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

Brocard V.[1], Castellan E.[1], Fagon J.[1], Browne N.[2], Debevere S.[3], Launay F.[1]

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R4D Resilience 4 Dairy

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

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

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

The consortium

16 countries, 18 partners

Resilience 4 for Dairy

R4D objectives

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

- Develop a **matic** and relevant ng on resilient dairy farms
- 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)
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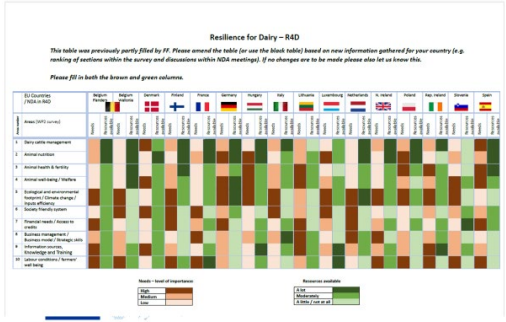
Step4
- Selecting most promising solutions (experts)
- Ranking= NDA/farmers

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



+200 solutions

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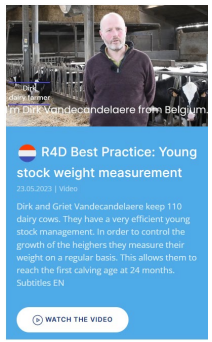
100 Best Practices



Resilience 4 for Dairy

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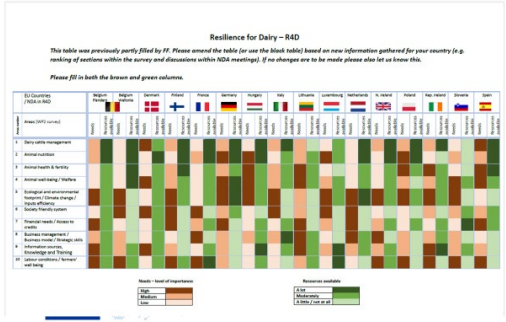

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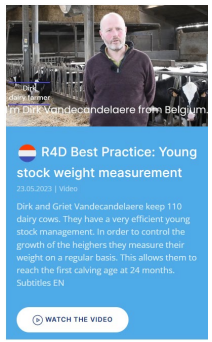


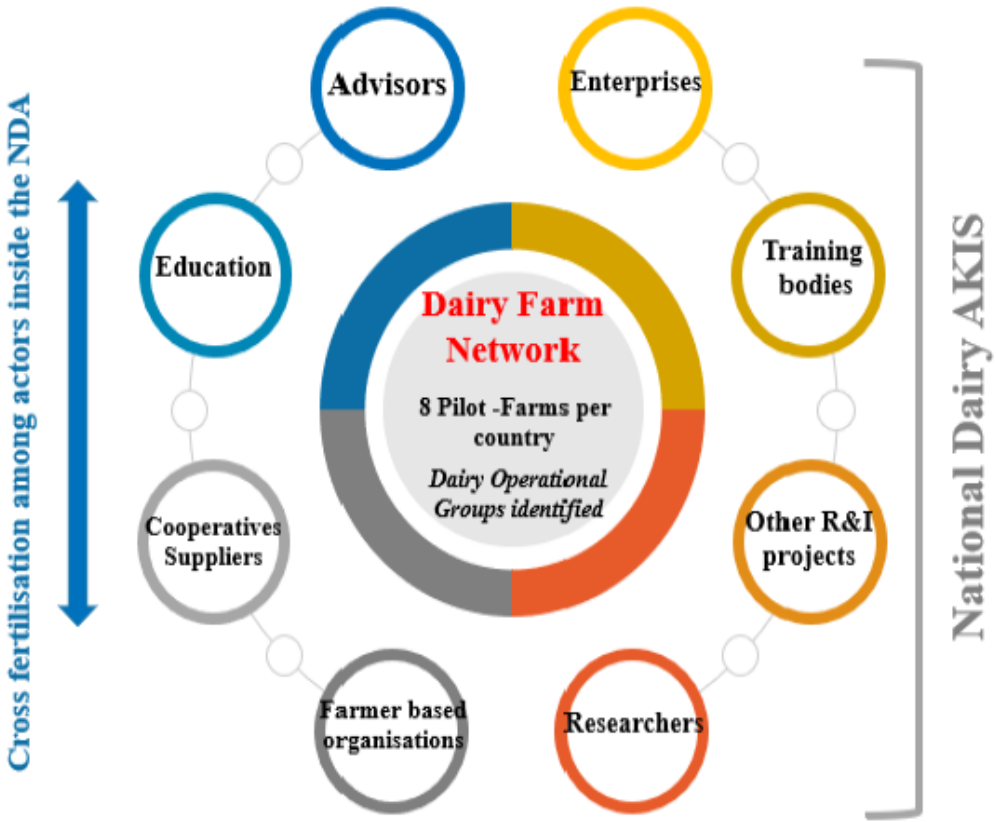
Resilience 4 for Dairy

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

Resilience 4 for Dairy

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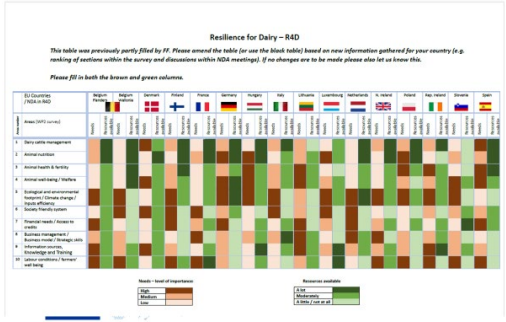

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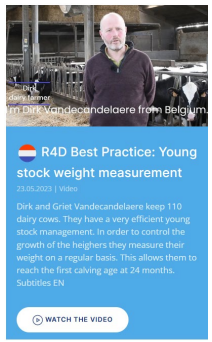
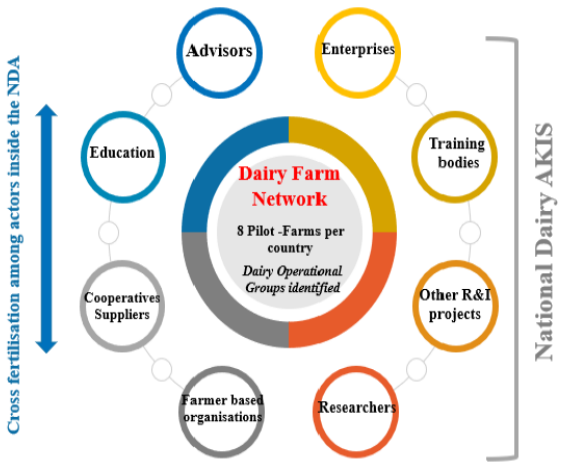


Resilience 4 for Dairy

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

16 NDAs



Needs

Solutions Innovations

Identification of 100 Best Practices

NDA meetings

Online survey

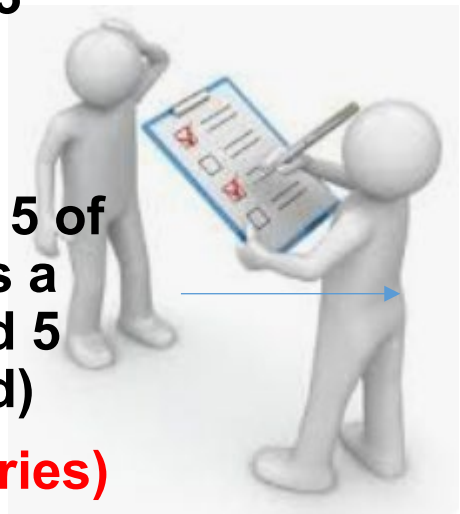
To provide innovative solutions, one must understand the needs.

- 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"

Resilience 4 for Dairy

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

R4D - NEEDS & SOLUTIONS

Resilience for Dairy (R4D) is an EU-funded project that will develop and strengthen a sustainable EU Thematic Network on "resilient and robust dairy farms". The newly developed thematic network will address both the needs and solutions to those needs of the EU bovine dairy sector, enabling the exchange of practical and scientific knowledge among European dairy farmers, researchers and other relevant stakeholders.
In this context, we ask for your contribution by completing the following questionnaire, which has the purpose to identify the main needs/solutions perceived by stakeholders in order to improve overall farm resilience.

resilience4dairy@gmail.com Switch accounts

*Required

Email *

Your email address

Next

Page 1 of 7

Clear form

Never submit passwords through Google Forms.

