DEVELOPING AN IMPACT ASSESSMENT FRAMEWORK FOR SPECIFIC PROTECTION GOALS FOR NON-TARGET ARTHROPODS

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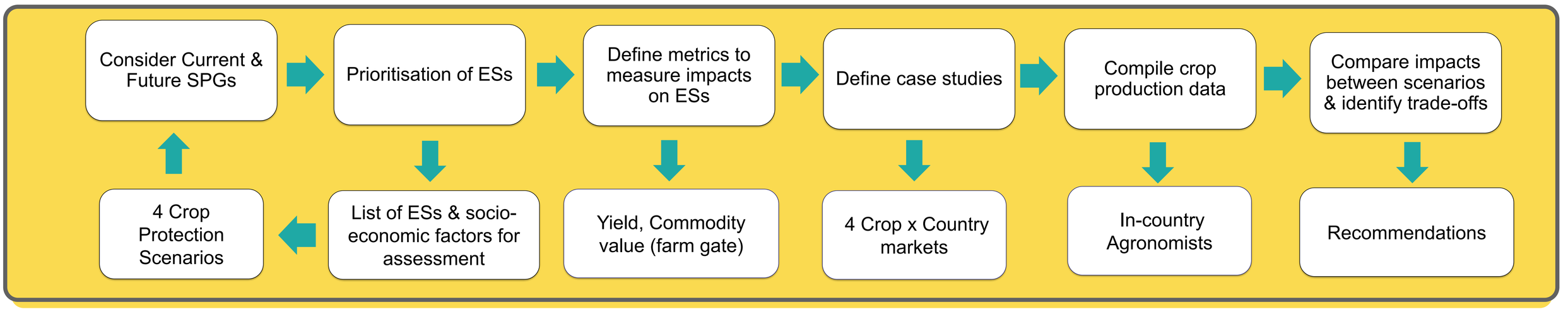
OBJECTIVES

- **To identify the impact of potential new risk assessment approaches on pest control practices via crop management scenarios**
- **Evaluate impact of those changes on environmental & socio-economic factors in the context of ecosystem services (ES) via case studies**



SCENARIOS

- Future SPGs for NTAs currently unknown
- Four scenarios were developed assuming that changes in SPGs for NTAs would result in a more conservative risk assessment scheme that would limit availability & future use patterns of PPPs (insecticides & fungicides)

1 In-field: no change Off-field: no change **Current risk assessment**	In-field: increased protection Off-field: no change **50% reduction in use (rate / risk as per EU Green Deal)** **2**
3 In-field: no change Off-field: increased protection **50% increase in mitigations (e.g. in-field buffers)**	In-field: increased protection Off-field: increased protection **50% reduction in use** **50% increase in mitigations** **4**

ECOSYSTEM SERVICES

- Food (in-field crop production)
- Wild foods
- Raw materials
- Freshwater (SW & GW)
- Soil fertility & erosion prevention
- Pollination services
- Biological Control
- Cultural services (tourism etc.)
- Genetic biodiversity
- Non-crop habitat for wild species

SOCIO-ECONOMIC IMPACTS

- Employment
- Labour costs
- Machinery costs
- Yield

Questions to agronomists & Expert judgement/literature

CASE STUDIES

Selection criteria

- Representative of different geographies
- Crop types (permanent & annual)
- Different cultivation & pest management practices
- Significant contribution to food chain, in terms of production area & value
- Access to agronomic & economic data

