



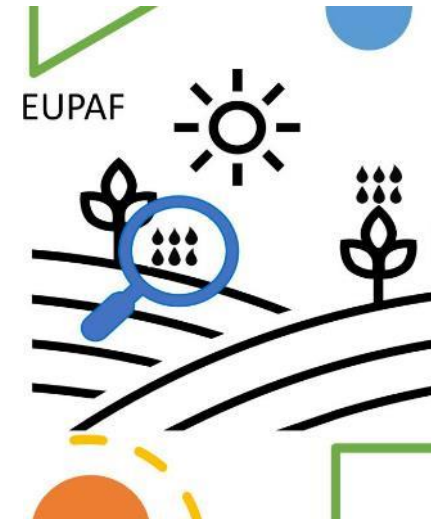
Federal Office of
Consumer Protection
and Food Safety

Initiatives for the consideration of Precision Application in the authorisation of PPP

Dr. Jonas Schartner



- **Introduction**
- **European Precision Application Task Force - EUPAF**
- **Workshop „PPP authorisation 2030“ in Germany**
- **Summary and Outlook**



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Band application in the PPP Authorisation

- Current example is the PPP Conviso One (sugar beet herbicide)
 - Risk mitigation measure NW 720
 - Only band application
 - Maximum of 45 % of the field could be treated
 - Possible reduction is usually not taken into account in risk management
 - Here a spray band width 0.2 m and row distance 0.45 m is assumed
- Potential areas of risk managed:
 - Leakage
 - Runoff
 - Drainage
 - Drift



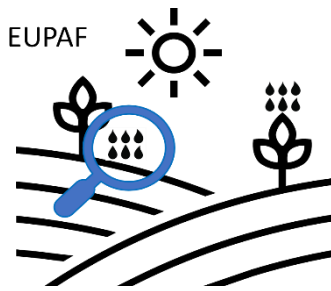
More data are required for a general consideration in the authorisation



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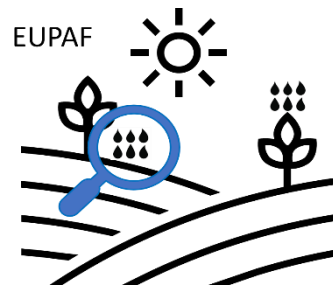
European Precision Application Task Force - EUPAF

Background

- Current **risk assessment** relates to representative uses, and aims to cover **worst case uses**
- **New application technology** is/will get more diverse, and significantly **different to the standard technology currently** evaluated and considered for standard risk assessment.
- Precision application has to be **part of the PPP authorization**.

“Fresenius” WS Digital Agriculture and Precision Farming (February 2023)

1. Recommendation to **create a scientific platform to gather expertise** in precision applications and risk mitigation measures
2. **Engage a dialog between experts in the development of precision application** equipment, farmers, regulatory scientists and risk assessors from both public and private organizations and research organizations
3. Objective: provide the **necessary information to facilitate the recognition** of precision applications of **crop protection solutions in the future**



EUPAF- Workshop Outcome Feb. 2023

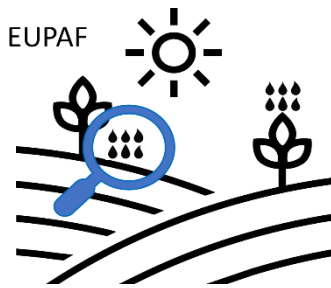
Task 1: inventory of equipment and corresponding aims of treatment (volume and drift)
Can we define rating scales? Performances?
Classes?
Consider 2D and 3D crops



