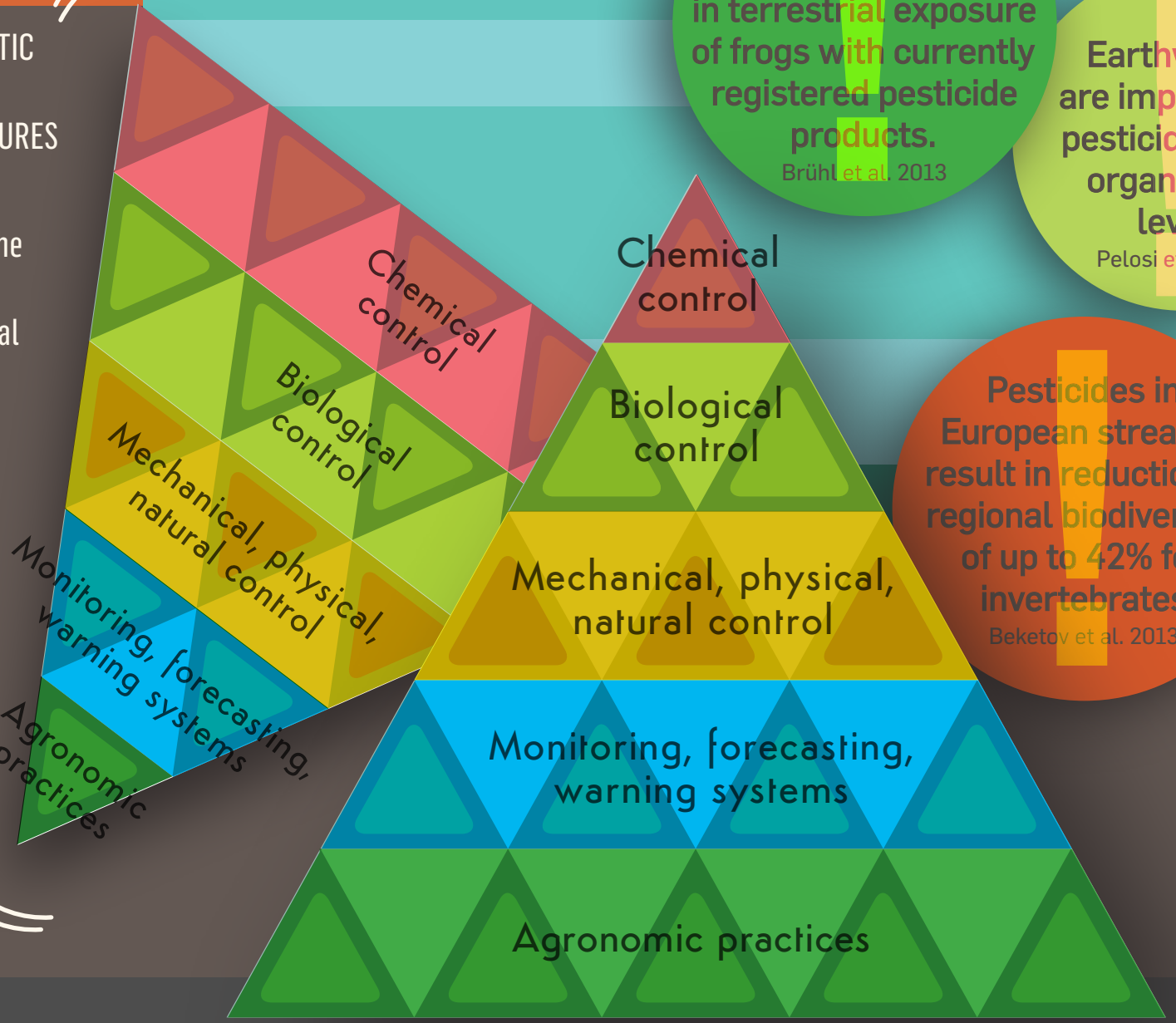
USING THE CAP TO TURN THE IPM TRIANGLE ON TO ITS SOLID BASE

CAP SPENDING MUST SUPPORT A HOLISTIC UPTAKE OF IPM TO REPLACE SYNTHETIC PESTICIDES WITH NON-CHEMICAL MEASURES

With this report PAN Europe wishes to show policy makers, civil servants and the farming community across Europe that the necessary changes to our agricultural system can be done now through uptake of holistic Integrated Pest Management.

Not only we already have the knowledge to make it happen, but the reform of the EU Common Agricultural Policy (CAP) is an opportunity that must be seized to make the objectives of the European Green Deal a reality.



Mortalities between 40 and 100% were observed in terrestrial exposure of frogs with currently registered pesticide products.
Brühl et al. 2013

Earthworms are impacted by pesticides at all organisation levels
Pelosi et al. 2013

Pesticides in European streams result in reduction in regional biodiversity of up to 42% for invertebrates
Beketov et al. 2013

Pesticide Action Network Europe

WHAT IS IPM AND HOW TO APPLY IT IN A SECTORIAL APPROACH

See annex 1 (p.14) for concrete examples of IPM farmers testimonies

Integrated Pest Management (IPM) is the implementation of diverse methods of pest and disease control in an integrated systems based approach that is founded on solid agronomic practices including monitoring and use of pest and disease thresholds.

However, most programs that claim to be "IPM" ignore, or pay mere lip-service to the preventative non-chemical methods and instead are very much skewed to the tip of the triangle (chemical intervention).

We turn the triangle on its head to emphasize the need to establish the sound foundation of a stable agroecosystem model first and intervene with alternative natural control methods to correct imbalances if they occur. When the farmer gets the basic foundations right, then the need for interventions will be reduced. Moreover, by primarily relying on non-chemical intervention alternatives, the use of pesticides can be minimized or fully avoided. We explore examples of diverse agricultural sectors to detail how this can be achieved.

THE ORIGINAL TIMETABLE OF THE SUD

14 December 2012
Training:
MS establish certification systems and designate responsible for implementation
(art. 5.2)

From 2013
General ban on aerial spraying:
Aircrafts to be equipped with best available technology to reduce drift
(art.9 (f))

30 June 2013
Integrated pest management:
MS to report to the European Commission on implementation of IPM
(art. 14.3)

1 January 2014
Integrated pest management:
All professional users to implement IPM
(art. 14.4)

14 December 2015
Sale of pesticides:
MS ensuring distributors giving information on danger and alternatives non-professional
(art. 6.4)

At the latest by Nov. 2016
Inspection of equipment:
MS to ensure all equipment has been checked (art 8.2) interval between inspections below five years and shall not exceed three years thereafter

Water
Protect the aquatic environment and drinking water, with mandatory establishment of buffer zones

Specific areas
Minimum or prohibited pesticide use or risks in specific areas

Handling
Handling and storage of pesticides and treatment of their packaging and remnants
(art. 13)

26 Nov. 2014
Commission shall submit report on NAP implementation to EP and Council
(art. 4.3)

Dec. 2016-2017
Member States shall review National Action Plans at the least every five years
(art 4.2)

26 Nov. 2018
Commission shall submit report on NAP implementation to EP and Council. It may be accompanied, if necessary, by appropriate legislative proposals (art. 4.4)

ACHIEVING IPM ON YOUR FARM

IPM arable is within the grasp of all farmers now. We don't need to wait. IPM is, most importantly a systematic approach based on good farming practices which start with the farmer. Working up the IPM triangle is the straightforward route to sustainable arable production.

"I rotate every 9 years between 6 different crops. it involves mechanical weeding and using staggered sowing dates to prevent problems with insects and diseases. it also involves mixing wheat varieties to try to pool the disease resistances of different varieties and make use of all of their properties." Jean-Bernard Lozier *Cereal and protein-crop grower Coudres France*

"The borders have also boosted the image of the whole sector... now, when you sow these flower borders around the field, you get people stopping. several times now, i've seen cyclists stopping to pick a few flowers... I can explain to people why i'm doing this. Which they are very glad to hear. because not only are you reducing pesticide use, but you're also helping make the landscape more beautiful."

Martin De Ruiter *Vegetable-grower in Hoeksche Waard. The Netherlands*

+ MONITORING, FORECASTING AND EARLY WARNING SYSTEMS

+ UNDER CROPPING AND INTERCROPPING

+ SUPPORTING BENEFICIAL INSECTS AND OTHER ORGANISMS

+ RESISTANT AND TRADITIONAL VARIETIES

CROP ROTATION

The key building blocks are:

1 Rotations

Put simply, to keep plant diseases at bay, reduce a buildup of infection from year to year and suppress weed growth, rotating crops is the fundamental step. Just doing this will already dramatically reduce the need for pest control. The best rotations are those which keep the longest gap between the same crop or same crop families so in practice a three year gap is better than a two year gap and so on. The optimum rotations may include crops that need marketing support for consumer acceptance in order to have the most robust productive cropping systems.

