Vision Foundation
for Strategic Studies

Regulatory, Environmental, and Economic Perspective on Pesticide Importation and Management in Iraq and the Kurdistan Region

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ABSTRACT

In Iraq, pesticide management is still a significant problem, especially in the Kurdistan Region where there are gaps in several stages of the pesticide lifecycle. In order to identify major flaws in current management practices and their effects on the environment and human health, this study carried out an extensive review of scientific literature and current legislation. Deficits in pesticide registration, enforcement, stock control, container disposal, and IPM strategy integration are identified by the analysis. On September 7, 2025, Vision Foundation for Strategic studies organized a roundtable discussion on the impact of pesticides and chemical substances on agricultural products and public health. The event, held with the participation of representatives from the Ministry of Agriculture, senior agricultural officials, relevant stakeholders, and agricultural experts, explored in detail the sources of pesticide and chemical use (including smuggling and unregulated access) and their possible hazards to public health constitute a danger to public health, the quality of agricultural products, or the land and water resources of the Kurdistan Region. Based on these findings, the study suggests carry out regulatory implementation, adding traceability and stock management systems, promoting container recycling, and making a list of safer pesticides that can only be bought with a prescription. In order to reduce the dangers that are linked with pesticides and to encourage environmentally responsible farming practices, the study highlights the importance of being in compliance with international standards and having legislative tools that are more effective.

INTRODUCTION

Insecticides, fungicides, herbicides, rodenticides, molluscicides, and nematicides are all types of pesticides.Pesticides are important for farming because they help grow more food of optimal yields and minimizing losses. During World War II (1939–1945), they grew quickly because there was a need to make more food available and stop diseases spread by insects (Tudi et al. 2021). Furthermore, the global production of pesticides increased by nearly 11% annually, from 0.2 million tonnes in the 1950s to over 5 million tonnes by 2000.

Every year, three billion kilograms of pesticides are used worldwide. Only 1% of all pesticides, however, are effective in preventing insect pests from harming the plants they are intended to protect. Water sources may contain residual pesticides due to their inadvertent effects on plants, soil, water, and air (Carvalho 2017). Pesticide use is still common in Iraq and the Kurdistan Region of Iraq (KRI) because high-value horticultural crops like tomatoes and cucumbers, as well as nutritional crops like wheat and barley, need to be protected.

In order to encourage people to use chemical inputs like fertilizers and pesticides and increase productivity, Iraq's agricultural policy has historically included large subsidies. This is usually due to food insecurity, especially wheat (Mahdi and Mohammed 2017). In Iraq and the Kurdistan Region of Iraq (KRI), agricultural policy lets people bring in and use pesticides. People are even more reliant on pesticides because of past agricultural policies that support farmers for buying chemicals. But people have abused them and placed the environment at risk because the laws aren't clear, lack of enforcement, and there aren't any safer solutions.

Governments all throughout the globe employ pesticide registration systems to establish a middle ground between the good things pesticides do for farmers and the bad things they do. According to international code of conduct on pesticide management (2014) which provided by the FAO, all pesticides should be registered before using and must be assessed in case of safety and effectiveness. Due to unavailability of the resources in low income countries this requirement cannot be achieved. This makes it hard to systematic, control, and enforce the laws after registration. We need to expression at our current systems again and make adjustments that are right for Iraq and the Kurdistan Region because of these difficulties.

The KRI Ministry of Agriculture and Water Resources (MoAWR) will tightly limit the entry of pesticides into the Kurdistan Region of Iraq (KRI) starting in 2025. The area usually follows federal Iraqi rules, but it has its own rules regarding how to get in and how to manage elements. This paper aims at critically evaluating the current pesticide management and regulatory system in Iraq, especially in the Kurdistan Region to establish

gaps and shortcomings within the pesticide lifecycle. Precisely, the paper intends to review the existing practice regarding pesticide registration and importation, enforcement, stock control, container disposal, and integration of the Integrated Pest Management (IPM) plans and recommend viable and situationally adequately sound and sustainable policy and legislative changes that are aligned with international standards and practices, and support environmentally sound agricultural practices.