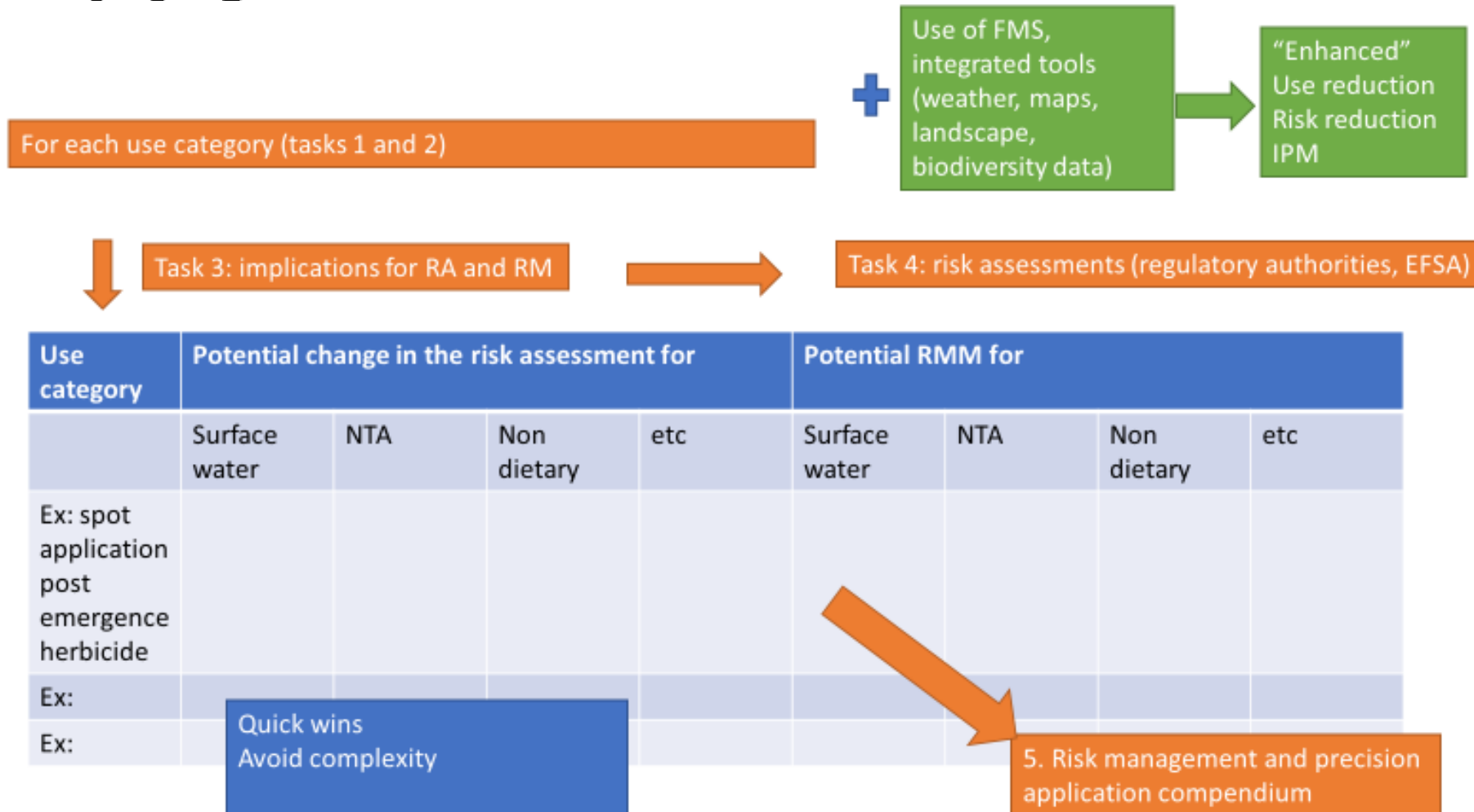
Crop	MS	F, G or I	Pests or groups of pests controlled	Formulation	Application method	Stage	Application rate	Remarks
Cereals Use 1	All	F	Broadleaf weeds	Liquid for low volume application	Precision spray after scouting (ground sprayer) Inward spray only at the edge of the field and risk mitigation measures to reduce spray drift Where scouting indicates	Pre / post emergence	Solution prepared for 0.5 mg/m ² Localized spray enables application on weed spots (> 50% volume reduction)	Spray is driven by confirmed presence of weed, using directed spray.
Task 2: design uses: how they should appear in GAP table: consider expertise of all stakeholders					Where scouting indicates	Pre / post emergence	Solution prepared for 0.5 mg/m ² Ultra localized spray on weeds only (>95% volume reduction)	Spray is driven by confirmed presence of weed, using ultra localized sprayer
					Where scouting indicates	Pre / post emergence	Solution prepared for 0.5 mg/m ² Ultra localized spray on weeds only (>95% volume reduction)	Spray is driven by confirmed presence of weed, using ultra localized sprayer

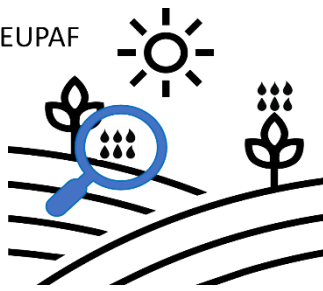
Task 2: design uses: how they should appear in GAP table: consider expertise of all stakeholders

