



Food and Agriculture
Organization of the
United Nations



World Health
Organization

International Code of Conduct on Pesticide Management

Guidance on pesticide licensing schemes



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on Pesticide Management**

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Food and Agriculture Organization of the United Nations
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Foreword

This document is intended to provide guidance for designing and implementing national pesticide licensing schemes by outlining elements, requirements and options for countries wishing to establish or strengthen their programmes for licensing of activities related to the pesticide life cycle. The guidance is designed primarily for use by government authorities in charge of pesticide management, in particular pesticide regulations, compliance, enforcement and risk reduction, but may also be useful in sectors such as the pesticide industry, nongovernmental organizations and other relevant entities.

This guidance was prepared in compliance with the **International Code of Conduct on Pesticide Management**, which sets out a framework and voluntary standards of conduct for pesticide management stakeholders, in particular governments and the pesticide industry. Endorsed by FAO, WHO, governments, pesticide producers, nongovernmental organizations and other stakeholders, the Code of Conduct outlines their shared responsibility to promote best practice and risk reduction throughout the pesticide life cycle. The Code of Conduct thereby establishes the commitment and moral obligation of the stakeholders to comply with the agreed standards of conduct and to assume their respective responsibilities. This includes governments' responsibility to promote pesticide risk reduction and industry's responsibility to produce products that are adapted to the context of their use and to provide stewardship of those products throughout their life cycle.

FAO and WHO welcome readers' feedback

FAO and WHO consider this guidance to be a living document, which could be improved. They would therefore value any feedback from readers and welcome comments. They would also value examples of how the guidance is used.

Please send your suggestions, comments and examples to pesticide-management@fao.org, indicating the title of the guidance and the relevant section and page.

Abbreviations and acronyms

| | |
|-------|---|
| EPA | United States Environmental Protection Agency |
| FAO | Food and Agriculture Organization of the United Nations |
| GHS | Globally Harmonized System of Classification and Labelling of Chemicals |
| HHP | highly hazardous pesticide |
| ILO | International Labour Organization |
| JMPM | FAO/WHO Joint Meeting on Pesticide Management |
| LMIC | low- and middle-income countries |
| NGO | Non-Governmental Organizations |
| PIC | Prior Informed Consent (Rotterdam Convention) |
| PCO | pest control operator |
| POPs | persistent organic pollutants |
| PPE | personal protective equipment |
| RUP | restricted-use pesticide (USA) |
| UNECE | United Nations Economic Commission for Europe |
| WHO | World Health Organization |

Definitions

License: formal written permission to conduct an ongoing activity, granted for a specific time and issued by a responsible government authority.

Permit: formal written permission to conduct a specific activity, granted for a specific time and issued by a responsible government authority.

The difference between a **license** and a **permit** depends on the jurisdiction, as the terms are used differently in some places and in the same way in others. Generally, however, a “permit” is issued for a defined period or a specific activity (perhaps even a single use), whereas a “license” gives a legal person permission to conduct an activity, such as a business operation.

The term “**certification**” usually refers to the provision of written or equivalent assurance (a certificate) that the person, product, service or system conforms to requirements.¹

The purposes of **certification** and **licensing** schemes are generally different, certification schemes serving as an attestation of compliance with certain requirements (e.g. certification of a product as organic, certification of a person following completion of a training programme), and licensing schemes providing regulatory control over a given activity. Licenses are usually required to initiate an activity, while an ongoing activity could be certified as meeting certain criteria. Certification is often conducted by independent third parties, although a government may also have a certification programme, while licensing schemes are generally public. The differences between these two concepts are subtle, and they may have overlapping uses. As the meaning of these terms is subject to their definition in national legislation, it may vary by jurisdiction.

All other definitions below are from Article 2 of the International Code of Conduct on Pesticide Management (FAO/WHO, 2014), unless otherwise indicated, as they represent the international consensus on terminology for pesticide management.

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

Biological pesticide (or biopesticide): a generic term generally applied to a substance derived from nature, such as a microorganism or botanical or semiochemical, that may be formulated and applied in a manner similar to a conventional chemical pesticide and that is normally used for short-term pest control (FAO/WHO, 2017).

Container: any object used to hold a pesticide product.

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

Environment: surroundings, including water, air, soil and their interrelationship as well as all relationships between them and any living organisms.

Exposure to pesticides: any contact between a living organism and one or more pesticides (FAO/WHO, 2016).

¹ Certification. Geneva: International Standards Organization; 2021 (<https://www.iso.org/certification.html>) and Principles for Food Import and Export Identification and Certification CAC/GL 20-1995. Rome: Codex Alimentarius; 1995.

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

Hazard: 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: pesticide 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 (WHO, 2019) or GHS (UNECE, 2019) 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.

Label: 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: 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: 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 ingredient or preparing its formulation or product.

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

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

Pest: 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.

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

Pesticide legislation: refers to legal instruments specifically designed to control pesticides. The term pesticide legislation may refer to a primary instrument, often a law, act or ordinance, to secondary or subsidiary legal instruments, such as regulations, decrees, rules or notices or to both (FAO/WHO, 2020a).

Pesticide management: 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.

Pest control operator: any person or company that apply pesticides as a profession.

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

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

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

Risk: 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.

1. Introduction

1.1. Background

National pesticide legislation usually requires that all persons or businesses that manufacture, import, formulate, pack, re-pack, distribute or sell a pesticide in the country or jurisdiction hold a valid license. Licensing provisions depend on the type of activity and the type of pesticide; more detailed requirements may apply for certain types of application, such as aerial spraying or fumigation, while other provisions may be considered for the use of certain types of pesticides, such as severely restricted pesticides or highly hazardous pesticides (HHPs). Licensing programmes and their requirements also differ by jurisdiction because they are designed to account for the local situation, in particular inspection and enforcement capacities.

Licensing is directly linked to inspections at national level, as inspections ensure that license holders continue to comply with the licensing conditions. For that reason, policy-makers will wish to look carefully at their inspection programmes as they develop or strengthen their pesticide licensing schemes. To be meaningful, licensing requirements must be enforced. The competent authority should have the power to instruct persons and companies engaged in activities for which a license is required but who do not have the required license to stop those unauthorized activities.

Whereas pesticide *registration* consists of a review process of products and the risks they pose, pesticide *licensing* consists of a review of the person, business or entity wishing to handle and work with registered pesticides. The purpose of such a review is to ascertain whether the applicant for the license is suitable – which is defined in the legislation – to work with the pesticides at issue, and to ensure that the license holder continues to comply with established requirements once the license has been issued. Licenses serve, therefore, to facilitate government control over specified activities.

This guidance was prepared with the support of the [FAO/WHO Joint Meeting on Pesticide Management](#) (JMPM) to provide further guidance on the provisions of the FAO/WHO International Code of Conduct on Pesticide Management (hereafter referred to as the “Code of Conduct”) that are related to pesticide licensing. It reflects the joint FAO/WHO approach to pesticide management, thus addressing licensing in both agricultural and public health settings. An overview of the most relevant provisions of the Code of Conduct that relate to pesticide licensing is provided in Box 1.

Box 1. Provisions related to pesticide licensing in the International Code of Conduct on Pesticide Management

Article 6 on Regulatory and technical requirements

6.1 Governments should:

Art 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.

Art 6.1.3: establish regulatory schemes such as licenses or permits for pest control operators

Art 6.1.10: improve regulations in relation to collecting and recording of data on import, export, manufacture, formulation, quality, and quantity of pesticides.

Article 8 on Distribution and trade

8.1 Governments should:

Art 8.1.1: develop legislation and implement licensing procedures related 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.

8.2 Pesticide industry should:

Art. 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.

Article 10 on Labelling, packaging, storage and disposal

10.3 Pesticide industry, in cooperation with government, should ensure that:

Art 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.

1.2. Objectives and targeted audience

This guidance sets out and discusses national pesticide licensing schemes. Building on the FAO/WHO *Guidelines on pesticide legislation* (FAO/WHO, 2020a) and on the 10 principles² set in the FAO guidelines on compliance and enforcement of a pesticide regulatory programme (FAO, 2006), it provides more detailed, more specific guidance on licensing. This document is intended to provide concrete guidance and options for countries wishing to establish or strengthen their programmes for licensing of activities associated with pesticides, including import, storage, distribution, sale and specific uses.

