

Conversion to agroecology

France's hopes for environmental salvation

An extended feature by Peter Crosskey

Preface

Parts of this study first appeared in *Replacing Chemicals with Biology*, a book that was distributed to delegates during the United Nations Environmental Programme's Fourth International Conference on Chemicals Management (ICCM4) in September 2015. It was published by Pesticide Action Network, to make a case for agroecology as an alternative to spraying.

This version covers the background to French pesticide policy from 2007 onwards and includes additional material generated during the summer of 2015 during a visit to the Phyto-Victimes association office near Limoges.

The popular image of agriculture is at odds with the hazards that industrial farming bring to the countryside. To paraphrase Phyto-Victimes president Paul François, if farmers were to put on a full-protection suit every time there was spraying to be done, they would forever be driving around the countryside "...dressed like cosmonauts..." and scare their neighbours to death.

Upon reflection, some good might actually come from that, but nowhere near as much as doing away with the repeated spraying of chemicals on crops at current levels.

Peter.

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Introduction

As the heaviest user of crop treatments in 21st century Europe^{1 2}, France's attempts to get to grips with both reducing the use of phytosanitary products and promoting alternative farming methods that sidestep any requirement to spray have lessons for us all. The results are mixed, but instructive.

The current French farm minister, Stéphane Le Foll, is at present working to revive a national pesticide reduction plan which he inherited from a predecessor. Le Foll has also steered a landmark agricultural reform act through the French parliament with substantial cross-party support. The *Loi d'Avenir pour l'Agriculture, l'Alimentation et la Forêt* (Law for the Future of Agriculture, Food and the Forest) promotes agroecological approaches and has a headline target of implementing them on 200,000 holdings by 2025. It also adds agroecology to the curriculum of agricultural colleges across the country. About 40% of France's working farming population is either within five years of retirement, or well into an active old age. With a farming family background and as a former agricultural college lecturer, Le Foll understands the power of change that a new generation can bring to the rural economy. The future of French farming will depend on it, since a high proportion of current farmers have no clear succession in place. But this is also a turning point in a much longer, historical cycle.

[1] 2008 sales of active ingredients in France: 78,600 tonnes, world's fourth largest user behind USA, Brazil and Japan.
Source: <http://www.assemblee-nationale.fr/13/pdf/rap-off/i2463.pdf> page 13

[2] A 2009 parliamentary report by Alain Gest [<http://www.assemblee-nationale.fr/13/pdf/rap-info/i1702.pdf> page 10] suggests that 80% of crop treatments are applied on less than 40% of France's farmland.

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Time to question a modern myth

Les trente glorieuses and the rural exodus

Postwar rural France was home to half the nation and agriculture employed one in four of the active population³. Within two generations, barely 3% of the French active population is earning a living from farming and urban centres are bulging at the seams. As thousands of former peasant households were drawn to town life by the promise of regular working hours and monthly wages, so their departure made room for the agricultural modernisation or “productivisme” that subsequently transformed the face of the countryside they left behind.

Europe's rural landscape underwent a transition that was particularly pronounced in France. From the immediate requirements of postwar reconstruction, France went on to play a pivotal role in building the Common Agricultural Policy (CAP). French president Charles de Gaulle gave his farm minister Edgard Pisani ⁴ a free hand in the talks. Many other negotiators around the table were required to report back to their respective ministries before adopting positions in detailed and tightly-argued discussions. A gifted and very able administrator, Pisani paid close attention to the economic mechanisms of the CAP but lacked the hands-on agricultural experience to anticipate the likely environmental consequences such a policy might bring.

With the benefit of hindsight, he later gave an account of the environmental shortcomings that arose from what the CAP subsequently became ⁵, which is available in translation⁶. Pisani went on to become a figurehead president d'honneur for the Groupe Saint Germain, an agri-environmental think-tank presided over in 2004 by none other than Stéphane Le Foll, then a member of the European parliament.

Pisani's heartfelt message was that there should be public debate of the CAP and its environmental impact, not least because of the scale on which public funds are committed to it. A fresh round of CAP reforms were on the political agenda and Pisani was keen for a civil society voice to be heard as part of the process. The future lines of the CAP needed fresh input, he argued, and who better to canvass than those who funded it?

[3] Vincent Gallon, Sylvie Flatrie, *La fracture agricole*, Delachaux et Niestle, 2008, page 19

[4] note: Edgard is correct spelling

[5] Edgard Pisani, *Un vieil homme et la terre*, Editions Seuil, Paris 2004

[6] *An old man and the land*, edited by Paul Perron, Legas, Ottawa 2005

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The 2007 Grenelle debate

A fresh start for environmental policy

On May 16, 2007, Nicolas Sarkozy swept into power as the new French head of state, with five clear years of presidential mandate ahead. He lost no time in announcing a watershed conference and consultation process on the environment and economy that would involve government, sector professionals as well as non-governmental organisations (NGOs). After holding an open and extensive exchange of views, there would be time to draft appropriate legislation to tackle the issues raised.

With an eye for historical precedence, Sarkozy chose to stage the event at the Work Ministry in rue de Grenelle. This was the building in which the 1968 Grenelle agreements had previously been negotiated to settle demands made during the 1968 May riots. Opening on July 6, 2007, the Grenelle de l'environnement co-ordinated the proceedings of six working groups. Working through the summer holiday period, discussions ranged across climate change, biodiversity, health and the environment, as well as sustainable forms of production and consumption. Other topics included ecological democracy, ecological development, employment and competitiveness. Two further sub-groupings were convened to discuss genetically-modified organisms (GMOs) and waste.

The results of these deliberations were given on September 27. The ones with a direct impact on plant treatment products included:

- ◆ Establishing a way of taxing environmental impact;
- ◆ Trebling the proportion of organic farmland from 1.8% to 6%
- ◆ Stepping up public research into the effects of genetic manipulation, as well as setting up an independent high level authority to evaluate the environmental impact, economic value and agronomic usefulness of every GMO.

Just a month later, Nicolas Sarkozy presided over a two-day round table at which a consensual overview of the Grenelle proceedings was presented. Three over-riding themes were identified for action: climate change; protecting biodiversity and cutting pollution. These were not yet attached to any legislative programme, but were now assumed to be part of the president's policymaking wishlist. The next stage was to implement some of them.

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What came out of Grenelle?

