Farmers' perceptions of levers and barriers to crop-livestock integration beyond farm level. A case-study in france.

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(A. Perrin)

Fostering win-win scenarios for crop-livestock integration beyond farm level

An in-depth analysis of French farmers' perceptions

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13/04/2022

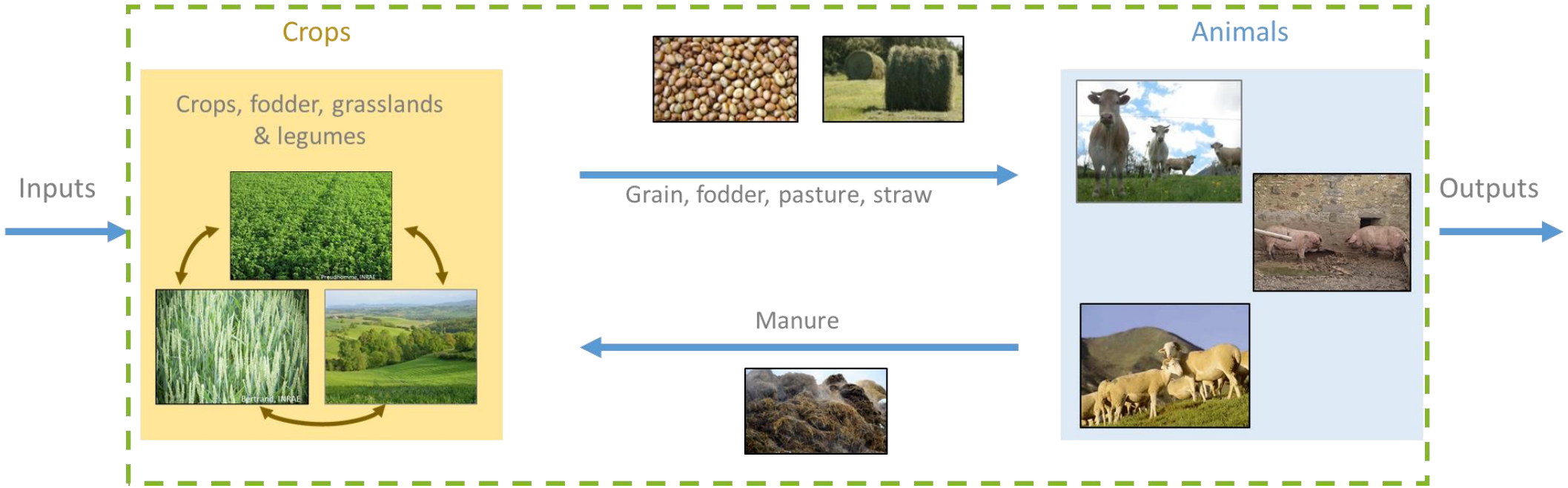
INRAE

AGIR AGroécologie - Innovations - TeRritoires

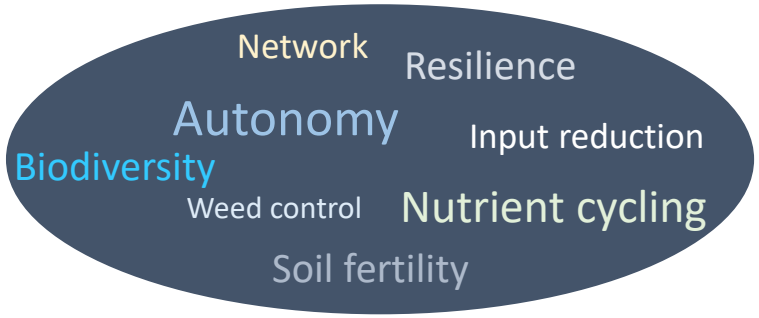
IFSA INTERNATIONAL FARMING SYSTEMS ASSOCIATION EUROPE GROUP

Integrated crop-livestock systems: agroecological systems in decline

ICLS : Production systems that feature temporal and spatial integration of crop and livestock enterprises