Although licensing may intersect with national regulatory frameworks governing commercial or importation licensing in general, this guidance recommends establishment of pesticide-specific licensing schemes that are administered by entities with specific knowledge of pesticides to address the associated risks and the specialized technical knowledge required to manage those risks.

The guidance is **intended primarily for government authorities in charge of pesticide management, in particular pesticide regulations, compliance, enforcement and risk reduction**, but may also be useful for entities such as the pesticide industry, nongovernmental organizations (NGOs) and officers and consultants in the field involved in organizing or advising on pesticide handling and use. These include plant protection services, vector control services and any private sector entities associated with importing, producing, storing, distributing or selling pesticides, or organizing pesticide application, such as plantations, contract growing schemes and pesticide application service providers.

The guidance is specifically targeted at stakeholders in low-and middle-income countries (LMIC) in which there is limited legislation, compliance and enforcement, and resources. Social, economic and cultural conditions and local practices should be considered when addressing pesticide licensing.

1.3. Scope and structure

This guidance applies to activities throughout the life cycle of a pesticide, which consists, according to the Code of Conduct, of the importation, manufacture, formulation, packaging, distribution, storage, sale, use and disposal of pesticides and associated waste. As pesticide licensing is a tool for regulatory control and enforcement of life cycle activities, it is a key aspect of pesticide risk management.

In the context of this guidance, an applicant for a license may be a manufacturer, importer, distributor, retailer, seller or user (for those uses that require a license according to national legislation, e.g. commercial operators). It should be noted that smallholder farmers generally do not require a license to work with pesticides, and this guidance does not cover use of pesticides by farmers. Farmers should, however, be trained³ in pesticide issues, risks and practices, and their training is another key aspect of pesticide risk management.

The guidance covers **pesticides used in agriculture and public health** (e.g. for vector control) and also pesticides for household use (FAO/WHO, 2020b) and for industrial use.

² The 10 core principles of compliance and enforcement are: (i) full and continuous compliance as the goal; (ii) culture of compliance; (iii) clear, well-understood requirements; (iv) expectation of self-initiated compliance; (v), likelihood of detection of violations; (vi) fair and predictable government response; (vii) level playing field; (viii) message sending and deterrence; (ix) comparable treatment for public and private sectors; and (x) transparency and accountability.

³ In some countries and in some commodity associations (e.g. coffee, cotton), after training, farmers can be *certified*. In the European Union (EU), farmers must attend specific training in order to be authorized to buy and apply pesticides.

The guidance:

- provides an overview of pesticide licensing schemes (section 2);
- describes the regulatory framework for pesticide licensing (section 3);
- outlines the elements of licensing programmes for various pesticide-related activities (section 4);
and
- provides short examples of features of pesticide licensing schemes around the world (Annex 1).

Throughout the document, “examples from current practice” are given. The examples were collected at the time of writing the guidance, and the reader is invited to ensure with national authorities that the information is still accurate and up to date.

2. Overview of pesticide licensing schemes

2.1. Goals of licensing

The purpose of pesticide licensing is to ensure that, in the relevant jurisdiction, only those persons or entities authorized by the responsible authority may manufacture, import, distribute, sell, apply (where relevant) or conduct other activities with registered pesticides.

Licensing requires applicants to demonstrate that they can comply with the legal requirements of the license. The requirements depend on:

- the intended activity of the applicant;
- the type of pesticide and of its use;
- the location of the activity; and
- the characteristics of the jurisdiction, including its government structure, its policies, its level of sophistication and its available resources.

Where and when a responsible authority considers that *regulatory control* must be ensured, it imposes licensing requirements for a particular activity. The purpose is to manage and monitor people who work with pesticides through periodic inspections and oversight during the period of validity of the license. The responsible authority can thus ensure that safety standards are met and *pesticide risk reduction* is achieved. It also allows the authority to *collect information* about pesticide import, manufacture and use, which ultimately helps the government to manage and monitor pesticides in its jurisdiction.

Pesticide licensing schemes help governments to achieve other goals (FAO/WHO, 2020a), including protecting human and animal health and the environment. For all of these reasons, licensing is an important tool for responsible authorities to ensure regulatory control over pesticide products and activities.

The overall goals of pesticide licensing can be placed into **three broad categories**, as described below.

2.1.1. *Licensing to ensure regulatory control*

Licensing enables end-to-end government control and oversight of pesticides. A licensing scheme identifies the responsible authority and outlines the powers that the authority will exercise to control pesticides and specific activities related to pesticides in the jurisdiction. **A pesticide licensing scheme should have a defined scope**, covering only certain activities and types of pesticides.

Generally speaking, a licensing scheme establishes:

- the criteria for issuing a license (including technical criteria);
- the criteria for retaining the license during its term of validity;
- procedures for the responsible authority to suspend or revoke a license according to information obtained during regular inspections; and

- the obligations of both the responsible authority and the license holder for record-keeping and reporting.

By regulating pesticide-related activities, licensing also ensures the quality of the activity (e.g. conducted by pest control operators (PCOs)) as well as the quality of advice given to end-users (e.g. by retailers).

Example from current practice: *In the USA, the Environmental Protection Agency (EPA) issues both commercial and private applicator licenses and regulates different types of license holders differently. Federal law requires any person who applies or supervises the use of restricted-use pesticides (RUPs) to be a certified (e.g. licensed) applicator in accordance with EPA regulations and state, territorial and tribal laws. The EPA regulations establish minimum standards of competence for pesticide applicators who apply or supervise the use of RUPs. Certifying authorities issue certifications to persons who demonstrate that they are competent to use pesticides safely. Many certifying authorities at Federal, state, territorial or tribal level require that all commercial applicators, not only those using RUPs, be certified. The Federal regulation classifies certified applicators as private or commercial. If a person applies pesticides for the production of an agricultural commodity on land owned or rented by that person or their employer, then they are considered a private applicator. If a person does not meet the description of a private applicator and applies RUPs, then they are a commercial applicator (for more detail about practices in the USA, see Annex 1).*

2.1.2. *Licensing to achieve risk reduction*

Another objective of pesticide licensing is to reduce the risks of harm to users and consumers and also to reduce or manage risks to the environment. Depending on the activity in question, the pesticide licensing scheme established in the jurisdiction's legislation may impose specific requirements or conditions that must be met before a license can be issued.

Example from current practice: *Australian states require pesticide license applicants to provide information about themselves to ensure that they are of a minimum age to handle pesticides. For example, the government of Western Australia requires pesticide applicants to be at least 18 years old. This minimum age is also stipulated in the International Labour Organization (ILO) Convention concerning safety and health in agriculture (ILO, 2001).*

In some cases, licenses may be granted only upon successful completion of mandatory training in pesticide handling and safety. In other cases, the responsible authority may require the license applicant to prove that special equipment (e.g. personal protection equipment (PPE)) or knowledge is available on site. Licensing systems may also be designed to encourage selection of lower-risk pesticides, such as biological pesticides, through differentiated requirements or a lower application fee or, conversely, through more rigorous requirements and a higher application fee for higher-risk pesticides or for HHPs (FAO/WHO, 2016). A licensing system, e.g. for pesticide sellers, can help prevent illegal sale of non-registered, fake or counterfeit products which have the potential to create many risks to human health and the environment, including to crops.

2.1.3. *Licensing to collect information*

A third objective of pesticide licensing schemes is the collection of information. For the purposes of the licensing scheme itself, the information collected allows the responsible authority to verify that license holders are complying with the conditions of the license. On a wider scale, the information allows the responsible authority to determine whether the pesticides on the market are of acceptable quality (i.e. not sub-standard, fake or counterfeit products), properly packaged and properly labelled (FAO/WHO, 2015a).

The more sophisticated the information collected, the more the responsible authority and the wider government (such as the ministries of agriculture, health and/or environment) will know about and be able to manage the risks associated with pesticides. For example, the information collected will generally allow the government to identify trends in imports, production, sales, uses, violations of license conditions, poisonings and other pesticide accidents. This information will then inform and guide any proposed policy and legislative changes.

Example from current practice: *In Malaysia, pesticide license holders are required to report accidents to the license board within 7 days of occurrence.*

2.2. Licensing and inspection

As noted above, licensing schemes are a regulatory tool that allows the competent authorities to monitor who is carrying out what activities related to pesticides in its jurisdiction. **Licensing is also a tool for enforcement and as such it should therefore always be linked to inspections.** Licenses and the associated permission to conduct approved activities can be withdrawn if the license holder no longer meets the licensing requirements.