2 Resistant and traditional varieties

Build-up of plant diseases and pests can be reduced by selecting resistant varieties bred using traditional plant breeding techniques.

3 Supporting beneficial insects and other organisms

While rotations and resistant varieties play their part, it's also essential to provide nourishment and shelter for beneficial organisms. Beneficial organisms feed on crop pests or pollinate crops but they are susceptible to pesticides. The resources they need can be provided by non-crop elements such as hedgerows and field margins. Especially effective are dedicated flower strips, when their flower species composition is targeted to encourage beneficials. Ensuring abundance of naturally occurring predators creates a "standing army" that wipes out damaging pests even before the damage starts and reduce or eliminate the need to use pesticides. The latter ensures the survival of the organisms that provide natural pest and disease control, thus creating a positive spiral.

4 Under cropping and intercropping

Both these practices play an important role in both soil fertility and weed control as well as providing shelter for beneficial insects. Under cropping provides competition for weeds but also particularly nitrogen for growing crops while intercropping disturbs weed growth, increases soil fertility and vitally protects soil from degradation and erosion.

THESE 4 STEPS ARE THE BASIS FOR ARABLE IPM AND ARE ALL INTERLINKED

More importantly, they are aids to better yields, lower pest and disease burdens, greater water and biodiversity protection and lower spending by farmers while at the same time they contribute to keeping soil healthy and therefore even deliver on long term food security.

THE NEXT STEPS IN IPM ARE MONITORING, FORECASTING AND EARLY WARNING SYSTEMS

IPM farmers use their knowledge to decide on crop conditions and damage thresholds rather than wasting money on pesticides when there is no need to do so. Novel monitoring tools and techniques are becoming available allowing farmers to monitor their crops efficiently. Monitoring and intervention thresholds should not only focus on pests and diseases, but also capture and include levels of beneficial organisms.

IPM TRIANGLE: APPLE AND PEAR CROPS AN EXAMPLE OF A PERENNIAL CROPPING SYSTEM WIDELY PRACTISED IN EUROPE

"...in the 90s we did a lot of work monitoring earwigs, their behaviour and movements...we decided not to use hoes underneath the trees anymore as that is where they hipernate and breed.... over the past 30 years our company has managed to voluntarily reduce pesticide use by 90%." Marc Cocquyt *Boomgarden Belgium*

+ BIOCONTROL AGENTS

+ MECHANICAL, HOT FOAM, HOT WATER, ELECTRIC WEED CONTROL AND PHYSICAL CONTROLS

+ MONITORING, FORECASTING AND EARLY WARNING SYSTEMS

+ PROTECTION AND ENHANCEMENT OF BENEFICIALS

+ UNDERSOWING AND COVER CROPS

Undersowing and cover crops:

Perennial crops do provide options to support beneficial arthropods, such as undersowing orchards or vineyards with flowering plants targeted to encourage pollinators or natural predators providing natural pest control and thus reduce the need to apply pesticides. This groundcover also reduces or removes the need to use herbicide as weeds are suppressed by competition from the undersown mixture. Beneficial insects can also be supported by adding shelter such as corrugated bands and hollow sticks for predators such as earwigs. Nest boxes for insectivorous birds or the use of hedgerows are further to maintain an ecological balance within the orchard agroecosystem and reduce pest pressure.

Crop rotation is not an option with a perennial crop like apples. Varieties of apple and pear should be selected on the basis of their disease and pest susceptibility profile using traditional plant breeding techniques. Varieties that are resistant to, or tolerant of common pests and diseases are available and these should be chosen when replanting an orchard. Some resistance can also be obtained through the choice of resistant root stock, onto which common varieties can be grafted. In certain instances, varieties can be chosen that have a shorter season to thereby reduce the exposure of the developing fruit to pests or disease at the end of the season when weather conditions are more favourable to diseases. Resistant or tolerant varieties are available to codling moth and tortrix moths as well to the diseases apple scab and fireblight.

The choice for resistant or tolerant varieties is often hampered by consumer demand for familiar varieties. Implementing new varieties therefore also requires investment in marketing encourage the buying and recall buying of these varieties by European consumers.

Monitoring, forecasting and early warning systems:

Monitoring to assess the incidence of the pest and diseases should be routinely practiced alongside monitoring of weather conditions and forecasts. Various methods can be used for pest monitoring. Models and pest thresholds have become more accurate and sophisticated. These models now take into account the crop development stage, the weather conditions and forecasts, the pest incidence and development models, the presence of mitigating factors including predator populations, varietal differences in susceptibility, generation of pests present, agronomic practices in place, etc.. Warning systems now communicate directly using smartphones, text messaging, etc. to advise of any interventions that may be necessary. There is no need to rely on programmed interventions as the interactive monitoring systems are accurate in predicting pest and disease dynamics, not merely their presence or absence.

Mechanical, hot foam, hot water, electric weed control and physical controls:

Accurate mechanical, hot foam, hot water, or electric weed control can be very effectively employed in a small area around and close to the tree trunk leaving the groundcover in place in the rest of the orchard. Treatments such as hot foam or hot water has secondary benefits in also controlling overwintering pest larvae which are found at the base of the trees. Having increased the protection and habitat for predators, natural control of pests or diseases is able to control and keep in balance many pests and diseases. This applies particularly to secondary pests that

become problematic when naturally occurring predators are being eradicated programmed spraying.

Physical controls including hygiene in the orchard, it's surrounds and packaging shed can aid prevention of disease and pests. Clean up the orchard and packing sheds for dropped and discarded fruit. This can be disposed of in high temperature composting and nutrients returned to the crop.

Apply grease bands or similar barrier to prevent winter moths infesting the orchard. Remove disease ridden fruits, foliage and branches, particularly for diseases such as fireblight in pears. Pruning equipment should be treated with a sterilising method prior to other uses and pruned plant material should be disposed of appropriately. Physical barriers can be effective in preventing disease from taking hold such as hail netting, temporary roofing, etc...Machinery selection can be tailored to be small and multi-purpose.

Biocontrol agents

There are several biocontrol agents currently available for use and more being developed each year.

Some examples to be integrated for codling moth control which is the major pest across Europe are listed below: Pheromones are available for mating disruption programmes and can also be employed for other lepidopteran pests of apples and pears. Codling moth CpGv granulosis viruses are available to supplement pheromone use. Bacillus thuringiensis is available to control codling moth and also other tortrix moth pests that may be an issue within the orchard environment. Hotspots, escapes or later generations can be managed by using an application of parasitic nematodes directed at the base of the tree trunk at the end of the season if needed either on an orchard wide or selective basis. This will then control any overwintering larvae and ensure a pest free start to the season.

For disease control: Several microbial biocontrol products and products based on natural substance are available for common problems should they be needed despite the robust implementation of the IPM system employed at lower levels of the triangle.

IN SUMMARY

The holistic implementation of the IPM system as described should mean that it is only in the exceptional growing year as a result of unusual conditions or sever pest or disease infestations that there is a need to resort to a chemical pesticide solution. By growing apple and pear crops in this manner, the natural controls become more robust and reliable over time, and further decrease the need to rely on chemical pesticide interventions. Pest and disease levels naturally fall over time in an agroecosystem in balance.

For other alternatives see also PAN Europe's homepage on low impact farming as well as the farmers testimonies in the annex

WHICH EU POLICIES ENCOURAGE IPM UPTAKE AND THUS PESTICIDE USE REDUCTIONS

Directive 2009/128/EC

When the Directive 2009/128/EC was adopted, aiming to achieve sustainable use of pesticides in the EU (SUD), was adopted in 2009 the framework was agreed aiming to engage Member States in supporting farmers to IPM which is an approach of working with nature rather than against, working on prevention, monitoring and observation. Non-chemical alternatives are given priority. while limiting the use of pesticides to be used as a last resort und thus strongly reducing (dependency on) the use of pesticides.

The SUD foresees the following steps:

Professional users of pesticides switch to practices and products with the lowest risk to human health and the environment among those available for the same pest problem	IPM principle no 8: Based on the records on the use of pesticides and on the monitoring of harmful organisms the professional user should check the success of the applied plant protection measures
Member states shall take all necessary measures to promote low pesticide-input pest man-agement and organic farming, giving wherever possible priority to non-chemical methods	Provide information and tools for pest monitoring and decision-making, as well as advisory services on integrated pest management. Article 14(2) Establish appropriate incentives to encourage professional users to implement crop and sector-specific guidelines for integrated pest management on a voluntary basis. Article 14.5

As part of the implementation, Member States of the EU were obliged to establish National Action plans (NAPs) in 2013 to set up their quantitative objectives, targets, measures and timetables to reduce risk.

