03/12/2019

Wallonie agriculture SPW

25th MARS conference

26-28 November 2019 – Prague, Czech Republic

CbM Pilot experience in Wallonia (Belgium) and future prospects

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Service public de Wallonie agriculture ressources naturelles environnement

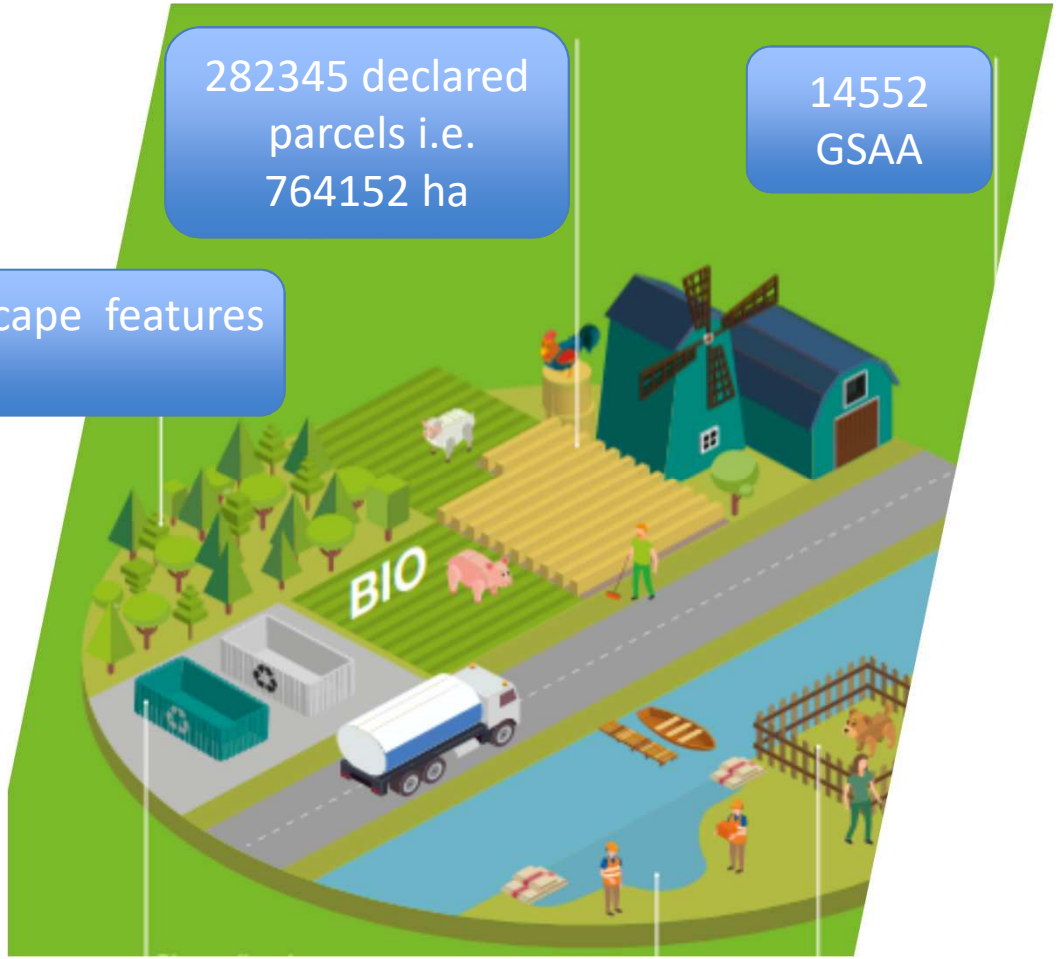
Overview

- PA Wallonia – some figures
- Monitoring – Stepwise approach
  - Automation Pilot 2019
  - Geotagging Pilot 2019
- Implementation strategy