Licensing systems rely on strong inspection systems because inspections identify problems and enforce compliance with pesticide legislation.

Inspections at manufacturing and production sites can ensure that facilities have systems for risk reduction and risk management, that they follow procedures to ensure a safe working environment and that the products they produce meet the required standards. Inspection of importers and distributors can prevent entry into the jurisdiction and distribution of prohibited pesticides, such as products that are banned, have not been registered, are not properly packaged or labelled or whose shelf-life has expired. Inspection of retailers and other places where pesticides are sold can help ensure vendors' compliance with legal provisions for the registration, import, export, storage (FAO, 1988), packaging, labelling (FAO/WHO, 2015a) and advertising (FAO/WHO, 2010a) of pesticides.

For some licenses, the responsible authority conducts an inspection before issuing a license, to verify that the pesticide can be used appropriately in the location proposed by the license applicant. The inspection may cover the location, land and facilities. It provides the responsible authority with an opportunity to verify that the license is appropriate for the proposed use and purpose (see section 3.3) and that the applicant is capable of managing any risk to human or animal health or the environment.

Responsible authorities should establish an approach to priority-setting for inspection and identify and decide on levels and types of inspection. They should also ensure close cooperation among government authorities involved in inspections. Additional, detailed guidance is available in the FAO/WHO

Guidance for inspection of pesticide producers, importers, distributors and retailers (FAO/WHO, 2020c).

2.3. International framework

A number of international instruments address pesticides directly, and most countries are contracting parties to one or more of those instruments. Other international or regional agreements affect pesticide management only indirectly, and also some voluntary instruments address pesticide management.

These international agreements comprise the international framework for pesticide management that is the basis for national pesticide regulatory frameworks in general and for pesticide licensing schemes in particular.

Below, a brief review is given of the key international, legally binding and voluntary documents related to management of pesticides throughout their life cycle. In international trade, non-Parties may voluntarily or may otherwise be required to apply the requirements of the conventions and additional requirements adopted by Parties.

2.3.1. *Rotterdam Convention*

The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam Convention; <http://www.pic.int/>) establishes the **Prior Informed Consent (PIC)** procedure based on import responses with regard to chemicals listed in Annex III to the Convention. The import decisions are circulated and exporting Parties are obligated under the Convention to take appropriate measures to ensure that exporters within its jurisdiction comply with the decisions.

The Convention covers pesticides and industrial chemicals that have been banned or severely restricted for health or environmental reasons by Parties. Severely hazardous pesticide formulations that present a risk under conditions of use in developing countries or countries with economies in transition may also be included in Annex III.

The PIC procedure is a trade control mechanism, for national decision-making, shared responsibility and cooperative efforts in international trade of certain hazardous chemicals. A key element of the PIC procedure is the decisions of importing Parties regarding the hazardous chemicals and pesticides listed in Annex III. Parties transmit these import decisions consisting of a final decision either to consent to import, not to consent to import or to consent to import subject to specified conditions or an interim response (i.e. consent to import with or without conditions or not to consent; final decision is under active consideration; request for further information; request for assistance in evaluating the chemical). Decisions by an importing country must be trade neutral, that is, they must apply equally to domestic production for domestic use as well as to imports from any source. **The measures adopted by Parties to implement the Convention, including their import decisions, are relevant for pesticide licensing, as Parties may establish conditions under the Convention that determine which entities may engage in import or export and under which conditions, if at all, international trade is permitted.**

2.3.2. *Basel Convention*

The Basel Convention on the Transboundary Movement of Hazardous Wastes and their Disposal (Basel Convention: <http://www.basel.int/>) controls **transboundary movement** of hazardous wastes and other wastes based on notification and consent under the control procedure set up under the Convention. Parties to the Basel Convention are required, among other things, to reduce their waste generation to a minimum and to ensure environmentally sound management of hazardous and other wastes in relation to transboundary movement. Although the Convention does not specifically address pesticides, it may address wastes arising from obsolete pesticides and substances that may be wastes from pesticides. The Basel Convention can therefore help governments to prevent dumping of imported wastes such as obsolete pesticides within their borders, especially if the country does not have the capacity or has limited capacity to manage such waste products in an environmentally sound manner. While transboundary movement is not allowed between Parties and non-Parties, Parties may, however, enter into bilateral or multilateral agreements on hazardous waste management with other Parties or with non-Parties, provided that such agreements are “no less environmentally sound” than the Basel Convention.

Under the Basel Convention, Parties may exercise the right to decide to prohibit the import of hazardous and other wastes for disposal or to limit or ban exports of hazardous wastes or other wastes. “States of export” may allow export of wastes within the scope of the Convention to begin only after having provided prior written notification to the importing and “states of transit”, received written consent and received confirmation of the existence of a contract specifying environmentally sound management of the wastes from the “state of import”. **The Basel Convention includes many obligations relevant to the development of national licensing schemes for pesticides in relation to their waste management.** For example, transboundary movement is allowed when the “state of export” does not have the technical capacity, the necessary facilities or suitable sites to dispose of the wastes in question in an environmentally sound manner; this must be accompanied by the movement document issued upon notification and consent by the “state of import” and “state(s) of transit”. Licensing schemes may address these and other issues in the life cycle management of pesticides.

2.3.3. *Stockholm Convention*

The aim of the Stockholm Convention on Persistent Organic Pollutants (Stockholm Convention: <http://chm.pops.int/>) is to protect human health and the environment from **Persistent Organic Pollutants (POPs)**. POPs are organic compounds that become widely distributed throughout the environment, remain intact for long periods of time, accumulate in the fatty tissue of living organisms, and are toxic to humans and wildlife. In many ways, they are some of the most highly dangerous chemicals, although their effects may be seen only in the long term.

The Stockholm Convention provides for elimination and restriction of chemicals from **intentional production and use**, as well as for elimination or reduction of releases from **unintentional production**. It allows certain specific exemptions and acceptable purposes for certain POPs as decided by the Convention’s governing body: the Conference of the Parties. The Convention requires that stockpiles and wastes of POPs, including POP pesticides and products and articles upon becoming wastes, be identified and managed to reduce or eliminate POPs released from these sources. The Convention also requires that wastes containing POPs be transported across international boundaries in accordance with relevant international rules, standards and guidelines.

Licensing schemes should take into account the chemicals listed in the Stockholm Convention for elimination (Annex A) or restriction (Annex B); which specific exemptions or acceptable purposes are available; and unintentional production releases to be controlled (Annex C).

2.3.4. *International Code of Conduct on Pesticide Management*

The Code of Conduct (FAO/WHO, 2014) is the only international instrument that addresses the main elements of pesticide management throughout the life cycle and serves as a reference and voluntary framework for governments, the pesticide industry and other stakeholders.

The Code of Conduct is supported by comprehensive technical guidelines that provide detailed guidance on specific aspects of the pesticide life cycle. This guidance on pesticide licensing schemes is only the latest in a series of documents prepared for the use of national and subnational governments. The FAO/WHO brochure *Managing pesticides in agriculture and public health: A compendium of FAO and WHO guidelines and other resources* (FAO/WHO, 2021) provides an overview of all the technical guidelines.

3. Regulatory framework for pesticide licensing schemes

This section reviews the regulatory framework for pesticide licensing. As noted in section 2.1, responsible authorities license pesticide activities to achieve various goals, such as regulatory control, protection of human health and the environment and collection of information. To meet these goals, the relevant authority establishes licensing requirements for specific activities during specific stages of the pesticide life cycle. Depending on its policy goals, the local context and resource constraints, one authority might require licenses to manufacture, sell, apply or import pesticides, while another might require licenses for only some of these activities. Specific types of license are reviewed in more detail in section 3.3.

3.1. Stages of regulatory control

As stated in Article 6.1.1 of the Code of Conduct, governments should introduce the necessary policies and legislation on pesticides, including their marketing and use throughout their life cycle. Specifically, Article 6.1.3 provides that governments should establish regulatory schemes such as licenses or permits for PCOs, while Article 6.1.10 requests countries to improve their collection and recording of data on the import, export, manufacture, formulation, quality and quantity of pesticides. Pesticide licensing schemes serve all these objectives at various stages of the regulatory process, which are described below.