As the two European Commission reports on the implementation of the SUD from 2017 and 2020 highlight, Member States and farmers are dramatically lacking commitment and engagement when it comes to implementing and spreading IPM across Europe.

> The assessment of the implementation of IPM by Member States continues to be the most widespread weakness in the application of the SUD. Member States have failed to exploit the significant potential for greater adoption of IPM, including the more widespread adoption of non-chemical pest control techniques.
>
> European Commission
> 2020 COM(2020) 204 final

From the General Directorate for health and safety of the European Commission (DG SANTE) audit reports summarises up to following picture at EU level:

Majority of MS	Forecast and warning system on pest outbreaks in place and regular bulletins in place
Many MS	Organises conferences and training on IPM
A number MS	Had made it mandatory for farmers to inform national administration about annual pesticide use
No MS	Define binding IPM measures for farmers to comply with SUD, the majority of the the FVO reports conclude: '*There is no system to verify that all professional users implement the general principles of IPM as required by Article 14 of Directive 2009/128/EC*'

COMMON AGRICULTURAL POLICY (CAP)

The main reason for the lack in engagement is that the IPM concept is broad and vague and has still not been properly integrated into the different parts of the CAP.

As you can see on p.10 and 11 a number of member states offer financial support to farmers towards different measures to officially encourage the farmers to reduce input dependency via the uptake of IPM.

CAP and SUD

In the 2013 CAP reform the European Commission had proposed to make first pillar payments (the so-called cross compliance rules) conditional on farmers applying IPM. But Member States watered this down during the negotiations, to instead only making it mandatory for Member States to offer farmers information about alternatives and uptake of IPM via the Farm Advisory Systems (FAS) but without making it mandatory for farmers.

Despite the history, European Commission's CAP reform proposal from 2018 did not propose to make it mandatory for farmer to apply IPM in order to obtain income support.

Moreover, still today the FAS, as highlighted in PAN Europe's factsheet, does not deliver information on alternatives.

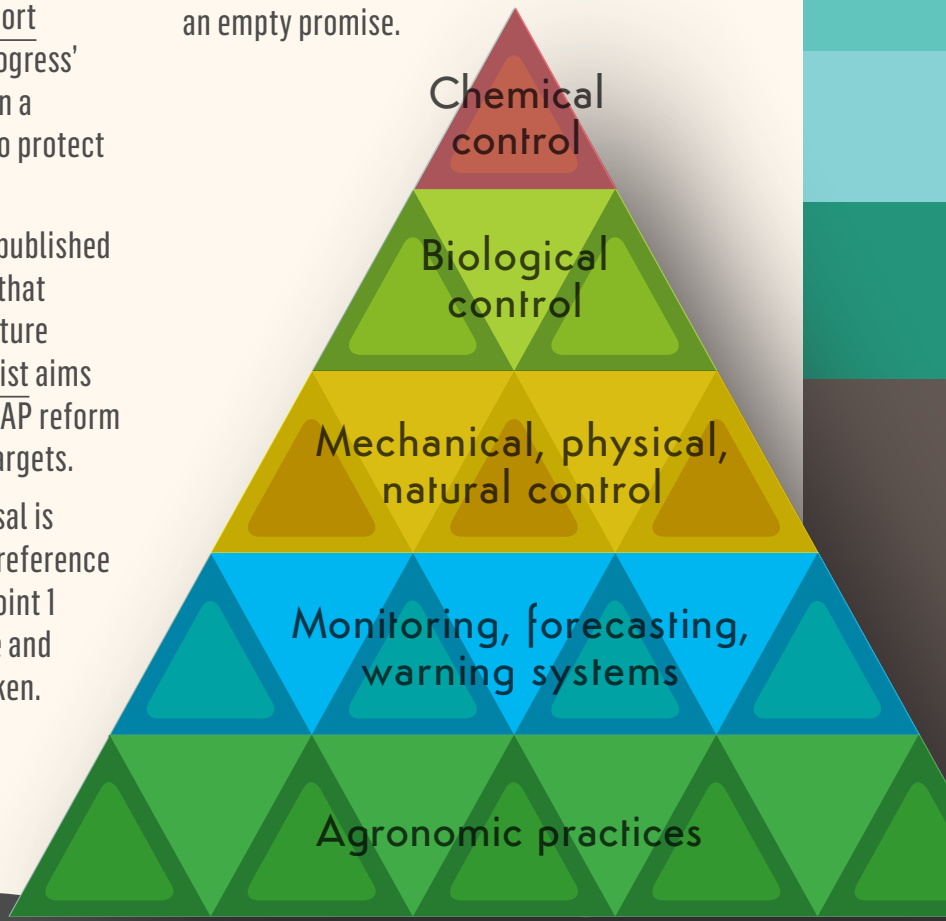
The European Green Deal

In December 2019 the European Commission presented its European Green Deal aiming at making the EU's economy sustainable. On May 20th 2020 the European Commission published the Biodiversity and Farm to Fork strategies. Both strategies envisage, as a central measure, a 50 percent reduction in the use and risk of pesticides throughout Europe by 2030.The need for action was among others underlined by the European Court of Auditors, first in a report concluding that there has been 'little progress' in the implementation of the SUD, then in a report concluding failure in EU actions to protect biodiversity.

The European Commission has recently published a list of potential agricultural practices that the eco-schemes could support in the future common agricultural policy (CAP). This list aims to contribute to the debate around the CAP reform and its role in reaching the Green Deal targets.

However, with regards to IPM, the proposal is really poor and lacks not only a specific reference to many of the practices mentioned in point 1 but also reference to the comprehensive and integrated approach that needs to be taken. Finally, the lists fails to mention that introduction of landscape elements into the field of course needs to be pesticide free to work properly.

With the EU Green Deal, there has never been a better time to actually integrate a holistic approach of IPM in the CAP, making it mandatory for farmers to apply a set of coherent and integrated practices to reduce pesticide use. If we miss this chance, the 50% pesticide reduction objective of the Farm to Fork & Biodiversity Strategies will remain an empty promise.



CAP MEASURES TO REDUCE PESTICIDE DEPENDENCY

Member states can offer support to farmers for IPM within the rural development programme and a majority of member states take use this opportunity.

Member States have to offer support to farmers for IPM uptake within the Common Market Organisation for fruit and vegetables.

Until 2010 the European Commission DG AGRI kept an overview of inventory practices within the CAP for uptake of IPM/pesticide dependency.

Unfortunately, the European Commission no longer makes these valuable inventories of practices/ management actions but only keeps record of budget management commitments.

See annex 2 (p.25) for details of recent CAP spending within the rural development policy and the common market organisation for fruit and vegetables

These schemes are developed in a very bureaucratic way where the conventional farmers are paid for doing one or the other. This could lead to a situation where the conventional farmer obtains more CAP funding for applying a few alternative techniques that the organic farmer for applying several techniques.

COUNTRY/REGION	CAP – INSTRUMENT	WHAT	AMOUNT €/HA
Italy/Emilia Romagna	F&V CMO	Selected pesticides combined with an integrated production system (incl. crop rotation, fertilisation plan, soil protection measures)	€ 100/ha: arable € 300/ha: vegetables € 550/ha: fruit
Austria	Agro-envir. in Rural Development	Crop rotations (annual crops), restrictions on fertiliser and pesticide use, training and record-keeping	€ 150/ha: potato/turnip € 250/ha: strawberries € 300/ha: fruit/hops up to € 400/ha: vine
France	AE	Elaboration of a strategic plan on alternative solutions; explaining crop rotation and repeating techniques, mechanical and/or thermic weeding	€ 196/ha: arable crops € 298/ha: vegetables € 332/ha: fruit trees € 341/ha: grapes
France	AE	Biological control agents; introduction of beneficiaries; or use of sexual confusion on the agricultural fields, in tunnels or in the field	€ 64/ha: arable crops € 105/ha: vegetables € 70/ha: fruit trees € 79/ha: grapes
Luxembourg	AE	Biological control agents to fight Cochylis et Eudemia on grapes	€ 120 or € 200/ha depending on the exact intervention needed
Belgium, Flanders	AE	Sexual confusing against the codling moth in pipfruit	€ 250/ha

Source: European Commission DG AGRI 2010

EXTRACTS ON CAP SUPPORT FROM THE EUROPEAN COMMISSION AUDIT REPORTS

PAN Europe has extracted keywords from what kind of support member states are offering to farmers from the fact finding mission reports and compiled the list. These audits were made by the European Commission in the period 2017-2019 *(methodology: search key words common agricultural policy, CAP, rural development, financial).*

See annex 3 (p.28) for more details of the audit reports

CYPRIOT Audit
Mechanical weeding
Crop rotation
2019

HUNGARIAN Audit
Eight principles of IPM
2018

AUSTRIAN Audit
Nature protection areas in which the use of PPPs are banned
2019

ROMANIAN Audit
No overall system
2019

IRISH Audit
Self-assessment questionnaire
2019

FRENCH Audit
Total annual budget Ecophyto plan exceeds €300 million
2018

NETHERLAND'S Fact finding report
Mandatory "plant protection monitors", where all IPM-measures have to be recorded by the farmer
2017

PORTUGUESE Audit
IPM general principles
2019

DANISH Fact finding report
Organic farmers
Capital investment
2017

This page shows that CAP financial support is almost exclusively targeted at distinct single objectives, therefore failing in encouraging the farmer to take an all-encompassing systematic approach embracing the combination of alternatives as presented in the IPM triangle. Also the financial support is of a static nature, lacking the holistic approach that needs to be taken.

