NIVA

NEW IACS VISION IN ACTION

KPIs and Innovation Management

This project has received funding from the european union's horizon 2020 research and innovation programme under grant agreement no. 842009

Key Performance Indicators (KPIs)

Tomaso Ceccarelli WUR

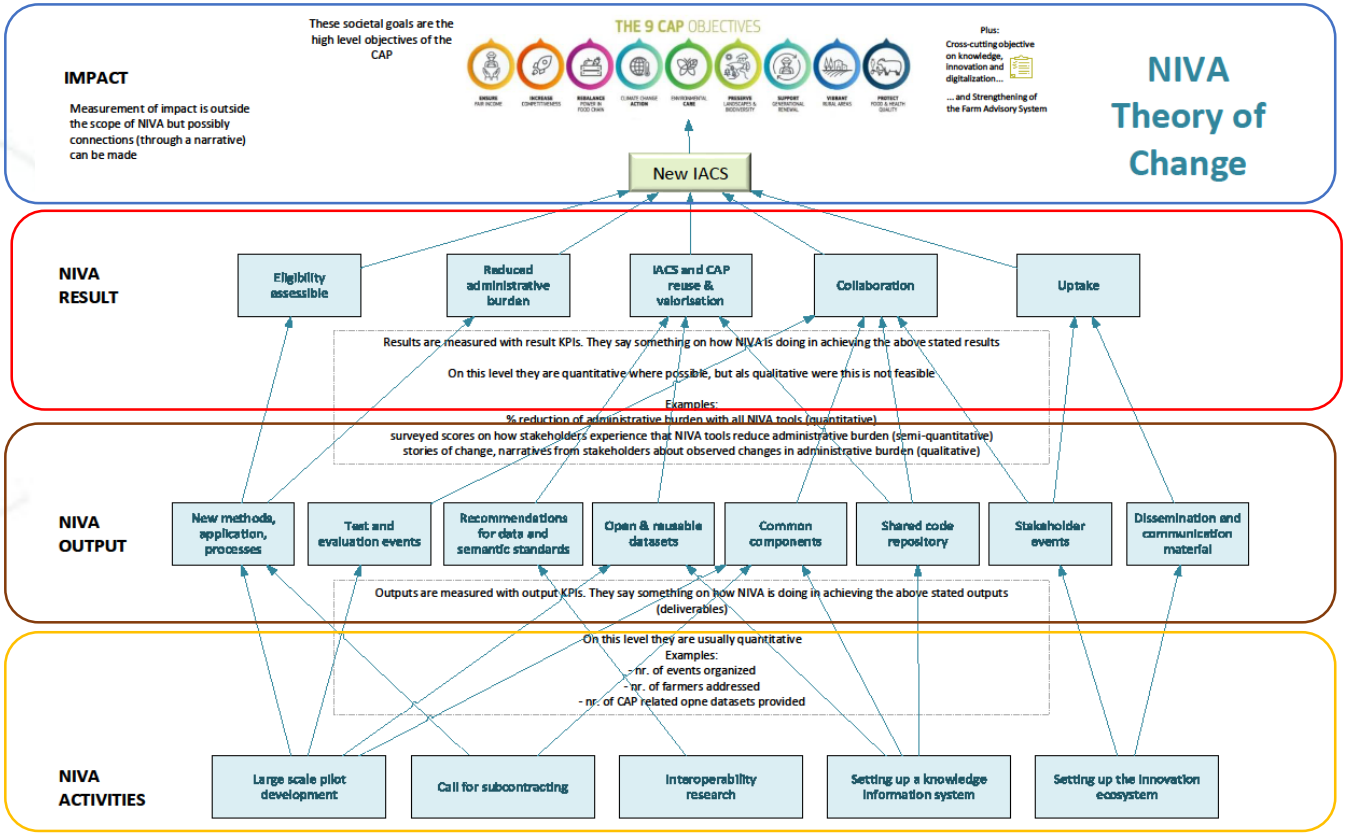
Key Performance Indicators (KPIs)

- Revised Theory of Change (ToC) for NIVA at project level
- KPI register (for WP2 use cases and other WPs)
- Use case (or WP) level ToC and KPIs
- Connection with Innovation Management

