

Overview of regional emission factor investigation

29th April 2026



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Agenda

Introduction to Ricardo

Background

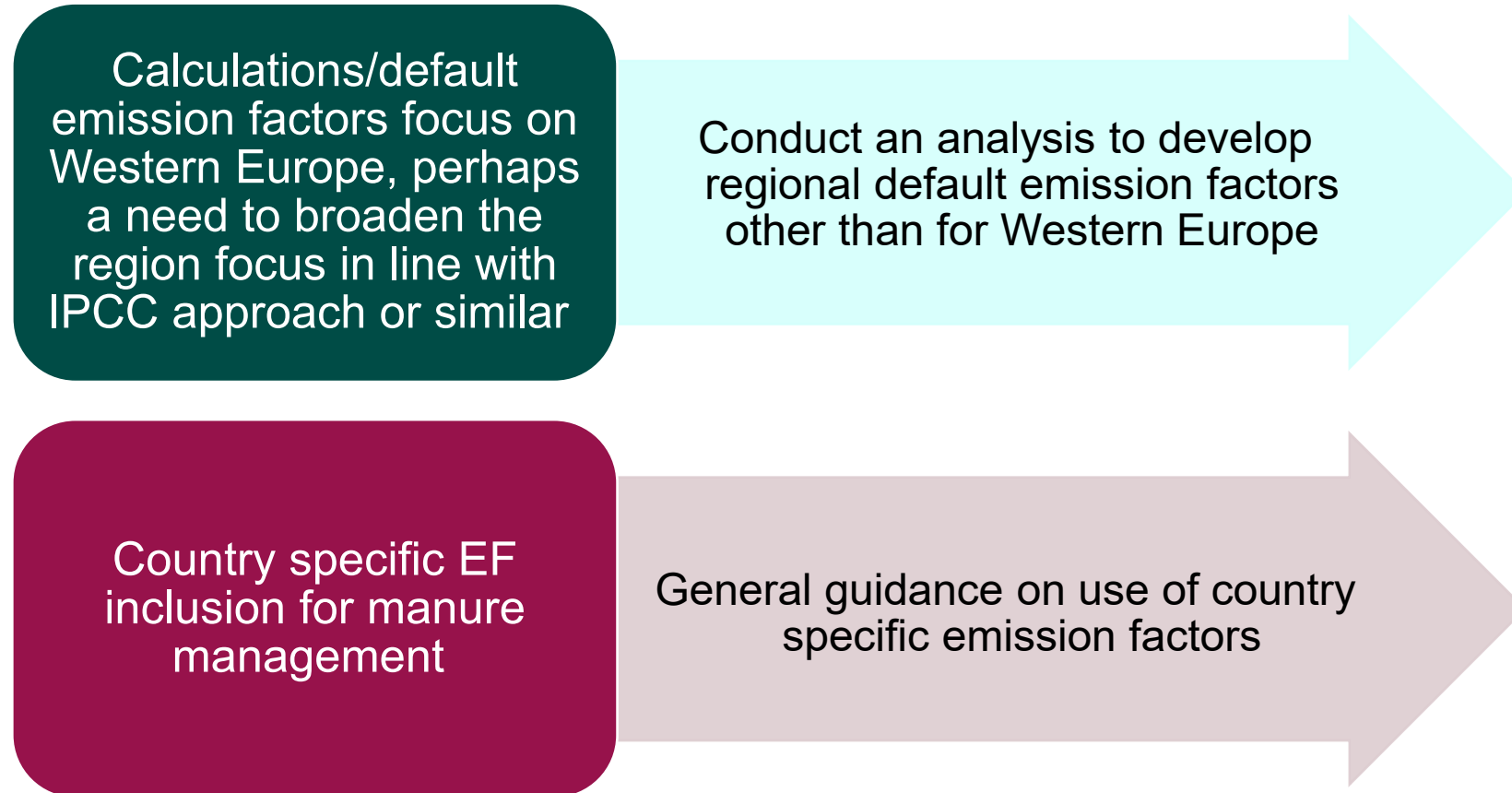
Proposed Action

Initial Steps/Findings

Next Steps

Discussion

Background



Initial Steps/Findings - Housing

Livestock Type	Housing Type	Western						Southern			Eastern						Northern			Total
		Austria	Belgium	France	Germany	Ireland	United Kingdom	Italy	Portugal	Spain	Slovakia	Slovenia	Lithuania	Czech Republic	Hungary	Poland	Denmark	Netherlands	Sweden	
Beef cattle	Cubicle housing						42											2		44
	loose housing						3													3
	Unsure																	1		1
Dairy cattle	Cubicle housing		18	2	9		17		3				2			33	27	31	6	148
	loose housing				1											9		4		14
	Tied stalls	2											1					4	3	10
	Unsure																	1		1
Poultry	Aviary house					1	4	2										5		12
	Battery cage house						2	8												10
	deep pit house			5			1							3						9
	Enriched cages							8		6										14
	Poultry housing			6		6	10		15					4						41
	Unsure			11			6				6	1		4				2		30
Swine	Closed house	8	49	17			12									5		4	6	101
	Deep pit house		30	155	15	18	23	21		5			2		1		24	56		350
	Loose housing			16	2		5						1		1			2		27
	Unsure		10			12				8	12	2						4		48
Total		10	107	212	27	37	125	39	18	19	18	3	6	11	2	47	51	116	15	863