SWEDISH Fact finding report
Crop rotation
Conserving biodiversity
2017

GERMAN Fact finding report
Biological controls
Flower strips
2017

N.B. Finally, the following audit reports do not contain information on IPM and CAP: The Bulgarian audit (2018), the Greek audit (2019), the Spanish audit (2018), the Italian fact finding report (2017), the Lithuanian audit (2019), the Polish fact finding report (2017).

CONCLUSION

Holistic IPM, as explained in this booklet, is already applied by an increasing number of farmers across Europe and it can, and should, be done now. Already, almost all the tools required for IPM are in place for protected crops, orchards and vineyard.

Progressive farmers have revolutionised agriculture in ways that make the crops and products concerned safer and healthier. In the arable sector, rapid strides are being made towards innovative cropping methods by progressive thoughtful and insightful farmers who care for their land, for nature, for their health as well as for their incomes.

At the same time, citizens around the world are asking for healthy and safe products while European citizens are asking for drastic reductions in pesticide use : there has never been a better moment to change the European model of farming.

A holistic approach of IPM, as well as organic production, are important routes to sustainable commercial agriculture in Europe. Their full implementation will bring enormous benefits for biodiversity, water and soil while at the same time represent a tool to increase citizen engagement in the European project. It will go a very long way towards fulfilling EU policy goals including pesticides legislation, the biodiversity strategy, several aspects of the water framework directive and EU soil policy with relation to agriculture.

Member States must take the opportunities with the CAP being reformed to achieve a giant step for the environment, moving away from the currently used concept of IPM, which is so broad and vague that it has become meaningless towards an approach of engaging all farmers towards applying holistic IPM. The logic must become: the more the farmer reduce pesticide dependency the higher CAP support.

WHAT NEXT?

1 CAP Strategic Plans must have serious pesticide reduction targets

PAN Europe is calling on each Member State to use the CAP strategic plan as a tool to embrace the ecological transition, in which clear overall pesticide use, impact reduction targets and clear timetables show the way forward. We call on each Member State to establish an 80% synthetic pesticide use reduction targets and to include specific target of at least 25% for organic agriculture in the CAP Strategic Plan.

2 CAP interventions must encourage a holistic uptake of IPM

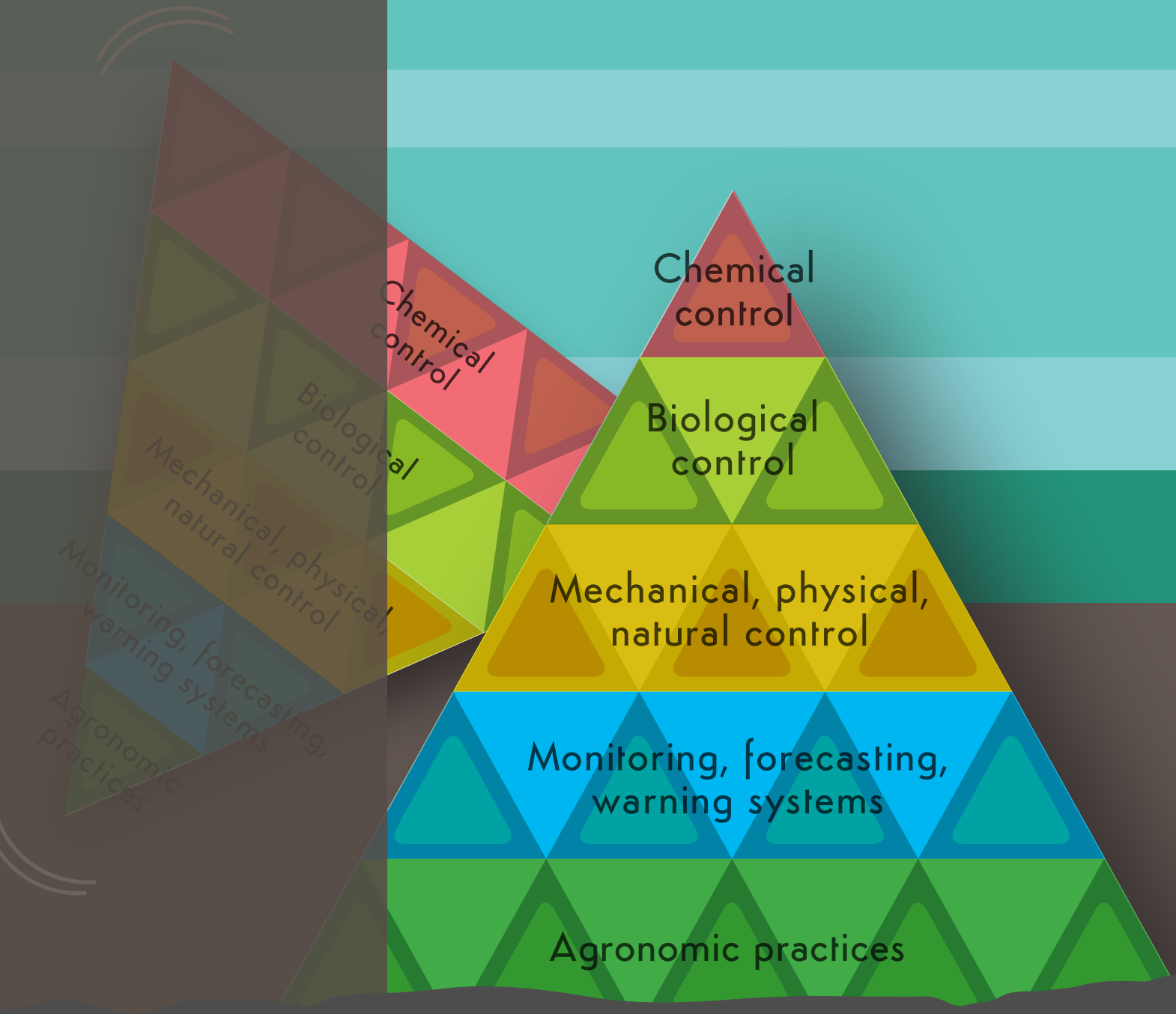
Currently, only a few measures are focused on reducing pesticide use, such as investment aid to replace pesticides with mechanical means, support for organic farming, and the measures mentioned on pages 10 & 11.

Future CAP interventions must go in the right direction, embracing the holistic uptake of non-chemical measures as presented in the IPM triangle, replacing systemic pesticides and upgrading the baseline for funding farmers.

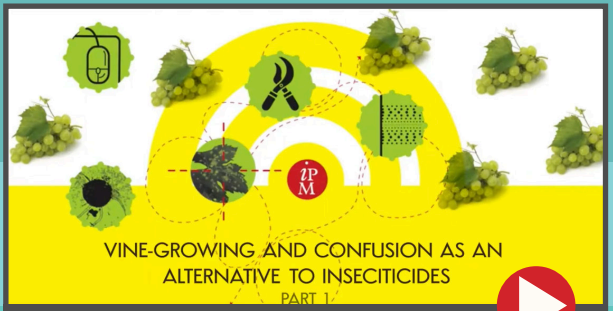
Member States must ban calendar spraying, seed treatment, spraying next to sensitive areas etc, or at least making sure that these kind of unsustainable practices are not obtaining CAP funding, while at the same time rethinking CAP interventions towards the logic of offering higher CAP payment to higher level of pesticide use reduction.

