

# Risk reduction: opportunities and challenges

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# 01 /Background

The evolution of environmental issue and challenge

Today's understanding and perception of environmental challenges are changing:

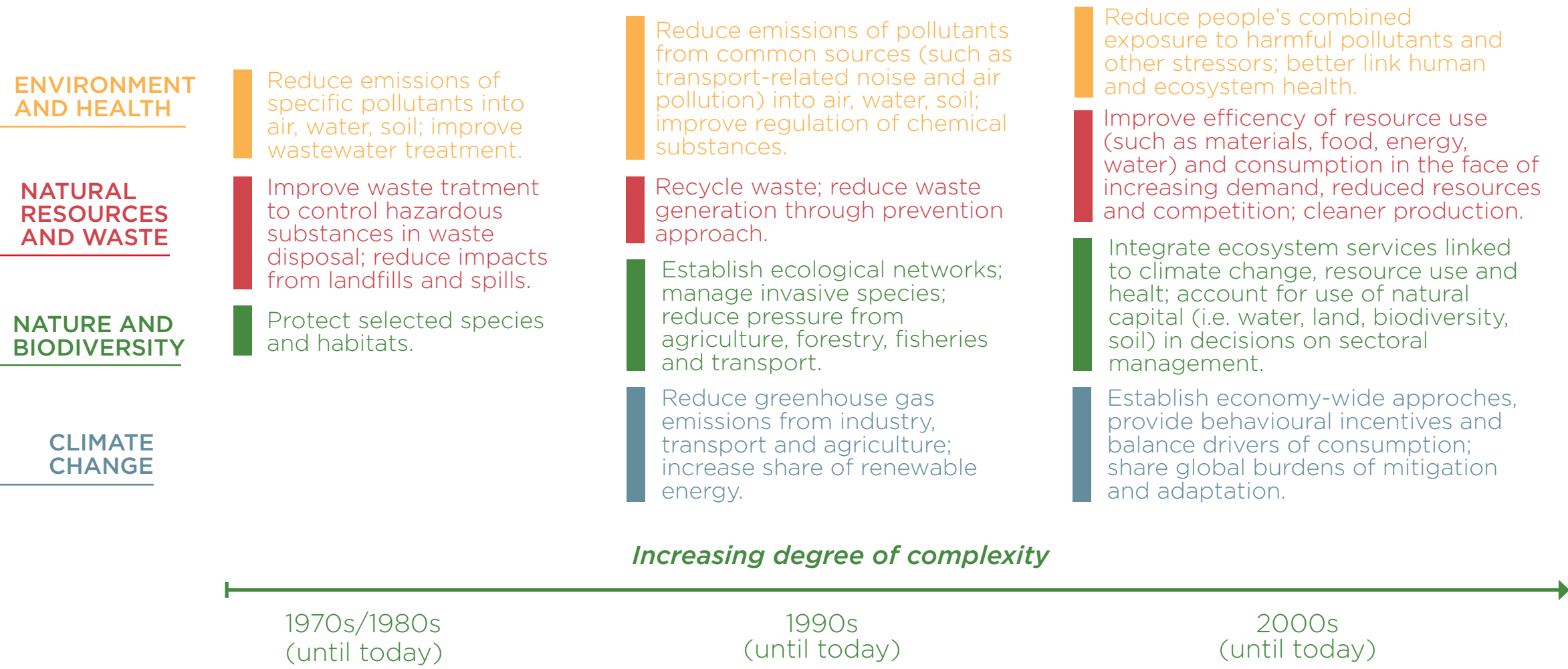
no longer can they be seen as independent, simple and specific issues. Rather, the challenges are increasingly broad-ranging and complex, part of a web of linked and interdependent functions provided by different natural and social systems.

*(From: Soer 2010 European Environmental Agency)*



# 01 /Background

## The evolution of environmental issue and challenge



(Source: EEA)

