



# Which policy and technical tools will be offered in France to ensure the transition

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Brussels December 12 2019

**What has been done during the ten last years ?**

## 2007.. Grenelle de l'environnement

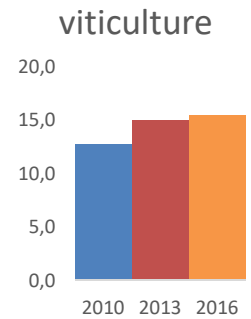
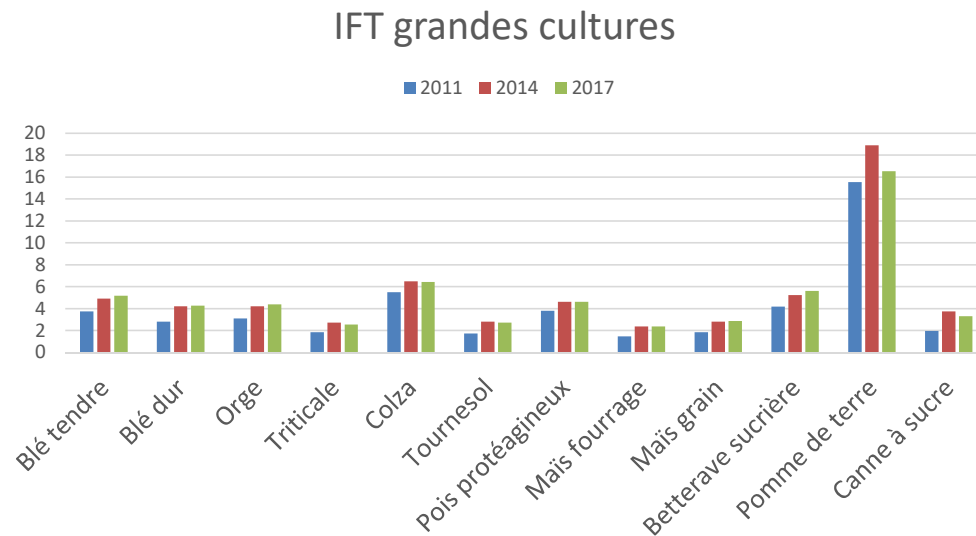
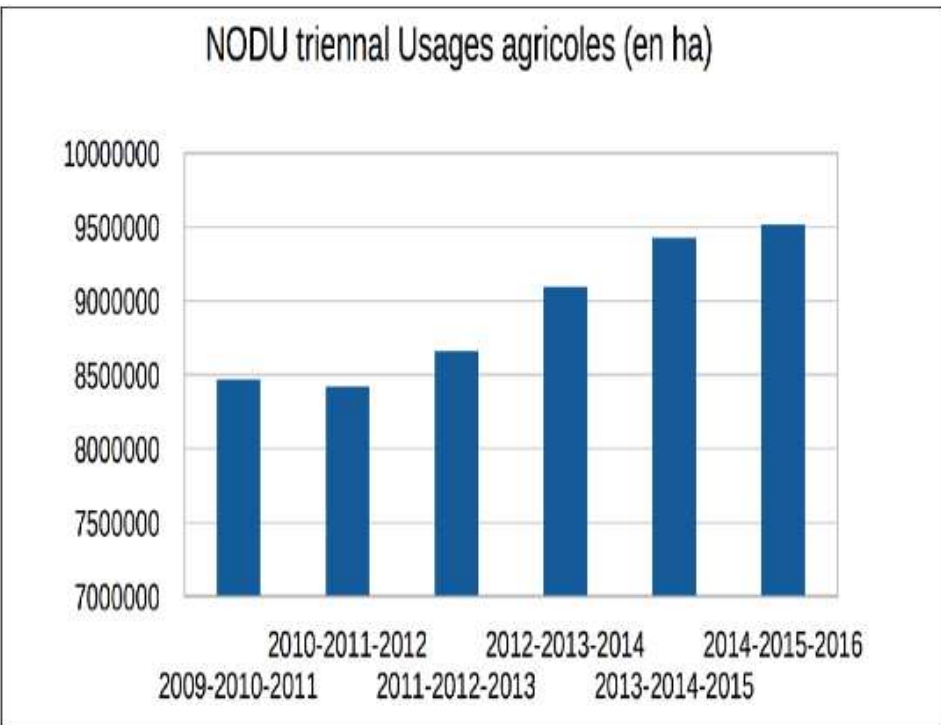
- Objective : Decrease by 50% of the use of pesticide within 10 years
- Ecophyto R&D, Inra : Is it feasible ?
  - Multidisciplinary expertise
  - Agronomy : - 30% yes (efficiency/substitution), - 50% possible but with cropping system redesign
  - Economics : -30% yes (depends on prices), - 50% requires strong economic incentives (Butault et al. 2010, Jacquet et al. 2011)