3 The SUD must be seriously implemented

PAN Europe calls on the European Commission to fulfil its Treaty obligations with regard to the SUD by insisting on its full implementation now. It must be done by initiating infringement proceedings against almost all Member States for their lack of progress and at the same time by clearly pointing out the possibilities to support implementation throughout the CAP.



Pesticide Action Network Europe



www.youtube.com/watch?v=hYyuNNAkhf0&t=1s

ECONOMIC PERSPECTIVE

"One day, a colleague said to me: 'mating disruption is interesting, it takes a little work, but it's not that expensive and seems to work, we should talk to our colleagues about it'."

REDUCTION PERSPECTIVE

"Today, with a hindsight of over more than 20 years, we can prove that attacks in vineyards under confusion are always lower than in conventional ones."

TECHNICAL PERSPECTIVE

"Every year, a meeting is held to discuss the type of diffuser to be used, the density to be installed and whether there are any changes to be made in the organization. The great thing is that it [using mating disruption] forces us to work together... It's a great opportunity to exchange."

"When you have solved one problem, another one shows up. It's called the job... I think that in terms of the cut systems against fungal disease, there is something to be done."

LUC PELLET IPM vine-grower in Mont-sur-Rolle
French speaking Switzerland

www.youtube.com/watch?v=NS2uEu36maQ&feature=emb_logo

REDUCTION PERSPECTIVE

"For now more than ten years, we have been working with [pheromone] dispensers against vine moth. In Luxembourg the entire wine surface is being treated with dispensers and we work well with it... Since then, we do not use insecticides anymore."

TECHNICAL PERSPECTIVE

"In my own farm, I have also been working without herbicides since three years ago. With the finger-weeder we open the soil and with the heat, weed roots are destroyed and stop growing or grow at a slower pace, so herbicides are not necessary anymore.

Every second row, we sow legumes, in order to increase biodiversity in the vines... We mow between the row in order to reduce humidity and weed growth."

JOSY GLODEN IPM Vine-grower, Moselle
Luxembourg

#9

Techniques to Reduce Pesticide Dependancy

Organic wine growing in Francia Corta

Baroni Pizzini

www.youtube.com/watch?v=0NUSKFvQ6fo

ECONOMIC PERSPECTIVE

"We think, based on our experience, that if you have a "living" soil, with a strong biodiversity base, you can have better wine."

REDUCTION PERSPECTIVE

"I started in 1998 on a small plot of land, doing a 'test round' and it was okay. We ran more and more tests until 2000, when our production became entirely organic, and the following year, we got the organic certification... I was the only organic producer in Francia Corta whereas now (April 2017), more than 60% of Francia Corta vineyards are organic."

TECHNICAL PERSPECTIVE

"We use mating disruption at a sectoral level because it only work on total areas... we started a project to network with more companies."

SILVANO BRESCIANINI
Organic vine-growing in Francia Corta, Italy

www.youtube.com/watch?time_continue=4&v=JmyjBEhWfF8

ECONOMIC PERSPECTIVE

"Over the past ten years, we have reduced our usage by 80%. We apply pesticides perhaps just once rather than three times. This is a huge advantage, both from a health and an economic perspective."

REDUCTION PERSPECTIVE

"In addition to working the ground under the vines mechanically rather than with chemicals, we have not used any weed-killers elsewhere for over 25 years."

TECHNICAL PERSPECTIVE

"We have been working on a project to combat moths and scaphoids for 15 years now. Pheromones are used to keep moths in check. We understood that this system could work. We tested it out. We were the first to do so in Piedmont, back in 2008... We continued trying for a good four years. The pheromones worked very

well, and we saw an instant decrease in the population in the first two or three years when we began using the method. Wine growers who use this method make a contribution of over 30% and have a major advantage both in terms of the plant health quality and healthiness of the end product."

ATTILIO PECCHENINO
IPM vine-grower in Dogliano, Italy

www.youtube.com/watch?v=RT2WQMHaalg

ECONOMIC PERSPECTIVE

"We have already added some of the varieties to the list authorized varieties for appellation... There are interspecific varieties in the appellation, but we need to see how consumers react."

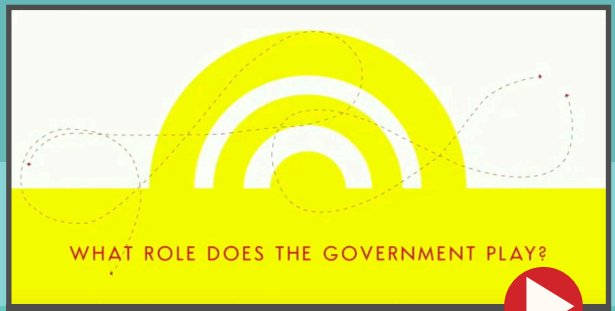
REDUCTION PERSPECTIVE

"We use interspecific grape varieties [resistant against powdery and downy mildew] because we can practically eliminate the use of phytosanitary products. All you have to do is apply small amounts of a few products which are authorized for organic agriculture two or three times a year, and your vines are clean... This is in combination with sexual confusion and mechanical soil tilling, to help us achieve an almost 0% pesticide rate."

TECHNICAL PERSPECTIVE

"We started standardization ACs with BASF in 1988 at the institute of wine growers and producers. In the 1990s, we started working with schools to eliminate the use of insecticides. The IWGP offers advice and carries out monitoring activities but we also do ACs with interspecific grape varieties to see what happens. The aim is to eliminate the use of fungicides."

SERGE FISCHER Chef de service
Viticulture Remich Luxembourg



www.youtube.com/watch?v=0-qwEf1VzBE

REDUCTION PERSPECTIVE

"As a government body, we are trying to reduce phytosanitary product use."

TECHNICAL PERSPECTIVE

"Objective advice needs to be provided, which is not subject to financial pressure... This can come from an agricultural association or via advisors paid directly by the government"

SERGE FISCHER Chef de service
Viticulture Remich Luxembourg

www.youtube.com/watch?v=FqPJWDb3XUo

REDUCTION PERSPECTIVE

"In the vineyard where we are, we'll reach up to 1,3kg of copper per hectare this year, knowing that the rule is more or less 4kg maximum. We are quite happy with this low amount. And we hope we'll have soon an organic replacement for copper."

TECHNICAL PERSPECTIVE

"Since the 1990s we have been using organic manure, no more chemical fertilizers. Later, we started to do mechanical weed killing, we stopped using herbicides. Then it was natural to move to the last step. To become organic.

We try to reduce copper [against downy mildew]... Since we are organic, fortunately, we spray less copper than before because what we learn in organic farming is to minimise the amount of copper and to bring it at the right time."

PHILIPPE ROTHGERBER
Organic vine-grower in Alsace, France

www.youtube.com/watch?v=LxkxRtLPYRs

ECONOMIC PERSPECTIVE

"We receive government support or grants for the confusion method. If we use very few or no herbicides, we also receive a grant. The idea is to work in an environmentally-friendly as much as possible, which is why the government subsidises these measures."

REDUCTION PERSPECTIVE

"We are in a vineyard with varieties which are resistant to fungal diseases including downy and powdery mildew... obtained by interbreeding standard varieties with resistant varieties. They only need to be treated once or twice a year so you can almost cut out phytosanitary product use. Soil-tilling machines are much more advanced now and we don't need herbicide anymore."

LISA VESQUE IPM vine-grower in Moselle, Luxembourg

www.youtube.com/watch?time_continue=18&v=b9aEX54lg_A

ECONOMIC PERSPECTIVE

"Italian consumers on some markets are increasingly asking for products of a certain kind: this has prompted our consortium to advise that crop production be re-oriented toward organic production, which has since translated into a growing trend."

TECHNICAL PERSPECTIVE

"A careful and measured application of copper is completely fine. However, one must also keep nature in mind, as organic producers aren't allow to use more than 6kg of copper per year. The hardest part is managing to calibrate it well; surely it is more difficult method compared to using systemic products, but in the end you will have good results both from a commercial and an environmental point of view."

CASCINA CLARA BELLA
Organic vine-growing in Francia Corta, Italy

#3

Techniques to Reduce Pesticide Dependancy

Organic Prosecco Production

Paolo De Stefani

www.youtube.com/watch?time_continue=18&v=RZ2fRZUWKM&feature=emb_

REDUCTION PERSPECTIVE

"My farm has been organic for over 20 years"

TECHNICAL PERSPECTIVE

"Where possible, we use machines to maintain the ground under the vines, which needs to be dug out and patted down again. We also use a machine for mulching, so that grass growing between rows of plants is pulled up and spread across the area under the vines. This grass creates a natural mulch and prevents the underlying grass from germinating and growing... Thanks to these agricultural techniques, we can control the invasive grass under the vines and continue to maintain the ground without the use of pesticides or weed killers.

