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Exploring farmers' motivation for collective action

A Q study on collaboration in Dutch agri-environment schemes

September 17, 2021

Introduction

Agri-environment schemes and the need for collective action



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Introduction

Agri-environment schemes and the need for collective action



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Introduction Agri-environment schemes (AES) and the need for collective action

- Lack of ecological effectiveness
- Landscape level action is needed, but caveats exist
- In the Netherlands, coordination is realised via farmer collectives since 2016 - individual applications no longer possible



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European Commission, 2005; McKenzie et al., 2013; Prager et al., 2012; Sutherland et al., 2012; Terwan et al., 2016; Whittingham, 2011

Introduction

Research objectives

Research Gap

- Participation in AES is voluntary → understanding motivation is crucial
- Much research on individual AES, little on motivation for collective AES

Ahnström et al., 2008; Lastra-Bravo et al., 2015; Prager & Nagel, 2008; Siebert et al., 2006

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Introduction

Research objectives

/// Motivation for collective AES

To Do

- explore the motivation of Dutch farmers to participate in collective AES
- Identify main advantages and disadvantages of Dutch collective AES

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Methodology

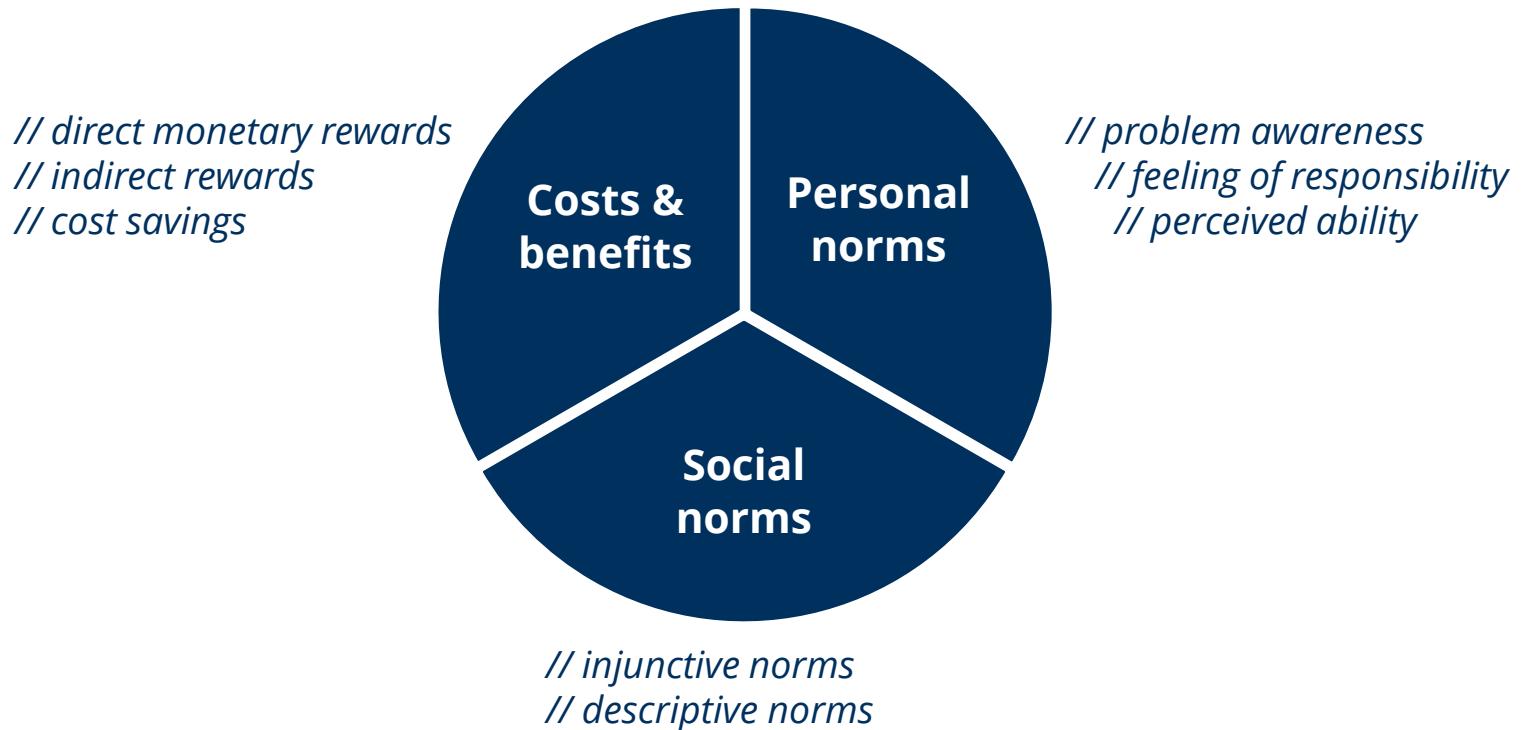
Q methodology

Aim: openly explore perspectives



Conceptual framework

Motivation to participate in collective AES



Barghusen et al., under review

Methodology Q methodology

Aim: *openly explore perspectives*

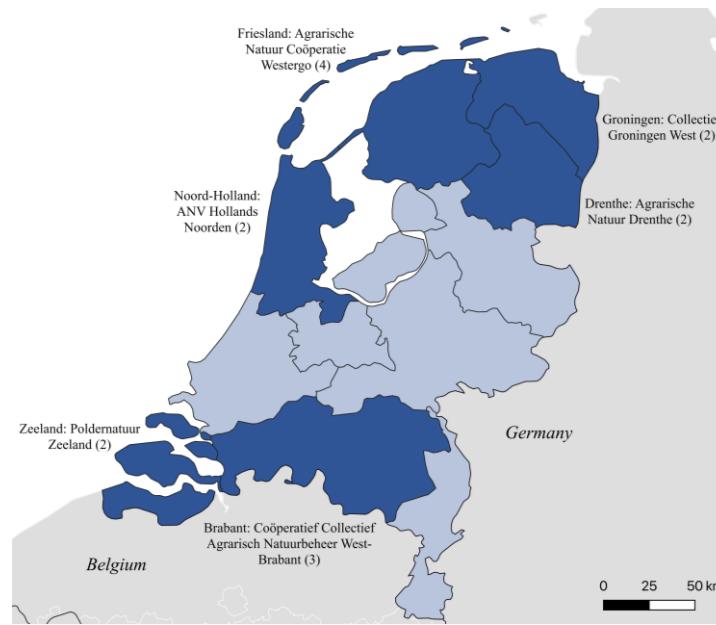
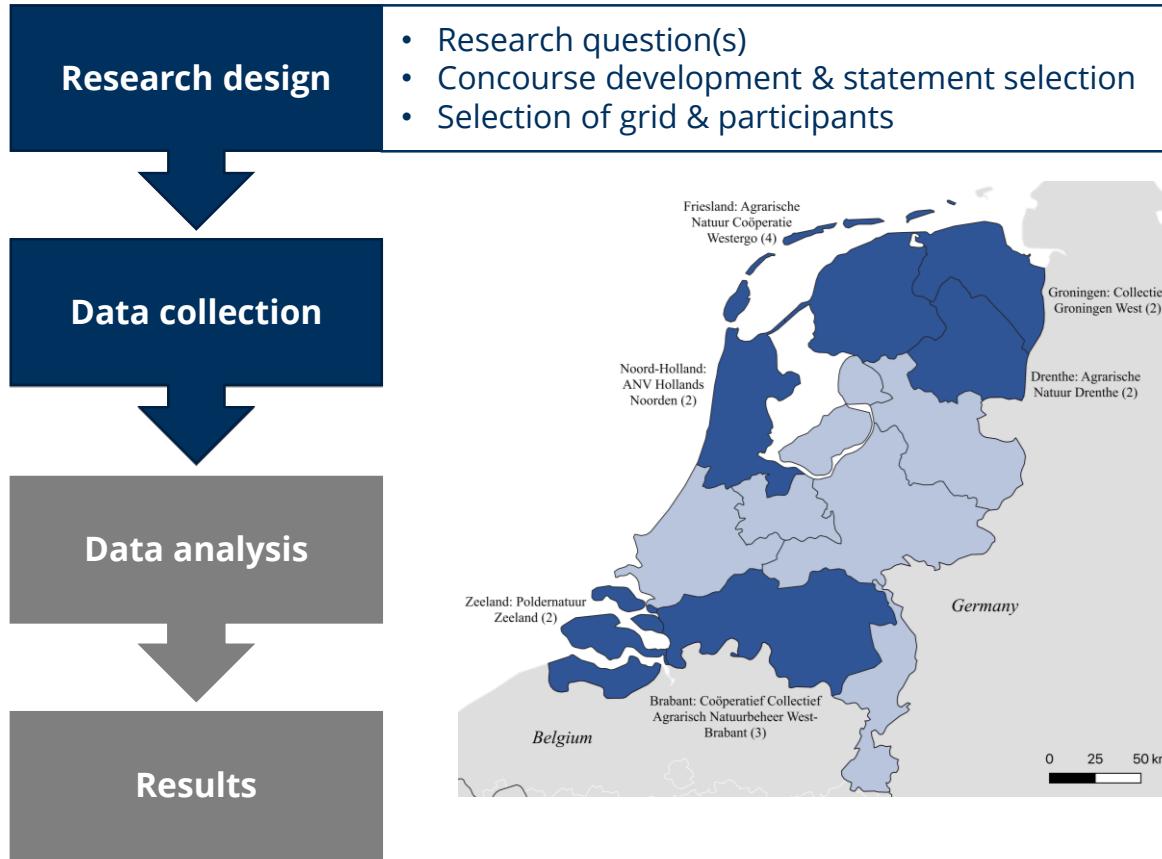
Watts & Stenner, 2012; Zabala et al., 2018