I. Dairy cattle management

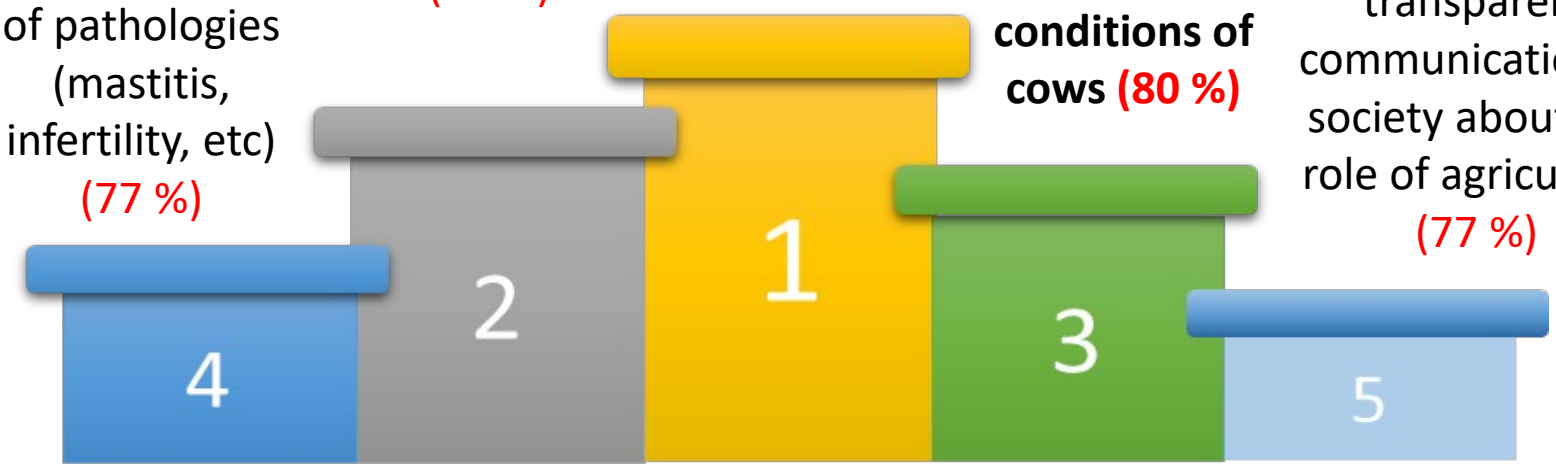
Housing, genetic, feeding system, etc.

Please rate you interest from 0 (no interest) to 5 (very interested) for the following needs/solutions for improving farm resilience *

	0	1	2	3	4	5	I don't know
Innovative milking devices (e.g. robots)	○	○	○	○	○	◉	○
Innovative milking strategies (e.g. extended lactation)	○	○	○	○	○	◉	○
Innovative feeding systems for calves (feed composition, preparation and distribution)	○	○	○	○	○	◉	○
Innovative feeding systems for cows (feed composition, preparation and distribution)	○	○	○	○	○	◉	○
Individual/herd milk yield estimator/recorder	○	○	○	○	○	◉	○
Innovative							

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

Innovative Lactation Strategies (Extended Lactation, etc.) (42 %)

Additives / Dietary Supplements (41 %)

Innovative Tool for Animal Identification / Localization **(38 %)**

Innovative Hay Production Technique (42 %)

Additives to Reduce Methane Emissions (44 %)

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 [1], Artur Wilczyński [1], Alberto Menghi [2], Chiara Serena Soffiantini [2] and Marija Klopčič [3,*]

[1] Department of Management and Marketing, Faculty of Economics, West Pomeranian University of Technology in Szczecin, ul. K. Janickiego 31, 71-270 Szczecin, Poland
[2] Centro Ricerche Produzioni Animali—CRPA Soc. Cons. p.A., Viale Timavo 43/2, 42121 Reggio Emilia, Italy
[3] Department of Animal Science, Biotechnical Faculty, University of Ljubljana, Groblje 3, 1230 Domžale, Slovenia
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Western Europe vs. Central and Eastern Europe

438

Belgium
Denmark
Finland
France
Germany
Ireland
Italy
Luxembourg
Netherlands
Northern Ireland
Spain

97

Lithuania
Poland
Slovenia
Hungary

Online survey on the needs of European dairy farmers – R4D

Improvement of welfare conditions of cows

Work-life balance

Effective communication and agricultural practices transparency

Western Europe (N=438)

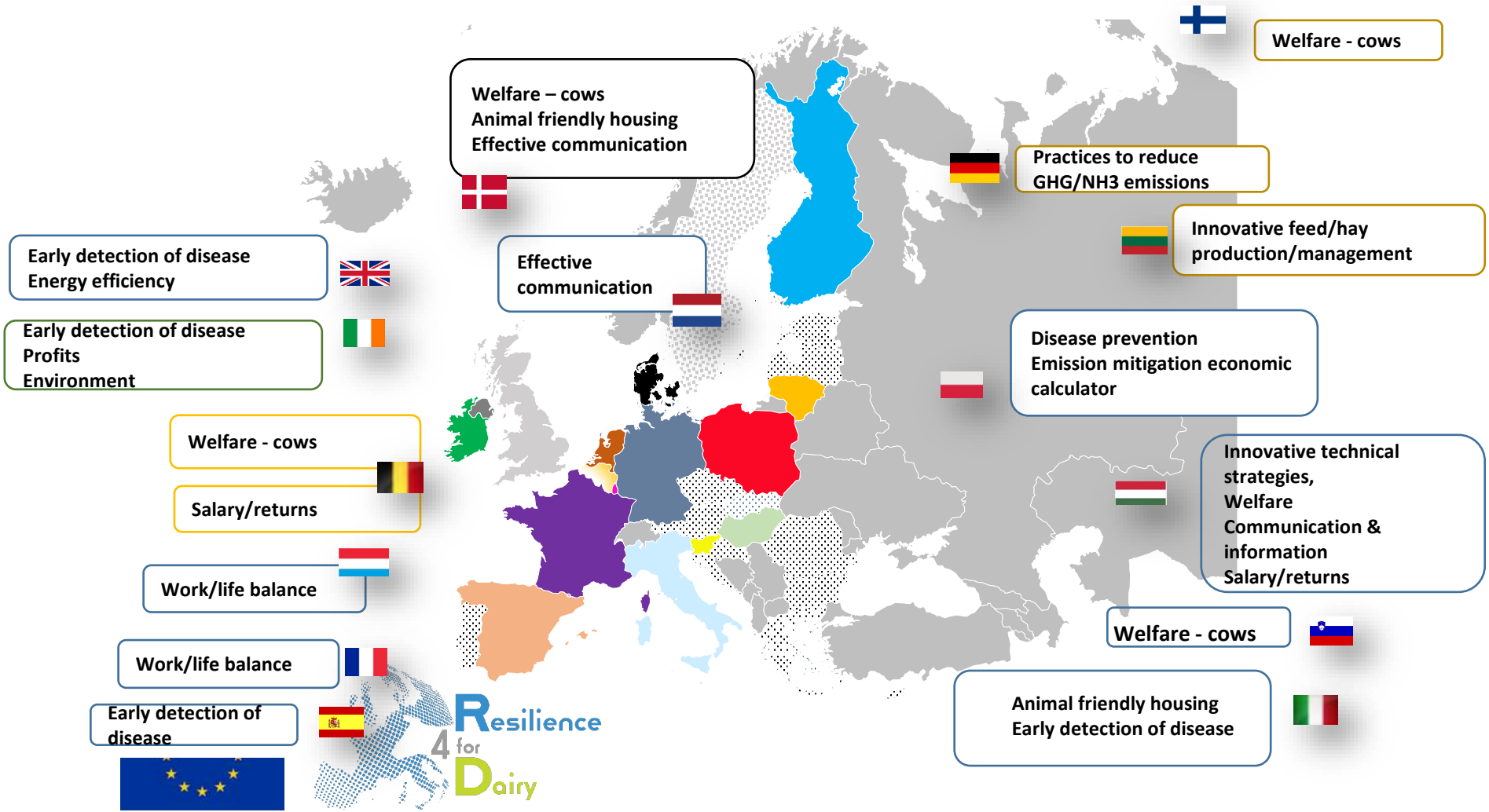
Innovative feeding systems for cows

Innovative feed production storage techniques

Work-life balance

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

Resilience 4 for Dairy

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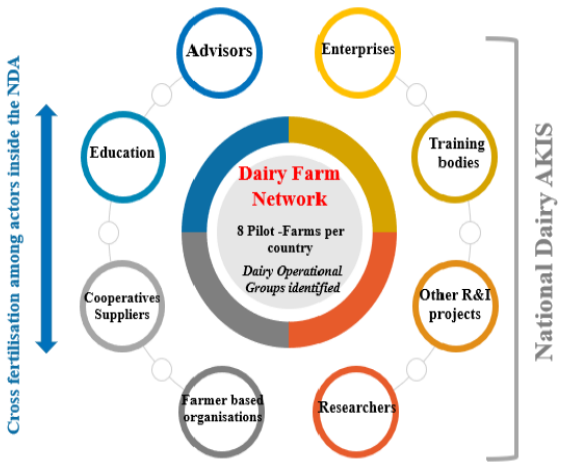

