

# R4D project - 100 best practices for resilient dairy farming in Europe

*Brocard V.<sup>1</sup>, Castellan E.<sup>1</sup>, Fagon J.<sup>1</sup>, Browne N.<sup>2</sup>, Debevere S.<sup>3</sup>, Launay F.<sup>1</sup>*

*<sup>1</sup>Institut de l'Élevage, France - <sup>2</sup>Teagasc, Ireland - <sup>3</sup>Inagro, Belgium*



## R4D Resilience 4 Dairy



Univerza v Ljubljani



Resilience for Dairy (R4D) has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101000770



**R**esilience  
4 for  
**D**airy

**Resilience4Dairy:**  
Sharing knowledge to improve sustainability  
and resilience of the dairy sector

# EU projects on resilience



- Focusing on **farmers** practical issues affecting future sustainability of dairying
- Involving farmers in the definition of resilience



Resource Efficiency



Animal Care



Socio-Economics



Biodiversity



## The EIP R&R Focus Group

### What is resilience?

EIP Focusgroup - 2016-2018



7 R&R enhancing factors

- A sustainable robust and resilient dairy production system **can recover from, or adapt to, changes** in environmental, social or economic conditions
- 3 levels: cow, farm, dairy sector



# General objectives of R4D Thematic Network

Resilience

Robustness

Sustainability

3 expertise areas (3 Knowledge Areas KA) =

Economic and social resilience

Technical efficiency

Environment, welfare and society



freepik



# Resilience 4 for Dairy



## The consortium



16 countries, 18 partners





# R4D objectives

Which pathways and solutions to remain a dairy farmer in Europe tomorrow?

- Develop a **Minimum Viable Product** (MVP) and relevant **business models** focusing on resilient dairy farms
- Address the farmers **needs on the main challenges** to improve resilience
- Collect, **assess**, test, exchange and publish **100 solutions** to improve the resilience of dairy farmers, farms and sector
  - tailored to answer farmer's specific needs and society's expectations

# R4D approach:

- Step 1
  - Creating the 16 National Dairy Akis (NDA)
  - Creating the Pilot Farm network (120 farms)
- Step 2
  - Collecting farmers needs
  - Collecting NDA solutions
- Step 3
  - Matching needs and solutions: Creating national workplans
- Step 4
  - Selecting most promising solutions (experts)
  - Ranking= NDA/farmers
- Step 5
  - Assessing and/or testing solutions
  - Adapting the solutions validated
- Step 6
  - Delivering **Ready-to-use Best Practices** (leaflets, webinars, videos, social networks)
- ...
  - Identifying knowledge gaps & needs for further research

Resilience for Dairy – R4D

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Please fill in both the brown and green columns.

Country	Needs																Resources available															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Belgium																																



+200 solutions



100 Best Practices

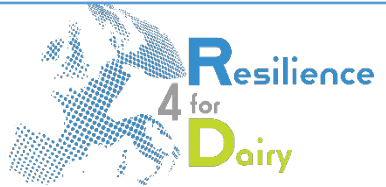
Im Dirk Vandecandelaere from Belgium

**R4D Best Practice: Young stock weight measurement**

2018/2019 | 10/10

Dirk and Griet Vandecandelaere keep 110 dairy cows. They have a very efficient young stock management. In order to control the growth of the heifers they measure their weight on a regular basis. This allows them to reach the first calving age at 24 months. [Subsidies EN](#)

WATCH THE VIDEO



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+200 solutions



100 Best Practices



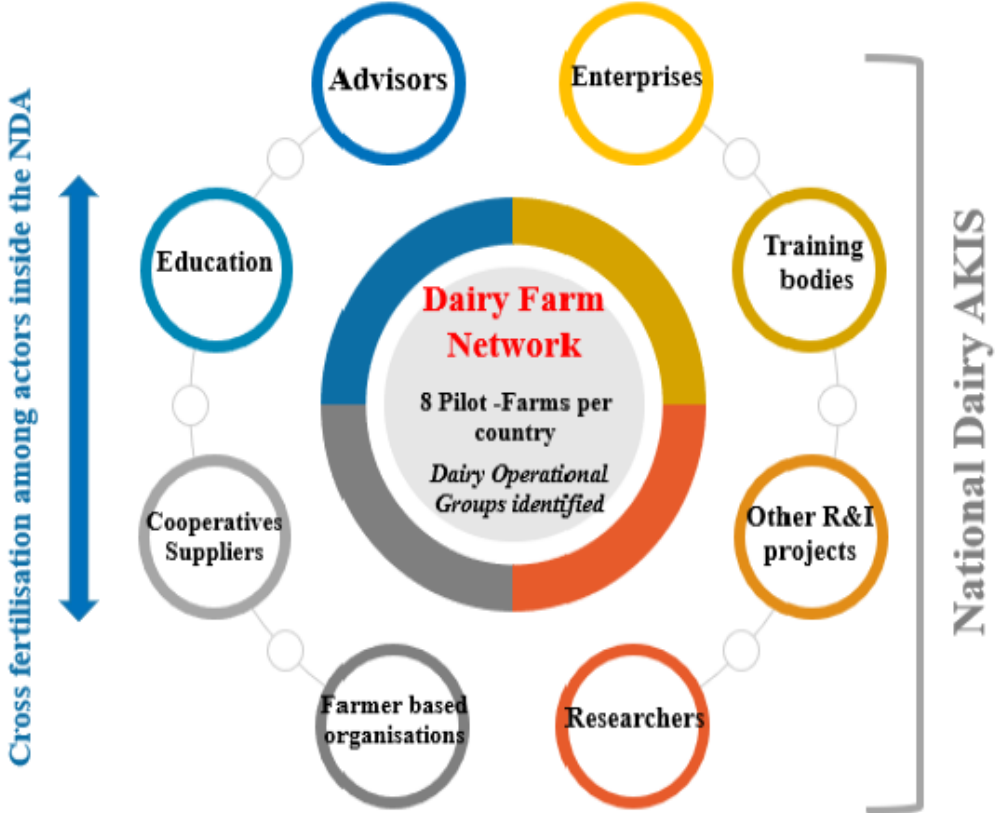


# Structure of the project

In each country, a national steering committee named **National Dairy Akis (NDA)**

With a facilitator named **Farm Facilitator (FF)**

Express the needs  
Implement tests and demos  
Organise exchanges  
(country and project levels)



# Implementing farmers EU workshops and cross visits

60 to 120 people  
X 5 EWS



1,214 actors  
involved



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16 National Dairy Akis (NDA)	Needs																Solutions															
	Belgium	France	Germany	Italy	Netherlands	Poland	Portugal	Spain	Sweden	Switzerland	UK	Austria	Denmark	Finland	Greece	Ireland	Belgium	France	Germany	Italy	Netherlands	Poland	Portugal	Spain	Sweden	Switzerland	UK	Austria	Denmark	Finland	Greece	Ireland
1. Dairy farm management																																
2. Animal health & welfare																																
3. Farming and environmental management (climate change) / Green/Blue/Carbon																																
4. Economic health / Diversification																																
5. Business management / Innovation/ New technologies																																
6. Knowledge and Training																																
7. Policy/Institutional/Network																																

