

Guide for farmers' interview

Survey #2

The objective of survey#2 is to produce quantitative data on IPMWORKS' IPM-based strategies, about pesticide use and impact, and cost-efficiency. To compute indicators, we need a comprehensive detailed description of technical crop management.

Outputs of Survey#2 should feed:

- Farmers' discussion within hubs, based on benchmarking
- The IPMWORKS project communication
- Specific communication towards Policy makers, who have high expectations for IPMWORKS. We have to convince them that IPMWORKS is useful and should be maintained and expanded. We need quantitative results for this.

Hub coaches are in charge of collecting data for Survey#2.

The deadline for completing the survey is December 31, 2023

AGROSYST is an information system to be used for collecting data required for IPMWORKS' survey #2. The interface will help you to describe farming practices (and a rough description of the farming context) and will compute technical indicators (TFIs, input costs, margins, etc.).

AGROSYST describes cropping systems. You are asked to choose and describe at least **one** cropping system (a rotation), for each farm in your Hub (the most representative, or the nicest IPM strategy). Describe one cropping season (year), either 2022 or 2023 (or eventually a synthesis of both years if you wish).

As a reminder: a crop year is the interval between the last harvest of year n-1 and the last harvest of year n.

Minimal data needs for AGROSYST completion are listed below, to help you ask the good questions to farmers:

THE FARM

IPMWORKS farm number

ex : ES15AF0012

What type of farm? *Commercial farm, Experimental farm, School farm*

In IPMWORKS, should be always 'Commercial farm'!

Type of management? *Conventional, organic*

Description of the livestock, when relevant: *type & numbers of animals*

Soil descriptions (main soil of the farm): texture, depth, stoniness

Non-mandatory data: maximum slope, distance to a watercourse, hydromorphy, limestone, organic matter...

Equipment pool

For this section, a rough description of equipment is enough (approximate power of tractors, approximate width of tools...). However, a description as precise as possible of PPP spraying equipment might be relevant.

4 categories

Tractor	<i>e.g.: Tractor, 120 hp</i>
Self-propelled	<i>e.g.: Combine harvester, 6 m cutting width</i>
Tools	<i>e.g.: 3 m rotary harrow; 15 m³ slurry spreader</i>
Irrigation	<i>e.g.: Pivot-ramp, 190m boom</i>
Tool combinations:	make a note of the tool combinations used for each type of intervention.

Is the tool shared or not with other farmers? Are some interventions done by a subcontractor? (In case of subcontracting, the equipment used still should be known)

CROP MANAGEMENT

The rotation / nature of crops

Crops

Species? Varieties? Eventually intercropping (mixtures of species, mixtures of cultivars)?

Cover crops (species)

The rotation

Describe the rotation *when relevant/possible, of course not in orchards or vineyards*

If the rotation is too complex, at least take note of the proportion of each crop in the system

Crop management for each term of the rotation

Ask and describe all interventions, from the harvest of the previous crop (*e.g. including interventions related to cover crops: sowing, crushing...*).

Tillage

Date?

What type ? *ploughing, hoeing, harrowing, subsoiling, etc. + mechanical weeding*

Depth in cm

Number of paths?

Tools/Combination of tools *including tractor*

Sowing

Date?

Which type (*classic, precision, direct, planting...*)

Type of seed (*certified, farm-saved, both...*)

Seed coating (*chemical, biological inoculation*)

Quantity sown? *Kg/ha or seeds/ha*

Sowing depth in cm

Tools/Combination of tools *including tractor*

Mineral fertilisation

Date(s)?

Type of fertiliser? *Urea, potassium fertilizer, sulphur ...*

Composition *N, P, K...*

Form? *liquid, granulated...*

Application rate (with unit)

Tools/Combination of tools *including tractor*

Organic fertilisation

Date(s)?

Type of product? *Solid/liquid manure...*

Composition *N, P, K...*

Application rate (with unit)

Tools/Combination of tools *including tractor*

Irrigation

Date(s)?

Average amount of water supplied (in mm)

If ferti-irrigation, amount of N applied (kg/ha)

PPP treatments

Date(s)?

Proportion of area treated (%)? */!\ this proportion might be below 100% if (i) not all the fields of a given crop are treated (spatial frequency), (ii) part only of each field is treated (spatial frequency, e.g. treatment against slugs on field margins only, or patch spraying on perennial weeds), (iii) all the fields are treated, but the treatments are located on rows only, or between rows only (band spraying), or (iv) a combination of several preceeding options. Take note of these !!*

Type of product *herbicide, fungicide, insecticide, etc.*

Trade name

Application rate (with unit)

Tools/Combination of tools *including tractor*

Average spray volume per hectare

Biocontrol and non-registered products

Date(s)?