- Aim of treatment
- Area treated (options)
- Product
- Type of equipment (volume and risk reduction classes)
- Biology



EUPAF- Workshop Outcome Feb. 2023





EUPAF - Structure

Steering Committee

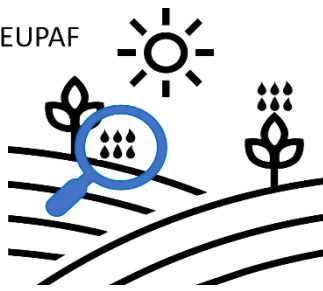
Jonas Schartner (BVL, chair),
Anne Alix (Corteva Agriscience, co-chair),
Bernhard Gottesbüren (make-sense consulting),
Peter Hloben (CEMA),
Corné Kempenaar (BO Akkerbouw),
Patrick Pagani (Copa Cogeca)
Anne Steenbergh (ctgb)

Task group 1
Inventory Chair: Tom
Bals

Task group 2 GAP
Chairs: Alexander
Pfaff and Joachim
Dressel

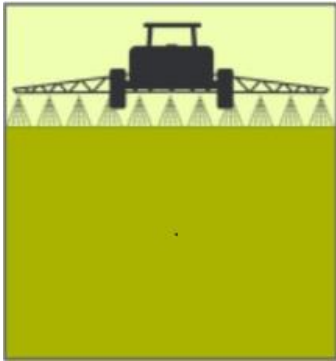
Task Group 3+4 Risk
assessment and
management:
Chair: Rena Isemer,
(tbc)

Task group 5+6
Compendium EU
Not started

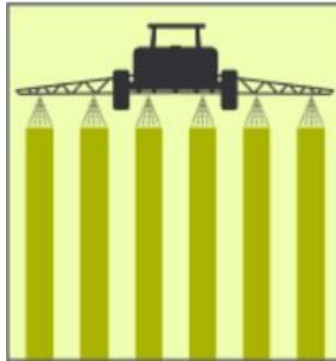


EUPAF - TG 1 Inventory of Equipment

Discussion Paper – Use Categories of PRECISION APPLICATION EQUIPMENT



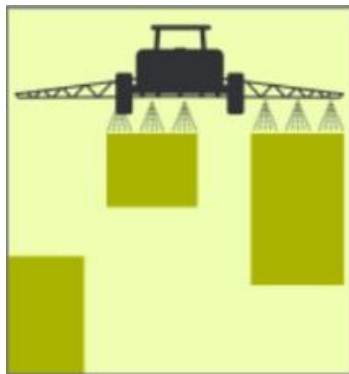
Broadcast



Band



Spot

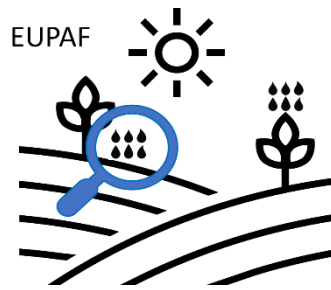


Patch


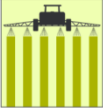







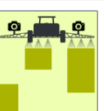
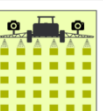
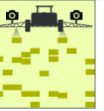

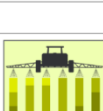
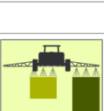
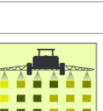



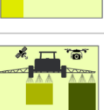
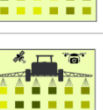

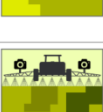
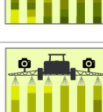

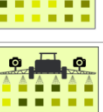
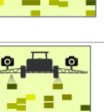
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Inventory

- ▶ Focusing on existing definitions by **ISO** and **EPPO**
- ▶ Existing equipment can be used in many cases **for band and patch applications**
- ▶ **New sprayers** being developed for **spot application**
- ▶ **New technology** developments potentially offer even greater **use reduction opportunities**
- ▶ All these Site Specific Applications can be performed with constant or **Variable Rate Application**.
- ▶ **Broadcast spraying** may remain the application of choice for **insecticides and fungicides** in the near future



