

## THE «BIG UNIVERSE» APPROACH

A MIXED METHOD APPROACH TO BUILD A COMMON SENSE ON RDPS EFFECTS ON COMPETITIVENESS AND ENVIRONMENT



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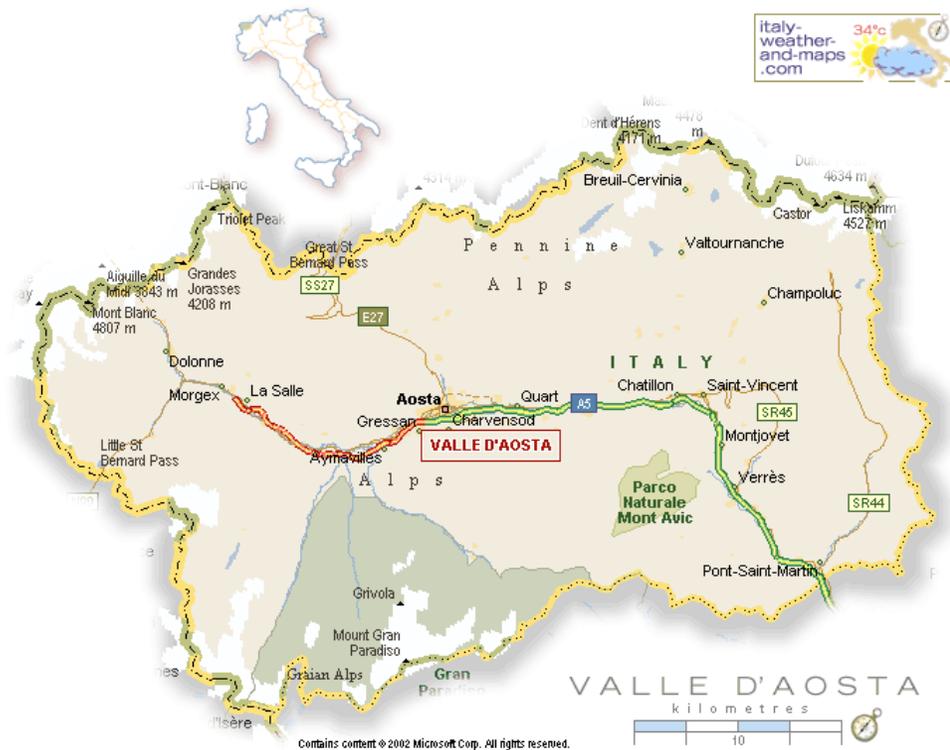
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## SHORT INTRODUCTION

### Background

- In 2019 we had to estimate the impacts in many RDPs with a low uptake level (lower than 30%)
- We decided to invest in a research pilot project to find out a method that was able to give a good proxy of the first results (economic and environmental) obtained by RDPs
- The research project aimed to define nonorthodox methods to assess RDPs effects and impact on the agrobusiness system as a whole
- The method experimented by University of Cassino for an RDP context analysis 2014-2020 was adapted to assess the result and impact of different programs
- This flexible method can be applied for either qualitative (expert panel) or quantitative (surveys) analysis, depending on the context and the progress of the Program
- We are nowadays applying this technique in four Italian RDPs: Valle d'Aosta, Marche, Campania and Puglia
- We will just present the case of Valle d'Aosta RDP. We are at an initial stage, in the following years and for the ex post we will be able to deliver to the MA more in-depth analysis and recommendations
- The added value of this method, in addition to its flexibility, is the fact that it provides a holistic vision of rural sector, combining competitiveness aspect and environmental issues and providing triangulation of qualitative and quantitative methods