Flavescence is a disease caused by an insect: the scaphoid beetle. The presence of the insect is monitored

and natural pyrethrum insecticide is applied, or potassium salts with fatty acids.

Yellow and red spider mites are kept at bay with normal, mineral Sulphur... I've never had any problems with them. Copper is used to combat late blight and for powdery mildew, we use Sulphur and enzymes two or three times a year."

PAOLO DE STEFANI
Organic vine-grower in Prosecco area, Italy

www.youtube.com/watch?v=ECmhbh8Kdms&ab_channel=PANEurope

ECONOMIC PERSPECTIVE

"As an organic farming unit, since 2011, we have been carrying out management comparison tests in which we compare three management systems in the same vineyards : IPM, organic and biodynamic. This aims to show the merits, defects and limits of each technique, and to respond to the needs of organic as well as biodynamic producers regarding issues that may arise in the phase of conversion or in the management of the vineyard."

REDUCTION PERSPECTIVE

"Since 2011, biodynamic vineyards in our experiment have no longer received any external input and we have succeeded in producing quantitatively and qualitatively grapes that are absolutely comparable to other systems [IPM and organic]."

ROBERTO LUCIN Researcher in Trentino, Italy

JEAN-BERNARD LOZIER – COUDRES

www.youtube.com/watch?v=I-n30UtAJus

ECONOMIC PERSPECTIVE

"It's also beneficial from an economic perspective. According to the results from central management, we are doing better than the average, we're one of the economically best-performing farms.

We also have to change our level of tolerance compared to traditional agriculture. I'm prepared to accept a few weeds in my fiels or a slightly lower profit due to a fungal disease or insect, as long as it remains economically viable. This loss of earnings is more than compensated by the savings I make from not using pesticides.

This agricultural system allows me to spread out my working time... My work is spread out over the year, leaving me with free time. So I never have to feel stressed."

REDUCTION PERSPECTIVE

"I've been able to drastically reduce my use of fungicides, insecticides and slug pellets. For examples, I haven't used any insecticides on my crops for 2 years now. I hardly ever use slug pellets either."

TECHNICAL PERSPECTIVE

"I rotate every 9 years between 6 different crops. It involves mechanical weeding and using staggered sowing dates to prevent problems with insects and diseases. It also involves mixing wheat varieties to try to pool the disease resistances of different varieties and make use of all of their properties.

By not using slug pellets, we allow the predators to do their work instead."

JEAN-BERNARD LOZIER
IPM arable farmer in Coudres, France

CYRILLE SAVALLE – AILLY

www.youtube.com/watch?v=MJGeOHwVzpE

ECONOMIC PERSPECTIVE

"You save a lot of time: the workload is much more acceptable. I think we are protecting our health too... I can also branch out in other areas. I started diversifying a few years ago. I can also find out what's happening elsewhere on other farms, and take inspiration from them. My yields have fallen a little, but as I'm spending less per hectare, I'm earning the same amount as before."

TECHNICAL PERSPECTIVE

"First I introduced an integrated approach for wheat on the farm, by delaying the sowing dates, modifying the density a little, and choosing rustic varieties which consume less nitrogen. I also became interested in mechanical weeding, which I introduced last year for the maize crops after purchasing a hoeing machine."

CYRILLE SAVALLE
IPM arable farmer in Ailly, France

www.youtube.com/watch?v=sb5zd_XGCSQ

REDUCTION PERSPECTIVE

"We haven't used any insecticides on the farm for 9 years.
Compared to the regional average, we use well under 50% less."

TECHNICAL PERSPECTIVE

"I've always believed that cattle and crops were complementary... We were fortunate as the prairie had been used for four years without needing to be ploughed and without any harmful weeds emerging, so we could start sowing on this prairie. This helped use save money on fertilizers, as the organic matter provided nutrients for the plants, and in the first two or three years, a lot less weeding was needed."

ERIC ODIENNE
IPM arable farmer in Chamblac, France

DIDIER DUEDAL – ORVAUX

www.youtube.com/watch?v=RIFYb3IbkfQ

ECONOMIC PERSPECTIVE

"I produce lower volumes than my colleagues, but then my expenses are lower as well, so I can generate an income which meets my expectations.

What's more, this system helps me to meet current societal demand for products produced with fewer pesticides."

TECHNICAL PERSPECTIVE

"As a livestock producer, it was very easy for me to choose not to use pesticides on my pasture land.

I started slowly investigating the diseases affecting my wheat and found that I was on the borderline for certain indicators, but instead of applying a treatment, I chose to wait and see... I haven't used any treatments for several years now, and fusarium [fungus type] is no longer an issue.

So clearly, we can do without them if we take precautions, such as choosing resistant wheat varieties which fulfill certain criteria.

I always wanted my system to be based on grass, but at the same time, I wanted to make sur this grass could be useful for my rotation system."

DIDIER DUEDAL
IPM arable farmer in Orvaux, France

EMMANUEL DRIQUE – BEZU-SAINT-ELOI

www.youtube.com/watch?v=RXEClyJ4ODU

ECONOMIC PERSPECTIVE

"The wide variety of crops also helps me to spread my financial risks out, as well as spread out the work over the course of the year.

Economically speaking my results easily match the average levels of the region".

REDUCTION PERSPECTIVE

"I haven't used any insecticides for 3 years now, and I haven't had any major disaster because of it.

I've been able to reduce my application frequency on the farm by 50%."

TECHNICAL PERSPECTIVE

"One of the main principles of this [IPM] approach is cultivating a large variety of crops on the farm. I have seven to eight crops on my farm depending on

the year. I have winter, spring and even summertime crops (eg. Maize), and I also have pulses such as peas, field beans and alfalfa."

EMMANUEL DRIQUE

IPM arable farmers in Bezu-St-Eloi, France

www.youtube.com/watch?v=9dDYEXaY4kk

REDUCTION PERSPECTIVE

"My work involves on one hand helping groups of farmers who are already quite advanced in this domain and who are already using 50% fewer phytosanitary products than others in this sector. We continue working with them. On the other hand, I also work a lot now with farm councils. Because if the advisors who support farmers don't stay up to date, that could hinder the development of the entire production system."

BERTRAND OMON

Farm adviser at the Eure Agriculture Chamber, France

www.youtube.com/watch?v=1NYStGJiVEY&ab_channel=PANEurope

ECONOMIC PERSPECTIVE

"Several working groups are emerging. A successful one is now represented by Riso BioSystem, which has resulted in a network of companies that are also commercially committed in this regard, of producing while preserving the environments of production."

REDUCTION PERSPECTIVE

"We mount the cover crop in front of the tractor, then use a crimper roller (made of blades). The blades impact the cover crop breaking its stems; breaking these stems prevents the cover crop from rising immediately. Behind the tractor, a direct seeding machine is mounted that allows our rice to be sown on the ground, which is covered with cover crop and entirely unprocessed. From then on, we proceed with careful management of the water... depending on the stage of development of the crop, its percentage of revegetation, and paying much attention to the biochemical mechanisms that are established when water is introduced into the paddy field. A mix of all these factors allows to follow the rice crop's development and to obtain a good rice production."

TECHNICAL PERSPECTIVE

"Here in the area, as far as rice is concerned, there is a network of farmers who are committed to these issues, and each one has developed a different system, a different arrangement. Everyone has their own particularity: be it their land, their farm organization, their farm size... and from this you learn something very important: that what one farm's system isn't replicable in the same way in another reality.

I'd like to see more participatory research, where the "classical" researcher sits with the farmer and the various stakeholders around a table; everyone has something valuable to contribute. From all this, you can produce a virtuous result in terms of growth, knowledge and the return of such practices to the land. I'd like to see the development of an innovative approach of participatory research, where public research certainly has an important role.

Rice farms are a very specialized kind of enterprise, which requires a very particular sectorial knowledge; therefore, exploiting the knowledge of a plurality of producers, and combining it with the knowledge of a plurality of disseminators or researchers produces a synergistic effect of great value."

HOW TO

"We make use of the farm from a didactic point of view, to make people understand the environment of wetlands, the importance of maintaining wetland ecosystems in a state of good quality, as well as how that ties into the matter of managing to maintain a balance with groundwater, springs, seepage, and the virtuous use of water.

Exactly as we produce rice, we also partly "produce" [knowledge] dissemination for future technicians, agricultural schools and universities, and various stakeholders, all of whom can then in turn mature a different awareness compared to the information normally given by the various traditional channels."

