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Resilience4Dairy: Assessment of solutions for the dairy sector

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Which solutions to
chose?



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Resilience for Dairy (R4D) partner countries

European Union (EU)
22 01 20

 **R4D partners**



CONTENT

Inventory of needs

Assessment of solutions by experts and farmers/stakeholders



(International) Expert meetings
National Dairy AKIS (NDA) workshops in 15 countries

Resilience is linked to three knowledge areas:

socio-economics, technical efficiency, environmental/welfare/health/perception

1. Farmer needs

- 45 categories; 535 stakeholders from 15 countries scored these needs online.
- The needs were linked to 190 solutions = practices, techniques, tools

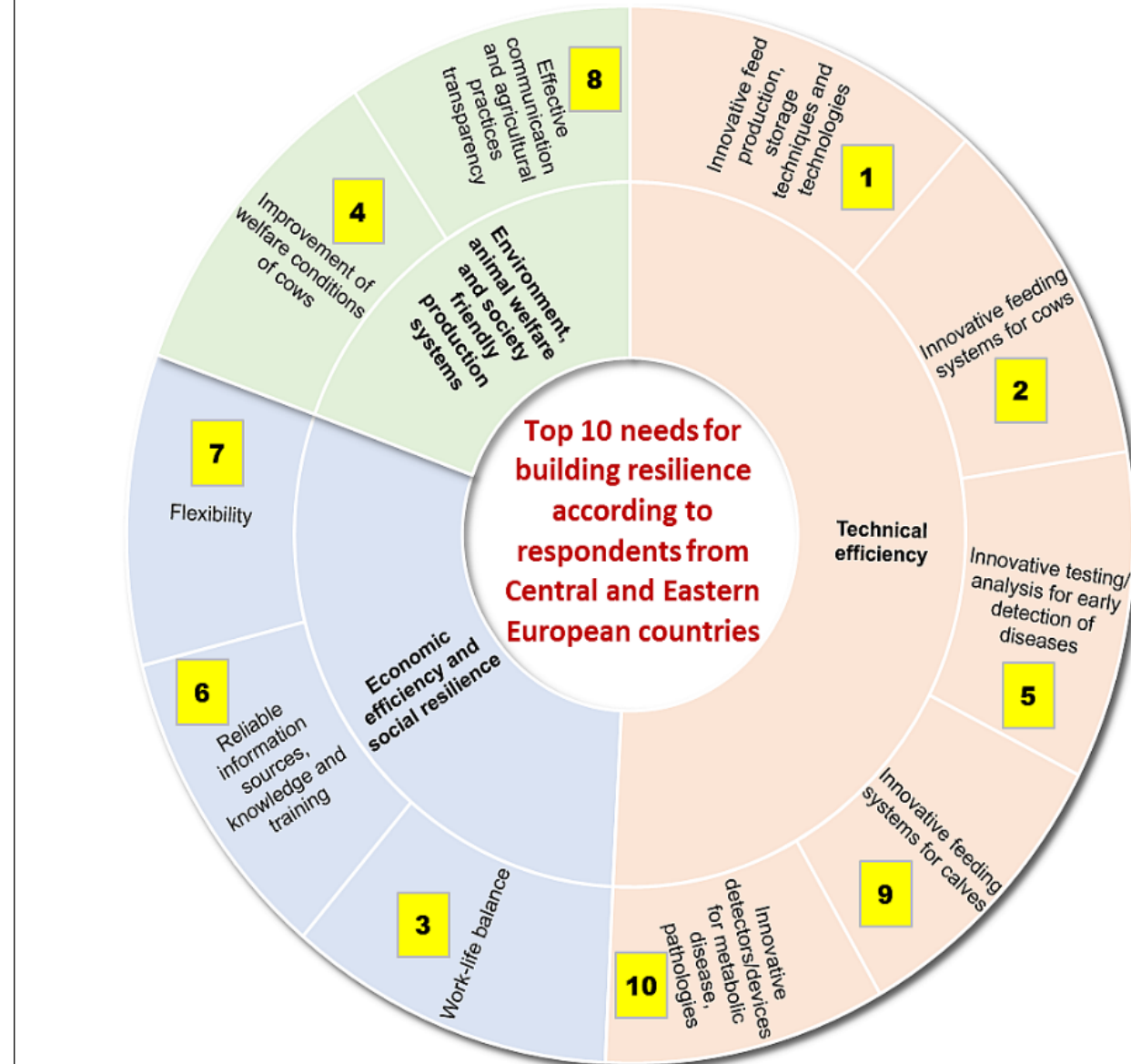
2. Assessment of solutions by experts

3. Assessment of solutions in National Dairy AKIS (NDA) meetings in 15 countries

Categories of needs with > 70% approval (by researchers, stakeholders, farmers)