A theoretical agroecological ideal



Systems in large decline in Europe

Work organization

Globalized markets

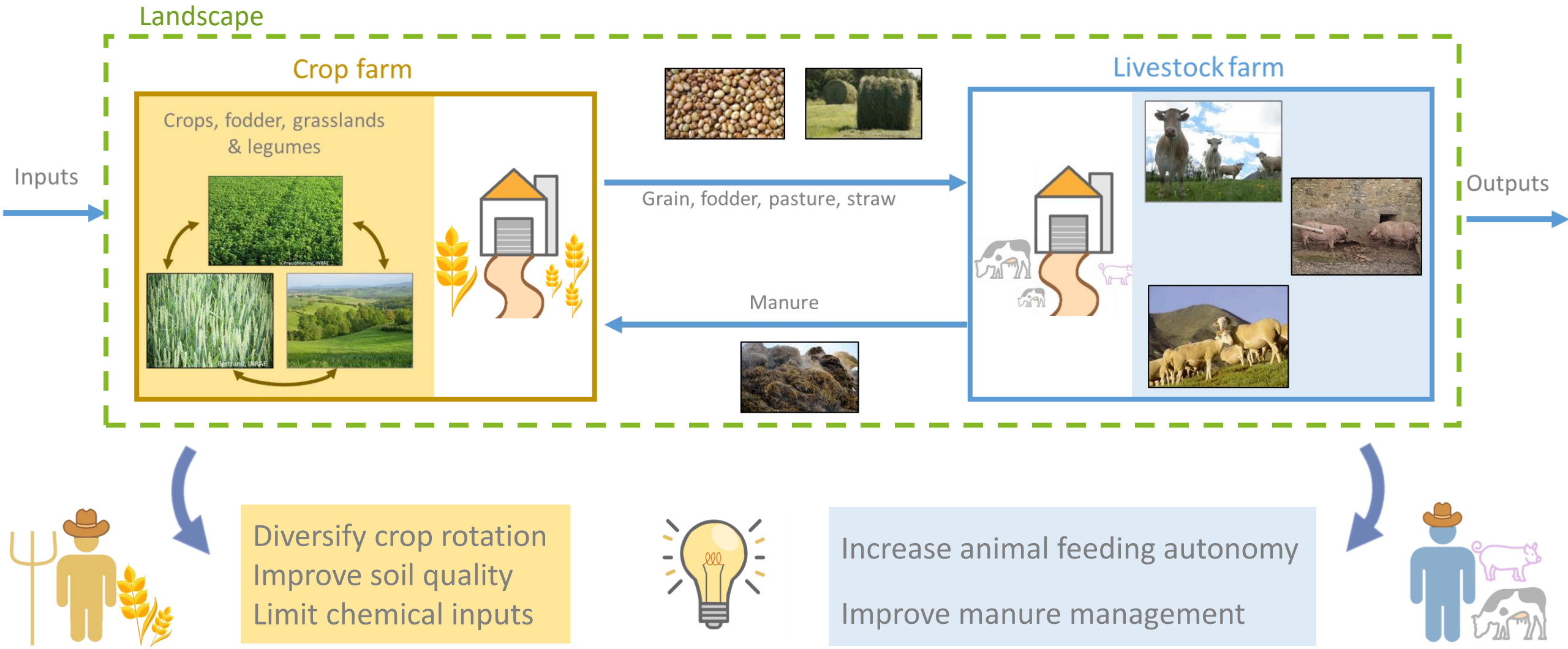
CAP

Multi-skilled workforce

Economy of scale

(Bonaudo et al., 2014 ; Franzluebbers et al., 2014; Garrett et al., 2020 ; Hendrickson et al., 2008; Lemaire et al., 2014 ; Peterson et al., 2020 ; Ryschawy et al., 2013)