- More inputs on KPIs from UC 4b - Machine data

Revised Theory of Change (ToC) for NIVA

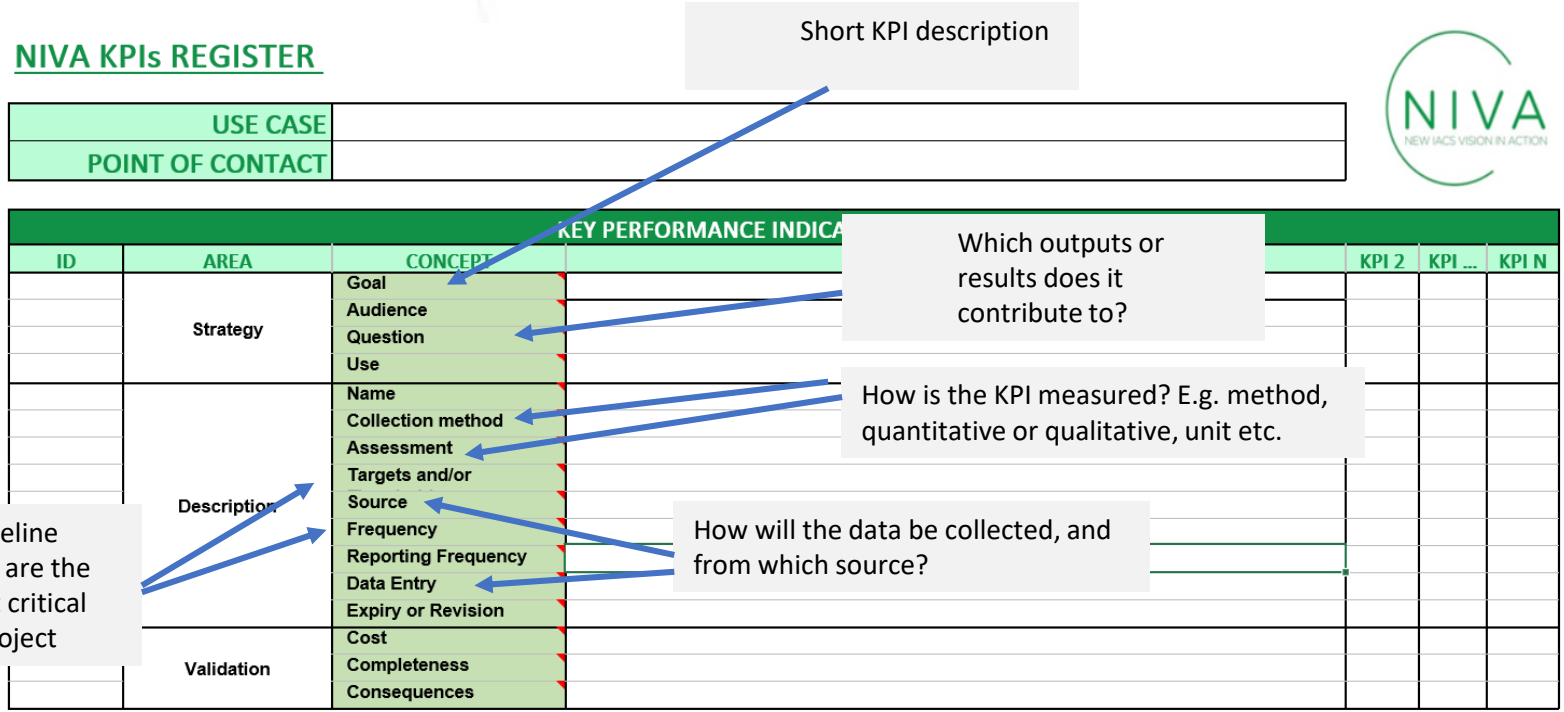
Project level



Result KPIs

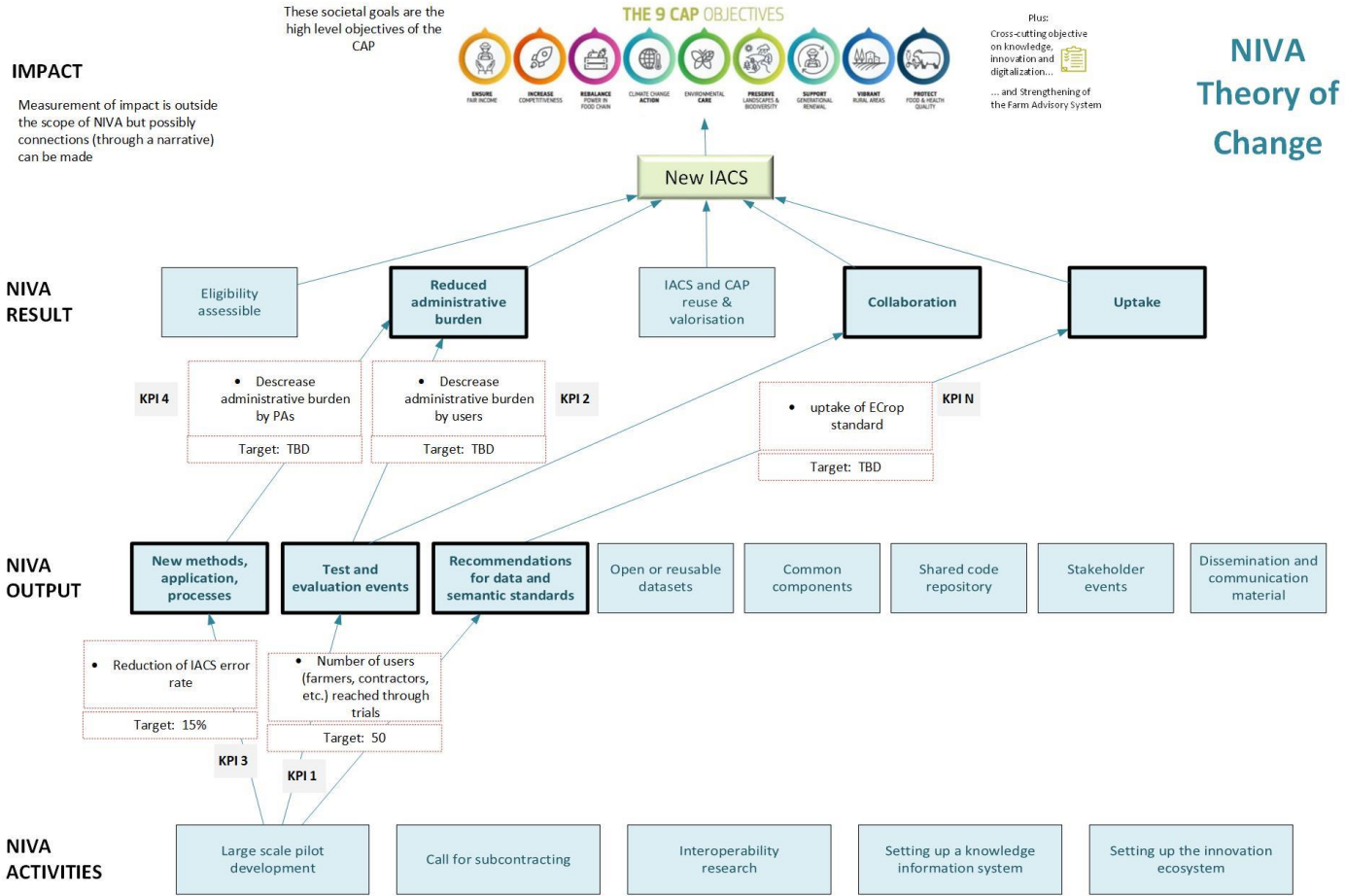
Output KPIs

KPI register (for WP2 use cases and other WPs)



UC (or WP) level ToC and KPIs

Use case level