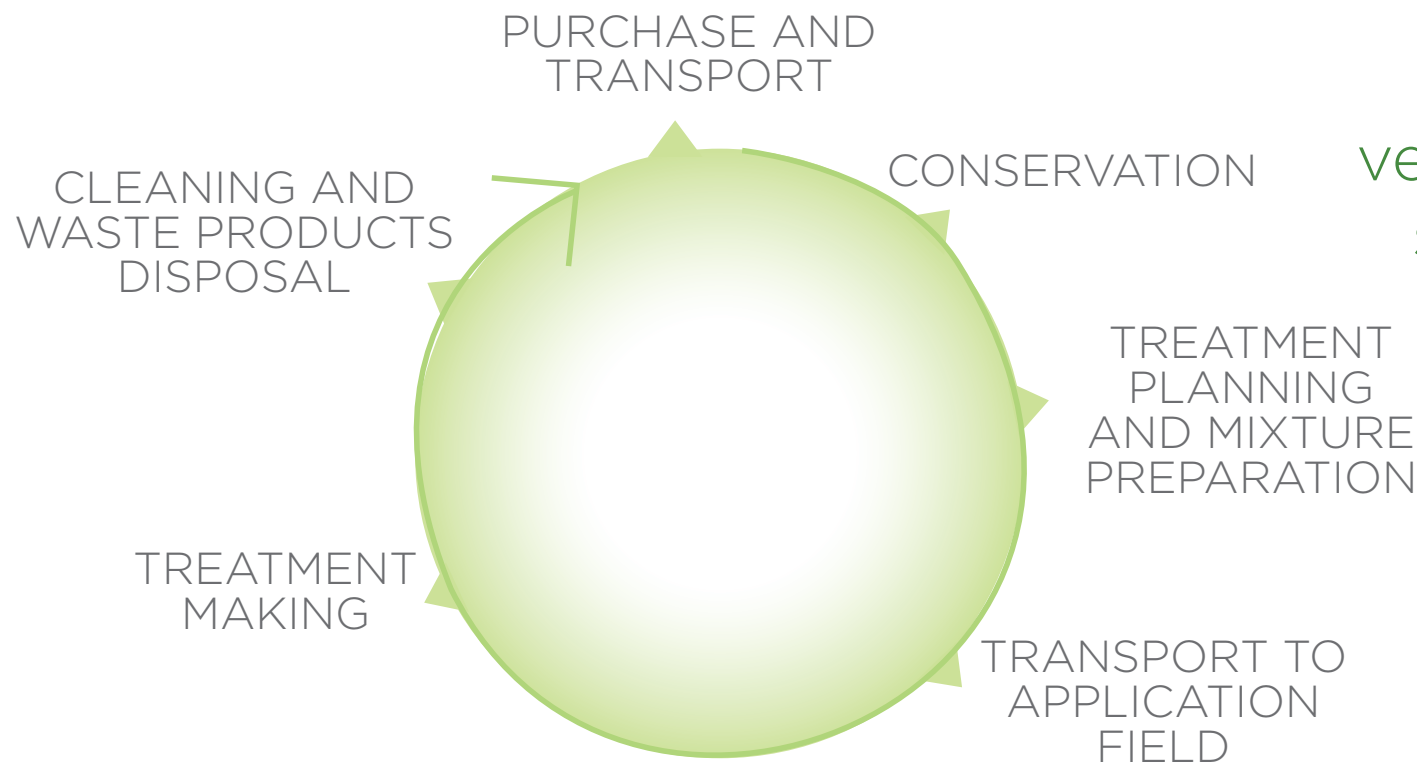


# 01 /Background

## The challenge of pesticide risk reduction

Agricultural pesticides are associated with several environmental and human health risks during the different stages of their life-cycle.

In order to help limiting pesticide risks the European Commission set out some very specific objectives on the sustainable use of pesticides



# 02 /The Gap

## ***Risk Assessors:***

Real risk  
Exposure models  
Professionals  
Mean values  
Projected behavior  
Good Agricultural Practices  
Focus on individual aspects

## ***Risk Managers:***

Perceived risk  
Real life activities  
General population  
Diversity of practices  
Human interference  
Specific practices  
Complex interactions

# 02 /The Gap

The role that can be played by SUD

## ***Risk Assessors:***

Real risk

Exposure models

Professionals

Mean values

Projected behavior

Good Agricultural Practices

Focus on individual aspects

## ***SUD***

> Training

> Requirements for sales of PPP

> Information and awareness

> Equipment

> Protect specific areas

> Handling of pesticides

> IPM

## ***Risk Managers:***

Perceived risk

Real life activities

General population

Diversity of practices

Human interference

Specific practices

Complex interactions

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## 02 /The Gap

SUD can provide answers **if:**

- > Measures are pragmatic and applicable
  - > New requirements for users produce a real risk reduction
- > New practices produce benefits also for farmers
  - > Appropriate incentives are in place
- > Training, information and awareness raising are based on scientific evaluations and recommendations

A PARTICIPATORY, MULTI-STAKEHOLDER PROCESS IS  
NEEDED FOR THE IMPLEMENTATION

# 03 /Background

## The challenge of pesticide risk reduction: **EU Objective**

- > to minimise the hazards and risks to health and environment from the use of pesticides.
  - > to improve controls on the use and distribution of pesticides.
  - > to reduce the levels of harmful active substances, in particular by replacing the most dangerous by safer (including non-chemical alternatives).
  - > to encourage the use of low-input or pesticide-free crop farming.
- > to establish a transparent system for reporting and monitoring progress including the development of appropriate indicators.



