



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



Resilience4Dairy: Assessment of solutions for the dairy sector



LYON 30/8/2023



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Methodology assessments

- Farmer needs were collected by Italian team through 535 stakeholders in 15 countries
Resulted in 190 solutions selected for assessment
solutions = practices, techniques, tools
- Categorized in 3 knowledge areas:
socio-economic, farm technical, environmental & health
- 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)

Survey to assess solutions

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)

13 questions Knowledge area 1 / 33 questions total

- Cat. 1b: Social resilience (7)

- Cat. 2: Technical efficiency (4)

4 Knowledge area 2 / 24 questions total

- Cat. 3a: Environment (6)

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

15 questions Knowledge area 3 / 35 questions total

- Cat. 3c: Other societal perception items (5)

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**



Example of survey questions

<i>Category 1a: Economic resilience (R4D-KA1)</i>		<i>questions for KA1 expert</i>					
		<i><€100,- per cow</i>		<i>€500,- per cow</i>		<i>>€1000,- per cow</i>	<i>no idea</i>
10	Investment level per cow	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11	Impact on level of direct costs / operating expenses	<i>lower direct costs</i>	<input type="radio"/>	<i>neutral</i>	<input type="radio"/>	<i>higher direct costs</i>	<i>no idea</i>
12	Impact on profitability	<i>lower profit</i>	<input type="radio"/>	<i>neutral</i>	<input type="radio"/>	<i>higher profit</i>	<i>no idea</i>
13	Impact on income (ic) volatility	<i>less constant ic</i>	<input type="radio"/>	<i>neutral</i>	<input type="radio"/>	<i>more constant ic</i>	<i>no idea</i>
14	Impact on risk of the farming business	<i>less risk</i>	<input type="radio"/>	<i>neutral</i>	<input type="radio"/>	<i>more risk</i>	<i>no idea</i>
15	Impact on overall economic resilience (er)	<i>less er</i>	<input type="radio"/>	<i>neutral</i>	<input type="radio"/>	<i>more er</i>	<i>no idea</i>

survey questions to fill in

summarizing question

Experts: Top 10 Socio-Economic solutions

Community-supported agriculture	3.6
Manage cash flows, investments and risks to increase mental health and resilience	3.9
Individual Economic indicators for benchmarking	3.8
Tools to make business plans to support strategic decisions	3.7
Grants to promote knowledge dissemination: skills and identifying opportunities	3.6
Peer groups of farmers to share knowledge using facilitation methods	3.7
Engage advisory services to improve farm management	3.6
Training of vets on prevention methods	3.9
Human resources management to retain employees, linked to production results	3.7
Application of the LEAN method	3.5

Experts: Top 10 Technical solutions

Genomic assessment of new born calves to predict future capabilities	3.7
Picking sires to suit specific traits of cows	3.8
Improve protein self-sufficiency through improvement of grassland management	3.7
Early detection of diseases - Combination of sensors and softwares	3.8
Calf colostrum management	3.9
Housing technology for heat stress management	3.7
Strategic hoof trimming	4.0
Preventive mastitis milk testing	3.7
Good practices for calf rearing	3.8
Reduction of first calving age	3.7

Experts: Top 10 Environmental and health solutions

The freewalk farming system	3.5
Improved barns for more animal welfare with access to outside	3.5
Apply sand as deep bedding in cubicles	3.5
Early group housing calves improving animal welfare and resilience	3.8
Offering milk to calves via teat, teat bucket or automated teat feeder	3.8
Use of hospital pens to provide more tailored support	4.0
Agroforestry on dairy farms	3.4
Encourage implementation of Variable Speed Drive vacuum pumps and milk pre-cooling	3.5
Low emission slurry spreading	3.4
Innovative spreading techniques to decrease impact on GHG emission and air quality	3.6