Targets for improvements

Sarkozy's farm minister was Michel Barnier, a seasoned career politician with a string of senior ministerial posts stretching back to the early 1990s. Working from the agriculture ministry in rue de Varenne, Barnier set up four committees to pursue the following aims:

- ◆ To promote organic farming. Barnier set the twin targets of ensuring that 20% of the products served in public sector canteens by 2012 would be organic and that organic production would occupy 20% of France's farmland by 2020.
- ◆ To reduce pesticide use. Later known as Ecophyto 2018, Barnier envisaged a scheme to reduce pesticide use by 50% by the year 2018. The outcome required a means of measuring the intensity of pesticide use, for which a unit was devised. The Nombre de Doses Unitaires (NODU), which is specific to each active ingredient, will be discussed in more detail further on.
- ◆ To establish environmental standards on agricultural holdings. Barnier set a 50% target for environmental certification at HVE ⁷ by 2012.
- ◆ To benchmark energy use on agricultural holdings. Energy use on a total of 100,000 holdings was to be measured and evaluated over the coming five years.

The first Grenelle programming law, passed in 2009, contained a number of quite detailed commitments to schedule future legislation on the following topics:

- ◆ Town Planning: a commitment to preserve farmland from urban encroachment.
- ◆ Biodiversity: a commitment to attribute value to biodiversity and to require compensation for harming biodiversity, as well as modifying any current tax measures that could damage biodiversity.
- ◆ Water: a commitment to define action plans to protect the 500 most-threatened water sources, incorporating solutions for crop treatment residues and agricultural runoff; preferential water priority for organic agriculture and other low-input systems.
- ◆ Agriculture: a commitment to treble organic farmland to 6% of national farmed area by 2012 and to reach a target of 20% by 2020; to promote sustainable farming techniques and withdraw 40 of the "most preoccupying" crop treatment products by 2010; a ban on crop-spraying aircraft except under derogation; to base an emergency plan for bees on an independent toxicological evaluation; to ease market access for harmless natural preparations, such as nettle extract.
- ◆ Research: a commitment to give priority to national research into biodiversity and ecosystems, as well as the integration of ecotoxicology into existing research frameworks.
- ◆ Risk, health and environment: a commitment to integrate an environmental axis into future health policymaking.

[7] *Haute Valeur Environnementale or High Environmental Value.*

Barnier announced the first tranche of 30 Ecophyto 2018 active ingredient withdrawals in January 2008 (full list in Appendix 1), with a further 23 active ingredient authorisation withdrawals to follow. In all, 1,500 products containing these ingredients were withdrawn. However, by the time the first Loi Grenelle had been adopted in August 2009, a new minister was in charge at rue de Varenne.

New broom, old habits

18 months of ministerial inertia

Bruno Le Maire, who had been a prominent member of Nicolas Sarkozy's election campaign team, shares an alma mater with former ministers of agriculture Jacques Chirac and Valéry Giscard d'Estaing, by virtue of graduating from the Ecole nationale de l'administration (ENA). Le Maire was, in every sense of the term, a textbook minister being the author of *Le Ministre* (The Minister).

In October 2010, Le Maire reconvened the Ecophyto 2018 steering committee for the second time since it was first brought together by his predecessor in April 2009. The minister noted that there were now nearly 200 demonstration farms in 14 regions running pilot pesticide reduction schemes, referred to as DEPHY. This acronym is a homonym for the French word "défi" or challenge, while suggesting a reduction in plant treatment products, referred to generically as "produits phytosanitaires." At the time, there was a DEPHY target figure of around 1,000 by the end of 2010, with a long-term aim to reach 2,000 by the end of 2011. As of October 2010, more than 17,000 professional users – it should be noted that the scope of Ecophyto 2018 extends into the management of parks and gardens, too – had already undergone training in compliance, best practice and had a working knowledge of integrated pest management. As to results, in the years 2008-10 there had been "...a marked decline in the sales of problematic substances for the environment or human health: a drop of 87% for carcinogens and substances that cause mutations and others toxic to the reproductive system." ⁸ When Barnier had revoked the authorisations for 30 active ingredients in 2008, no fewer than 1,500 products were taken off the French market. In the same document is the news that the NODU index value rose by 2.6% for the period 2008-2010.

Bruno Le Maire's solution to the mixed fortunes of French agriculture between late 2006 and 2009 was designed to look good on paper, literally. His 2010 Loi pour la Modernisation de l'Agriculture ⁹ (LMA) set out to structure all agricultural activity in a series of contracts. A year previously, Le Maire's Loi pour la Modernisation de l'Economie ¹⁰ (LME) strengthened retailers' power in the food industry with a misplaced article of faith that imposing contracts would somehow curb the sharklike habits of retail buyers in their commercial relations with suppliers. For good measure he repealed the Loi Galland, a segment of the Code du Commerce ¹¹ that made it illegal to sell at a loss. Now, contemplating the modernisation of the Code Rural ¹² Le Maire wanted to discard all the market regulations that protected agricultural interests from retailer abuse, require written contracts, for all but the most insignificant transactions to ensure that French agriculture developed the following traits: to become competitive (bigger); to be an attractive investment; to expand its already significant export capacity and to be modern (read: technically adventurous). For decades, the CAP had already been scaling up of farm sizes

and ensuring that parcels of land were absorbed as rural households moved into towns and cities. In the process, the CAP had also made agricultural exports a lucrative business, at the expense of short, local food chains. And, with the national self-image of France as a world class food exporter, how could anyone possibly question the necessity of adopting the very latest generation of branded crop protection products, which are routinely traded for a reliable profit by vertically-integrated farmer cooperatives?

[8] Ecophyto 2018 press pack, download link: http://agriculture.gouv.fr/IMG/pdf/DP-Ecophyto_251011-4.pdf

[9] Law for the Modernisation of Agriculture

[10] Law for the Modernisation of the Economy

[11] The body of law governing commercial practices: one of the Napoleonic codes

[12] Another of the Napoleonic codes that are still used and modified to enact modern legislation.



The scale of the problem: meet NODU

How pesticide use is measured in France

NODU (NOMBRE de Doses Unités/number of dosage units) is a figure based on annual sales data supplied by resellers to the national office for water and aquatic spaces (ONEMA - Office National de l'Eau et des Milieux Aquatiques). By correlating the dosage units and, in the case of an agricultural NODU calculation, the usable agricultural area (SAU - Surface Agricole Utilisable), it is possible to arrive at an average number of treatments per hectare. There are different NODU segments, reflecting the land use for which the products concerned were sold.