Proportion of area treated (%)?

Type of product *macro-organisms, chemical mediators, others...*

Name?

Application rate (with unit)

Tools/Combination of tools *including tractor*

Harvest

Date?

Type *grain, roots, silage, baling, grazing...*

Yields? */!\ the unit in AGROSYST is deciton/ha!*

If it is a mixture of species/varieties you can specify the yield of each species/variety, if you can access the information.

Tools/Combination of tools *Combine harvester, ...*

Maintenance/ Vineyard and orchard pruning:

Date?

What type *pre-pruning, leaf removal, trellising, etc.*

Tools/Combination of tools

Other interventions:

Date?

type ? *transplanting, covering, protection, grafting, potting, etc.*

Type of small equipment used and its characteristics (*tarpaulin, traps, pots...*)

Tools/Combination of tools *including tractor*

List of secondary information (not mandatory, not so important)

- Age, motivation of farmer
- GPS location
- Labour forces, human resources
- Prices (inputs and harvested products)
- Plots

Next pages: Template for taking notes of relevant data for survey#2

Farm description

Farm ID		Conventional / Organic	
Livestock			
Type of animals		Number	
Soil(s)	Soil 1	Soil 2	Soil 3
texture			
depth			
stoniness			
organic matter			
limestone			
slope			
hydromorphy			
Comments			
Equipment			
Tractor(s) <i>[power]</i>			
Self-propelled <i>[type, width]</i>			
Tools <i>[type, width]</i>			
Irrigation <i>[type, size]</i>			

Tool combinations:	
Type of intervention <i>what type?</i>	> Tractors, Tools
• Soil tillage 1	>
• Soil tillage 2	>
• Soil tillage 3	>
• Sowing 1	>
• Sowing 2	>
• Fertiliser 1	>
• Fertiliser 2	>
• PPP spraying	>
• Mechanical weeding	>
• Irrigation	>
• Harvest 1	>
• Harvest 2	>

Average
spray volume L/ha

Crops	Specie(s)	Cultivar(s)	Mixture of species	Mixture of cultivars
Crop 1			<input type="checkbox"/>	<input type="checkbox"/>
Crop 2			<input type="checkbox"/>	<input type="checkbox"/>
Crop 3			<input type="checkbox"/>	<input type="checkbox"/>
Crop 4			<input type="checkbox"/>	<input type="checkbox"/>
Crop 5			<input type="checkbox"/>	<input type="checkbox"/>
Crop 6			<input type="checkbox"/>	<input type="checkbox"/>
Crop 7			<input type="checkbox"/>	<input type="checkbox"/>

Crop rotation

Comments

don't forget the unit !

Other relevant information

Crop management crop 1			Species :
Type of intervention	date	Dose	Combination of tools
Soil tillage			
Cover crop			
Sowing			
Fertilisation			
PPPs			
Harvest Yield (with unit!)			

Crop management crop 2			Species :
Type of intervention	date	Dose	Combination of tools
Soil tillage			
Cover crop			
Sowing			
Fertilisation			
PPPs			
Harvest Yield (with unit!)			

Crop management crop 3			Species :
Type of intervention	date	Dose	Combination of tools
Soil tillage			
Cover crop			
Sowing			
Fertilisation			
PPPs			
Harvest Yield (with unit!)			

Crop management crop 4			Species :
Type of intervention	date	Dose	Combination of tools
Soil tillage			
Cover crop			
Sowing			
Fertilisation			
PPPs			
Harvest Yield (with unit!)			

Crop management crop 5			Species :
Type of intervention	date	Dose	Combination of tools
Soil tillage			
Cover crop			
Sowing			
Fertilisation			
PPPs			
Harvest Yield (with unit!)			

Crop management crop 6			Species :
Type of intervention	date	Dose	Combination of tools
Soil tillage			
Cover crop			
Sowing			
Fertilisation			
PPPs			
Harvest Yield (with unit!)			

Crop management crop 7			Species :
Type of intervention	date	Dose	Combination of tools
Soil tillage			
Cover crop			
Sowing			
Fertilisation			
PPPs			
Harvest Yield (with unit!)			

Other relevant information