Apples Poland | **Vines Italy**

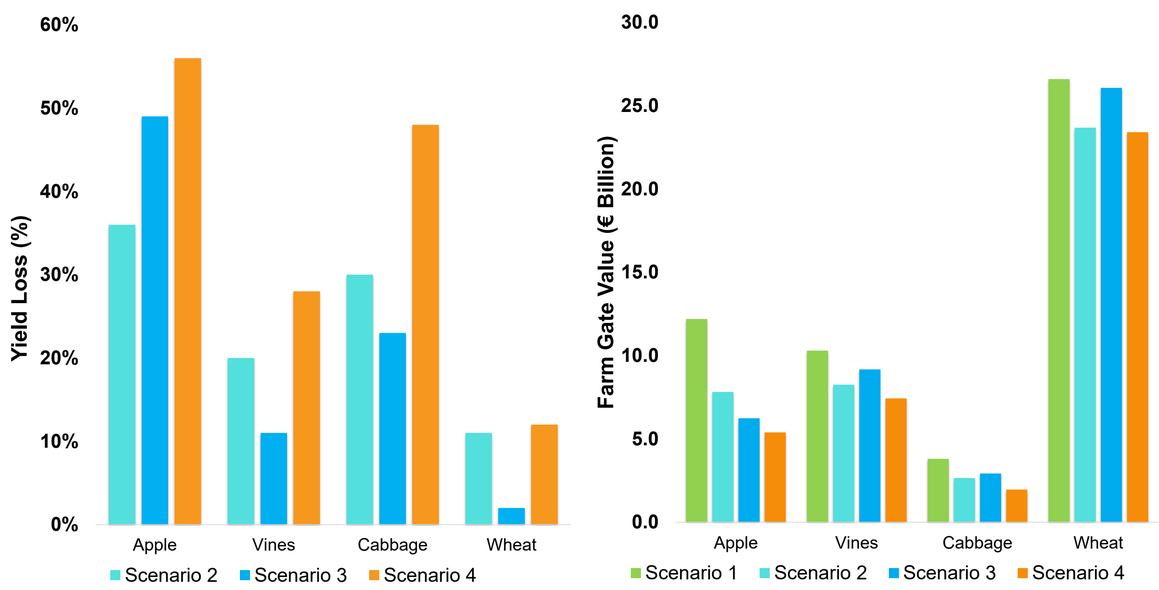
Cabbage NL | **W. Wheat UK**

IMPACT ASSESSMENT

Pest and disease management

Scenario	Change relative to Scenario 1 (i.e. current risk assessment)			
	Apples PO	**Vines IT**	**Cabbages NL**	**Winter Wheat UK**
1. Current risk assessment	Predominantly insecticides Up to 20 fungicide apps depending on biotic pressure conditions	5 insecticide apps 4-10 fungicide apps	3-6 insecticide apps 3-6 fungicide apps IPM strategies	1 insecticide app on 41% of land 1-4 fungicide apps IPM strategies
2. In field – increased protection Off-field – no change	Precision application Increased IPM Switch to annual crops Change in land use	Precision application Increased IPM Abandonment	Precision application Increased IPM	Increased IPM
3. In-field – no change Off-field – increased protection	Reduced in-field app via PA Buffers, SRDT	Reduced in-field app via PA Buffers, SDRT Abandonment	Reduced in-field app via PA Buffers, SRDT	Buffers, SDRT
4. In field & off-field increased protection	Precision application Increased IPM Buffer, SDRT Switch to annual crops Change in land use	Precision application Increased IPM Buffer, SDRT Switch to annual crops Abandonment	Precision application Increased IPM Buffer, SDRT	Increased IPM Buffer, SDRT
IPM Strategies	Monitoring/forecasting (sensors) Economic thresholds Sanitation (weed control) Resistance inducers Biological control	Monitoring/forecasting Economic thresholds Biological controls Canopy pruning Sanitation (weed control) Hand harvesting	Crop rotation Sanitation measures Resistant varieties Planting time Monitoring Collars / nets Biological control	Delayed drilling Management of green bridge between crops Monitoring Min tillage Resistant varieties Intercropping (alternative host)

Yield loss and economic impact



KEY FINDINGS COMPARED TO BASELINE

Economic Impacts

- Labour and machinery costs ↑
- Yields ↓
- Commodity prices ↑
- Employment effects mixed (Labour ↑ but farm viability ↓)

→ **Increased food costs**
Reduced trade
Reduced food security

Environmental Impacts

Reduced PPP inputs generally expected to have positive impact on Ecosystem Services other than food production.

May have unintended negative impacts e.g.: Switch from perennial crops to annual (reduction in soil quality, pollination, biocontrol, wild habitat); increased pest pressure; move from crops to alternative land use e.g. building; compensation of yield losses by increased production outside EU[2].

Citations

1. EFSA, (2025). Adriaanse, P., Arts, G., Lassen, S. B., Chaton, P.-F., Fuerst, M., Ingels, B., Pieper, S., Rundlof, M., Sousa, J. P., Van Eekelen, R., Arena, M., Fait, G., Ippolito, A., Padovani, L., Sharp, R., & Auteri, D. Analysis of the evidence to support the definition of specific protection goals for terrestrial organisms. Part 1: Proposed strategy. EFSA Journal, 23(6), e9501. https://doi.org/10.2903/j.efsa.2025.9501
2. Wesseler, J. (2022). The EU's farm-to-fork strategy: An assessment from the perspective of agricultural economics. Applied Economic Perspectives and Policy44(4): 1826–1843. https://doi.org/10.1002/aepp.13239