NDA meetings Flanders and the Netherlands



Large scale farmer protests during NDA meetings



Political party
Farmer - Citizen

NDA meetings Slovenia and France



NDA meeting in Germany and Italy



NDA meetings Hungary, Denmark and Finland



THE 20 SOLUTIONS SELECTED FOR RANKING IN DK	
68	Cow-calf contact system for improved animal welfare and performance, in particular before weaning
73	Offering milk to calves via teat, teat bucket or automated teat feeder (instead of buckets or troughs) to reduce the risk of abnormal behaviour and prevents the development of cross-sucking
154	High milk allowances (at approx. 20% of BW) early in life combined with gradual weaning
155	Improved water access for pre-weaned calves to improve concentrate intake, hydration and welfare (health)
153	Cross breeding with dairy breeds to improve performance, health fertility and longevity
121	Use of sexed semen and crossbreeding with beef cattle breeds to reduce and increase the value of young stock
104	Strategic hoof trimming to improve herd health status and longevity
149	Improve feed energy self-sufficiency through growing feed energy crops such as fodder beets and grains that can replace concentrates
14	Tools to make business plans to support strategic decisions for dairy farm
71	Apply sand as deep bedding in cubicles to improve health, welfare and productivity by preventing lameness and injuries
49	Attract workforce/employee cooperation
72	Early group housing of calves to improve animal welfare and resilience
246	Replace milking robots by milking parlour with the goal to increase financial returns, reduce mental stress and improve health and welfare

Discussed in stakeholder groups

each NDA meeting ranked 20 preferred solutions in order 1st to 20th place

123 solutions were discussed at least 1 NDA meeting

53 solutions were discussed at only 1 NDA meeting

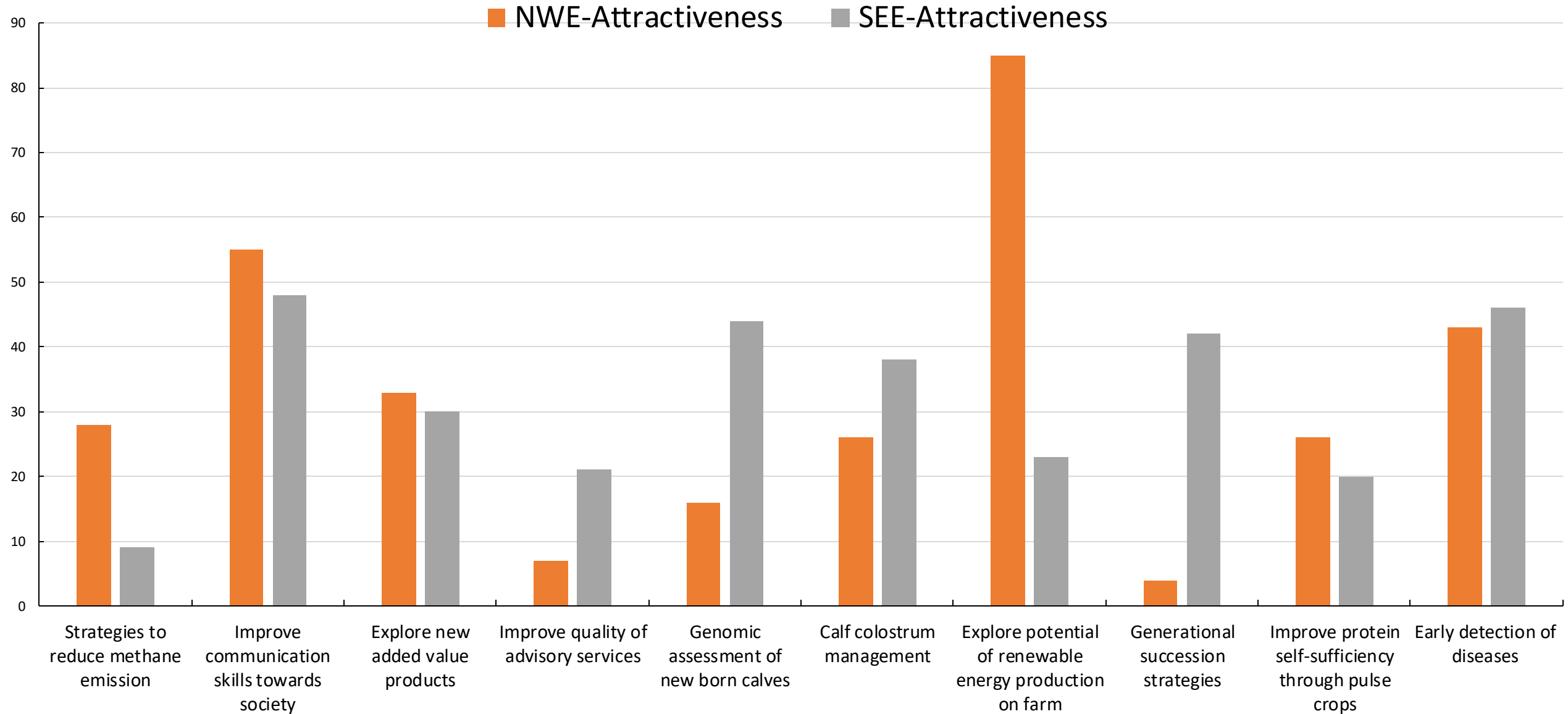
21 solutions were discussed on 2 NDA meetings

