



# **COUNTERACTION TO COUNTERFEIT AND CONTRABAND PESTICIDES**

**METHODOLOGY**

Counteraction to Counterfeit and Contraband Pesticides. Methodology  
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Authors: M. Malkov, S. Prischepa, T. Kutonova

Project manager and editor: T. Kutonova

Assistance in editing the English version: L. Kalashnyk

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## ABOUT THE PUBLICATION

Counterfeit pesticides are roughly estimated to be as high as 25% of the global pesticide market. The profitability of the illegal trade in counterfeit pesticides makes it one of the top ten most lucrative organized crime businesses (Europol, 2012; Fishel, 2015). Counterfeit pesticides pose a threat to farmers' lives as, even when slightly changed, their properties can surge toxicity, which can seriously affect human health. Unlike the pesticides authorized for use, the chemical composition of counterfeit pesticides is unknown and even a slight alteration can significantly increase their toxicity. Such pesticides are very likely to have a negative effect on biodiversity, contaminating soil and water. Detected counterfeit pesticides in most cases are nothing else but hazardous waste and a subject to special storage and disposal. Businesses and food industries involved in dealings with counterfeit pesticides risk incurring severe financial losses and damaging their reputation.

All countries in Eastern Europe, South Caucasus and Central Asia import pesticides. Part of them are imported illegally. Such contraband pesticides quite often turn out to be counterfeit. Additionally to the counterfeit-related risks and threats outlined above, illegal trafficking of pesticides contributes to the social pressure caused by cuts in revenues to the state budget due to the undervaluation of these goods.

Since 2008, the Organization for Security and Co-operation in Europe (OSCE), within the framework of the Environment and Security Initiative (ENVSEC),

has been supporting the capacity building of organizations responsible for identification and prevention of transboundary environmental crimes. The project portfolio has grown considerably with projects on illegal transboundary movement of waste (the subject matter of the Basel Convention on Transboundary Movement of Hazardous Wastes and their Disposal), ozone depleting substances (the Montreal Protocol on Substances that Deplete the Ozone Layer), and species and their derivatives listed in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). It was in Tbilisi in June 2014, during the 2nd Regional Workshop of the EC/FAO on Pesticide Life Cycle Management (for Eastern Europe, South Caucasus and Central Asia), that it became evident that such OSCE experience can be beneficial for the region's efforts to combat counterfeit pesticides. The OSCE also supported the removal and safe disposal of unusable pesticides within the framework of another ENVSEC project, which saw over 100 tons of outdated pesticides removed from Transnistria /Republic of Moldova for safe disposal.

This publication was prepared, inter alia, in response to the requests and proposals made by the participants of the aforementioned workshop. While developing its concept, the authors of the publication thought to cover counterfeit pesticides as well, for there is a direct link between the counterfeit pesticides and the illegal trafficking of pesticides. To bet-

ter understand the proposed methodology for counteracting contraband and counterfeit pesticides, the publication provides explanations of underlying reasons for the phenomena, regional trends, particularities of the illegal production of counterfeit pesticides, and *modus operandi* at different stages of their transportation across the borders. The counteraction methodology for this type of crime is based on the approach comprising three phases: prevention, preparation and response to already committed

crime. Hopefully, this approach will enable decision makers and implementers to see and address the issue in a more efficient and comprehensive manner.

It is necessary to highlight the importance of following all the safety regulations when dealing with pesticides (during examination, customs checks, etc.), for it is the human life and health that should be considered in the first place, in the modern pesticide life cycle management.

*Authors*

## EXECUTIVE SUMMARY

According to various estimates, the share of counterfeit pesticides on the global pesticide market is as high as 25%, with not less than 70% of which coming in small packages (for private agricultural producers and small farmers). This criminal business is in the top ten in terms of profitability. In general, it is comparable to annual global market of illegal transportation of waste (10–12 billion USD) or endangered species (7–23 billion USD) and plants and wood (30 to 100 billion USD). To obtain higher benefits international criminal groups are increasingly using complex supply chains, including repackaging, re-marking and changing labels. Given a modern trend of increasing production and consumption of pesticides, the circulation of counterfeit pesticides has to be considered a new global threat.

The use of counterfeit pesticides poses a threat to human life and health, as well as to the environment. Both, direct work with pesticides and use of the products containing pesticides, entail accumulation of toxins in human organs, and increase the risk of various diseases. Unlike permitted pesticides, chemical composition of counterfeit pesticides has not been studied, and therefore even a partial change in the physicochemical properties of the chemical components might increase its toxic effects (short- and long-term disruption of heart, kidneys, liver, endocrine system, leading to premature death). Substandard pesticides can also cause long-term contamination of soil, groundwater and surface water, which can also lead to transboundary impacts.

Detected counterfeit pesticides are hazardous waste that is subject to destruction, as it constitutes a costly burden for the countries of Eastern Europe, South Caucasus and Central Asia, and contributes to the accumulation of dangerous waste in unprotected warehouses. In spite of all efforts made, counterfeit pesticides often return to the market after changing labels. Return of detained counterfeit pesticides on the market is a very alarming new regional trend.

A methodology to combat counterfeit and contraband pesticides presented in this publication is based on the approach which includes prevention, preparedness and response to already committed crime. For example, a package of measures to combat trafficking of counterfeit pesticides includes independent system of pesticides registration, the application of the system of customs risk analysis, disposal of obsolete and waste pesticides, its packaging, a regular awareness campaign among the general public about the threats of counterfeit pesticides, raids on and seizure of counterfeit products, as well as the establishment of the “quarantine” warehouses. The number of contraband pesticides is often related to the share of counterfeit pesticide products in the market. Proportion of contraband active compound may grow while the number of smuggled preparative forms may decrease in countries where there are legal producers of pesticides and illegal producers of counterfeit products. The appearance on the market of the counterfeit and contraband pesticides



is caused by economic reasons (the desire to maximize the benefits), lack of awareness and information (about the dangers of counterfeit and banned pesticides, and on the availability of the registered brands), gaps in national legislation and practice of pesticides management, and corruption.

In addition to being a threat to human health and to the environment, counterfeit and contraband products pose a risk to the economic activity of enterprises involved in the entire food production chain: losses due to confiscation of pesticides or products that do not meet quality standards, reputational risks, and direct losses from the state budget shortfall of customs duties. They could also be complicating factors in interstate relations.

The most commonly used methods of smuggling pesticides are: changing the concentration of the active ingredient, forging a name, weight or monetary value of the product, failing to declare it for customs control at the checkpoints, splitting a consignment, repackaging and re-forming the separate batches, interrupting a transit, and exporting the counterfeit goods under the disguise of moving the companies' stock balances. To detect smuggling during import, export, or transit it is necessary to verify and compare a vehicle's weight at the time of crossing the entrance and exit checkpoints. It is also advisable to check a route of a transit cargo using GPS-navigator. Import of pesticides must be controlled through the inspection of supporting documentation, visual control of packaging and labeling, and, in case of suspected contraband, sampling and performing of a lab analysis. Detection of smuggling during export requires a verification of a proof of origin of a cargo.

A strategy for combating the illegal import/export of pesticides involves active application of the customs risk analysis, waste disposal and packaging of the pesticide, establishment of customs laboratories, introduction of significant penalties and legal responsibility of importers for smuggling, limitation of the list of checkpoints and the number of their staff, registration and documentation of imported goods (including their active ingredients), promoting awareness campaigns among the general public, creating "quarantine" warehouses for arrested pesticide shipments, implementing legal and financial instruments (securities, insurance) for temporary storage and further destruction of waste after the final decision of the court, execution of special operations in order to detect smuggling of pesticides, and introduction of corporate security standards (QR-Codes).

Customs risk analysis and management system is at the forefront of anti-counterfeiting and anti-smuggling. All customs, regardless of whether a particular country is, or is not, a Party to the Convention on the Simplification and Harmonization of Customs Procedures (Kyoto Convention, 1973), use some form of risk management, implementing procedures to detect illegal activities. Some parameters for customs risk profiles for transboundary movements of pesticides include correct classification of goods and their quantitative and weight characteristics, documenting of the customs value of goods, tracking unusual and difficult routes, monitoring trading activities of the companies with negative history, and researching the origins of transported products.

Due to the fact that the population of the region (including private agricultural producers, businesses of

different sizes) is not aware of the threats and risks of counterfeit pesticides, it is necessary to conduct a major awareness campaign involving local authorities, media, and non-governmental organizations. Raising public awareness is one of the key elements of a strategy to prevent trafficking of the counterfeit and contraband pesticides.

Measures presented in this publication should be taken at the national level. It is essential to ensure the involvement of responsible businesses, social activists, and international organizations, as well as the development of interagency and international cooperation. The effectiveness of anti-counterfeiting and anti-smuggling activities greatly depends on interagency and intergovernmental cooperation (particularly between customs authorities of different countries), communication with businesses, civil society

and international organizations. Among the latter are the World Customs Organization, Europol, EU Border Assistance Mission to Moldova and Ukraine (EUBAM), UN Food and Agriculture Organization (FAO) and the World Health Organization (WHO), the Secretariat of the Stockholm, Rotterdam and Basel Conventions, the Green Customs Initiative, and the Collaborative International Pesticides Analytical Council (CIPAC).

Due to the fact that pesticides, regardless of whether they are legal or counterfeit, may have an impact on human health, such goods should be handled with extreme caution. If sampling is required, it should be performed by an expert trained in accordance with the ISO17025 requirements. If needed, it would also validate the results of the examination for its use as evidence in court.