The data is collected by ONEMA as the basis for calculating a tax on low-level water pollution, the redevance pour pollutions diffuses (RDP) that was instituted on January 1, 2008 to implement a 2006 French law on water and aquatic spaces. Based on the principle that "the polluter pays", this tax funds part of the Ecophyto programme and water quality work for the future. While selling non-approved, trafficked products is tantamount to aggravated tax fraud under French law, the resources have not been available to bring enough successful prosecutions to deter illegal trading.

A note on the methodology used to calculate NODU (in French) can be found at [<http://agriculture.gouv.fr/Notes-methodologiques-Le-NODU>] with links to worked examples. Further detail on the sales data collection procedure can be downloaded (in French) from [http://agriculture.gouv.fr/IMG/pdf/La_BNV-d_cle8978db.pdf]

How farming communities are victims

Sold short by pesticide propaganda

French cereal farmer Paul François (pictured, right) accidentally inhaled herbicide fumes in 2004. He has been fighting for justice ever since. His exposure to the Monsanto product Lasso pitched François into a series of administrative and legal battles, each one more daunting than the previous one.



After months in hospital, he spent five years fighting the French authorities to recognise his condition as an occupational illness [<http://www.arc2020.eu/2012/05/french-pesticide-decree-sets-a-precedent/>]. The French state now recognises Parkinson's disease and earlier this year added non-Hodgkins lymphoma to the list of occupational illnesses in the agricultural sector.

François went on to become the first French farmer to challenge Monsanto in a French court. The proceedings opened in 2010: he emerged victorious in February 2012, but Monsanto appealed. The appeal hearing took place in May this year at the Tribunal de Grande Instance at Lyon, where Monsanto France has its headquarters: a judgement is scheduled for September 10.

When it comes to identifying which pesticide could be to blame in any specific case, there is a huge range of potential active ingredients to investigate. "The problem with chronic exposure to pesticides is that you can't single out any one product: a farmer of my age, of my generation, will have used nearly 900 active ingredients in the course of a farming career. That doesn't include the different additives that go into any given formulation," he told ARC2020 at his farm near Limoges.

For example, Lasso, the product which Paul François inhaled when he had his accident, lists alachlor as an active ingredient (40%) as well as monochlorobenzene (54%). "The rest was a dozen or so additives of one sort or another. I would say that in most products, as well as the main active ingredient, you'll have 10 or more other chemicals as part of the formulation."

This chemical maze gives the manufacturers plenty of opportunities to hide. "Because there are hundreds of chemical ingredients involved, you can't attack any of the manufacturers individually, because they'll say it's not their chemical that has made this monsieur ill. It could be that all the chemicals acted together to generate a cocktail effect. But they won't say that. They'll blame a different chemical."

As a result of what happened to Paul François, his friends and family helped him to form the Phyto-victimes association for people whose lives have been affected directly or indirectly by pesticides. Today, Phyto-Victimes is reaching out to people who would not consider themselves directly at risk from pesticides.

The farmer's wife, who contracted Parkinson's disease after washing her husband's boiler suits for years, is a victim just like the tractor driver who went spraying on hot days with the cab windows open. Most users will wear gloves, some will wear a mask, even during hot weather.

However, there are few takers for the recommended full protection suits: "If you came across your neighbour spraying his fields dressed like a cosmonaut, you'd be frightened rather than reassured. You'd want to know what he's putting on the field that is so dangerous," Paul François explains. "My own case is very unusual and there is only one other case like it in France at the moment. Jean-Marie Delion, who is a farmer too, and part of the administration of Phyto-Victimes is taking the same action against Monsanto."

It is understandable that farmers want justice for their illness, but making it stick is another matter. "When people phone me and say they want to take this or that firm to court, I warn them that it is very difficult to make anything stick. In my case, I had a judgement that reads: 'It was Lassoo, a product made by Monsanto, which poisoned Monsieur François and made him ill'."

Proving it in a court of law, however, is something else. "Despite this decision, Monsanto says 'it's another jurisdiction, it's nothing to do with us, we are not bound by the conclusions reached by this tribunal.' Yet the findings of this tribunal are based on facts, expert opinions and reports from [yet more] experts. So I won the first time round and the result of Monsanto's appeal will be handed down on September 10." Since recording that interview, the French legal system turned down Monsanto's appeal, clearing the way for Paul François to claim damages.

He hopes that the case could lead to an understanding by a wider public that: "...rather than accusing farmers of being polluters, the agricultural world is the first link in a chain reaction. Using products [that have been effectively] authorised by the manufacturers, who have been selling dangerous chemicals to farmers."

Agriculture is largely a closed book to consumers. Much of the process is invisible, from sowing to harvest: it only becomes visible when it arrives on a sales floor, with a price attached. "The consumer doesn't see it, that's true. But for now, the farmer doesn't have a clear idea of the impact of the product[s] in any case."

Nor is this a new phenomenon: "Farmers today describe the product[s] which have been used all the way down the food chain as 'plant medicines'. That's the phrase they use most frequently. These are authorised products for agricultural use. Farmers consider that if they respect all the rules for [the] use [of these chemicals] there should be no danger for the consumer."

For Paul François, this is an article of faith: "The farmer believes [in what he does]." There may be some exceptions, but the majority of farmers would not imagine that the product[s] they use could represent a hazard for the consumer. "What is more, it is not necessarily cereals that represent the greatest risk." There are plenty of other treated crops that consumers buy every week. "There are other products which are exposed to more intensive crop treatments during shorter crop cycles. Leeks, carrots, potatoes all undergo treatments which, for me, could represent a hazard for the consumer. Certain fruit and vegetables are exposed to successive treatments with a lot of active ingredients."

During most of his farming career, Paul François has been lukewarm about organic farming, which he regards as a very technical challenge on his 400-hectare cereals holding. However, for a number of reasons, this year he has put 100 hectares into conversion to organic. "It's primarily the outlying parcels, which have houses and a school around the edges." François is making the change to be a good neighbour. "After everything that I've been through, it makes sense to avoid the risk of any further exposure." For Paul François, the vocation of organic production is to educate a wider public and to make better citizens of farmers and consumers alike.

Anyone who imagines that rural life is relaxing should think again: financial worries and isolation are just two everyday stress factors in the agricultural world. "One French farmer commits suicide every day," says Paul François, shaking his head. "That's ten times the national average for any other occupation."