Connection with Innovation Management

As it will be presented later,

Innovation management keeps track of how NIVA achieves innovation through its work.

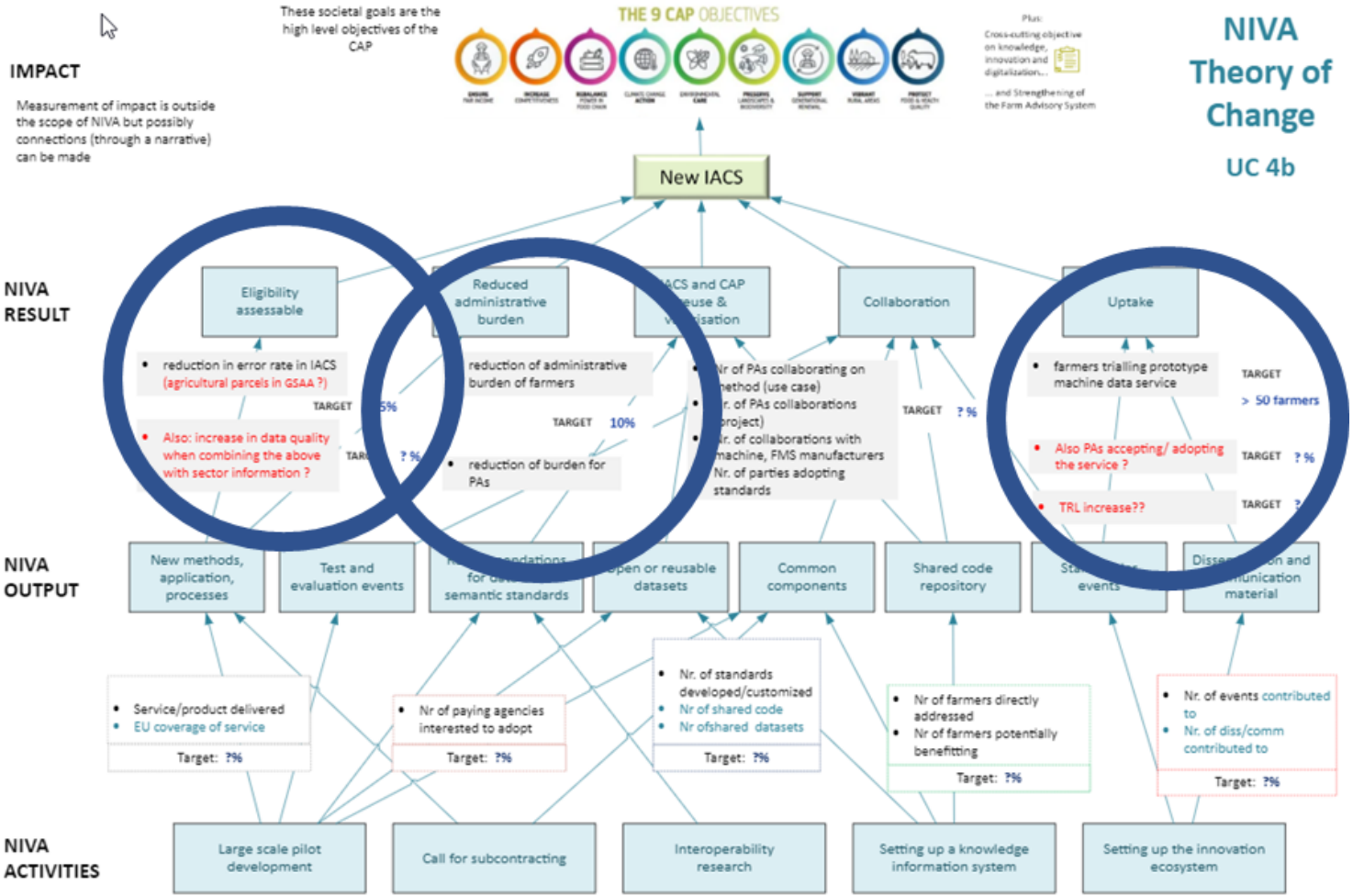
Innovation management is one way of assuring that the longer-term KPIs (results), that are dependent on adoption and uptake of NIVA outputs, are reached

