



REPORT ON THE SITUATION OF HIGHLY HAZARDOUS PESTICIDES (HHPs)  
AND ALTERNATIVES IN ARMENIA

BY



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## Summary

Agriculture is one of the key contributors to the Armenian economy and the main source of employment. In 2018, it accounted for about 13.7% of GDP. The economy of Armenia gives priority to small-scale agricultural production. As one of the leading sectors of national economy, it accounts for 31.6% of the working population, of which almost 56% are women farmers. Scientific estimates indicate that in terms of the human burden on ecosystems this industrial sector is among the leaders, causing significant damage to the environment and numerous problems for public health. The significant contribution to the negative impact is determined by the intensive chemicalization of agriculture and the widespread use of chemical plant protection products, in particular highly hazardous pesticides (HHPs).

In this review, we analyzed highly hazardous pesticides used in Armenia. In particular, the review focused on:

- An assessment of the use and management of pesticides, including existing policies and the legal framework for phasing out HHPs in Armenia
- Identification of existing alternatives for phasing out HHPs in Armenia, such as agroecology, organic agriculture and Integrated Pest Management (IPM)
- Raising awareness of the impact of HHPs and alternatives to them through the exchange of information and experience, training materials and the media, available documents / best practices on HHPs alternatives

The analysis was based on the HHPs list compiled by Pesticide Action Network (PAN) in 2019, which used the criteria of the World Health Organization (WHO) and the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). The analysis of the situation with HHPs in Armenia showed that HHPs are quite widely used in the agricultural sector. Over 60% of pesticides permitted by law belong to the list of HHPs. In 2018-2019, 602 pesticide formulations were imported into Armenia, of which 65.3% of pesticides belonged to the HHPs, with many of them banned in other countries. HHPs enter the country and are sold under different brand names, and the concentration of the active ingredient varies depending on manufacturer. HHPs are used in more than 30 crops in agriculture as insecticides, herbicides, fungicides, acaricides, and rodenticides. The main volume of pesticides imported into Armenia is represented by products from China and India, and annual growth of this indicator is observed. Noteworthy is the increase in procurement volumes of HHPs, such as Chlorpyrifos and Glyphosate.

The review includes analysis of crops in Armenia's agricultural sector where HHPs are applied. Principal crops in Armenia are cereal and leguminous crops, melons, aromatic plants, feed crops, potatoes, and tobacco. Armenia is especially rich in fruit, berries and nuts, such as apricots, grapes, peaches, apples, plums, pears, pomegranates, quinces, figs, walnuts, etc. Agro-climatic conditions also allow the cultivation of a variety of vegetables. Winter wheat and spring barley are the dominant crops.

The review revealed that most HHPs are used in vegetable growing and horticulture, which poses certain risks both for workers in this field and for consumers of products, which may contain these toxic chemicals. Moreover, there is no systematic monitoring of the quality of agriculture products in Armenia.

We analyzed 58 active ingredients of 391 HHP products imported for use in the agricultural sector in 2018-2019 by degree of their impact in accordance with the 2019 PAN classification of HHPs. The analysis showed that 34.5% of the active ingredients belonged to the third group (toxic to the environment), 31% belonged to the second (long-term effects), 3.4% belonged to the first group (acute toxicity), and 31% included combinations of groups 1-3; 1-2; 2-3 and 1-2-3.

In frame of this review, the recommendations on phase-out of HHPs and gradual transition to safe alternatives were presented to Armenian stakeholders and decision-makers.

In the past decade, no studies have been conducted in Armenia to identify the relationship between the incidence and use of pesticides, in particular the highly hazardous ones. However, statistical data on the growth of oncological diseases morbidity and mortality in the country, malformations in children, hormonal disorders in the reproductive age group and other pathologies suggest that such a relationship exists if we take into account the information obtained through this review on the use of a wide range of HHPs in Armenia. The vast majority of cases of pesticide poisoning, even those with severe poisoning are not reported to medical services, as the affected people self-medicate at home. . From the available official information, it can be concluded that most poisoning cases which mostly occur in men are associated with insecticides and organophosphate pesticides. Most farmers do not understand the ecotoxicity and pollution of natural resources associated with the use of pesticides. In this review, we analyzed the situation with regard to ecosystem-based farming approaches in Armenia. All instances of using alternative approaches in the agricultural sector of Armenia are mainly market- and demand-driven private initiatives. Armenia has no national policy on HHPs management. Armenia lacks the necessary capacity and does not have a strategy that would provide adequate assistance to agricultural producers in changing the practices of agricultural production, which would help maintain the high yields without the use of highly hazardous pesticides. At present,

there are no short-term opportunities for adopting laws and by-laws to phase-out and ban all HHPs in Armenia.

The political framework supporting ecosystem approaches as an alternative to synthetic pesticides in agricultural policy is limited to the declaration of organic farming as one of the priority areas with a broad perspective in Armenia. The Armenian government, civil society and the private sector support organic agriculture policies in the form of project/program initiatives.