Crop-livestock integration beyond farm as a relevant option



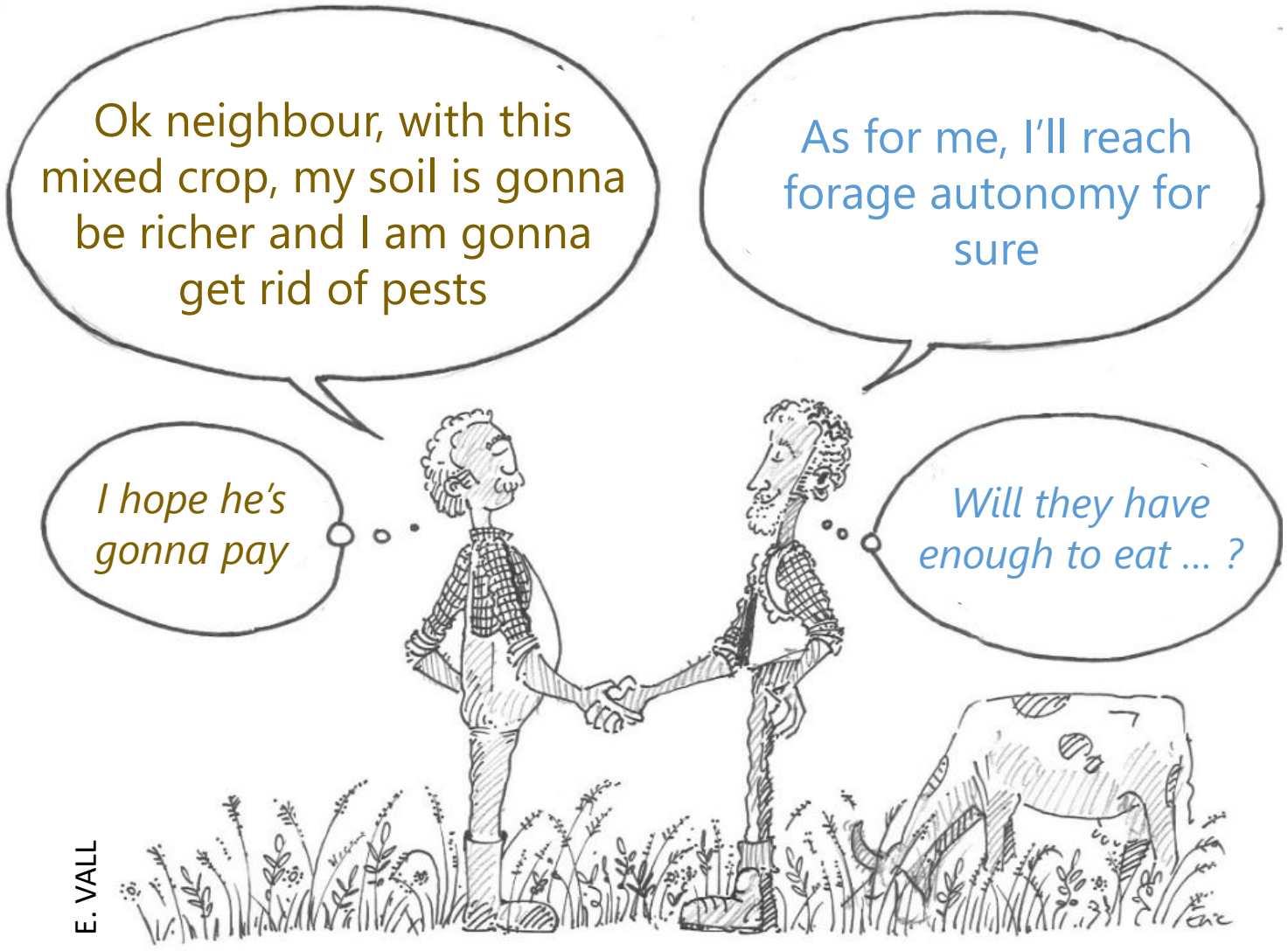
Diversify crop rotation
Improve soil quality
Limit chemical inputs

Increase animal feeding autonomy

Improve manure management

(Bonaudo et al., 2014 ; Martin et al., 2016)

Many lock-ins to beyond farm integration : the role of farmers' perceptions



(Bouttes et al., 2019)

Many Advantages X Scarce initiatives

Costs for information gathering, collective decision making, monitoring
(Asai et al., 2018)

Implicit aversion to risk and lack of trust between crop and livestock farmers
(Garrett et al., 2020)