# 03 /Background

## The Sustainable Use Directive: **OPERA analysis**

OPERA Research Centre has initiated an EU-wide consultation, drawing on experts from the fields of agriculture, industry, trade, academia, environment and consumer protection, to produce a document that supports the transposition process of the Directive and the drafting of NAPs.

Proposing of a package of practical and pragmatic risk reduction measures together with a system of indicators to measure progress in meeting the objectives of the SUD.

## 03 /Background

The challenge of pesticide risk reduction:

### *The Sustainable Use Directive*

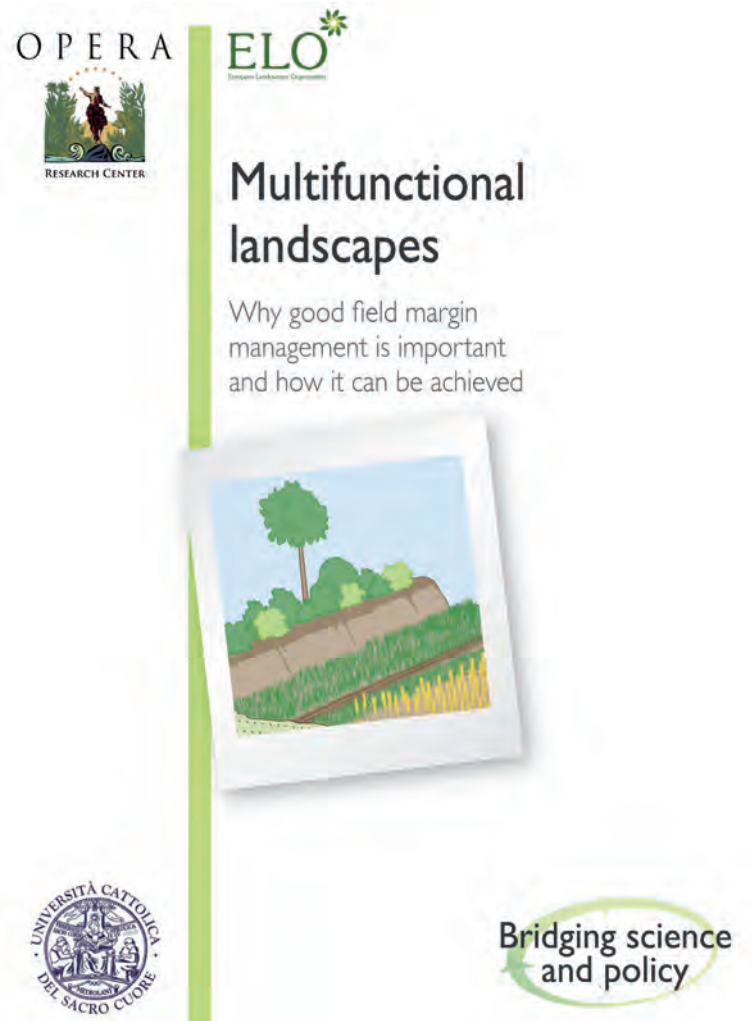
The EU Directive 128/2009 requires Member States to develop a legislative framework and National Action Plan (NAP) that includes the aim of reducing the potential risk associated with **pesticide use**.

### *Key Objective of the activity*

To assist authorities in defining the content of NAP and **system to measure step-by-step improvements** from an initial assessment, towards the final objective.