Needs = level of importance  
Solutions = availability



+200 solutions



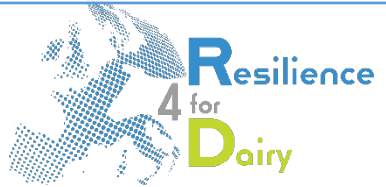
100 Best Practices

Im Dirk Vandecandelaere from Belgium

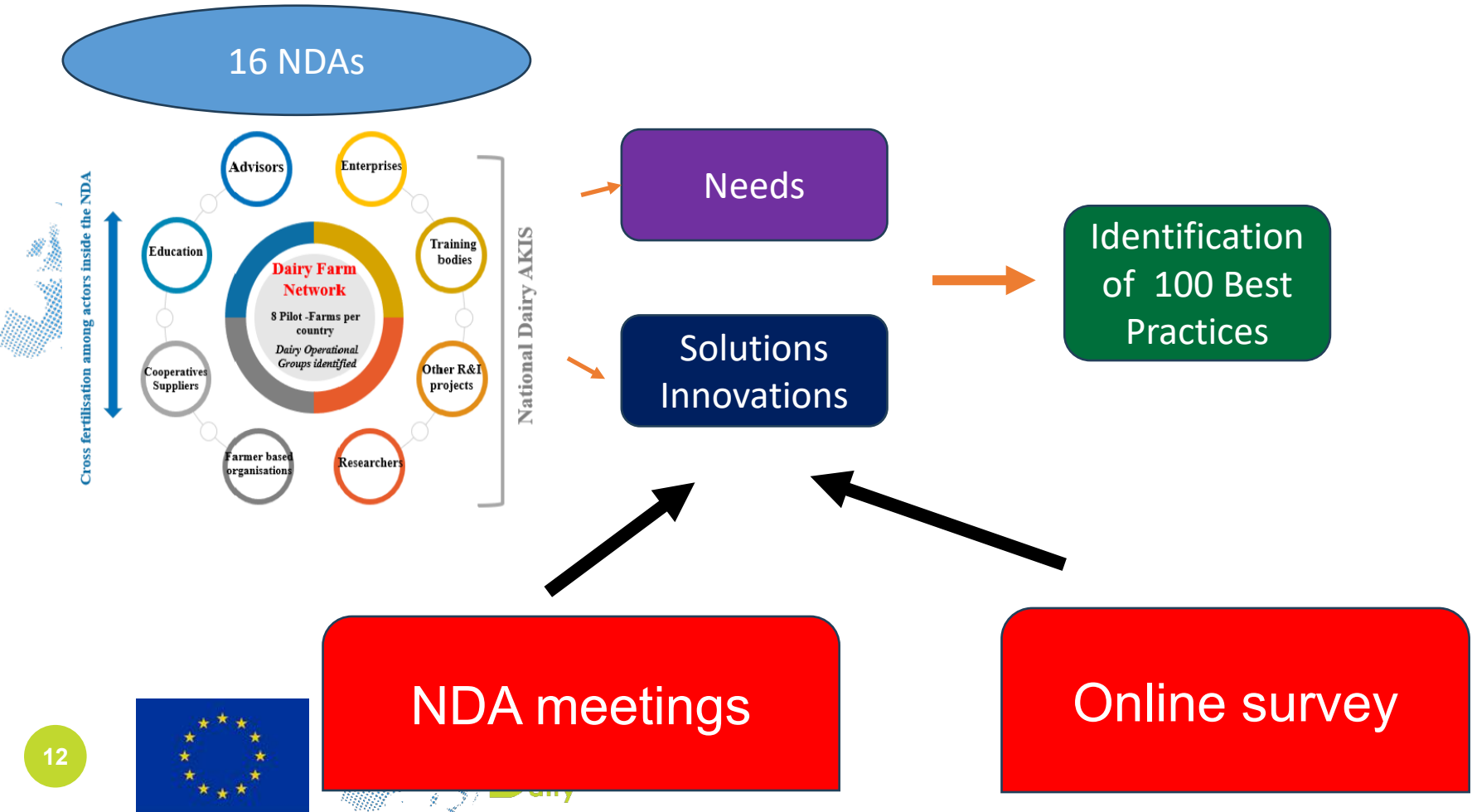
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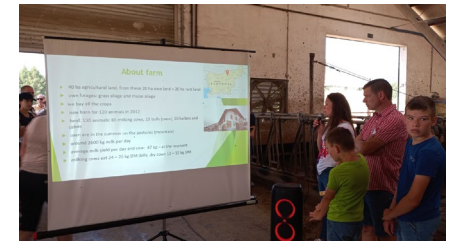


# Collecting farmers most urgent needs and solutions. Creation of National Workplans



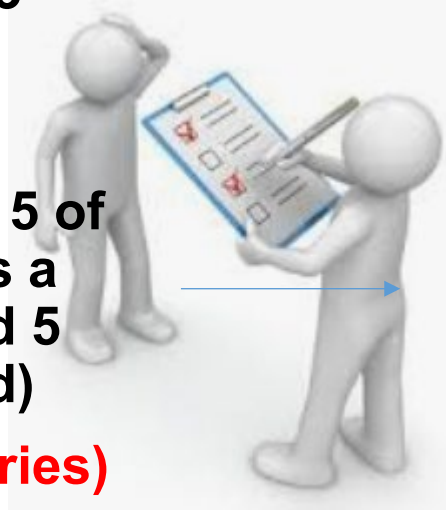
# To provide innovative solutions, one must understand the needs.

- Collection of the strongest expectations of farmers (and their advisors) in the 16 countries
  - **Online survey**
  - **Physical meeting**
- Initial list based on literature, former EU projects, feedbacks from partners and farmers
- Formatting and sorting of needs by field through voting and discussions
- Field visits in the region and in Europe "to see and understand"



# Online survey 2022

- 43 proposals of themes/needs (10 chapters divided into 43 specific topics)
- Rated from 0 to 5
- Results (Top 5 and Bottom 5 of the vote/43) – expressed as a percentage of ratings 4 and 5 (interested / very interested)
- 535 respondents (16 countries)
- Not evenly spread (Irl 9, B Fla 91)



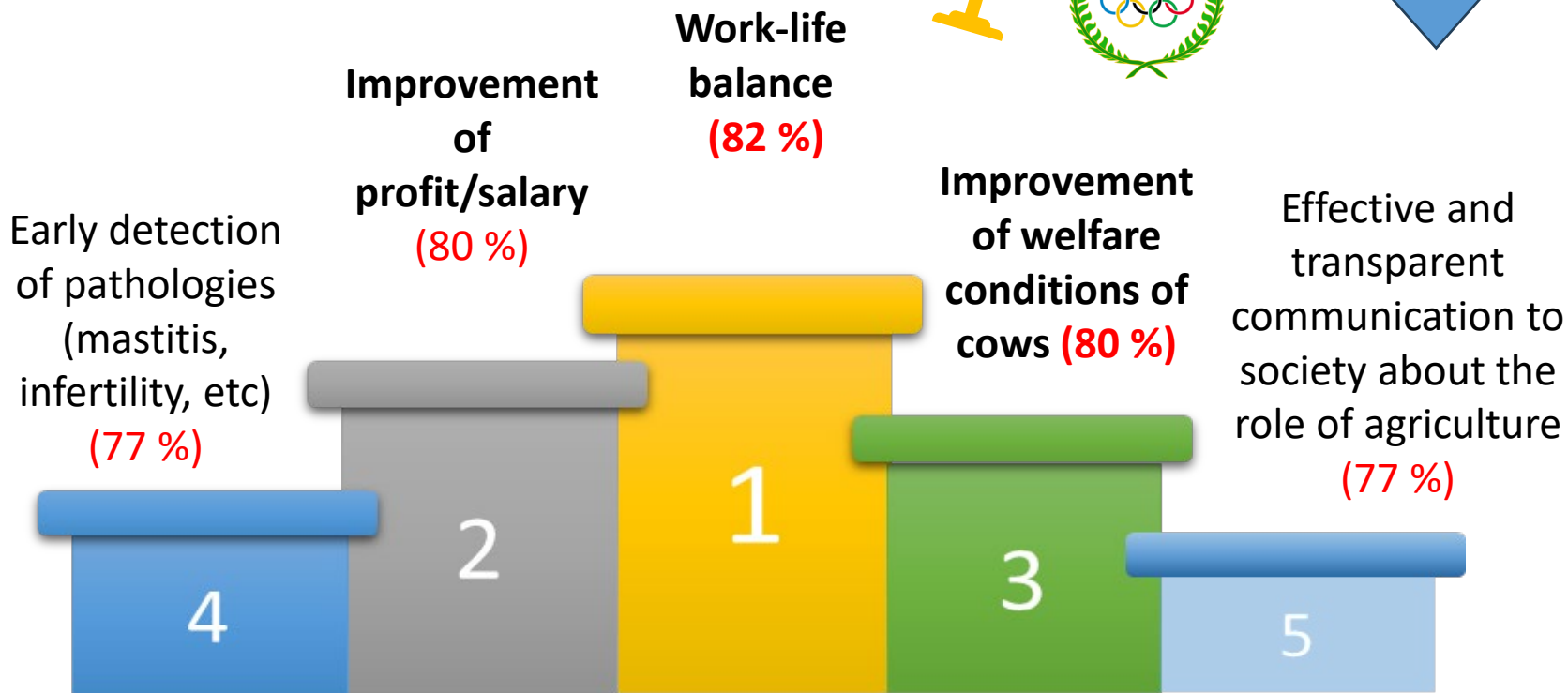
Economic and social resilience	FINANCIAL NEEDS
	BUSINESS MANAGEMENT: IMPROVE STRATEGIC SKILLS AND BUILD ROBUST BUSINESS MODELS
	INFORMATION SOURCES, KNOWLEDGE, TRAINING
	LABOUR CONDITIONS
Technical Efficiency	DAIRY CATTLE MANAGEMENT (housing, genetic, feeding system,...)
	ANIMAL NUTRITION
	ANIMAL HEALTH (and fertility)
Environment, welfare and society	ANIMAL WELFARE
	ECOLOGICAL AND ENVIRONMENTAL FOOTPRINT/MITIGATION OF CLIMATE CHANGE/INPUTS EFFICIENCY
	SOCIAL ISSUES: BUILD SOCIETY FRIENDLY SYSTEM





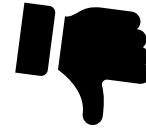
# Online survey on the needs of European dairy farmers – R4D