Methodology Q methodology

Aim: openly explore perspectives

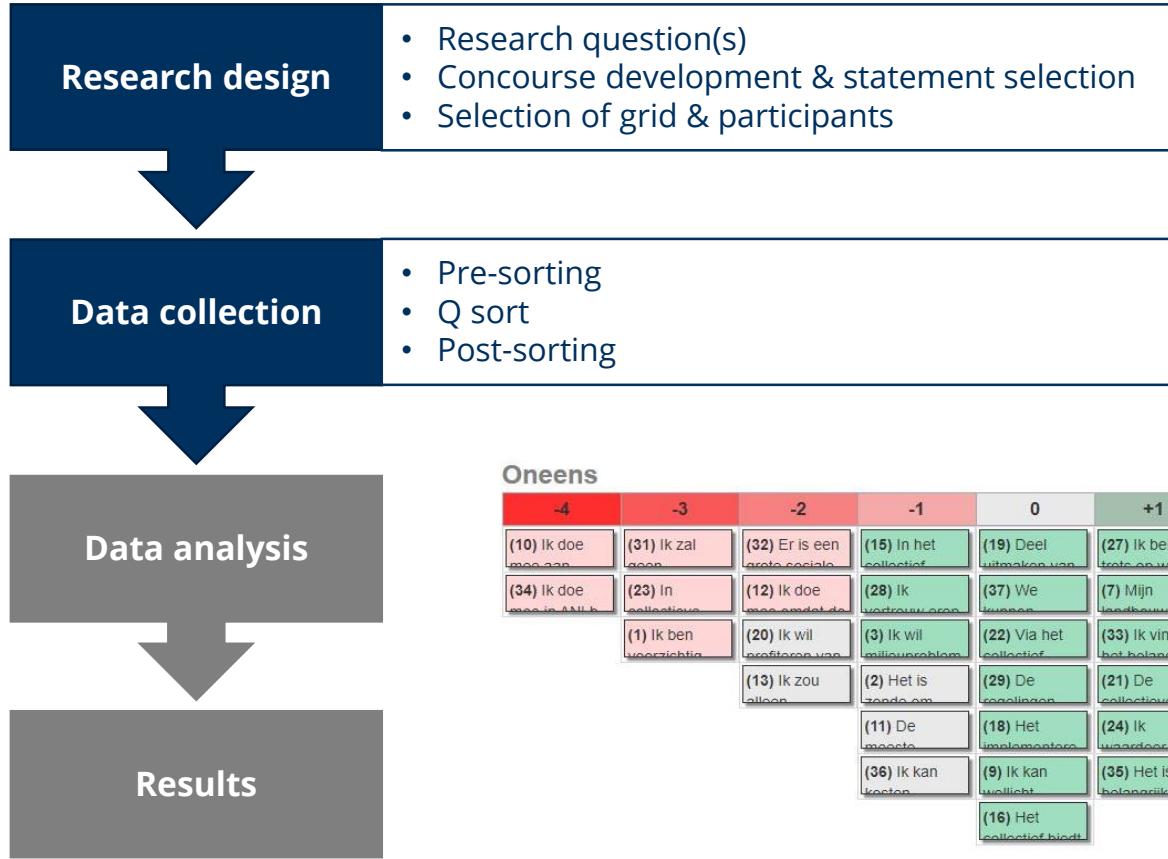
Watts & Stenner, 2012; Zabala et al., 2018



Methodology Q methodology

Aim: openly explore perspectives

Watts & Stenner, 2012; Zabala et al., 2018



In the collective scheme can save costs through easier access to information and resources.
It's part of having a good farmer to do what the environment needs.

37 x

-4	-3	-2	-1	0	1	2	3	4
-4	-3	-2	-1	0	1	2	3	4
-3	-2	-1	0	1	2	3	4	
-2	-1	0	1	2	3	4		
-1	0	1	2	3	4			
0	1	2	3	4				
1	0	1	2	3	4			
2	1	0	1	2	3	4		
3	2	1	0	1	2	3	4	
4	3	2	1	0	1	2	3	4

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Oneens

(10) Ik doe maar aan...	(31) Ik zal geen...	(32) Er is een grote sociale...	(15) In het collectief...	(19) Deel uitmaken van...	(27) Ik ben trots op wat...	(14) Zelfs als veranderings...	(26) Binnen het collectief...	(4) Ik houd van natuur en...
(34) Ik doe maar aan ANL b...	(23) In collectieve...	(12) Ik doe maar omdat da...	(28) Ik vertrouw op...	(37) We kunnen...	(7) Mijn landbouwbedrijf...	(5) Collectieve...	(17) Een groot voordeel...	(6) Ik wil eerder...
(1) Ik ben voorzichtig...		(20) Ik wil profiteren van...	(3) Ik wil milieuprobleem...	(22) Via het collectief...	(33) Ik vind het belangrijk...	(25) Samenwerken...	(30) Voor mij zijn...	
		(13) Ik zou alleen...	(2) Het is goed voor...	(29) De gezelligheid...	(21) De collectieve...	(8) Om het milieu te...		
			(11) De...	(18) Het...	(24) IK...			
			(36) Ik kan kiezen...	(9) Ik kan wéllicht...	(35) Het is belangrijk dat...			
				(16) Het collectieve biedt...				