## TERMINOLOGY AND DEFINITIONS

**Adulterated pesticide** is a pesticide with any of its components partially or fully altered, or with any of its elements partially or fully extracted, added or altered compared to approved specifications.

**Active substance (AS) of pesticide** is a biologically active part of a pesticide, which, when used in different preparative (physical) forms, affects certain type of harmful organisms, or the plant growth and development.

**Banned pesticide** means a pesticide, any form of usage of which was prohibited by final regulatory action, in order to protect human health or the environment. The term includes a pesticide that has been refused approval for first-time use, or has been withdrawn by the industry for any possible usage in the domestic market, and excluded from further consideration in a future approval process. These measures are taken only if there is clear evidence that such actions are necessary for the protection of human health or the environment.

**Codex Alimentarius** (Latin for “Book of Food”) is a collection of internationally recognized standards adopted by the FAO/WHO commission on implementation of code of standards and rules related to foods. The Code standards cover processed and raw foods, as well as semi-processed foods.

**Counterfeit pesticide** stands for non-standard / adulterated / falsely marked / pesticide.

**FAO** – UN Food and Agriculture Organization.

**Fake pesticide** is a pesticide produced by unapproved facility, not certified or not registered by its producer. It is produced by way of copying or imitating the original product with no authorization or rights to deceive or mislead and further sell the copied or imitated product as an original one.

**Formulation of pesticides** (toxic chemicals) means the technological process of production of pesticides (toxic chemicals) based on the initial ingredients.

**International Code of Conduct on the Distribution and Use of Pesticides** (hereinafter referred to as the Code) is a FAO-developed list of regulations which sets the voluntary standards for all state and private organizations dealing in pesticides or connected to such activity, especially in cases of absence of an adequate national legislation regulating the use of pesticides. The Code is a basis for development of a respective national legal framework in the field.

**Manufacturers of original of pesticides** (ORIGINALS) are, as a rule, large international companies and patent holders of AS and PF.

**Non-standard pesticide** is a pesticide which physical and chemical qualities are not in line with the minimum quality standards.

**Secured preservation** means the inspector’s ability to guarantee identity and integrity of the sam-

ples taken for governmental quality control from subtraction, detention, transporting, storage and analysis to findings delivery.

**Severely restricted pesticide** means a pesticide for which virtually all kinds of usage were prohibited by final regulatory action in order to protect human health or the environment, but for which certain specific uses remain allowed. It includes a pesticide that has been refused for approval or been withdrawn by industry either from the domestic market or from further consideration in the domestic approval process, and where there is clear evidence that such action has been taken in order to protect human health or the environment.

**Pesticides** (Latin “pestis” for “taint” and “caedo” for “to kill”) (agricultural toxic chemicals) are chemicals used against various parasites and pests (including pests of grain, wood, cotton, wool, and leather products), plant diseases, weeds, as well as against domestic animal ectoparasites and vectors of human and animal diseases.

It is customary to integrate the following groups under pesticides:

- ▶ **herbicides** that destroy weeds;
- ▶ **insecticides** that destroy insect pests;
- ▶ **fungicides** that destroy pathogenic fungi;
- ▶ **zoocides** that destroy harmful warm-blooded animals etc.

The industrial classification of pesticides includes 31 sub-groups.

Most of the pesticides are not only poisonous, but they also include the sterilizers (causing infertility) and inhibitors of growth.

**Pesticide Dossier** means a complete set of information about the pesticide, including data on active ingredient and formulations (in certain cases data on formulation is restricted), preparative form, agrochemical properties, application procedures, level of toxicity, safety measures, packaging, marking, etc.

**Pesticide quality control** stands for inspection of imported, produced and/or marketed pesticide products by authorities in order to check its compliance with regulations, including marking, packaging and specifications, as well as to determine reasons for discrepancies and to take necessary measures.

**Preparative (physical) form (PF)** is the composition of a pesticide active substance and subsidiary substance with defined chemical and physical properties (Currently, there are 57 preparative (physical) forms).

**Producers of generic pesticides (GENERIC)** are manufacturers of AS and PF but not developing/research facilities. Typically, the original PF patents have already expired

**Region** (for the purpose of this publication) stands for Eastern Europe (Belarus, Moldova and Ukraine), South Caucasus (Armenia, Azerbaijan and Georgia) and Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan).

**WHO** – World Health Organization.

# 1. COUNTERFEIT

## 1.1. Introduction

Pesticides when properly used can play a vital role in the agricultural production. The constant growth of world population, global climate change, and industrialization of agriculture result in the growth of the market of plant protection products, first and foremost pesticides. According to FAO, the world market of plant protection products annually generates over 50 billion US dollars, and it keeps growing. The report “Pesticide market, end user, geography of use: global trends and forecasts till 2019” predicts that the world pesticide market output might reach 3.2 million tons by 2019. 2013 already saw 2.3 million tons of pesticides produced, which means that at an average the annual growth rate of pesticide usage in 2014–2020 will be 6.1%. The better performance in fighting plant diseases and pests directly depends on the quality of pesticides and their proper use.

The second global trend is more stringent WHO and FAO requirements to quality and food safety. Due to the obvious presence of pesticides, and other agrochemical substances in all the links of the food production chain, including ready-made food, the usage of ingredients produced from the vegetable raw materials that have been cultivated with assistance of low quality pesticides can be dangerous for human health and even life. That means that there is a need for efficient state systems that would control the pesticide circulation. The International Code of Conduct on the Distribution and Use of Pesti-

cides developed by FAO (hereinafter referred to as the Code) states that governments on national level should improve their legal frameworks regulating collection and registration of data on import, export, production of preparative forms, quality and volume of pesticides; detect illegal trafficking and counterfeit pesticides, and fight it by means of national interagency and intergovernmental cooperation and exchange of information. WHO, FAO and the Commission on International Food Standards (Codex Alimentarius) are unanimous in their conclusion that the use of counterfeit pesticides is a new global threat.

The international organized crime groups are aware of the steady growth of the pesticide market. According to different estimates, including those of CropLife International, an international trade association of agribusiness companies, and representatives of different business associations, the share of counterfeit pesticide products on the world market is likely to be as high as 25%. It places this lucrative criminal business in the top ten most profitable illicit industries. Its total value can be compared with the world illegal waste market (10–12 billion USD per annum), or trafficking in rare and endangered species (7–23 billion USD per annum) and plants and timber (30–100 billion USD per annum). To secure more profits, international criminal groups exploit progressively more complex schemes, including such methods as repackaging and substitution of labels. It is believed that “if illegal pesticide producers

were a single company they would be the 4th or 5th largest” (Counterfeit and illegal pesticides, 2015).

## **1.2. Threats and risks related to the use of counterfeit pesticides**

The use of counterfeit pesticides poses a threat not only to human life and health, but also to the environment, as well as to the businesses involved in the food production. In the next sections each of these newly emerging threats will be examined in more detail.

### **1.2.1. Threats to human health and life**

First and foremost, the use of counterfeit pesticides is dangerous for farmers’ lives and health, as even when slightly changed, their properties can surge toxicity which poses a great threat to humans. Moreover, these pesticide profiles are stating incorrect and inadequate safety and personal protection protocols for its use. Unfortunately, there is an abundance of poisoning cases, some being even lethal. Typical symptoms in acute intoxication cases would be high fever up to 38-40 °C, endocrine system disorders, liver indurations and hepatomegalia, kidney and lung deficit (edema), impairment of consciousness and even coma. Extreme cases can be fatal as a result of stethoparalysis, or cardiovascular failure, or lungs and kidney failures.

Secondly, consumed pesticide-ridden foods might translate into toxin build-up in different human organs, thus making the person who was exposed to pesticides more prone to cancer, cardiovascular diseases, respiratory disorders, endocrine and gastrointestinal system disruption.

Side effects of pesticides, including the cases of exposure to obsolete pesticides, need to be differentiated in terms of their health impact on human organism. Women especially face a greater health risks, because of their leading position in the process of food production in rural communities. This factor increases the risk of infertility, miscarriage and stillbirth among women who work with pesticides, or whose partners deal with pesticides. In addition, some pesticides work as endocrine disruptors interfering with functioning of hormones. The transfer of agricultural chemicals into breast milk is also a concern. Even without a direct contact with pesticides, women in such agricultural areas frequently live, work and raise children in a toxic environment.

Definitely, this does not apply to all the pesticides. For, if correctly used, the negative effect on the human health of authorized toxic chemicals can be minimized. Whereas, unlike with authorized pesticides, the chemical composition of counterfeit pesticides is unknown. And even the slightest shift in composition can boost toxicity multifold thus raising the risk of acute intoxication. It is also important to remember the problem of unknown composition also cuts short the time for identification the right course of treatment for such toxicological cases.

### **1.2.2. Environmental threats**

Poor quality products can contain foreign substances, or chemicals changing the level of toxic effect on flora and fauna. Potentially, the use of counterfeit pesticides can cause the target pest to grow immune to the pesticide, the pest migration and/or the spread of diseases on the territories prior free of them. That

means that the use of counterfeit pesticides can backfire in quite an unpredictable way.

Incorrect pesticide formulations are likely to have significantly longer half-life period and, subsequently, this translates into a long-term contamination of soil, ground and surface water as well as adjacent reservoirs. Local biodiversity exposed to the chemicals will be affected causing financial losses to the farmers, as they will no longer be able to cultivate the contaminated lands.