# VALLE D'AOSTA BACKGROUND



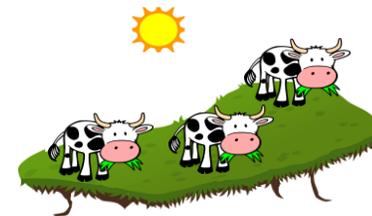
**128,000**  
Inhabitants



**38,8**  
inhab/square km

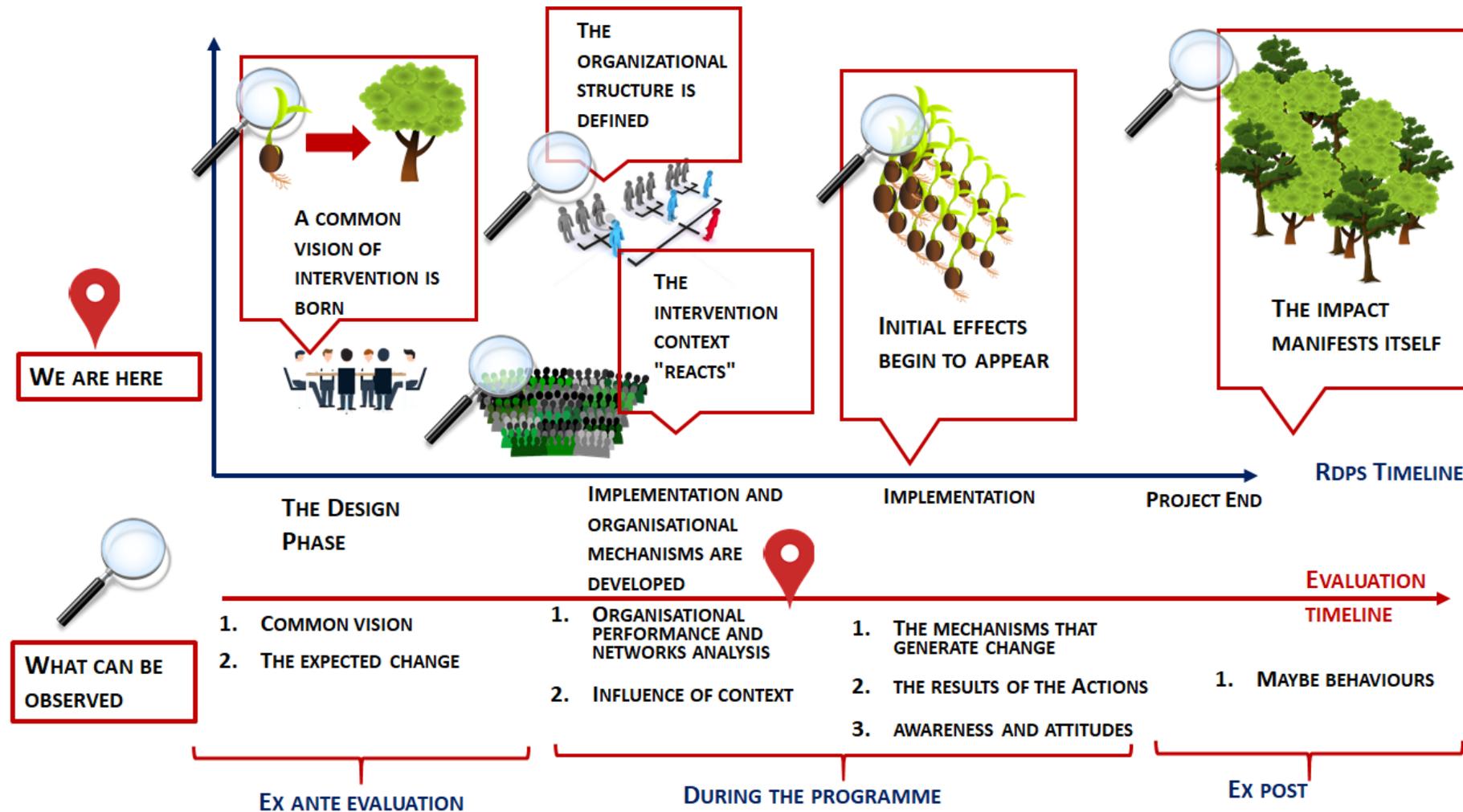


**The Battle of the Queens**



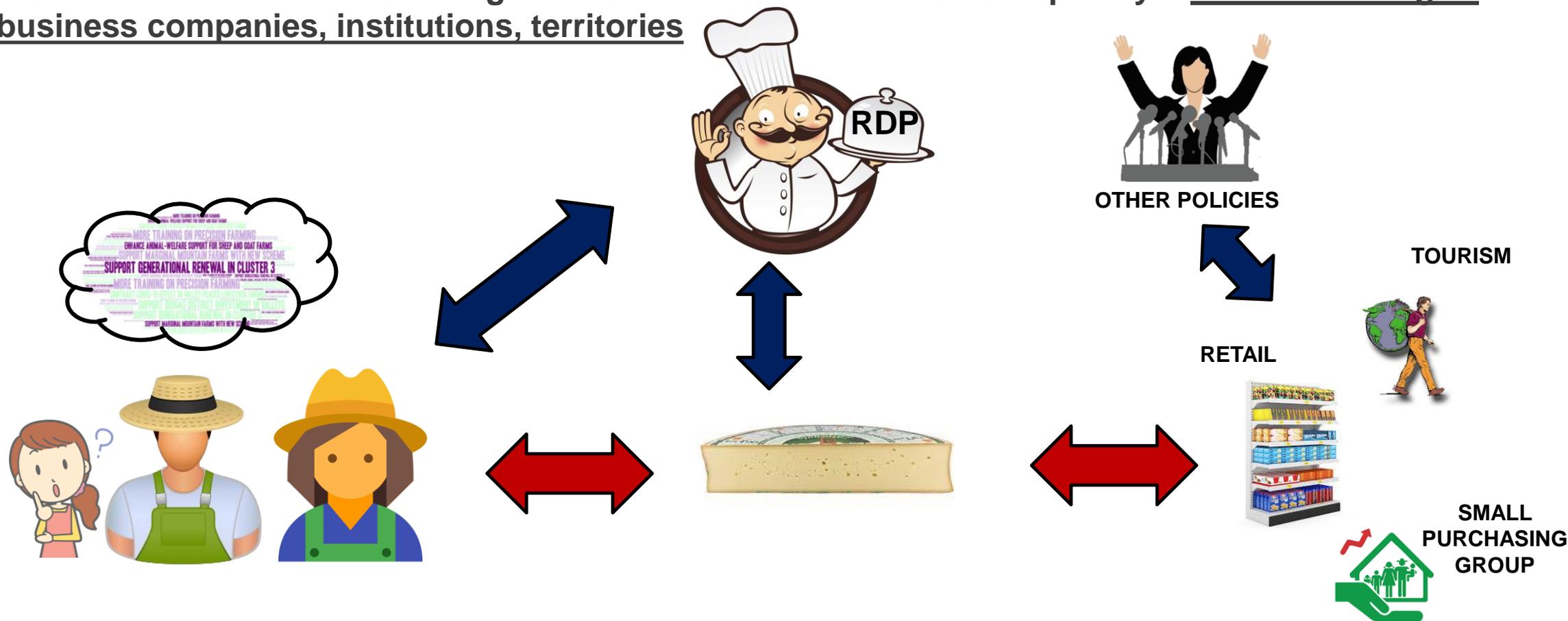
**Food supply chain is focused on the dairy sector and to Fontina cheese**