Results 16 countries

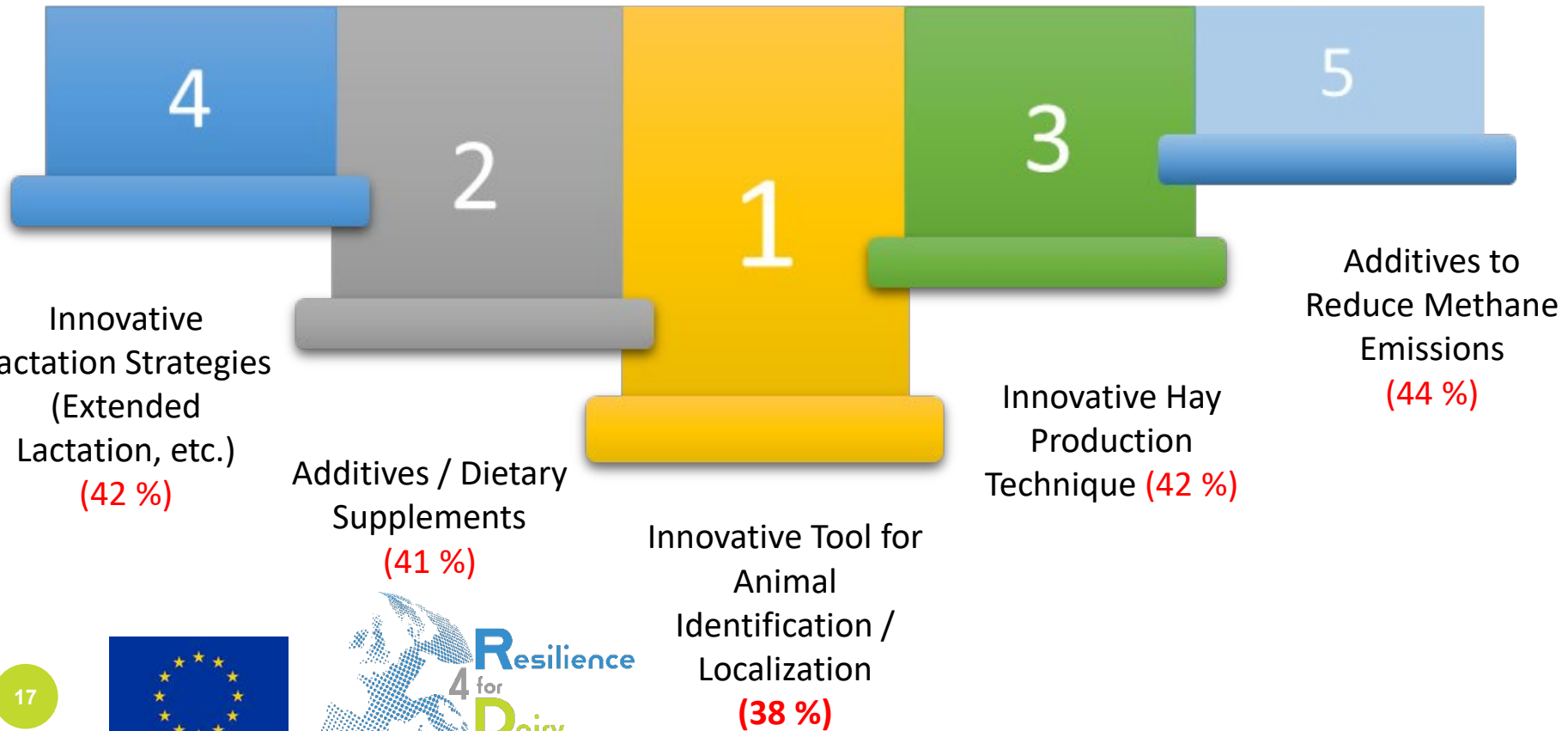




# Online survey on the needs of European dairy farmers – R4D



Results 16 countries



# Some specific investigations by cluster

- Farmers (379) vs non farmers (156) :
  - welfare condition of cows ranks 1 (just above work/life balance)
- Farm dimension over 100 cows (170)
  - Improvement of welfare conditions of calves ranks 4th
- Over 40 yrs (371)
  - Effective communication and transparency to the general public ranks higher (5th)
- Female (125) / Male
  - 1-work/life balance; 2-3-4 : welfare condition of cows, calves and animal friendly buildings
- Level of education: little impact



# Results by country/area

## Searching for Dairy Farm Resilience with the R4D Project: Innovation Needs to Be Sustainable

by Ewa Kołoszycz <sup>1</sup> , Artur Wilczyński <sup>1</sup> , Alberto Menghi <sup>2</sup> , Chiara Serena Soffiantini <sup>2</sup>  and Marija Klopčič <sup>3,\*</sup> 

- <sup>1</sup> Department of Management and Marketing, Faculty of Economics, West Pomeranian University of Technology in Szczecin, ul. K. Janickiego 31, 71-270 Szczecin, Poland
  - <sup>2</sup> Centro Ricerche Produzioni Animali—CRPA Soc. Cons. p.A., Viale Timavo 43/2, 42121 Reggio Emilia, Italy
  - <sup>3</sup> Department of Animal Science, Biotechnical Faculty, University of Ljubljana, Groblje 3, 1230 Domžale, Slovenia
- \* Author to whom correspondence should be addressed.

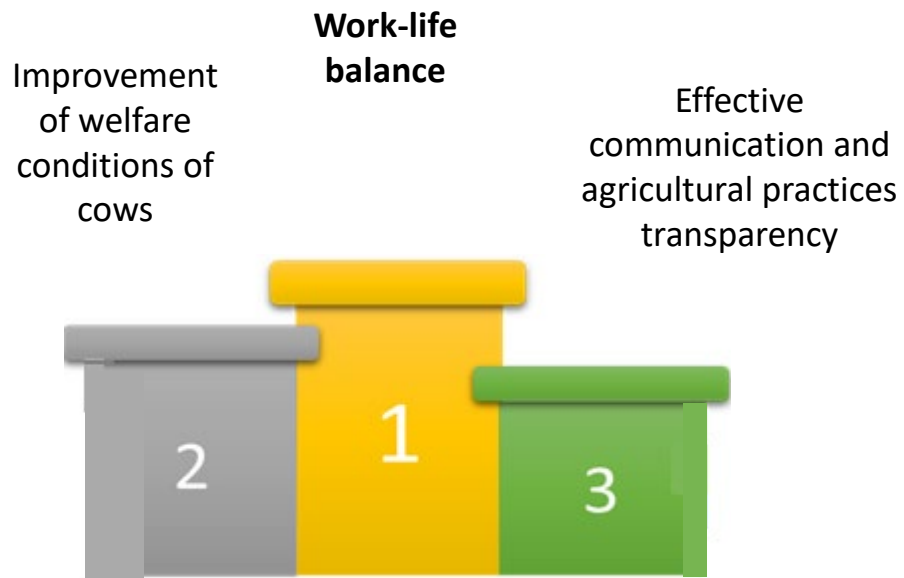
*Sustainability* **2024**, *16*(9), 3520; <https://doi.org/10.3390/su16093520>

Submission received: 9 March 2024 / Revised: 15 April 2024 / Accepted: 17 April 2024 / Published: 23 April 2024

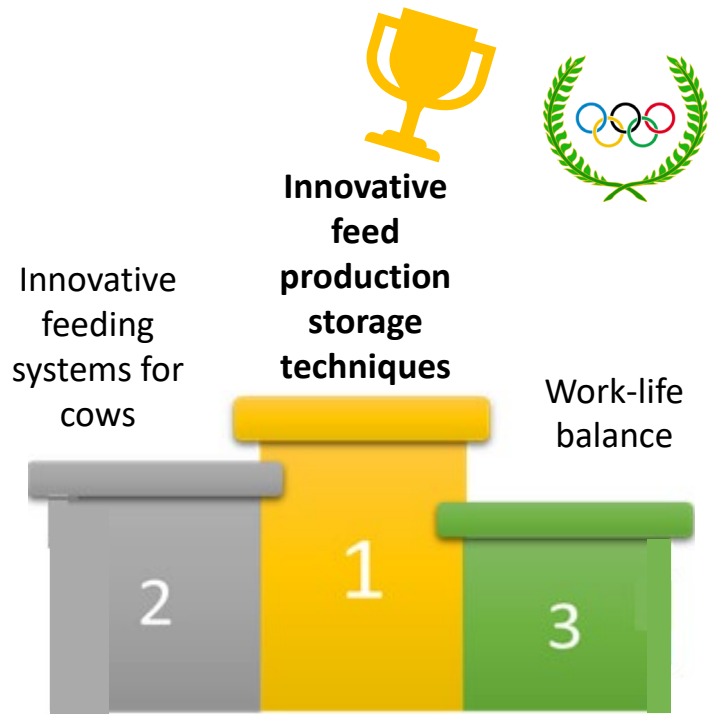
### Western Europe vs. Central and Eastern Europe



