ambiguity or exaggerated claim, is likely to mislead the buyer, in particular with regard to the "safety" of the product, its nature, composition or suitability for use, official recognition or approval;
 - 11.2.3** pesticides which are legally restricted to use by trained or registered operators are not publicly advertised through journals other than those catering for such operators, unless the restricted availability is clearly and prominently shown;
- 11.2.4** no company or individual in any one country simultaneously markets different pesticide active ingredients or combinations of ingredients under a single brand name;
- 11.2.5** advertising does not encourage uses other than those specified on the approved label;
- 11.2.6** promotional material does not include recommendations at variance with national regulatory decisions;
- 11.2.7** advertisements do not misrepresent research results, quotations from technical and scientific literature or scientific jargon to make claims appear to have a scientific basis they do not possess;
- 11.2.8** claims as to safety, including statements such as "safe", "non-poiso-

nous", "harmless", "non-toxic", "environmentally friendly" or "compatible with IPM/ IVM," are not made on labels, pamphlets or other publicity material, with or without a qualifying phrase such as "when used as directed". [However, reference to use within specified IPM/IVM programmes may be included if validated by the regulating authority, and the claim is qualified accordingly];

- 11.2.9** statements comparing the risk, hazard or "safety" of different pesticides or other substances are not made;
- 11.2.10** no misleading statements are made concerning the effectiveness of the product;
- 11.2.11** no guarantees or implied guarantees, such as "more profits with..." or "guarantees high yields," are given unless definite evidence to substantiate such claims is available;
- 11.2.12** advertisements do not contain any visual representation of potentially dangerous practices, such as mixing or application without sufficient protective clothing, use near food or use by or in the vicinity of children;
- 11.2.13** advertising or promotional material draws attention to the appropriate warning phrases and symbols as laid down in the GHS and FAO/WHO labelling guidelines (3);
- 11.2.14** technical literature provides ade-

quate information on correct practices, including the observance of recommended application rates, frequency of applications and pre-harvest intervals in language that is understandable to end users;

- 11.2.15** false or misleading comparisons with other pesticides are not made;
 - 11.2.16** all staff involved in sales promotion are adequately trained and possess sufficient technical knowledge to present complete, accurate and valid information on the products offered for sale;
 - 11.2.17** advertisements encourage purchasers and users to read the label carefully, or have the label read to them if they cannot read;
 - 11.2.18** advertisements and promotional activities should not include inappropriate incentives or gifts to encourage the purchase of pesticides.
- 11.3** International organizations and public interest groups should call attention to departures from this Article.

Article 12

Monitoring and Observance of the Code

- 12.1** The Code should be published by FAO, WHO and UNEP and should be observed through collaborative action by all entities addressed by this Code.
- 12.2** The Code should be brought to the attention of all concerned in the regulation, manufacture, distribution and use of pesticides, so that governments, pesticide industry and other entities addressed by this Code that are in a position to promote sustainable pest and vector management practices, understand their shared responsibilities in working together to ensure that the objectives of the Code are achieved.
- 12.3** All entities addressed by this Code should promote the principles and ethics expressed by the Code, irrespective of other entities' ability to observe the Code. Pesticide industry should cooperate fully in the observance of the Code and promote the principles and ethics expressed by the Code, irrespective of a government's ability to observe the Code.
- 12.4** Independently of any measures taken with respect to the observance of this Code, all relevant legal rules, whether legislative, administrative, judicial or customary, dealing with liability, consumer protection, conservation, pollution control and other related subjects, should be strictly applied.
- 12.5** Governments and other entities concerned:
- 12.5.1** are encouraged to observe the provisions laid down in any relevant international instruments concerning chemical management, environmental and health protection, sustainable development and international trade, relevant to the Code (Annex 1);
- 12.5.2** are encouraged, if they have not yet joined, ratified or acceded to such instruments, to evaluate the appropriateness of so doing as soon as possible.

- 12.6** FAO, WHO, UNEP and other relevant international organizations should give full support to the observance of the Code.
- 12.7** Governments, in collaboration with FAO WHO and UNEP, should monitor the observance of the Code and report on progress made to the Directors-General of FAO and WHO and the Executive Director of UNEP (53).
- 12.8** Pesticide industry is invited to provide reports to Directors-General of FAO and WHO and the Executive Director of UNEP on its product stewardship activities related to observance of the Code (54).
- 12.9** NGOs and other interested entities are invited to monitor activities related to the implementation of the Code and report these to Directors-General of FAO and WHO and the Executive Director of UNEP (54).
- 12.10** Governing Bodies of FAO, WHO and UNEP should periodically review the relevance and effectiveness of the Code. The Code should be considered a dynamic text which must be brought up to date as required, taking into account technical, economic and social progress.

Annex 1

International instruments in the field of chemical management, environmental and health protection, sustainable development and international trade, relevant to the Code

International policy instruments which address one or more aspects of the life-cycle of a pesticide include, but are not limited to, the ones listed below. Some have direct operational implications for pesticide distribution and use, while others provide a more general policy context. Dates of entry into force are given for those instruments that were legally binding at the time of adoption of the revision of this Code.