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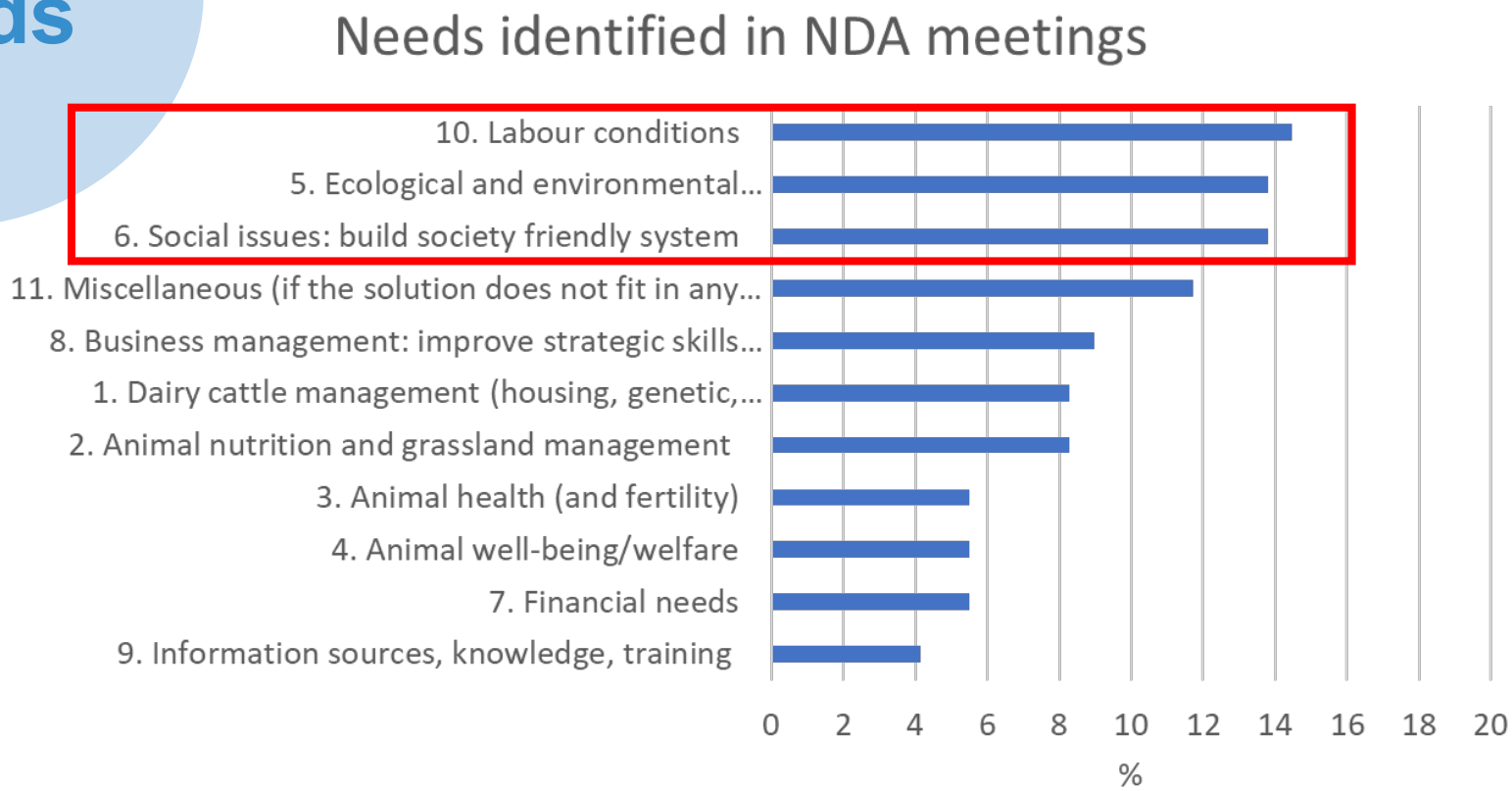


Most often mentioned: Labour conditions, environmental and social issues

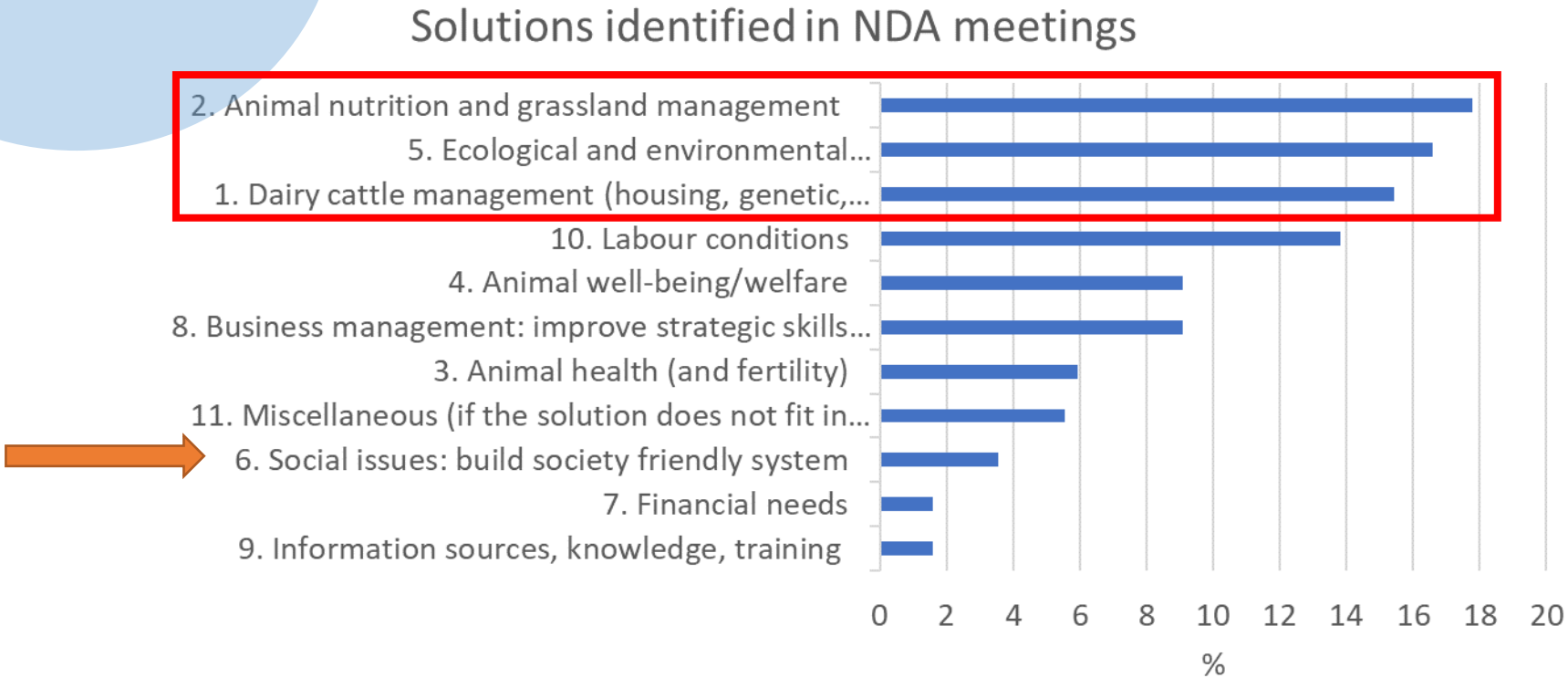
Top 1 needs in detail

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

Resilience 4 for Dairy

Solutions



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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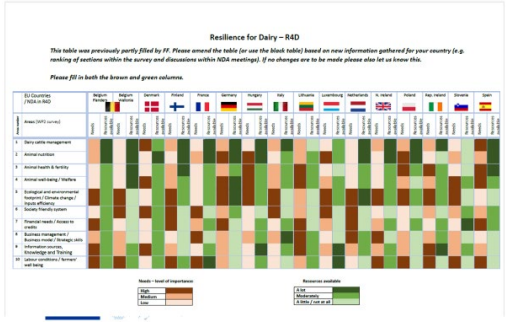