# Online survey on the needs of European dairy farmers – R4D



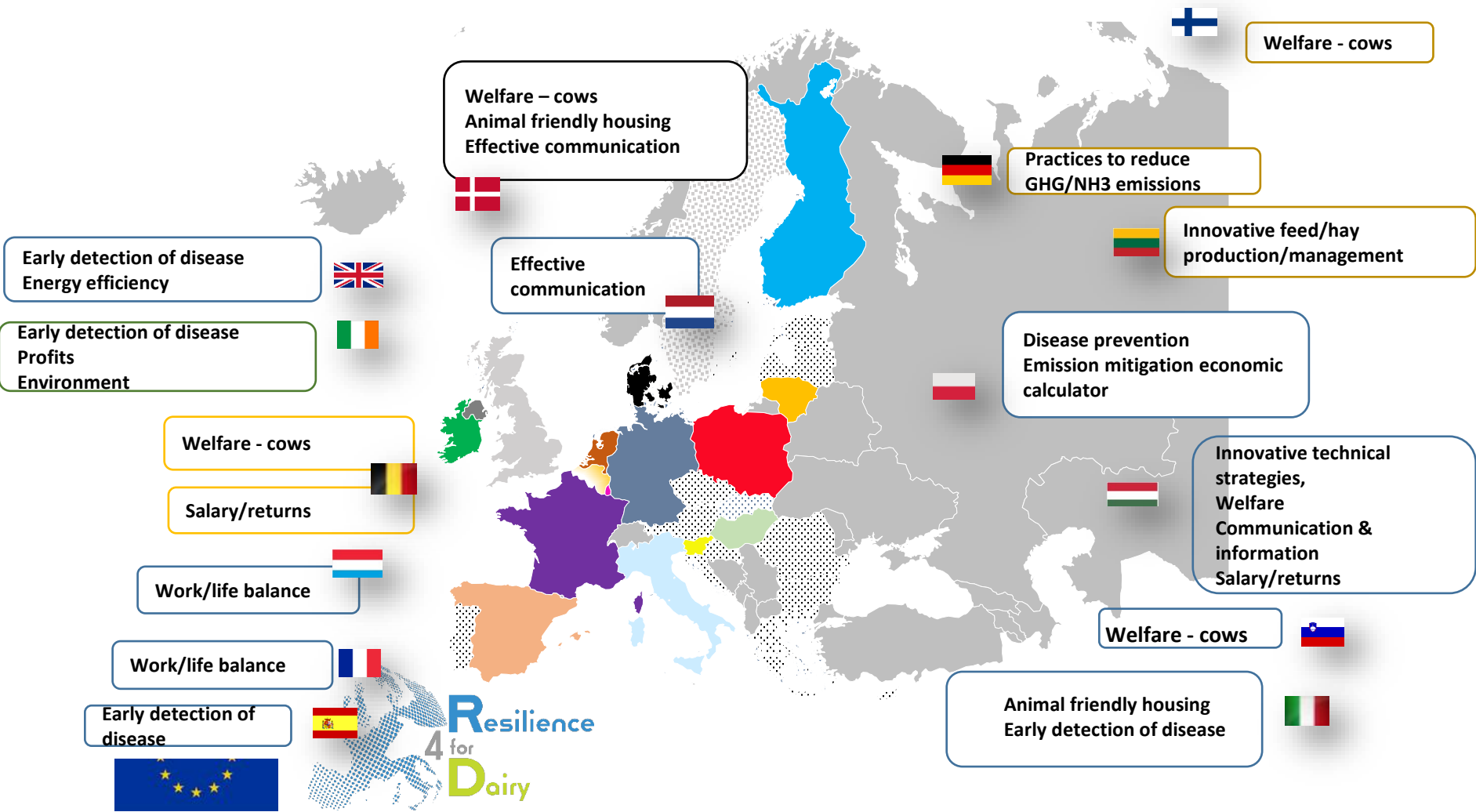
**Western Europe (N=438)**



**Central and Eastern Europe (N=97)**



# Top need for each country based on survey

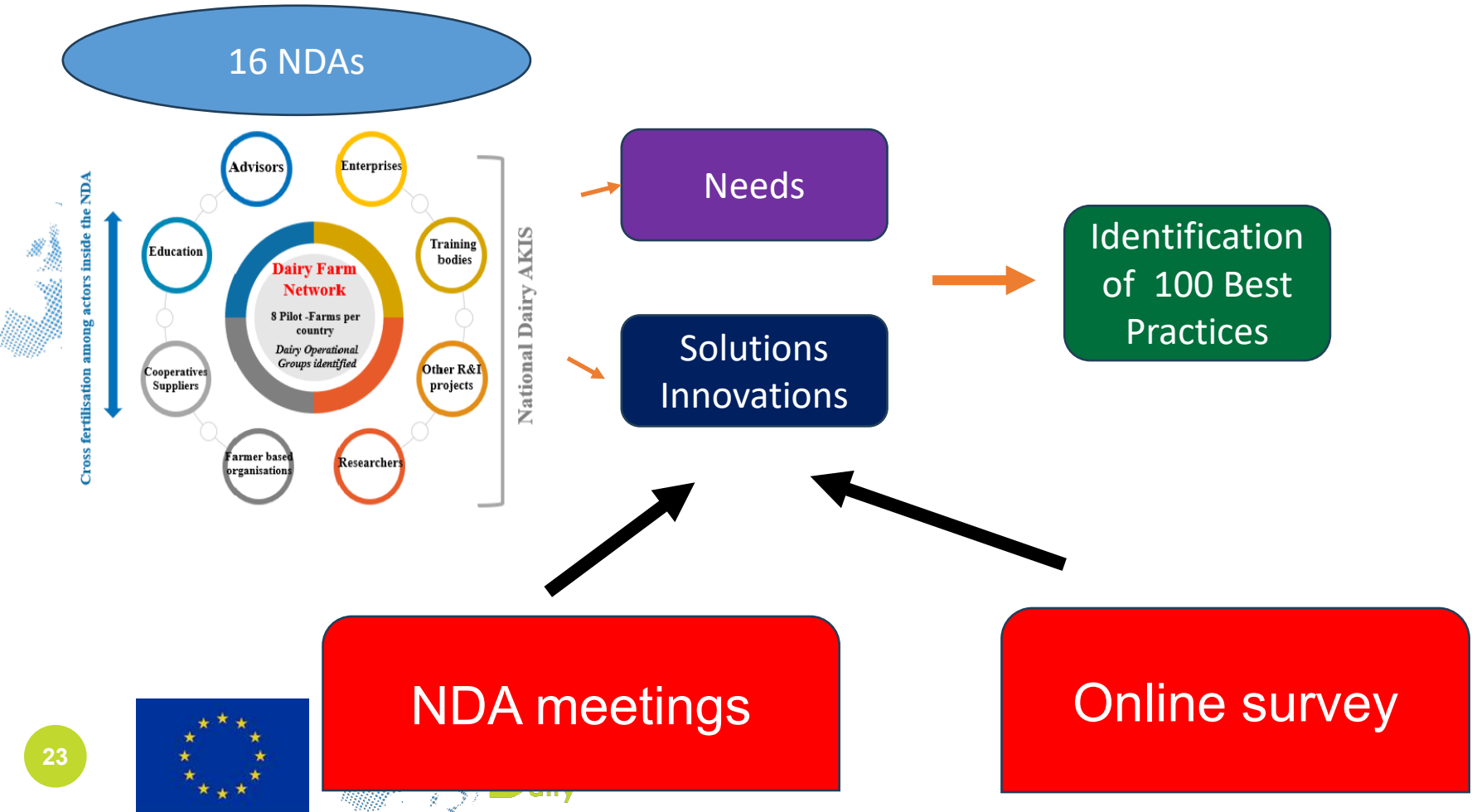


# Survey on Needs: Conclusions

- The ranking shows the variety of needs that farmers have to face
- The main themes are:
  - farmers welfare (work-life balance)
  - animal welfare and health (prevention)
  - communication with civil society
  - environmental sustainability (renewable energy)
- “Work-life balance” is always in the first 3 top positions regardless of clusters