PESTICIDES IN IRAQI AGRICULTURE

Existing policy and regulatory environment. Previously, the agricultural policy within Iraq has supported and encouraged the use of chemical inputs like fertilizers and pesticides which was largely influenced by the need to decrease food deficit in the country and enhance crop productivity. The Ministry of Agriculture regulates the pesticides under the National Committee of the Registration and accreditation of pesticides and this committee regulates importation, registration, licensing, selling and use of pesticides in Iraq. This committee is the key factor in the approval of pesticide products and the issuing of licenses

to distributors and importers and overseeing the conformity to the national regulations (National Committee for Registration and Accreditation of Prohibited Pesticides in Iraq).

Pesticides in the agricultural system. The movement of pesticides in Iraq is usually initiated by the importation of pesticides through agreed border points, registration and licensing by the National Committee. When the pesticides are approved, they are distributed by licensed wholesalers and retailers and finally to the farmers and the end-consumers.

This flow is, in practice, frequently distorted by lax policing, a lack of inspection capability, and informal market routes. Because of this, there is a possibility of unregistered or misused pesticides getting into the market which poses a greater threat to human health and the environment. There is also limited post-import oversight, stock misuse, and proper disposal of expired or outdated pesticides, which ma

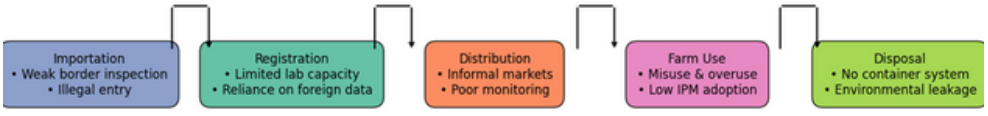

Figure 1. Pesticide lifecycle and key regulatory gaps

The market for pesticides in Iraq is growing steadily because farmers need more products to protect their crops. Chemical pesticides, such as herbicides, insecticides, and fungicides, make up most of the market. The market is growing because more people are growing crops, more people are learning about the benefits of pesticides, and more pests and crop diseases are becoming common. In Iraq, the pesticide industry has a lot of important players, from big international companies to small local manufacturers. These companies make a wide range of products to meet the different needs of farmers.

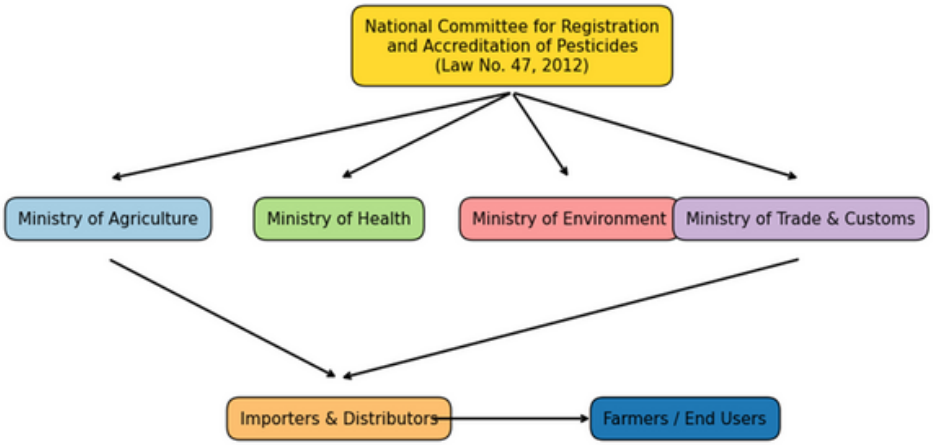

Figure 2. Institutional framework for pesticide regulation and oversight

It's not easy to bring pesticides into Iraq. There is a push for modernization and stricter rules on the other hand. But the country needs food security immediately. The Ministry of Agriculture (MoA) is keeping in-depth evaluation on things to make sure that chemicals that come from other countries don't harm the environment or people's health.

In the past, in case of the supplies national food demands in Iraq, the Iraqi agricultural policy enhances to the chemical like pesticides and fertilizers. The importations and regulations of the pesticides were managed by the National Committee for the Registration and Accreditation of Pesticides. Ministry of Agriculture is in charge of this committee. The import, sale, and use of these substances are regulated by this committee, which is also in charge of licensing and registration (National Committee for Registration and Accreditation of Prohibited Pesticides in Iraq).