Explore in-depth farmers' perceptions

Material & Methods

A case-study in South Western France, a historical ICLS region

200 m

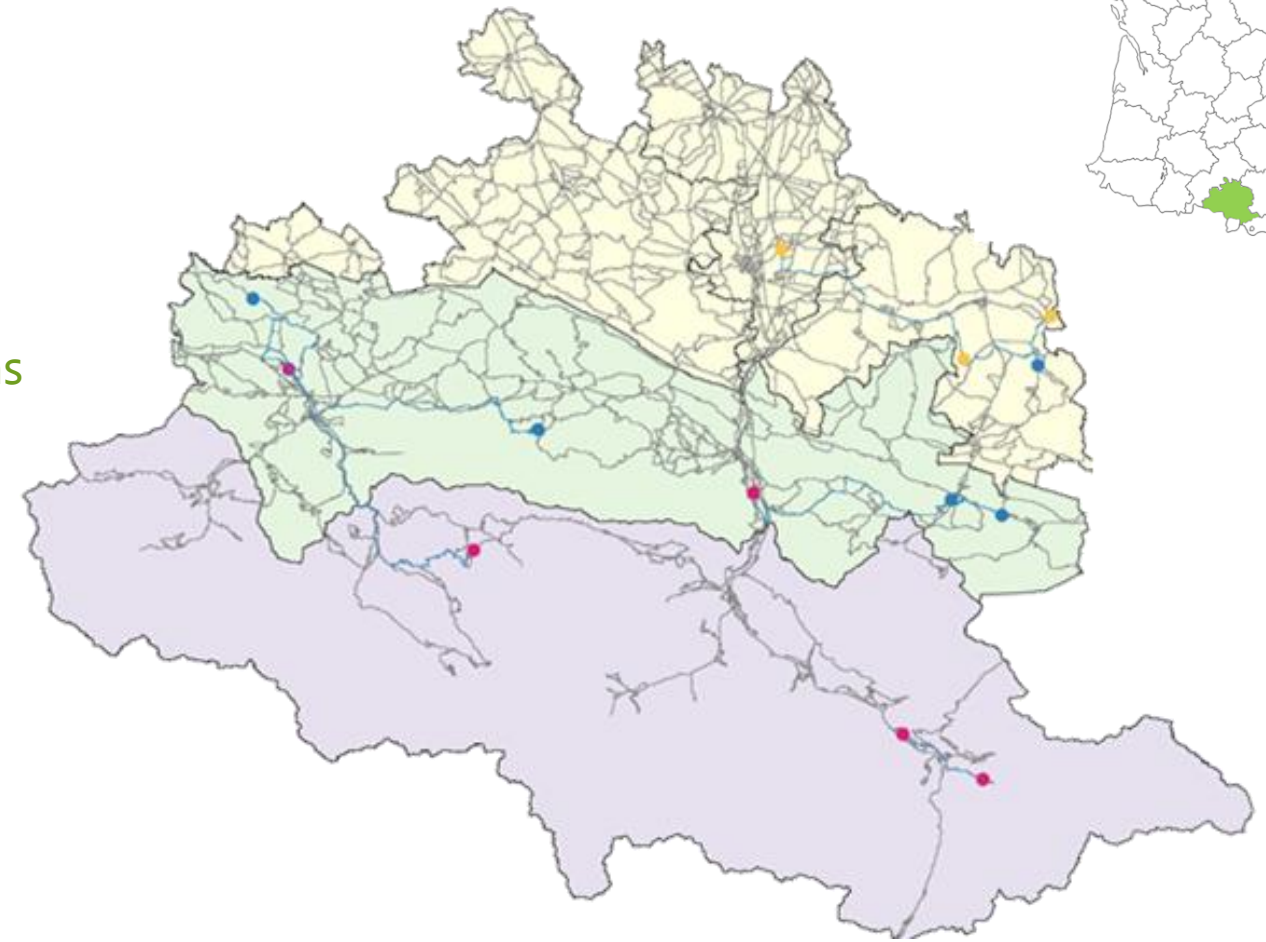
Valley

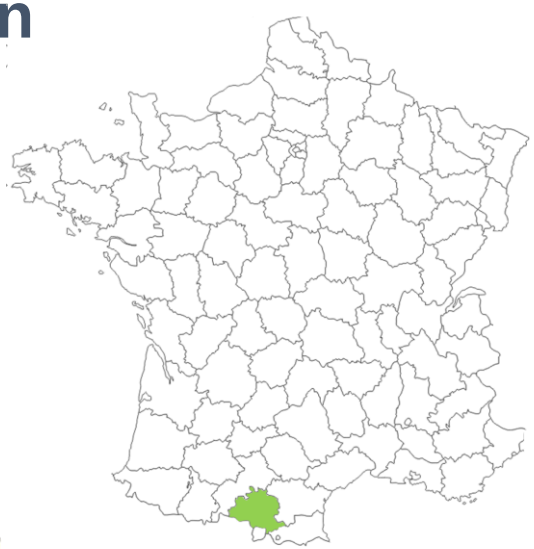
400 m

Premountains

700 m

Mountains





Applying a qualitative methodology

- ❑ History & attributes of the farm
- ❑ Vision of ICLS beyond farm level
- ❑ Past experience of ICLS beyond farm level
- ❑ Products to supply / demand
- ❑ Levers / barriers for ICLS beyond farm level

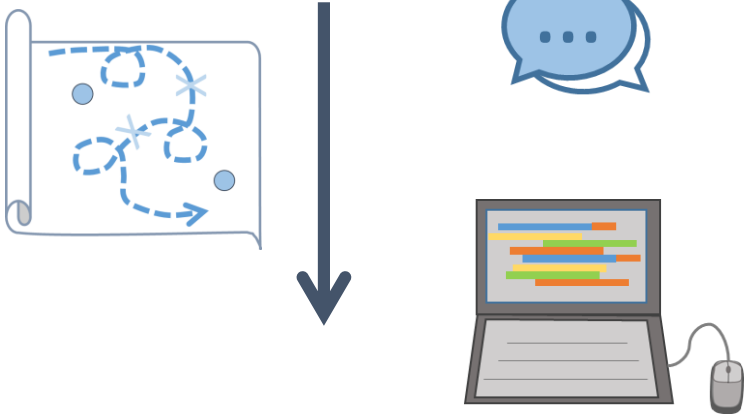
19 farmers

CONSER'Sols

8 | 7 | 4

58 – 262 ha

Not statistical representativness, interested farmers



Semi-structured interviews

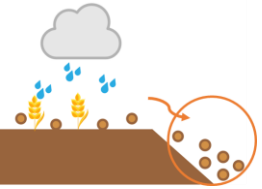
Inductive content analysis with Nvivo (S. Carle)

(Beudou et al., 2017 ; Elo and Kyngäs, 2008)