Detected counterfeit pesticides in most cases are hazardous waste, which means they have to be properly recycled or disposed of, in line with national and international legal regulations on waste management.

### 1.2.3. Economic exposure

Economic losses from the use of counterfeit pesticides are not merely limited to incapacitated farm production on the contaminated territories. The producer who knowingly or unintentionally acquired counterfeit pesticides, in case if detected, faces significant financial charges. Legislative practices in many countries require confiscation of illegal products. The Code is clear in stating the need of compulsory enforcement of punitive measures to be applied, which means that such an entity shall be a subject to a monetary fine at a rate determined by the national legal regulations. As stated above, counterfeit pesticides are (hazardous) waste. In most countries, the waste management legislation holds the owner responsible for its disposal. So, it is the entity that shall bear financial implications of the storage of counterfeit product at specific storage facilities during investigation, and of its eventual disposal.

No lesser risk lies with the use of counterfeit pesticides to food producers. There is a known case, when a whole shipment of sunflower oil containing pesticide residue was denied customs clearance. The majority of large food producers have had to significantly boost their investment portfolios in order to finance the laboratories, which closely monitor the quality of farm food and origins of the pesticides used by farmers. Small and medium-sized food producers encounter the same risks of financial losses caused by the use of pesticide-contaminated agricultural raw materials.

Both, agricultural and food-producing enterprises also face serious reputational losses, in case they are found using counterfeit pesticides in production cycle, which may eventually lead to significant financial losses. In some cases, these risks can also affect countries, where such agricultural and food products are produced, resulting in the total or partial export ban on the products from these countries. Countries in the region comprising Eastern Europe, South Caucasus and Central Asia experience the immediate need for effective quality control systems, in order to monitor domestic production processes, and to introduce multi-level system for counteracting the circulation of counterfeit pesticides.

## 1.3. How counterfeit pesticides end up on the markets

In order to effectively counteract the proliferation of counterfeit pesticides, it is important to understand how they are surfacing on the markets in the region. Even though, every country is unique, the underlying reasons for favouring counterfeit pesticide prod-

ucts are usually very similar. These reasons are presented below, grouped in three main categories.

### **1.3.1. Economic reasons**

The financial gain is a powerful push factor and motivator for any commercial undertaking. And pesticide business is no exception.

The development of a new active ingredient, chemical, or formulation takes time and knowledge, as well as considerable investment funds from original producers. As a rule, it takes 10 years for the patent to expire. After that the chemical composition becomes available for general public, and could be accessed by any interested party. The use of an active ingredient, no longer covered by the patent law, in a production of a new formulation significantly minimizes its prime cost. The cost of such a generic product (Generic) is much lower than that one of the original. Furthermore, generic producers (quite often legal ones) do not always consider the impact of impurities on the active ingredient. It is more profitable for distributors to sell such forged products rather than original ones, as with illegally forged patent-protected pesticides profits are surging still higher. As it has been already noted, this opportunity to scoop very high profits together with a steady growth of the pesticide market turned counterfeit pesticide production into a lucrative organized criminal business. As a result, globally more and more counterfeit pesticides are traded every year. According to the European Business Association, the market share of counterfeit pesticides in the region is about 25%, whereas for small-packed counterfeit pesticides (for private crop producers and farmers) it is as high as 70%.

On the other hand, the desire to grow financially, quite often makes small, medium-sized, and sometimes even big businesses buy less expensive pesticides following the logic that active ingredient should be the same. It is still more difficult to tell a forged product with state-of-the-art copy of the packaging and labels sold at a lower price from the original. This means that at least in the nearest future, a stable secured market is still available for counterfeit products.

### **1.3.2. Lack of awareness and information**

In every country of Eastern Europe, South Caucasus and Central Asia, people tend to be unaware of the threats associated with the use of counterfeit pesticides. Even agricultural producers, representatives of small, medium-sized and, in rare cases, big businesses know next to nothing about those threats and risks. Much might be explained by the fact that there is almost no information about companies found entangled in counterfeit pesticide dealings, as well as of possible repercussions for their illegal use. Moreover, in many countries of the region the information on registered brands, highly hazardous and banned pesticides, if indeed available, is not user-friendly and is posted on different websites.

### **1.3.3. What needs to be improved in national legislation and practices on pesticide management**

Criminals use existing gaps in national legislation to increase the share of counterfeit pesticides on the market. The weaknesses include a very easy temporary (preliminary) registration process for pesticides,



in order to get the pesticide portfolio finally filled-in; possibility to introduce commercial batches with only temporary registration; different duty rates for active ingredients and ready-made products; and the lack of fully developed operational pesticide control system.

Most of the countries in the region still have much to improve in their interagency coordination of efforts to prevent counterfeit pesticides circulating on the market. A general information exchange centre for managing all the data received within the framework of international cooperation actions should also be created, as customs services have no access to the information received as a part of the Rotterdam Convention's efforts. In the entire region there are very few certified laboratories that would be equipped adequately to the modern challenges and have qualified staff, as well as special procedures in place to identify the products.

Presently, not a single country of the region has a system for collection and disposal of pesticide containers. This gives criminal businesses additional opportunity to buy out original containers and further use them for selling their forged pesticides.

Finally, the major challenge for national customs authorities is that they often lack, or have a very restricted access to the accumulated data on imported products and their active ingredients, on forwarding agents and producers, supply routes and pricing, as well as on peaks and seasonality of pesticide flows, etc. These factors greatly undermine the efficiency and effectiveness of automated risk management systems (if available) that help customs officers to choose proper customs control procedures.

No country of the region has early warning systems in place within international customs cooperation frameworks to flag counterfeit pesticides and active ingredients movement across the border.

### **1.3.4. Corruption**

All the above reasons naturally lead to the risk of corruption on every stage of the pesticides life cycle. The corruption that involves responsible officials, law enforcers, customs officers, and companies' staff in charge of agrochemical procurements, adds up to the problem of controlling the illegal business of counterfeit pesticides in the region.

## **1.4. Regional trends**

### **1.4.1. Local production of counterfeit pesticides**

The lack of compiled statistics on local pesticide production, international cooperation and efficient monitoring, operational systems for collection and disposal of pesticide containers, as well as simplified procedures for and sometimes even stimulation of import of active ingredients –form a fertile ground for local production of counterfeit pesticides. And this is true for the entire region.

It is worth taking a look at a classical example of local counterfeit pesticide production. It is typical for the countries to have minimal duty rates for active substance, but higher ones for preparatory forms. This enables local producers, of both legal and counterfeit pesticides, to bring in active ingredients under their titles. While legal pesticide producers always

readily provide all the data on the volume of their production (it is always higher than needed for the production of the active ingredient), the volume of imported active ingredient and their authorized suppliers, the others, non-certified importers of active ingredients, tend to conceal their operations, as they bring counterfeit products for the purpose of illegal changing of the product title.

#### **1.4.2. Transit through the region**

Geographically the region has borders with the EU, as well as with the countries that reportedly are the main producers of counterfeit pesticides, thus, turning the region into a major transit zone for counterfeit pesticides. This situation is further aggravated by the lack of international cooperation on the matter between customs authorities of the countries in the region. Companies involved in this illegal business tend to use ultra-complex logistics, forge certificates, transport documents, and the brand names (through repackaging or changing labels).

#### **1.4.3. Lack of efficient waste disposal mechanisms**

As has already been reiterated, detected counterfeit pesticides are hazardous waste, and the region has no specialized facilities for their safe disposal. As a consequence, they need to be transported to the adjacent EU countries for safe disposal in line with the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. In some cases, waste owners (the businesses in the possession of counterfeit pesticides at the time of arrest) do everything possible, up to bankruptcy state-

ments, to avoid responsibility for the waste disposal. As a result, huge amounts of waste are accumulated in unguarded storage facilities, where there is a risk that the pesticides are relabeled and brought back to the market. The return of previously confiscated counterfeit pesticides is a new regional trend that raises serious concerns.

### **1.5. Main producers of counterfeit pesticides**

Traditionally, according to Carter and Durrant (2015) and Fishel (2015), the biggest share in the production of counterfeit pesticides was that one of the small and medium-sized Indian and Chinese businesses. Governments of these countries take certain steps to combat the manufacture of counterfeit and forged agrochemical products, as well as to raise quality standards for their produce. For example, there are already tangible results of China's Anti-Counterfeit Pesticide Policy, though still not enough significant as to be able to cut the volumes of such illegal production.

Besides, certain countries have simplified inspection procedures for cargos produced in OECD member-states. Recently, in the region there has been an increase in counterfeit pesticides in small packages (for the use in gardens and small households) which are made to look as if they were legally manufactured in these states. These brands are predominantly smuggled, and often have no registration.

Finally, as mentioned before, all countries of the region have their local counterfeit pesticide production.

## 1.6. Methodology of counteracting trade in counterfeit pesticides

There is a need for an integrated approach to effectively counteract the circulation of counterfeit pesticides. It has to include international and interagency cooperation, interaction with responsible businesses and nongovernmental organizations, as well as willingness to introduce a system that would prevent counterfeit pesticides from entering the markets, prepare for actions in case it happened, and react to such cases adequately. It is essential to factor in the reality of counterfeit pesticides presence on the market as well as the large volumes of locally produced counterfeit products.