The National Committee for Registration and Accreditation of Pesticides Law No. (47) of 2012 was issued, pursuant to which the basic procedures for registering and accrediting pesticides in Iraq were organized, and a committee was formed headed by the Minister of Agriculture and with membership of representatives from other relevant ministries.

THIS COMMITTEE UNDERTAKES THE FOLLOWING TASKS:

Registering and approving pesticides of all types and their composition in the Republic of Iraq in accordance with the law.

1.Re-registering and approving pesticides or canceling them as decided in light of local and international scientific and security developments in accordance with the law.

2.Issuing an official registration certificate for the pesticide that meets the conditions, controls, technical recommendations, and test results.

3.Granting a license to manufacture and synthesize the pesticide or canceling or renewing it in accordance with the law.

4.Granting a license to import or export pesticides a
broad in accordance with the law.

5.Banning pesticides and restricting their use permanently or temporarily in accordance with what is decided in light of local and international scientific and security developments, in accordance with the instructions issued by the committee.

6.Studying issues related to pesticide affairs and issuing the necessary decisions regarding them, and approving pesticides that are less harmful to humans and the environment.

7.Forming specialized committees to facilitate the performance of the National Committee's tasks and within the scope of its work.

8.Spreading scientific awareness of everything related to pesticides to ensure their optimal and safe use, and working on using biological and mechanical control.

9.Providing the relevant authorities with a list of the names and quantities of pesticides licensed for import.

Argument of weaknesses in the process of executing the duties of the Committee. Although the framework is very elaborate as provided in Law No. (47) of 2012, there are various challenges that produce an impediment to the effective execution of the functions of the National Committee. Such weaknesses may be divided into institutional, technical, logistical, and regulatory gaps: Minimal Technical Capacity of Registration and Evaluation. Whereas the committee is supposed to take the pesticides through scientific data and approve them, Iraq usually has no up-to-date laboratory equipment, professionals, and risk analysis equipment necessary to assess the toxicity, environmental behavior and effectiveness.

This results in: Trust on foreign information without local validation. Poor capacity to assess novel or complicated active components. Late or variegated registration decisions. Lack of Post-Registration Surveillance and Implementation. Re-registration, cancellation and restriction of pesticides involve tasks like monitoring of continually: Field use Resistance development Human health effects Environmental contamination Monitoring is however very minimal as there are just a few field inspectors, disjointed reporting, and poor coordination between diverse ministries.

As a result: The risky products can stay longer than they should stay in the market. Illegal pesticides are still going round the market. The violations hardly get recorded or punished. Weak control over manufacturing, Importation and Export. This committee has the mandate of licensing production and regulating imports/exports.

In practice: The border points usually do not have trained employees or analytical devices to identify illegal or counterfeit goods. Inefficient coordination with the custom has led to the entry of pesticides that are not registered or those that are expired into the market. There is a risk that the quality of the products will vary because of a lack of quality formulation facilities in the local areas. Difficulties in Bans or Restriction Implementation.

DESPITE THE LEGAL POSSIBILITY OF BOTH PERMANENT AND TEMPORARY PROHIBITIONS, THERE ARE SOME CHALLENGES IN ENFORCING:

Minimal market monitoring to make sure that prohibited goods are eliminated. Reliance of farmers on some pesticides because they have no choice. Important pressure caused by importers or distributors opposing restrictions. Slow process of updating lists in response to international changes in a legislative process. A deficit inter-ministerial co-ordination. The committee consists of a representative of various ministries, yet the collaboration is usually poor because of: Various institutional concerns. Overlapping mandates Slow decision-making Poor mechanisms of information sharing.

This undermines national pesticide governance. Lack of Community Education and Reaching. The committee will have the duty of promoting safe use and encouraging biological control, but: There are sporadic educational campaigns which are not well-funded.

Rural areas lack or have low staffing of extension services. The farmers are given inadequate training on dosage, timing, PPE, and IPM practices. This causes abuse, excessive use and mishandling of pesticides. Absence of Complete Databases and Traceability Systems. It is necessary to provide the authorities with lists of licensed pesticides, however, there are outdated or incomplete databases. There is no countrywide digital system to trace the pest movement between the importation stage and the application in the field. The tracing of containers and empty packaging does not exist. This gives chances of the infiltration of illegal, counterfeit, or expired products into the supply chain. Restructured Fewer and Smaller Special Subcommittees.