3.1.1. *Stage 1: Identify risks, and design appropriate licensing scheme*

Even before exercising regulatory control, **governments must identify the main issues and risks in their jurisdiction of local practices involving pesticides.** On that basis, the authority must then ensure that the licensing requirements include the measures necessary to address the identified issues and risks adequately.

In designing and implementing a pesticide licensing scheme, governments should take into account the local situation, including the available resources, culture and context.

Article 6.1.1 of the Code of Conduct provides that, when introducing the necessary policy and legislation to regulate pesticides (including enforcement), 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.” **Each country has its own requirements, priorities and needs.** Furthermore, the requirements may vary even within a country. For example, pesticide shops in rural areas are often very different from larger shops in towns, which may be able to meet certain requirements that are difficult to meet for smaller, rural outlets. A licensing scheme may distinguish between larger and smaller outlets, for example according to volume of sales or stocks.

Similarly, the conditions for obtaining a license should be feasible for the target group. For instance, if a training certificate is required for retailers, training must be offered to retailers nationwide. If transport is difficult or costly, then the authorities must consider how to provide training (e.g. number of staff, transport) and how to include all the retail outlets in the country.

Smaller shops in rural areas might also require education or awareness-raising, as the owners and operators often have little idea of the legal requirements. Governments might consider preparing a simple information booklet, with text and diagrams, to explain the basic requirements for pesticide shops. In countries where inspectors also serve as extension agents (rather than simply for enforcement and punitive actions), they could distribute such booklets and help shopkeepers assess the situation and identify any problematic areas before they apply for a license.

Example from current practice: *In the Lao People's Democratic Republic, a simple information booklet was prepared, printed in large quantities and distributed to all retailers. The booklets were presented to shops by inspectors during their first visit, who then also completed an initial checklist with the shopkeeper to determine any problems to be resolved before a second visit. The first visits were of an educational nature.*

Governments should take into account the resources and capacity not only of potential license holders but also of the authority responsible for implementing and enforcing the licensing scheme.

If, for example, the government is to issue licenses to all retail shops in the country, a certain number of inspectors and transport for inspectors to monitor and ensure compliance will be required.

3.1.2. Stage 2: Application for a license

The next stage at which a government exercises regulatory control is during application for a license. The jurisdiction's pesticide legislation empowers the responsible authority to receive, evaluate, approve or deny applications for pesticide licenses.⁴ The authority's decision to grant or deny a license depends on the location of the proposed activity and the characteristics of the person or entity applying for the license, namely, whether the applicant has the appropriate training, resources and capacity to conduct the proposed activity with the pesticide or pesticides.

The pesticide licensing scheme includes requirements (set out in a law or laws and subsidiary regulations) that must be met in order to obtain a license. These may be, for example, that the applicant has appropriate storage facilities, adequate record-keeping or basic knowledge about pesticides. The responsible authority may impose more specific, stricter requirements for severely restricted pesticides or HHPs and less strict ones for biological pesticides or for pesticide use in certain places.

Applications are submitted in the form specified by the law and are approved or denied according to specified procedures and for specified reasons. The law usually also empowers the responsible authority to charge a fee for licenses granted under the law.

⁴ In some cases, some categories of licenses are managed by a different authority, such as the ministry of transport for licenses to transport pesticides.

When an application for a license is denied, the responsible authority is usually obligated to communicate in writing the reasons for the refusal and to give the applicant the possibility to appeal.

3.1.3. Stage 3: Post-license issuance

The third stage consists of the period after a license has been issued. The license will be valid for the time established in the legislation. During that period, the responsible authority regularly verifies that license holders are still complying with the requirements of the license. The responsible authority's inspections (see section 2.2) therefore include a review of the person, business or other entity holding the license to ascertain their compliance with established parameters for the location and the activity. The review also covers the continuing competence of the applicant and the applicant's ability to safeguard against known risks. The legislation that establishes the licensing scheme will also set out procedures for renewal of licenses, criteria for their suspension or revocation and any rules for their transfer to third parties (see section 4 for detailed information).

3.2. General features of a pesticide licensing framework

The pesticide licensing framework in a particular jurisdiction will be based on national pesticide legislation. In most cases, the basic requirements are established in parliamentary law, while the details are set out in subsidiary instruments, such as regulations.

3.2.1. Designation of a responsible authority for licensing

One of the main purposes and steps in pesticide legislation is designation of an authority in charge of licensing. **This is usually a pesticide management unit.** The legislation will also outline the powers that this unit exercises in relation to issuing licenses and otherwise managing the licensing scheme(s), including monitoring compliance and enforcement through inspections. In some instances, the responsible authority in the country or jurisdiction will be directly responsible for issuing all pesticides licenses and permits. In other cases, the authority will coordinate with other competent entities for the issuance of specific licenses (see footnote 4).

In some countries, aspects of licensing schemes are implemented by decentralized authorities, such as provincial or local governments. In such circumstances, the decentralized authorities implement both central-level and their own legislation. For a decentralized system to be effective, its authorities must have sufficient technical capacity with regard to pesticides, and there must be strong, effective coordination between the central and decentralized structures. Clear, regular record-keeping and information-sharing are essential for effective coordination in decentralized systems.

3.2.2. Eligibility for certain types of license

A pesticide licensing scheme sets out who is required to apply for a license. For example, the system may require that importers, exporters, manufacturers, retailers and industrial users obtain a license. The underpinning legislation outlines the requirements to be met by individuals and companies to obtain (and later renew) a license. If individuals or companies do not meet the eligibility requirements, they will not be able to obtain a license in the first instance.

Example from current practice: *In some jurisdictions, such as in the European Union, one step in the licensing process is technical certification of the person involved in the pesticide-related activity. Certification may depend on the activity (e.g. applicator, retailer, pest management adviser). This requires that the country have a training and certification scheme in place.*

3.2.3. *Application requirements*

A licensing scheme outlines the requirements for license applications in detail. For example, it may require that the applicant submit documentation on both the pesticide and the personnel, business, premises, training and other features. **Depending on the activity, the pesticide licensing scheme may impose specific requirements or conditions to be met before a license can be issued.** For example, some pesticide licensing schemes may require an environmental impact assessment before issuance of certain types of license. Licenses are granted for a specified period and may be granted with conditions.

To avoid arbitrary decision-making, the pesticide licensing scheme should establish and apply clear criteria for granting or denying a license, such as requirements to be fulfilled in terms of facilities, equipment and staff. The law will also generally allow the responsible authority to request additional data from the applicant or to conduct e.g. site visits at the applicant's plant, to check storage facilities and the qualifications of staff before deciding whether to issue a license.

For import licenses (see also section 3.3.2), the legislation may require the importer to notify the responsible authority of the quantities of the pesticide to be imported. The legislation may also impose requirements on the shelf-life of large consignments to obviate the possibility that pesticides will become obsolete soon after they arrive in the country.

3.2.4. *Suspension or revocation*

Most licenses are subject to renewal according to established procedures. **The licensing authority should also have the power to suspend or revoke a license if inspections reveal that the requirements are not met, if there is violation of any condition on which the license was granted or if new facts come to light that would have led to denial of the application before it was issued.** Just as there is usually an appeal procedure for those whose applications for a license have been denied, there should also be an appeal procedure available for license holders who do not agree with the suspension or revocation of a license. More detailed guidance is provided in sections 4.3 and 4.4.

3.3. **Types of license**

This section covers various types of pesticide license. The list is not exhaustive and, as noted earlier:

Each responsible government authority will decide on the basis of its policy goals, the local context and its priorities and capacity, which and how many licenses to issue for which pesticide-related activities in the jurisdiction.

Licensing schemes and the associated inspection schemes can be very costly, and countries may decide to have only a few licensing programmes, for e.g. national priorities, specific activities or pesticides of concern.

3.3.1. Manufacture and formulation

Licensing of persons and companies that manufacture or formulate pesticides, including those that prepare pesticide-treated items such as seeds or bednets, provides the responsible authority with assurance that the applicants are aware of the hazardous nature of the pesticide product they are dealing with and that they are technically competent to formulate or manufacture it.

Generally, a pesticide licensing scheme will require a manufacturer or formulator to demonstrate sufficient ability to:

- handle large quantities of the pesticide appropriately, including having a risk management plan for spills or leaks;
- store the pesticides properly;
- analyse the quality of pesticides;
- provide data efficiently to retailers and distributors;
- use machinery properly to move the pesticide;
- use machinery properly to mix the pesticide;
- provide information about the chemical composition of the pesticide to the responsible authority (this may be confidential);
- provide environmental and human health assessments to the responsible authority;
- keep records of the sales of the pesticide to customers, and report them to the pesticide management unit as prescribed; and
- keep records of which pesticides are created and when, and report them to the pesticide management unit as prescribed.