# THE EPISTEMOLOGICAL APPROACH



# THE EPISTEMOLOGICAL APPROACH

- We want to focus on the change of behaviours and address complexity : farmers and agro-business companies, institutions, territories



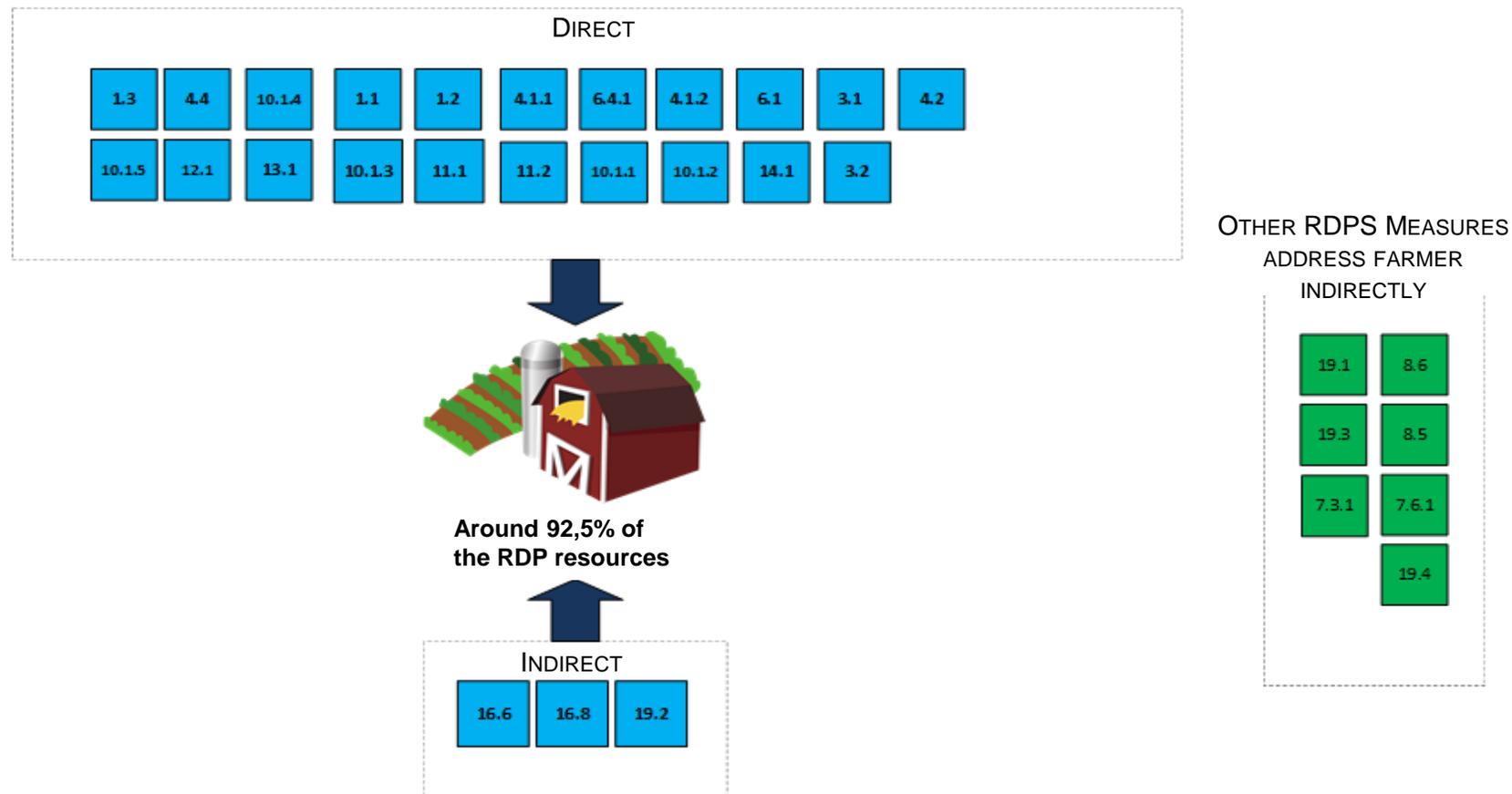
## FOCUS AREA 3A CEQ 6 AND ADDITIONAL JUDGEMENT CRITERIA

- It is not just a matter of assessing effectiveness but focusing on mechanisms, answering why, who are the “winners” and the “losers”, and looking at unexpected effects is necessary

Judgement criteria	Subcriteria
1. Measures addressing quality of agricultural product increase income of the farmers	Animal welfare measures foster quality strategies
	Short supply chain initiatives targeting quality increase farmers income
	Medium-long chain initiative targeting quality increase farmers income
	Synergic effects took place by promotion initiatives on quality labelled products
2. Measures reinforce and create existing/new aggregation	Cooperatives investment foster biological supply chain
	New aggregations were set on small purchasing groups
	Emerging sectors reinforce their market position
	Traditional sectors innovates process/products
	Farms business strategies moves synchronically

## RATIONALE

- In most RDPs financial resources are highly concentrated on farm holdings
- Farms are the gravitational centre of the policy



# AN OVERVIEW: OUR APPROACH RELIES ON CONSENSUS



## FIRST PHASE: EXPERT INVOLVEMENT

- Clustering farms through a qualitative approach since classical cluster analysis gives back groups which are not recognised by RDPs key stakeholders