KA Socio Economic	KA Technical	KA Environment, Animal Welfare Health
Work-life balance	Innovative testing and analyses for early detection of diseases	Improvement of welfare conditions of cows and calves
Salary / returns	Innovative detectors and devices for diseases – mastitis, lameness, oestrus, eating behaviour	Innovative and animal friendly housing
Effective communication and transparency to general public		Energy efficiency and use of renewable energy
Flexibility		Efficiency of nitrogen use
		Soil management

Western versus Eastern European respondents



Assessment of the solutions

- 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)

Assessment of solutions - survey

32 questions all Knowledge areas

All KAs

All KAs

- Solution and assessor (4 questions)
- 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 (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

All KAs

All KAs

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

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

- 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

Category 1a: Economic resilience (R4D-KA1)		questions for KA1 expert					
		<€100,- per cow		€500,- per cow		>€1000,- per cow	no idea
10	Investment level per cow	☐	☐	☐	☐	☐	☐
11	Impact on level of direct costs / operating expenses	☐	☐	☐	☐	☐	☐
12	Impact on profitability	☐	☐	☐	☐	☐	☐
13	Impact on income (ic) volatility	☐	☐	☐	☐	☐	☐
14	Impact on risk of the farming business	☐	☐	☐	☐	☐	☐
15	Impact on overall economic resilience (er)	☐	☐	☐	☐	☐	☐

survey questions to fill in

summarizing question

Highest assessed / scored solutions by experts

KA Socio Economic	KA Technical	KA Environment, Animal Welfare Health
Lean management	Sensors monitoring insight in health and fertility	Improvement of health, fertility and longevity in herds
Manage cash flows, Investment, and risks to increase mental health and resilience of farmer	Calf colostrum management	Freewalk farming system
Tools to make business plans to support strategic decisions	Strategic hoof trimming	Barns for more animal welfare with access to outside
Improve quality consultancy services, engage advisory in farm management	Manure application tailored to needs plant	Apply sand as deep bedding in cubicles to improve health, welfare and productivity
Peer groups of farmers to share knowledge using facilitation methods	Early detection of diseases	Biodiversity implementation package for dairy farms
Reparceling of land	Cross-breeding with beef cattle	Agroforestry on dairy farms

Assessment of solutions by farmers / stakeholders in 2-3 NDA meeting in 15 countries



20 SOLUTIONS SELECTED FOR RAIN	
Cow-calf contact system for improved animal welfare and performance, in particular:	
Offering milk to calves via teat, teat bucket or automated teat feeder (instead of bucket)	Prevents the development of cross-sucking
High milk allowances (at approx. 30% of BW) early in life combined with gradual weaning	Improves water access for pre-weaned calves to improve concentrate intake, hydration and health
Cross breeding with dairy breeds to improve performance, health fertility and longevity	Use of sexed semen and crossbreeding with beef cattle breeds to reduce and increase strategic hoof trimming to improve herd health status and longevity
Improve feed energy self-sufficiency through growing feed energy crops such as forage	Tools to make business plans to support strategic decisions for dairy farm
Apply sand as deep bedding in cubicles to improve health, welfare and productivity	Attract workforce/employee cooperation
Early group housing of calves to improve animal welfare and resilience	Use of hospital pens to provide more tailored support (feed, water, group size, welfare)
Embryo transfer for maximum reproductive success (top segment)	Develop biogas plant
Use of rubber-coated flooring in alleys improves and stimulates safe cow movement	Use of hospital pens to provide more tailored support (feed, water, group size, welfare)
Improve quality of advisory services	Improvement of health, fertility and longevity in dairy herds to provide higher income
Prevention: good practices and biosecurity	