The responsible authority may also regulate the type and quality of products manufactured or formulated, while other agencies or ministries (such as of commerce, environment, industry or health) may regulate site selection, environmental safety of the plant and the occupational health of its workers. This type of license therefore usually requires inter-ministerial coordination.

The responsible authority should use the information collected to ensure that the pesticides manufactured meet the applicable quality standards and specifications.⁵

Licensing schemes for the manufacture or formulation of specific products must also comply with international obligations (see section 2.3). For example, under the Rotterdam Convention, an importing Party that does not consent to the import of a listed chemical must also prohibit the chemical's production for domestic use in national legislation (for example by including it as a banned chemical under the pesticide law). The same holds true for any importing Party that consents to importation of a chemical with conditions: those same conditions must apply to domestic production. An efficient record-keeping and communication system is therefore imperative to ensure that chemicals rejected under the

⁵ See FAO/WHO work on pesticide specifications at: <http://www.fao.org/pest-and-pesticide-management/guidelines-standards/faowho-joint-meeting-on-pesticide-specifications-jmps/en/>.

PIC procedure of the Rotterdam Convention are not later approved for domestic production or use. The ILO conventions (ILO, 1990, 2001) that apply to worker safety during manufacture must also be reflected in the pesticide licensing scheme.

Each country should determine which international obligations it is required to follow according to the international conventions it has signed or intends to sign, and how to address those obligations in the pesticide licensing scheme.

3.3.2. *Importation*

In some countries and jurisdictions, pesticide importers must obtain a license that serves as general permission to import pesticides. Once in possession of the license, importers generally do not require a permit to import any particular consignment. Import licenses provide assurance that the applicant has adequate facilities and knowledge to import and handle pesticides.

A typical pesticide licensing scheme requires importers to demonstrate their capacity to implement and agree to the following to obtain a license:

- ensure that all imported products are registered pesticides and that they are adequately packaged and labelled in conformity with national legislation;
- do not handle illegal (e.g. counterfeit, fake, unregistered or banned) pesticides, and report these to the appropriate authorities;
- handle specified quantities of the pesticide appropriately, including having a risk management plan for spills or leaks;
- store the pesticides properly, which includes adequate stock-planning to ensure that storage does not exceed established maximum periods (e.g. 60 days);
- refrain from repackaging pesticides without specific approval from the national authority in charge of pesticide management (with the exception of repackaging to replace leaking containers);
- provide data efficiently to retailers, manufacturers and distributors, including the origin of the pesticides;
- use machinery properly to move the pesticide(s);
- obtain prior consent to export of a pesticide listed in Annex III of the Rotterdam Convention to a member Party;
- keep records of which pesticides are imported and in what quantities, and report them to the pesticide management unit as prescribed;
- keep records of where the importer sent the pesticide after import, and report them to the pesticide management unit as prescribed; and
- report obsolete stocks to the designated authority and refrain from disposal (FAO, 2011) without a permit.

Example from current practice: *In Guam, importers of pesticides are required to keep records of the importation and sale for at least 2 years, including tracking the delivery, movement, holding or storage of a pesticide and its quantity, name and registration number.*

3.3.3. *Storage*

Some jurisdictions require a specific license to store pesticides in general or to store quantities above a certain level or certain types. These licenses may impose specific risk reduction or risk management

measures or restrictions on the location of stores. Generally, granting of a license is accompanied by requirements for record-keeping and reporting. Licensing schemes for pesticide distributors and retailers may also include storage requirements, which need not be covered by separate licensing for storage.

3.3.4. *Distribution*

To obtain a license, a distributor must agree to the following and demonstrate sufficient ability to:

- handle large quantities of the pesticide appropriately, including having a risk management plan for spills or leaks;
- ensure that all products held are registered pesticides only and that they are adequately packaged and labelled in conformity with national legislation;
- properly store the pesticides for a specific period;
- refrain from repackaging pesticides without specific approval from the national authority in charge of pesticide management (with the exception of repackaging to replace leaking containers);
- provide data to retailers and manufacturers efficiently;
- keep records of the sale of the pesticide to customers;
- keep records of the purchase of the pesticide from the manufacturer or importer;
- use machinery properly to move the pesticide;
- report obsolete stocks to the designated authority, and refrain from disposal without a permit; and
- have available for distribution the necessary PPE (FAO/WHO, 2020d) required for eventual use of the pesticide.

3.3.5. *Retail sale*

Pesticide licensing programmes usually require retailers to apply for a license to sell pesticides. This is often made explicit by prohibiting, within the jurisdiction, the sale of pesticides by anyone not in possession of a valid license.

Licenses for the sale of pesticides help to ensure that sellers provide the appropriate products to consumers, users and farmers so that they will use the pesticide as intended, such that their use does not pose unnecessary environmental or health risks.

Article 8.11 of the Code of Conduct refers to the establishment of a licensing scheme whereby only competent, trained sellers are permitted to sell pesticides, to ensure that buyers receive sound information on the selection and use of pesticides and their associated risks. In certain countries, retailers are the sole or main source of information on the management of pests and pesticides.

As noted above, in designing a pesticide scheme, governments should evaluate the local context and the available resources in deciding the reach of the retail licensing scheme to ensure that the responsible authority has the capacity to inspect and monitor what may be a significant number of retail license holders dispersed geographically throughout the jurisdiction.

Example from current practice: *In Canada, licenses are issued according to vendor type. For pesticide storage and display, Canadian regulations require, among other things, that the license holder (i) store the pesticide in a manner such that it is not likely to negatively affect the health or safety of a person, (ii) display warning signs of the pesticides being*

stored and (iii) store the pesticides in an area that is maintained and in good repair so as to prevent contamination of the natural environment.

Licensing of retail pesticide shops helps to ensure that only registered, properly packaged and labelled pesticides are sold and that the facilities are appropriate for safe storage of pesticides.

Large shops in towns, for example, often serve as intermediate distributors and therefore need more storage facilities, whereas turnover will be more rapid in small village shops and supermarkets.

The requirements for such licenses may include confirmation that:

- the information in the application is complete and accurate;
- the applicant is technically competent to operate the business as proposed;
- the applicant has basic knowledge about pesticides, their uses, the risks involved in using or handling them and standard risk reduction measures;
- the applicant has been trained and is competent to ensure that buyers receive sound information for the selection and use of pesticides and about the associated risks;
- the applicant is capable of handling large quantities of pesticides appropriately and has in place a risk management plan for spills or leaks;
- the applicant has knowledge of applicable pesticide legislation and the list of permitted, severely restricted and banned products;
- the applicant agrees to abide by the relevant pesticide legislation;
- the applicant has the appropriate machinery for moving the pesticide as necessary;
- the applicant has the capacity to properly store the pesticides for a specified period (e.g. 365 days);
- the applicant has available the protective gear and PPE required for proper use of the pesticide being sold;
- sufficient occupational safety measures are in place to ensure proper handling of the products (training, use of protective gear, equipment and materials to handle pesticides, deal with emergencies and provide first aid);
- the location, land and facilities are appropriate for the proposed use without risk to human or animal health or the environment;
- the applicant will sell registered pesticides only in their approved packaging;
- the applicant will not repackage or relabel pesticides;
- the applicant's storage facilities meet the requirements;
- the applicant will not store obsolete pesticides, will report obsolete stocks to the designated authority and will refrain from disposal without a permit;
- the pesticides are properly displayed and adequately segregated from other products (e.g. separate from food or from fertilizers);
- the facilities and procedures are adequate to deal with expired products, leakage from pesticide containers and management of empty containers (FAO, 2008) and waste products;
- the applicant is capable of keeping accurate records of purchases from manufacturers, importers or distributors and of sales to customers and is committed to reporting them to the pesticide management unit as prescribed; and
- the applicant is capable of efficient provision of data to pesticide users.

The responsible authority should inspect the premises before issuing a license to ensure compliance with the established requirements. Follow-up inspections (regular, planned or ad hoc) ensure that requirements continue to be met. Otherwise, the license is subject to suspension or revocation.