23 solutions were discussed on 3 NDA meetings

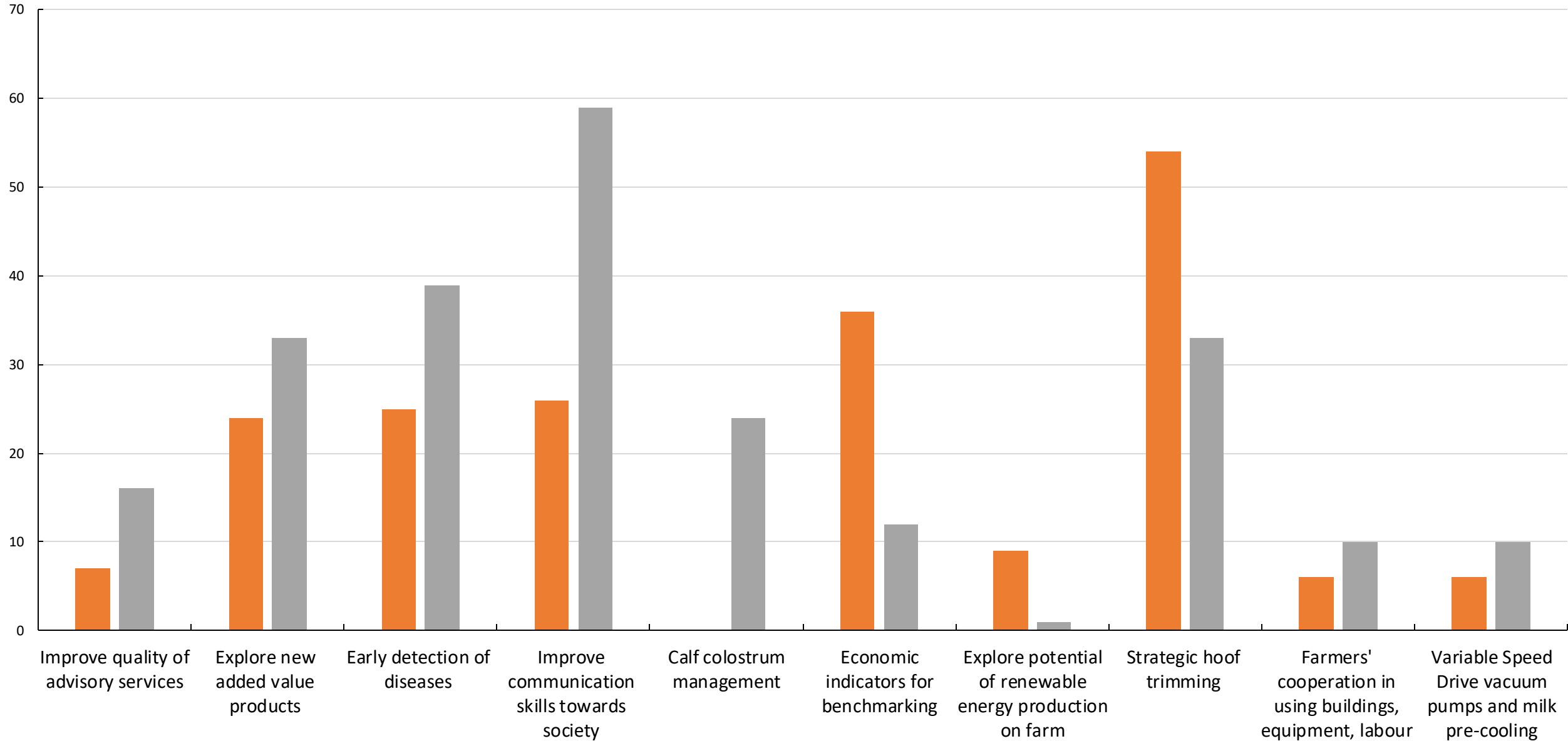
17 solutions were discussed on 4 to 9 NDA meetings