### CLUSTER IDENTIFICATION:

#### PANEL OF EXPERTS' INVOLVEMENT:

- COMPREHENSIVE KNOWLEDGE OF REGIONAL AGRIFOOD SECTOR
- BALANCED POINT OF VIEW (RESEARCHERS, DECISION MAKERS, FARMERS, FARM GROUP, FARM ASSOCIATION, OTHER RELEVANT)



**TIME REQUESTED**  
**AT LEAST 6 HOURS WITH THREE**  
**BREAKS**



## QUALITATIVE CLUSTER

- As the cluster analysis, the qualitative technique embeds the iterative algorithm philosophy: cluster is identified on consensus



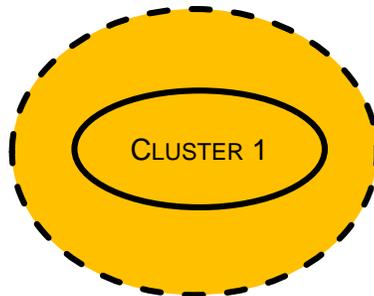
## AN EXAMPLE

### EXTENSIVE MOUNTAIN LIVESTOCK FARMS BELONGING TO FONTINA CHAIN

- WEIGHT RESPECT REGIONAL MARKETABLE OUTPUT 5%**
- NUMERICAL WEIGHT RESPECT REGIONAL FARM HOLDINGS 15%**
- AVERAGE AGE OF FARMERS 55**
- AVERAGE UAA: 15 HA**
- OTHER FEATURES: RELUCTANT TO INNOVATION, PILLAR I DEPENDANCY**
- AGRI-ENVIRONMENTAL MEASURES FOCUSED**

## CLUSTER REPRESENTATION

- Cluster representation shows its regional relevance with respect to standard output (continuous line) and farms numerosity (dotted line)

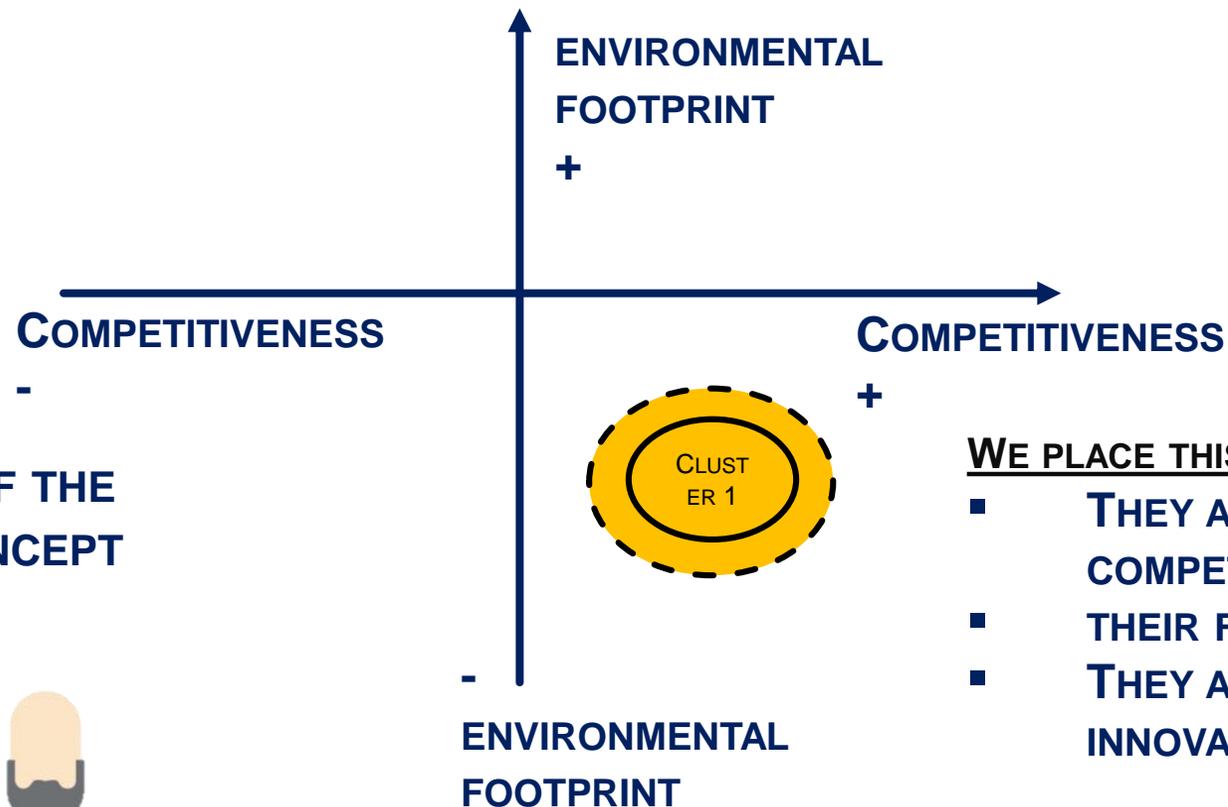


**EXPERTS HAVE A VERY SPECIFIC KNOWLEDGE ON THESE TWO ASPECTS AND OVERALL CONSISTENCY IS GUARANTEED THROUGH GROUP CONSENSUS AND PAYING AGENCY DATA (PILLAR I AND II)**