3.3.6. Sale of household pesticides

Different arrangements may be considered for licensing sales of household pesticides (FAO/WHO, 2020b). Clear criteria should be stated for who can sell household pesticides and when a license is required. In this respect, it may be desirable to differentiate between bulk sale of such pesticides for professional use (e.g. by professional vector control or gardening services) and retail sale of household pesticides (to non-professional or amateur users) in ready-to-use packaging at outlets such as garden centres and supermarkets. A license could be required in both cases and could be particularly helpful in the case of retail sales, ensuring that retailers can advise non-professional users about the best solution to their pest problems. Nevertheless, the practicalities of administering a system that issues many licenses to retailers even in the most remote areas are challenging in even the most sophisticated jurisdictions. As noted earlier, it is important for governments to consider such practical issues and their own capacity when they design systems and decide which activities will require a license and which will not.

3.3.7. Sale of pesticides from vehicles

If sale from vehicles or other mobile units is permitted (limited for example to remote areas where there are no shops), it should be made clear that licensing also applies and that these mobile units are subject to inspection. Transporting pesticides by small van or vehicle has unique risks, as a vehicle with large quantities of pesticides may travel on rough, isolated roads. The responsible authority should target licensing requirements to the vehicle itself to ensure that it can safely transport pesticides. In this case, the license holder must meet the same requirements as retailers but with the added burden of proving that its vehicle can transport pesticides safely with minimal risk.

3.3.8. Sale of pesticides over the Internet

National legislation governs the sale, transport and distribution of pesticides regardless of where they are sold, in shops or online. Generally, the law obligates sellers (including those who sell over the Internet) to ensure that any pesticides sold are registered and labelled in accordance with the rules of the destination jurisdiction. In multi-jurisdictional systems such as the European Union and the USA, both overall and specific legislation may apply. In addition, more detailed rules may apply to more dangerous pesticides such as HHPs, requiring the sellers or applicators to be licensed in every jurisdiction in which they intend to supply these types of pesticides.

Sale of pesticides over the Internet is a complex issue, as the market situation changes continuously, and sellers and buyers can hide behind false names in often unknown locations. E-commerce can facilitate the purchase of illegal pesticides on international markets, including those that are banned in most countries, not registered for use in the country of the buyer or are fake or counterfeit products.

Countries may decide to require special licenses or to require the applicant to extend pesticides sales licenses specifically to Internet sales. Such a special license or extension of a sales license must incorporate the necessary guarantees to ensure the responsibility of the seller for any problems with the

product, such as conservation of the product after delivery and upon arrival to the buyer (e.g. if the product is exposed to very high temperatures during transport).

The potential for anonymity increases the risks of improper handling and use of pesticides sold over the Internet, hence increasing health risks and environmental contamination.

Enforcement is difficult, because it is harder for responsible authorities to ensure compliance with labels and instructions for pesticides sold online.

The responsibilities and potential licensing requirements of Internet platforms that serve as intermediaries between the buyer and the seller require particular attention, particularly in the case of international trade. National legislation may require Internet platforms to assume some responsibility for sales, such as to verify that sellers are licensed in their country of origin; ensure that only products registered in the country of the buyer are sold; and guarantee that the seller can be contacted and that the buyer can make a complaint or potentially take action against the seller.

3.3.9. Commercial operators

Some licensing schemes cover people who apply pesticides for pay, such as PCOs for aerial (including drone or fumigation) application. This type of license is designed to guarantee the responsible and proper use of pesticides by such commercial operators. Licensing in this case contributes to protecting the health and safety of those who conduct ground or aerial application (FAO, 2001a; FAO, 2001b)⁶ of pesticides and to reducing the risks to human and animal life and health and the environment due to uncontrolled or incorrect application of pesticides. The FAO/WHO *Guidelines on licensing of public health pest control operators* (FAO/WHO, 2015b) provide additional, detailed guidance for PCOs who provide services in or around premises and public places, although the guidelines are not applicable to pest control services in the agriculture and forestry sectors.

PCOs provide specialist services in pesticide application, which may involve handling more toxic formulations and therefore require the use of special application equipment and PPE. Some commercial operators specialize in agricultural applications, while others specialize in vector control and in pest control in buildings.

Some of the conditions that legislation may impose for obtaining a commercial license include the following.

- The operator must take a prescribed training course and receive the necessary authorization.
- The authorized person must be the one who supervises and trains others working in the same company. In some cases, all those who apply a pesticide should be licensed.
- All pest control contracts must specify the use of the pesticides to be applied, including any restrictions on location (e.g. distance from schools, bodies of water or hospitals).
- The business must be equipped with the required safety equipment and protective clothing for those who apply the pesticide.
- The company must have an occupational health programme for workers exposed to pesticides.
- The company must organize a maintenance programme for spray equipment.

⁶ The “FAO Guidelines on good practice for aerial application of pesticides” was under revision at the time of preparation of this guidance. The revision will include information about drone application, which may be subject to separate licensing.

- The company must keep records of all pesticide-related operations, including any spills.

The FAO/WHO Guidelines (FAO/WHO, 2015b) state that the approach to licensing of PCOs depends on the jurisdiction's stage of development in pesticide management and on the types of pesticides at issue. As noted above, whatever approach is used in designing a pesticide licensing scheme, it should be pragmatic, effective and account for the resources available.

3.3.10. *Special licenses*

Jurisdictions may issue specific, more specialized licenses, depending on the range of pesticide uses and pesticide types. Examples of situations in which a special license is required are:

- ***for the sale, import, storage or transport of severely restricted pesticides or some HHPs.*** These licenses may be conditional on specific training or storage requirements and may include the obligation to sell only to licensed users. Requirements for obtaining such a license include proof of knowledge about these pesticides (including proper handling, risk reduction and dealing with emergencies), use of appropriate PPE and application equipment and a requirement for monitoring the health of employees. Posted notices may be required on premises, and there are usually special reporting requirements regarding spills or other incidents.
- ***for use of unregistered pesticides for research purposes or emergency application.*** Such licenses generally restrict the purpose, location and duration of the activity to be carried out with the specific pesticide, and on the quantities to be used.
- ***for pesticide application not by commercial operators but by agricultural producers themselves.*** These licenses might be required, for example, when a farm owner conducts such activities as aerial or drone applications or fumigation on a large plantation. The license would probably be limited in time, to a specific geographical area or to a specific time of the day (e.g. only during daylight).
- ***for pesticide disposal or waste management.*** These licenses are issued to those who dispose of (obsolete) pesticides, process or recycle (empty) pesticide containers or deal with other pesticide wastes.
- ***for those conducting pesticide training.*** Licenses are issued to people authorized to train pesticide operators or users.

4. Elements of a pesticide licensing scheme

Once a nationwide risk assessment has been conducted to identify the pesticide-related activities that should be licensed, the government will design an appropriate licensing scheme and enshrine it in legislation. The licensing scheme should account for the roles and duties of different ministries and their potential role in pesticide inspections and for the division of competences between central and decentralized levels (regions, states, local). In defining the types of license in the system, they should consider the available government capacity and resources for managing the issuance and monitoring of licenses and the associated inspections. The legislation should also clearly set out the mechanisms for enforcement and identify the penalties for violations. A transition period may be necessary, for instance to allow for implementation of a nationwide training of retailers. The licensing scheme will consist of a series of steps, which are set out in the next sections.

4.1. Application process

Application for a license is an opportunity for the responsible authority to collect information on how pesticides will be used. The process for applying for a license depends on the user.

Example from current practice: *Guyana requires applicants to take and pass a written or oral examination on both general and specific standards linked to the applicant's specialization.*

4.1.1. Who is required to obtain a license?

The responsible authority should require everyone who has a major role in the pesticide life cycle to obtain a license. For example, this would include owners or leaseholders of premises used for the sale of pesticides. It would also include operators of pesticide storage sites, including supermarkets, Internet retailers, informal vendors and pesticide applicators. Practically, however, depending on how large the jurisdiction is, it will be difficult or impossible to require all supermarkets and village markets that sell household pesticides to obtain a license.

4.1.2. How is a license obtained?

The process may be similar for most applicants. **Applicants submit an application to the responsible authority, which reviews the application and collects a fee.** If the applicant is a distributor, retailer or storage facility, the responsible authority inspects the premises, and, if it determines that the applicant and the premises qualify, issues a license.