Pesticide reduction and the landscape

How water table management gave it a head start

Reducing pesticide use was not a new topic on the research agenda, it would appear. The French national agronomy institute INRA had been running successful trials with a group of farmers in Picardy, northern France, since 2004. In March 2010, the financial newspaper *Les Echos*¹³ ran a page of feature coverage under the main heading “Cultivate better while earning as much.” The paper told the story of eight farmers’ progress with reduced pesticide use through the eyes and ears of INRA’s regional agronomist Pierre Mischler. After six growing seasons, all but two of the farmers in the original group had converted to integrated controls, encouraged by being members of a group with the same objectives and covered by crop insurance in case of crop failure. *Les Echos* reported that the eight farms had successfully reduce pesticide use by 30% during the years under observation and had noticed other benefits as a result. These were as simple as reduced energy costs from cutting down the number of spraying trips as well as freeing up more time in the farming calendar.

France has hydrological management committees for each of its major river basins: defined by the watersheds, these water authorities are an additional layer of regional government,



collecting and disbursing public funds. From 2007, the six river basin authorities used European and national funding to offer subsidies for integrated controls in key catchment areas for drinking water extraction. *Les Echos* recounts that a number of contract levels were being offered, ranging from EUR 118/ha/year for a 40% cut in herbicides and 50% cut in other products to EUR 65/ha/year for a 30% cut in non-herbicide products. In Picardie there were between 12,000 and 15,000 ha of farmland contracted under this scheme, where the agency was failing to find enough takers to spend all its budget. The region had recruited canned and frozen vegetable packer Bonduelle, a world leader in its sector, to test integrated controls for field vegetables, as well as the “Thousand Fields Club”. This regional initiative (similar schemes were established across France) recruited hundreds of farmers to “sacrifice” an experimental parcel to reduced crop treatments. The hope was that such voluntary measures could serve as a “bridge from intensive to organic agriculture,” although the bigger picture did not support such an enthusiastic reading of the possible outcomes. The national audit agency, the Cour des Comptes made a generalised complaint in its 2010 report that French policy on water protection was ineffective.

[13] *Les Echos*, March 3 2010, page 12 ISSN 0153-4831

Ranting and spraying...

How a corporate marketing message becomes received wisdom

Despite the occupational hazards of applying pesticides, many rank and file farmers do not oppose pesticides on principle. For Nicolas Jaquet, vice president of farming union Co-ordination Rurale (catchline: “responsible farmers”), the problem was that French farmers were paying more than their European neighbours, not to mention those further afield. Writing in an editorial for the February 2010 issue of CR infos, Jaquet fumed that: “The state should simplify and reduce the cost of authorisations to put generic crop treatments and pharmaceutical products on the market so as maintain healthy competition and allow farmers to benefit from cheaper crop protection (2% generic products in France against 30-50% for our neighbours).”¹⁴ Elsewhere in the same magazine was a short piece in a similar vein about the requirement of a licence to buy and use pesticides, scheduled to take effect in 2014. Co-ordination Rurale branded this “constraint” as being wanted by “the majority and which has just been added to a long list of obligations that farmers have to pay for.” Alongside this turbulent outburst was another news item that suggested enforcement was not particularly vigorous in France at this time. In 2009, French farmers were required to have routine inspections of spraying equipment: the measure was being phased in at this time. “But [there was a] surprise for the farmers who wanted to have this famous inspection carried out. The organisations delivering the required sticker are very thin on the ground and they were demanding a minimum number of sprayers to inspect, so as to cover the travel costs.” The last straw, however, was that the safety check came with a bill for “at least” EUR 250. “Yet another extra cost and constraint that would not have arisen if Co-ordination Rurale had been listened to in the first place!”

[14] CR infos no 187, February 2010. ISSN 1168-7711



Selling a vision of agricultural normality

France's biggest farm shows off in Paris

Every year, at the end of February and the beginning of March, Paris is home to France's largest farm. Generally referred to as the Salon de l'Agriculture (SIA) fills the Porte de Versailles exhibition site and welcomes half a million visitors, many of them bussed in from all over France. It is a week when town and country dwellers alike rub shoulders with a shared passion for the rural idyll; line 12 of the Paris metro is full to bursting, carrying Parisians with their children or grandchildren and day trippers from far and wide.



The salon is opened by the French president and visited by politicians and pundits of every stripe, all keen to show their solidarity with the French agricultural world. It is a time for staging public debates with panels of experts, many of them working for the ministry of agriculture. In 2011 the head of the Ecophyto project, Emmanuelle Soubeyran was lined up alongside Hervé Guyomard, then the scientific director of INRA, and Didier

Marteau, chair of the environmental committee of the chemists' Association des Chimistes et Pharmaciens Analystes (ACPA). Soubeyran stressed that in the final analysis, the farmer makes his or her own decision. All three were unanimous that farmers need to be trained:

Marteau argued this from a public health perspective, since farmers have the greatest level of exposure to crop treatments on a regular basis. Guyomard warned that to cut pesticide use by half would cause "...breaks in supply [of food]..." while Marteau predicted that after years of visually perfect fresh produce, retail buyers and consumers would have to change their expectations of what fruit and vegetables should look like. In the middle of a manicured, squeaky-clean show case for modern agriculture, what else could they say?





The French president François Hollande meets the crowds while opening the 2013 Salon de l'Agriculture.



Agricultural policymaking is not always well-received in the countryside



French farming minister Stéphane Le Foll discusses dietary best practice at the Salon de l'Agriculture.

Why French farming needed a new law

The background to the Loi d'Avenir

Stéphane Le Foll started work at the French agriculture ministry in May 2012. When he arrived at Rue de Varenne (<http://www.themeatsite.com/meatnews/17921/new-french-minister-faces-age-old-problems>) his predecessor parted with the valedictory phrase: “Bon courage, Stéphane,”¹⁶ and a faint smile. On May 31, Charles Doux, founder of the eponymous poultry export group, put his business into administration. This not-unexpected action threatened rural infrastructure across the country, with unpaid hauliers, unpaid vets, not to mention unpaid poultry producers. The new minister went into overdrive and, like a proverbial conjuring act, was obliged to pull not just one, but a series of rabbits out of an increasingly battered hat.

