



Institute of Transport Economics  
Norwegian Centre for Transport Research

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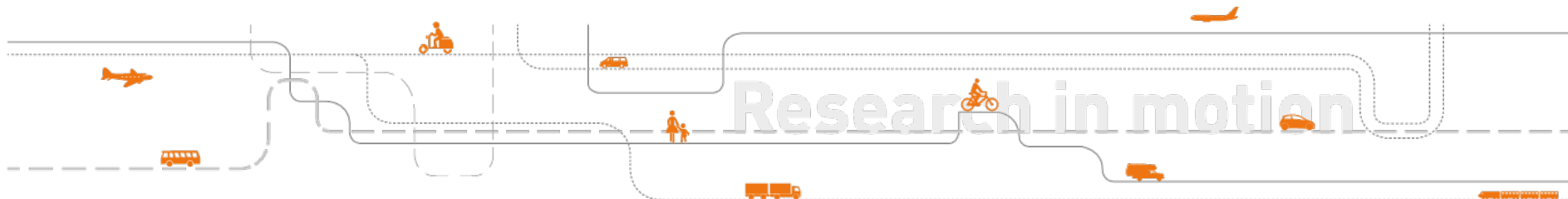


# TRANPAREA

## Final Workshop

### Data Collection & Main Results

Thursday, 2nd of June 2016. Knappgården, Särna, Sweden



# Survey and Sampling

- Pilot survey – 11-17<sup>th</sup> September 2015
- Main survey – 21<sup>st</sup> October – 11<sup>th</sup> November 2015

	<b>SE</b>	<b>NO</b>
Invitation rejections	4%	2%
Unanswered invitations	57%	70%
Questionnaires started	39%	28%
<b>Final sample size (pilot + main)</b>	<b>1343</b>	<b>1154</b>
Filling in mean time (mm:ss)	16:36	16:07

# The Samples

Descriptive statistics for socio-economic characteristics of the respondents, Sweden and Norway

	Sweden (n=1343)			Norway (n=1184)		
	Mean	Min	Max	Mean	Min	Max
<b>Age</b>	64,14	18	97	66,06	19	97
<b>Gender (male)</b>	0,53	0	1	0,54	0	1
<b>University degree</b>	0,27	0	1	0,15	0	1
<b>Children (below 18 years) in household</b>	0,37	0	1	0,37	0	1
<b>No. of children (&lt; 18 yrs.) in household</b>	0,52	0	5	0,52	0	7
<b>Household members</b>	1,85	1	7	1,90	1	7
<b>Employed household members</b>	1,23	0	6	1,15	0	6
<b>Income (household monthly net income, SEK/NOK, estimated from midpoints of income intervals)</b>	36 400	0	120 000	41 800	0	120 000
<b>Live in town/city (5000-100,000)</b>	0,40	0	1	0,38	0	1
<b>Live in larger city (&gt;100,000)</b>	0,31	0	1	0,23	0	1

# Does Fulufjäll provide use values or mostly “non-use values” to people?

## Past and intended visits to Fulufjäll

	Sweden (n=1343)	Norway (n=1184)
<i>Visited Fulufjäll</i>	14 %	9 %
Domestic side	12 %	7 %
Foreign side	4 %	3 %
<i>Agree - visit domestic side within 5 yrs.</i>	16 %	14 %
<i>Agree - visit foreign side within 5 yrs.</i>	11 %	9 %
<i>Think protection should be extended</i>	64 %	61 %

Most of those supporting nature protection, and who are willing to pay for it, are probably not motivated by their own use (visiting the national park area) – that they attach value to the existence of preserved nature (however also retaining an option of a future visit – although not within the next 5 years)

# Choices

16 choices per respondent – the alternative changed

Protection programme	No change	Alternative
National park extension on the Swedish side of Fulufjället (share of the area protected on the Swedish side)	+ 0 km <sup>2</sup> (72%)	+ 40 km <sup>2</sup> (80%)
National park extension on the Norwegian side of Fulufjället (share of the area protected on the Norwegian side)	+ 0 km <sup>2</sup> (32%)	+ 20 km <sup>2</sup> (40%)
Additional amount of income tax, which you would have to pay annually during five years	0 kroner	300 kroner
Your choice		

The alternative cost, additional income tax, varied between 100 and 500 kroner, in the choices