Chosen on Attractiveness and Readiness

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

123 solutions were discussed at least 1 NDA meeting

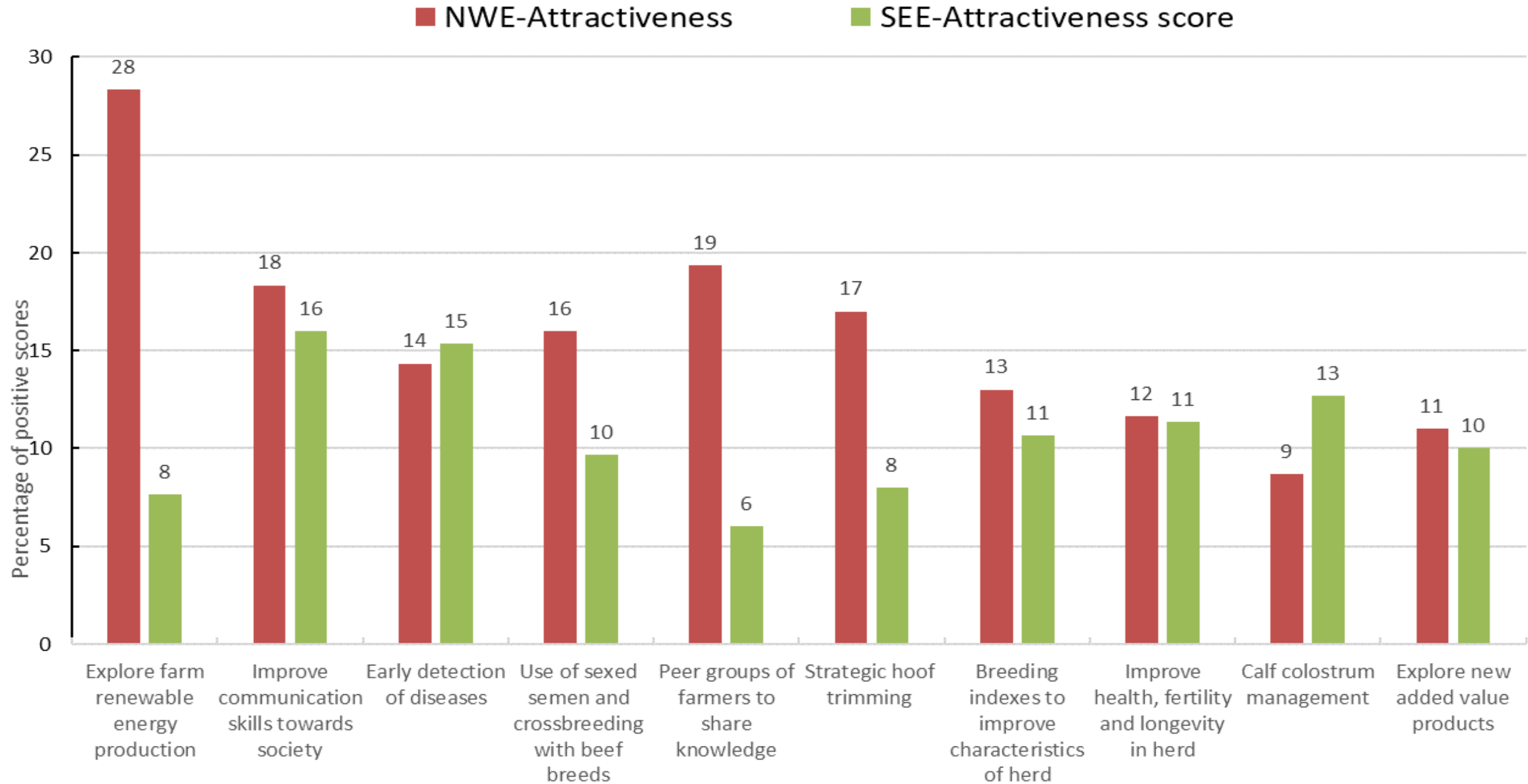
53 solutions were discussed at only 1 NDA meeting