Considering that every country of the region has its own legislation which regulates trade, waste, and pesticide management, methodology should be specifically designed for each country on the national level, whereas on the regional level the general guidelines and principles definitely should be common. The methodology is based upon approaches comprising prevention, preparation, and response. The following sub-sections will explore in more detail how to achieve these goals through applying the approaches.

### 1.6.1. Prevention

Developing measures to prevent counterfeit pesticides circulation is the aim of this publication. As a matter of fact, this stands for an integrated system that would minimize the chance of counterfeit pesticides resurfacing at any stage of the pesticide life cycle: registration, customs clearance, logistics

and trade, pesticide entry, and waste and packaging disposal. Every stage will then be analyzed in more detail.

### *Pesticide registration*

An independent pesticide registration system in line with the Code provisions will enable the countries significantly cut the flow of low-quality products. Most of the countries since long time ago have these systems in place. Though, at the same time, they also have simplified temporary (provisional) registration for chemicals, to form the pesticide portfolio and to enable suppliers to bring them in batches. Evidently, this is one of the ways pesticides get on the market. To prevent it is necessary on the national level:

- ▶ to strengthen existing legal frameworks related to temporary registration. The measures should include banning entry (for imported pesticides) and sales (for legally produced pesticides) of temporary registered product batches;
- ▶ to ensure uniform registration requirements for originals and generics;
- ▶ to enhance cooperation between registration and fiscal authorities (Customs and Tax inspections) to inform the latter about the products with temporary registration and the allowed volumes for entry or sale;
- ▶ to audit the brands registered earlier to remove from the approved list of pesticides the brands with expired registration, and to inform fiscal services thereof.

Within the international cooperation frameworks it is necessary:

- ▶ to enhance cooperation between the registration authorities and pesticide producers in order to be able to exchange information on the products undergoing official registration process; to consider the information received from the Secretariat of the Rotterdam Convention; to carefully consider and properly respond when other countries in similar climatic zones add products to the list of severely restricted pesticides.

### *Customs clearance*

There is a need, for customs authorities on the national level, to closely cooperate with the business associations and other authorities to develop respective risk profiles to be entered into the automated risk management system (ARMS) in order to assist with the right choice of customs inspection mode. In addition, efficient information exchange between national registration authorities and other fiscal services is of utter importance. Such collaboration would greatly facilitate accessing of up-to-date information concerning official pesticide producers, types and volumes of products annually produced, and the demand for imported raw materials. This will allow tracking down criminal groups involved in forged pesticide production and, as a result, significantly decreasing the volume of locally produced counterfeit pesticides.

As a part of international cooperation efforts, it would be advisable to introduce an early warning tool on supplies to inform customs services about consignments in terms of country of origin, countries of consignment and destination, as well as

countries of transit. These measures will significantly simplify the tracking of potential logistics chains, and if combined with ARMS, will contribute to the success in preventing counterfeit pesticide entry at the customs.

The first recommended step for customs services in the region would be strengthening cooperation with their counterparts from the countries producing pesticides, to exchange operational data and intelligence (e.g. Interpol notices, particularly purple or blue notices).

To find out more about customs risk analysis and management system, please check the respective part about countering smuggling in section 2.5.1 (Prevention of contraband. Customs Risk Analysis).

### *Logistics and sales*

The Code and other international legal instruments, such as the relevant EU Directives, all outline the principle of free trade in pesticides. However, they also emphasize the need for an effective system to monitor pesticide circulation and apply instrumental penalties for trading in counterfeit products. Based on its national legislation, each country of the region decides for itself how it will implement these provisions. In any case, an effective control system to assist in removing counterfeit pesticides from the market, is one of the most instrumental preventive mechanisms.

Given that pesticides considered to be hazardous goods, their transportation should be handled by certified carriers along the approved routes. Information about these routes and their supervision

can help to identify illegal producers, and serve the police as an efficient instrument for planning anti-counterfeit operations.

### *Waste and pesticide packaging disposal*

A system for collection and disposal of pesticide packaging and outdated pesticides is one of the main counterfeit preventive mechanisms. For this, national technical regulations on pesticide distribution should be updated with mandatory triple rinsing instructions (at the distribution location with consequent pressure rinsing in the field) and container piercing (to avoid possible reuse). This will allow the proper disposal of pesticide containers, except for non-disposable packaging, because of its material, or discarding the packaging of the water-insoluble pesticides. By proper waste disposal (old and counterfeit pesticides) criminal business will be cut short of the ways to repackage and to introduce their counterfeit products on the market.

### *Raising awareness*

The lack of awareness of the risks associated with the use of counterfeit pesticides is one of the underlying reasons for their presence on the market. To change it, there is a need for a strong awareness campaign with active involvement of local authorities, media and civil society organizations. This is one of the core elements of the anti-counterfeit strategy. If successful, the campaign will help to decrease significantly the demand for cheap illegal pesticides.

General public needs to be communicated following tips to identify counterfeit pesticides.

- ▶ Carefully consider the label:
  - it must be securely attached to the package;
  - information on it should be clearly printed and be in the official national language;
  - it should indicate the name of the manufacturer's supplier and its addressee, the active ingredient, product name, batch number, weight or volume, date of manufacture and expiry date;
  - means of application (application rate, species on which it works, method, decontamination methods, safety measures and first aid) should be clearly written;
  - grammar errors on the label are a clear sign of a fake product.
- ▶ Pay attention to the fact that the agricultural chemicals have never packed in a medical container!
- ▶ Pay attention to the (underestimated) the price of pesticides.

In case of doubt as to the originality of the product call the manufacturer for all major producers settle "a hot line" to address such issues.

### *Interaction with business*

Close interaction with responsible businesses that are ready to stand up and protect their interests, will help in detecting illegal counterfeit supply channels and facilitate new opportunities for anti-counterfeit measures.

## 1.6.2. Preparation

### *Joint raids*

Criminal businesses despite all the preventive measures will continue the attempts to market their counterfeit pesticides. Preparation measures aim to create effective operational mechanisms to counteract these illegal efforts. Joint raids of inspection officers, security services of the responsible businesses, and law enforcement agencies proved to be quite an effective good practice. It allows not only seizing counterfeit pesticides in circulation, but also detecting illegal supply and marketing channels. Seizing counterfeit pesticides is obligatory, but it has to be done in line with national legislations.

### *Quarantine warehouses*

The purpose of preparation measures is to make it impossible for arrested counterfeit pesticides to re-surface on the market. These measures include, first and foremost, construction of specialized protected quarantine warehouses E, HFNM. There, counterfeit toxic agrochemicals should be stored in such warehouses during investigation and court proceedings, up to the point when they are sent for disposal.

It is also important to underline the need to make use of financial instruments (insurance, trust funds with self-regulated organizations, grants/loans from international financial institutions or direct state funding), as well as to introduce appropriate legal procedures for waste disposal. This will help to reduce storage time of counterfeit pesticides at specialized storage facilities, and minimize the chances of those counterfeit goods returning to the market.

### *Raising awareness*

Obligatory coverage on arrested counterfeit pesticides and involvement of civil activists in the monitoring of storage conditions are no less important integral parts of the preparatory phase. These measures will significantly decrease the chance of any deals struck by criminals with corrupt law enforcement officers, and will help to avoid counterfeit pesticides once again entering the market.

### *International cooperation*

Finally, operational intelligence information exchanged within the framework of international cooperation between customs and law enforcement agencies of the countries producing and supplying pesticides, will help to detect and eliminate marketing channels for counterfeit pesticides. For this purpose the countries should have operational forces within their law enforcement agencies, which focus on such crimes, and constantly build up their capacities.

## 1.6.3. Response

Response measures are the steps which law enforcement and controlling agencies should be taking when faced with detected counterfeit pesticides. These steps need to be regulated on the national level by internal codes of procedure and Criminal Procedure Code. At the same time, arrested products must be transferred to specially protected warehouses, where they should stay throughout the investigation until they are sent for disposal.

Special attention should be paid to securing sample integrity and enforcement of safety procedures for handling hazardous materials. Customs and law

enforcement officers involved in seizure procedures should undergo proper training and, depending on the nature of an operation, should have proper personal protection equipment.

## 1.7. Conclusions and recommendations

1. Counterfeit pesticides in circulation pose a new global threat.
2. The use of counterfeit pesticides is associated with risks to human life and health, environment, as well as with financial consequences for businesses involved in food production.
3. It is the desire for profit that brings counterfeit products to the market, supplemented with the lack of information and public awareness, gaps in legislation and pesticide management practices, as well as corruption.
4. The average share of counterfeit pesticides on the market in the region is as high as 25%. However, for small-packed counterfeit pesticides (for private crop producers and farmers) the number is as high as 70%.
5. Detected counterfeit pesticides in most cases are hazardous waste subject to mandatory disposal.
6. Governments should take active measures to reduce the share of counterfeit pesticides on the market. Anti-counterfeit methodology covers a range of approaches and tools to achieve this goal: independent system for product registration, customs risk analysis system, waste and pesticide packaging disposal, continuous awareness raising efforts to bring the risks associated with the use of counterfeit pesticides to the attention of general public, coordinated raids to detect and seize counterfeit products, and establishment of the quarantine warehouses. These measures should be taken on the national level. Active involvement of responsible businesses, civil activists, and international organizations through enhanced interagency and international cooperation is also vital in this context. Please see the Checklist for methodology implementation in Annex 1.