From NDA meetings: Sum of rankings of preferred 20 solutions

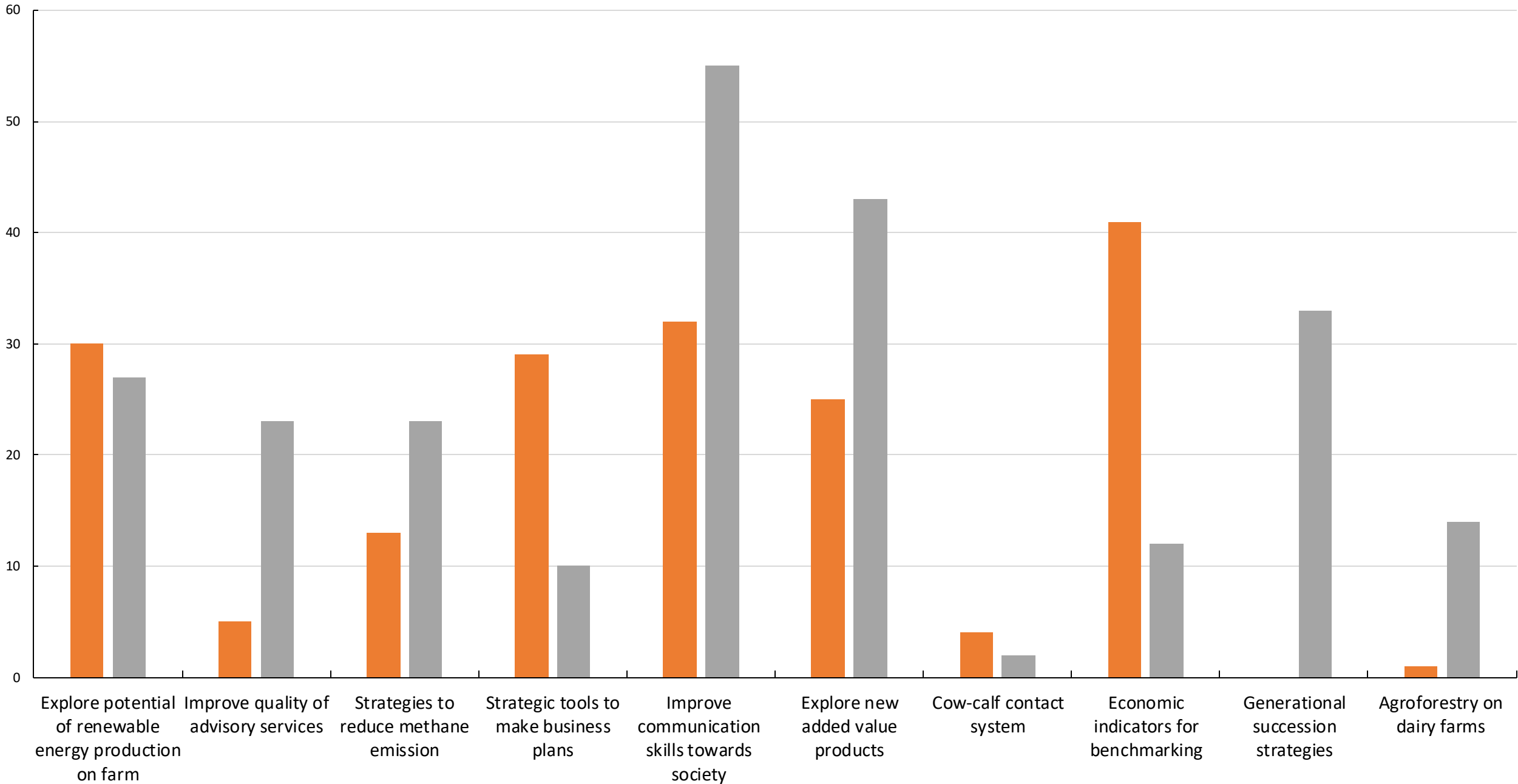
NWE = North West Europe SEE = South East Europe



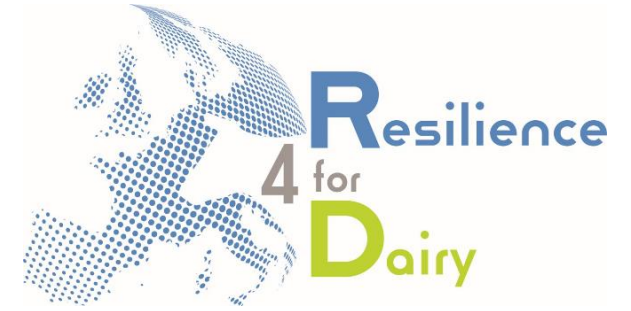
■ NWE-Resilience ■ SEE-Resilience



■ NWE-Readiness ■ SEE-Readiness



Conclusions



- **Challenging process to collect and assess solutions in 15 countries**
- **Choices +/- affected by facilitation, choice of farmers, etc.**
- **Differences in focus over Europe (especially East versus West)**

Next steps:

Monitor some of solutions in the field for better understanding

Prepare 100 European Innovation Platform (EIP) fact sheets and abstracts from the selected solutions