More inputs on KPIs from UC 4b - Machine data

Peter Paree - ZLTO

NIVA Theory of Change

UC 4b

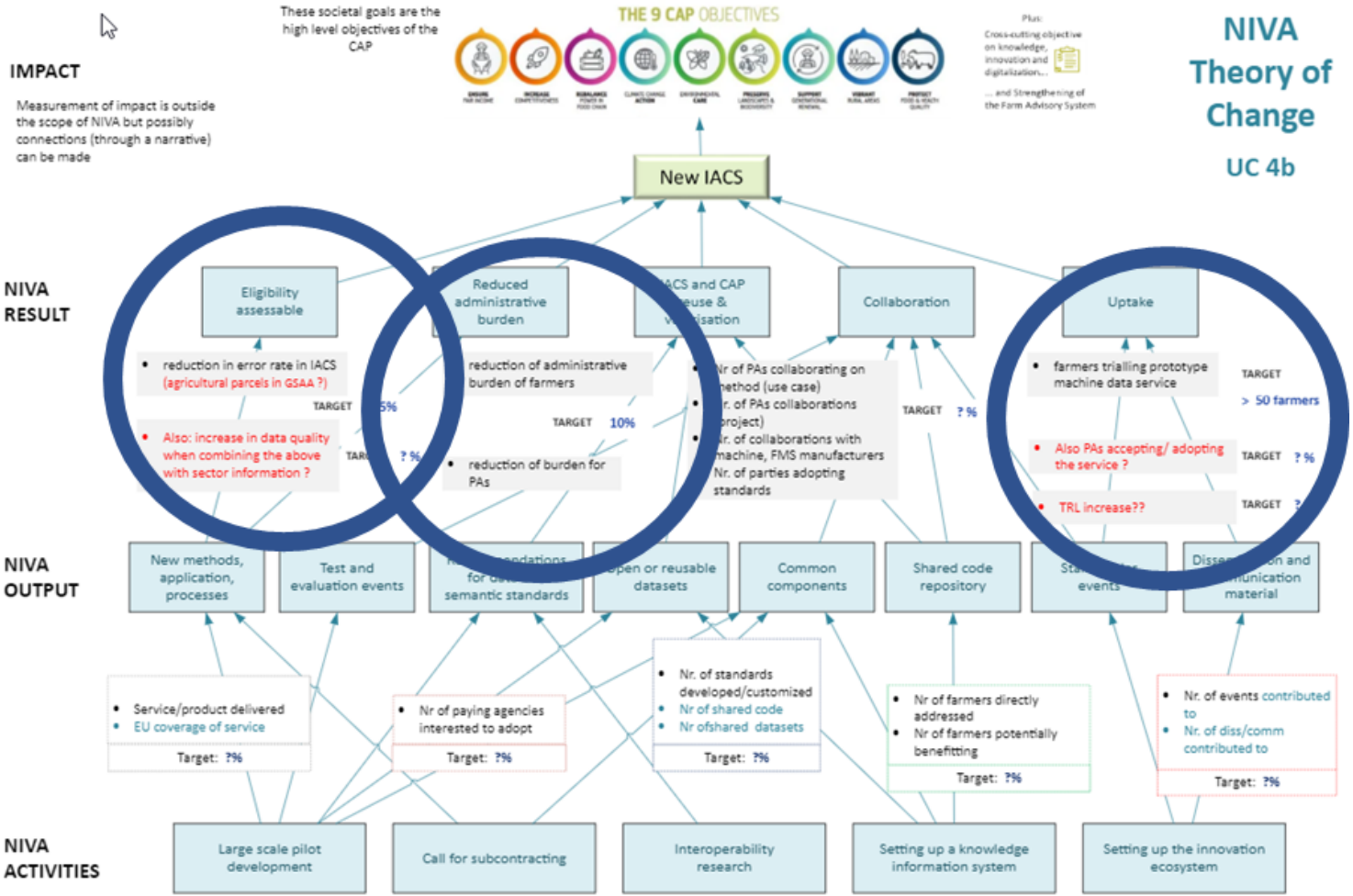


All processes assessed

- reduction error rate IACS
- Reduction admin burden farmers
- Uptake by farmers

NIVA Theory of Change

UC 4b



All processes assessed

- **reduction error rate IACS**
  15%
- **Reduction admin burden farmers**
  10%
- **Uptake by farmers**
  50

Easy start:

copy paste!

3KPIs is fine

KEY PERFORMANCE INDICATORS REGISTER

CONCEPT	KPI 1	KPI 2	KPI 3	KPI N
Goal	Measure the number of farmers reached through trials	Decrease the percieved administrative burden by 10%, by farmers/users	Reduction of IACS error rate by 15%	uptake of ECrop
Audience	Farmers (especially the ones that use PA kind of machines)	Farmers that use the automatic data exchange; farmers that visit a demo/introduction, their employees, contractors, etc		(3 KPIs is enough)
Question	How well did we do our pilot testing and evaluation? (output indicator	In a score of 1-5, "give the admin burden that you percieved with existing and new practice", and open question: "why?"		
Use	directly: To show successful stakeholder participation in UC4b trials indirectly: To contribute to aggregated KPIs on the project level: the stakeholder participation over all UCs,	Improve the tools to survey IACS data, so that farmers are more motivated to use them		
Name	Nr of farmers trialing prototype machine data service	Reduced Admin Burden		
Collection method	Counting the nr of farmers participating in the trials	inventory, during one of the NPPL or other PL meetings (early majority)		
Assessment	Quantitative assessment, using somekind of attendance list to capture	qualitative assessment, opinion on a scale + additional remarks		
Targets and/or Thresholds	50	reduction on question : "burden existing practice" - "burden new practice" >1/2: = 10% of 5	15% reduction in error rate, e.g. measured in decrease of nr of field visits	
Source	The participant attendance lists	after application (how is real life practice)in MVP1: 1 farmer MVP2 3 farmers in a demo (is the story convincing?) in MVP1: 0 farmer MVP2 50 farmers: farmer in Raalte/ 3 farmers communities (Mechan:1, ZLTO:2)		
Frequency	trials for now take place during two trial periods (single and multi-member state level	once per MVP, in demo (during NPPL, etc)		
Report Frequency	After every trial period (2 times within the project)	After every trial period (2 times within the project)		
Data Entry	use case 4b lead (may appoint a representative)	advisor/farmer (interview on paper or mentimeter)		
Expiry/Revision	??			
Cost	minimal	minimal		
Completeness	This captures the KPI 100%	percieved burden, not neccesarily measurable in time reduction		
Consequences	??	if no reduction, solve reasons/ unconveniencies; The result will be included in an article to convince other farmers that using this application makes it easier to fulfil the obligatory admin; to assess the effectiveness of our application Also pay attention to the apprecition of early warning, when the dataset is not sufficient for control, or later when mistakes are found		