## 2. CONTRABAND

### 2.1. Contraband: concept and classification

The word “contraband” originated from Italian “contra” meaning “against” and “bando” which stands for “governmental decree”. Contraband is the smuggling of goods or items across customs borders of a state, without any customs clearance, or with forged documentation, or when such goods are falsely declared or not declared at all. Contraband also refers to the goods and items that have been smuggled.

Contraband operations can be classified according to the following:

- ▶ severity of risk for states and societies;
- ▶ scale of economic losses;
- ▶ types of contraband items;
- ▶ concealment methods.

It is customary for the countries in the region to classify the scale of contraband (small/large) based on its market price. The value varies from country to country; notwithstanding, the vast majority of countries have criminal cases for large-scale contraband, and small-scale contraband entails administrative liability.

### 2.2. Damage from contraband pesticides

Smuggling of pesticides brings damages in a systematic and complex way in several areas. Please see below a short summary of the economic, political and social implications of the contraband-related damages.

#### 2.2.1. Economic damage

In terms of economic damages on the national level it is necessary to mention the two following aspects:

- ▶ direct damage to the state budget from tax, duty and levy losses (the declared customs value of contraband pesticides is always significantly lower than their actual cost, which is translated into less customs revenues);
- ▶ undermined equal and fair competition opportunities for the market players (those receiving original or generic pesticides at lower costs, due to unpaid customs duties and/or intentionally declared false description of goods, find themselves in a more advantageous position than the others).

#### 2.2.2. Social damage

Economic damages would inevitably have social consequences, first and foremost, because of unbalanced state budget revenues, as a result of customs undervaluation.



Quite often, contraband pesticides turn out to be counterfeit. The risks and threats involved in dealing with such pesticides have been extensively discussed in Section 1.2. Besides having impact on human health and life, it should also be noted that use of low-quality counterfeit pesticides can negatively affect public trust towards main legal producers, and, consequently, lead to decreased productivity in agricultural sector. This can directly affect farmers' revenues and deteriorate social and economic situation in rural areas.

### 2.2.3. Political consequences

Contraband can be one of the factors complicating interstate relations between the neighbouring countries. Unwillingness or inability of some countries to shut down their customs border to contraband can disgruntle the other neighbouring states. When pesticides are involved, conflicts might occur in the sphere of international trade relations due to the growing transit share in contraband or counterfeit products through the countries in the region.

## 2.3. Quantitative estimation of contraband pesticides in the region

Both, in the countries of the region and globally, the market share of contraband pesticides can be compared to that of the counterfeit pesticides (as high as 10–25%, according to Europol's estimates). The reason for this is largely because legal importers of originals and generics tend to regularly order the same brands.

At the same time, in the countries with both, legal and illegal production, the contraband product portfolios tend to change, particularly with the contraband of active ingredients rising, and the contraband of ready preparative forms decreasing.

## 2.4. Contraband methods and ways to detect pesticides

### 2.4.1. Traditional methods

Traditional methods of smuggling pesticides and active ingredients can involve attempts:

- ▶ to move counterfeit pesticides;
- ▶ to change concentration of active ingredient;
- ▶ to change the name of a pesticide (within HCDCS groups 3808 and 2903<sup>1</sup>);
- ▶ to conceal in order to avoid customs clearance at border crossing points (usually for small-packaged pesticides);
- ▶ to intentionally under-declare the customs value of pesticides and active ingredients;
- ▶ to move pesticides beyond border crossing points to avoid customs control (usually for transit through territories with undefined status);

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<sup>1</sup> Subgroup 3808 includes insecticides, rodenticides, fungicides, herbicides, anti-sprouting products and plant-growth regulators, disinfectants and similar products, arranged in forms or packaging for retail sale, or as preparations and articles (for example: sulphur-treated bands, wicks and candles, and flypapers). Subgroup 2903 includes halogenated derivatives of hydrocarbons.

It should be clear, that is that one of the main encouraging factors for contraband in pesticides is corruption. Criminal businesses keep designing contraband schemes relying on certain corrupt customs officers, environmental safety inspectors or law enforcement officers.

#### 2.4.2. Import operations at inland customs

National customs services in the region usually have inland customs facilities (inland customs houses and customs border posts). These customs houses are not located at the border, but inland with customs posts for customs clearance. As a rule, they are stationed outside the cities in the logistics centers that are conveniently located at the main transport routes. These centers are usually equipped with arrival areas for cargo vehicles (carrying pesticides) that crossed the customs border. The cargo is under customs supervision and subject to customs clearance at inland customs house. This explains the modus operandi of smugglers to get contraband through inland customs. Very often they:

- ▶ smuggle goods under disguise (with forged documents under changed product name. Quite often this is made possible by a customs inspector leaving goods uninspected before clearance for the benefit of smugglers);
- ▶ change product name within the same product category group (particularly in the case of subgroup 3808);
- ▶ declare products but incompletely (by changing the declared cargo weight with a possible assistance from a corrupt customs inspector to avoid the inspection of cargo weight);

- ▶ combine the aforementioned methods;
- ▶ purposefully underestimate the customs value of the cargo (it is almost always the case, but it is quite difficult to prove).

#### 2.4.3. Import operations at the customs border

The number and locations of customs border crossing points are prescribed by national customs codes of each country in the region. All vehicles crossing them are subject to checks, whereas transported cargos are subject to both customs checks and clearance. These procedures are designed to detect and record information on the vehicle, driver (if the cargo is transported by vehicle), consignee, and the cargo. This information is presented in the form of declared intent of international commercial operation. Provisional declaration is presented at the inland or border customs post (customs clearance department). Upon the border crossing a customs inspector supplements this declaration with additional information: vehicle number plates, CMR consignment note, bill of lading (BoL), or an air consignment note (AWB), an invoice, a document which guarantees that the cargo will be delivered, and permits, if applicable. Then the vehicle is let through to proceed for inland customs clearance of the cargo. This procedure is similar for all imports and transits.

Border crossing points can be international and local (these are used by residents of border areas who are free to cross the border based on intergovernmental agreements on transborder movement). These are the risks associated with border crossing points:

- ▶ uninterrupted movement of small-sized contraband, especially pesticides in small packages, to avoid customs checks;
- ▶ splitting contraband into small batches (locals arrive to the adjacent territory, get their batch of products in the volume and of weight not subject to any taxation);
- ▶ repackaging or re-batching is typical for goods coming through customs warehouses of neighboring or transit countries. In such cases, trucks unload at the customs warehouses of these countries, where the cargo is re-batched anew, while documents, vehicles, consignees and contracts are changed. Those goods that have to be concealed are hidden in the front part of trucks further covered with legitimate goods. With partial customs checks the hidden stuff stays concealed, as to find it an inspector has to unload the whole truck;
- ▶ partial declaration is when only legal part of the cargo is declared at the crossing point, and the rest stays undeclared. After crossing the customs border, the undeclared part is unloaded at intermediary warehouse, and into another vehicle. At this point, they already have all the necessary documents for the contraband products, and they simply “disappear”.
- ▶ interrupted transit is illegal import under cover of transit documents.
- ▶ exporting remaining warehoused stocks on requests from international corporations. International corporations have remaining pesticide stocks in warehouses of different countries, stored by a range of official dealers. As a part of unplanned supply operations, corporations from time to time can take products from one country and resend it to another one, provided that a prior agreement between the dealers was reached. In such case it is usually the dealer who manages it. There is a risk that criminals, using a dealer status and a need of such product to be transferred as a smoke screen, will organize illegal supply of counterfeit pesticides (usually of premium brands) to third country markets;
- ▶ exporting remaining warehoused stocks of small and medium-sized companies. International trade law, based on principles of free trade, does not restrict opportunities for different companies to strike commercial deals on pesticide supply. This is one of the most “popular” export methods of adulterated and forged pesticides, as it results in acquiring of a certain paper portfolio to legalize the documentation for customs clearance and registration. Officially registered documents allow the products to be released from the supervision of controlling agencies;
- ▶ export of pesticides legally produced in the country. There were registered attempts to export the adulterated and counterfeit pesticides under the disguise of legally produced pesticides.

#### 2.4.4. Export contraband operations

Pesticide export from the countries of the region is possible in three cases, when:

#### 2.4.5. Detecting contraband at customs posts

Most often it is the method of checking the vehicle weight at the entry and exit posts that helps to detect contraband in transit. Another way to detect contraband (cannot be applied in all the countries of the region) is to check GPS itinerary transcripts, as all carriers of hazardous cargos should have preliminary approved itineraries, and their vehicles should be equipped with global positioning systems (in line with regulations similar to the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), approved in most countries of the region).

Contraband detection of imports can be done by comparing documented cargo weights with the physical ones, as well as through careful analysis of support documentation. Inspectors should do visual checks of the packaging and labels of the given preparative form comparing them with the data in the pesticide file. If suspicious of contraband, the customs officer should inform of the decision to inspect the cargo. The samples, thereof, are to be sent for expert analysis. To take samples the officer should be experienced, trained, and certified in line with ISO17025. This will allow for the results to be further used as evidence in court.

Contraband detection of exports can be done by comparing documented cargo weights with the physical ones, and by confirming the cargo origin.

### 2.5. Methodology for counteracting contraband

Every country of the region has its own national legislation on trade and handling waste and pesticides, that is why the methodology for counteracting contraband on executive level would differ too. Approaches to counteracting contraband in pesticides are based on a 3-stage methodology of prevention, preparation and response to already committed crime. The following sub-sections will explore in more detail how to achieve these goals through applying the approaches.