+200 solutions

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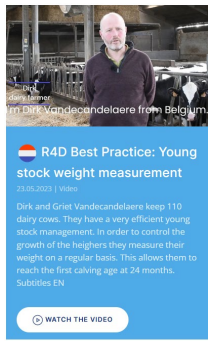
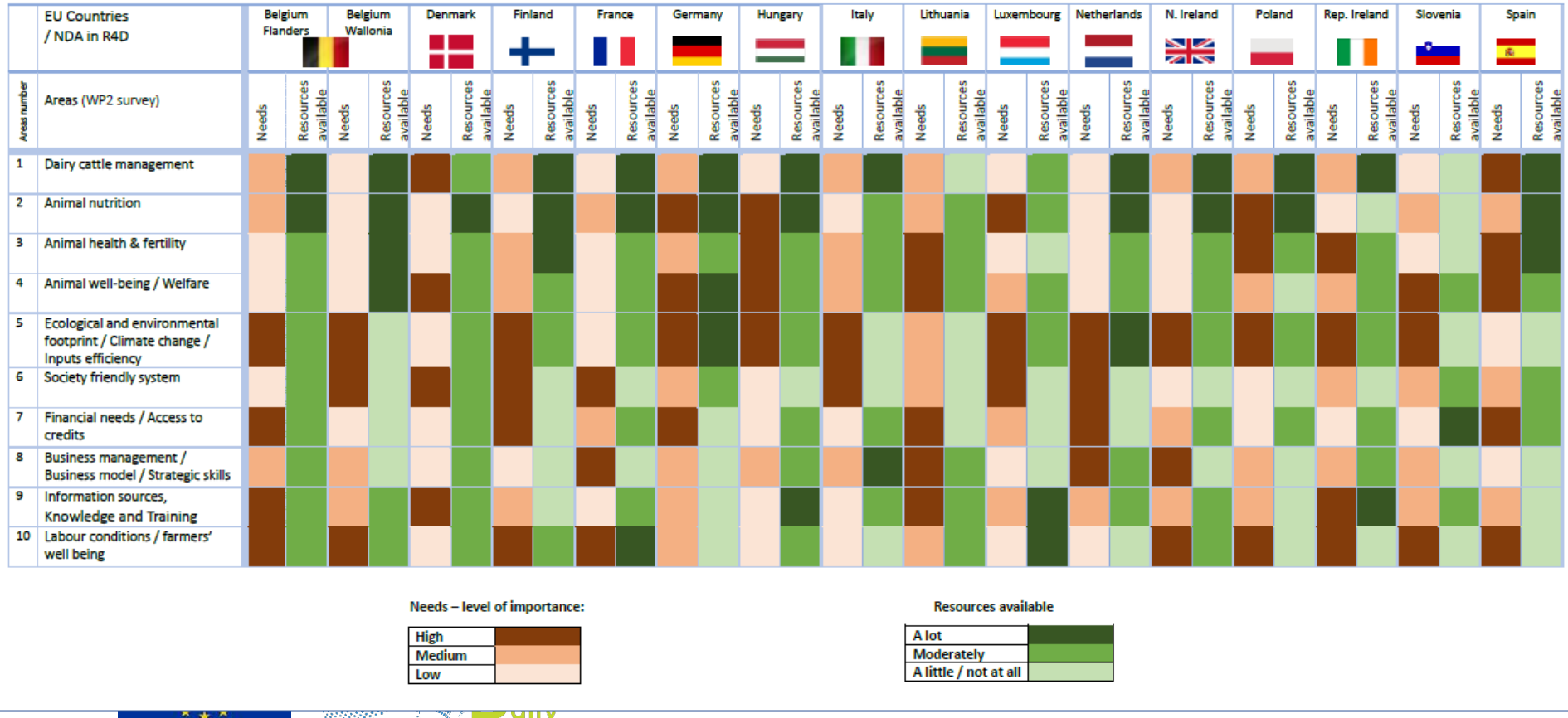


Creating workplans by comparing needs and resources by country



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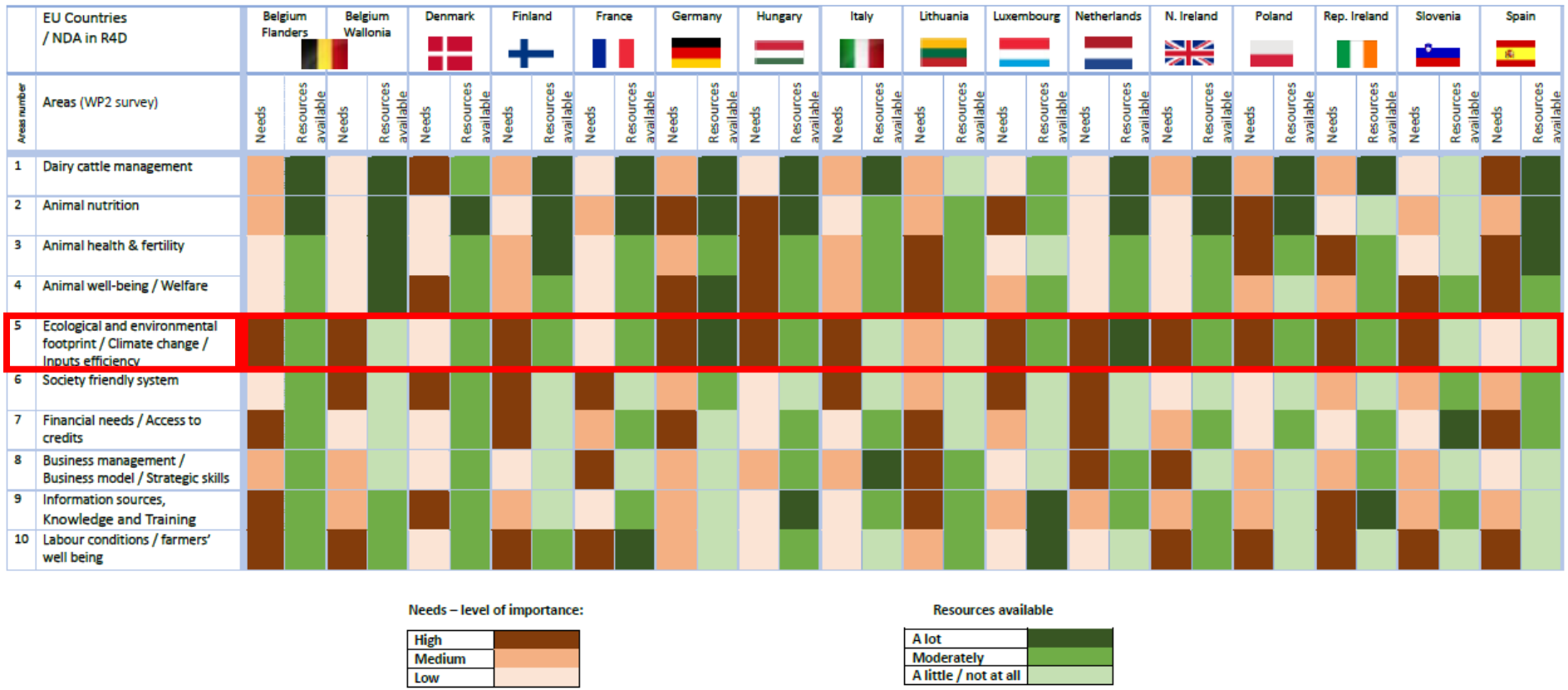