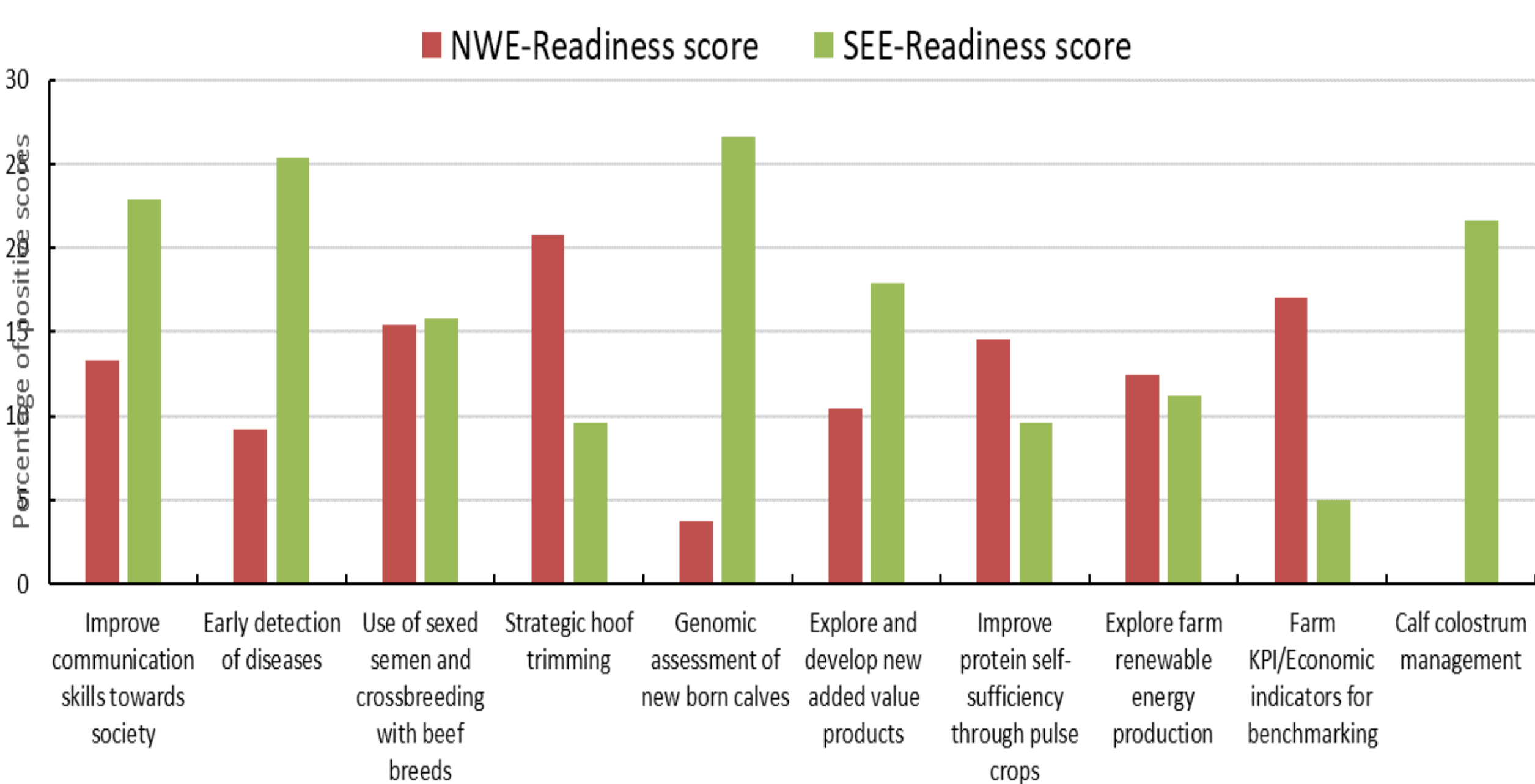
21 solutions were discussed on 2 NDA meetings