GAP – Description of the use categories

Geometry	broadcast	band	patch	regular spot	irregular spot	single plant
pure geometry						
geometry offline						
geometry online						
geometry VRA						
geometry offline VRA						
geometry online VRA						

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Preliminary Results

- ▶ Using „Personas“ approach by looking at the **different perspectives** and needs, e. g. farmers, risk assessor, applicant, risk manager, ...
- ▶ Identification of the different **use categories** in the GAP table (pictograms, keep being updated)
- ▶ Focus on **grouping** similar use cases based on the proposed risk assessment (TG3+4)
- ▶ Development of a **GAP handbook** with detailed information in how to fill the GAP table

Risk assessment and Risk management – four subgroups

Environmental exposure

- ▶ Identify areas where a **conversion factor** for the expected exposure can be used
- ▶ Propose a conversion factor
- ▶ Consider **future developments** and tools that could help including the use in the ERA
- ▶ At the moment only considering vertical spray for 2D crops. 3D crops like bushes and trees and possibly UAVs will be considered later.

Dietary risk assessment

- ▶ Identify uses resulting in a significant different to standard use regarding consumer exposure

Environmental effects and risks

- ▶ Looking at the use categories and the effects on the different Non-target organisms (NTOs), e. g. Birds, Mammals, Aquatic, Pollinators
- ▶ Main questions are:
 - ▶ Will **current ERA** work?
 - ▶ *Can **conversion factor** from current ERA be used?*
 - ▶ *What needs to **change** (e.g. tools, methods, testing, **data**, regulatory framework)?*

Non dietary risk assessment

- ▶ Identify areas where a **conversion factor** for the expected exposure can be used
- ▶ Propose a conversion factor
- ▶ Consider **future developments** and tools that could help including the use in the RA



Workshop “PPP authorisation 2030”

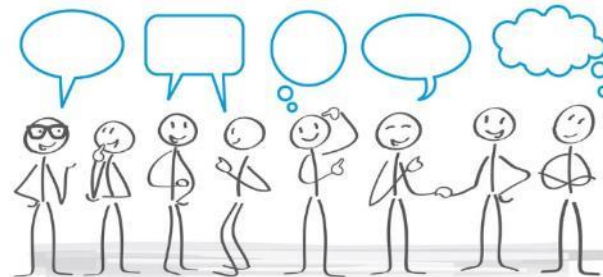
About the project

Objectives

- ▶ Discuss future challenges and potentials for optimisation
- ▶ Provide recommendations for authorities and policy makers

Duration

- ▶ 2022 – 2024



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Participants

- ▶ National ministries of agriculture and environment
- ▶ Regulatory authority and risk assessment bodies
- ▶ Authorities for control and advice
- ▶ Associations of agrochemical industry and biocontrol manufacturers
- ▶ Associations of organic farming
- ▶ Environmental NGOs
- ▶ Regional councils of water management



National Activities

- ▶ Working groups e. g. on **new application techniques** (WG3) and on the **risk management** (WG4)
- ▶ Results propose the **consideration** of precision application (spot, patch, band) in the **GAP**
- ▶ In principle the reduced amount of PPP on the field (e. g. 50% of the field) could also be **regulated** by a **risk mitigation measure** (RMM)
- ▶ Provide **machine-readable data** in **legally** secure form
- ▶ Initiate **further research projects** to identify and close data gaps and also (further) develop the risk assessment.
- ▶ Develop a concept for the establishment of a catalogue of measures (“**Toolbox**”) for risk mitigation
 - Example is the specific german regulation „**Altes Land**”



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Further measures to reduce the risk in fruit cultivation via a toolbox approach

- Local **fruit-growing area** in water-rich areas of Hamburg and Lower Saxony
- Creation/maintenance of a **hedge** between water body and application area = 50% risk reduction
- Regulation of the **water depth** 0.9 meter = 70% risk reduction
- Use of a **tunnel sprayer** with a drift reduction of 90% or 95%, results in a risk reduction 90% or 95% respectively
- Creation/maintenance of a **refugial water bodies** = 50% risk reduction