# QUALITATIVE FACTOR ANALYSIS

**EXPERTS PLAY THE ROLE OF THE  
«ALGORITHM» - GROUP CONCEPT  
MAPPING APPROACH**

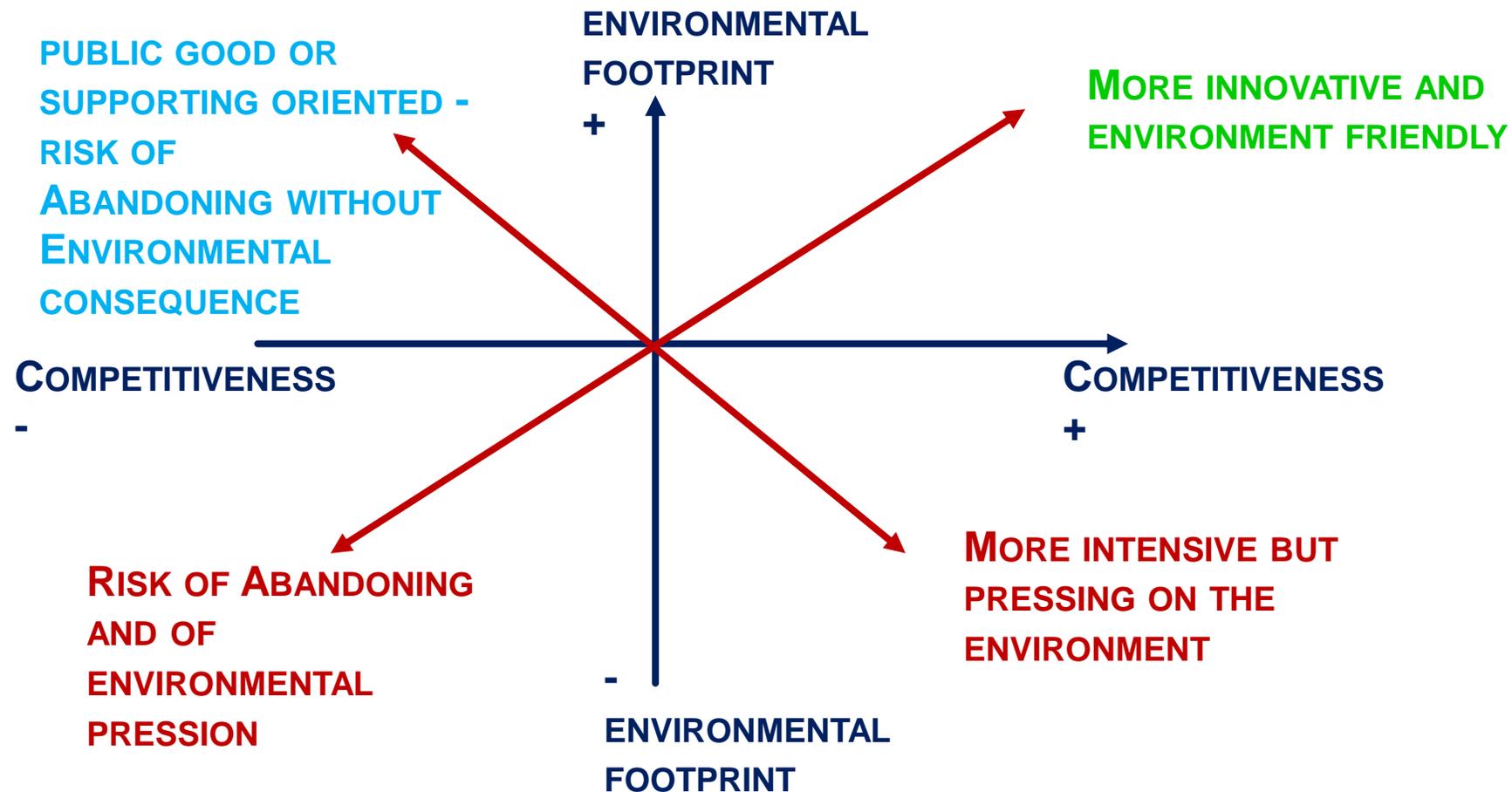


**WE PLACE THIS CLUSTER HERE BECAUSE:**

- **THEY ARE SUFFICIENTLY COMPETITIVE**
- **THEIR FOOTPRINT IS CRITICAL**
- **THEY ARE RELUCTANT TO INNOVATION**

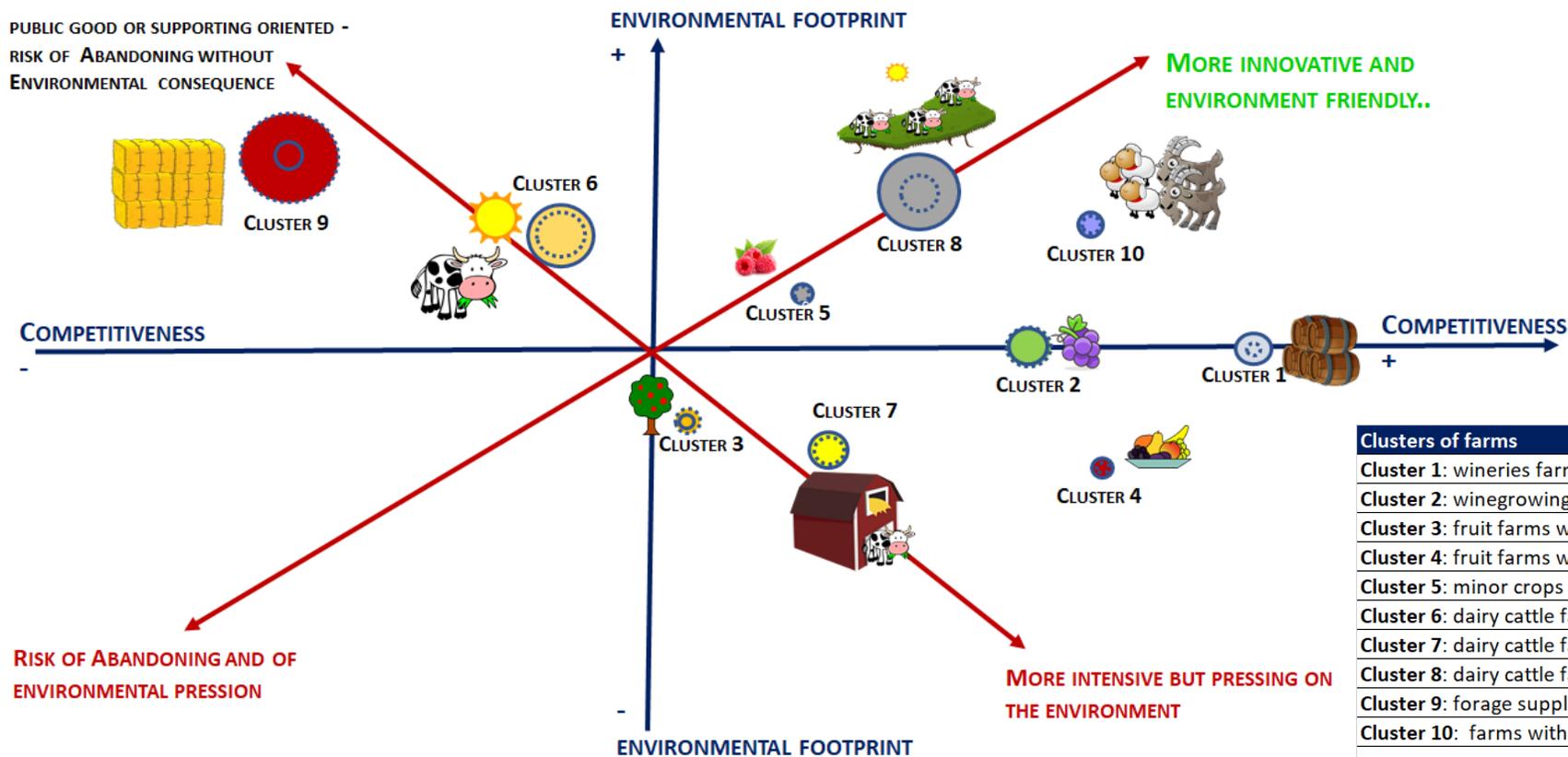
## THE SEMIOTIC SQUARE

- Each quadrant defines a trajectory, like semiotic squares introduced by Greimas