# 04 /Multifunctional Landscapes

why good field margins is important and how can it be achieved



## *Our recommendation provides information on:*

- > Definition
- > The Functions of field margins:
  - > *Enhancing biodiversity*
  - > *Pesticide buffer*
  - > *Nutrient retention*
- > The EU legal framework
- > Financial aid and assistance required for their setting up

# 04 / Multifunctional Landscapes

## ***Legal compliance:***

Member States must take measures to protect the aquatic environment and drinking water

(Directive EC 128/2009)

## ***Multifunctionality:***

Creating buffer zones, can benefit

- > soil
- > water protection
- > natural fertilization
- > biological crop protection
- > biodiversity

# 04 / Multifunctional Landscapes

## MULTIPLE BENEFITS of field margins = OPPORTUNITY for agriculture and the environment

- > Avoid erosive soil loss
- > Protect water
- > Reduction of pollution by pesticides from spray drift
  - > Increases earthworms populations
  - > Attract arthropods
- > Help birds and small animals
  - > Enable carbon reduction

# 05 /Bio purification systems

why on farm water management is important and how it can be achieved

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## Bio purification systems

Why on-farm water management is important and how it can be achieved

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Bridging science and policy

Land and water management practices are of primer importance for satisfying the needs of agriculture and ecosystems

# 05 /Bio purification systems

## THE RECOMMENDATION COVERS THE FOLLOWING SUBJECTS:

- > Why on farm water management is important
  - > How do PPPs reach the water bodies
    - > Point source pollution
    - > Evolution of bio purification systems
  - > Existing types of bio purification system
    - > Advantages and disadvantages
- > Relevant requirements in the EU legislation

# 05 /Bio purification systems

why on farm water management is important  
and how it can be achieved

## *Legal compliance:*

SUD is the framework for measures dealing with diffuse and point source pollution to protect the environment

## Advantages of Bio-purification Systems = OPPORTUNITY

- > Eliminate point source pollution
  - > Economic and simple constructions
  - > Safeguard human and animal health on farm
- > Safeguard biodiversity and beneficial organisms
  - > Ability to treat large volumes of contaminated water
  - > Need of minimum maintenance



# 06 /IPM

seen from the perspective of SUD Objectives  
(to be published soon !)



IPM seen from  
the perspective  
of Sustainable Use  
Directive Objectives

OPERA guidelines for implementation



Bridging science  
and policy

## The RECOMMENDATION PROVIDES INFORMATION on:

- > European Agriculture and Plant Protection
  - > EU legislation & IP
  - > IPM concept & its application
- > How to achieve IPM implementation as required by SUD
  - > Resources and actions to achieve a successful implementation of IPM principles
    - > Evolution of IPM practices at farm level
    - > Limitations in implementing IPM
- > Regulatory initiatives recommended to be taken into consideration for a successful implementation of IPM



# 05 /IPM

seen from the perspective of SUD Objectives  
*(to be published soon !)*

Opportunity for new  
and improved  
production practices

## The 8 POINTS of the Annex recall the adoption of:

- 1 Agronomic measures
- 2 Monitoring
- 3 Threshold levels
- 4 Specificity of application
- 5 Preference for non-chemicals
- 6 If providing satisfactory pest control
- 7 Resistance Management and
- 8 Check of results in relation with the applied measures

# 05 /IPM

seen from the perspective of SUD Objectives  
*(to be published soon !)*

**IPM** requires certain resources for implementation related to **knowledge transfer** and **to production** methods.

**Knowledge transfer =  
OPPORTUNITY FOR DEVELOPMENT**

- > Training
- > Information
- > Research

\* Training is explicitly required by the SUD for the whole complex of measures, but it appears particularly relevant for IPM

# 06 / Indicators and targets for the Sustainable Use Directive

## DEFINING THE PROBLEM:

- > Indicators and Targets need to capture information, **not related to the volume of pesticide** used, but on **impact in reducing the risk** following the implementation of National Action Plans (NAP)
- > Indicators and targets assess performance of NAP
- > Information on risk reduction at European level will be completed with data collected for the future harmonised indicators

Risk Indicator selection and Quantitative Targets to meet Sustainable Use Directive objectives

OPERA guidelines for implementation



## 07 / The approach of the **working group**

In implementing the SUD, it is important to clearly define goals to reduce risk, and then measures to reach these goals.