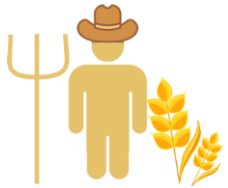
Results



Major technical interests for crop farmers…

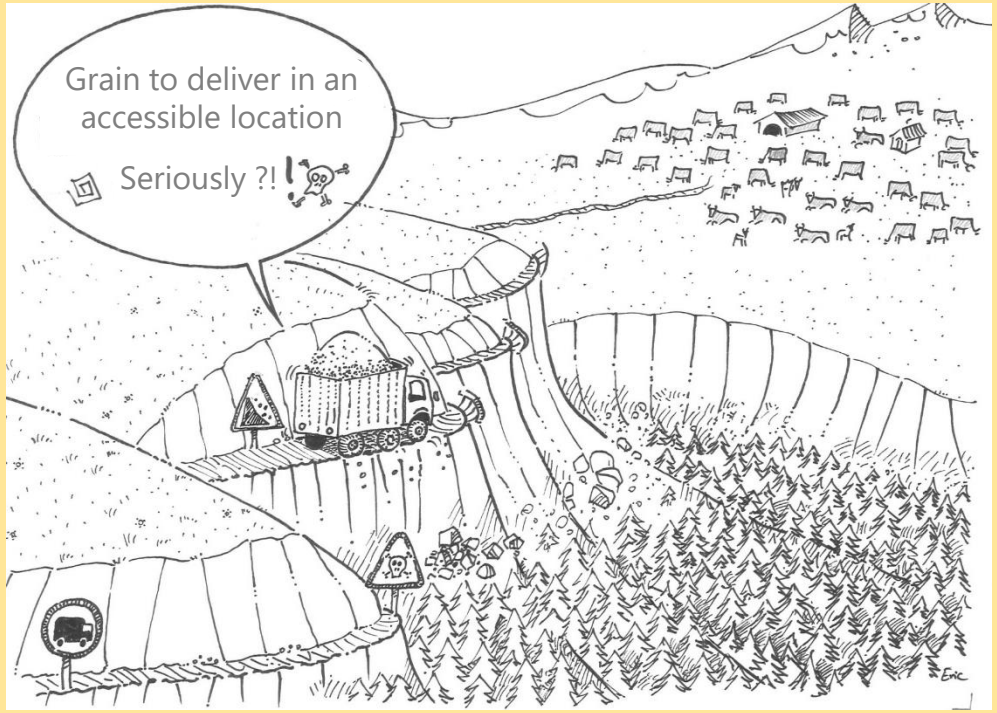


Especially soil quality



“When you are a crop farmer, it is true that you lack organic matter”

“ Seeding alfalfa for several years, it allows anyway to limit erosion. And maybe it could do regarding weeds”



E. VALL

… Balanced by organizational barriers

Time management & logistic risk

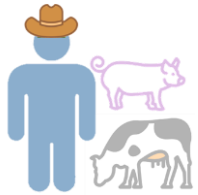
“We sell the grain to the cooperative. It’s easier than coordinating ourselves with livestock farmers.”

“The guy must be available quickly to take out the straw and be there, otherwise it will not be okay.”

Low cost of outputs as regards to the time needed to implement such local cooperation

“When we see the price of alfalfa seed, if we seed it to make only two cuts and pull it out, it will have to be well paid.”

Regaining autonomy is key for livestock farmers…



Technically and at the local level

"buying directly from crop farmers, it also allows us to pay less for the product" since *"when we limit intermediaries there is always less cost."*

In decision as regards to large cooperatives

"they are private, they are no longer cooperatives, they are no longer working in the interest of the members"

… But their fears and lack of knowledge slow them down

Loss of knowledge to prepare the rations

Lack of appropriate machinery

"We cannot do precise and serious work with mixed crops harvested [if not sorted]"

Lack of trust in crop farmers who may follow the market rather than help their neighbours

A strong implicit divergence between the mindsets of crop farmers and livestock farmers

Trade-offs in term of timing, strategy and vision

Logistics, time and organization

Calendar, constraints and priorities of each of them

Fair prices

Trust establishment

Few knowledge exchanges and connections between crop farmers and livestock farmers

Mitigated by crop farmers values and backgrounds regarding livestock

“Livestock farmers think in the longer term; we cannot say, ‘Well, this year I won’t feed my heifers, but I will do it for sure next year’. Crop farmers, they think on a yearly basis; they think short-term.”

“It must be win-win and not win-lose”

"For me with my friends, there is no problem, a word is worth more than a writing. But if there are people I don't know, I'll be suspicious "

“For me, it was more to provide solutions to livestock farmers, who are disappearing.”

Conclusion & Take-home messages



Unlocking ICLS beyond farm level

Understanding farmers' perceptions

Identifying progressive farmers as leaders

Key role of ICLS farmers

Bridging the divide

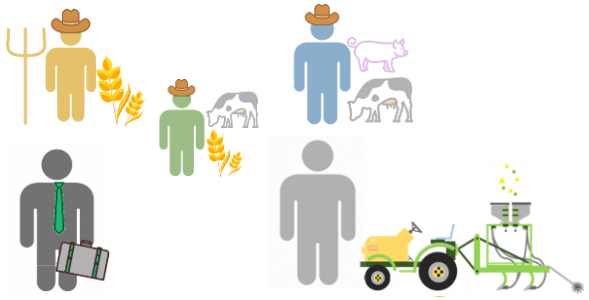
Involving a diversity of actors

Local cooperatives or machinery groups

Supply chain

Niche markets

Policy makers



Facilitating communication

Empathy as a first step for codesign

Ease trust establishment and create bonding ties

Dynamix

(Klerx et al., 2010 ; Stern and Dietz, 1994)

Thank you for your attention !