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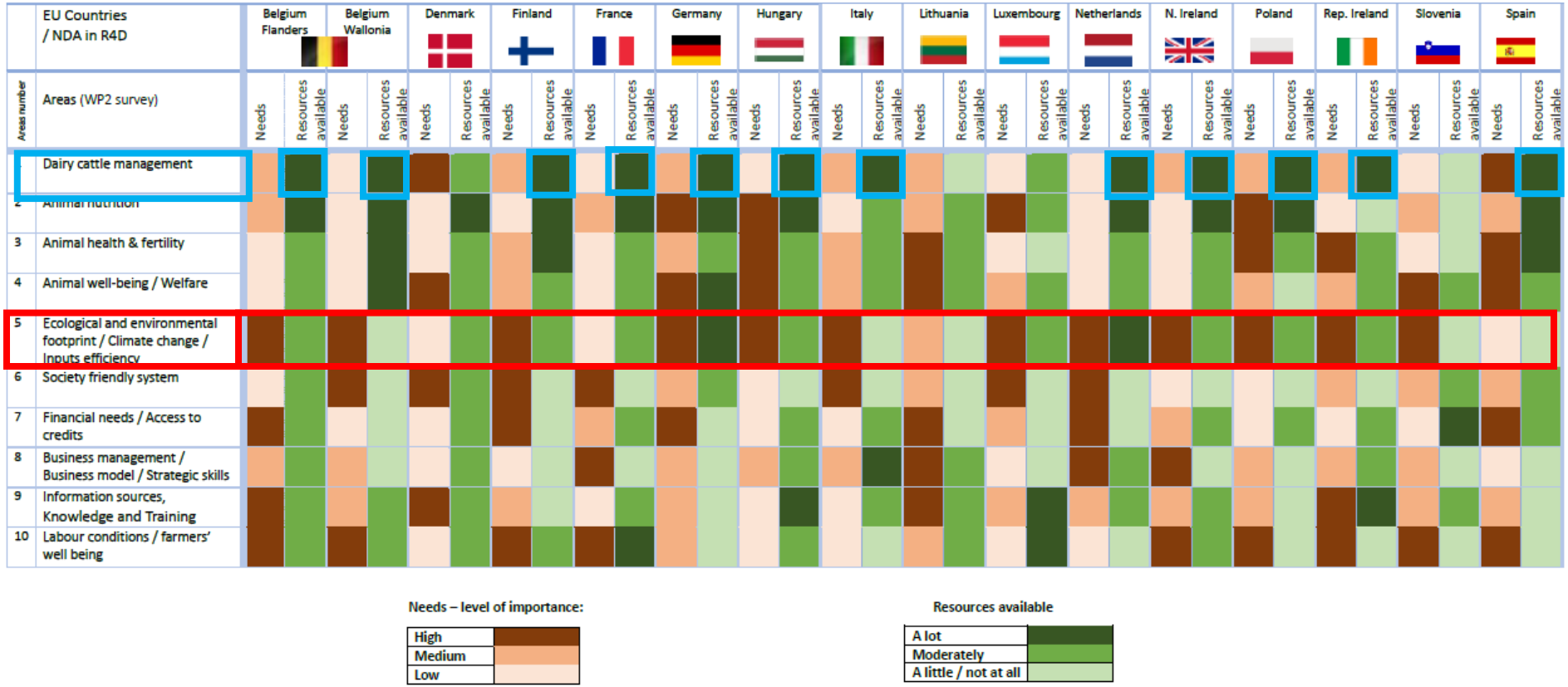

Resilience 4 for Dairy

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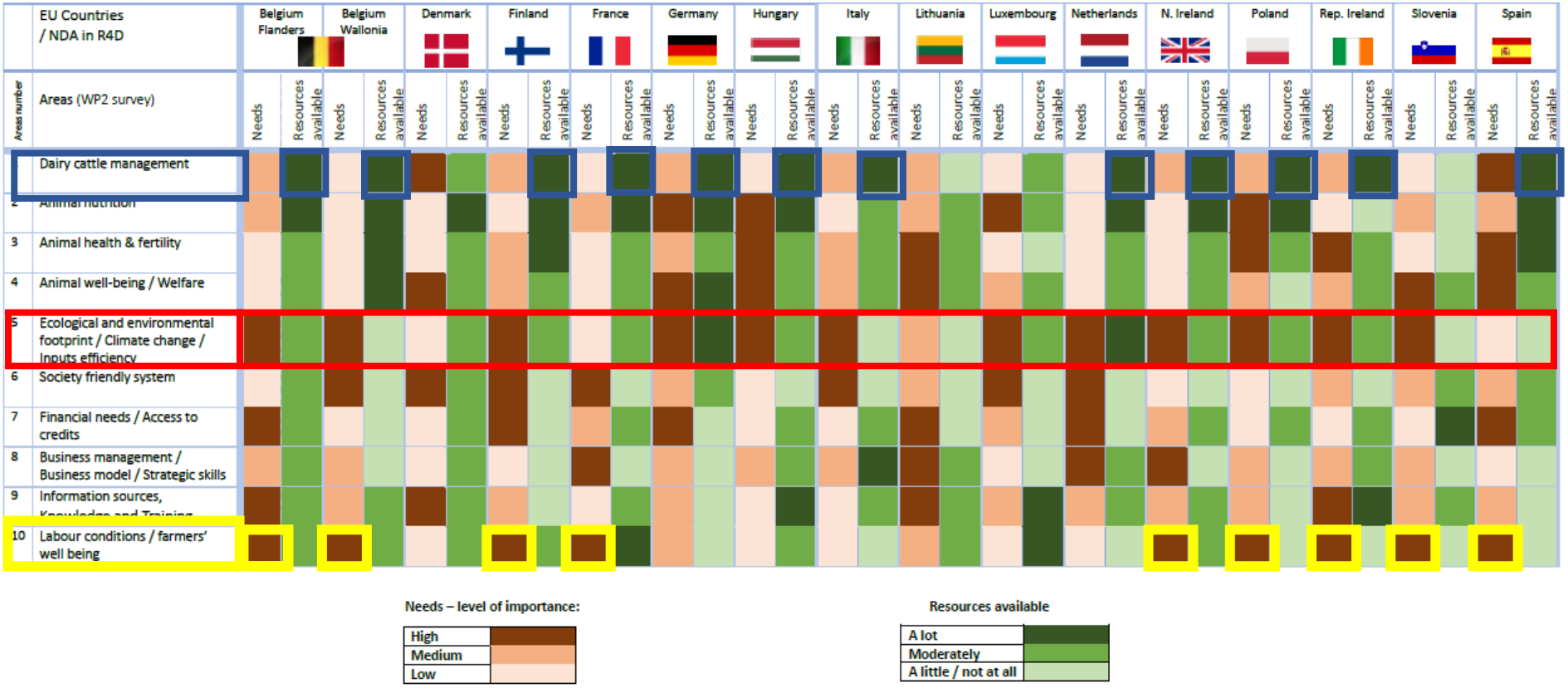

Resilience 4 for Dairy

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

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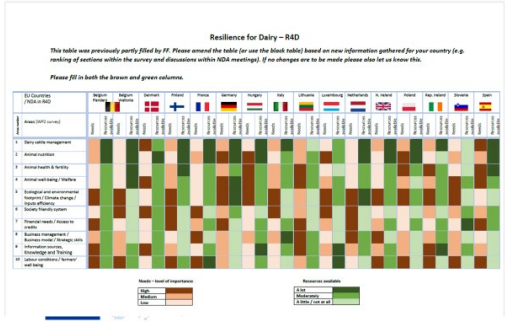

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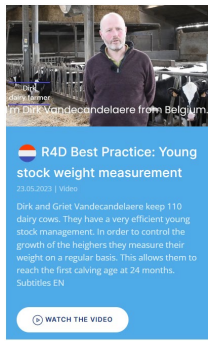
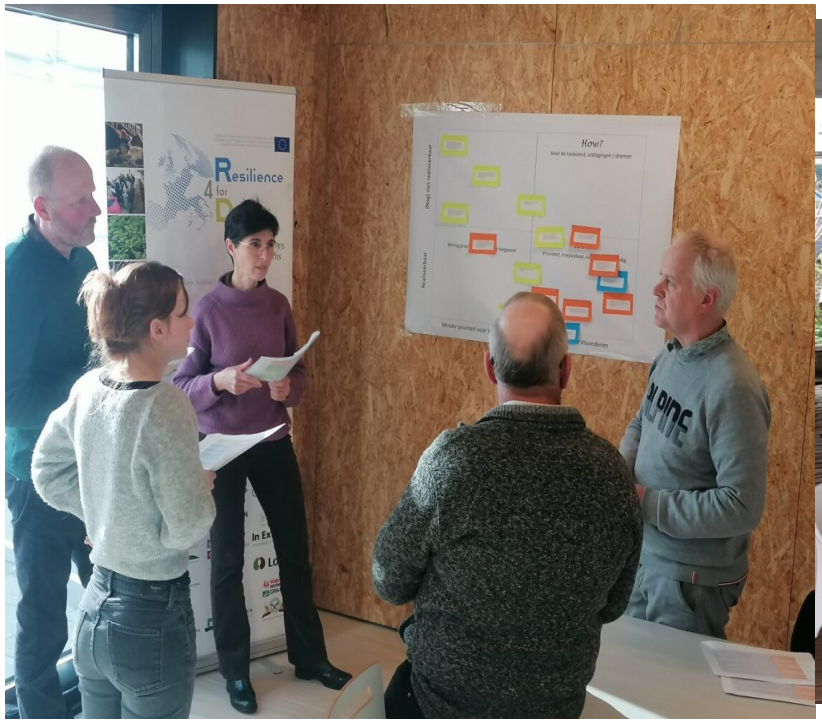