A. International policy instruments with direct operational implications for pesticide management

- The *Codex Alimentarius*, and more specifically the Codex Committee on Pesticide Residues, operational since 1966 (55).
- The *Montreal Protocol on Substances that Deplete the Ozone Layer*, adopted in 1987 and entered into force in 1989, and its subsequent amendments (56).
- *The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal*, adopted in 1989 and entered into

force in 1992 (50).

- *The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade*, adopted in 1998 and entered into force in 2004 (1).
- *The Stockholm Convention on Persistent Organic Pollutants*, adopted in 2001 and entered into force in 2004 (57).

B. International policy instruments that provide a general policy context for pesticide management

- *The Convention concerning Safety and Health in Agriculture*. ILO, adopted in 2001 and entered into force in 2003 (44).
- *The Convention concerning Safety in the Use of Chemicals at Work*, adopted in 1990 and entered into force in 1993 (58).
- *Convention concerning the prohibition and immediate action for the elimination of the worst forms of child labour*, ILO, Geneva, 1999.

- The *Rio Declaration on Environment and Development*, proclaimed by the United Nations Conference on Environment and Development in 1992 (59).
- *Agenda 21 – Global Programme of Action on Sustainable Development*, and more specifically chapters 14 (*Promoting Sustainable Agriculture and Rural Development*) and 19 (*Environmentally Sound Management of Toxic Chemicals, Including Prevention of Illegal International Traffic in Toxic and Dangerous Products*), adopted in 1992 (60).
- The *Convention on Biological Diversity*, adopted in 1992 and entered into force in 1993 (61).
- The *Convention concerning the Prevention of Major Industrial Accidents*, adopted in 1993 and entered into force in 1997 (62).
- The *Rome Declaration on World Food Security and The World Food Summit Plan of Action*, adopted in 1996 (63);
- The *World Health Declaration and Health-for-all in the 21st Century*, adopted in 1998 (64).
- The Strategic Approach to International Chemicals Management, adopted in 2006 by the *International Conference on Chemicals Management*, (65).
- The Globally harmonised system for the classification and labelling of chemicals (GHS).

References

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[further information and text at: <http://www.pic.int>]
- 2 *Guidelines for legislation on the control of pesticides*. FAO, Rome. 1989. [text at: <http://www.fao.org/agriculture/crops/core-themes/theme/pests/pm/code/guidelines/en/>]
- 3 *Guidelines on good labelling practice for pesticides*. FAO, Rome. 1995. [text at: <http://www.fao.org/agriculture/crops/core-themes/theme/pests/pm/code/guidelines/en/>]
- 4 *Provisional guidelines on tender procedures for the procurement of pesticides*. FAO, Rome. 1994. [text at: <http://www.fao.org/agriculture/crops/core-themes/theme/pests/pm/code/guidelines/en/>]
- 5 *Guidelines for procuring public health pesticides*. WHO, Geneva, 2012 text at: http://whqlibdoc.who.int/publications/2012/9789241503426_eng.pdf
- 6 *Guidelines on personal protection when using pesticides in hot climates*. FAO, Rome. 1990. [text at: <http://www.fao.org/agriculture/crops/core-themes/theme/pests/pm/code/guidelines/en/>]
- 7 *Guidelines on good practice for ground application of pesticides*. FAO, Rome. 2001. [text at: <http://www.fao.org/agriculture/crops/core-themes/theme/pests/pm/code/guidelines/en/>]
- 8 *Guidelines on good practice for aerial application of pesticides*. FAO, Rome. 2001. [text at: <http://www.fao.org/agriculture/crops/core-themes/theme/pests/pm/code/guidelines/en/>]
- 9 *Pesticides and their application for the control of vectors and pests of public health importance*. 6th edition. WHO, Geneva. 2006 [text at: http://www.who.int/whopes/recommendations/who_fao_guidelines/en/index.html]
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- 11 *Manual for indoor residual spraying – Application of residual sprays for vector control*. 2nd edition. WHO, Geneva. 2007 [text at: http://www.who.int/whopes/recommendations/who_fao_guidelines/en/index.html]