4.2. Validity and renewal of licenses

4.2.1. *Period of validity*

A license should be valid for a specified time (e.g. 5 years), which will depend on the risks associated with the licensed activity and national capacity.

Importers, manufacturers, distributors and retailers should be required to renew their licenses at the end of the period of validity so that the responsible authority can conduct monitoring. It is important that the validity period not be too short, as a short period could increase the administrative burden of inspection and collection of fees to renew licenses at their expiration.

4.2.2. *Renewal (during period of validity)*

Although the responsible authority will conduct announced and unannounced inspections, renewal provides another formal opportunity to ensure that the license holder is still complying with the license conditions (including continued education and training). Generally, the responsible authority imposes requirements for license renewal at regular intervals. Renewal is also usually subject to a fee.

Example from current practice: *In Australia, generally, each state requires a license holder to submit an application for renewal, with a fee. In some jurisdictions, for operator licenses, officials test crops for pesticide residues and visit storage facilities to verify that the facility is complying with the conditions of the operator or applicator license.*

4.2.3. *License transfer*

Generally, license holders who are commercial operators (not retailers) can apply to transfer a license to a third party in cases of bankruptcy, death or corporate merger. The responsible authority establishes the requirements for any such transfer. Retail licenses are generally *not* transferable, because they require training and knowledge, which are personal to the applicant.

4.3. Suspension or revocation of licenses

As noted earlier, licensing is an important mechanism for enforcement. After introduction of a licensing scheme in a country, all businesses that are not licensed will be closed down. This serves as a deterrent to operation without a license and is an incentive to apply for a license and pass regular inspections to retain it. Suspension and revocation are useful for the responsible authority in situations in which a license holder does not meet its obligations or when a product has been de-registered or other new information or circumstances arise that identify an unacceptable risk associated with the licensed activity.

As suspension and revocation of licenses have weighty consequences, the legislation should set out clear criteria and procedures to avoid capricious government action and ensure fairness.

4.3.1. *Suspension*

A suspension indicates that license holders may qualify for renewal if they remedy the actions or omissions that triggered suspension. The problem might be as simple as a documentation error or as serious as deteriorating sanitation conditions at a storage facility.

4.3.2. *Revocation*

Revocation of a license indicates that the license holder cannot renew it. A license should be revoked if the licensee makes false statements, repeatedly violates license requirements and/or the situation leading to revocation cannot be remedied. An example might be a seller who continually violates sale conditions or an applicator who routinely misuses safety equipment or fails to provide required training to employees. The specific requirements for revocation, such as how many violations of license requirements lead to revocation of a license, must be established in the legislation.

Both suspension and revocation should be subject to appeal, whereby a license holder objects to the administrative decision that suspended or revoked the license. To facilitate appeal, the responsible authority should be required under the legislation to issue a written document explaining the decision to suspend or revoke and clearly identifying any remedial actions that the license holder must take and within what period to lift the suspension before enforcement.

4.4. **Appeal procedures**

The FAO/WHO *Guidelines on pesticide legislation* (FAO/WHO, 2020a) indicate that licensees should be made aware of the time for appealing negative administrative decisions. A typical appeal procedure will consist of the following.

1. The responsible authority issues a negative response in writing.
2. The licensee files an appeal against the decision within a set period.
3. The responsible authority reviews the appeal, also within a specified period, during which the responsible authority may request additional information and may conduct an inspection.
4. The responsible authority issues a decision in writing.

4.5. **Licensee responsibilities**

License holders have three responsibilities: compliance, documentation and reporting. The government has parallel responsibilities, and, in some circumstances, licensees may be unable to comply with their obligations if the government does not meet its own. This section reviews licensee responsibilities, while section 4.6 addresses government responsibilities.

4.5.1. Compliance

A license holder must comply with domestic and international law and with any conditions attached to the license in order to retain it. For most types of pesticide license, the requirements should generally include the following.

1. The license holder is legally producing, selling or dealing with pesticides. Pesticides should be sold or purchased only if they are registered in the jurisdiction. Registration is covered in other guidelines (FAO/WHO, 2010b, for chemical pesticides and FAO/WHO, 2017, for biological pesticides) and tools (e.g. [the FAO registration toolkit](#), FAO, 2019). At the least, the licensing scheme should require that license holders deal only with registered pesticides that are packaged and labelled as prescribed.
2. License holders should provide proof that they have adequate knowledge of pesticides. This could include technical knowledge about how to use a pesticide or knowledge of the legal requirements to distribute it. The responsible authority may choose to offer training for owners of pesticide shops and require that they obtain a training certificate as proof of adequate knowledge. The legislation may also list other ways in which license holders can prove that they have technical knowledge.
3. The license holder must store the pesticide in such a way as to meet the prescribed safety requirements.
4. The license holder should understand any risks to end-users and can communicate them to those who may be exposed to the pesticide.
5. The license holder is capable of keeping adequate records and reporting them as required.
6. License holders adequately display their licenses.
7. The license holder will cooperate with inspectors and the necessary authorities.

4.5.2. Documentation

License holders must keep records and properly document the activities required to hold a valid license, depending on the license type. Documentation could include records of the quantities manufactured and imported, and reports of batch analysis for quality, purchases, sales and distributions of pesticides over a set period.

4.5.3. Reporting

License holders are obliged to report, on a defined, regular basis, to the responsible authority that issued the license. For example, a distributor that holds a license to distribute pesticides should report regularly to the responsible authority where and to whom it sold which pesticides (e.g. product name, manufacturer or importer, batch numbers) in the country. This will assist the authority in tracking where pesticides are used and how much of various types of pesticide is distributed around the country. Reporting requirements may be imposed on license holders so that they send reports regularly, or license holders may only have to respond to requests by the responsible authority.

4.6. Government responsibilities

As said in the previous section, the obligations of many license holders may depend on the government meeting its own obligations.

At the most basic level, the government must allocate sufficient budget and staff to the responsible authority to implement the licensing schemes.

For example, there must be sufficient numbers of inspectors and inspectors with sufficient resources (such as means of transport and communication) to conduct the necessary inspections. The responsible authority must also have sufficient capacity to provide any training that license holders are required to complete or identify the appropriate entity to conduct such training.

Equally, in order for license holders to report accurately on the types of pesticides they handle, the government must make information about registered, banned, severely restricted pesticides and HHPs easily accessible. When license holders are obligated to report to the responsible authority, the government must ensure that the responsible authority has the capacity to review and maintain the reports and to follow up on any information in the reports. All these considerations should be included when the government designs the licensing scheme.

4.7. Responsibilities of other stakeholders

As outlined in the Code of Conduct, all stakeholders involved in pesticide management are responsible for promoting best practice and risk reduction throughout the pesticide life cycle. In addition to national governments and those targeted by licensing as outlined in this guidance, other stakeholders can play a role in licensing.

Pesticide industry associations and manufacturers have a role in training importers, distributors and retailers and providing them with safety data sheets, including for transporters. They also train retailers and provide information on pest and pesticide management. They issue safety data sheets and report on fake, counterfeit and substandard products to national authorities or other international networks⁷. The pesticide industry should take a proactive approach to preventing violations by retailers, including by:

- ensuring adequate availability of registered products that are properly packaged and labelled, and
- supplying only distributors and retailers that hold the required licenses and requiring the same from intermediates.

The role of **civil society organizations** could comprise:

- monitoring the sale of pesticides and reporting violations to the relevant authorities, and
- monitoring to provide feedback to policy-makers on the effectiveness of the licensing (and inspection) scheme.

⁷ ONIP: OECD Network on Illegal Trade of Pesticides (OECD, 2018).

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Additional reading relevant to pesticide licensing

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Annex 1. Pesticide licensing schemes in selected jurisdictions

This section summarizes several examples of pesticide licensing programmes in various countries to provide concrete options for jurisdictions that are considering creating or updating licensing programmes.

These examples were collected at the time of writing this guidance, and the reader is invited to check with the national authorities (starting with their websites) to determine whether the information is still accurate and up to date.

Australia

In Australia, the Federal Government does not regulate the control of use of pesticides, which is the responsibility of states and territories. Some pesticide licenses are issued by health departments, and others are issued by environment or agriculture departments.

Canada

Canada has a two-part system. The central Government regulates and registers pesticides and oversees their sale, storage, use, transport and disposal, while provincial governments license pesticides once they are registered in the country. For example, in Ontario, the provincial government licenses pesticides under three categories: exterminator license, operator license and vendor license. The category of license determines its cost, minimum handling requirements (such as the age of the applicant) and training information (<https://www.ontario.ca/page/pesticide-licences-and-permits>).