# Collecting farmers most urgent needs and solutions. Creation of National Workplans



# Needs

## Needs identified in NDA meetings



Most often mentioned: Labour conditions, environmental and social issues





# Top 1 needs in detail

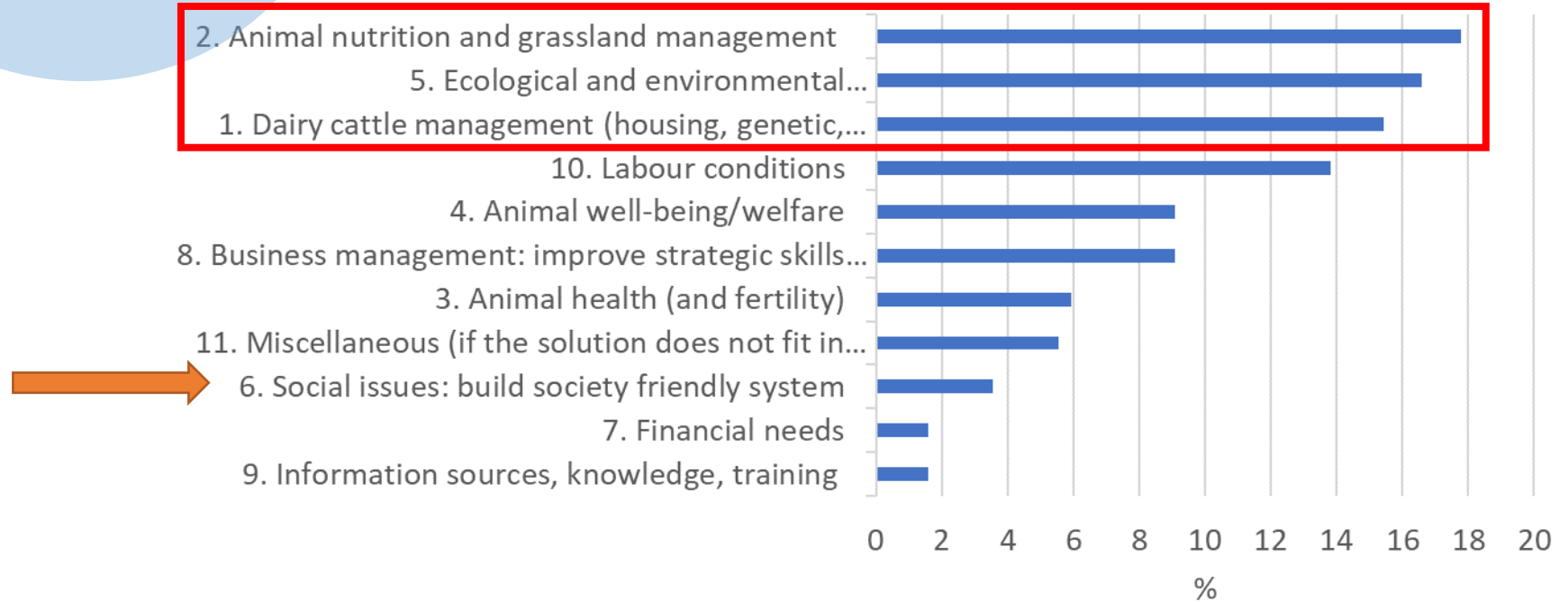
## Labour conditions

- Well-being of farmers
  - work-life balance
  - mental health
  - social relationships, partnership relations
  - economy
  - family and generations
- Farmers' entrepreneurship
  - skills as a manager, work organisation
- Cooperation with other farmers
  - share tools, technologies and workload
  - peer group support



# Solutions

## Solutions identified in NDA meetings



Most often mentioned: Animal nutrition, environment and dairy cattle management



# Solutions proposed, in detail

## Animal nutrition and grassland management

- Feeding
  - Protein self-sufficiency
  - Optimization/reducing of protein feeding
  - Novel feeds
- Grass/forage
  - Forage quality, analyzing, plate measuring, drones
  - Reduce silage storage losses
- Grazing
  - Improving grazing management
  - New grazing systems
- Other
  - Slurry technologies, agroforestry



Photo: Lilli Frondelius, Luke



# Comparing survey with NDA results



**Labour** was the most highly emphasized in the NDA meetings, which links to a work/life balance which was top of the survey



**Salary/returns** was in the top three needs in the survey, however was not commonly emphasized in the NDA meetings



**Animal welfare** scored high in the on-line survey, but was not emphasized in the NDA outputs



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1. Dairy farm management																																	
2. Animal health & welfare																																	
3. Animal welfare / Welfare																																	
4. Farming and environmental management (climate change) / Climate Change																																	
5. Farming and environmental management (water) / Water																																	
6. Farming and environmental management (energy) / Energy																																	
7. Farming and environmental management (soil) / Soil																																	
8. Farming and environmental management (biodiversity) / Biodiversity																																	
9. Farming and environmental management (knowledge and training) / Knowledge and Training																																	
10. Farming and environmental management (policy) / Policy																																	



+200 solutions



100 Best Practices

Im Dirk Vandecandelaere from Belgium

**R4D Best Practice: Young stock weight measurement**

2018/2019 | 100p

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Subsidies EN

WATCH THE VIDEO



# Creating **workplans** by comparing needs and resources by country

EU Countries / NDA in R4D		Belgium Flanders		Belgium Wallonia		Denmark		Finland		France		Germany		Hungary		Italy		Lithuania		Luxembourg		Netherlands		N. Ireland		Poland		Rep. Ireland		Slovenia		Spain	
Area number	Areas (WP2 survey)	Needs	Resources available	Needs	Resources available	Needs	Resources available	Needs	Resources available	Needs	Resources available	Needs	Resources available	Needs	Resources available	Needs	Resources available	Needs	Resources available	Needs	Resources available	Needs	Resources available	Needs	Resources available	Needs	Resources available	Needs	Resources available	Needs	Resources available		
		1	Dairy cattle management	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot
2	Animal nutrition	Medium	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot		
3	Animal health & fertility	Medium	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot		
4	Animal well-being / Welfare	Medium	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot		
5	Ecological and environmental footprint / Climate change / Inputs efficiency	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot		
6	Society friendly system	Medium	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot		
7	Financial needs / Access to credits	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot		
8	Business management / Business model / Strategic skills	Medium	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot		
9	Information sources, Knowledge and Training	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot		
10	Labour conditions / farmers' well being	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot	High	A lot		

Needs – level of importance:

High	High
Medium	Medium
Low	Low

Resources available

A lot	A lot
Moderately	Moderately
A little / not at all	A little / not at all

# Creating **workplans** by comparing needs and resources by country

EU Countries / NDA in R4D	Belgium Flanders		Belgium Wallonia		Denmark		Finland		France		Germany		Hungary		Italy		Lithuania		Luxembourg		Netherlands		N. Ireland		Poland		Rep. Ireland		Slovenia		Spain					
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Needs – level of importance:

High	Dark Brown
Medium	Light Brown
Low	Very Light Brown

Resources available

A lot	Dark Green
Moderately	Medium Green
A little / not at all	Light Green



# Creating **workplans** by comparing needs and resources by country

EU Countries / NDA in R4D	Belgium Flanders	Belgium Wallonia	Denmark	Finland	France	Germany	Hungary	Italy	Lithuania	Luxembourg	Netherlands	N. Ireland	Poland	Rep. Ireland	Slovenia	Spain
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3 Animal health & fertility	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot
4 Animal well-being / Welfare	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot
5 Ecological and environmental footprint / Climate change / Inputs efficiency	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot
6 Society friendly system	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot
7 Financial needs / Access to credits	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot
8 Business management / Business model / Strategic skills	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot
9 Information sources, Knowledge and Training	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot
10 Labour conditions / farmers' well being	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot

Needs – level of importance:

High	Dark Brown
Medium	Light Brown
Low	Very Light Brown

Resources available

A lot	Dark Green
Moderately	Medium Green
A little / not at all	Light Green





# Creating **workplans** by comparing needs and resources by country

EU Countries / NDA in R4D	Belgium Flanders	Belgium Wallonia	Denmark	Finland	France	Germany	Hungary	Italy	Lithuania	Luxembourg	Netherlands	N. Ireland	Poland	Rep. Ireland	Slovenia	Spain
Areas (WP2 survey)	Needs Resources available	Needs Resources available	Needs Resources available	Needs Resources available	Needs Resources available	Needs Resources available	Needs Resources available	Needs Resources available	Needs Resources available	Needs Resources available	Needs Resources available	Needs Resources available	Needs Resources available	Needs Resources available	Needs Resources available	Needs Resources available
1 Dairy cattle management	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot
2 Animal nutrition	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot
3 Animal health & fertility	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot
4 Animal well-being / Welfare	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot
5 Ecological and environmental footprint / Climate change / Inputs efficiency	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot
6 Society friendly system	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot
7 Financial needs / Access to credits	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot
8 Business management / Business model / Strategic skills	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot
9 Information sources, Knowledge and Training	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot	Low A lot
10 Labour conditions / farmers' well being	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot	High A lot

Needs – level of importance:

High	Dark Brown
Medium	Light Brown
Low	Very Light Brown

Resources available

A lot	Dark Green
Moderately	Medium Green
A little / not at all	Light Green



# Matching needs and solutions



- Many challenges: many needs
- Most scored Need and Solution = **Environment/Climate**
- Practical management issues : Lots of resources available
  - Need to exchange, adapt, disseminate, not necessary to create new research
- Lack of practical solutions for farmers: farmers well being



# R4D approach:

- Step 1
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  - Creating the Pilot Farm network (120 farms)
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  - **Ranking= NDA/farmers**
- Step 5
  - Assessing and/or testing solutions
  - Adapting the solutions validated
- Step 6
  - Delivering **Ready-to-use Best Practices** (leaflets, webinars, videos, social networks)
- ...
  - Identifying knowledge gaps & needs for further research

Resilience for Dairy – R4D

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Please fill in both the brown and green columns.