#### 2.5.1. Prevention

##### *Traditional approach to contraband prevention*

Effective prevention of contraband pesticides in the region is impossible without operational, vertically integrated control system of the pesticide life cycle. International practice proved it necessary for the system to include the following elements:

- ▶ involvement of 1) central government authorities in charge of state policies on pesticide management and control (system of permits, licensing, etc.), 2) regional controlling agencies in the field, and 3) customs and other border management agencies combined with follow-up communications with controlling agencies on central and regional levels. Information exchange between different authorities, law enforcement agencies and customs enhanced with joint operations and inspections is of vital importance;

- ▶ well-coordinated system of quarantine warehouses to store arrested pesticides, or those held for disposal (on regional level and in customs houses);
- ▶ the disposal system for unusable pesticides and pesticide packaging;
- ▶ an efficient system of customs laboratories fully equipped, and able to analyze pesticides in line with internationally accepted methodologies;
- ▶ significant penalties for smuggling pesticides and legal implications for importers;
- ▶ limited list of customs crossing points to deal specifically with customs clearance of pesticides (similarly to what is done with excise goods and drugs), with mobile laboratories to enable express pesticide testing, and capacity building of these customs border crossing points;
- ▶ early warning system on supplies between customs authorities of different countries and enhanced customs clearance procedure, as well as systems of coding, and statistics;
- ▶ interaction with customs agencies of other countries, World Customs Organization, Interpol, Europol, EUBAM, FAO and WHO, Secretariats of Stockholm, Rotterdam and Basel Conventions, as well as competent authorities at national level, Green Customs Initiative, etc.; joint operations;
- ▶ interaction with the Collaborative International Pesticides Analytical Council (CIPAC) on methodological assistance in pesticide laboratory testing ; with FAO and WHO for laboratory capacity building and with international

donor community for enhancing laboratory infrastructure;

- ▶ cooperation with responsible businesses (associations of importers, producers of both originals and legal generic pesticides);
- ▶ Risk Management System systematically updated with new lists of pesticides from annexes to the conventions.

Some countries of the region can also apply the following additional measures.

### *State labelling system*

The system suggests mandatory labeling of pesticide containers, as well as holographic protection elements. Though, availability of these technologies to criminal business, and impossibility to automatically check 100% of all products, makes this system much less effective.

### *Corporate protection measures*

A number of companies have initiated QR-code initiative to track their pesticides throughout their life cycle. By scanning this code, any user will be redirected to the company's website with full description of the product life cycle (all data from official supply chain to transportation of each container to its disposal). Such systems often have an integrated function to notify producers on counterfeit products. These systems are more efficient as they make virtually impossible to use forged containers, or reuse original ones.

### *Tracking introduction of agricultural chemicals, including active ingredients on the markets*

Tracking import of agricultural chemicals (including AI) and monitoring of the pesticides residues by authorities, both on the markets and in the warehouses, this approach is similarly important for combating counterfeit products (please see Section 1.6: Logistics and sales).

### *Customs Risk Analysis*

Most efficient in counteracting contraband is the customs risk analysis and management system. Customs authorities started to build up their capacities in risk analysis as early as in 1973, the year when the International Convention on the Simplification and Harmonization of Customs Procedures (Kyoto Convention) was adopted. The region's parties of the Convention are Armenia, Azerbaijan, Republic of Belarus, Kazakhstan, and Ukraine. The following are considered pesticide-related customs risks: potential infringements of customs legislation during customs clearing procedures with a given group of goods, discrepancies with the pesticide portfolio (including pesticide labeling), as well as other specific customs risks.

Customs administrations of all the countries in the region use some form of risk management (formally or unofficially) introducing procedures to better detect cross-border crimes. This approach is also applied by the countries that did not sign the Convention. Most countries have already introduced automated risk analysis and management systems

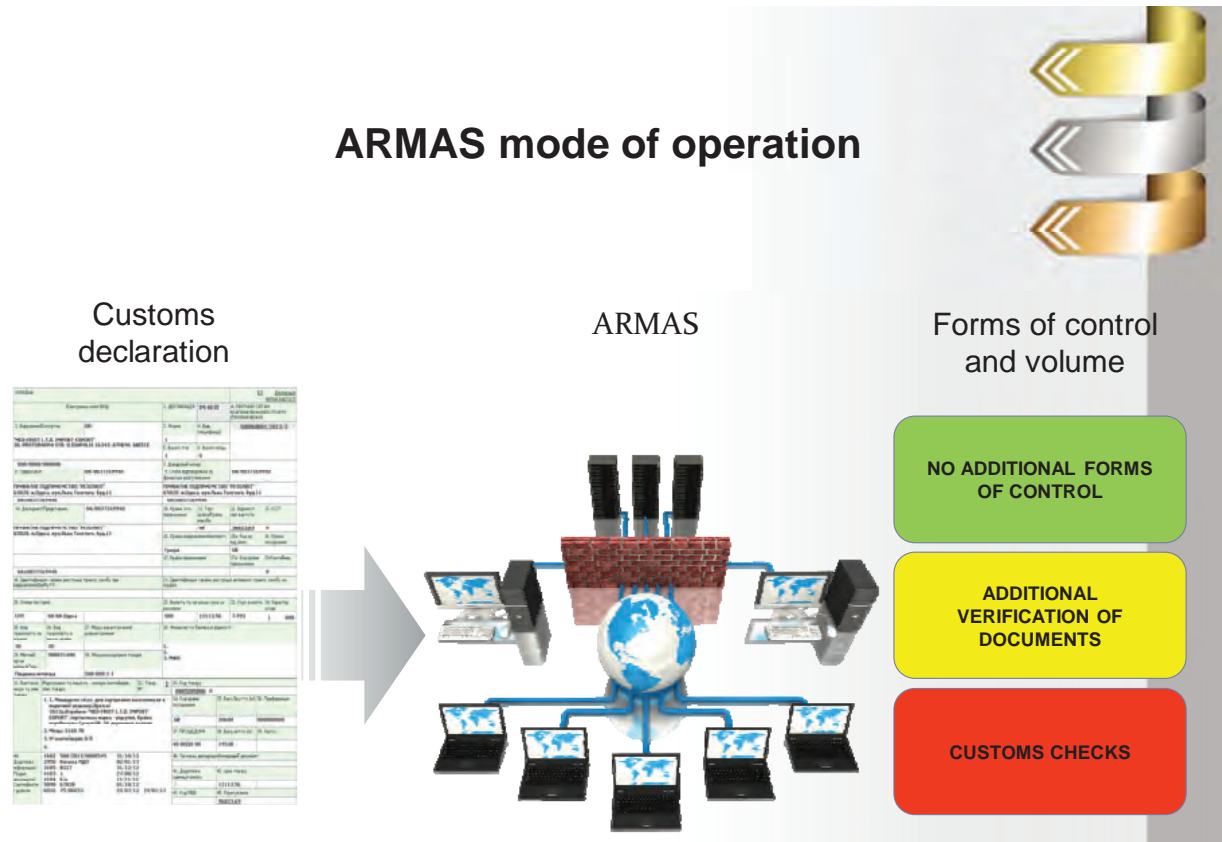
to assist in deciding on the mode of cargo control procedures.

The main element of such system is a risk profile, which contains compiled information on the area and indicators of the risk, as well as on the measures to prevent or minimize the risk. Risk profiles are used during customs control and clearance procedures, applied to vehicles and cargos crossing customs borders, to inform inspector beforehand of a possible risk of violations of customs legislation in certain international commercial operations, and to suggest a recommended mode of control measures. The ultimate goal of profiling is to ensure customs security and safety by assisting personnel in decision-making process.

Profile data can cover information on the creation date of the profile or of its last update, its number, title, areas and indicators of the risk, as well as the list of control measures that should be applied when the profile is flagged. Risk assessment algorithm is one of the most important profile components that consolidates everything else. The following section will provide a description of procedures for checking the risk indicators and, depending on their combinations, identifying the level of risk.

Declaration-based risk analysis and a list of necessary customs procedures are done by the ARMAS after an e-declaration is entered into the data base. The risk management system checks the declaration against risk profiles and generates instructions for an inspector on which control procedures should be undertaken (Pic. 1).