China

China amended its Regulation on the Administration of Pesticides in 2017 to include overseeing of pesticide production, registration and marketing. Entities intending to manufacture, process, package or use pesticides in China are required to obtain a pesticide production license from the provincial agricultural department. Similarly, an entity intending to market pesticides (except for public health pesticides) must apply for a pesticide marketing license, also at provincial level.

Eritrea

Under the Regulations for Importation, Handling, Use, Storage and Disposal of Pesticides (2006), Eritrea requires licenses for pesticide importers and dealers. Applicants must apply to the Ministry of Trade and Industry for a license. Once issued, licenses can be suspended or revoked if:

- the license was obtained on the basis of false information;
- the license holder imports, distributes, keeps, sells or applies pesticides that are excluded from the National List of Pesticides, are adulterated, expired or hazardous or are stored at unapproved premises; or
- the license holder obstructs an inspector in the course of his or her duties.

Guyana

Under its Pesticides and Toxic Chemicals Control Act (2000), Guyana allows private and commercial applicators to use pesticides. For example, commercial applicators must be certified in one or more specialized categories, including industrial, agricultural and aquatic pest control. Only certified applicators may apply restricted pesticides.

Applicants must pass written or oral examinations on general standards and on specific standards, when applicable. Licenses are valid for 2 years and can be renewed by completion of an additional training programme or by re-examination.

India

In India, pesticides are registered centrally by the Registration Committee constituted by the Government, while licenses for manufacture, sale, storage, distribution and pest control operations are issued by state governments. The state governments notify state licensing authorities for the purpose. Application for a license is made on prescribed form(s), with a fee, and the license is issued in the prescribed form with conditions. If a pesticide is proposed to be manufactured at more than one place, separate applications are required and licenses issued in respect of each place.

The license to manufacture a pesticide must be kept on the approved premises and be produced for inspection at the request of an inspector. Every pesticide to be manufactured on the premises must be endorsed on the license.

At present, licenses issued for manufacture, sale and distribution have no period of validity, while, earlier, licenses were valid for 2 years. Licenses for storage and pest control operations are valid for 5 years from the date of issue, to be renewed periodically. If the holder of a license is unable to comply with any of the conditions subject to which the license was granted, the license can be revoked, suspended or amended by the authorities.

No license to manufacture a pesticide is granted unless the licensing officer is satisfied that the necessary manufacturing plant, machinery, safety devices and first-aid facilities are on the premises. The manufacturing facility must also have qualified personnel.

Any person aggrieved by the decision of a licensing officer may appeal against the decision within 30 days of its communication. The appellate authority shall, after giving the appellant an opportunity to show cause, dispose of the appeal within 6 months, and the decision of the appellate authority is final.

The holder of a license may, at any time before expiry of the license, apply for permission to transfer the license to another person.

Ireland

Under the European Communities (Sustainable Use of Pesticides) Regulations (2012), Ireland requires professional users and distributors of pesticides to hold licenses. Ireland maintains a country-wide register of professional users, distributors, advisors and inspectors of pesticides and equipment.

Professional users and distributors must hold licenses that confirm that they have been trained and comply with training requirements. Licenses may be withdrawn for failure to satisfy training requirements or if a user commits an offense that results in misuse of pesticides or in water pollution.

Users may not be required to hold a license if they:

- farm only grassland;
- use a limited amount of pesticides;
- do not apply pesticides to large areas of land; or
- are supervised by licensed professional users.

Lao People’s Democratic Republic

Under the Regulation on the Control of Pesticides of 2019, the Lao People’s Democratic Republic requires retailers to apply for pesticide licenses. Applicants must apply to the Ministry of Agriculture and Forestry, attend a training course on pesticide management and pay a fee. The Ministry may educate, warn, fine or punish license holders who violate the regulations, depending on the severity of the violation.

United States of America

In the Federal system, pesticide licensing, referred to as “registration” in the USA, is overseen by the United States Environmental Protection Agency (EPA). The EPA regulates pesticides under broad authority granted in two major statutes:

- the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), and
- the Federal Food, Drug, and Cosmetic Act (FFDCA).

These laws have been amended by the:

- Food Quality Protection Act (FQPA), and
- the Pesticide Registration Improvement Act (PRIA).

In addition, the Endangered Species Act (ESA) requires US Federal agencies to ensure that any action they authorize, fund or carry out is unlikely to jeopardize the continued existence of any listed species or destroy or adversely modify any critical habitat of those species. The EPA is responsible for reviewing information and data to determine whether a pesticide product may be registered for a particular use.

Under FIFRA, training is required for workers in pesticide-treated areas and certification and training for applicators of restricted-use pesticides (RUPs). RUPs are not available for purchase or use by the general public. They have the potential to cause unreasonably adverse effects on the environment and injury to applicators or bystanders without added restrictions. The “restricted use” classification restricts a product or its uses to a certified applicator or someone under the direct supervision of a certified applicator.

Anyone who applies pesticides must comply with Federal and state laws. In general, states have primary authority for monitoring compliance and enforcing laws against illegal pesticide use. State governments may develop their own regulations that are stricter than those of the EPA’s federal pesticide regulations. These regulations are enforced by each state’s pesticide regulatory office. Federal law requires any person who applies or supervises the use of RUPs to be certified in accordance with EPA regulations and state, territorial and tribal laws. The state, territorial and tribal authorities certify RUP applicators.

If a person applies pesticides for the production of an agricultural commodity on land in which that person or their employer owns or rents, they are a private applicator. A person who does not meet the description of a private applicator is a commercial applicator.

Private applicator license

To receive a license as a private applicator, the applicant must show practical knowledge of:

- pest problems and control practices associated with agricultural operations;
- proper storage, use, handling and disposal of pesticides and containers; and
- legal responsibility.

In addition, the applicant must be able to:

- read and understand pesticide labels and labelling;
- apply pesticides according to labelling instructions and warnings; and
- recognize common pests and the damage caused by them, local environmental situations to be considered during application to avoid contamination and poisoning symptoms and procedures to be followed in case of a pesticide accident.

Private applicators are certified by a state, territory or tribe by passing a written or oral test, attending a training course or by another system approved by the EPA.

Commercial applicator license

To receive a license as a commercial applicator, the applicant must show practical knowledge of:

- pesticide use and safety;
- at least one specific category (type/site) of application;
- pesticide labels and labelling comprehension;
- safety, including pesticide hazards, first aid, personal protective equipment and emergency response;
- pesticides in the environment;
- pest identification and management;
- pesticide formulations;
- pesticide application equipment and application techniques; and
- laws and regulations.

Ten Federal categories of pesticide use require a license. States, territories and tribes may add to or delete from the list:

- agricultural pest control:
 - plant: for production of agricultural crops;
 - animal: for use of pesticides on animals, such as beef cattle, dairy cattle, swine, sheep, horses, goats and poultry.
- forest pest control;
- ornamental and turf pest control;
- seed treatment;
- aquatic pest control, including application of pesticides purposefully to standing or running water;
- right-of-way pest control: for maintenance of public roads, electric power lines, pipelines and railways;
- industrial, institutional, structural and health-related pest control, covering use of pesticides in and around:
 - food-handling establishments;
 - human dwellings;
 - Schools;
 - Hospitals; and
 - industrial establishments, including warehouses and grain elevators.

- public health pest control: for use of pesticides to control pests of medical and public health importance;
- regulatory pest control, meaning state, federal and other governmental employees who use or supervise the use of pesticides in the control of regulated pests, such as the Mediterranean fruit fly; and
- demonstration and research pest control.

Commercial applicators are certified by a state, territory or tribe by passing a written test, passing a performance-based test or another system approved by the EPA.

Applicators must be recertified periodically to maintain certification. This generally requires continuing education courses every 3–5 years.

More information on pesticide licensing in the USA is available at: <https://www.epa.gov/pesticide-worker-safety/revised-certification-standards-pesticide-applicator>.

Food and Agriculture Organization of the United Nations

<http://www.fao.org/pest-and-pesticide-management/en/>

Viale delle Terme di Caracalla

00153 Rome - Italy

World Health Organization

<https://www.who.int/teams/control-of-neglected-tropical-diseases>

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