The Doux group business model was to provide day-old chicks to poultry farmers, who raised the birds to slaughter weight with feed supplied from a Doux feed mill, before they were delivered to a Doux abattoir by an out-sourced lorry driver, after which frozen oven-ready chickens were exported outside the European Union. On the basis that the poultry was converted cereal feed, the CAP at that time allowed Doux to claim export restitutions for every last quintal of cereal fed to the birds while they were alive. Nor were the sums involved mere chicken feed, either. It later emerged that the Doux group was one of the largest single beneficiaries of the CAP, banking more than EUR 50 million of export restitution payments in a single year before the business took a tumble.

While the Doux group survived the crisis, restructuring the business and shedding hundreds of jobs in a long drawn-out recovery phase, the episode served to leave a question mark over the received wisdom of large specialist, agricultural businesses being stronger than smaller, diversified ones, as well as questioning the kinds of risk that agriculture should be expected to run in the normal course of its business cycle. While the Doux crash was not the sole driver for Stéphane Le Foll's Loi d'Avenir pour l'Agriculture, l'Alimentation et la Forêt (Law for the Future of Agriculture, Food and the Forest) it provided a compelling argument for changing a dysfunctional set of policy objectives. With a headline aim of applying agroecology on 200,000 holdings by 2025, it is a bold strategy in challenging times. When asked by journalists, half jokingly, why France had to have yet another farming law, Le Foll's answer was completely serious: “Because we need one.”

A vision that starts with showing the way for future generations

With the catchline “produisons autrement” (let us produce in other ways), the Loi d'Avenir looks to agroecology for solutions to current problems. In the autumn of 2014 the French state employed over 200 new researchers and tutors to teach agroecology across the country as a core part of the national agricultural educational programme. With 40% of France's agricultural workforce either set to retire within five years or already past retirement age, there is a pressing need to train a new generation of farmers who can take on the nation's farms and to

create more jobs in the sector. Stéphane Le Foll's headline commitment to applying agroecology on 200,000 holdings by 2025 sounds like a bold piece of policymaking, but it is based on the minister's reading of existing numbers. He is counting on the next generation of farmers implementing forward-looking strategies and stresses that: "...the crisis that we are going through requires us to put more effort [into agricultural education] to meet a major challenge and create jobs for young people in our country."

The Loi d'Avenir includes promoting crop diversity and biodiversity as guiding principles. Being careful not to define agroecology too closely, it is being promoted through education and research. In addition, it encourages economic and environmental stakeholders to join forces and manage resources at a landscape level in cross-sector groups, called Groupements d'Intérêt Economiques et Environnementaux (GIEE). The law also makes a fundamental change in land policy, protecting farmland from competing land uses and to making it easier for young farmers to get started in agriculture. Both these aims are achieved by reorganising the regional farmland management bodies (known as SAFERs ^{17 18}) which can now intervene in land sales to compulsorily purchase farmland that might otherwise be built over. A local SAFER also helps young farmers get started in agriculture by assigning them land from its land bank. Rue de Varenne issued a 10-point checklist of agroecology's key components¹⁹. These are:

- ◆ Education: training the farmers of today and tomorrow.
- ◆ Stakeholder involvement: developing Groupements d'Intérêt Economiques et Environnementaux (GIEEs).
- ◆ Crops: reduce the use of pesticides.
- ◆ Biocontrols: or natural methods to protect crops, eg ladybirds to control aphids.
- ◆ Livestock: reduce the use of veterinary antibiotics.
- ◆ Bees: engage in developing sustainable beekeeping.
- ◆ Methanisation: extract value from livestock effluent.
- ◆ Organic: promote organic farming.
- ◆ Seeds: choose and select locally-adapted seed stock.
- ◆ Agroforestry: use trees to improve production.

An expanded version is available for download at: http://agriculture.gouv.fr/IMG/pdf/plaqPA-BDv3_cle4ee4c8.pdf Unlike some agricultural policies, the Loi d'Avenir takes public expectations of agriculture into account, requiring a degree of public accountability for spraying. The Loi d'Avenir sets out to protect vulnerable members of the population from exposure to crop chemicals, notably the young, the old and the sick. It will require hedges around fields to catch spray drift and users will be required to post warnings of upcoming crop treatments in public buildings, like schools, nurseries, retirement homes and clinics. Providing such warnings are logged – and there is no reason why they should not be kept on record – there will be the opportunity to establish a publicly accessible audit trail to help epidemiologists in the event of public health incidents. Whether this will be well received by farmers remains to be seen.

[16] "Good luck, Stephen," with the implication that he would need it.

[17] Sociétés d'Aménagement Foncier et d'Etablissement Rural

[18] <http://www.safer.fr/>

[19] <http://agriculture.gouv.fr/definition-agroecologie>

The banned generic products paradox

How brand owners are funding enforcement

Spraying is a sensitive subject among farmers for a number of reasons. French legislation is more demanding than elsewhere in Europe, insisting on proprietary products rather than allowing the use of cheaper generic equivalents. In parts of France this has led to cross-border trading of generic products on an industrial scale. Since Bercy taxes manufacturers on the basis of domestic sales, both the use and taxation of imported generic products are beyond the administrative reach of the French government.

The finance ministry is caught up in a structural dilemma, which involves tax revenues paid to fund ONEMA (Office Nationale des Eaux et Milieux Aquatiques) by water management agencies. These represent the national government share of a tax on low-level pollution, the redevance pour pollutions diffuses. Thus, between 2009 and 2014, the agencies paid ONEMA EUR 193 million out of a EUR 360 million budget for the five-year period. The balance was made up by a mix of support from training funds, regional budgets and research programmes.

Bercy can either stick to the current regulations and insist on the exclusive use (and taxation) of branded products, knowing that such sales will generate a given tax yield downstream from the brand owners, as a share of sales. Or, at the cost of the goodwill of brand owners, the finance ministry could otherwise recognise the presence of generic products and tax them too, thereby removing one of the price advantages of using such products in the first place.

Since the NODU is based on declared sales and is effectively a tax data subset, authorising the use of generic products raises the open-ended question of fiscal enforcement across about 20 million hectares of French farmland ²⁰. Whichever option Bercy takes, the question of enforcement will generate a political hot potato for anyone who is bold enough to grasp the nettle and apply either the current regulations or a modified version. The main risk to any French government in taking on the nation's mainstream farming sector is that of committing political suicide. The close integration at senior levels of the national farming unions' federation FNSEA with the Gaullist UMP (now les Républicains) gives the large-scale farming sector the political muscle to break governments if the need were to arise.