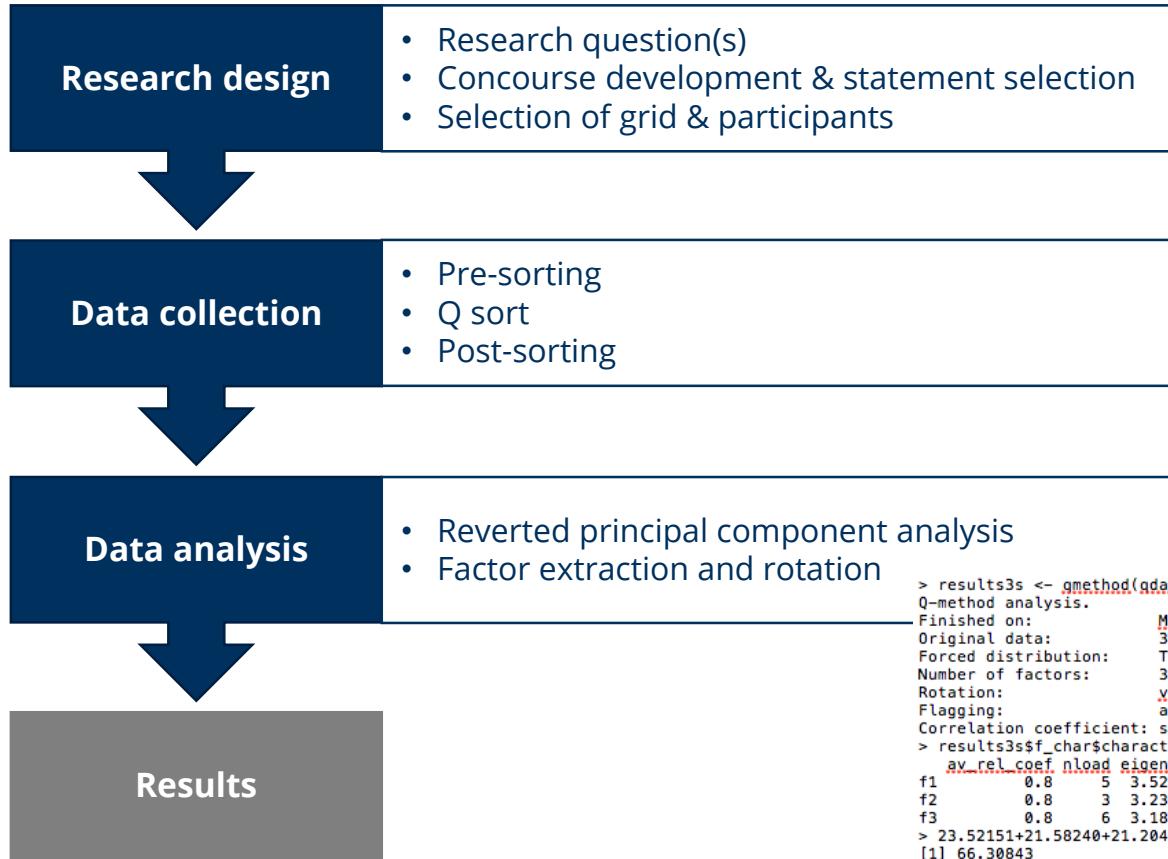
Eens



Methodology Q methodology

Aim: openly explore perspectives

Watts & Stenner, 2012; Zabala et al., 2018



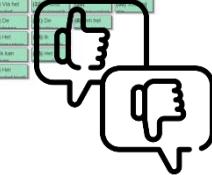
37 x

-4	-3	-2	-1	0	1	2	3	4
-4	-3	-2	-1	0	1	2	3	4
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-2	-1	0	1	2	3	4	4	4
-1	0	1	2	3	4	4	4	4
0	1	2	3	4	4	4	4	4
-1	0	1	2	3	4	4	4	4
0	1	2	3	4	4	4	4	4
0	1	2	3	4	4	4	4	4