PAOLO MARIA MOSCA
Organic rice cultivation, Crescentino, Italy

www.youtube.com/watch?v=4DT5kfgsWd4

ECONOMIC PERSPECTIVE

"As we have a big demand for rice, we try and push the crop rotation as much as we can: this way we have reached the maximum level of our production, which is 130 hectares out of a total of 460 hectares."

CASCINE ORSINE Biodynamic rice production in Bereguardo, Italy

www.youtube.com/watch?v=71S9ULxJOp8

ECONOMIC PERSPECTIVE

"It takes a few years, but you start to see the results: the figures speak for themselves. The farm is becoming profitable."

REDUCTION PERSPECTIVE

"We use about 50% fewer phytosanitary products compared to neighbouring farms".

REDUCTION PERSPECTIVE

"I reorganised my plot structure into plots of no more than 12 ha, separated with strips of grass. Another advantage of this is that it attracts a lot of beetles... from the third or fourth year, you start getting a lot of beetles in the grassy areas which eat the slugs around the crops.

My farm is 100 ha and 100% of it is ploughed. To reduce pesticide use, you need to use false seed-bed technique regularly."

JEAN PHILIPPE PETILLON
IPM arable farmer in Richeville, France

ANTOINE LAMBERT – FOUR-EN-VEXIN

www.youtube.com/watch?v=W2a4UmtVEaY

ECONOMIC PERSPECTIVE

"The financial results have been satisfactory. Changes can be made. The yields have decreased, but the costs for phytosanitary products have also decreased significantly because we have cut our application frenquency by half."

TECHNICAL PERSPECTIVE

"To reduce your usage, you need a cultivation system which involves a number of linked steps carried out one after the other. This includes for example alternating spring and winter crops to restrict mould and disease and using varieties which are less susceptible to disease.

For wheat, I sow different varieties together to prevent the issues that arise when you have only one single variety.

I sow much later than usual to prevent weeds from growing at their optimum times."

ANTOINE LAMBERT
IPM arable farmer in Four-en-Vexin, France

SEBASTIEN GALLAND – EMANVILLE

www.youtube.com/watch?v=_z84_mxnFDU

ECONOMIC PERSPECTIVE

"This is good for the balance sheet."

TECHNICAL PERSPECTIVE

"My strategy involves crop rotation. I invested in a hoeing machine this year to limit my herbicide use, particularly for the beetroots. Last year, I applied herbicides on the beetroots 5 times, whereas this year I only carried out 2 applications."

SEBASTIEN GALLAND
IPM arable farmer in Emanville, France

Spending within the rural development programme on input reductions (pesticides and fertiliser)																												
	All MS	Belgium	Bulgaria	Czechia	Denmark	Germany	Ireland	Greece	Spain	France	Italy	Cyprus	Latvia	Hungary	Netherlands	Austria	Poland	Portugal	Romania	Slovakia	Finland	Sweden	United Kingdom	Malta	slovenia	Lux	Lithuania	Estonia	control
2015	396.222.264	8.816.172		12.634.553		57.460.562	1.098.348		140.556	2.033.366	11.817.011				8.570.691	53.375.499		50.314.826			145.109.873	243.510	33.173.118		11.172.144	262.036			396.222.264
2016	584.708.683	8.368.033		28.875.422	23.431.304	99.931.562	8.421.142		54.660.047	1.410.928	49.232.339	2.160.683	753.564	32.657.273	7.777.641	46.038.805		96.478.350		4.734.571	109.846.518				7.635.036	102.323	1.898.994	294.148	584.708.683
2017	03.928.646	3.085.202		8.617.938		96.473.213	18.722.850	7.527.402	56.027.842	16.835.549	160.333.849	6.663.498	865.856		1.446.312	47.773.131		56.308.928		5.668.830	105.596.484				10.011.061	66.334	1.580.834	323.532	603.928.646
2018	903.310.964	3.104.978		16.299.963		98.162.993	27.135.203	5.806.194	66.588.191	61.693.352	185.692.032	4.805.026	910.700	124.836.192	437.164	56.175.160		88.618.762		5.837.305	106.157.274		36.598.161	187.561	10.364.430	859.408	2.630.153	410.762	903.310.964

Spending within the Common Market Organisation for fruit and vegetables																						
ii) Integrated production																						
	All MSs	Belgium	Bulgaria	Czechia	Denmark	Germany	Ireland	Greece	Spain	France	Italy	Cyprus	Latvia	Hungary	Netherlands	Austria	Poland	Portugal	Romania	Slovakia	Finland	Sweden	United Kingdom	Malta
2010	116.846.744	6.610.299		18.636	991.833	549.665	798.643	3.114.602	6.898.871	9.207.050		24.491		30.767	24.547.532	613.347						442.973	656.804	
2011	76.576.034	2.533.445			483.849	564.309		2.925.057	7.150.482	8.831.430	35.297.484	25.736		134.018	17.226.076	560.876					4.505	353.820	474.147	
2012	92.303.941	9.503.694				377.227		2.666.978	8.019.767	9.540.674	45.158.263	35.507		145.759	14.073.679	607.284		54.018			5.778	147.264	71.937	
2013	84.139.821	7.133.723		110.668		332.630		2.009.028	9.137.319	8.205.934	38.281.887	45.977		9.566	15.073.735	551.994		61.920			510.556	163.669	595.928	
2014	84.629.330	9.008.730				75.757		2.417.536	14.115.671	9.419.978	31.766.440	27.973		285.127	13.631.983	626.142		46.342			371.731	47.235	1.973.480	
2015	86.173.871	9.135.290				29.928		1.821.226	11.821.525	8.859.744	38.681.370	42.263			12.544.162	614.383		44.628			428.960	93.901	2.001.213	
2016	82.179.467	10.823.138				34.612		2.019.612	15.603.112	11.523.954	26.133.939	29.185		30.396	13.778.920	297.672		51.194			435.860	26.127	1.354.069	
2017	79.797.474	4.345.063				144.609		2.183.283	26.191.232	10.596.533	30.362.516	40.741		22.680	2.852.058	158.240		75.964				44.412	2.744.854	

Spending within the Common Market Organisation for fruit and vegetables																						
i) Organic production																						
	All MSs	Belgium	Bulgaria	Czechia	Denmark	Germany	Ireland	Greece	Spain	France	Italy	Cyprus	Latvia	Hungary	Netherlands	Austria	Poland	Portugal	Romania	Slovakia	Finland	Sweden	United Kingdom	Malta
2010	6.296.547	2.817.269			606.904	22.335	71.436	79.423	510.034	63.413		24.491		19.534	948.638	25.356						75.134	59.775	
2011	4.902.604	2.416.819			28.590	29.174		68.861	54.588	56.424	949.726	25.736		5.686	1.030.433	18.809					13.630	192.871	36.994	
2012	8.301.389	5.759.510				26.420		75.628	244.736	75.185	407.766	35.507		19.747	1.088.805	19.510						16.942	258.474	
2013	2.861.077	43.201				30.110		25.400	127.595	58.832	1.008.636	45.977			1.073.295	35.394						39.057	47.112	
2014	2.615.885	437.193				199.291		43.303	104.771	41.422	419.056	27.973			751.176	55.269						93.487	16.387	
2015	2.321.380	597.892				181.266		51.157	16.926	19.616	190.203	42.263	62.933		604.667	57.469						64.672	2.955	
2016	2.195.917	22.715				180.062		25.400	8.544	46.408	366.589	29.185	75.326		783.442	41.809						38.691		
2017	3.094.157	1.132.464				174.228		25.400	4.863	66.722	438.625	40.741	60.261	161.500	65.997	36.145						110.984		

Spending within the Common Market Organisation for fruit and vegetables

iv) Actions to conserve soil (e.g. labour techniques to prevent/reduce soil erosion, green cover, conservation agriculture, mulching)

	All MSs	Belgium	Bulgaria	Czechia	Denmark	Germany	Ireland	Greece	Spain	France	Italy	Cyprus	Latvia	Hungary	Netherlands	Austria	Poland	Portugal	Romania	Slovakia	Finland	Sweden	United Kingdom	Malta
2010	4.407.998	173.429		81.879		133.114				287.673		205.354		84.035				9.550					196.899	
2011	5.547.722	189.372		222.560		50.630				262.321	4.325.831	311.490		4.561									179.156	
2012	6.043.583	99.542		130.365		124.621			2.510.584	68.674	2.347.647	346.354		10.771			20.065				6.583		378.376	
2013	6.308.470	71.131		125.805		58.444			2.048.326	276.416	2.554.511	336.218		65.393			21.750				11.993		715.983	
2014	6.206.020	87.759		254.978					368.003	360.483	3.993.133	378.593		86.154			21.611	8.217			12.458		634.631	
2015	8.267.373	4.850		271.375		89.923			1.510.380	506.298	4.353.130	316.281		136.066			21.503	6.884			21.161		1.029.522	
2016	9.201.682	3.379		387.159		0			3.757.770	450.446	3.050.233	316.648		100.028			21.139	17.775			12.518		1.084.586	
2017	12.434.984	4.515		324.714		211.625		12.500	5.718.646	166.979	3.617.984	235.643		318.701								1.012	1.822.665	