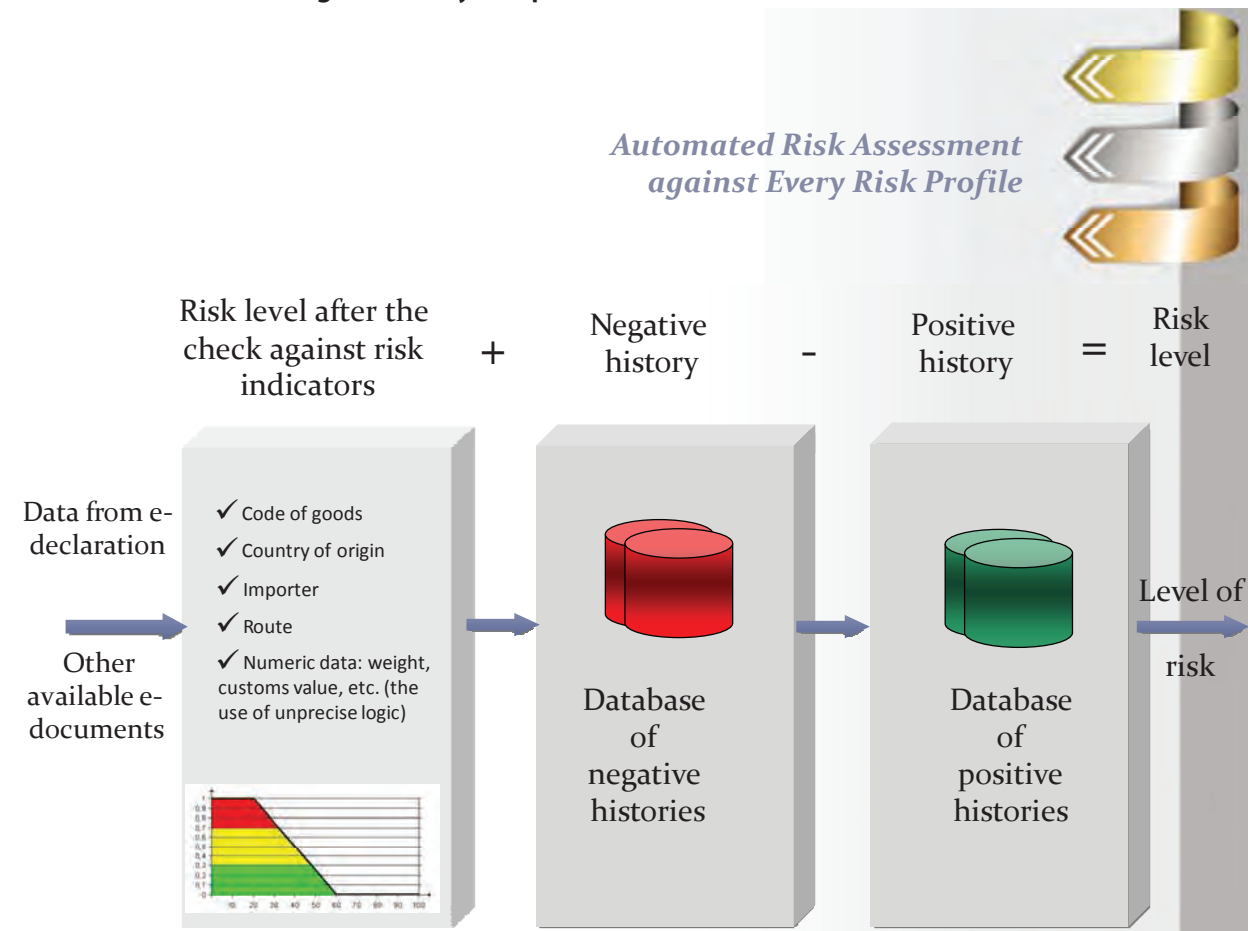
Pic. 1. Customs risk analysis with the use of Automated Risk Management and Analysis System (ARMAS)



The declaration is run against every profile in the following manner. First of all, risk indicators are checked under the set algorithm to calculate the level of risk. Depending on the risk level, the system suggests to an inspector a list of necessary control measures to be taken. There are also other two parameters that could affect the final results: positive and negative histories. The system has a database of all the cases in which the declaration was rejected. For certain risk profiles this information is of fundamental importance, as it can be indicative of a higher level of risk. It results in building up a negative history for such profiles. Depending on the number of such cases, the level of risk – increases or decreases. All cases, when certain risks would be flagged, but no violations would be found, are recorded in the system as a positive history. This enables the system to automatically regulate the level of risks and either increase or decrease the number of hits.

Thus, risk assessment against every profile consists of the level of risk, based on the evaluation results for running the given declaration against risk indicators, and its positive and negative history (Pic. 2).

**Pic. 2. Risk assessment against every risk profile**



Framework risk profiles can be also applied. These are profiles with the lists of indicators that can be updated on a case-by-case basis. The profiles can also be updated by respective departments and specialized customs agencies in charge of particular areas of border control. Regional, or field profile updates and design are also quite promising, as information there is added by customs officers on the basis of their experience with cer-



tain risks during customs clearance. These profiles could only be applied in the areas of responsibility of the customs authority whose officers updated the profile.

It is of vital importance to have constant information exchange with other countries and state services to countercheck controlled indicators.

The list of recommended parameters for risk profiles on transboundary movement covers the following:

- ▶ correct classification of goods;
- ▶ quantity and weight data of goods;
- ▶ correctly identified customs value of goods;
- ▶ tracking down the suspicious movement of transportation vehicles and uncommon operational schemes;
- ▶ extra attention given to the movement of goods executed by the businesses with the negative customs history records;
- ▶ taking into consideration the seasonal character of contraband operations;
- ▶ attention to the country of origin of the freight;
- ▶ feasible and existing market prices;
- ▶ date of production and expiration date;
- ▶ position of the pesticide, or AI, on international lists prescribing to limit production and use of chemicals (for example, global production and use of methyl bromide should be restricted for quarantine and pre-shipment use only as of January 1, 2015).

CropLife International recently introduced a so called concept “Know Your Customer” (KYC) to

make vessel companies vetting their customers to avoid counterfeiters. Also it is suggested that old customs seizures should be revived and used in risk profiling for the vessel companies which most likely transport counterfeit goods (including pesticides).

It is necessary to use intelligence data on possible violations or suspicions received as a part of international cooperation efforts to create new risk profiles and update existing ones.

### 2.5.2. Preparation

Despite all the counteracting efforts, criminal businesses keep improving tactics which helps them to smuggle pesticides across the borders, and the law enforcement authorities should be ready to confront their illegal activities. The list of necessary preparation measures should include preventive actions of state agencies intended to minimize damage inflicted by such illegal operations. These measures include:

- ▶ construction of temporary isolated quarantine warehouses storage facilities for arrested cargos;
- ▶ application of legal and fiscal instruments (securities and insurance) for temporary storage and further disposal of waste following the final court decision;
- ▶ special operations for thorough inspections of pesticide cargos within a set period of time. Such operations generate extremely useful information on volumes, suppliers, etc. of counterfeit products.

### 2.5.3. Response

Response measures are aimed at improving state response procedures in case of identifying the contraband pesticides. Usually these measures are outlined in pursuant legislation and instructions. Nevertheless, their detailed description supported by international best practices, will secure more efficient provision of evidential base for court proceedings. A good example would be the methodology on sampling, thoroughly described in ISO 17025.

At the same time, presumption of innocence and adherence to WCO norms still are the cornerstones of success in response approaches.

## 2.6. Conclusions and recommendations

1. In terms of quantity, the share of contraband pesticides on the market can be compared with that of counterfeit pesticides. In countries that have both, legal and illegal pesticide producers, the share of contraband in active ingredients is usually higher than the volume of contraband in ready preparative forms.
2. The main reason for the success of contraband business is a relatively low risk involved combined with the good chances of high profits. Contraband and corruption go hand in hand together, prompted by gaps in customs legislation and methodology on counteracting contraband.
3. There is a wide range of methods for smuggling contraband pesticides, most common of which are changed concentrations of active ingredient; false declaration of pesticide or AI name, weight, and value; concealment from customs

controls at border crossing points; splitting pesticides into small batches; interrupted transit; counterfeit export under the disguise of the need to transfer the different remaining volumes of company legal pesticides from warehouses.

4. To detect contraband pesticides in import, transit, or export operations, vehicle weight check has to be done at the entry and exit points. Additionally, whenever it is possible, it is recommended to do GPS itinerary checks. In the cases of pesticide import operations, accompanying documentation has to be thoroughly analyzed; packaging and labels should be visually inspected, in order to ensure that preparation forms on the labels match the information from the pesticide portfolios. In case of suspected contraband, samples should be taken for further expert analysis. It is also important to identify the cargo's country of origin.
5. Methodology for counteracting the smuggling of pesticides covers such approaches and instruments as: customs risk analysis and management system, disposal of waste and pesticide packaging, setting up system of mobile laboratories, and introduction of meaningful penalties for smuggling pesticides, and legal implications for importers of contraband pesticides. There is a need to limit the list of customs crossing points specialized in customs clearance of pesticides and to build up their capacity, to track introduced pesticides, including AI. There is an urgent need in constant awareness-raising campaigns. Not less important is to create quarantine warehouses for arrested pesticide shipments, to

develop legal and fiscal instruments (securities and insurance) for temporary storage and further disposal of waste, following the final court decisions. Finally, it is advisable to carry out joint operations to detect contraband pesticides, and to introduce corporate security standards/technologies (QR-codes). Please see the Checklist for implementation of the methodology and aforementioned measures in Annex 1.

6. Effective counteraction directly depends upon interagency and interstate cooperation (especially with customs authorities of different coun-

tries), working with business community, civil society and international organizations. Among the latter, important counterparts would be the World Customs Organization, Interpol, Europol, EUBAM, FAO and WHO, Secretariats of the Stockholm, Rotterdam and Basel Conventions as well as competent authorities at national level, Green Customs Initiative, CIPAC – for they have vast information resources, necessary mechanisms, skills and guidelines ready to be shared and used to combat the smuggling of pesticides in the region.

## 3. SAFETY REQUIREMENTS WHEN WORKING WITH PESTICIDES

Every country has its own national regulations on occupational safety. However, there are generally accepted safety requirements for working with pesticides, which, commonly, are easily and readily accessible for general public. The major points are outlined below.