To be sure, France is not unique in facing enforcement issues over pesticide use, but it is unusual for its fiscal dimension. Since French borders are permeable to products which are illegal in France but not the rest of the EU, it is a problem that will need to be resolved at a European level.

[20] The 2000 figure for France's total farmland hectarage was 27.8 million hectares, but this total includes 280,000 beef farms, which are quantified in head of cattle and not hectares, hence the adjustment. http://agreste.agriculture.gouv.fr/IMG/pdf/ra2000/reg_dep.pdf

Putting Ecophyto into context

Making a case for pesticide reduction in the real world

When starting his investigations into the shortcomings of Ecophyto, organic farmer and parliamentarian Dominique Potier asked stakeholders five questions when he became chair of the Consultative Committee of Governance (CCG) for Ecophyto²¹.

The first concerned the broader landscape within which Ecophyto is expected to work. In very general terms:

- ◆ Stakeholders observed that holding sizes in French agriculture had grown steadily, with increasing specialisation, at the expense of mixed livestock and multicrop farms. This leads farmers to resort to crop spraying before questioning the vulnerability of monocultures to infection and pests.
- ◆ The current CAP contains limited measures that may slow down the rate of growth in crop treatment use, but nothing that will lead to a drop in their use.
- ◆ In the current economic climate, the gaping chasm between, say, the returns on buoyant cereals and depressed livestock markets is taken as an indication against diversification. Given the increasingly unpredictable climate, growing conditions between 2010 and the committee hearing in 2013 were cited as self-evident reasons for above average spraying of crops. Add to this the expectations of retail buyers, conditioned by years of demanding and requiring visual perfection, the grower will be more likely to spray than to risk letting nature take its course.

Quizzed about the positive and negative aspects of the Ecophyto programme, stakeholders commended the solid policymaking toolbox, such as the Dephy farms network; the Certiphyto user training, crop health bulletins and the EcophytoPIC internet portal for integrated crop protection. For all these achievements, however, Ecophyto is perceived as a heavy framework generated by the Grenelle process, which has managed to keep the French rate of growth in agricultural pesticide use below that of its European neighbours. The NODU index rose by 2.7% between 2009 and 2011, Potier reports, looking for a reversal in the trend with the 2012 dataset.

Asked for their top three priorities for Ecophyto, stakeholders agreed that publicly-supported pilot projects should be rolled out and reach a larger number of privately-run agricultural businesses. They were unanimous that it was time to engage with people outside the inner circle of converts. There was also consensus support for three possible policy suggestions by the minister in the autumn of 2012: the first was to promote the idea that a win for the environment was also a win for economic performance and business efficiency; the second was a tightening of post-approval product monitoring for crop treatment products and the third was agreement around the table to crack down on fraud and trafficked pesticides.

Potier is optimistic that Ecophyto can still answer two recurring questions that farmers always have when faced with the prospect of curbing pesticide usage: “Will it make my business less competitive?” and “Is it compatible with feeding a planet with a population of 10 billion by 2050?” To allay fears that agroecological approaches mean increased costs and reduced yields, Potier observes that leading exponents of sustainable agriculture have maintained their bottom line through better management of inputs and precision agriculture, as well as cutting their use of crop treatments by the 25% envisaged in the first

stage of the Ecophyto plan. The next stage, the move from a 25% reduction to a 50% reduction is based on a more enlightened view of the nature of competitiveness, a new deal. "To be authentic, this should take into account a whole set of expectations: protection of common goods, generating new jobs, remuneration and quality of life for those at work, the costs and gains generated for society today and tomorrow. This approach justifies a balanced share of public funding, the rejection of an undue influence over the means of production being held by a minority and fairness in trade. Without these elements, even the notion of competitiveness itself could be a mistake."

Potier cites an example of alfalfa in Lorraine, which disappeared from mixed holdings in 1992 when CAP funding was decoupled from production and gave way to oilseed rape, mainly for biofuels. "It is impossible to determine the competitiveness of either crop without deciding on the nature of the indicators: the risk to water supplies, vegetable protein self-sufficiency or the carbon footprint." Potier is adamant that true competitiveness is also realistic: "It is not forgetful of environmental externalities and the social aspects of enterprise nor the human ambition that goes with it."

He is equally convinced of the planet's inherent ability to feed 10 billion people in 2050 by harnessing what Edgard Pisani referred to as "the agricultures of the world". Potier cites former UN special rapporteur Olivier de Schutter, who, both during and at the end of his mandate, warned that industrial agriculture is struggling to maintain the growing levels of inputs that it needs to ensure the optimum performance of technically advanced crops and seed varieties. Potier himself argues that: "...it is up to us to follow a 'navigable' path for all those who want to take part. Our starting point is that a cultural revolution is in progress, not only among consumers but equally among producers. A question of health for themselves and their families, a question of image and markets, farmers now are now living and curbing their use of pesticides as a sign of modernity. The desire to change is there..."

Potier stresses that there can be no "local" solution to crop treatments without a wider, global agroecological framework to support them. With its provision for landscape level stakeholder management (the GIEEs), the Loi d'Avenir provides a context within which to build a new approach to agriculture. The parliamentarian is encouraged by modest signs of progress: "A little bit at a time, everywhere, the future is inventing itself in places where we manage to bring down the walls! On the ground, we have seen the leading lights work side by side. The change on the face of Céline, who with other young farmers now defines herself as 'a producer of food, health and the environment', or Olivier in the north, when he managed to shift the line of the water agency. You can also see the future in the face of Jean-Marie of CIRAD, when he makes la Réunion into a laboratory for integrated pest control or Antoine when the cooperative In Vivo invested massively in the technological potential of biocontrol." The vision that Potier shares is part of a series of wider, agroecological approaches that are generated by farmers of all descriptions.

[21] *Pesticides et agro-écologie LES CHAMPS DU POSSIBLE*, p 238 <http://agriculture.gouv.fr/rapport-pesticides-Potier>



Putting agroecology on the map

Forward-looking French farmers taking practical steps

So who and where are these ground-breaking pioneer farmers? The French agricultural ministry has a map on its website at [<http://agriculture.gouv.fr/carte-projets-agroecologie>] which shows all the regions of metropolitan France and includes the overseas départements at the foot of the map. For example the volcanic island of La Réunion is a tropical island in the Indian Ocean, 700 kilometres east of Madagascar, is home to a fruit and vegetable growers' cooperative, la Vivéa. Comprising 120 growers whose crops are grown under glass, they are investigating the use of insect predators to target pest species. "These methods respect the environment and are more effective for the grower," explains Stéphane Avril. "They meet consumer expectations,

but also those of growers who are looking for ways of improving their working conditions and the quality of their production." This project runs for just over two years and ends in the summer of 2016. A central government funding application was made for EUR 100,000 out of a total budget of EUR 140,000 for the project.