## Ecophyto 2008 - 2018

- Funded by the Tax on diffuse agricultural pollution (5 to 6% of pesticide price)
- Around 40 millions /year
- Innovation and Research
- Dissemination and demonstration (DEPHY Farms network and Experiments network)
- Monitoring the impacts



# 2008 – 2018 Pesticides use

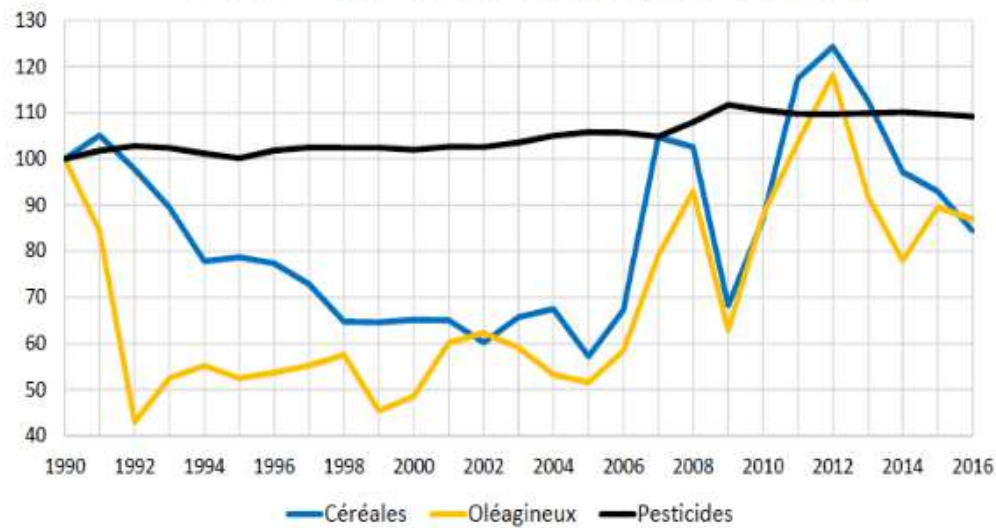


# Why ?

Prices ?

Socio-technical lock-in ?

Indices des prix des cultures et des pesticides, 1990-2016  
Céréales et oléagineux (IPPAP et IPAMPA, nominal, 100:1990)



Alain Carpentier Inra

Insufficient  
development of  
alternatives ?

## Cropping systems more and more simplified

- **Spécialisation régionale:** régions de grande culture / régions d'élevage ; recul constant des systèmes de la polyculture élevage

- **Accroissement des surfaces en blé, maïs, colza ;** recul général des légumineuses

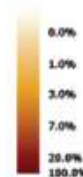
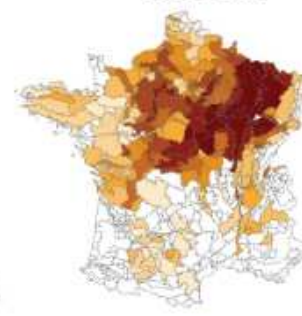
- **Raccourcissement des rotations:**
  - Colza-Blé-Orge
  - Colza-Blé-Blé
  - Maïs-Blé
  - Monocultures blé ou maïs

Augmentation de la fréquence des rotations courtes, illustrée par le pourcentage de la rotation Colza-Blé-Orge sur les terres labourables

