Choice of mitigation strategies contributing to sustainability by experts from eight countries

Consortium partners of CCCfarming were in 2022 requested to choose mitigation practices that they considered as being useful to deal with the reduction of either ammonia emission or GHG emissions in their area or country. The goal was to apply the practices on farm level. The eight partners were advised to discuss this with colleagues such that their opinions represented a wider group of experts and expertise in their region. The choice of 15 to 20 mitigation practices was left to each partner, thus there was no pre-printed list of practices distributed.

Afterwards, the coordination team of CCCfarming ordered all collected mitigation practices in specific categories, to make the list easier to interpret. The list contains 52 mitigation practices, which were divided in 10 categories. The practices and choices per country are illustrated in below scheme.

Mitigation category, and related practices: X and O = yes	NH3	GHG	Ро	Lt	La	It	Fr	Ge	Sc	NI
Animal - amount										
Less young stock, lower replacement cows (longevity)	Х	Х	0		0					0
Performance increases, reduction of breeding animals	Х	Х	0					0		
Animal – breeding										
Genetic selection feed efficiency, health, low emission	Х	Х	0			0				0
Animal – feeding										
Low protein diets	Х				0	0		0		0
Low phosphate in diets	Х							0		
Feed more maize	Х	X?								0
Feed more concentrates		X?	0		0	0				
High digestable diet	Х	х	0				0			
More balanced feed and feed additives	Х	х	0	0	0				0	
Use of probiotics in the barn	Х			0						
Methane blocker as feed additive		Х								0
Precision feeding tools and techniques	Х	Х	0		0	0				

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Grazing and grassland									
More hours grazing	Х	Х			0	0			0
Mowing younger grass	-	Χ?							0
Silages of high nutritional value	Х	х	0		0				
Crops									
Grow more maize	Х								0
Grow own concentrates (sugar beets, grain)	?	Χ?							0
More self produced protein (e.g. mixture grass and legumes)	Х	Х			0	0			
Increasing efficiency in work processes in crop farming	Х	X?					0		
More efficient roughage production (more output/input)		X?						0	
Covercrops						0			

Soil and water										
Higher goundwater level peat ground		Х								0
Wetland management		Х		0	0					
Reduced tillage and restored pastures		Х		0	0		0			
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Housing	X	V					0			
Increasing the scrapping frequency	X	X					0		<u> </u>	0
low emission floor (e.g. separation feces and urine)	X			0		_		0		0
Low emission floors (e.g. prefabricated floors with grooves)	Х					0			<u> </u>	
Slight slope in walking areas	X						0			
Use of straw where manaure stays (with solid manure storage)	X						0			
Freewalk organic bedding	X	-								0
Innovative floors (separation feces/urine) and bedding	X						0			0
Manure acidification	Х					0				
Manure additives	Х				0					
Storage									<u> </u>	
	Х				0					
Conversion of manure lagoon to cylindrical storage	-	v			0		0			
Lower manure level in liquid storages	X	X				0	0	0	<u> </u>	
Covering manure storage	X	(X)	0	0	0	0	0	0		
Covering liquid manure tanks with passive methane production	X	Х					0	0		
Composting the manure	X						0	0		
Spreading manure and fertilizing										
Dilution of manure	Х									0
Bury slurry <6 hrs after application arable land	Х		0		0					
Slurry acidification in field	Х	(X)		0		0		0		
More organic and less synthtic fertilizers	Х	Х				0			0	
Save fuel, reduce fertilizer costs	Х	Х	0					0		
Improved chemical fertilizers (e.g. UREA)	Х		0			0	0			
Apply slurry in soil or close to ground	Х	Х			0		0	0		
Precision techniques manure and fertilizers	Х			0	0	0				
Cooling manure		Х								0
									<u> </u>	<u> </u>
Energy, general										
Anaerobic digester		Х	0		0	0	0			0
Biofermentor	X	Х			0	0				
Burning methane		Х				0	0			0
Solar / PV panels, plus solar power applications		Х	0		0		0			0
Lesss energy demanding machines, tractors, equipment	Х	Х				0	0			