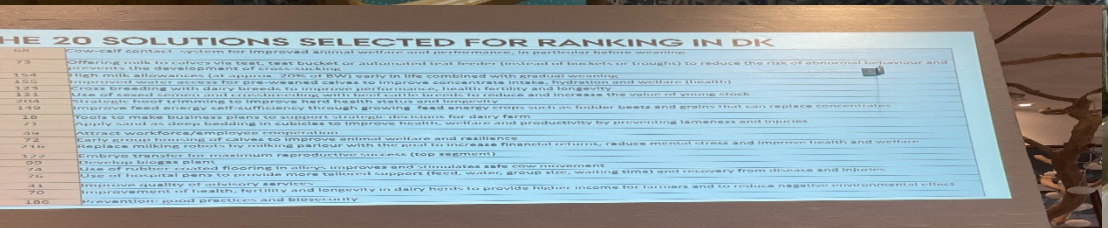
Resilience 4 for Dairy

NDA meetings to select solutions and rank them



NDA meetings Flanders and the Netherlands

NDA meetings Hungary, Denmark and Finland



NDA meetings in Germany and Italy

NDA meetings Slovenia and France

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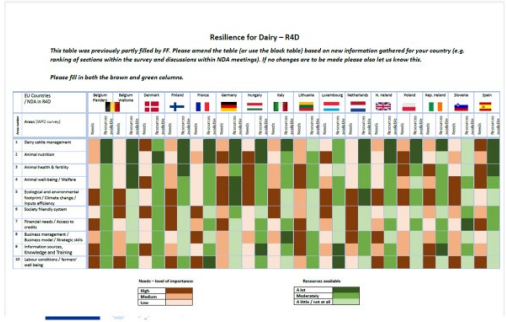

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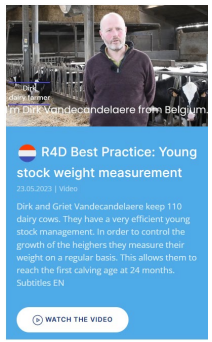


Methodology of assessments of solutions

- **Farmer needs were collected via survey**

Resulted in 190 “solutions” selected for assessment

- **Cost / benefit analysis method created**

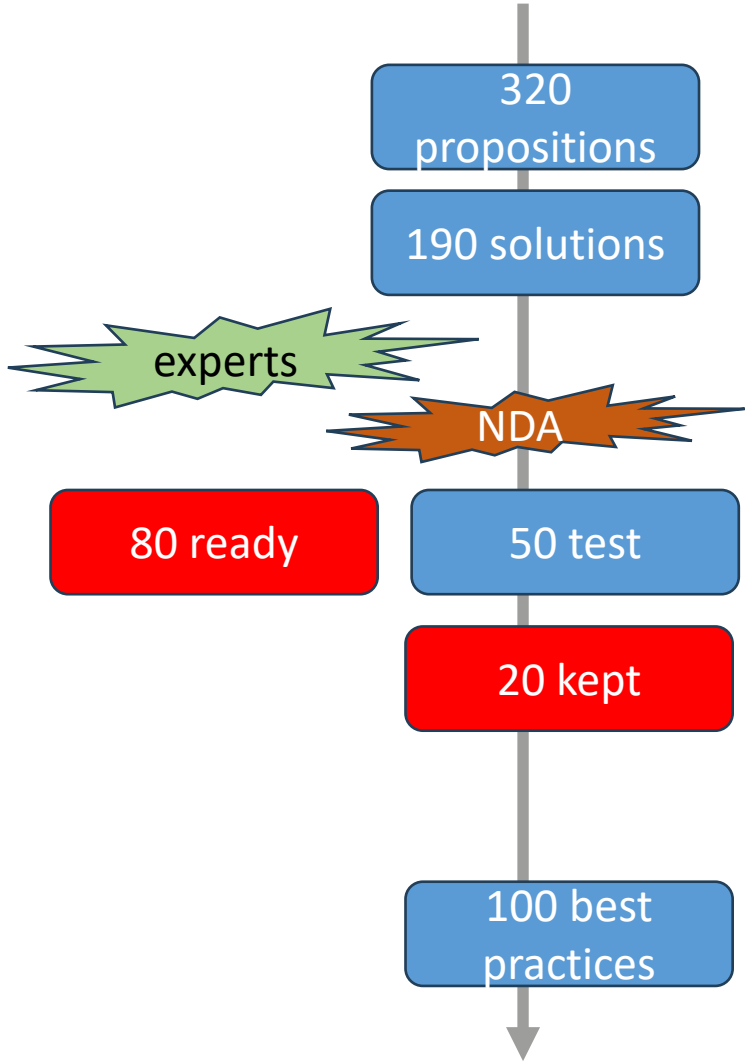
- **66 expert assessors from 15 European countries**

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)

13 questions Knowledge area 1 / **33 questions total**

- Cat. 2: Technical efficiency (4)

4 Knowledge area 2 / **24 questions total**

- Cat. 3a: Environment (6)
- Cat. 3b: Animal welfare and health (4)
- Cat. 3c: Societal perception items (5)

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)
- Cat. 6: Final comments (2)

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

Farm facilitator and farmer (WP4) / 57 questions total

Total number of questions: **57**

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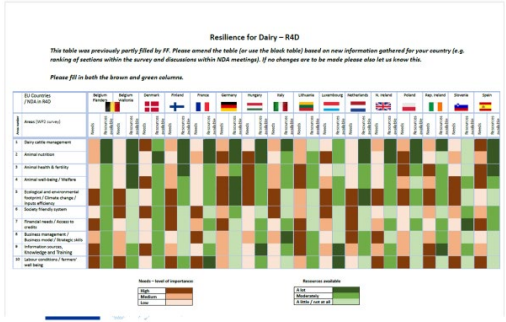

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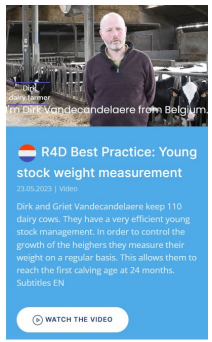
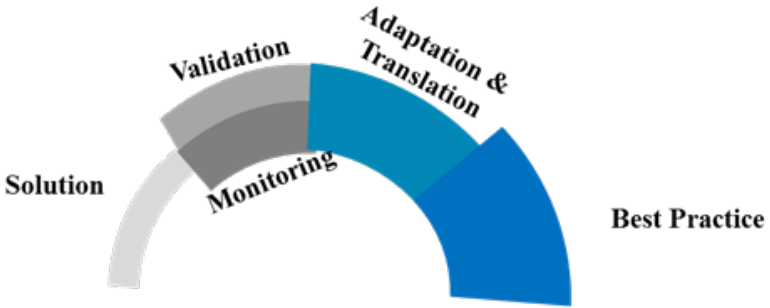
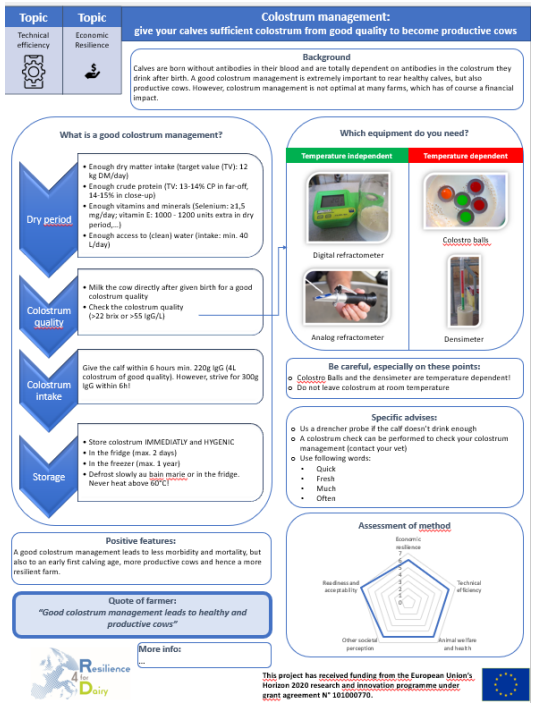
100 Best Practices