1992-1997



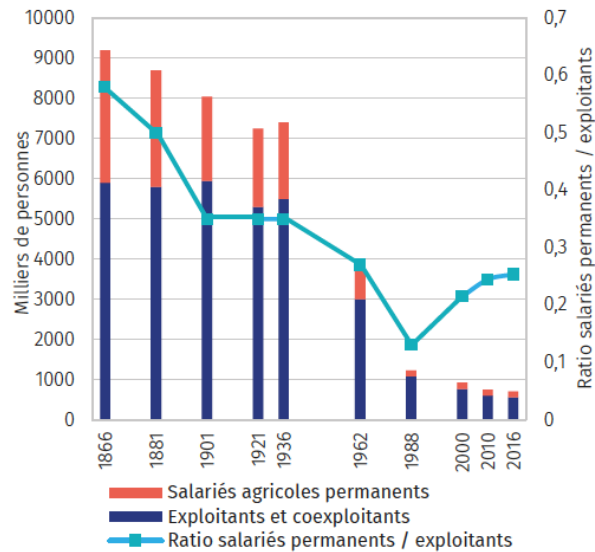
1998-2003



source : Ministère de l'Agriculture et INRA Mirecourt

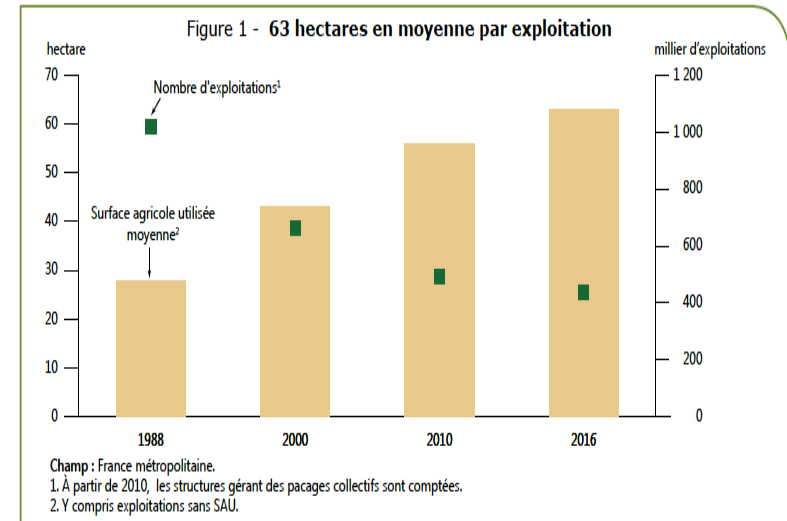
# Change in farm structures Hired/Family labor Ag contractors

**FIGURE 1.4**  
Évolution du nombre d'exploitants, de coexploitants  
et de salariés agricoles permanents de 1866 à 2016



Source : Grandjean et al. (2016) pour les données de 1866 à 1988, SSP- Agreste pour les données de 2000 à 2016; traitement CEP.

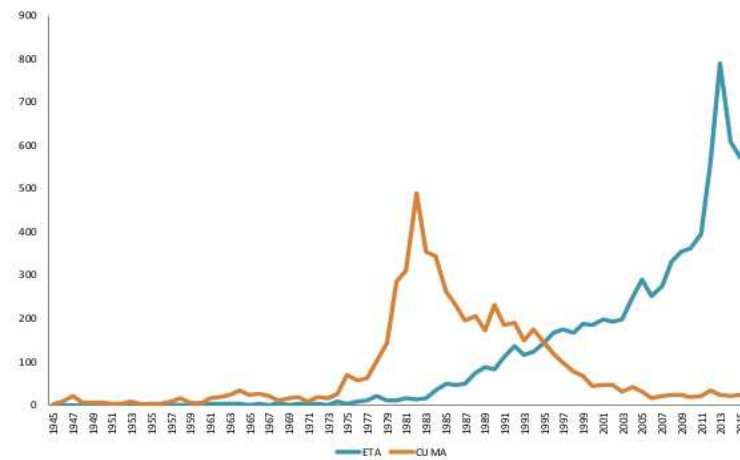
2019, Actif'Agri. Transformations des emplois et des activités en agriculture, Centre d'études et de prospective, MAA Paris.



Sources : Agreste - Recensements agricoles et enquête sur la structure des exploitations agricoles 2016