282345 declared parcels i.e. 764152 ha

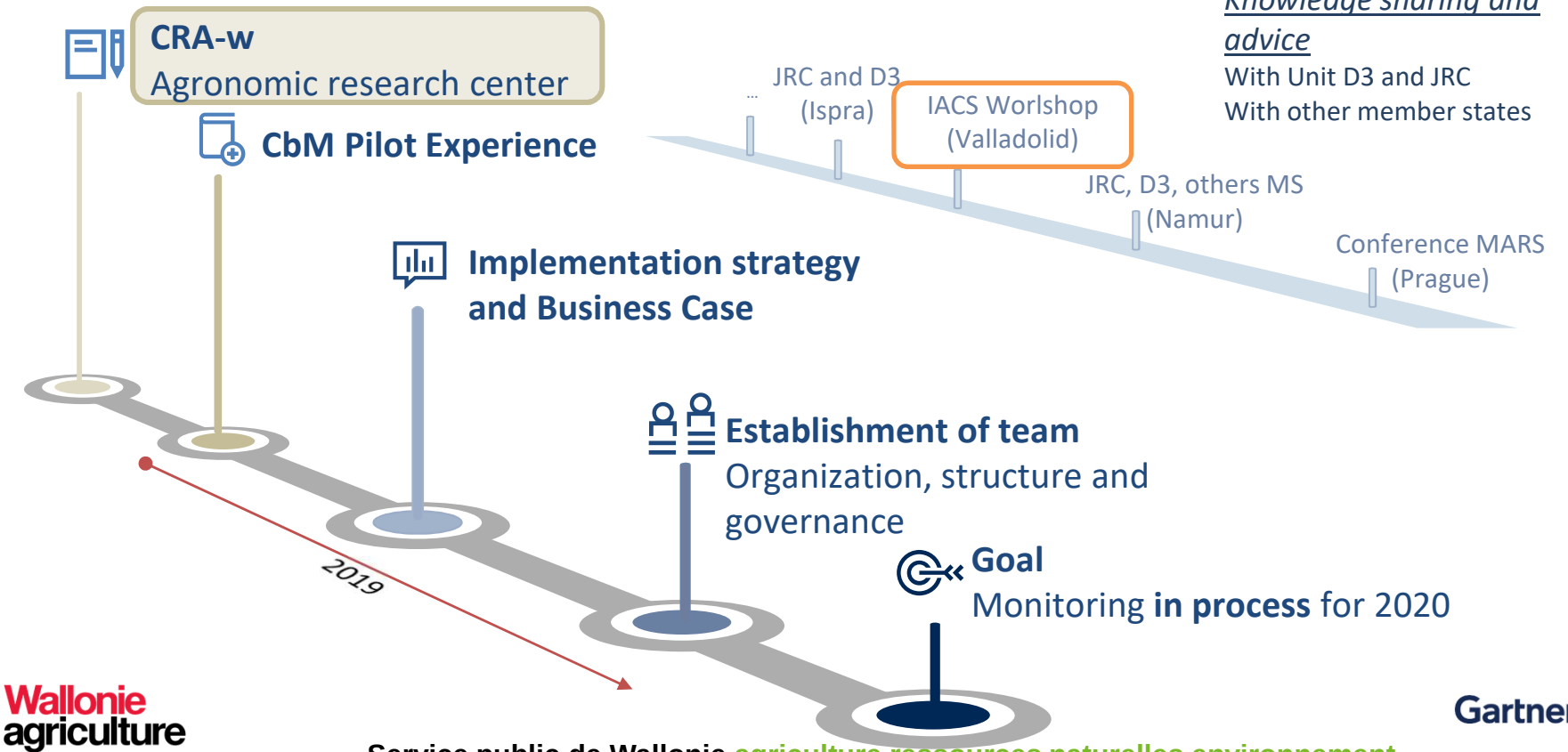
14552 GSAA

Landscape features



Wallonia

Monitoring – Stepwise approach



Knowledge sharing and advice

With Unit D3 and JRC

With other member states

Since 2017, a scientific approach

Targets :

- Crop identification
- Change detection
- Land use activities detection (key dates …)

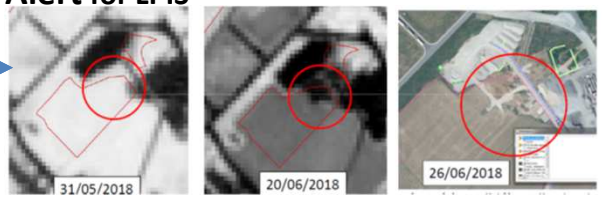
Data : S1 and S2 available, LPIS and GSAA

Methods:

- Parcel homogeneity analysis (S1 and S2 data). Integrated as alerts in the GSAA for the farmers and in the LPIS for Administration.
- Crop classification for 40 crop groups
- Aerial photos and field visits for validation

Heterogeneite detection on a parcel

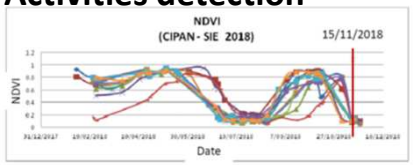
Alert for LPIS



Integration in GSAA

Field visits

Activities detection



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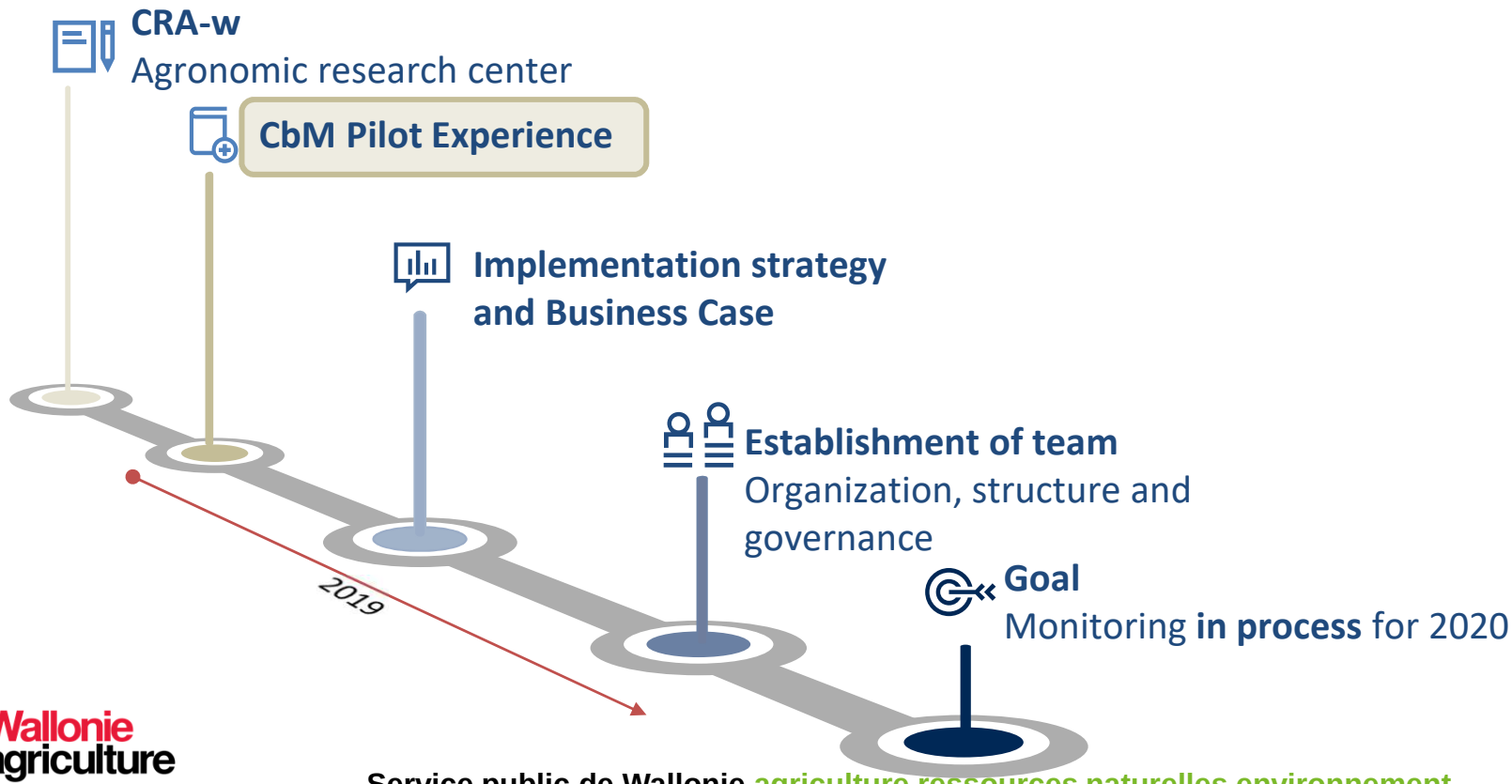
Source: Présentation du CRA-W