- 12 *Guidelines on minimum requirements for agricultural pesticide application equipment*. FAO, Rome. 2001. [text at: <http://www.fao.org/agriculture/crops/core-themes/theme/pests/pm/code/guidelines/en/>]
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- 16 *Equipment for vector control – Specification guidelines*, Revised Version 2010. WHO, Geneva. 2010. [text at: http://www.who.int/whopes/recommendations/who_fao_guidelines/en/index.html]
- 17 *Guidelines on organization and operation of training schemes and certification procedures for operators of pesticide application equipment*. FAO, Rome. 2001. [text at: <http://www.fao.org/docrep/006/y2686e/y2686e00.htm>]
- 18 *Guidelines on Prevention and Management of Pesticide Resistance*, FAO, Rome, 2012 [text at: <http://www.fao.org/agriculture/crops/core-themes/theme/pests/pm/code/guidelines/en/>]
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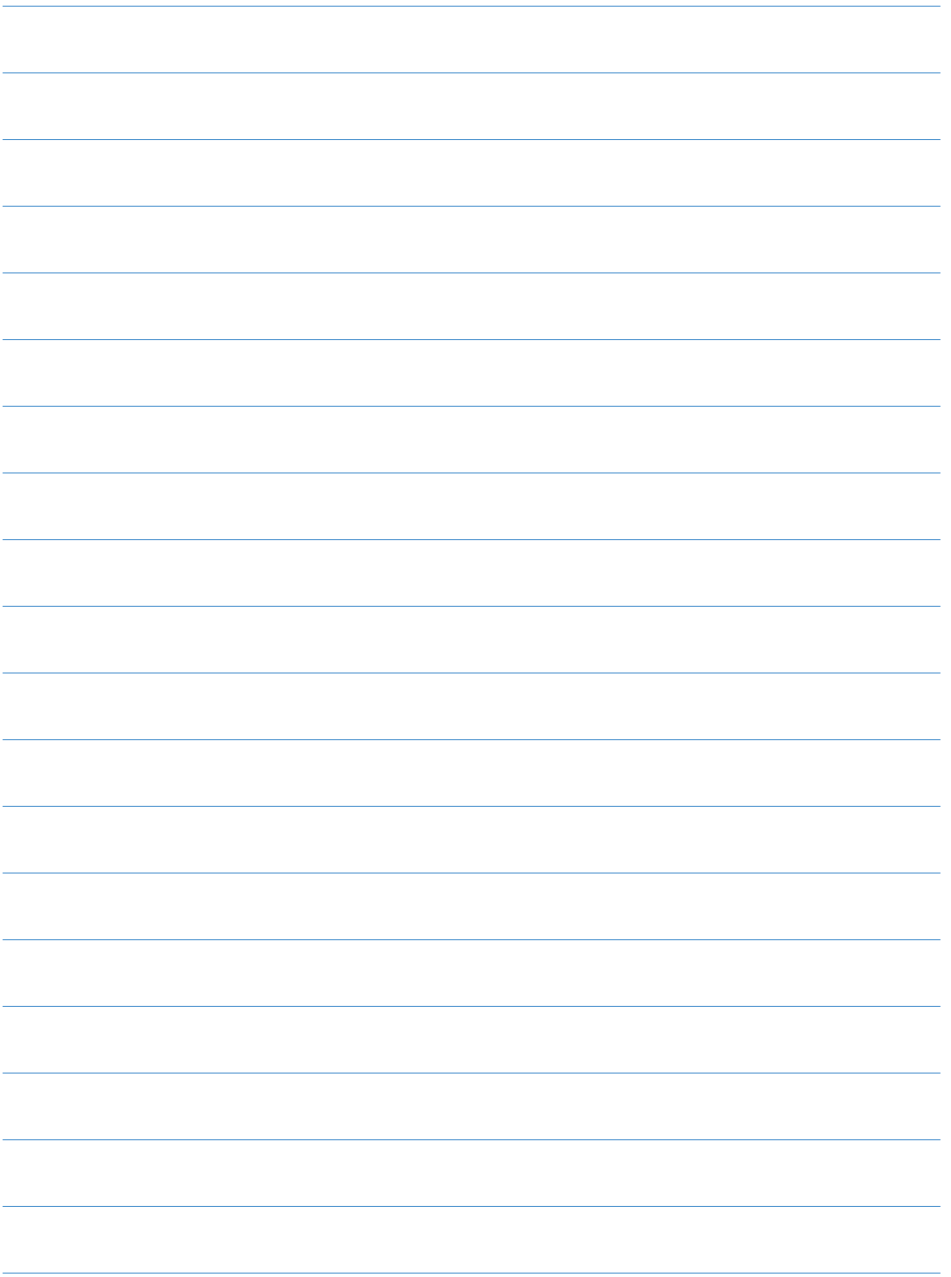
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- 30 *WHO Specifications for public health pesticides.* WHO, Geneva. Various dates. [text at: <http://www.who.int/whopes/quality/en/>]
- 31 *Quality control of pesticides products – Guidelines for national laboratories.* WHO/FAO/CIPAC, Geneva. 2005. [text at: <http://www.who.int/whopes/quality/en/>]
- 32 *Guidelines on developing a reporting system for health and environmental incidents resulting from exposure to pesticides.* FAO/WHO, Rome/Geneva. 2009. [text at: <http://www.fao.org/agriculture/crops/core-themes/theme/pests/pm/code/list-guide/en/>]
- 33 *WHO IPCS Poison Centres information* [<http://www.who.int/ipcs/poisons/centre/en/index.html>]
- 34 *Rotterdam Convention Severely Hazardous Pesticide Formulation Incident Reporting Forms* [<http://www.pic.int/>]
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