

# Pesticides: Benefits and drawbacks; Possibilities for control; EU policies

[Ron Ockwell, August 2016]



The 'green revolution' in the 1960-70s introduced specialized, large-scale, mono-cropping of high-yielding plant varieties requiring systematic use of artificial fertilizers and pesticides. It led to considerable increases in yields and total production of staple crops...and the use of ever-increasing quantities of fertilizers and pesticides. However:

- Evidence is accumulating of negative effects on human health of exposure to pesticides.<sup>1</sup>
- Massive pesticide use in 'industrial' agriculture has resulted in important losses of biodiversity, and the worldwide loss of pollinators now occurring is linked, in part, to the use of pesticides, particularly neonicotinoids.<sup>2</sup>
- There are growing problems of pesticide resistance, with major implications for long-term productivity. Recourse to additional chemicals to tackle such resistance risks creating vicious cycles of further adaptation and resistance while also increasing costs.<sup>3</sup>
- Research now shows that some agro-chemicals may actually harm the plants themselves and, in some circumstances, increase the impact of the targeted pests through 'pesticide-induced resurgence'!<sup>4</sup>

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<sup>1</sup>Impacts may be direct (e.g. industrial workers producing plant protection products and operators applying them) or indirect (e.g. via their residues in agricultural produce and drinking water, or by exposure of bystanders or animals to spray drift when they are applied).

<sup>2</sup>(IPES-Food, 2016: 22) according to which the economic value of pollination is approximately 9.5% (€153 billion) of the value of global agricultural production for human food.

<sup>3</sup>(IPES-Food, 2016: 16) This IPES-Food report notes that: "This trend has been increasingly documented with regard to genetically-modified crops, and particularly the monocultures associated with the 'Roundup-Ready' model of herbicide-tolerant crops and accompanying glyphosate treatments. There are currently some 210 species of herbicide-resistant weeds, many of which can be linked to genetically-modified crops."

<sup>4</sup>FAO *What is Integrated Pest Management* [<http://www.fao.org/agriculture/crops/thematic-sitemap/theme/spi/scpi-home/managing-ecosystems/integrated-pest-management/ipm-what/en/>]



Aerial spraying is a particular problem: it has been estimated that over 98% of sprayed insecticides and 95% of herbicides reach a destination other than their target species.<sup>5</sup>

## Controls on the sale and use of agro-chemicals

In Europe, the EU has a strategy for the ‘sustainable use of pesticides’ to reduce the risks and impacts of pesticide use on people's health and the environment.<sup>6</sup> It allows countries to minimise or ban the use of pesticides in critical areas for environmental and health reasons.<sup>7</sup> It ‘prohibits’ aerial spraying, but then specifies conditions under which it may be undertaken!

At the international level, the International Code of Conduct on Pesticide Management provides a framework for pesticide management for all public and private entities engaged in, or associated with, the production, regulation and management of pesticides.<sup>8</sup> The Code is comprehensive, but voluntary. It is also recent, and evidence is lacking concerning its effectiveness.

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<sup>5</sup>Wikipedia referring to Miller GT (2004), *Sustaining the Earth*, 6th edition. Thompson Learning, Inc. Pacific Grove, California. Chapter 9, Pages 211-216.

<sup>6</sup> [Directive 2009/128/EC](#). The strategy requires national plans, training, public information and the inspection of equipment. It includes objectives to “reduce the levels of harmful active substances including through substituting the most dangerous with safer (including non-chemical) alternatives”, and to “encourage the use of low-input or pesticide-free crop farming, in particular by raising users' awareness, by promoting codes of good practices and consideration of the possible application of financial instruments.” [<http://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:52006PC0373>]

<sup>7</sup> [[http://ec.europa.eu/food/plant/pesticides/sustainable\\_use\\_pesticides/index\\_en.htm](http://ec.europa.eu/food/plant/pesticides/sustainable_use_pesticides/index_en.htm)]

<sup>8</sup> (FAO/WHO, 2013)

A number of binding international policy instruments exist of direct relevance to pesticide use, including the Rotterdam Convention<sup>9</sup> and the Convention on Biodiversity,<sup>10</sup> but damage due to large-scale pesticide use continues.