Spending within the Common Market Organisation for fruit and vegetables

v) Actions to create or maintain habitats favourable for biodiversity (e.g. wetlands) or to maintain the landscape, including the conservation of historical features (e.g. stonewalls, terraces, small wood)

	All MSs	Belgium	Bulgaria	Czechia	Denmark	Germany	Ireland	Greece	Spain	France	Italy	Cyprus	Latvia	Hungary	Netherlands	Austria	Poland	Portugal	Romania	Slovakia	Finland	Sweden	United Kingdom	Malta
2010	18.737.784	8.490		2.111		397			17.591.577	180.136													13.925	
2011	20.247.866	3.649							17.858.569	169.626	2.062.768												19.539	
2012	21.128.454	3.795				4.962			18.264.705	104.430	2.454.917												26.132	
2013	22.139.887	5.215				9.710			19.147.490	77.827	2.290.695												1.380	
2014	19.536.624	5.000				190.053			18.016.267	111.947	979.759			224.737					1.359				7.502	
2015	19.578.063	2.260				305.193			16.650.805	100.596	2.018.356			475.870			4.682		3.124				17.177	
2016	21.191.508					357.933			18.005.108	239.268	2.025.707			510.718			10.222		4.396	4.000			34.156	
2017	15.849.484					327.619			13.029.754	102.906	2.173.349			31.435			33.364			124.853			26.205	

The SWEDISH fact finding report

2017

Farmers can receive additional payments under Rural Development programmes for measures taken under the scheme. Participating farmers receive a series of visits to guide them in improving their practices and attend farmer-led group discussions on specific problem areas. While the primary focus is nutrient use efficiency, several aspects of IPM, including crop rotation, crop nutrition, plant protection and conserving biodiversity are incorporated into this scheme.

The NETHERLAND'S fact finding report

2017

Implementation of IPM general principles became an obligation for professional users since 01 January 2014. The NAP puts an emphasis on the broad dissemination of knowledge and methods, as well as continuing the development of new integrated methods. The Competent Authorities put in place, for instance, financial and fiscal incentives, certification, a link with the Common Agricultural Policy or statutory measures.

Before 2015, all professional users were obliged to have plant protection plans (covering IPM), which was a condition under national legislation and, therefore, were subject to control during cross-compliance checks. In 2015, the plant protection plans were replaced by mandatory "plant protection monitors", where all IPM-measures (chemical and non-chemical) have to be recorded by the farmer. The NVWA staff check if the monitor is available and kept up-to-date during the growing season. However, as IPM is no longer a condition under national legislation, it is not currently checked during cross compliance checks.

The plant protection monitor should be kept up to date during cultivation and completed within two months after the end of the growing season. Records kept are required to cover all IPM measures taken (Annex III of the SUD), including: crop rotation, use of resistant or tolerant planting material, including seeds, biological, physical and nonchemical methods, which must be given preference, selection of PPPs based on risks for environment and humans, monitoring of harmful organisms, use of warning and forecasting systems and resistance management. The plant protection monitor is meant to help growers to evaluate their IPM approach and adapt it for the following growing season, which is considered a good practice. As the plant protection monitor is a new instrument, its effectiveness is not known yet. Its evaluation will be part of the evaluation of the GGDO in 2018.

The ROMANIAN audit

2019

There is no overall system of publicly-funded applied agricultural research, advisory services or pest forecasting/ warning systems to promote low pesticide-input pest management and to help arable farmers implement the principles of IPM.

The audit team noted that Romania has not implemented a Farm Advisory System as required by Article 12 of Regulation (EU) No 1306/2013 of the European Parliament and the Council. Article 12(2)(e) requires that the farm advisory system provides advice to claimants of funds under the Common Agricultural Policy on the safe use of PPPs, and in particular, the requirements of Article 14 of SUD on IPM.

The CYPRIOT audit 2019

Cyprus uses Rural Development funding under Pillar II of the EU Common Agricultural Policy to promote low-PPP input agriculture. This includes specific measures relating to mechanical weeding in permanent crops (instead of PPPs) and crop rotation for cereals and potatoes.

The HUNGARIAN audit 2018

For those growers, applying for subsidies under the agro-environmental measures under the CAP, official controls cover the assessment of the implementation of the eight IPM principles (Annex III of the SUD). The CA stated that there are 12 000 growers claiming payments for agro-environmental measures, which represents 6.8% of cross-compliance applicants. The CA conducts official controls at 5% of the growers receiving agro-environmental payments on an annual basis. These official controls are conducted by staff from CGO-PPSCUs. The CAs stated that there are no controls to verify the implementation of the eight principles of IPM to users of PPPs not receiving subsidies under the agro-environmental measures scheme.

The PORTUGUESE audit 2019

... assessment of IPM general principles at farm level takes place at growers receiving funding under agri-environmental measures, as well as growers certified under the private quality schemes. At the time of the audit, based on documentary evidence provided by the relevant Competent Authorities and one of the private IP certification bodies, met by the audit team, it was found that inspections performed by them cover partly the implementation of IPM general principles. Thus, currently existing official controls at both CAP and non-CAP growers, and private schemes do not systematically assess all eight IPM general principles in order to ensure that all professional users comply with this obligation, as required by Article 14(4) of the SUD.

The FRENCH audit 2018

... the budget dedicated to agro-environmental and climate measures and to conversion to organic farming under the Common Agricultural Policy (CAP) and water protection actions by the Water Agencies. The CAs estimated that the overall total annual budget dedicated to actions related to the current Ecophyto plan exceeds €300 million.

The DANISH fact finding report 2017

Denmark uses EU Rural Development funds in two ways to support IPM. Firstly, organic farmers receive additional area-based payments compared to their conventional counterparts. Secondly, funding is provided to grant aid capital investment. Growers received a total of over 220 million DKK, equivalent to €30 million, between 2010 and 2016 under co-funded programmes for the purchase of mechanical weed control equipment, Global Positioning System (GPS) equipment and new PAE.

The GERMAN fact finding report

2017

Growers can claim additional payments for IPM-related measures such as using biological controls against the European corn borer in maize and pheromones in orchards to control codling moth, establishing buffer zones adjacent to water courses, and including flower strips in arable fields.

In Lower Saxony, growers can claim additional payments for crop rotation practices and including flower strips in arable fields. At a national level, 25% of UAA is implementing some measure under Rural Development programmes, many of which contain measures complementary to IPM.

The IRISH audit

2019

All professional users of PPPs are required to complete a self-assessment questionnaire highlighting specific practices falling in each of the eight IPM principles. Although this questionnaire is requested and it must be available during official controls, inspectors do not challenge the answers given. This is not in line with Article 14(4) of SUD requiring MSs to ensure that the general principles of IPM are implemented by all professional users.

The AUSTRIAN audit

2019

The Austrian Agri-environmental Programme is part of the Rural Development Programme 2014 to 2020 and offers a groundwater protection measure on a voluntary basis. Growers adhered to this measure are not allowed to use specific substances (metolachlor, terbutylazin, metazachlor and chloridazon).

In Burgenland, 34% of the total area of the Province is covered by nature protection designation (130 000 ha). The Provincial CA stated that protection of species and habitats is achieved by two different models. The first model is based on specific ban or restriction, and the second system is by contract agreements with land owners for the promotion of certain measures. The nature protection areas in which the use of PPPs are banned covers a total of 5 000 ha in the province which accounts for 2.7% of the total farming area. The Provincial CA also stated that 12 000 ha (6.4% of the farming area) are applying for agri-environmental subsidies of the rural development scheme. Under this scheme, more extensive production systems are agreed with farmers which favour reduced use of PPPs. Around two thirds of these farms are located in protected areas.

In Lower Austria, there are 36 areas included within the Natura 2000 network, which accounts for around 23% of the Province area. The total area for both arable land and grassland account for 820 000 ha, of which 48 000 ha (5.6%) are adhered to the agri-environmental programme under the rural development subsidies. In the case of Lower Austria, the agri-environmental measures completely prohibit the use of PPPs. In 2018, 16 600 ha farmland under the agri-environmental scheme were located within Natura 2000 designated areas.

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