EVEN THOUGH THE LAW ALLOWS THE ESTABLISHMENT OF SPECIALIZED SUBCOMMITTEES:

There are numerous committees that are not operational as they lack funds or they have no clear mandates. Technical subcommittees are not always experts in toxicology, ecology or risk assessment. The decision-making process is highly administrative as opposed to being scientific.

The smuggling and illegal traffic of pesticides by unscrupulous people, along with the lack of qualified specialists and scholarly advice in green houses and open fields are one of the most significant threats to the agriculture of Iraq. Smuggled pesticides tend to find their way into the country without going through the legal registration and inspection procedures, ignoring the safety, quality and labeling laws.

Such products can easily be counterfeited, expire, or prohibited or even wrongly formulated which is a great danger to the farmers, consumers, and the environment. Another reason that aggravates misuse of pesticides is the introduction of unlicensed traders and non-experts in the distribution of pesticides since they often take their decisions regarding the application on the basis of personal experience or non-scientific recommendations.

Concurrently, the minimal accessibility of the agricultural extension services, plant protection specialists, and academic professionals in the production regions especially in greenhouse systems has led to inappropriate pesticides selection, high application levels and ineffective timing of treatments. Farmers resort to pesticide sales people who offer them technical advice and this leads to conflicts of interests that encourage excessive use.

The lack of effective training activities and on-farm technical control threatens the implementation of the Integrated Pest Management (IPM) practices and escalates the resistance to pesticides, the presence of pesticide residue on the crops, and soil and water resource contamination. To deal with these problems, there is a greater need of stricter border control and enforcement, licensing of pesticide sellers, extension services expansion, and closer interaction of academic institutions and farmers in order to achieve safe and sustainable pest control methods.

IRAQI KURDISTAN REGION PESTICIDE IMPORT STATUS

The KRG Ministry of Agriculture and Water Resources (MoAWR) runs a strict set of rules for bringing pesticides into the Iraqi Kurdistan Region (KRG). The area often works with the federal Iraqi standards, but it has its own set of rules for how to run things and how to get in.

THE CURRENT SITUATION WITH IMPORTING PESTICIDES CAN BE SUMMED UP AS FOLLOWS:

All pesticides that are going to be brought into the country must get the approval from the National Committee for the Registration and Accreditation of Pesticides. Only businesses that have been officially registered with the KRG Ministry of Agriculture or the Federal Iraqi Ministry can apply for import licenses. All pesticides should be undergoing the process of registration.

You need to send in technical data, studies on how toxic it is, and a certificate of analysis from the country where it came from as part of this process. New or unregistered pesticides must go through a field trial period of one to two years to see how well they work and how they affect the environment in the area before they can be brought into the country permanently.

The KRI follows international drug laws, such as the Stockholm and Rotterdam Conventions, which list drugs that are against the law. Persistent organic pollutants (POPs) and a lot of organochlorines, like DDT and Endosulfan, are examples of highly dangerous pesticides (HHPs) that you can't have. People are still trying to reduce the amount of broad-spectrum pesticides that come into the country in favor of products that work with biological and integrated pest management (IPM). Each shipment necessitates the completion of several critical tasks. A unique permit is required that specifies the quantity, brand name, and active ingredient for each shipment.

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Bashmakh in Iran. Labels must clearly show the concentration of the active ingredient, the dates of manufacture and expiration, and safety instructions in Kurdish, Arabic, or English.

As part of a larger shift toward regenerative agriculture and fiscal reform, the government has cut subsidies for pesticides to encourage more responsible use. In the past, the government paid for up to half of the cost of these chemicals. Border controls are getting stricter to keep dangerous "black market" pesticides from getting into the country. It is still common to send paper applications to the Ministry in Erbil, but the KRG is using digital platforms more and more to help farmers.

IRAQ PESTICIDES MARKET SYNOPSIS

Farmers in Iraq need more things to protect their crops, so pesticides are becoming more popular. Chemical pesticides, such as herbicides, insecticides, and fungicides, make up most of the market. There are more diseases and pests that can hurt crops, and more people are learning about how pesticides can help crops grow. These things are helping the market grow.