### 3.1. Personnel safety when working with pesticides

- ▶ Only persons attested by medical personnel, and who received special training and hold respective certification, are allowed to work with pesticides and agricultural chemicals. Pregnant and breastfeeding female workers, seniors, and underage persons, as well as those with health conditions are not allowed to deal with agrochemicals.
- ▶ One should use personal protection equipment when working with pesticides. These would be: special overalls, footwear, work and rubber gloves, safety eyewear, respirators and breathing gasmasks. It is not allowed to smoke, eat, or drink while working with pesticides.
- ▶ During the working hours, one should monitor his/her health condition. If tired, sleepy, or in acute pain the worker should immediately stop his/her operations and ask for medical assistance.

- ▶ At the end of the working shift, the worker should change and thoroughly wash hands and face with water and soap.

### 3.2. Safety requirements when transporting pesticides

- ▶ Pesticides should be transported exclusively by specialized vehicles in line with requirements on transportation of hazardous goods, and by authorized staff only.
- ▶ Pesticides should not be transported together with other cargos.
- ▶ All loading/unloading operations should be mechanized.
- ▶ After delivery, the vehicles are subject to thorough wet cleaning and disinfection.

### 3.3. Safety requirements when storing pesticides

- ▶ Warehouses that have no positive sanitary and epidemiological review should not be used for storage of pesticides.
- ▶ It is not allowed to use the same warehouses for storage of pesticides along with foods, fodder, and different household items. Pesticides must not be stored in non-adapted facilities, or in the open air.

- ▶ The warehouses should be equipped with the following facilities for:
  - storage and release of pesticides. In the case of 1<sup>st</sup> hazard class, pesticides should be stored and released in the specially equipped premises, isolated from the rest of the facilities, and provided with safety locked boxes that should be sealed after use. Flammable and volatile chemicals should be stored in specially designated areas;
  - storage of drinking water and foods, recreational facilities, lunch rooms, as well as areas for the receiving and returning of personal protective equipment;
  - decontamination area for personal protective equipment, special working robes and footwear;
  - ablutions (the facility which functions as a decontamination center);
  - in warehouses pesticides should be stored in the stacks, on the pallets, and shelves. With pesticides in stacks, metal drums, barrels (not less than 5 liters), cardboards and polymer boxes, cases and flasks – the height of a storage pile should not be more than 3 tiers;
  - the minimum gap between the wall and the cargo should be at least 0,5 m, whereas, between the floor and the stack – 0,8 m;
- liquid and powder (granular) chemicals should be stored separately;
- when storing barrels and canisters with flammable liquid pesticides, they must be placed top side up. The use of metal equipment, or any other tool which might produce a spark, should be avoided when opening containers.

### **3.4. Decontamination procedures for spilled or scattered pesticides, or its residues**

- ▶ Scattered particles should be cleared by dry cleaning process using the vacuum system.
- ▶ The spill or leakage should be covered with sand, soil or sawdust till absorbed completely. Then the adsorbing material should be collected and thrown into special container for decontamination, and then sent for a disposal in line with the local safety regulations. There is absolutely no use of the spilled products.
- ▶ Decontamination of special working robes, spraying equipment, and the containers shall be done only at the locations specially designed for that purpose.
- ▶ Rinsing wastewater and disposal of used containers should be performed in line with applicable regulations.

## 4. CONCLUSIONS AND RECOMMENDATIONS

1. Counterfeit pesticides are the new global threat.
2. The use of counterfeit pesticides poses a threat to human life and health, environment, as well as risks for businesses involved in food production. Quite often contraband pesticides turn out to be counterfeit.
3. Detected counterfeit pesticides are (hazardous) waste, subject to mandatory disposal.
4. Contraband and counterfeit pesticides end up on the markets as a result of certain financial aspirations (the desire to receive high profits with low risk involved), the lack of public awareness, gaps in legislation, and corruption.
5. The region's average share in counterfeit pesticides is around 25%, whereas for the small-packed counterfeit pesticides (for private crop producers and farmers) it is as high as 70%. In terms of quantity the share of contraband pesticides on the market can be compared with that of counterfeit pesticides. In countries that have both, legal and illegal pesticides producers, the share of contraband in active ingredients is usually higher than the volume of contraband in ready preparative forms.
6. Methodologies for counteracting both counterfeit and contraband pesticides are based on the approaches that comprise prevention, preparation and response to already committed crime.
7. Governments should take active measures to reduce the share of counterfeit pesticides on the market. Anti-counterfeit methodology covers a range of necessary approaches and tools to achieve this goal: independent system for product registration, customs risk analysis system, waste and pesticide packaging disposal, constant awareness-raising efforts to bring the risks associated with the use of counterfeit pesticides to the attention of general public, coordinated raids to detect and seize counterfeit products, and the establishment of the quarantine warehouses. These measures should be taken on the national level. Active involvement of responsible businesses, civil activists, and international organizations through the enhanced interagency and international is vital in this context.
8. There is a wide range of methods for smuggling contraband pesticides, most common of which are changed concentrations of active ingredient; false declaration of pesticide or AI name, weight, and value; concealment from customs controls at border crossing points; splitting pesticides into small batches; interrupted transit; counterfeit export under the disguise of the need to transfer the different remaining volumes of company legal pesticides from warehouses.
9. To detect contraband pesticides in import, transit, or export operations, vehicle weight check has to be done at the entry and exit points. Ad-

ditionally, whenever it is possible, it is recommended to do GPS itinerary checks. In the cases of pesticide import operations, accompanying documentation has to be thoroughly analyzed; packaging and labels should be visually inspected, in order to ensure that preparation forms on the labels match the information from the pesticide portfolios. In case of suspected contraband, samples should be taken for further expert analysis. It is also important to identify the cargo's country of origin.

10. Methodology for counteracting in the smuggling of pesticides covers such approaches and instruments as: customs risk analysis and management system, disposal of waste and pesticide packaging, setting up system of mobile laboratories, and introduction of meaningful penalties for smuggling pesticides, and legal implications for importers of contraband pesticides. There is a need to limit the list of customs crossing points specialized in customs clearance of pesticides and to build up their capacity, to track introduced pesticides, including AI. There is an urgent need in constant awareness-raising campaigns. Not less important is to create quarantine warehouses for arrested pesticides, to develop legal and fiscal instruments (securities and insurance) for temporary storage and further disposal of waste, following the final court decisions. Finally, it is advisable to carry out joint operations to detect contraband pesticides, and to introduce corporate security standards/technologies (QR-codes).
11. Effective counteraction directly depends upon interagency and interstate cooperation (especially with customs authorities of different countries), working with business community, civil society and international organizations. Among the latter, important counterparts would be the World Customs Organization, Interpol, Europol, EUBAM, FAO and WHO, Secretariats of Stockholm, Rotterdam and Basel Conventions as well as plenipotentiaries of national authorities, Green Customs Initiative, CIPAC – for they have vast information resources, necessary mechanisms, skills and guidelines ready to be shared and used to combat the smuggling of pesticides in the region.
12. As contraband pesticides, regardless of whether they are legal or counterfeit, can have adverse effects on human health, this type of cargo has to be handled with special care. If sampling is required, it should be performed by an expert trained in accordance with the ISO17025 requirements. If needed, it would also validate the results of the examination for its use as evidence in court.
13. Safety requirements for personnel working with pesticides, for pesticides transportation, storage and decontamination of spilled, scattered pesticides and their residues should always be considered while dealing with these chemicals.

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## ANNEX 1. Check list for national implementation of the methodology to counteract counterfeit and contraband in pesticides

Counterfeit Preventive Instruments	Implemented in the country
<b>Prevention</b>	
Pesticides registration: <ul style="list-style-type: none"> <li>– to enhance legislation on temporary registration and the ban on import and marketing of temporary registered products;</li> <li>– to harmonize registration requirements for originals and generics;</li> <li>– to enhance interaction between registration and fiscal authorities (Customs and Tax inspections);</li> <li>– to audit priority registered brands;</li> <li>– to enhance cooperation between state registration authorities and countries-producers.</li> </ul>	
Customs clearance: <ul style="list-style-type: none"> <li>– customs risk analysis;</li> <li>– early notification – cooperation with customs authorities of countries- importers and exporters.</li> </ul>	
Logistics and trade: <ul style="list-style-type: none"> <li>– to withdraw counterfeit from the market;</li> <li>– to transport with certified carriers.</li> </ul>	
Disposal of waste and pesticide containers	
Awareness-raising efforts	
Interaction with business	
<b>Preparation</b>	
Interdepartmental joint raids	
Quarantine warehouses	
Awareness-raising efforts	
Cooperation with the countries of importers and exporters	
<b>Response</b>	
Operational procedures for law enforcement and controlling agencies, including safety training	

Anti-smuggling Instruments	Implemented in the country
Prevention	
Traditional integrated system: <ul style="list-style-type: none"> <li>- <i>interdepartmental cooperation, incl. joint checks;</i></li> <li>- <i>quarantine warehouses;</i></li> <li>- <i>disposal of unusable pesticides and containers;</i></li> <li>- <i>enhanced systems of customs laboratories;</i></li> <li>- <i>system of penalties and liability for contraband;</i></li> <li>- <i>limiting the number of crossing points and their capacity building;</i></li> <li>- <i>international cooperation, incl. joint checks;</i></li> <li>- <i>cooperation with business.</i></li> </ul>	
Corporate security standards	
Keeping records of introduced pesticides, including their active ingredients	
Customs risk analysis	
Preparation	
Construction of temporary isolated quarantine warehouses for arrested pesticides	
Legal and financial instruments (securities and insurance) for temporary storage	
Special inspection operations on pesticide shipments	
Response	
Operational procedures for customs officers, incl. sampling	





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