1) Country (NDA or R4D)	2) Needs																3) Solutions															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1) Dairy (NDA) ranked																																
2) Dairy (R4D) ranked																																

Needs: level of importance  
 1: High  
 2: Medium  
 3: Low

Solutions: available  
 1: Yes  
 2: No



+200 solutions



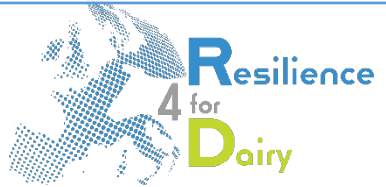
100 Best Practices

Im Dirk Vandecandelaere from Belgium

**R4D Best Practice: Young stock weight measurement**  
 2018/2019 | 1/10/19

Dirk and Griet Vandecandelaere keep 110 dairy cows. They have a very efficient young stock management. In order to control the growth of the heifers they measure their weight on a regular basis. This allows them to reach the first calving age at 24 months. [Subsidies EN](#)

WATCH THE VIDEO



# NDA meetings to select solutions and rank them



# NDA meetings Flanders and the Netherlands

# NDA meetings Hungary, Denmark and Finland



**THE 20 SOLUTIONS SELECTED FOR RANKING IN DK**

1. Overall welfare system for improved animal welfare and performance, in particular before weaning
2. Offering milk to calves via teats, teat buckets or automatic milk feeders (instead of buckets) to reduce the risk of abnormal behaviour and
3. High milk allowance (at least 20% of BW) early in life combined with medical weaning
4. High milk allowance (at least 20% of BW) early in life combined with medical weaning
5. Cross breeding with dairy breeds to improve milk volume, health, fertility and longevity
6. Use of animal health and reproductive data to reduce and increase the value of young stock
7. Use of animal health and reproductive data to reduce and increase the value of young stock
8. Genetic selection for improved health status and longevity
9. Genetic selection for improved health status and longevity
10. Genetic selection for improved health status and longevity
11. Genetic selection for improved health status and longevity
12. Genetic selection for improved health status and longevity
13. Genetic selection for improved health status and longevity
14. Genetic selection for improved health status and longevity
15. Genetic selection for improved health status and longevity
16. Genetic selection for improved health status and longevity
17. Genetic selection for improved health status and longevity
18. Genetic selection for improved health status and longevity
19. Genetic selection for improved health status and longevity
20. Prevention, good practices and biosecurity

# NDA meetings in Germany and Italy



# NDA meetings Slovenia and France



# R4D approach:

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  - **Assessing and/or testing solutions**
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- ...

Resilience for Dairy – R4D

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EU Countries (NDA or R4D)	Needs																Solutions															
	BE	BG	CZ	DK	DE	FR	GR	HU	IE	IT	LT	LU	NL	PL	PT	RO	BE	BG	CZ	DK	DE	FR	GR	HU	IE	IT	LT	LU	NL	PL	PT	RO
1. Overall management																																
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10. Farming and environmental management (biodiversity) / Biodiversity																																



+200 solutions



100 Best Practices

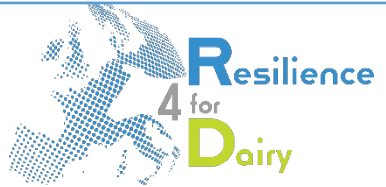
Im Dirk Vandecandelaere from Belgium

**R4D Best Practice: Young stock weight measurement**

2018/2019 | 100p

Dirk and Griet Vandecandelaere keep 110 dairy cows. They have a very efficient young stock management. In order to control the growth of the heifers they measure their weight on a regular basis. This allows them to reach the first calving age at 24 months. Subsidies EN

WATCH THE VIDEO





# Methodology of assessments of solutions

- **Farmer needs were collected via survey**

Resulted in 190 “solutions” selected for assessment

- **Cost / benefit analysis method created**

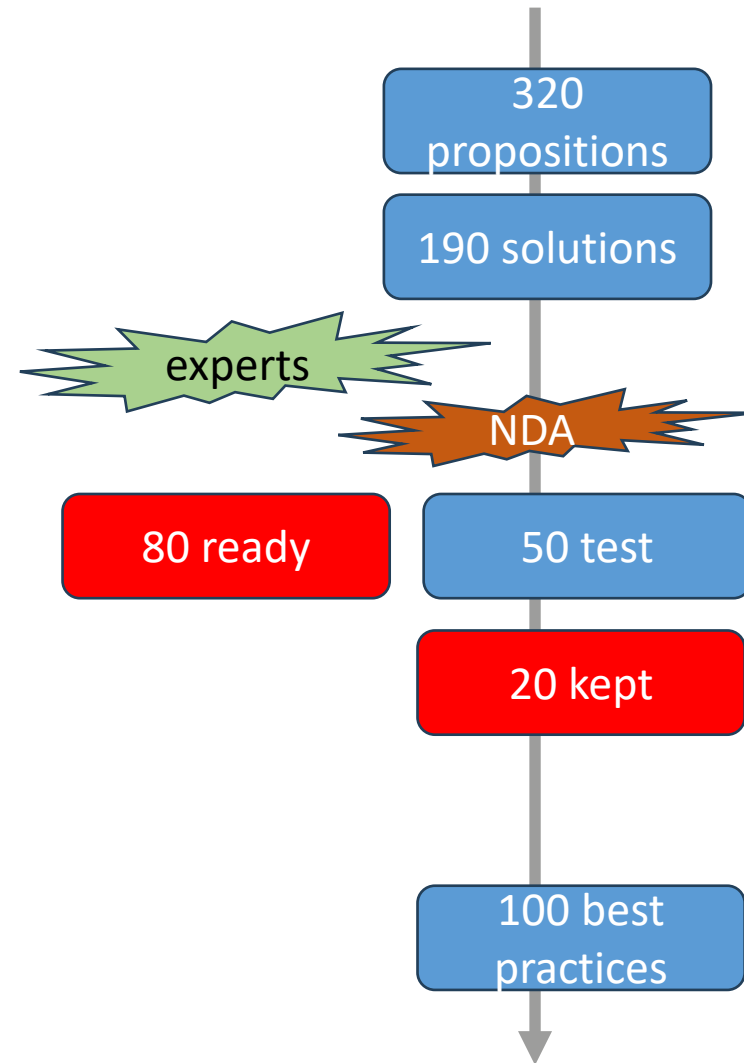
- **66 expert assessors from 15 European countries**

3329 assessments, thus 50 per assessor

Each solution scored by accessing “not important to very important” (1 to 5)

- **2-3 National Dairy AKIS (NDA) meetings in 15 countries to check scored solutions for readiness and acceptability**

20 solutions chosen per country (overlapping)



# Cost-benefit analysis to assess solutions

Session 60 A. Kuipers et al  
This afternoon

32 questions all Knowledge areas

All  
KAs

- Solution and assessor (4 questions)

All KAs

- Match between solution and type of farm (5)

- Cat. 1a: Economic resilience (6)

- Cat. 1b: Social resilience (7)

- Cat. 2: Technical efficiency (4)

- Cat. 3a: Environment (6)

- Cat. 3b: Animal welfare and health (4)

- Cat. 3c: Societal perception items (5)

13 questions Knowledge area 1 / 33 questions total

4 Knowledge area 2 / 24 questions total

15 questions Knowledge area 3 / 35 questions total

All KAs

- Cat. 4: Readiness and acceptability of solutions (6)

All KAs

- Cat. 5: Cross cutting resilience challenges (3)

All  
KAs

- Cat. 6: Final comments (2)

- Cat. 7: Feedback on farm monitoring (5)

Farm facilitator and farmer (WP4) / 57 questions total

Total number of questions: **57**



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Resilience for Dairy – R4D

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16 National Dairy Akis (NDA)	Needs																Solutions															
	Belgium	France	Germany	Italy	Netherlands	Poland	Portugal	Spain	Sweden	Switzerland	UK	Austria	Denmark	Finland	Greece	Ireland	Belgium	France	Germany	Italy	Netherlands	Poland	Portugal	Spain	Sweden	Switzerland	UK	Austria	Denmark	Finland	Greece	Ireland
1. Stocking management																																
2. Animal health & fertility																																
3. Animal welfare / Welfare																																
4. Farming and environmental management (climate change) / Green production																																
5. Economic viability / Diversify income																																
6. Business management / Business model development																																
7. Knowledge and training / Knowledge and training																																
8. Policy innovation / Policy																																



+200 solutions



100 Best Practices

Im Dirk Vandecandelaere from Belgium

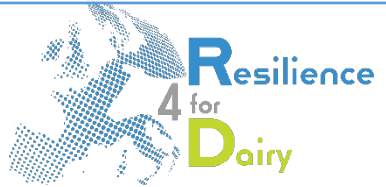
**R4D Best Practice: Young stock weight measurement**

2018/2019 | 100p

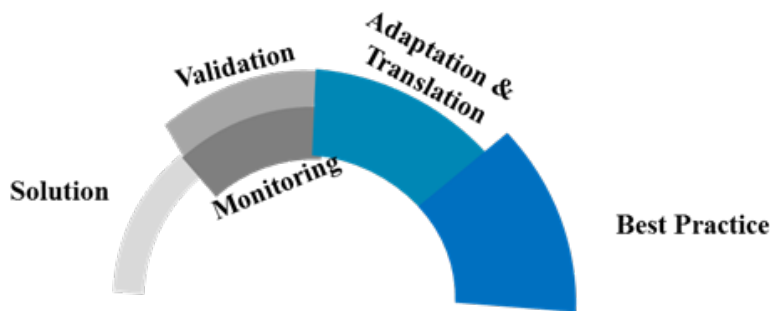
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Subsidies EN

WATCH THE VIDEO



# Dissemination of Best Practices



**GAEC Trouencon Farm description FR**  
 16.01.2023 | Flyer  
 GAEC Le Trouencon is using a cross breeding system with pasture.

[SHOW THE FLYER](#)



**Lameness in dairy cows at pasture - An important challenge for Irish Dairy farmers**  
 14.11.2022 | Webinar  
 Minimising the incidence of lameness in dairy cows was identified by farmers participating in the Resilience for Dairy project as an important contributor to the resilience of their dairy enterprise. During the webinar the principal types of lameness and solutions in grazing dairy cows are discussed.