Multinational companies and local manufacturers are important players in the Iraqi pesticides market. They offer a wide range of products to meet the needs of different types of farmers. However, challenges such as regulatory issues, environmental concerns, and the shift towards sustainable agricultural practices are influencing the market dynamics and driving the adoption of biopesticides and organic farming methods in the country. According to OEC (2023). Iraq was 88th lageest global importer of pesticide, and nearly 73.5 million US dollars was consumed for importing the pesticide from the different countries as follow:

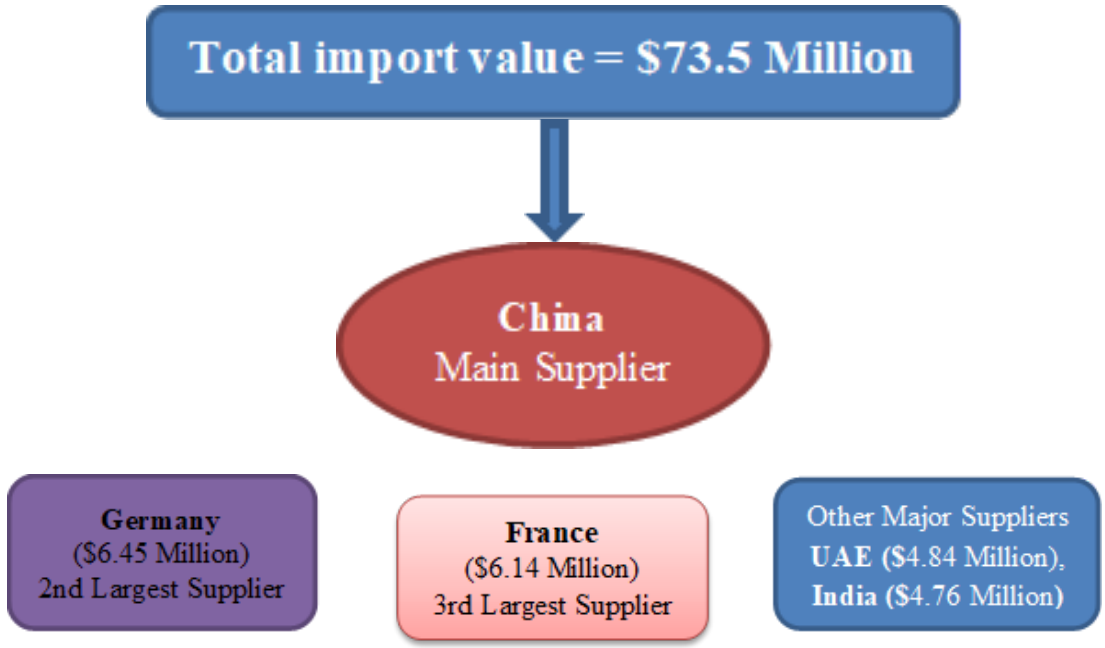

Figure 3. Major exporting countries supplying pesticides to Iraq in 2023

This data does not include the amount of pesticide imported from Iran and Turkey, and it is expected that a large quantity of pesticides is imported illegally from both countries without any monitoring. According to some data, a large quantity of Iranian and Turkish pesticides has been imported into the Iraq and Kurdistan Region and Iraq.