# THE FINAL RESULT

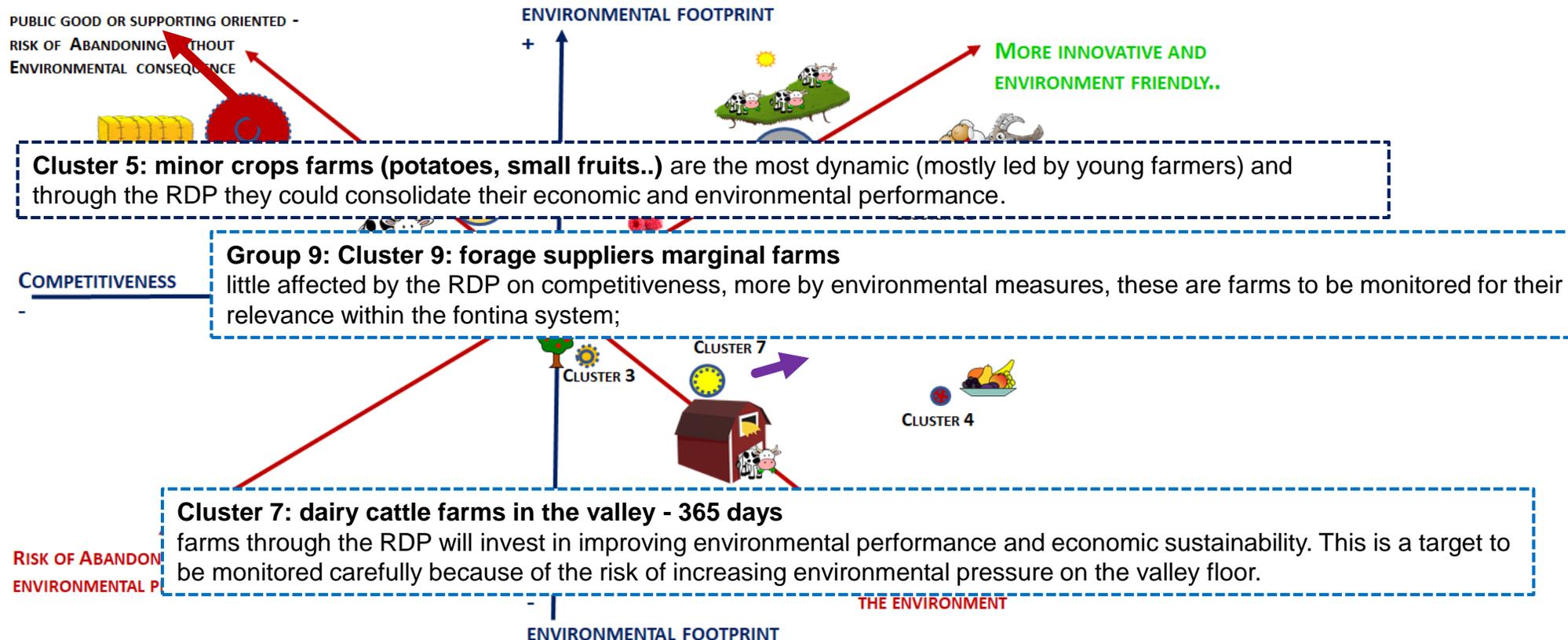
## ■ The clusters representation in VdA



Clusters of farms	% Total farms	% Total Mkt Output
Cluster 1: wineries farms	1,7%	9,2%
Cluster 2: winegrowing farms	16,6%	13,5%
Cluster 3: fruit farms which deliver to third	3,3%	1,2%
Cluster 4: fruit farms which sell	0,4%	2,3%
Cluster 5: minor crops farms (potat, small fruits..)	1,2%	1,9%
Cluster 6: dairy cattle farms in the valley - summer livestocke tra	18,7%	22,0%
Cluster 7: dairy cattle farms in the valley - 365 days	8,3%	10,0%
Cluster 8: dairy cattle farms with traditional grazing	12,4%	30,0%
Cluster 9: forage suppliers marginal farms	35,3%	5,9%
Cluster 10: farms with sheep and goat	2,1%	4,0%
	100,0%	100,0%

## THE PANEL VIEW ON RDP'S CONTRIBUTION

- Experts reflect on farms needs and on RPD contribution in shifting clusters of farms within group and between group or in the semiotic space



## SECOND PHASE: SURVEY

- Beneficiaries (and not beneficiaries) interviews: the “big universe” refers to the statistical concept of sampling universe. In our case a unique population which includes all farms’ beneficiaries of RDP’s support

**THE POPULATION OF FARM HOLDINGS BENEFICIARIES IS DIVIDED INTO DIFFERENT SUB-POPULATIONS ACCORDING TO HOW MANY RDP’S TYPOLOGIES OF INTERVENTIONS THEY RECEIVED SUPPORT (VALLE D’AOSTA EXAMPLE)**

Segmentation	Population	Sample size	Sampling error
All the beneficiaries	1.761	300	5,4%

Segmentazione	Population	Sample size	Sampling error	pure proport. Sample size
Beneficiaries of one measure	650	84	10,0%	111
Beneficiaries of two measures	560	82	10,0%	95
Beneficiaries of three measures	246	69	10,0%	42
Beneficiaries of four and more	305	65	10,8%	52
<b>TOT</b>	<b>1761</b>	<b>300</b>		<b>300</b>

## SAMPLING STRATEGY

- Each sub-population is stratified according to farm size and typology of operation

Population beneficiaries with 4 measure and more	UAA					
	> 1 ha <5 ha	> 5 ha < 10 ha	> 10 ha < 20 ha	> 20 ha < 50 ha	> 50 ha < 100 ha	> 100 ha
prevalence 4.1.1	3	12	23	18	14	39
prevalence 6.1.1	2	3	0	4	1	3