Monitoring – Stepwise approach



CbM Pilot experience

Input

Technology

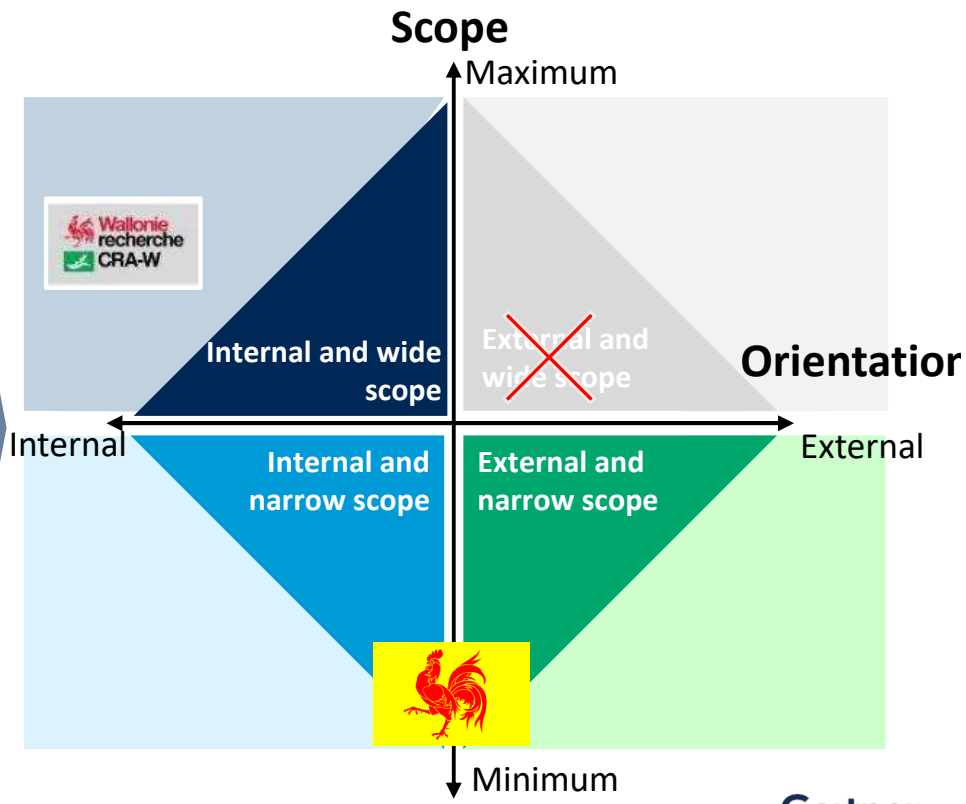
- Major technological trends on the Market
- Focus on relevant technologies for the Monitoring

Bench marking

- Analysis of the main « Vendors » (~15) in terms of Monitoring
- Study on their position, on their value proposal…

Member States

- Contact with other MS officially in Monitoring
- Interview on their approach, their feedback…



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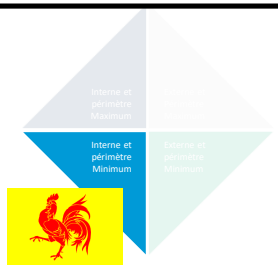
CbM Pilot experience : 3 scenarii