A project in the Caribbean islands that make up Guadeloupe brings together a co-operative of 17 pig producers and 11 farmers to resolve slurry issues. Without access to bagasse (crushed sugar cane or sorghum stems), the livestock farmers keep the animals on slotted concrete floors, but can only spread the manure on sugar cane fields in the immediate post-harvest phase and never on the permanent banana plantations. Experienced former INRA researcher Franciane Gamiette is running a project to develop composting techniques with worms to transform the slurry into a readily-useable source of phosphorous and other essential plant nutrients for the growers in the project. "Little used, muck heaps are often sources of



pollution. Now the worm compost creates phosphorous, which is very useful in agroecology. Farmers are in favour of this solution, which also resolves the ecological problems linked to the presence of numerous water courses,” explains Gamiette. This three-year project has a budget of just over EUR 146,000, including an application to central government for EUR 90,000.

In the Languedoc et Roussillon region, in the deep south of France, an 18-month project is supporting an association of 15 farmers, the Chemin Cueillant (“the gathering road”) collective. They are Minervois wine producers for the most part, planning to diversify their production with traditional varieties of fresh produce for local consumption and improve their soils in the process. “The aim for our group is to develop agroecology from a coherent and autonomous point of view,” explains project leader Nathalie Ramos. “For us, agroecology is not just about being organic or withdrawing pesticides, but having more sustainable and diversified practices, built around a system of self-help.” The project is modest: out of a total budget of EUR 31,000, an application was made for central government funding of EUR 24,000.

A group of 21 cereal farmers are making a decisive move to diversify their holdings by planting organic walnut trees on buffer strips bordering water courses or near habitation. This three-year project in the Centre region is being assisted by a regional fresh fruit and vegetable producer organisation, Agralys. This landscape level project is also recruiting support from the Loir-et-Cher département’s chamber of agriculture and local government. A central government funding application for just over EUR 70,000 was made towards a total project budget of EUR 105,400.

Also in the Centre region, a 20-strong group of mixed cereal and livestock farmers are working to restore an alfalfa crop into their rotations, which would provide local forage for their herds of goats. As well as the economic arguments for home-grown forage, this strategic change secures the farmers’ position with regard to the technical manual when supplying creameries making the protected appellation Chavignol AOP goat cheese. This three-year project has a total budget of EUR 60,551, of which EUR 48,441 was the subject of a central government funding application.

In the Bourgogne region, 15 cereal farmers working land in the catchment area for Auxerre are researching the impact of sowing directly into grass cover in a bid to cut nitrate run-off into the water table. This three-year project has a total budget of EUR 86,000, including an application for EUR 42,000 to central government. Just an hour and a half south east of Paris, the Auxerre conurbation is home to 92,000 people, famous Burgundy wines like Chablis and a highly-rated football club.

There is even a case to be made for agroecology as a way of reducing input costs and helping struggling farms to turn a corner in their day-to-day business dealings. A group of dairy farmers in the Sarthe département were struggling with rising input costs and declining prices for their milk. They were able to curb input prices by making better use of pasture and reducing dependence on external resources. “The project aims to show that these changed practices have had a positive effect on an economic, environmental and social level, not least because they were able to keep their farms,” declares spokesperson Yannick Beaujard. This must have come as a breath of fresh air to the Sarthe député, who happens to be none other than farm minister Stéphane Le Foll.



Rue de Varenne and la France profonde

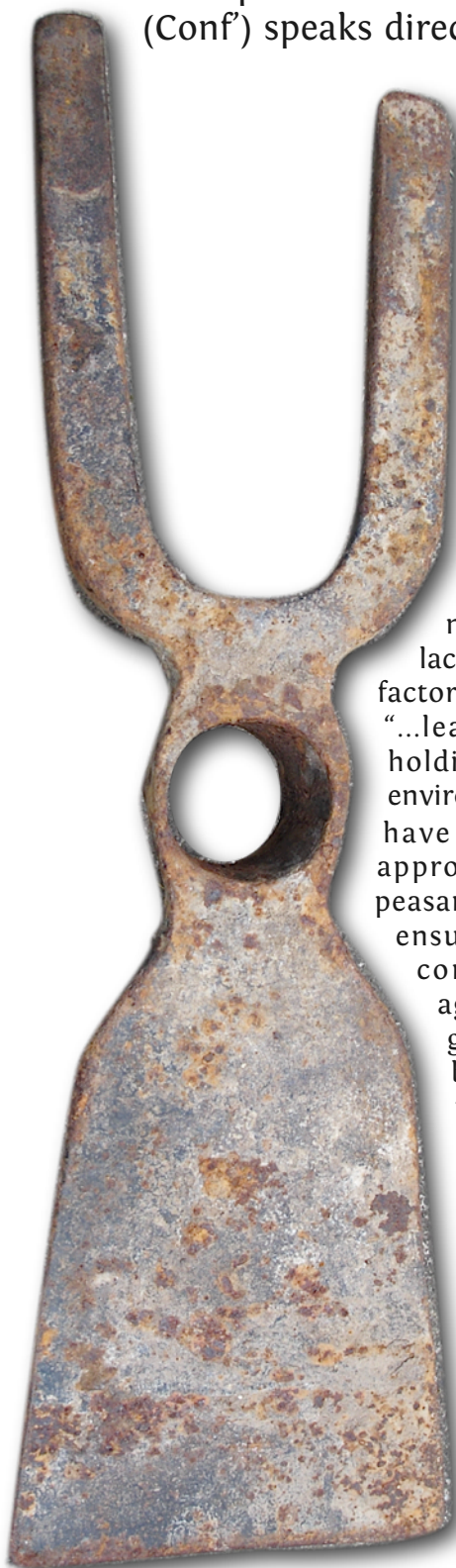
The chasm between expectations and what politicians can deliver

For some agricultural unions, the Loi d'Avenir is too little, too late, with blindspots that could still trip it up. The Confédération Paysanne (Conf') speaks directly for those pushed aside by intensive farming.