Jan-Feb 2021



Oeens	-3	-2	-1	0	+1	+2	+3	Eens
(1) In-doe	(2) In-zit	(3) In-een	(4) In-het	(5) Daar	(6) Daar	(7) Daar	(8) Daar	(9) Noot
(1) In-doe	(2) In-zit	(3) In-een	(4) In-het	(5) Daar	(6) Daar	(7) Daar	(8) Daar	(9) Noot
(1) In-doe	(2) In-zit	(3) In-een	(4) In-het	(5) Daar	(6) Daar	(7) Daar	(8) Daar	(9) Noot
(1) In-doe	(2) In-zit	(3) In-een	(4) In-het	(5) Daar	(6) Daar	(7) Daar	(8) Daar	(9) Noot
(1) In-doe	(2) In-zit	(3) In-een	(4) In-het	(5) Daar	(6) Daar	(7) Daar	(8) Daar	(9) Noot
(1) In-doe	(2) In-zit	(3) In-een	(4) In-het	(5) Daar	(6) Daar	(7) Daar	(8) Daar	(9) Noot
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(1) In-doe	(2) In-zit	(3) In-een	(4) In-het	(5) Daar	(6) Daar	(7) Daar	(8) Daar	(9) Noot
(1) In-doe	(2) In-zit	(3) In-een	(4) In-het	(5) Daar	(6) Daar	(7) Daar	(8) Daar	(9) Noot

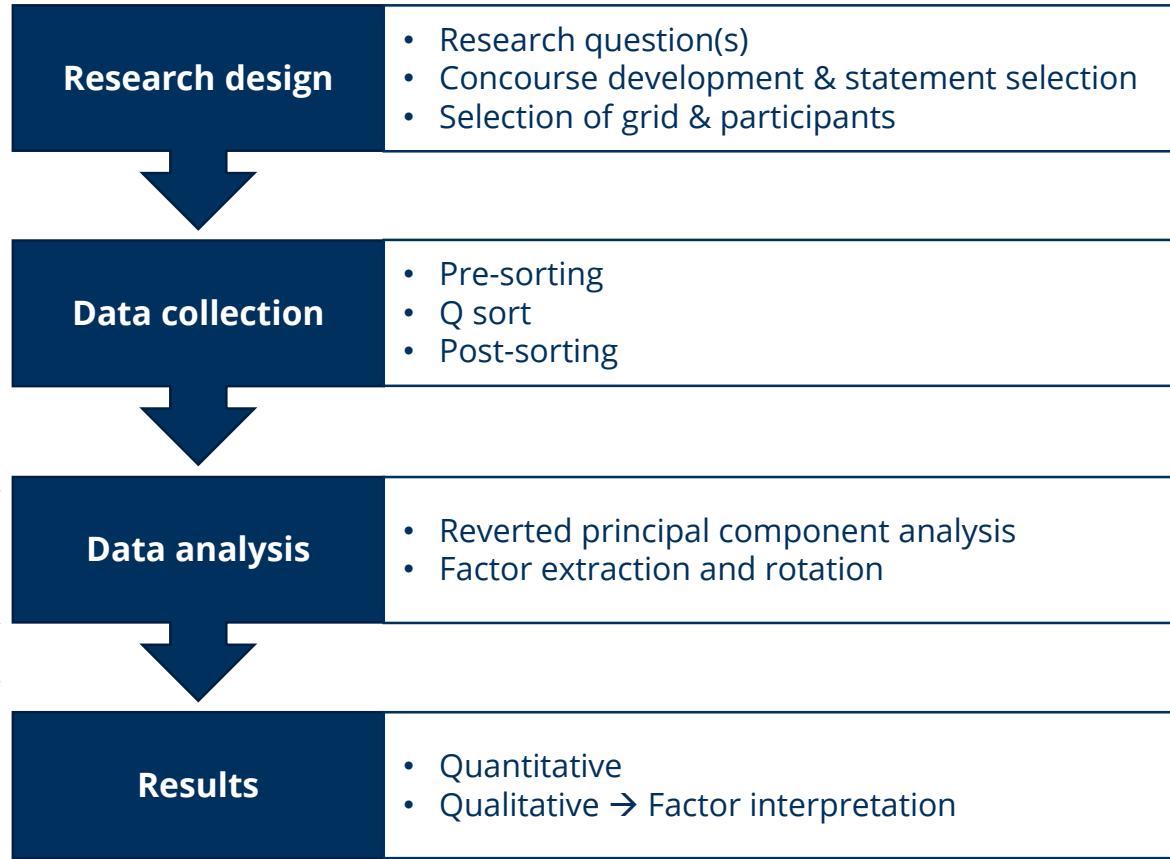


```
> results3s <- qmethod(qdata, nfactors = 3, rotation = "varimax", cor.method = "spearman")
Q-method analysis.
Finished on: Mon Feb 22 13:46:19 2021
Original data: 37 statements, 15 Q-sorts
Forced distribution: TRUE
Number of factors: 3
Rotation: varimax
Flagging: automatic
Correlation coefficient: spearman
> results3s$char$characteristics
   av_rel_coef nload eigenval expl_var reliability se_fscores
f1      0.8     5  3.528227 23.52151  0.9523810  0.2182179
f2      0.8     3  3.237360 21.58240  0.9230769  0.2773501
f3      0.8     6  3.180678 21.20452  0.9600000  0.2000000
> 23.52151+21.58240+21.20452
[1] 66.30843
```

Methodology Q methodology

Aim: openly explore perspectives

Watts & Stenner, 2012; Zabala et al., 2018



37 x

In the collective system can save costs through easier access to information and resources.
It's part of having a good farmer to do what the environment needs.