Kula 2018



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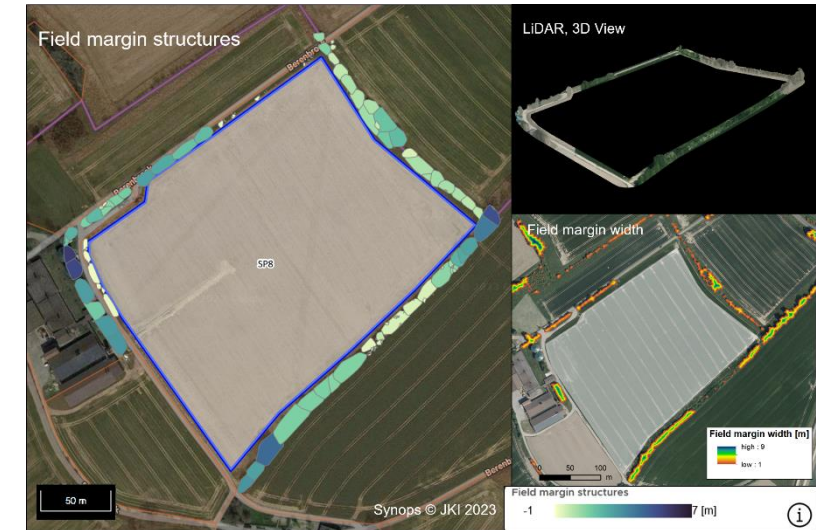
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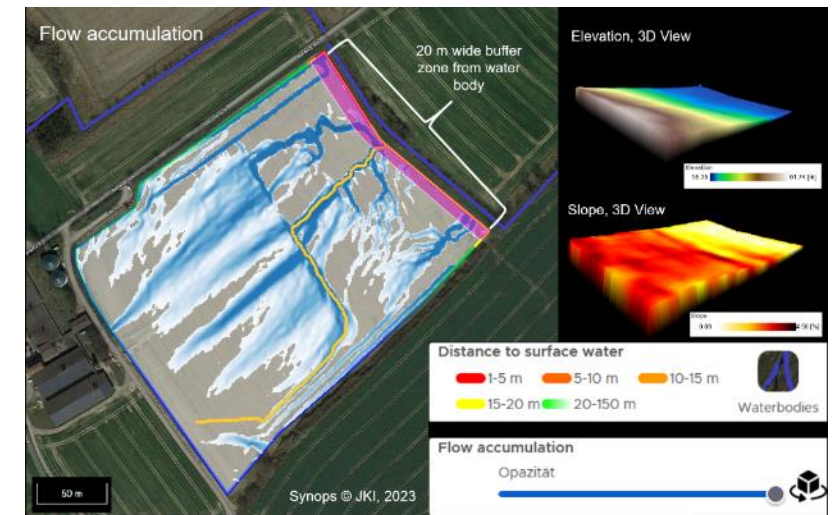
Development of risk management with digital tools

- Considerations of **improved** techniques (e.g. drift reduction class 95%)
- By using **SYNOPS WEB** in combination with **LiDAR**-based information on **landscape elements**, **field margins** or **water embankments** can be resolved and **help farmers to protect** these structures.
- To provide **GIS data** on preferential flows in the treated areas to optimise the **location of vegetated buffer strips**.

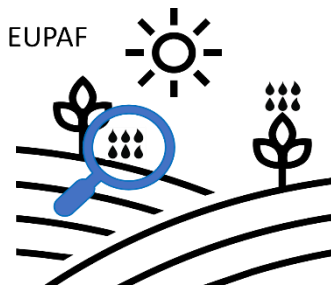
➔ **Quality standards by authorities** needed for digital support tools which could be officially referenced in RMM documentation



Source: JKI



Source: JKI



Next steps

- **Document** containing **input from all groups**, including examples of Precision Application categories
- **GAP handbook** including glossary
- New working group on trees and bushes
- New working group on drone (UAV) applications
- Link to **AGROS II project** (WUR)
- Link to new E-Link workshop

Future communications

- **First milestone Fresenius conference 10 & 11 April 2024 in Düsseldorf, Germany**
- Monthly newsletter
- SETAC session on precision applications at 2024 annual meeting in Seville, Spain
- Fresenius conference on environmental risk assessment, June 2024, Germany



- We have to meet manifold challenges providing sufficient plant protection in the future
- Therefore we have to adapt the authorisation processes to the new conditions
- Digital tools may pave the way for a more regional risk management
- The national Workshop “PPP authorisation 2030” provided many proposals for future developments, that needs to be considered in the next step



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Thank you for your attention!

Disclaimer: Please note that I am primarily here to represent EUPAF and not the position of the BVL. At the BVL there are ongoing discussions on those topics.

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