While many welcome a long-awaited political initiative to bring agriculture back into harmony with the environment, the Conf' is alarmed at the ease with which good intentions can be waylaid by political expediency. In February this year, the Conf' greeted the minister's announcement that this was the: "...Year One of agroecology" with incredulity²².

"The drive for agroecology cannot sit alongside public policies which favour so-called 'competitiveness', the industrialisation [of agriculture] [or] the exclusion of small or diversified farms," warns the Conf'. While containing "interesting elements" the Conf' is disappointed that the minister's plan for implementing agroecological farming lacks: "...systemic and territorial approaches ... as well as social factors." Its foundations are based on technical assumptions and "...leave no place for peasant know-how. The scale of farm holdings is not questioned, although its implications for the environment are well known." A number of peasant organisations have developed diagnostic frameworks for agroecological approaches, which they are asking the minister to use with peasants to "...really go in the direction of agroecology. And, to ensure that this policy makes sense and is more than just a communications exercise, it is essential to re-envision agricultural policies in the light of agroecology." There is a genuine concern that the label agroecological will end up being overused indiscriminately, in much the same way as the term greening was applied to parts of the CAP. Mostly the bits that either got dropped by the wayside or are being lined up for "simplification" by the new agriculture commissioner Phil Hogan.

[22] <http://confederationpaysanne.fr/actu.php?id=3292>



What does the future hold?

A challenge to the political process

So is the Loi d'Avenir going to meet the challenges detoxifying the French countryside during the years to come, then? Samuel Féret is president of the Groupe de Bruges agroecology think-tank and coordinates the Agricultural and Rural Convention (ARC2020), an EU-level platform for NGOs that want to see more food that is local, organic and fair across Europe.

In February 2015, he told the Nourish Scotland conference in Edinburgh that the Loi d'Avenir was anything but a revolutionary concept. "Rather, it is a consensual but necessary approach to mobilise and bring together farmers' networks, agricultural colleges and research institutes with shared agroecological approaches. This will mean working together to build better farming systems, as was the case in 1999 with an earlier law to promote sustainability."

"In France, we might think that the Loi d'Avenir doesn't go far enough, that it should be more prescriptive in what it means by agroecology and that it should be more innovative in proposing territorial frameworks for negotiating reductions in pesticide use. But when you stand back and look at the Loi d'Avenir in a European landscape, it is rare to find other countries which define agroecology as the Loi d'Avenir does.

"To be sure, the Loi d'Avenir implies that there exist a number of forms of agroecology that should somehow be made to co-exist in a spectrum ranging from organic farming to conventional farming, which is debatable. But its real value is in insisting on support for forms of agroecology around the notion of a group of farmers, acting as a pivotal force for change through economic and environmental interest groups (GIEE)."



Appendix 1

the 30 active ingredients withdrawn by Michel Barnier in 2008.

This list has been retyped using the original French names from the original ministry press release²³, which were hidden from search engines by being listed in an image file. The ban is primarily a housekeeping exercise, since most of the products concerned (eg paraquat) were already subject to a pre-existing EU ban.

The following 27 active ingredients were withdrawn from the market as of February 1, 2008 but existing stocks held on farms were authorised for use before the end of the calendar year 2008.

Alachlore	Aldicarbe	Azinphos-methyl
Azocyclotin	Cadusaphos	Carbofuran
Chlorfenvinphos	Coumafène	Dichlorvos
Diuron	Endosulfan	Fenbutatin oxyde
Fenpropathrine	Fenthion	Fenarimol
Fluquinconazole	Méthamidophos	Méthidathion
Methomyl	Oxycdemeton-methyl	Paraquat
Parathion-Methyl	Procymidone	Terbufos
Tolyfluanide	Trifluraline	Vinchlozoline

Existing stocks of the three following active ingredients remained available for distribution until December 31, 2008 and could be applied during the calendar year 2009.

Carbendazime	Molinate	Dinocap
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²³ <http://agriculture.gouv.fr/plan-ecophyto-2018-michel-barnier> (at the time of writing this link was already an archived page and has since been cleared away: the list should still appear in the Journal Officiel)

Further reading

A lot of further reading sources will inevitably be in French, primarily but not exclusively online. The French government has published a number of English background documents at intervals. Here is a small selection:

Web page about the Loi d'Avenir in English:

<http://agriculture.gouv.fr/changing-production-models-to-combine-economic-and-environmental-performance>

Downloadable English guide to the Loi d'Avenir in English:

http://agriculture.gouv.fr/IMG/pdf/ProjetGB_cle8a75db.pdf

Web page about the first phase of Ecophyto in English:

<http://agriculture.gouv.fr/Ecophyto-in-English-1571>

(It looks odd without a file extension, but it does appear to work, nonetheless.)

Downloadable English guide to Ecophyto published in 2008:

http://agriculture.gouv.fr/IMG/pdf/PLAN_ECOPHYTO_2018_eng.pdf

Edgard Pisani's book *Un Vieil Homme et la Terre* (Editions du Seuil 2004, ISBN 2-02-062174-6) is available in translation by Paul Perron, Legas, Ottawa, ISBN 1-89-4508718-5 under the title *An Old Man and The Land*.

French speakers in search of further reading will find an excellent booklist on the French ministry website at: <http://agriculture.gouv.fr/Publications,22885> (again, a non-standard link format that worked while compiling this reading list).

Other links will be found in the footnotes, some of which have clickable equivalents or URLs in them.

Postscript

French farm minister Stéphane Le Foll added non-Hodgkin lymphoma to the list of occupational illnesses on June 5, 2015, for those regularly exposed to or working with pesticides that contain organochlorates, organophosphates, carbaryl, toxaphene or atrazine. [http://agriculture.gouv.fr/IMG/pdf/150611_CP_protection-phytos_cle09ac2d.pdf] Two years previously, the minister had requested further investigations into the effects of routine exposure to pesticides, from the national medical research institute INSERM.

From 2013, the minister had also re-evaluated the risks to amateur gardeners of authorised glyphosate products, after which a number of products were withdrawn from consumer use.

The new version of the Ecophyto plan promotes a transition to alternative forms of pest control for amateur gardeners. From January 2018, consumers will only be able to buy pesticides from certified sellers, who will be expected to offer integrated pest control alternatives. Work on this will start with the retailers concerned in 2016. Ecophyto might have started out with an agricultural focus, but is now finding a wider application with householders. As with any pesticide policy, Ecophyto demonstrates that everyone is concerned, but that more people need to be involved.