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-3	-2	-1	0	1	2	3	4	1
-2	-1	0	1	2	3	4	1	2
-1	0	1	2	3	4	1	2	3
0	1	2	3	4	1	2	3	4
1	0	1	2	3	4	1	2	3
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3	2	1	0	1	2	3	4	1
4	3	2	1	0	1	2	3	4

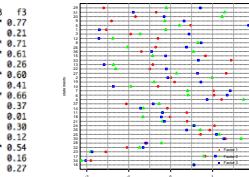
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```
> results3s <- qmethod(qdata, nfactors = 3, rotation = "varimax", cor.method = "spearman")
> results3s$analysis
[1] "Reverted PCA analysis"
[2] "Number of statements: 37"
[3] "Number of 0-sorts: 15"
[4] "Forced factorization: TRUE"
[5] "Number of factors: 3"
[6] "Rotation: varimax"
[7] "Flag: automatic"
[8] "Correlation coefficient: spearman"
> results3s$characteristics
[1] "RMSLCA: 0.80 (loadings > 0.50), Var. Reliability: 0.9523010, 0.2182179"
f1   [1] 0.8   [2] 3.528227  [3] 23.52151  [4] 0.9523010  [5] 0.2182179
f2   [1] 0.8   [2] 3.237268  [3] 21.50240  [4] 0.9230769  [5] 0.2773581
f3   [1] 0.8   [2] 3.330678  [3] 21.20452  [4] 0.9600000  [5] 0.2000000
> 23.52151+21.50240+21.20452
[1] 66.30843
```

> loadings(results3s)

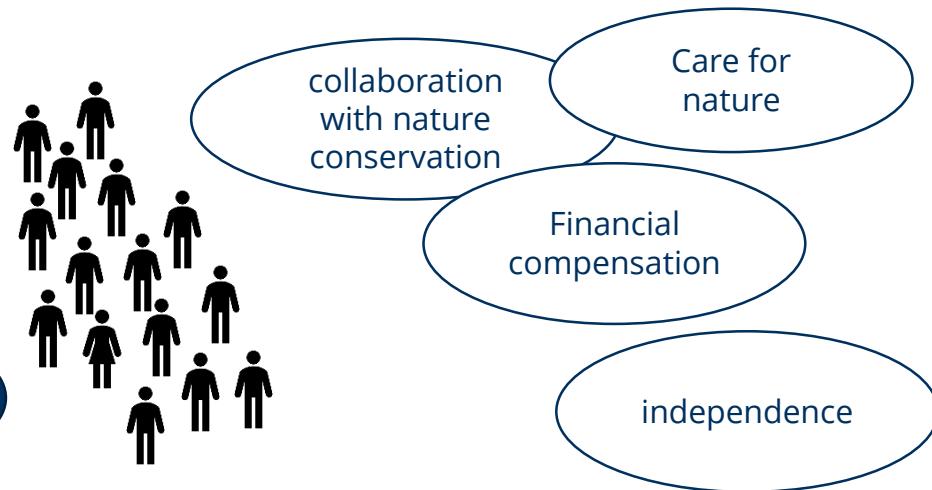
f1	f2	f3	f4	f5
par_1	0.70	0.28	0.77	
par_2	0.48	0.21		
par_3	0.18	0.36	0.71	
par_4	0.57	0.19	0.61	
par_5	0.34	0.39	0.56	
par_6	0.30	0.47	0.60	
par_7	0.56	0.16	0.41	
par_8	0.54	-0.18	0.66	