Dissemination of Best Practices





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

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

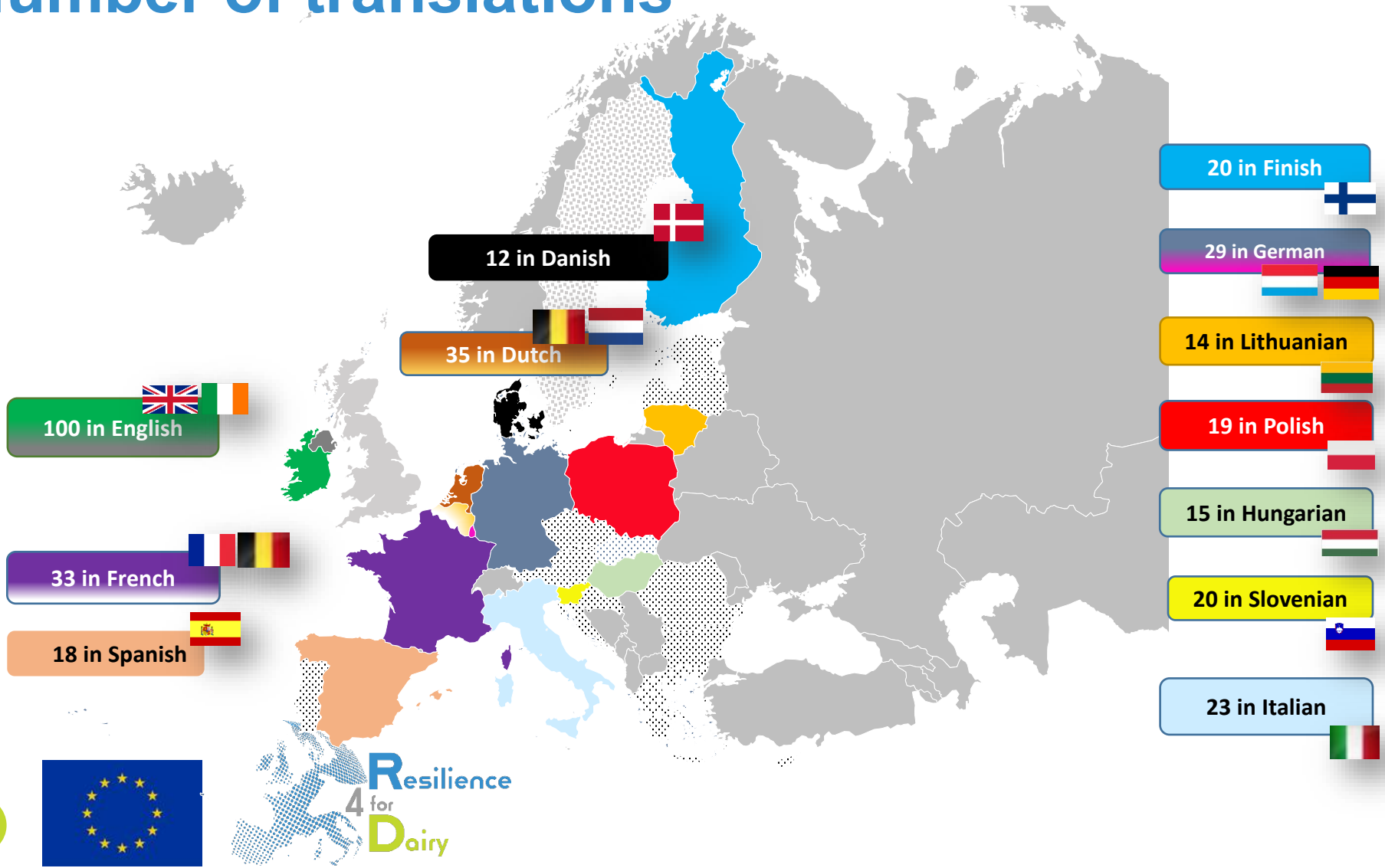
In all languages!

www.resilience4dairy.eu

Knowledge areas

Resilience 4 for Dairy

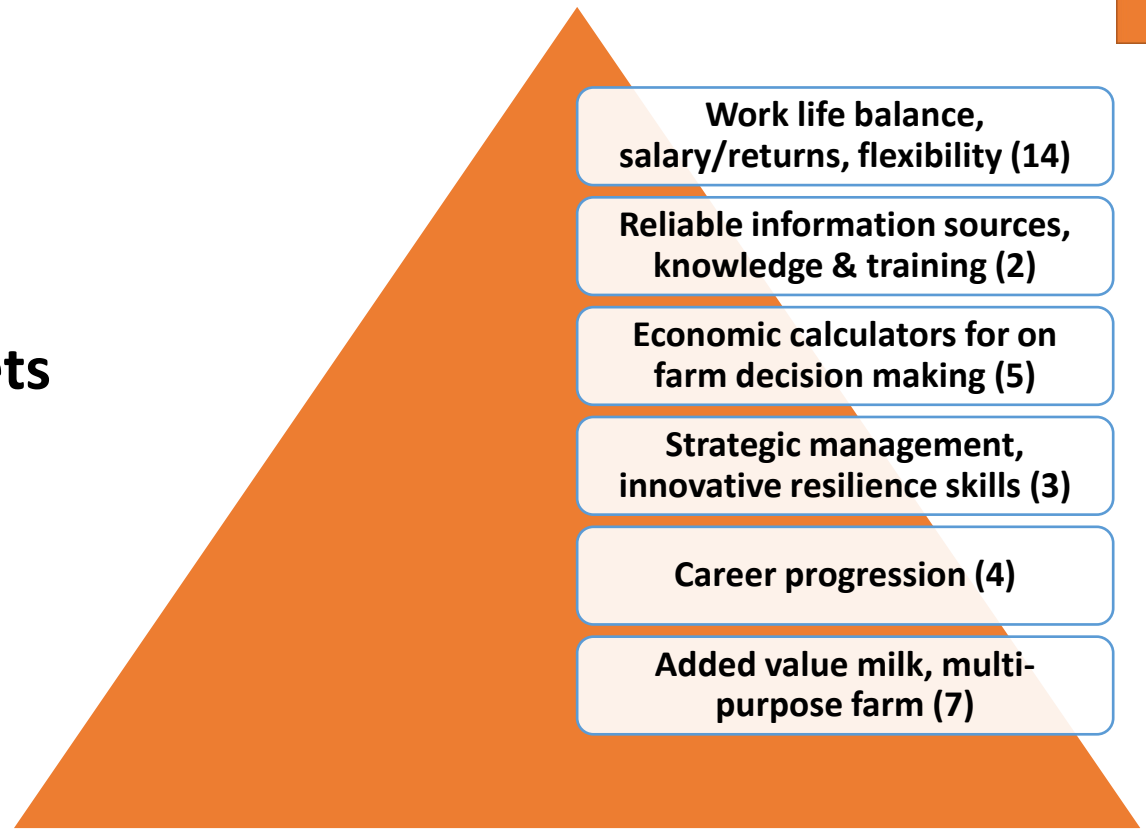
Number of translations



Needs and solutions

KA1
Economic and social resilience

35 factsheets



Resilience 4 for Dairy

Knowledge areas

9 videos **24 videos** **19 videos**

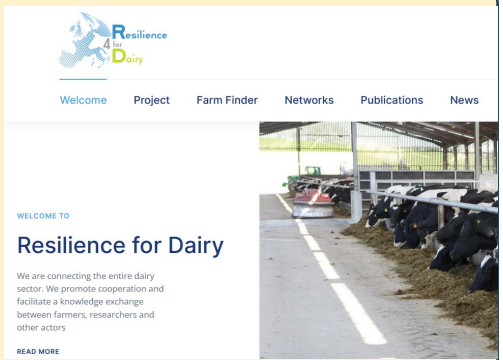
52 Videos

Covering 40 different Factsheets

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

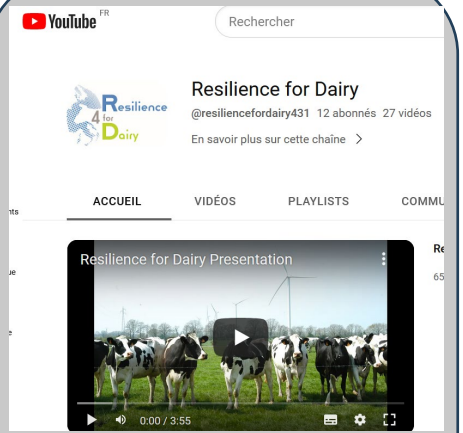
Resilience 4 for Dairy

Visit our website



www.resilience4dairy.eu

Visit our Youtube Channel



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

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

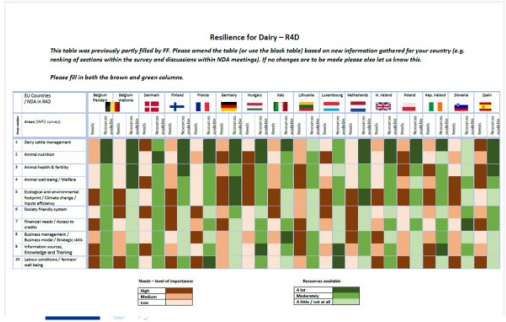
Step 3
- Matching needs and solutions: Creating national workplans