A

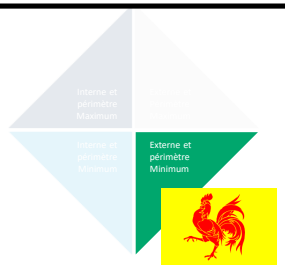
Conceptual Pilot

Pilot Experience



B

Automation Pilot

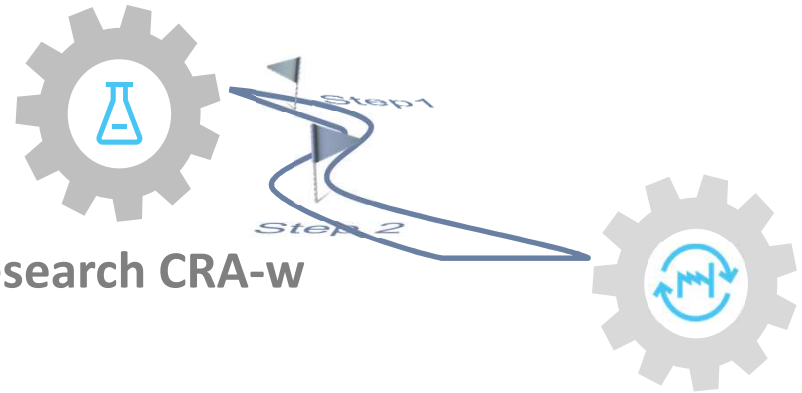


C

Geotagging Pilot

Automation pilot

Automation Pilot

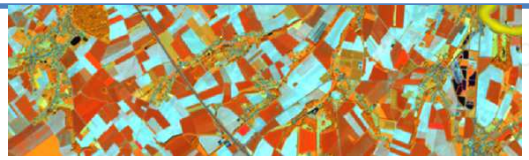


Research CRA-w

Monitoring in process

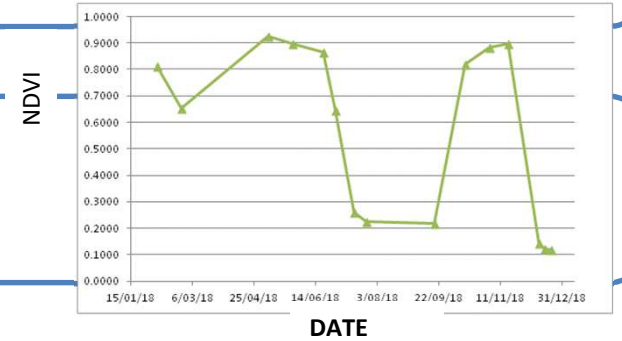
Sentinel images

- Images processing
- Indexes extraction



Index

- Time series of data
- NDVI, coherence…



Marker

- Marker types for schemes

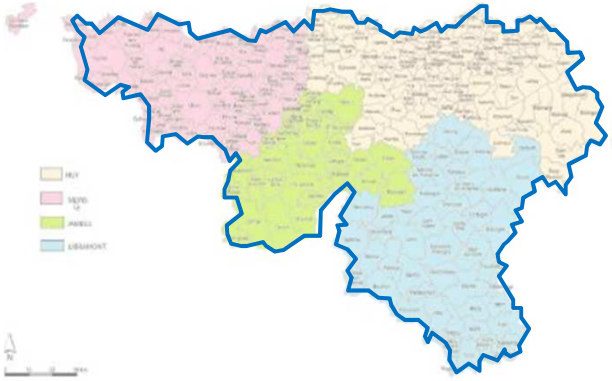
Traffic lights

- Green light : compliant parcel
- Red light : non compliant parcel
- Yellow light : non conclusive parcel => follow-up

Automation Pilot

Automation Pilot

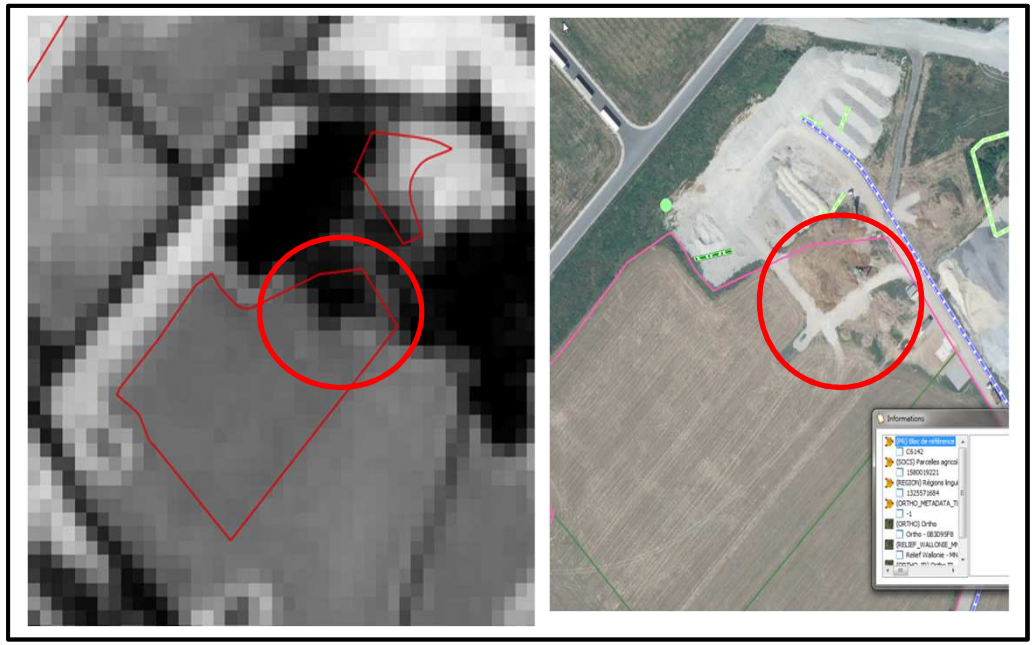
- All the steps from image acquisition to traffic light generation
- The whole Walloon territory
- Based on Internal IT developments
- CRA-w algorithms