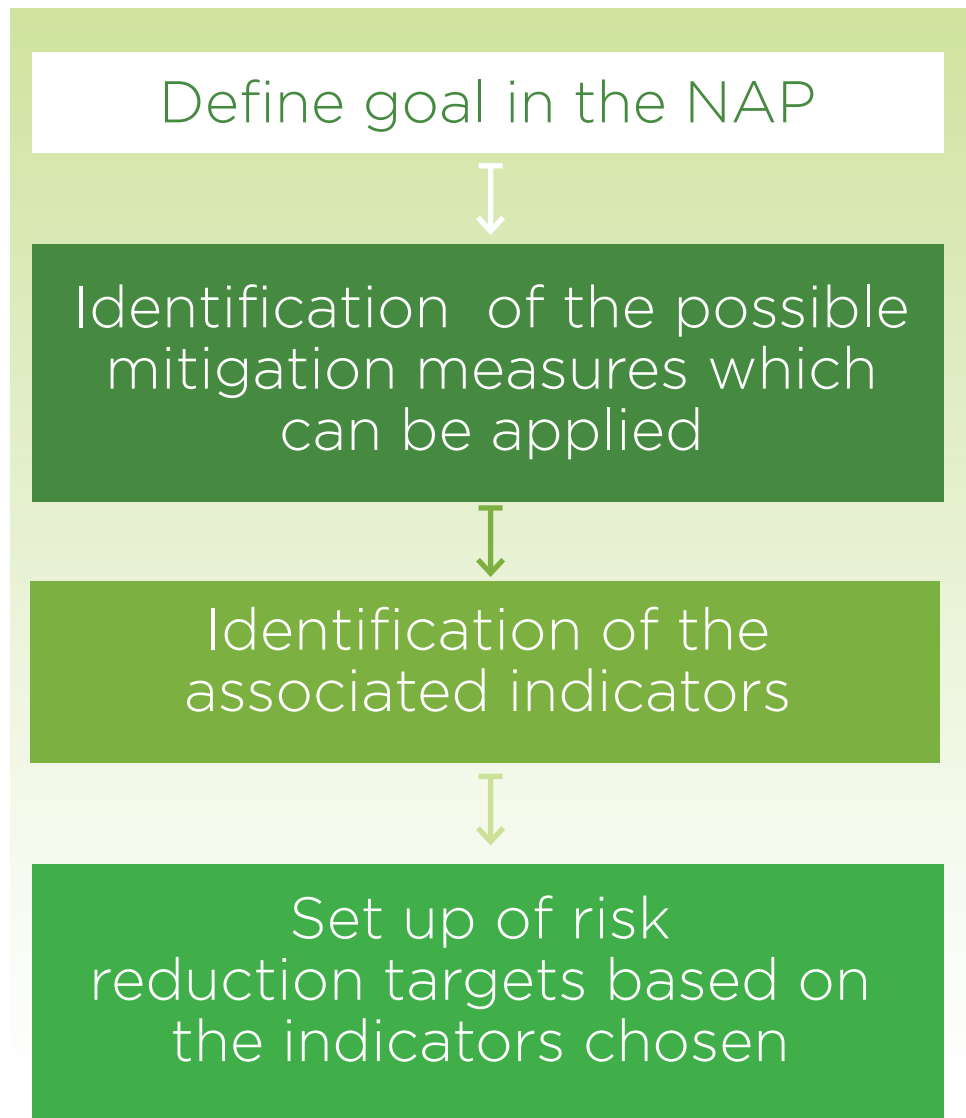
The mitigation measures are linked to the risk indicators selected.

Therefore, risk indicators and mitigating measures - have to be addressed in parallel.



Any set of indicators should reflect a minimum number of **economic, social** and **environmental** aspects.

## 08 / The toolbox stepwise approach



Redefine goals after implementation

Goals should be set in relation to the policy priorities in the MS to address the risks identified prior to the application of the NAP

The targets for each measure shall vary from MS to MS, even if the overall quantitative target of the plan is the same.

## 08 / The toolbox

### Procedure to establish quantitative risk reduction targets:

- > Give benchmark values over time to the indicators selected to monitor risk reduction.
- > Use existing monitoring data for setting the baseline, *such as: the current level of residues in water, number of trained farmers, areas of buffer zones already in place and implementation of best agricultural practices etc.*

The targets suggested in the toolbox are a *hypothetical example* of how MS's may consider achieving a certain level of risk reduction through the measure taken and its corresponding indicator.

## 08 / The toolbox

The **toolbox of practical risk indicators** proposed by OPERA aim to measure the impact of NAP on:

- > Environment - water; soil and biodiversity
- > People - consumers; bystanders and operators
  - > Social issues
  - > Economic costs

A mix of indicators from the four categories it is recommended



# 09 / Conclusion

NEW LEGAL REQUIREMENTS POSE A SERIES OF **CHALLENGES** to:

- > Farmers to adapt their practices
- > Industry to develop new solutions
- > Authorities to implement legal text
- > Food chain to take into account developments

**OPPORTUNITIES** ARE CREATED FOR:

- > Farmers to improve their practices and knowledge
  - > Industry to put in practice their research
- > Authorities to communicate to society risk reduction
  - > Food chain to boost consumer confidence

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The full document is available for download at:  
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