**Evolution du nombre de créations d'ETA et de CUMA (données Infogreffe 2019)**

Source : INP-ENSA Toulouse, UMR INP-INRA Agr



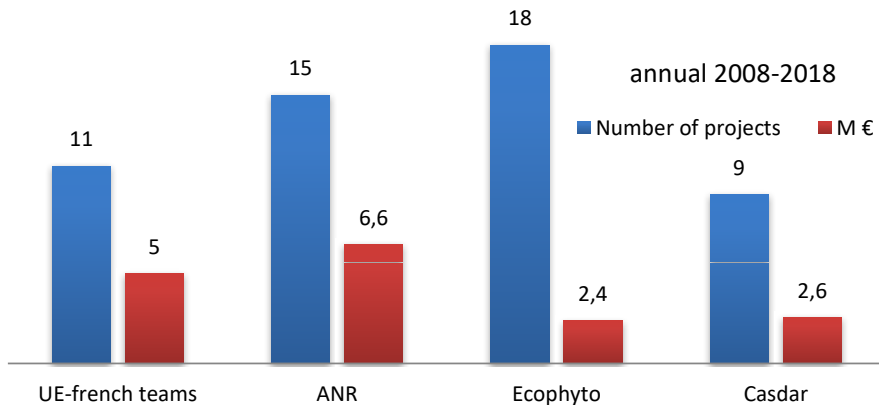


## Some positive results

### DEPHY FERME Pesticides reduction (TFI)

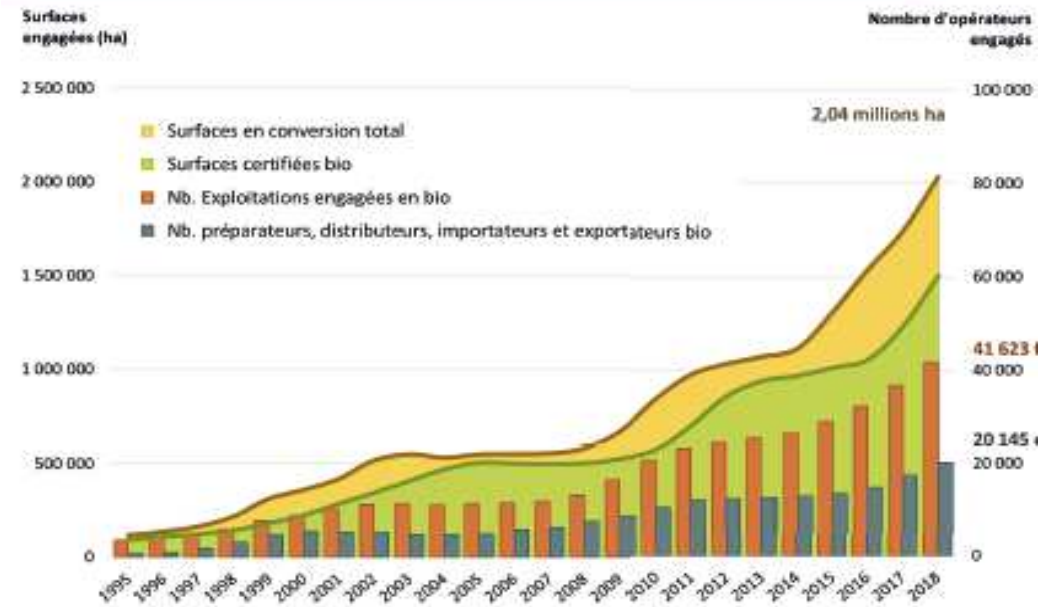
- ✓ - 33 % vegetables
- ✓ - 19 % fruits
- ✓ - 12 % vines
- ✓ - 7 % arable crops
- ✓ - 17 % crop- livestock

High number of **research projects** funded →  
need for capitalisation of **results**



### Strong Increase in Organic Farming

#### EVOLUTION DU NOMBRE D'OPÉRATEURS ET DES SURFACES ENGAGÉES EN BIO



Source : Agence BIO / OC

**What are the next steps ?**

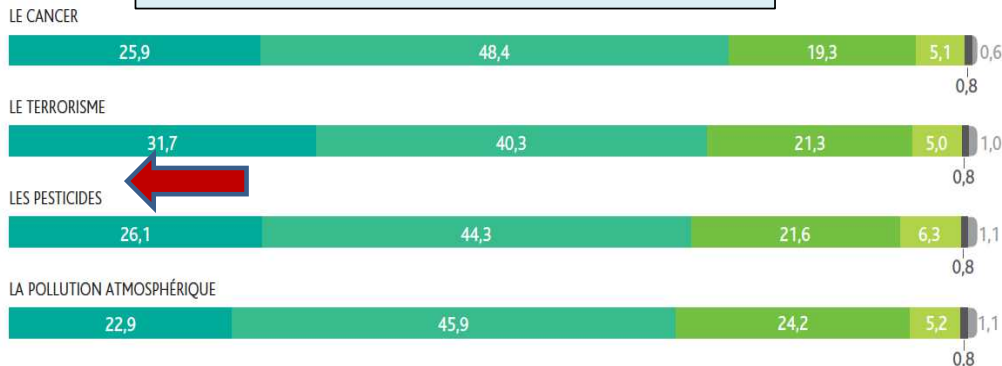
# Social concern is increasing



According to IFOP 96% of French people support the anti-pesticide decree issued by mayors .