How to measure decrease of administrative burden?

perceived burden # stopwatch

chosen: inventory opinion on scale 1-5

10% reduction = 10%*5= 0,5

So if ‘with tool’ scale is 0,5 lower than ‘without tool’, innovation is success

CONCEPT	KPI 1	KPI 2	
Goal	Measure the number of farmers reached through trials	Decrease the percieved administrative burden by 10%, by farmers/users	Reduction of IAC
Audience	Farmers (especially the ones that use PA kind of machines)	Farmers that use the automatic data exchange; farmers that visit a demo/introduction, their employees, contractors, etc	
Question	How well did we do our pilot testing and evaluation? (output indicator	In a score of 1-5, "give the admin burden that you percieved with existing and new practice", and open question: "why?"	
Use	directly: To show successful stakeholder participation in UC4b trials indirectly: To contribute to aggregated KPIs on the project level: the stakeholder participation over all UCs,	Improve the tools to survey IACS data, so that farmers are more motivated to use them	
Name	Nr of farmers trialing prototype machine data service	Reduced Admin Burden	
Collection method	Counting the nr of farmers participating in the trials	inventory, during one of the NPPL or other PL meetings (early majority)	
Assessment	Quantitative assessment, using somekind of attendance list to capture	qualitative assessment, opinion on a scale + additional remarks	
Targets and/or Thresholds	50	reduction on question : "burden existing practice" - "burden new practice" >1/2: = 10% of 5	15% reduction in nr of field visits
Source	The participant attendance lists	after application (how is real life practice)in MVP1: 1 farmer MVP2 3 farmers in a demo (is the story convincing?) in MVP1: 0 farmer MVP2 50 farmers: farmer in Raalte/ 3 farmers communities (Mechan:1, ZLTO:2)	
Frequency	trials for now take place during two trial periods (single and multi-member state level	once per MVP, in demo (during NPPL, etc)	
Report Frequency	After every trial period (2 times within the project)	After every trial period (2 times within the project)	
Data Entry	use case 4b lead (may appoint a representative)	advisor/farmer (interview on paper or mentimeter)	
Expiry/Revision	??		
Cost	minimal	minimal	
Completeness	This captures the KPI 100%	percieved burden, not neccesarily measurable in time reduction	
Consequences	??	if no reduction, solve reasons/ unconveniencies; The result will be included in an article to convince other farmers that using this application makes it easier to fulfil the obligatory admin; to assess the effectiveness of our application Also pay attention to the apprecition of early warning, when the dataset is not sufficient for control, or later when mistakes are found	

Also think of:

What if expectations are NOT realized

→ discussion

→ define action

CONCEPT	KPI 1	KPI 2	KPI 3
Goal	Measure the number of farmers reached through trials	Decrease the percieved administrative burden by 10%, by farmers/users	Reduction of IACS error rate by 15%
Audience	Farmers (especially the ones that use PA kind of machines)	Farmers that use the automatic data exchange; farmers that visit a demo/introduction, their employees, contractors, etc	
Question	How well did we do our pilot testing and evaluation? (output indicator	In a score of 1-5, "give the admin burden that you percieved with existing and new practice", and open question: "why?"	
Use	directly: To show successful stakeholder participation in UC4b trials indirectly: To contribute to aggregated KPIs on the project level: the stakeholder participation over all UCs,	Improve the tools to survey IACS data, so that farmers are more motivated to use them	
Name	Nr of farmers trialing prototype machine data service	Reduced Admin Burden	
Collection method	Counting the nr of farmers participating in the trials	inventory, during one of the NPPL or other PL meetings (early majority)	
Assessment	Quantitative assessment, using somekind of attendance list to capture	qualitative assessment, opinion on a scale + additional remarks	
Targets and/or Thresholds	50	reduction on question : "burden existing practice" - "burden new practice" >1/2: = 10% of 5	15% reduction in error rate, e.g. measured in decrease of nr of field visits
Source	The participant attendance lists	after application (how is real life practice)in MVP1: 1 farmer MVP2 3 farmers in a demo (is the story convincing?) in MVP1: 0 farmer MVP2 50 farmers: farmer in Raalte/ 3 farmers communities (Mechan:1, ZLTO:2)	
Frequency	trials for now take place during two trial periods (single and multi-member state level	once per MVP, in demo (during NPPL, etc)	
Report Frequency	After every trial period (2 times within the project)	After every trial period (2 times within the project)	
Data Entry	use case 4b lead (may appoint a representative)	advisor/farmer (interview on paper or mentimeter)	
Expiry/Revision	??		
Cost	minimal	minimal	
Completeness	This captures the KPI 100%	percieved burden, not neccesarily measurable in time reduction	
Consequences	??	if no reduction, solve reasons/ unconveniencies; The result will be included in an article to convince other farmers that using this application makes it easier to fulfil the obligatory admin; to assess the effectiveness of our application Also pay attention to the appreciton of early warning, when the dataset is not sufficient for control, or later when mistakes are found	