prevalence 10.1.1 e 10.1.2	0	3	4	8	15	44
prevalence 10.1.4	8	23	28	23	8	16
<b>Share with respect to Tot farms</b>	<b>1,7%</b>	<b>15,8%</b>	<b>27,1%</b>	<b>43,7%</b>	<b>43,5%</b>	<b>52,6%</b>

**THIS IS THE SUBPOPULATION WITH MORE THAN FOUR MEASURES, AND CONCENTRATES MOST OF THE FARMS WITH MEDIUM-HIGH CLASS SIZE UAA**

## INCREMENTAL SAMPLING

### SAMPLE TIMELINE AND INCREASING ACCURACY FOR INFERENCING AND ANSWERING EVALUATION QUESTIONS

	INCREMENTAL SAMPLING					
	YEARS					
	2020	2021	2022	2023	2024	TOT
SAMPLE NUMEROSITY	50	60	60	65	65	300
SAMPLE COVERAGE	17%	37%	57%	78%	100%	
ACCURACY (INFERENCE)	VERY LOW	LOW	MEDIUM	MEDIUM-HIGH	HIGH	

## INTERVIEWS

- **CATI interviews are ongoing. Questionnaires are structured in order to understand their behaviour with respect to competitiveness and environment. Most questions are open with a closing strategy (set of categories of answers already identified)**

**THE FIRST PART OF THE QUESTIONNAIRE INCLUDES A QUICK INVESTIGATION ON CLUSTERS' BELONGING FROM FARMERS' PERSPECTIVE. THAT IS MATCHING EXPERTS VIEW WITH THAT OF THE FARMERS, IN ORDER TO GIVE BACK FORMULATIONS WHICH FIT WITH EXPERTS' FRAMEWORK**

### **QUESTIONNAIRE INCLUDES:**

- **FARMER CHARACTERISTICS (AGE, EDUCATION)**
- **CLUSTER BELONGING (ACTUAL, PAST AND FUTURE)**
- **FARMS LABOR FORCE**
- **FARMS SPECIALIZATION**
- **INFO ON LABELS, DIVERSIFICATION AND SO ON**
- **INFO ON COST AND REVENUES**
- **INFO ON FARMS STRATEGIES WITH RESPECT TO COMPETITIVENESS, ENVIRONMENT, TERRITORY, INNOVATION**
- **INFO ON RDP'S PARTICIPATION REPERCUSSION ON FARMS STRATEGIES**

## DATA PROCESSING

- **CATI interviews give back information which can be arranged in a data matrix**

**MULTIVARIATE TECHNIQUES**

**SEM MODELING**

**MULTIDIMENSIONAL SCALING**

**PROBIT/LOGIT MODEL**

**A WIDE RANGE OF TECHNIQUES CAN BE USED TO LOOK AT REGULARITIES AND CAUSE-EFFECT RELATIONSHIP**

## THIRD PHASE: CLOSING THE CIRCLE

- Re-activate the panel of experts to discuss the results
- Activate other panel depending on the focus (commercialisation, promotion, distribution..)