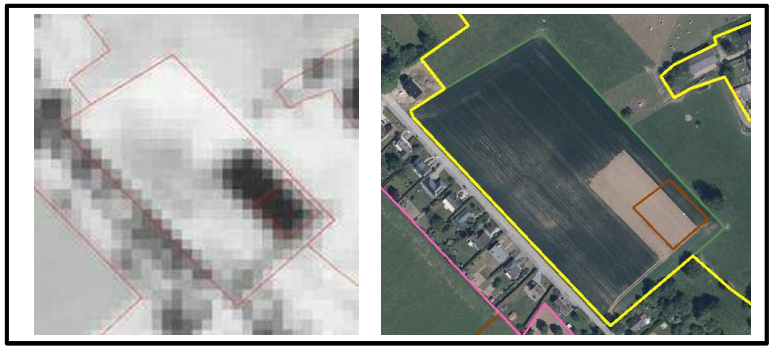


Automation Pilot
Markers

Markers	BPS	Diversification (Greening)	Land Laying fallow (Greening)
Multi-covers detection	X		
Ineligible crops detection (Xmas trees)	X		
Other land cover detection (permanent crop instead of PG or AL)	X		
Crop groups identification		X	
Key dates checks			X

Automation Pilot
Multi-covers – examples





Automation Pilot
Preliminary results – BPS

Yellow Flags	Occurrence
Multi-covers to confirm => LPIS update	957
Ineligibles crops (Christmas tree)	1
Other land cover detection (permanent crop instead of PG or AL)	186
Parcels without data*	5443
TOTAL	**6587**

or **2.33 %**
Of the 282345 declared parcels

* Undetected narrow ground strips (negative buffer of 5 m) or double claim or minor crops …

Automation Pilot
Preliminary results – BPS

Financial impact	Nb of farmers	Nb of parcels	Required action	% (/282.345 parcels)
< 50 €	1767	2615	/	
≥ 50 € and ≤ 250 €	606	2069	Sample 5% => 104	0.73
> 250 €	205	946	FOLLOW-UP	0.33
Multi-covers		957	FOLLOW-UP	
Total		6587		

i.e. **2007** parcels

⇔ **0.71 %**

of the 282345 declared parcels

Automation Pilot
Preliminary results – Diversification

Yellow Flags	Occurrence
Other crop group identification that declared	27956
Parcels without data	5443
TOTAL	**33399**

85 crop groups considered for flags determination

i.e. **11.83 %** of the 282345 claimed parcels

Without financial impact calculation => No traffic light results

Algorithm to improve !

Automation Pilot
Preliminary results – land lying fallow EFA

Yellow flags	Occurrence
Key dates checks : Ploughing of land lying fallow before the 15/08	4
TOTAL	**4**

→ Red

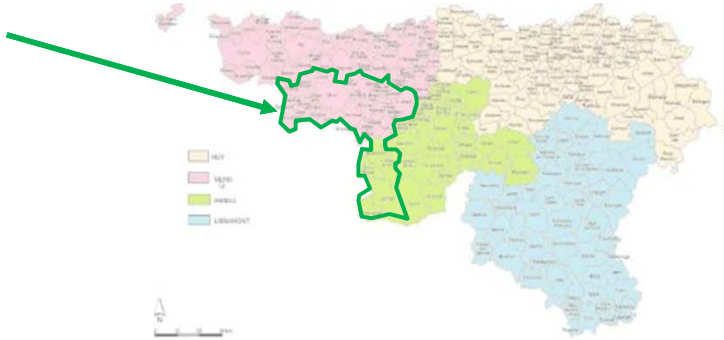
i.e. **0.26 %**

of the 1528 declared parcels

Geotagging Pilot

Geotagging Pilot

- Pilot group : farmers and PA agents
- Test only of a limited part of Wallonia (15%)

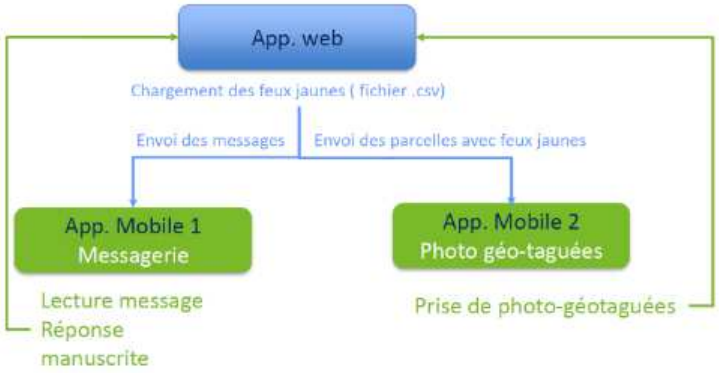


Geotagging Pilot

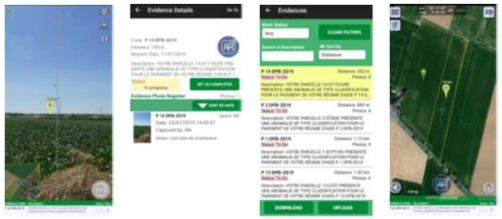
External solution ABACO :

- Web application : sending of traffic lights and displaying of the photos
- Mobile App1 : only used for message sending
- Mobile App2 : for taking geotagging photos