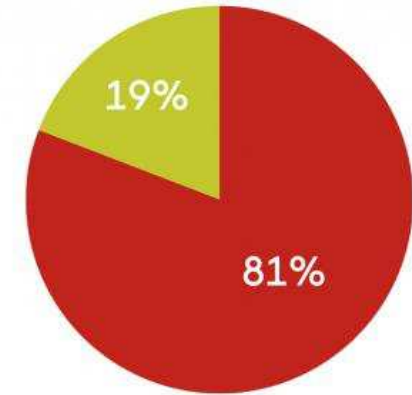
## NOVEMBRE/DÉCEMBRE 2018 Baromètre IRSN 2019

Les risques auxquels les français se sentent exposés..

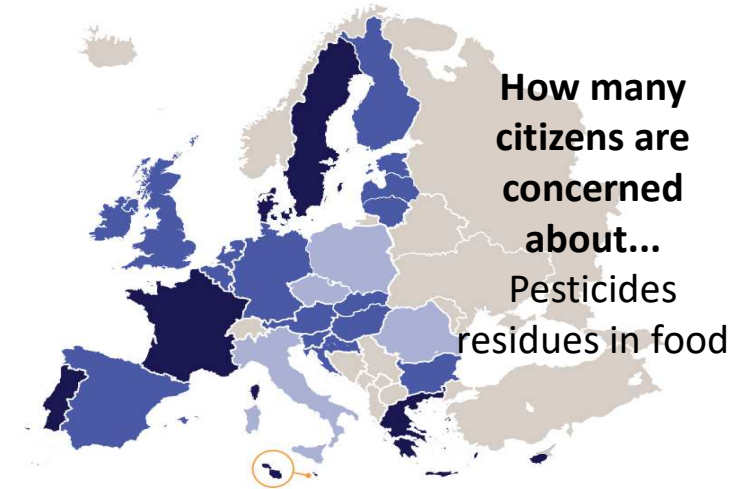
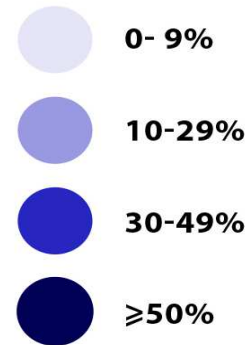


Selon vous faut-il plutôt...

- Interdire le glyphosate, parce qu'il est potentiellement dangereux pour la santé
- Ne pas interdire le glyphosate, parce que sa dangerosité n'est pas certaine et que les agriculteurs français en ont besoin



sondage Odoxa du 26 octobre 2017



Source: <https://www.efsa.europa.eu/en/interactive-pages/eurobarometer-2019>

## Ecophyto II+

- Budget increase to 71 million euros
- -25% by 2020, -50% by 2025
- Increase in the number of farms targeted by DEPHY FERME (x10 → 30000)
- More « 0 pesticides » long term experiments (DEPHY EXPE)
- CEPP : Pesticides saving certificates (distributors/practices to lower the use of pesticide)
- Increase in Research & innovation fundings
- Glyphosate exit plan

**Research Program :**  
**Cultiver et Protéger Autrement...**  
**(alternative crop production and protection)**  
**... for a pesticide-free agriculture**

- 30 million € Call for research projects
- Long term research programme (6 years projects)
- Fondamental research (TRL 1-4)
- Need to explore new research frontiers
  - Ambitious
  - Disruptive
  - Integrative



PROPOSITIONS POUR UN PROGRAMME PRIORITAIRE DE RECHERCHE

**« CULTIVER ET PROTÉGER AUTREMENT »**

Alternative aux phytosanitaires : mobiliser les leviers de l'agroécologie, du biocontrôle et de la prophylaxie pour une agriculture performante et durable.



## Plant/plant interactions

- Positive or negative interactions
- Functional diversity
- Combination of species or varieties
- Intermediate crops
- Catch crops, companion plants

## Agronomy and Biocontrol

- Diversify crop species in the field
- Functional biodiversity
- introduction of macro and micro organisms, plant defense stimulators

## Genetics

- Identification and use of new sources of genetic resistance taking into account interactions
- Developing varieties suitable for new cropping systems (diversification crops, minor species and companion plants..)

## Microbiome

Understanding crop microbiomes and their use in plant health  
Understanding the effects of microorganisms on the regulation of pests and disease  
Identification of candidate microorganisms for use in biocontrol products

## Facilitate and accelerate transition

Understanding determinants of farmers behavior  
Understanding private companies strategies  
Support design of public policies

## Will that be enough ?



➤ Drivers for ecological transition

➤ National public Policies

➤ CAP



Thanks for your attention