## Opportunities for and obstacles to change

The need to control the use of pesticides is widely recognized but opinions differ concerning the end goal. Some experts and organizations (and some pesticide producers<sup>11</sup>) call for the ‘responsible use’ of pesticides; others for the phasing out of their use and their replacement by natural, ecological methods of pest management.<sup>12</sup>

Reinforcement of regulations would be resisted by the agro-chemical industry, as shown by the ongoing controversies concerning neonicotinoids and glyphosphate. Moves by several countries and the EU to ban the three most widely used neonicotinoids have been fiercely opposed by leading pesticide corporations and by farmers already locked into production systems that depend on the use of such pesticides.<sup>13</sup>

The glyphosphate case highlights two linked issues: different interpretations of scientific evidence, and transparency and the privatization of research evidence. The International Agency for Research Against Cancer found, in 2015, on the basis of published scientific literature and consultations with independent international cancer specialists, that glyphosphate “probably causes cancer”. The European Food Safety Authority, taking

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<sup>9</sup> [<http://www.pic.int/TheConvention/Overview/tabid/1044/language/en-US/Default.aspx>] This establishes, amongst other things, a requirement that exporters of pesticides obtain the “prior informed consent” from the importing country before shipping.

<sup>10</sup> [<https://www.cbd.int/>]

<sup>11</sup> Personal communication from a staff of Syngenta!!

<sup>12</sup> For example, FAO’s ‘Integrated Pest Management’ programme [<http://www.fao.org/agriculture/crops/thematic-sitemap/theme/spi/scpi-home/managing-ecosystems/integrated-pest-management/en/>] aims to ‘minimise’ the use of pesticides through training and demonstrations. Its ‘Climate-Smart Agriculture’ programme incorporates the same approach [<http://www.fao.org/climate-smart-agriculture/en/>]. More complete forms of agroecology (see Option 3) aim at phasing out.

<sup>13</sup> (Simon M, 2014). See also [<http://www.nature.com/articles/ncomms12459>]

account of additional evidence from unpublished studies made available confidentially by the industry, reached a different conclusion.<sup>14 15 16</sup>

These cases also illustrate the different approaches to 'precaution'. Environmental and health sector actors demand proof of no harm before licensing. Industry and international trade rules demand proof of harm before restricting. And it would appear that the European Commission has, in these cases, not respected the 'precautionary principle' as defined in the Lisbon Treaty.<sup>17</sup>

## Conclusions; potential for NGO action

Calls for action in this area are already made by public health agencies, environmental protection agencies, sustainability-oriented agronomists, cities with food policy commissions or equivalent, and many NGOs. Further regulation will be resisted by agro-industry and their political and financial backers, economists and politicians oriented towards export-led growth and maximising GDP, and many agronomists. The probable main challenges will be a lack of political will, disputes over scientific evidence, differences over the precautionary principle, and 'free' trade agreements that seek to eliminate 'impediments' to trade.

While demonstrating the strength of industry resistance, the neonicotinoids and glyphosphate cases do show, however, that EU governments are increasingly sensitive to the growing strength of public opinion on these issues. Building on that, NGOs could 'add value' at the EU level by working with other groups on:

- monitoring the implementation by the EU of its pesticide management strategy and regularly publicizing the findings;

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<sup>14</sup> (Corporate Europe, 2016a)

<sup>15</sup> (GreenFacts, 2016a)

<sup>16</sup> (Corporate Europe, 2016b)

<sup>17</sup> For a discussion of the precautionary principle including the EU interpretation, see [[https://en.wikipedia.org/wiki/Precautionary\\_principle](https://en.wikipedia.org/wiki/Precautionary_principle)]

- advocating for removing the clause that allows aerial spraying in certain circumstances;
- promoting adherence to the International Code of Conduct by all European entities, public and private, involved with pesticides, and exposing those that do not comply;
- seeking ways by which the 'polluter pays' principle can be applied to pesticide producers, sellers and users in line with the EU's declared precautionary principle, and penalties be imposed;
- rationalizing standards, certification and the labelling of pesticide-free organic produce;
- promoting a Europe-wide public education campaign concerning the dangers that pesticides pose to health, biodiversity and the environment.

NGOs could, within their home countries, press governments to cooperate with the above, organize associated public education, and monitor the performance of national pesticide producers, sellers and users.

NGOs working in developing countries could avoid the use of pesticides in agricultural projects they support, and help local partners to monitor and where needed expose the performance of pesticide producers, sellers and users within the country, and to support them in getting aerial spraying banned.

While valuable in relation to health and biodiversity, the contribution of these measures to the overall Agenda-2030 would be relatively limited. In the short term, reducing the use of pesticides could even lead to increases in levels of poverty as yields and income levels fall *unless* appropriate incentives are made available and other, complementary actions are taken to enhance productivity.