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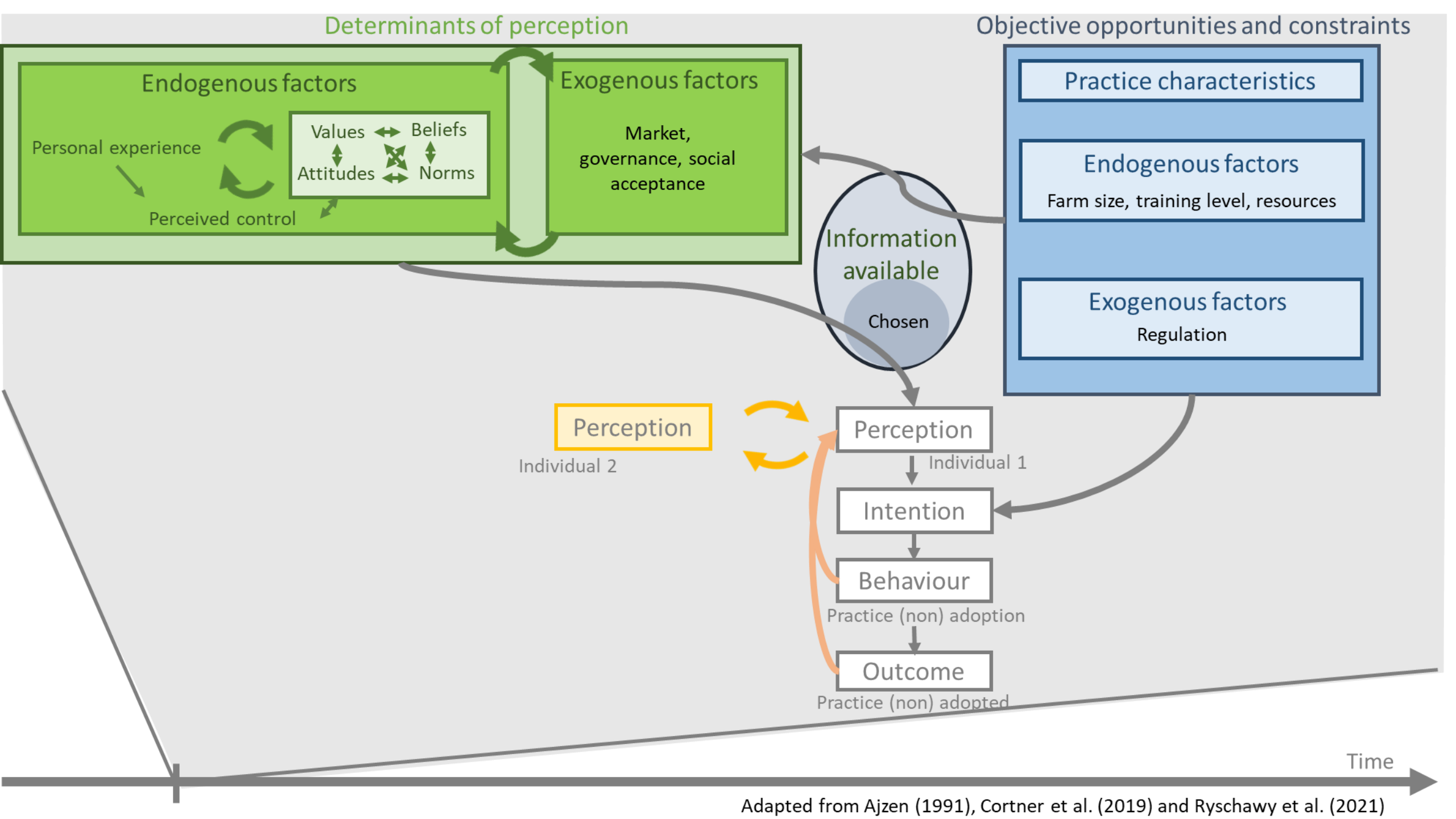
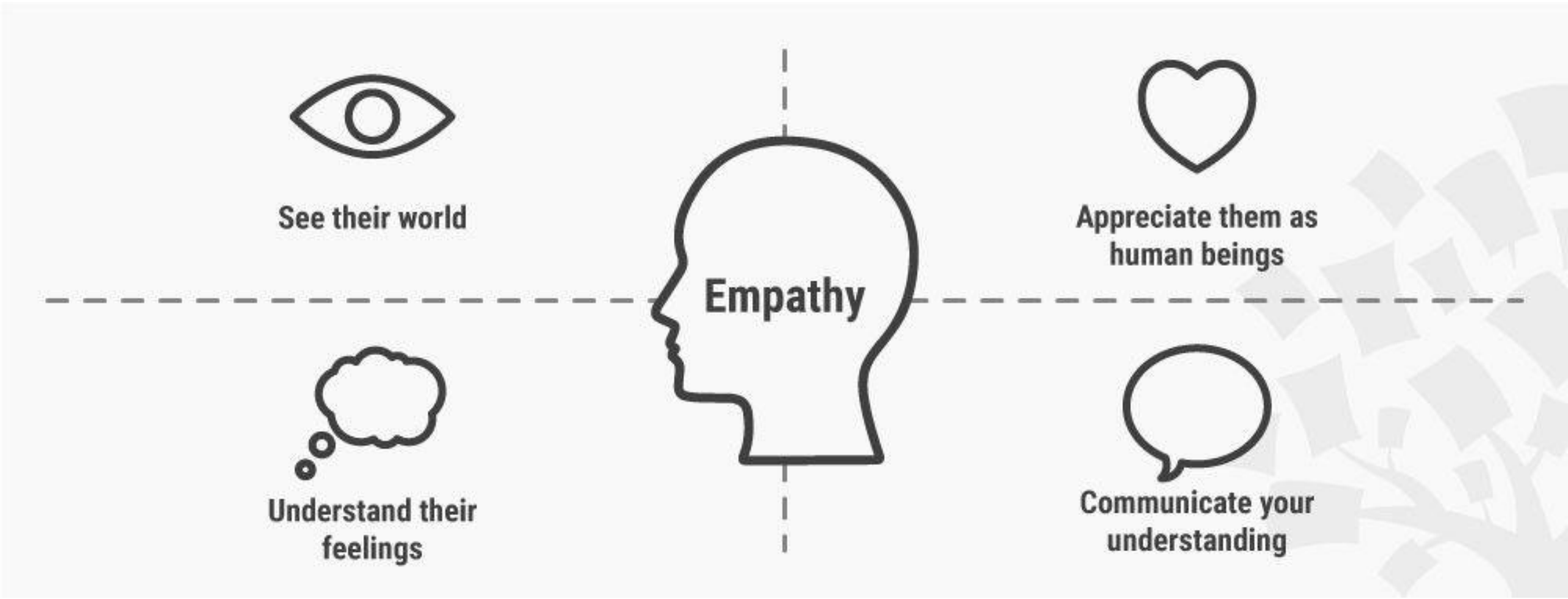