Also think of:

What if expectations are NOT realized

→ discussion

→ define action

CONCEPT	KPI 1	KPI 2	KPI 3
Goal	Measure the number of farmers reached through trials	Decrease the percieved administrative burden by 10%, by farmers/users	Reduction of IACS error rate by 15%
Audience	Farmers (especially the ones that use PA kind of machines)	Farmers that use the automatic data exchange; farmers that visit a demo/introduction, their employees, contractors, etc	
Question	How well did we do our pilot testing and evaluation? (output indicator	In a score of 1-5, "give the admin burden that you percieved with existing and new practice", and open question: "why?"	
Use	directly: To show successful stakeholder participation in UC4b trials indirectly: To contribute to aggregated KPIs on the project level: the stakeholder participation over all UCs,	Improve the tools to survey IACS data, so that farmers are more motivated to use them	
Name	Nr of farmers trialing prototype machine data service	Reduced Admin Burden	
Collection method	Counting the nr of farmers participating in the trials	inventory, during one of the NPPL or other PL meetings (early majority)	
Assessment	Quantitative assessment, using somekind of attendance list to capture	qualitative assessment, opinion on a scale + additional remarks	
Targets and/or Thresholds	50	reduction on question : "burden existing practice" - "burden new practice" >1/2: = 10% of 5	15% reduction in error rate, e.g. measured in decrease of nr of field visits
Source	The participant attendance lists	after application (how is real life practice)in MVP1: 1 farmer MVP2 3 farmers in a demo (is the story convincing?) in MVP1: 0 farmer MVP2 50 farmers: farmer in Raalte/ 3 farmers communities (Mechan:1, ZLTO:2)	
Frequency	trials for now take place during two trial periods (single and multi-member state level	once per MVP, in demo (during NPPL, etc)	
Report Frequency	After every trial period (2 times within the project)	After every trial period (2 times within the project)	
Data Entry	use case 4b lead (may appoint a representative)	advisor/farmer (interview on paper or mentimeter)	
Expiry/Revision	??		
Cost	minimal	minimal	
Completeness	This captures the KPI 100%	percieved burden, not neccesarily measurable in time reduction	
Consequences	??	if no reduction, solve reasons/ unconveniencies; The result will be included in an article to convince other farmers that using this application makes it easier to fulfil the obligatory admin; to assess the effectiveness of our application Also pay attention to the appreciton of early warning, when the dataset is not sufficient for control, or later when mistakes are found	

Next question: what is reduction of error rate:

→ specific action, or
→ costs, in scenario!
F.i. field visits = 60% of costs

80/20 rule

KEY PERFORMANCE INDICATORS REGISTER			
CONCEPT	KPI 1	KPI 2	KPI 3
Goal	Measure the number of farmers reached through trials	Decrease the percieved administrative burden by 10%, by farmers/users	Reduction of IACS error rate by 15%
Audience	Farmers (especially the ones that use PA kind of machines)	Farmers that use the automatic data exchange; farmers that visit a demo/introduction, their employees, contractors, etc	PAs: employees responsible for control
Question	How well did we do our pilot testing and evaluation? (output indicator	In a score of 1-5, "give the admin burden that you percieved with existing and new practice", and open question: "why?"	Do farm machines yield more reliable data than current data acquisition (satelite data and farmers registration)?
Use	directly: To show successful stakeholder participation in UC4b trials indirectly: To contribute to aggregated KPIs on the project level: the stakeholder participation over all UCs, KPI for	Improve the tools to survey IACS data, so that farmers are more motivated to use them	To contribute to reduced administrative burden for PAs (more reliable data means less errors that need to be handled)
Name	Nr of farmers trialing prototype machine data service	Reduced Admin Burden	Error reduction rate in IACS
Collection method	Counting the nr of farmers participating in the trials	inventory, during one of the NPPL or other PL meetings (early majority)	An expert team makes a comparison of collected farm machine data and current IACS data (timestamps, parcels, sowing seed)
Assessment	Quantitative assessment, using somekind of attendance list to capture it	qualitative assessment, opinion on a scale + additional remarks	Expert scenario comparison (old scenario versus new scenario), e.g. difference in timestamps from machine versus as registrated by farmer
Targets and/or Thresholds	50	reduction on question : "burden existing practice" - "burden new practice" >1/2: = 10% of 5	15% reduction in error rate, e.g. measured in decrease of nr of field visits
Source	The participant attendance lists	after application (how is real life practice)in MVP1: 1 farmer MVP2 3 farmers in a demo (is the story convincing?) in MVP1: 0 farmer MVP2 50 farmers: farmer in Raalte/ 3 farmers communities (Mechan group:1, ZLTO:2)	IACS data & data from farm machines of participating farmers; error rates in administratieve processes, scenario about impact of different errors
Frequency	trials for now take place during two trial periods (single and multi-member state level	once per MVP, in demo (during NPPL, etc)	trials for now take place during two trial periods (single and multi-member state level. (not sure if this KPI can be measured in the multi-member state trial)
Reporting Frequency	After every trial period (2 times within the project)	After every trial period (2 times within the project)	After every trial period
Data Entry	use case 4b lead (may appoint a representative)	advisor/farmer (interview on paper or mentimeter)	Expert team
Expiry or Revision	??		
Cost	minimal	minimal	Costs for the expert team
Completeness	This captures the KPI 100%	percieved burden, not neccesarily measurable in time reduction	Estimation of the decrease in controlling steps, not the actual reduction
Consequences	??	if no reduction, solve reasons/ unconveniencies; The result will be included in an article to convince other farmers that using this application makes it easier to fulfil the obligatory admin; to assess the effectiveness of our application Also pay attention to the apprecition of early warning, when the dataset is not sufficient for control, or later when mistakes are found	If the error rate does not decrease, the machine data may still be of benefit, e.g. by giving early warnings. + possibility to communicate results to other PAs

