The quest for a holistic pesticide policy

October 8 2020, by Robert Finger

Credit: Pixabay/CC0 Public Domain

Bans and simple measures alone won't solve the problems in plant protection. Robert Finger presses for a comprehensive pesticide policy.

Something must be done—nobody's questioning that. But the dilemma in the agricultural sector is not easy to solve: crops must be protected from diseases and pests, yet many products endanger both the environment and our health. The risks here must be drastically reduced—and fast.

Just how this can be achieved is being hotly debated in Switzerland and throughout Europe. And rightly so—for despite their ambitious plans, hardly a single European country has made progress in mitigating the risks in pesticide use. In Switzerland too, threshold values are regularly exceeded in water bodies and groundwater. In this country, two pending popular initiatives on drinking water and pesticides are now seeking to massively reduce or even ban the use of artificial pesticides in farming.

But plant protection is a complex matter. To reduce risks effectively and efficiently, we need to take a holistic view, and include all stakeholders, from farmers and authorities to consumers. In an interdisciplinary team of experts, we have outlined what such a pesticide policy could look like in a paper published recently in *Nature Food*.

Setting and monitoring risk-based reduction targets

If you want to reduce risks, you have to measure them. In practice, such measurements are often based on the quantity of substances applied, without taking toxicity into account. This doesn't accurately determine extreme risks in particular (see previous blog post); it would be advisable to use risk-based indicators that take into account the potential harm to humans and the environment.

An effective pesticide policy must define measurable, transparent and binding objectives to reduce risks. These are lacking in most EU countries and in Switzerland.

Governments setting targets should regularly check whether they're being achieved, and make the results publicly available. However, very few countries know exactly when, where and in what quantities pesticides are used. We need more transparency here.

Exploiting alternative approaches

A number of practices and technologies harbor potential for partially forgoing pesticides or even completely replacing them. Agro-ecological approaches must increasingly become the norm in traditional agriculture too—for example, farming systems rich in species and with diverse crop rotations that reduce disease and pest pressure, and methods that control any remaining pests biologically.

Another avenue is the use of new molecular biological techniques to breed crop varieties resistant to diseases and pests more efficiently. In the EU and Switzerland, however, such breeding methods are tightly regulated; we should be more open to evaluating these new options in the context of sustainable plant protection.

Digitalisation too can play a key part here. In precision farming, for example, autonomous robots and drones control weeds, pests and diseases by spraying or mechanical weeding where necessary. Such technologies for smart crop protection must be enhanced and promoted.

All these alternative approaches will help reduce the reliance on pesticides. However, despite their potential, farms deploy them too rarely—either because they feel it doesn't pay off (although it should), or because they don't have the specific expertise.

Creating incentives for change

New technologies, however promising, are ineffective if farmers don't adopt them. Today, pesticides are too cheap; the potential damage to humans and the environment is not reflected in the price. This is where tax incentives can be decisive in motivating farmers to replace harmful pesticides with less harmful products, or to completely stop using them.

Denmark, for example, has applied tax incentives and managed to reduce the risks of pesticides by over 30 percent in five years.

When it comes to encouraging farmers to switch to alternative practices and new technologies, a combination of taxes, direct payments, targeted insurance, and independent advice is proving effective. But on top of this, the food industry and consumers should push for more sustainable crop protection.

A long-term perspective on pesticide policy

Of course, in the short term, any stricter pesticide policy inevitably leads to conflicts with other agricultural policy goals. Forgoing pesticides may reduce food yields, or even exacerbate the climate balance; banning specific spraying agents may encourage resistance or mean more harmful ones are substituted.

But these conflicting objectives can be overcome. What's called for is an overarching food policy framework that recognizes the key areas of tension; one that provides a long-term perspective, and that encompasses the various actors along the food value chain and reconciles opposing interests.

This is the type of agricultural policy we must strive for, in Switzerland and elsewhere. The EU recently put forward its "From Farm to Fork" strategy, which aims to create more sustainable food systems and to slash the risks of pesticide use. Both are ideal opportunities for a rethinking of plant protection.

Anders Branth Pedersen et al. Environmental policy mixes and target group heterogeneity: analyzing Danish farmers' responses to the pesticide taxes, *Journal of Environmental Policy & Planning* (2020). DOI: 10.1080/1523908X.2020.1806047

Provided by ETH Zurich

Citation: The quest for a holistic pesticide policy (2020, October 8) retrieved 3 May 2024 from https://phys.org/news/2020-10-quest-holistic-pesticide-policy.html