- Conclusive test via pilot group

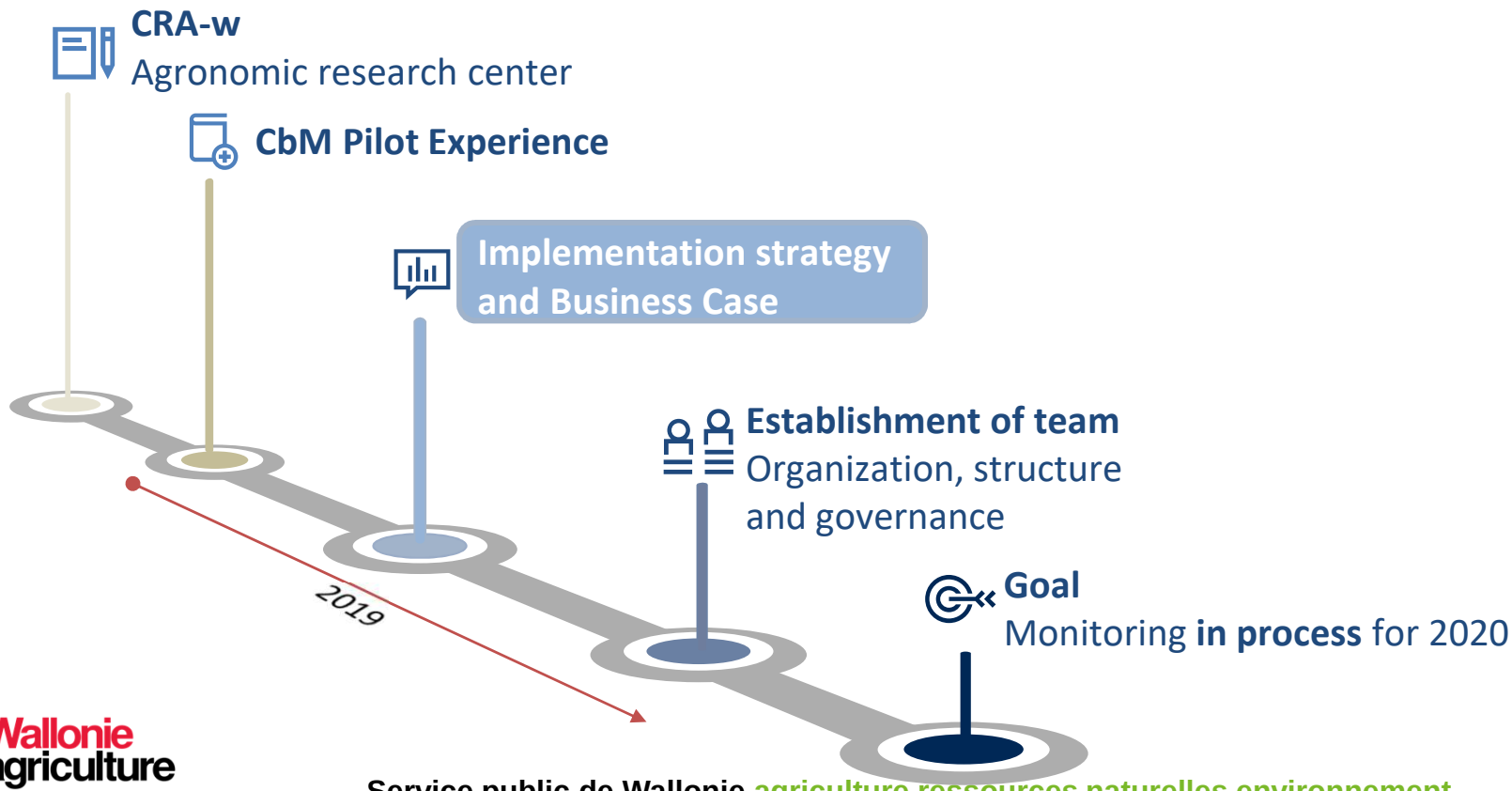


Web App



Mobile Apps

Monitoring – Stepwise approach



Implementation strategy 2020

Pilot experience 2019

HOW : internal automation and external geotagging

WHAT : BPS, young farmer, redistributive payment, payment for areas with natural constraints