23 solutions were discussed on 3 NDA meetings

17 solutions were discussed on 9 NDA meetings

From NDA meetings: Sum of rankings of preferred 20 solutions





Outcomes affected by large scale farmer protests during NDA meetings



Denmark: CO2 tax



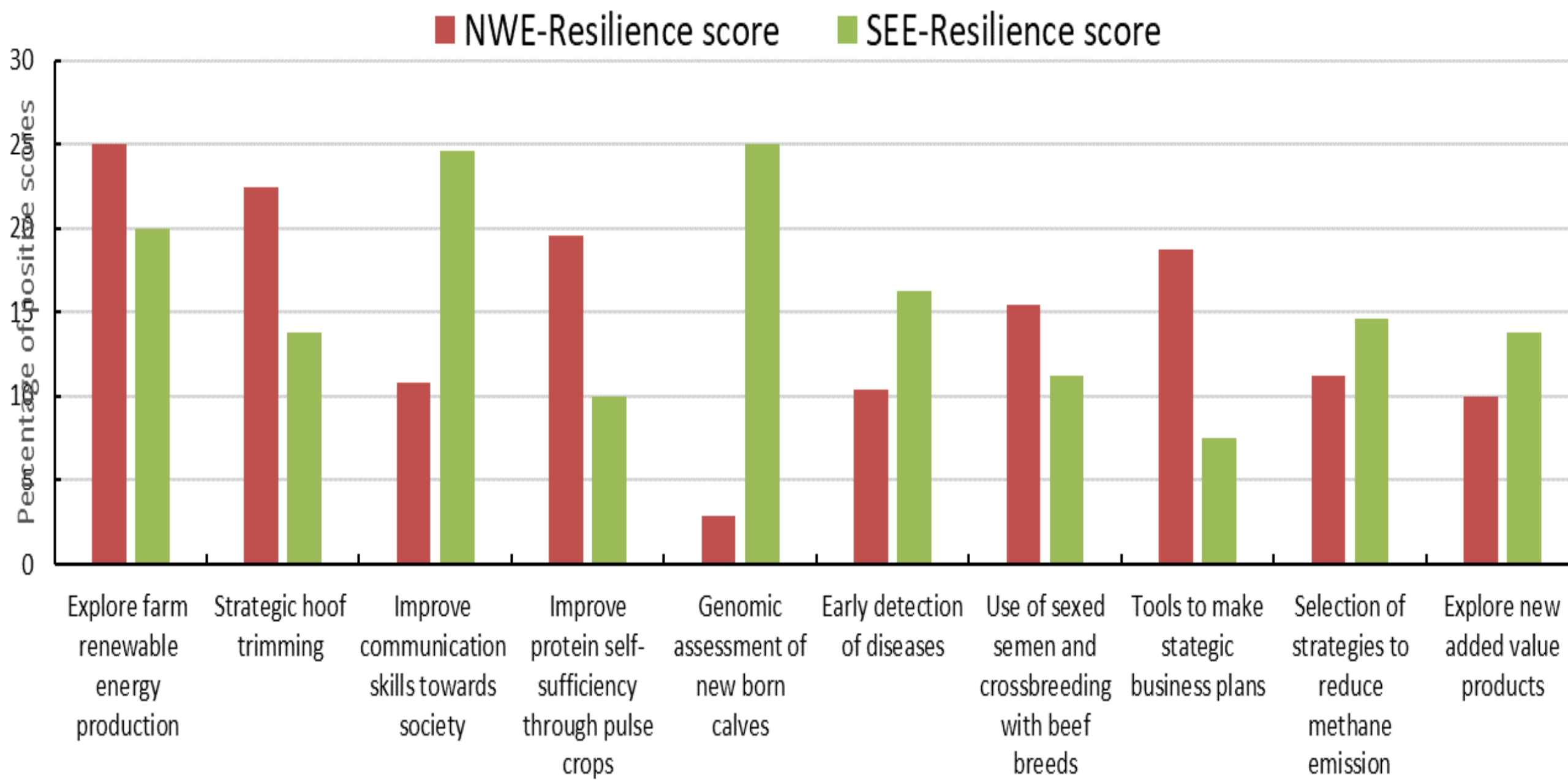
Slovenia: Animal welfare
brigade



Political party
Farmer - Citizen

Conclusions

- It was a challenging process to collect and assess the series of solutions from the 15 countries
- The choices of solutions were likely affected by the experts participating in the Resilience for Dairy project, and by the facilitation of the workshops, choice of farmers, etc.;
- There are differences in focus on solutions over Europe: especially East versus West;
- Expert' and farmer / stakeholder' opinions appeared not to be the same for several of the solutions;
- Technical efficiency was a leading strategy at farm level, especially in Eastern Europe;
- Much mentioned topics of interest: work-life balance, communication with society, renewable energy production, strategic hoof trimming, early detection of diseases in the herd, monitoring fertility and health of the animals, and calf rearing;
- The impact fields economic resilience, social resilience, technical efficiency, environment, animal welfare & health, and societal perception appeared to be good predictors for resilience as defined in this project. Only animal welfare & health and societal perception overlapped each other in response.



NDA meetings Hungary, Denmark and Finland