par_9	0.12	0.21	0.77	
par_10	0.76	0.29	0.01	
par_11	0.74	0.09	0.30	
par_12	0.65	0.49	0.12	
par_13	0.22	0.40	0.44	
par_14	0.20	0.83	0.16	
par_15	0.45	0.45	0.27	



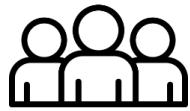
Results

Farmers' perspectives

DISAGREEMENT



AGREEMENT



The Collectivists



The Business Rationalists



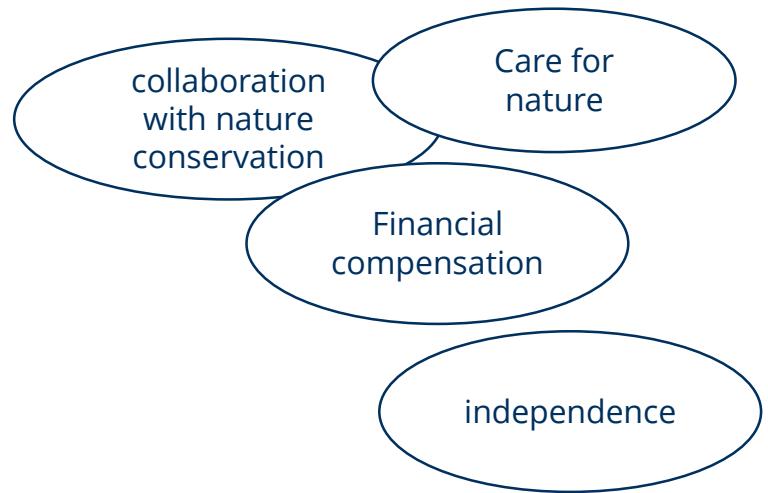
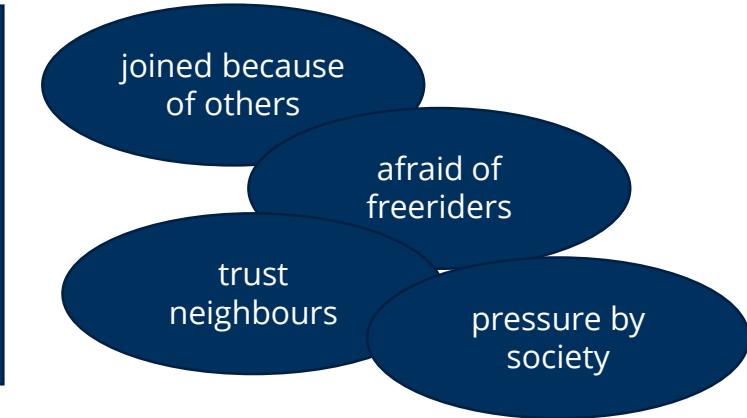
The Environmental Optimisers

Results

Farmers' perspectives

DISAGREEMENT

AGREEMENT

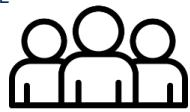


VARIANCE

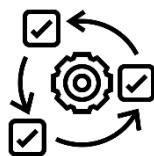
EXPLAINED VARIANCE

100 %

$\Sigma 66.3 \%$



The Collectivists



The Business Rationalists

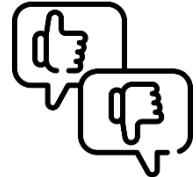


The Environmental Optimisers



Results

Advantages and disadvantages of the Dutch collective schemes



→ Very positive feedback

Farmers **appreciate**

... but still **wish for**

Ecological impacts

Flexibility

(Administrative) support

Involvement

Networks & exchange

Transparent policy

Knowledge & advice

Improved communication

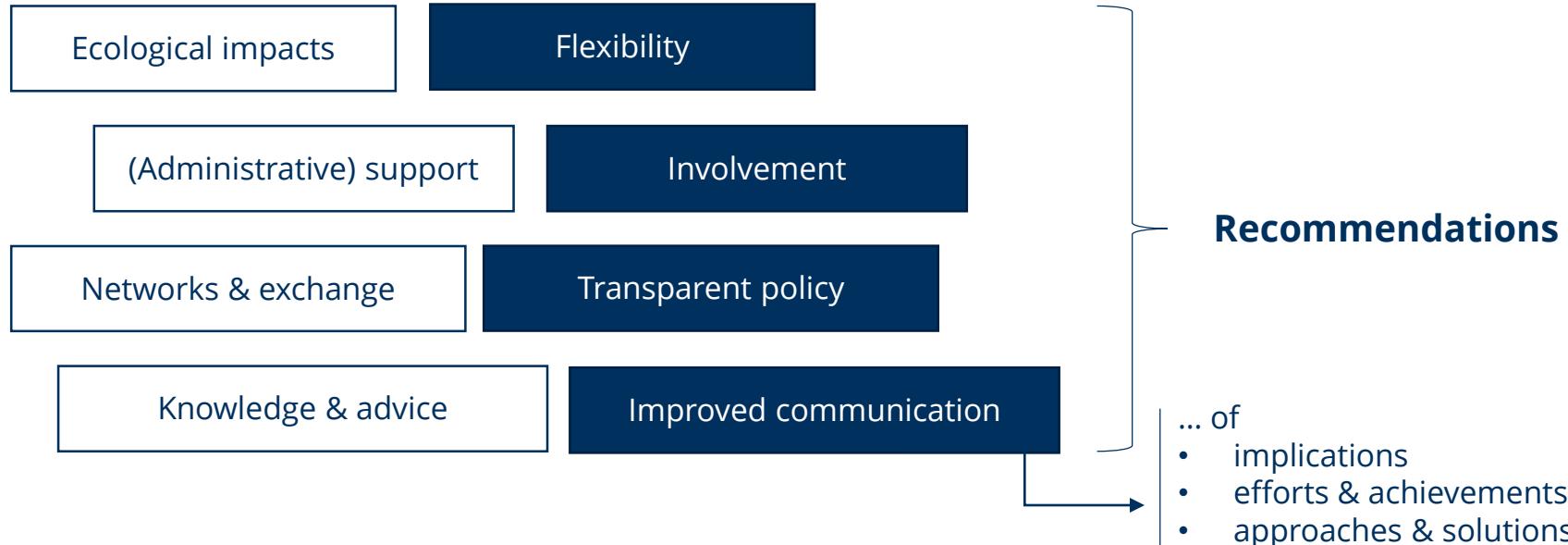
Discussion

Advantages and disadvantages of the Dutch collective schemes



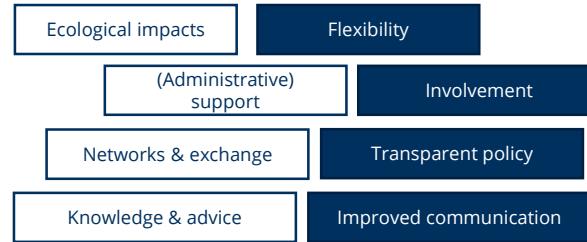
→ Very positive feedback

Farmers **appreciate** ... but still **wish for**



Discussion