60%

9%

10%

21%

Initial Steps/Findings - Housing

Outcome: There is potential to expand EFs beyond Western Europe for poultry, swine, and dairy cattle. It seems like there is also enough coverage of different housing types to expand these, however no. of replicates would require further analysis.

Initial Steps/Findings - Storage

		Beef	Cattle						Dairy cattle								Poultry		Swine						Total				
		Solid manure	Co-digestate	Digestate	Dirty water	Separated liquid	Separated solid	Slurry	Solid manure	Co-digestate	Co-digestate separated liquid	Co-digestate separated solid	Digestate	Digested separated liquid	Separated liquid	Separated solid	Slurry	Solid manure	Broiler litter	Layer manure	Digestate	Digested separated liquid	Digested separated solid	Dirty water		Separated liquid	Separated solid	Slurry	Solid manure
Western	Austria							2	4				1		1	1	3										15	6	27
Western	Switzerland							4	2																			6	
Western	France								2																	38	6	46	
Western	Germany				4	2	2	12				6				4								2	2	2		36	
Western	United Kingdom	14						10	4							18		9								33	12	100	
Southern	Italy			10		2	2	8		4	4	4		1		11				2	2	2		2	2	36	2	94	
Southern	Portugal														1	1	6											8	
Southern	Spain																						1			1		2	
Northern	Sweden								1									2	2								1	6	
Northern	Denmark		2					20	2	1	1					1	3									32		62	
Northern	Netherlands																									10		10	
Total		14	2	10	4	4	4	56	15	5	5	4	7	1	2	2	43	3	11	2	2	2	2	1	4	4	167	21	397

54%

26%

20%

Initial Steps/Findings - Storage

Outcome: There is no data to expand the EFs to reflect Eastern Europe for any livestock type. There is data to look at Northern and Southern Europe.

Initial Steps/Findings - Field

Region	Country	Beef cattle			Cattle					Dairy cattle					Poultry				Sheep			Swine			Total	
		Dung	Farmyard manure (FYM)	Urine - real	Dung	Farmyard manure (FYM)	Slurry	Solid manure	Urine - real	Dirty water	Dung	Farmyard manure (FYM)	Slurry	Urine - real	Urine - synthetic	Broiler litter	Deep litter	Farmyard manure (FYM)	Layer manure	Dung	Urine - real	Urine - synthetic	Farmyard manure (FYM)	Slurry		Solid manure
Western	Austria										2	10														12
Western	Belgium												3													3
Western	Germany	1		1	1		33		1	3	1		8	1						1	1				92	144
Western	France					4	17																		14	35
Western	Ireland						50				45			63	45										18	221
Western	United Kingdom		46			1	299	32			51		885	173	45	77		1	35		4	4	44	450	2147	
Southern	Italy						8																		74	82
Northern	Netherlands						170						18												13	201
Northern	Sweden						26						4				2								32	64
Northern	Denmark						127	5																	86	221
Total		1	46	1	1	5	730	37	4	3	97	2	925	237	90	77	2	1	35	1	5	4	44	779	3	3130

82%

3%

16%

Initial Steps/Findings - Field

Outcome: There is not enough data to expand the EFs to reflect Eastern Europe for any livestock type. There is data to look at Northern and Southern Europe.

Summary of Outcomes

Housing: There is potential to expand EFs beyond Western Europe for poultry, swine, and dairy cattle. It seems like there is also enough coverage of different housing types to expand these, however no. of replicates would require further analysis.

Storage: There is no data to expand the EFs to reflect Eastern Europe for any livestock type. There is data to look at Northern and Southern Europe.

Field: There is not enough data to expand the EFs to reflect Eastern Europe for any livestock type. There is data to look at Northern and Southern Europe.

Next Steps

Issue:

Calculations/default emission factors focus on Western Europe, perhaps a need to broaden the region focus in line with IPCC approach or similar

Proposed solution:

Conduct an analysis to develop regional default emission factors other than for Western Europe

Ongoing work:

Analyse DATAMAN in detail and compare this outcome with the currently used EFs in the Guidebook

Country specific EF inclusion for manure management

General guidance on use of country specific emission factors

Guidance on how to use DATAMAN to develop country or region specific EFs



Member of **WSP**

Discussion

Further inquires contact:

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