More inputs from UC 4b

- What do we mean with:
  - Uptake: number of farmers reached
  - Reduced burden for farmers (and other users): perceived burden (on scale)
  - Reduced administrative burden /error rate for PAs: less of most costly actions
- How do we measure ?
  - Farmers reached : attendance lists
  - Reduced error rate of IACS: number of field visits
  - Reduced administrative burden for farmers : through poll + some interviews
- At what level do we measure ?
  - Quantitative assessment: farmers reached: output level
  - Qualitative assessment: reduced administrative burden for farmers
- What is the baseline/benchmark ?

Innovation Management

Rob Lokers WUR

Jesus Estrada TRAGSA

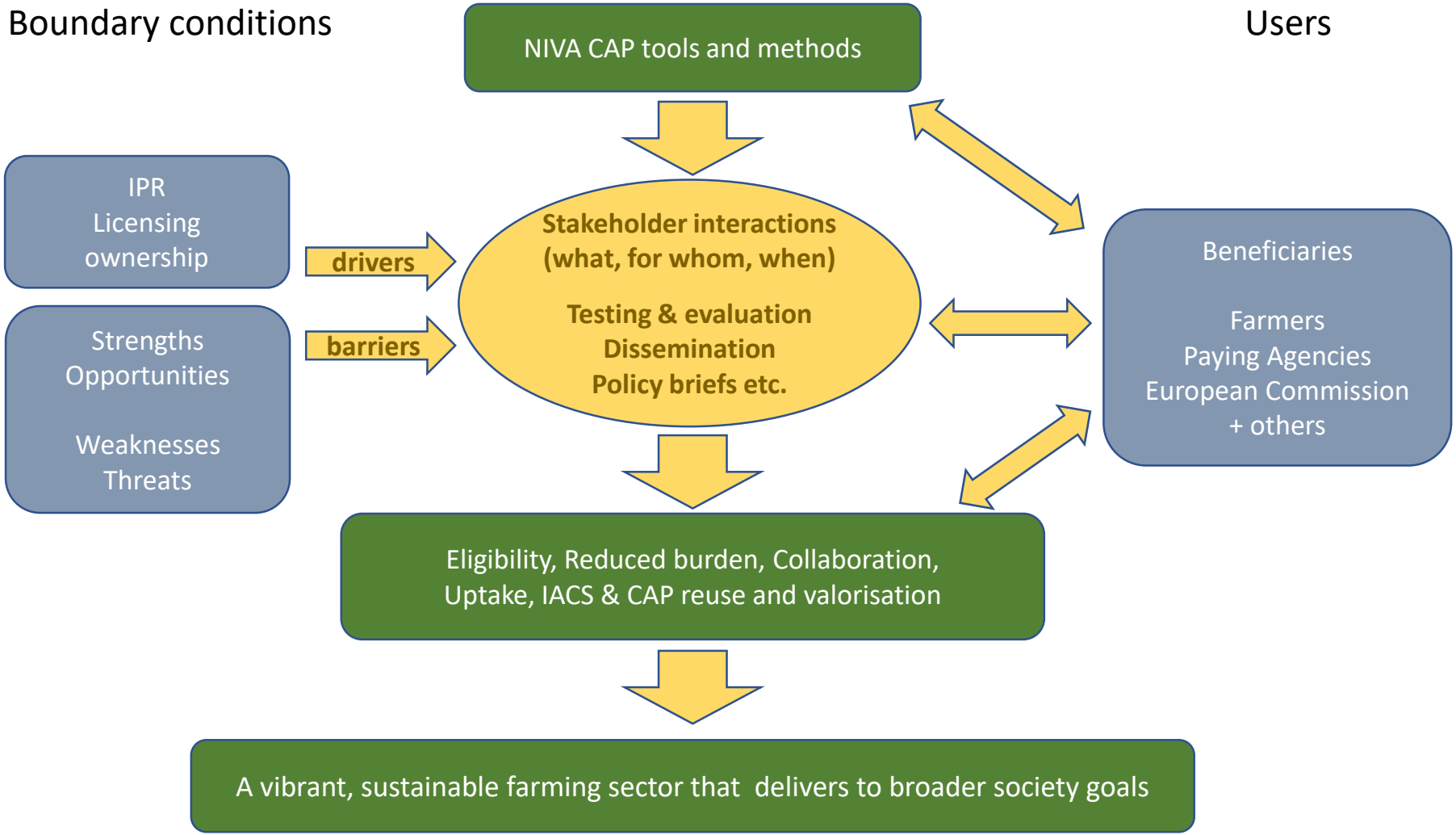
Innovation Management

Innovation = ***The process of creating something new that contributes to better quality of life***

- *NIVA develops methods and tools to support the CAP (ToC - output)*
- *NIVA promotes and encourages uptake of their tools by stakeholders, leading to adoption and practical use (ToC – result)*
- *Stakeholders apply NIVA tools and methods, which leads to better implementation of the CAP objectives (ToC - impact)*

Innovation management: monitors and controls the process towards innovation

However, many actions are to be performed by the NIVA WPs!