IMPLEMENTATION STRATEGY

Implementation strategy 2020

- Schemes

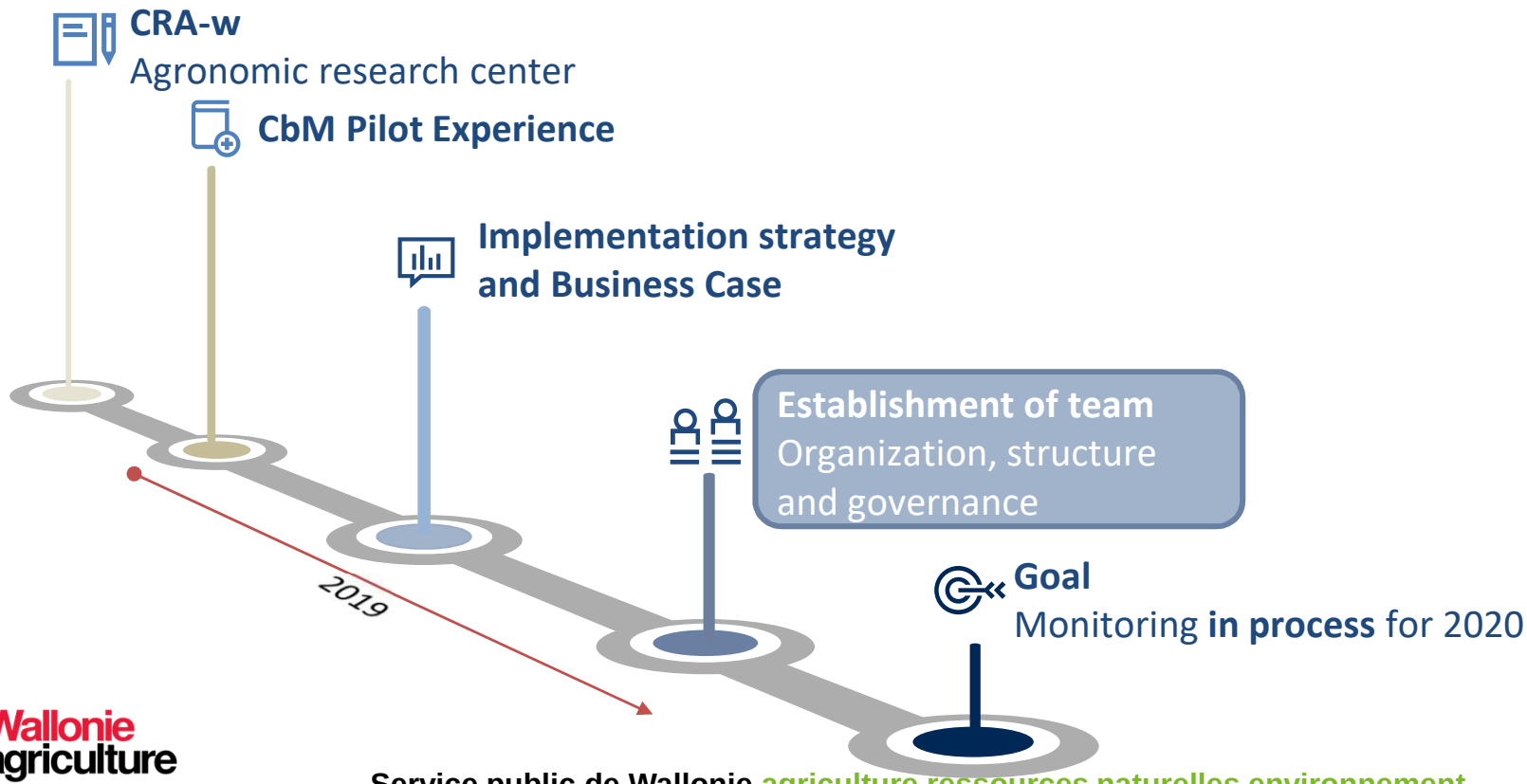
1st pillar	BPS Young farmers payment Redistributive payment	87 millions € 5 millions € 46 millions €
2nd pillar	Payment for areas with natural constraints	10 millions €