[WATCH THE WEBINAR](#)

<b>Topic</b> Technical efficiency 	<b>Topic</b> Economic Resilience 	<b>Colostrum management: give your calves sufficient colostrum from good quality to become productive cows</b>
<p><b>Background</b>                  Calves are born without antibodies in their blood and are totally dependent on antibodies in the colostrum they drink after birth. A good colostrum management is extremely important to rear healthy calves, but also productive cows. However, colostrum management is not optimal at many farms, which has of course a financial impact.</p>		
<p><b>What is a good colostrum management?</b></p> <p><b>Dry period</b></p> <ul style="list-style-type: none"> <li>Enough dry matter intake (target value (TV): 12 kg DM/day)</li> <li>Enough crude protein (TV: 13-14% CP in far-off, 14-15% in close-up)</li> <li>Enough vitamins and minerals (Selenium: 23.5 mg/day; vitamin E: 1000 - 1200 units extra in dry period...)</li> <li>Enough access to (clean) water (intake: min. 40 L/day)</li> </ul> <p><b>Colostrum quality</b></p> <ul style="list-style-type: none"> <li>Milk the cow directly after given birth for a good colostrum quality</li> <li>Check the colostrum quality (&gt;20 brix or &gt;55 IgG/L)</li> </ul> <p><b>Colostrum intake</b></p> <p>Give the calf within 6 hours min. 220g IgG (4L colostrum of good quality). However, strive for 300g IgG within 8h!</p> <p><b>Storage</b></p> <ul style="list-style-type: none"> <li>Store colostrum IMMEDIATELY and HYGENIC</li> <li>In the fridge (max. 2 days)</li> <li>In the freezer (max. 3 years)</li> <li>Defrost slowly as bain marie or in the fridge. Never heat above 60°C!</li> </ul>	<p><b>Which equipment do you need?</b></p> <p><b>Temperature independent</b></p> <p> Digital refractometer</p> <p><b>Temperature dependent</b></p> <p> Colostrum balls</p> <p> Analog refractometer</p> <p> Densimeter</p> <p><b>Be careful, especially on these points:</b></p> <ul style="list-style-type: none"> <li>Colostrum balls and the densimeter are temperature dependent!</li> <li>Do not leave colostrum at room temperature</li> </ul> <p><b>Specific advices:</b></p> <ul style="list-style-type: none"> <li>Use a drencher probe if the calf doesn't drink enough</li> <li>A colostrum check can be performed to check your colostrum management (contact your vet)</li> <li>Use following words:                         <ul style="list-style-type: none"> <li>Quick</li> <li>Fresh</li> <li>Much</li> <li>Often</li> </ul> </li> </ul>	
<p><b>Positive features:</b>                  A good colostrum management leads to less morbidity and mortality, but also to an early first calving age, more productive cows and hence a more resilient farm.</p> <p><b>Quote of farmer:</b>                  "Good colostrum management leads to healthy and productive cows"</p> <p><b>More info:</b></p>		
<p><b>Assessment of method</b></p>		
<p>This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 101000770.</p>		



**Automatic Feed Pusher**  
 24.11.2022 | Video

Automatic Feed Pusher help to reduce workload and increase feed intake of dairy cows. This innovative technology is applied on the R4D Pilotfarm Soc. Agr. Cervi Ciboldi in Italy.

[WATCH THE VIDEO](#)

**In all languages!**

[www.resilience4dairy.eu](http://www.resilience4dairy.eu)



# Knowledge areas



**KA1**  
Economic and  
social resilience

**35 factsheets**



**KA2**  
Technical  
efficiency

**26 factsheets**

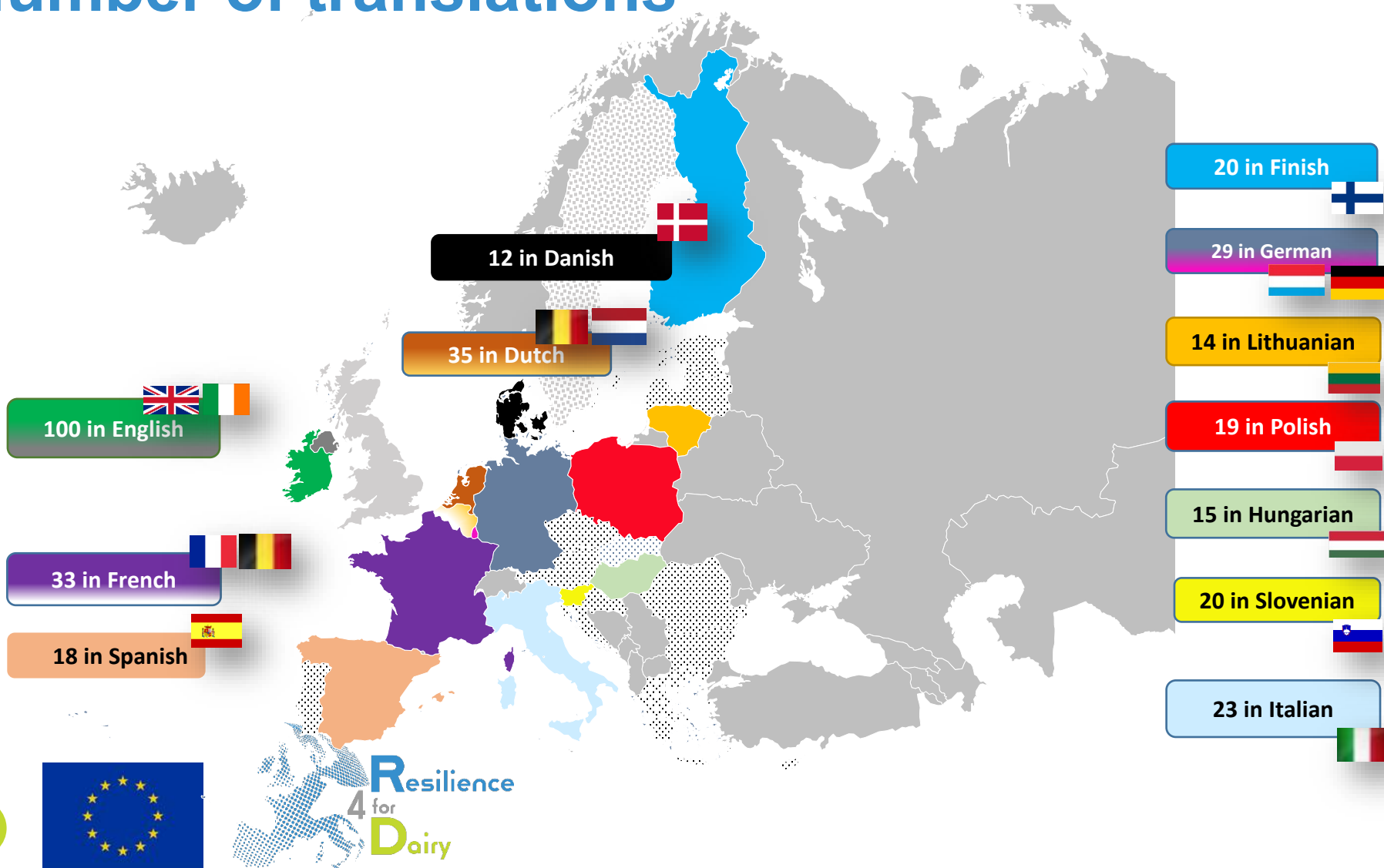


**KA3**  
Environment,  
welfare and society

**39 factsheets**

**100 factsheets**

# Number of translations



# Needs and solutions

**35**  
**factsheets**



# Knowledge areas



**KA1**  
Economic and  
social resilience

**9 videos**



**KA2**  
Technical  
efficiency

**24 videos**



**KA3**  
Environment,  
welfare and society

**19 videos**

**52 Videos**

Covering 40 different Factsheets

**+ 50 webinars + 4 modules of E-learning on Lean**



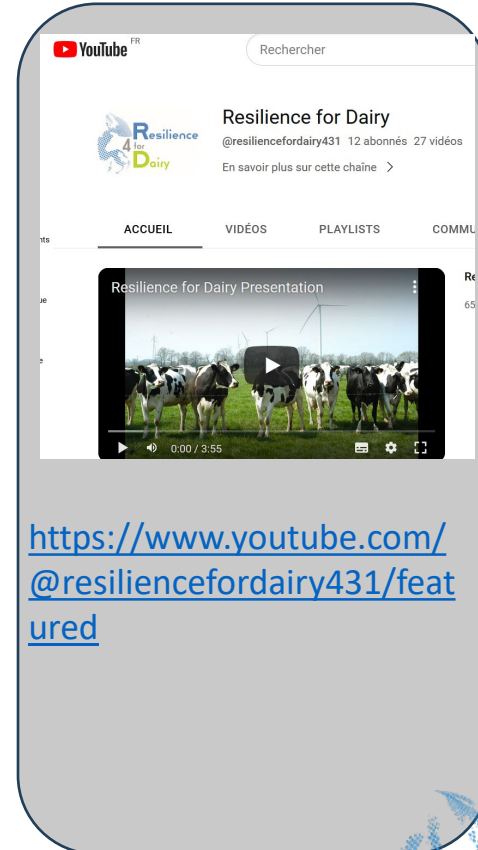


# Visit our website



[www.resilience4dairy.eu](http://www.resilience4dairy.eu)