Adapted from Ajzen (1991), Cortner et al. (2019) and Ryschawy et al. (2021)


See their world
Empathy
Appreciate them as human beings
Understand their feelings
Communicate your understanding

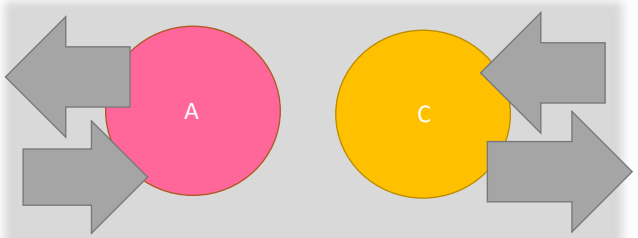
Landscape developments

Pull factors

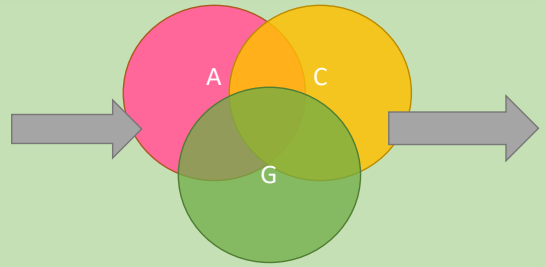
Research, credit, and insurance systems that value whole farm outcomes and longer time horizons

More flexible food safety and sanitary regulations that support a circular economy

Agricultural regime



Segregated-HIA
Specialized production, focused on high yields and global competitiveness



New-ICLS
Locally interconnected, limited external inputs, focus on whole farm outcomes

Ecolabels and sourcing standards for ICLS

Farmer knowledge networks

Technological niches

Field trials, farm demonstrations, and knowledge synthesis

Push factors

Time