Boundary conditions
Users
NIVA CAP tools and methods
IPR
Licensing
ownership
Strengths
Opportunities
Weaknesses
Threats
drivers
barriers
Stakeholder interactions
(what, for whom, when)
Testing & evaluation
Dissemination
Policy briefs etc.
Beneficiaries
Farmers
Paying Agencies
European Commission
+ others
Eligibility, Reduced burden, Collaboration,
Uptake, IACS & CAP reuse and valorisation
A vibrant, sustainable farming sector that delivers to broader society goals

Key issues for achieving innovation

- Understanding what your stakeholders need
- Understanding “the environment” and how it influences your goals
- Delivering high-quality, fit-for-purpose products
- Stakeholder interaction
- Stakeholder engagement
- Encouraging user uptake
- Promoting use
- Monitoring, learning and improving
- ...and managing this process

Creating an overview of innovation activities

- Describe your products
  - What are you developing?
  - What are the conditions of use: IPR & Ownership
  - SWOT (strengths, weaknesses, opportunities, threats)
- Describe the users and other stakeholders for your product, and how they benefit from it
- Describe what you will do to encourage adoption and achieve uptake
  - What?
  - By whom, where, when?
  - For which stakeholders / potential users
  - How will the activity contribute to the NIVA KPIs

Example – Use Case 3

Output	
Short description:	FEGA (Spanish CAP Coordinating Body) Farm Registry • Agreed Farm Registry Data Model for agricultural areas • Unique Farm identification code across Europe • Consultation and information updating interfaces (web services) • Data flow among agencies and interfaces
Ownership / IPR model:	• Software: under EUPL license • Used data standards: Ecrop Data Model, JRC LPIS Data Model
Strengths:	• Based on previous datasets • Well known development technology • Links between FEGA and TRAGSATEC (responsible for the development) well defined: collaboration for more than 20 years
Weaknesses:	• Interoperability might still be a problem • Lack of consensus on the data model across Europe • KPI is just 5% of the whole surface of Spain • Final Aim of the registry not yet defined
Opportunities:	• Allows reduction of administrative burden • Central access to several datasets • Unified European data model for crops and farms • Centralized analysis for Agro-Environmental performance
Threats:	• Definition of partially agreed models: some secondary fields. Not so much important agreements across Europe • NIVA Data model not used after project lifetime

Example – Use Case 3

Beneficiaries	
Beneficiary	**How do they benefit?**
Farmers	Reduced administrative burden. Information accessible in just one point.
Paying agencies	Better knowledge of the whole state of Farms. Centralized access to information.
European Commission	Centralized access to information. Possibility to define agro-environmental indicators.

Activity – Testing with Spanish PAs and other foreign PAs			
Goal	Install and test the registry with a selected number of farmers and one paying agency. Share the data model and the registry with other Pas.		
Short description	First final version of the data model by the end of M12 (May 2020) Query and update interfaces designed by the end of M12 (May 2020) Data model, query and update interfaces: deliverable by M18 (Nov 2020) Testing in 2021		
Responsible party	FEGA (Roberto Rodriguez) TRAGSATEC (Mercedes Forteza) TRAGSA (Mariano Navarro)		
Contributing parties	Use case partners		
Where	Spain	When	2021
Target stakeholder 1	Farmers	Targeted nr.	TBD
Target stakeholder 2	Paying Agencies	Targeted nr.	3-4
KPI 1	Farms registered	Contribution	5%
KPI 2	Number of tools-interfaces provided	Contribution	2

Next steps

- All use cases and WPs to think about KPIs and Innovation Management
  - Note that many use cases have already provided first drafts according to the KPI template
- WP1/2 will contact all remaining use cases and WPs (May 2020)
- Together we will finalize the following
  - A use case and WP specific set of realistic and measurable indicators (May 2020)
  - A use case and WP specific set of actions to support CAP innovation (May 2020)
  - A harmonized set of KPIs for the whole NIVA project (June 2020)
  - A realistic procedure to monitor KPIs and assess progress of the project (June 2020)
  - An overview of the activities that the project will perform throughout the project to achieve its innovation targets (July 2020)

Next steps

- Performance monitoring will be executed as part of the WP2 work
  - Objectives:
    - to measure the NIVA KPIs throughout the project
    - To report on results and anomalies, and advise on mitigations
  - Process will be part of deliverable D2.6 "Monitoring & Benchmarking"
  - Measuring and monitoring indicators
  - Data to be collected by all use cases and WPs
- Innovation management will be executed as part of the WP1 work
  - Objectives
    - to assure that activities are organized and aligned to maximize NIVA uptake
  - Process will be described in deliverable D1.2 "Risk and Innovation Management Plan"
  - The required activities will be performed in the different WPs
    - strong role for WP2 (e.g. testing and evaluation with stakeholders in MS)
    - strong role for WP5 (stakeholder platform, dissemination and stakeholder interactions)

NIVA
NEW IACS VISION IN ACTION

THANK YOU

This project has received funding from the european union's horizon 2020 research and innovation programme under grant agreement no. 842009