**IT ALLOWS THE INTERACTION AMONG PARTNERSHIP AND DECISION MAKERS  
ENABLING A SHARED SPACE OF COMMON UNDERSTANDING ON MULTIPLE  
DIMENSIONS: COMPETITIVENESS, SUPPLY CHAIN, TERRITORIES, YOUNG FARMERS,  
INNOVATION AND TRAINING, ENVIRONMENT**

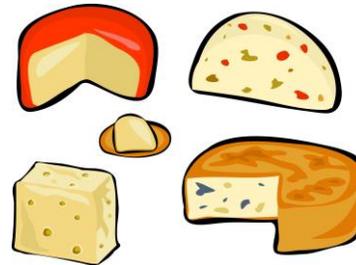
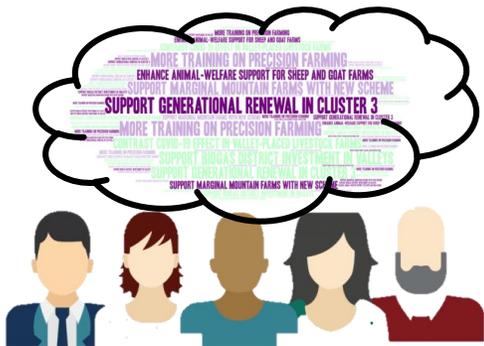


## FOR “FA 3A” ASSESSMENT

- Focusing on the producers allows to understand food supply chain repercussions
- Take into consideration other actors (case study)

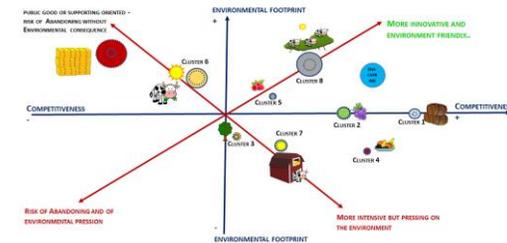
### CASE STUDIES ON AGRI-FOOD COMPANIES' BENEFICIARIES (VDA DIARY SECTORS)

#### THE EXPERTS' ROLE



### INVESTIGATE SHORT-MEDIUM-LONG SUPPLY CHAIN PERSPECTIVE DEPENDING ON THE FOCUS

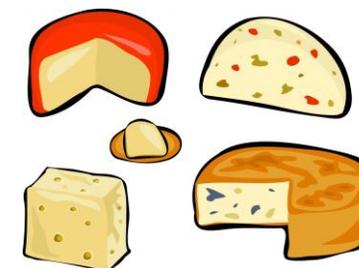
### BETTER FOCUS ON RISKS ALONG THE SUPPLY CHAIN (I.E MARGINAL FARMS FORAGE PRODUCERS, SMALL FAMILY-RUN FARMS, LARGE SIZE FARMS WITH GRASSLANDS)



### 3A: ASSESSMENT – THE FONTINA CASE

- Investment on dairy cooperatives are under implementation
- We know that RDP supported dairy coop. which process about nine million milk per year, 52% of the milk delivered annually to the social dairies of Valle d'Aosta.

Dairy Cooperative	YEAR foundation	Members (n.)	Members Delta	liters of milk processed	Delta 2016-17 (%)
Cooperativa Evançon soc. coop. (Arnad)	1977	59	-5	3.813.493	2,7
Grand Combin soc. coop. (Valpelline)	1987	40	1	1.908.582	-5,7
Agricole Oyace soc. coop. (Oyace)	1986	10	0	344.836	4,3
Valdigne-Mont Blanc soc. coop. (Morgex)	1969	26	0	937.459	-4,4
Chatel Argent soc. coop. (Villeneuve)	1969	61	0	2.302.878	-3,7
Agricole Valgrisenche soc. coop. (Valgrisenche)	1976	40	0	194.378	1,5
Agricole de Gressan soc. coop. (Gressan)	1996	11	-1	398.796	-3,1
Le Lait De Pollein soc. coop. (Pollein)	1993	27	-2	914.177	0,8
Champagne soc. coop. (Chambave)	1987	115	0	1.613.574	-11,9
Agricole Ollomont soc. coop. (Ollomont)	1989	7	0	182.461	6,9
Valle del Cervino soc. coop. (Valtournenche)	1974	71	-1	1.467.506	0,0
Fromagerie Haut Val D'Ayas soc. coop. (Brusson)	2002	66	-1	2.442.238	1,2
Les Iles soc. coop. (Brissogne)	1995	8	0	445.989	13,3



## PROS/CONS

- Helping policy makers to take decisions based on a common framework of understanding
- More holistic view on what the RDPs generates
- Allows to address EQ for the ex-post
- Allows to understand better the Context Impact indicators evolution



- We will understand by doing all the critical aspects
- If the mandate of the MA is too focused on the quantification of indicators or the ToRs of evaluation services defined too tight standards on surveys (indicators quantifications), it is better to avoid it. Surveys on FADN format are expensive and too much focused on economic performance (budget constraints)



**THANKS FOR YOUR ATTENTION**

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