- All of Wallonia
- Follow-up by PA agents

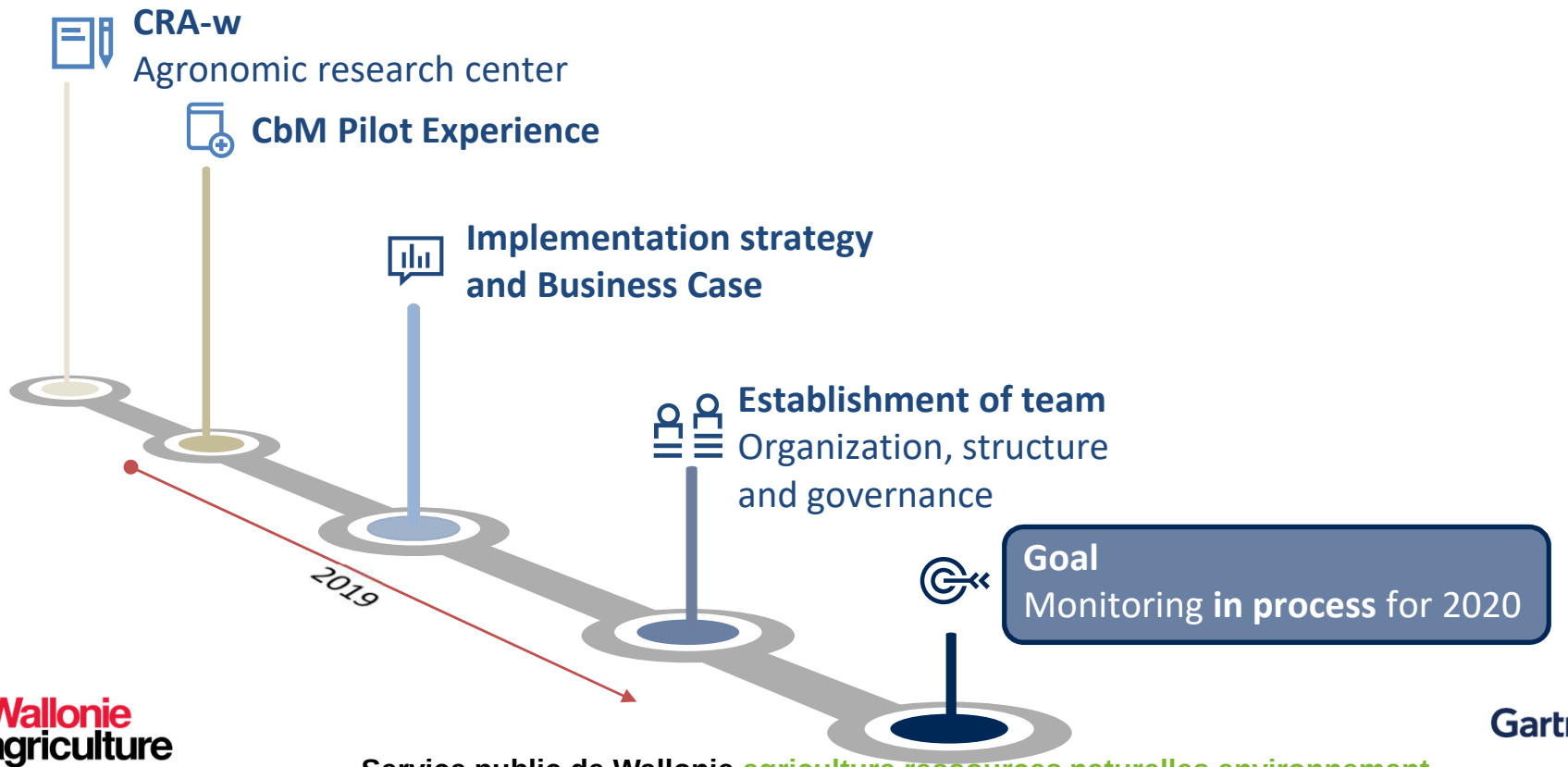
Business Case

		Benefits	Costs
IT	Monitoring implementation		- -
	System maintenance		- -
Field	OTSC decrease	+ + +	
	Follow up on the field	+ +	- -
Administrative	Traffic lights treatment and geotagging photos interpretation		-
	Less retroactive cases	+ +	
	Less updates in the LPIS from the OTSC	+ +	
	New updates in the LPIS from the Follow-up		-
	Final Result:	+	

Monitoring – Stepwise approach



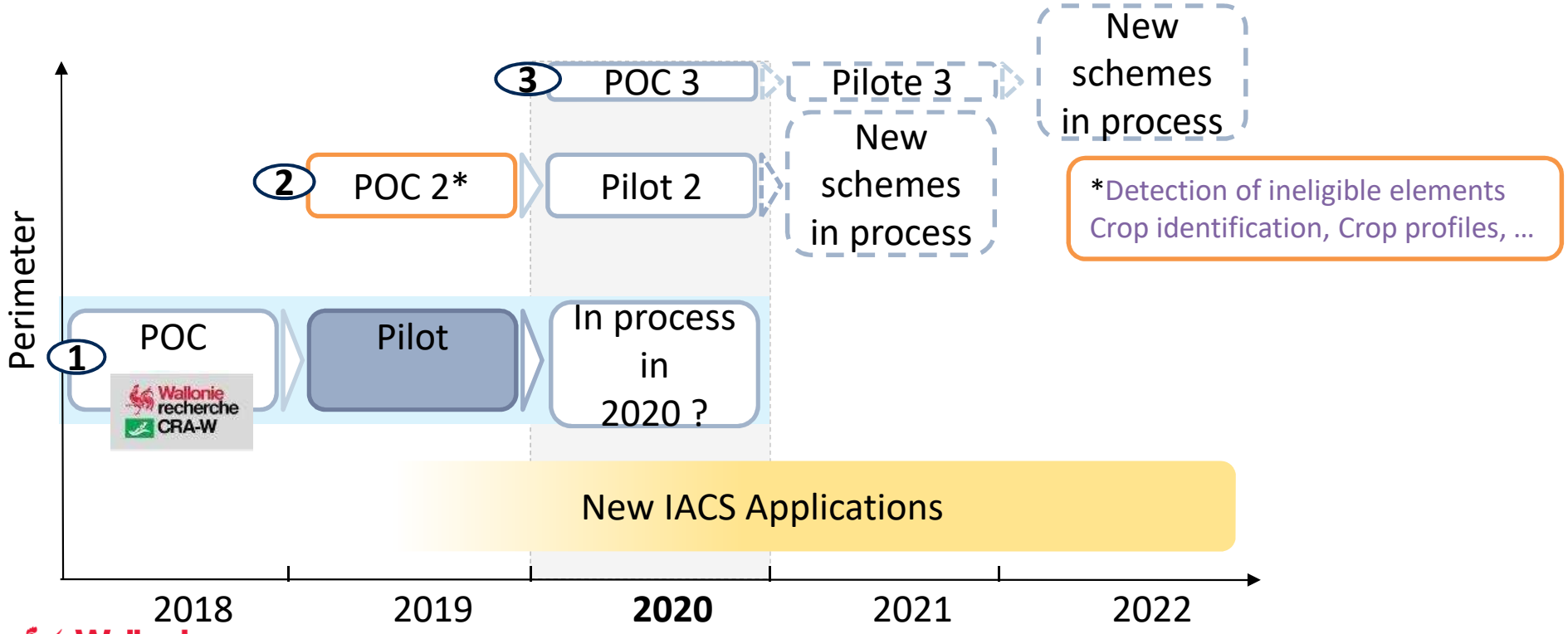
Monitoring – Stepwise approach



SWOT analysis

	POSITIVE	NEGATIVE
Internal	**Strenghts** - Pilot experience - IT developments reached - 2020 perimeter - Team	**Weaknesses** - **Management resistance** - Fear of change - Availibility of Human Resources
External	**Opportunities** - EC (JRC and D3) support: SEN4CAP, Planetscope data, … - CAP reform anticipation	**Threats** - Audits incertainty - Unfinished guidelines - Farmers misunderstanding

Research and process strategy



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* POC = Proof Of Concept

Gartner

Thanks

- CRA-W
- JRC, DGAGRI
- MS (BE-FL, IT, MT, DK, ES, FR, LU, …)
- ABACO
- GARTNER

ALL OF YOU FOR YOUR ATTENTION !!!

25

Happy Birthday!
Bon Anniversaire
Parabéns
Sto Lat
Bonne Fete
Sretan Rodendan
Heppi Berdej
Feliz Cumpleaños
Buon Compleanno
Alles Gut Zum Geburtstag
Fijne Verjaardag
Multi Ani
Vse Najboljse
Chestit Rozhden Den
Boldog Szuletesnapot
Dobrý narozeniny

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