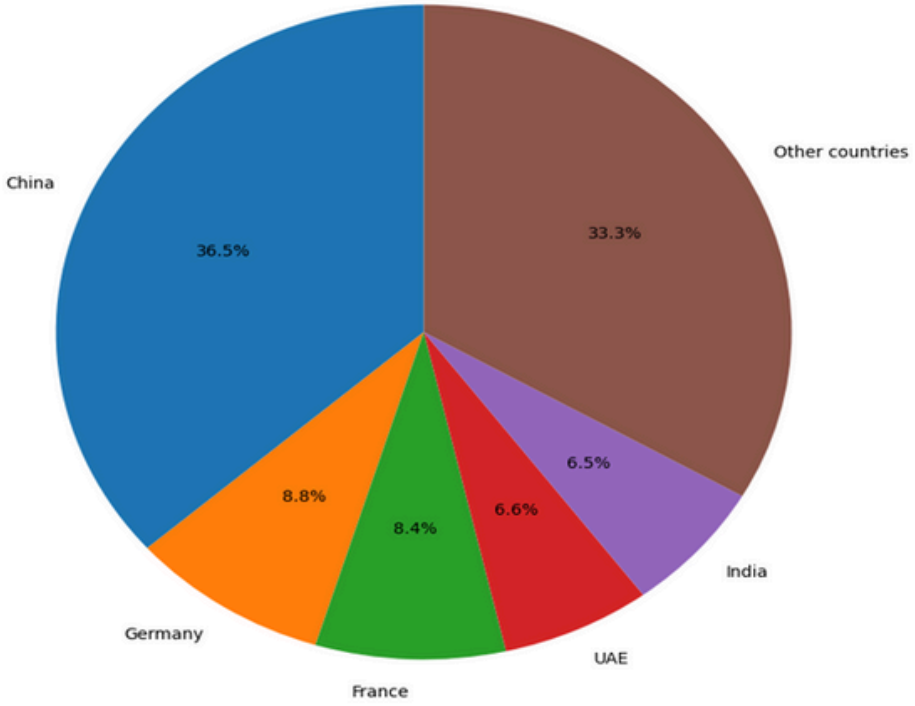

Figure 4. Share of Iraq pesticide imports by country

GLOBAL PESTICIDE MARKET VALUE AND VOLUME (2023-2024)

According to the table 1, global pesticide consumption exceeded 4.6 million metric tons. The market value of pesticides was $78.9 billion in 2023 and rose to about $82.62 billion in 2024. By 2031, the market value is projected to rise to $119.33 billion, reflecting a 5.39% increase.

The top pesticide-consuming country is China, which uses approximately 1,700,000 tons. Following China, the United States, Brazil, Argentina, and India are the other major pesticide users (figure 4).

Metric	Value/Volume (2023-2024	Forecast (CAGR 2024–2031)
Market Value (2023)	$78.90 Billion USD (for the global	
Market Value (2024 Estimate)	$82.62 Billion USD	
Forecasted Market Value (2031)	$119.33 Billion USD	5.39%
Global Consumption	**Over 4.6 Million Metric Tons (Mt) of**	

Table 1 Market value of pesticide

CURRENT CHALLENGES

THERE ARE STILL MAJOR OBSTACLES, EVEN WITH THE REGULATORY FRAMEWORK:

Dangers to Health and the Environment: The contamination of soil and water due to the careless and unregulated application of pesticides has endangered both human health and biodiversity.Chronic health issues have been linked to exposure, especially among agricultural workers.

Enforcement Gaps: Even though the rules say that imported goods must be tested, have the right labels (in the local languages), and have safety data sheets, enforcement is often not strong enough at border entry points and distribution networks.

Farmers' Knowledge and Practices: The traditional methods of pesticides application (unsafe) are used by the majority of the farmers, while the integrated pest management is not used widely. However, the government pay attention to use these hazardous pesticides and encourage use the safest pesticides.

Highly Hazardous Pesticides (HHPs): In global, particularly, the developing countries including Iraq and Kurdistan region widely used highly hazardous pesticides. The HHPs are enormously hazardous, due to contain a high toxic and persist in the environment for a long time, predominantly in places where safety protections are tough to implement.

POLICY RECOMMENDATIONS FOR REFORM

To bring Iraq's and IKR's pesticide management system up to date, make it more in line with international standards, and help farming stay sustainable, the following policy steps need to be taken:

Make it easier to regulate and enforce: To make sure that only safe and registered products come into the country and are used correctly, the current system needs strong institutional support and modernization.

Make a National Pesticide Monitoring Authority: Under the National Committee for the registration and accreditation of pesticides, set up a well-funded, independent group that will only be in charge of keeping in-depth evaluation of things after they have been brought in.Give the National Center for Pesticide Control (or a similar group) the ability and tools to check for pesticide residues on imported pesticides in stores, and farm produce on a regular basis. The Ministry of Health and the Ministry of Environment should also work together to check places where farms store their goods, wholesale markets, and customs points. The government should consider these checks.

MAKE IT POSSIBLE TO GET LICENSES AND BRING THINGS INTO THE COUNTRY ONLINE:

Established a national electronic system to in-depth evaluation of pesticides from the time they import into the country until they are used on farms. This will make it possible to license and import them online. Importers would have to provide the names of buyers, batch numbers, quantities, and expiration dates right away on a digital platform. This method would make it easier to track things and help stop the spread of pesticides that aren't registered or have expired.