# Visit our Youtube Channel



<https://www.youtube.com/@resiliencefordairy431/featured>

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+200 solutions



100 Best Practices

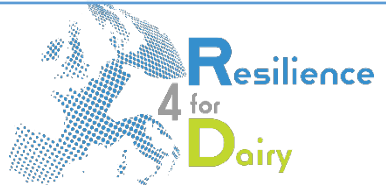
Im Dirk Vandecastelaele from Belgium

**R4D Best Practice: Young stock weight measurement**

2018/2019 | 1:00

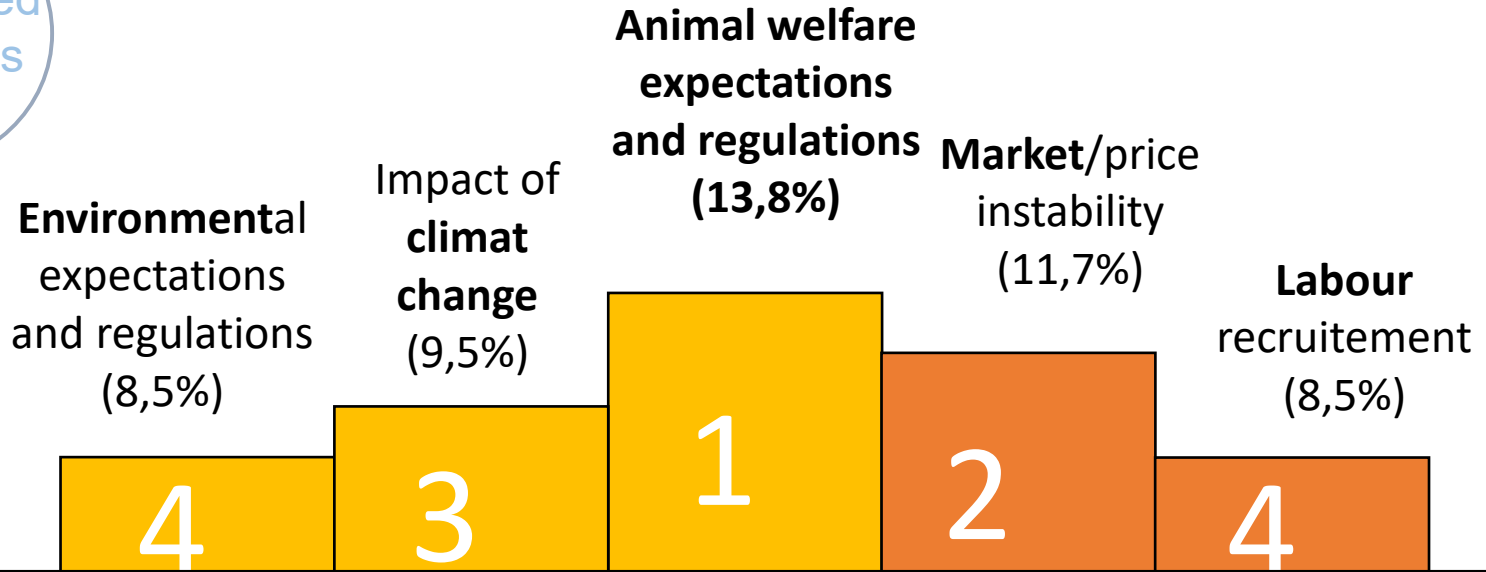
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WATCH THE VIDEO



# European overview: Main challenges identified in 2022

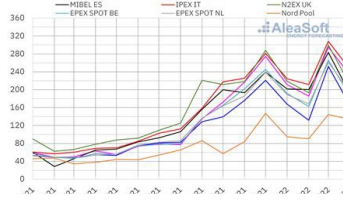
Most quoted  
challenges



# What changed between 2022 and 2024?

Dry and hot year

Input prices  
(energy,  
fertilizer,...)  
go up



New CAP



Rainy year



Political  
instability



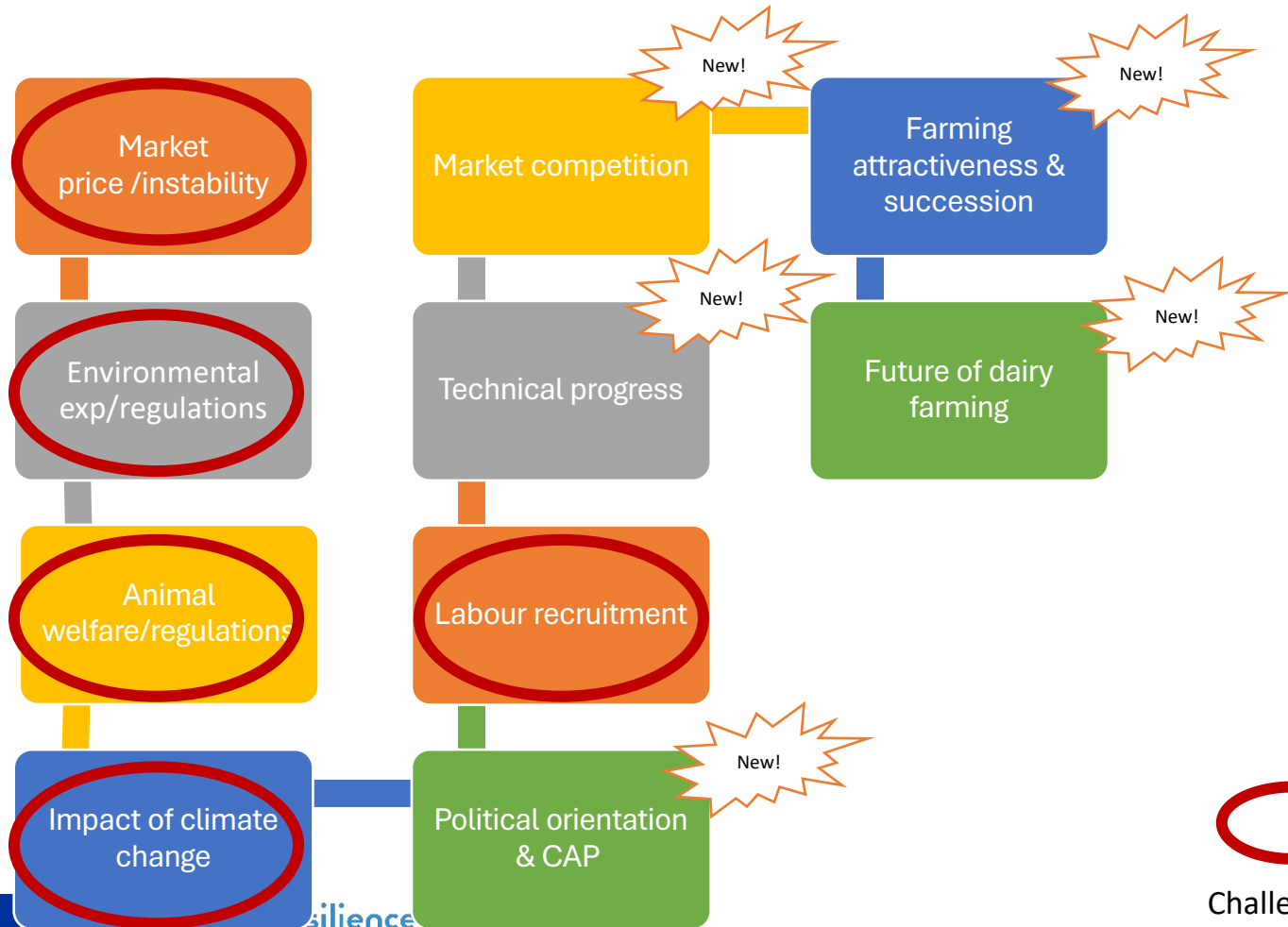
Output  
prices go up



Farmers  
strike



# 2024: Are there new challenges?



Challenges identified in 2022



Resilience

# Missing topics? Topics without answers?

- Consumers / citizen's point of view on dairy system
- Attractiveness / Renewal of generations
- Preparing for EU environmental targets (GHG emissions)



# Needs for further research and dissemination

- Need for **practical solutions** to enhance farmers and animal well being, while respecting environment
- Improve communication with citizens



# For a more resilient European dairy sector!





# A big thank to:

- The 120+ Pilot Farmers
- The 16+ Farm Facilitators
- The 6+ Knowledge facilitators
- All the NDA members from the 16 « countries »
- All the researchers, advisers from the partner organisations
- Our students (Pauline, Alfred, Eva, Stefen, Flore)



Resilience for Dairy (R4D) has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101000770



**R**esilience  
**4** for  
**D**airy

Thank you for your attention

Contact: [valerie.brocard@idele.fr](mailto:valerie.brocard@idele.fr)

[www.resilience4dairy.eu](http://www.resilience4dairy.eu)



Univerza v Ljubljani