Transfer potential to other EU member states



- Positive feedback on collective schemes, dismissing caveats
- Possible transfer to other regions if
 - political willingness
 - suitable institution(s)
 - and appropriate scheme design and communication exist

Conclusion

- Distinct perspectives, but joint positive perception of collective AES
- Love to nature and region important, but different levels of problem awareness
- Financial compensation necessary as enabler
- Independence important; autonomy strengthened by collective
- Existing caveats dismissed, but still some room for improvement of schemes
- Crucial role of collective



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CAP

AGRI-ENVIRONMENT SCHEMES

DUTCH MODEL

COOPERATION

COLLECTIVES

SOCIAL CAPITAL

CONCEPTUAL FRAMEWORK

INJUNCTIVE &
DESCRIPTIVE NORMS

GROUP EFFICACY

FARM(ER) CHARACTERISTICS

FUTURE RESEARCH NEEDS

Q SET & Q SORT

PARTICIPANTS

RANKING GRID

Q METHODOLOGY

CORRELATION

PEARSON VS. SPEARMAN

PRINCIPAL COMPONENT ANALYSIS

FACTOR EXTRACTION

FACTOR ROTATION

FACTOR INTERPRETATION

LIMITATIONS

QUESTIONS?

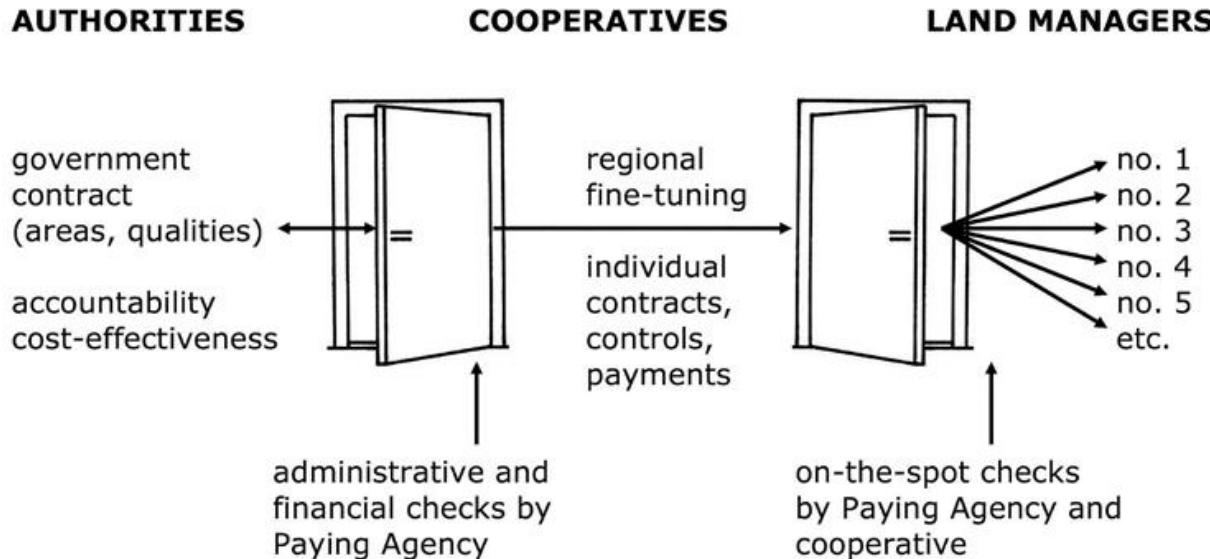


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Methodology

Case study: The Dutch environmental farmer collectives



Front door – back door principle (Terwan et al., 2016)