Strengthen Labeling and Information Standards: Make it a rule that all pesticide labels must have clear, easy-to-understand instructions and warnings in both Arabic and Kurdish. This includes the chemical name and toxicity classification of the active ingredient.

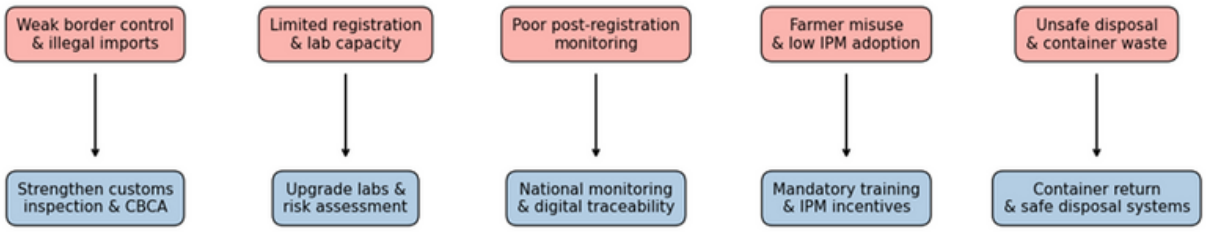

Figure 5. Alignment between policy gaps and recommended reforms

AVOID USING HIGHLY HAZARDOUS PESTICIDES (HHPS)

Eliminate Highly Hazardous Pesticides (HHPs). High levels of hazardous pesticides should be eliminated.

Adopt a temporal schedule for the restriction of HHPs: Use the Food and Agriculture Organization (FAO)/World Health Organization (WHO) framework to find and ban or limit Highly Hazardous Pesticides (HHPs) systematically.

The National Committee for the Registration and Accreditation of Pesticides needs to quickly check all pesticides that are currently registered against international hazard standards and make a clear plan for when HHPs will no longer be used. At the same time, set aside resources for the safe disposal of old and extra HHP inventory to reduce pollution in the environment.

ENCOURAGE INTEGRATED PEST MANAGEMENT (IPM) AS A NATIONAL STRATEGY

To stop using chemical pesticides, farmers need to make a concerted effort to switch to more sustainable approaches. Reassess and slowly move subsidies away from chemical pesticides and towards training and inputs that help with Integrated Pest Management (IPM). The farmers would encourage for using biopesticides, biofertilizers, and other IPM tools. Support the farmers to use IPM-certified methods, which combine biological, cultural, and mechanical controls with careful use of chemicals.

National Farmer Education and Extension Program: Implement up a required training program for everyone in the country on how to safely handle pesticides and use IPM principles. Revive the Agricultural Extension system so that it can give farmers practical, localized training (in languages they can understand) on how to identify pests, use IPM safely, and the economic and environmental benefits of IPM. Work with universities and agricultural research centers to do research and create salt-tolerant crop varieties, pest-resistant, and adapted to the local climate.

Banned bringing in illegal pesticides from Turkey and Iran: Additional inspections should be done at official entry points, and more monitoring should be done along unofficial trade routes. Make sure that all pesticides that come into Iraq and the Kurdistan Region are registered under Law No. 47 (2012) and have clear labels and safety information. Fine, take away, and sue people who import or sell pesticides that aren't registered or are against the law. Make agreements with Iran and Turkey to keep an eye on and control the trade of pesticides across borders.

CONCLUSION

There is no doubt that the current pesticide laws and rules need to be updated right away. This should be done as part of a clear policy that uses the judicial system and coordinated use of its approaches to fix many of the strategic flaws that have been found. Some of these flaws are high dangerous to ignore because they could have a lot of negative impacts on the health and environment of the people in the country. It is not only important for the environment to strengthen Iraq's rules for importing and using pesticides; it is also an excellent financial decision in the quality of food, public health, and the future of Iraqi farming. Iraq can make sure that its efforts to protect food production don't hurt its most important natural and human resources by strengthening enforcement of rules, getting rid of the most dangerous chemicals, and actively promoting IPM. It is recommended that to establish a strong, coordinated national policy for pesticide regulation that leverages the judicial system's enforcement tools. In addition, the shift away from the most toxic chemicals and towards sustainable alternatives is essential for protecting natural and human resources.

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