Step4
- 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**



+200 solutions

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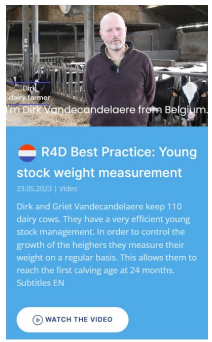
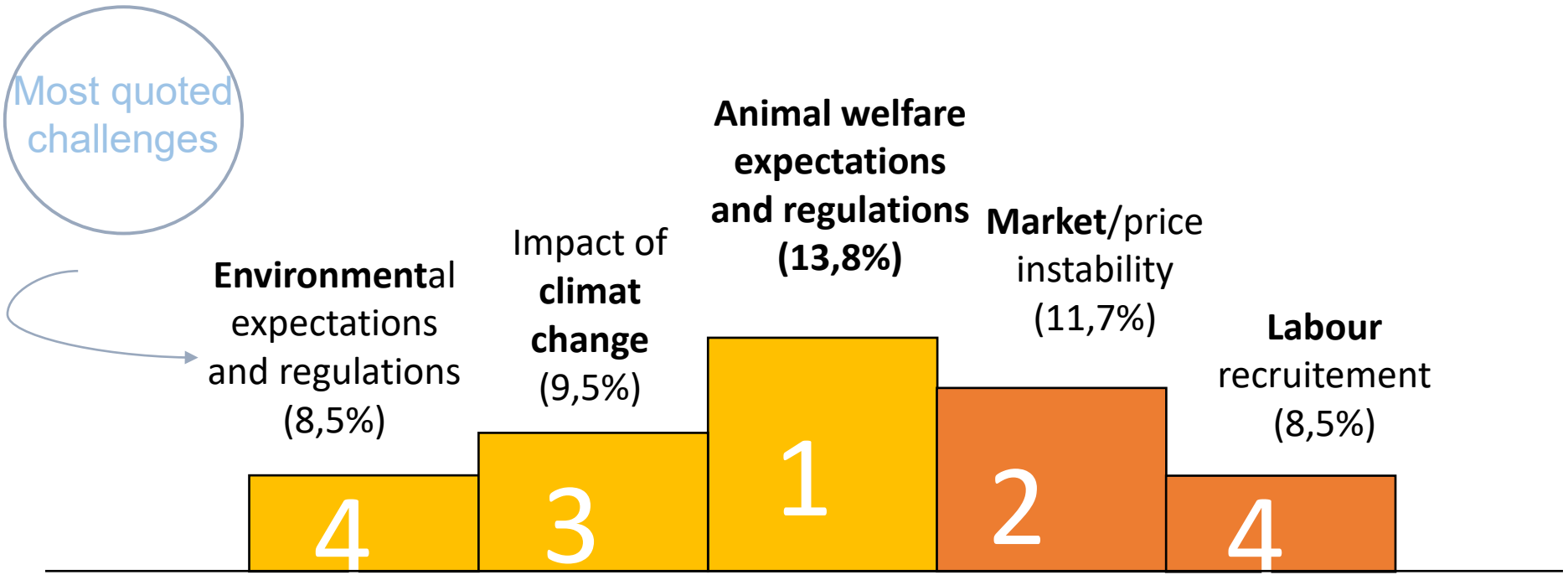
100 Best Practices



European overview:
Main challenges identified in 2022



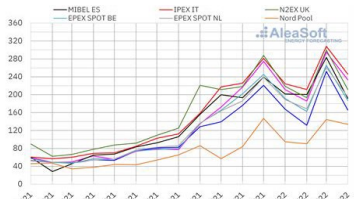
% of total votes (94)

What changed between 2022 and 2024?

Dry and hot year

Political instability

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



Output prices go up

New CAP

Rainy year

Farmers strike

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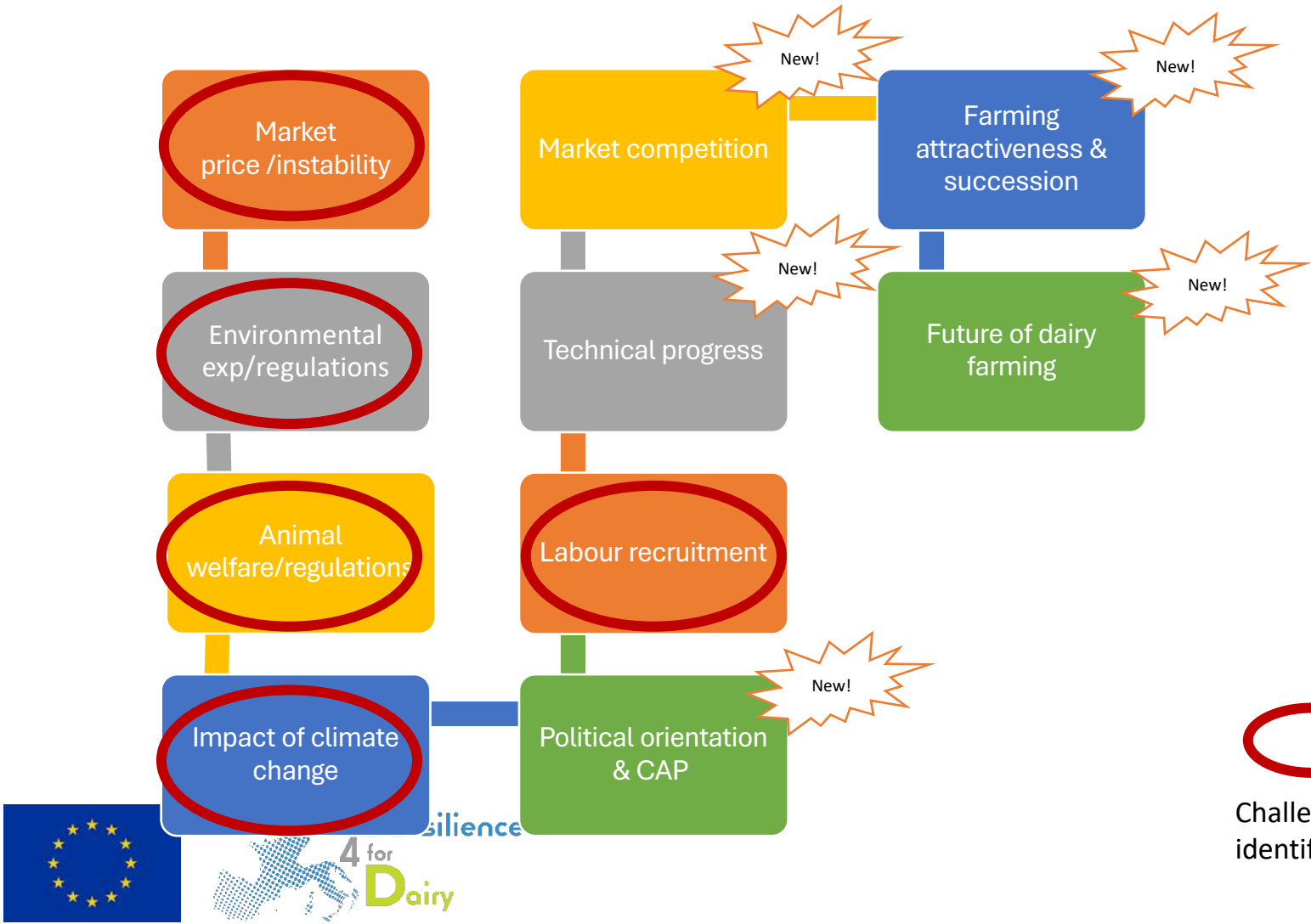
2024: Are there new challenges?



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)

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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

Thank you for your attention

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www.resilience4dairy.eu