The additional protected area, in the alternative, varied between 0, 20, 40 and 60 sq.km

# Willingness-to-Pay (WTP)

## Estimated willingness-to-pay for park extension

Model specification – random parameter logit	Norwegian sample			Swedish sample		
	coef.	st.err.	p-value	coef.	st.err.	p-value
Status quo (SQ)	0.1501	0.1432	0.2948	-0.1120	0.1002	0.2634
NO +20 sq.km	1.3169	0.0619	0.0000	0.6183	0.0469	0.0000
NO +40 sq.km	2.0238	0.0739	0.0000	0.6786	0.0588	0.0000
NO +60 sq.km	2.3867	0.0829	0.0000	0.9196	0.0552	0.0000
SE +20 sq.km	0.3979	0.0473	0.0000	1.1979	0.0540	0.0000
SE +40 sq.km	0.6548	0.0556	0.0000	1.7036	0.0589	0.0000
SE +60 sq.km	0.6864	0.0559	0.0000	1.9722	0.0693	0.0000
COST (10 EUR PPP)	-0.0206	0.0446	0.6446	-0.0234	0.0439	0.5931
McFadden R2	0.4591			0.4582		
n	18779			21548		

## Norwegian sample – WTP:

- $1.3169 * 10 = 13.17$  EUR per year in added tax for 20 sq.km national park extension on the Norwegian side of Fulufjäll
- $0.3979 * 10 = 3.98$  EUR per year in added tax for 20 sq. km national park extension on the Swedish side of Fulufjäll

# Willingness-to-Pay (WTP)

Estimated annual WTP per household

Fulufjäll national park extension (sq.km in SE / NO)

WTP based on RPL:	Norwegian sample			Swedish sample		
	WTP			WTP		
Status quo (SQ)	0			0		
NO +20 sq.km	13.17 EUR			6.18 EUR		
NO +40 sq.km	20.24 EUR			6.79 EUR		
NO +60 sq.km	23.87 EUR			9.20 EUR		
SE +20 sq.km	3.98 EUR			11.98 EUR		
SE +40 sq.km	6.55 EUR			17.04 EUR		
SE +60 sq.km	6.86 EUR			19.72 EUR		

WTP increases in national park extension

Difference between WTP for domestic and foreign extension is lower in Sweden than in Norway

# Post-choice consideration of the three attributes in the choices

Post-choice assessment of the three attributes' importance when making the 16 choices

Choice attribute	Sweden (n=1343)	Norway (n=1184)
Extension in sq.km of domestic part important in choices	49 %	46 %
Extension in sq.km of foreign part important in choices	28 %	23 %
Cost (increased income tax) for the financing of extended protection important in choices	43 %	40 %

Both samples attached somewhat more importance to the extension of the national park within their national border



# International Public Good?

- One fundament for the TRANPAREA project is a test of transnational protected nature areas being so-called “international public goods” (e.g., Białowieża and Fulufjäll).
- If an “international public good” definition requires that WTP per sq.km is exactly equal between foreign and domestic – the protection of Fulufjäll is *not* an international public good.
- However, Swedes and Norwegians do show WTP for protection on the other side of the border (possibly Fulufjäll is perceived as slightly more “international public good”, or “binational public good”, among Swedes).

# Factors possibly explaining WTP

## Level of agreement to post-choice statements

	Sweden (n=1343)		Norway (n=1184)	
	Agree	Disagree	Agree	Disagree
Tax funds collected for extension can be lost/stolen	27 %	4 %	30 %	4 %
Domestic institutions more responsible than foreign	24 %	13 %	26 %	14 %
Prefer (only) domestic park extension ("patriotism"?)	12 %	25 %	16 %	29 %
Foreign side of park will be extended anyhow ("int. free rider"?)	45 %	12 %	53 %	10 %
The larger country should contribute most	23 %	25 %	35 %	20 %
Foreign side should contribute more because they are the wealthiest	17 %	34 %	11 %	51 %
The survey results will have policy consequences	43 %	15 %	44 %	16 %
The proposed tax amounts might be introduced	30 %	16 %	24 %	15 %
The proposed tax bids for financing park extension are feasible	35 %	8 %	34 %	10 %

# Respondents understanding of the questionnaire

Issues concerning costs/financing/taxes and sizes slightly less easy than forest characteristics and national borders?

Were these presented/expained elements easy or difficult?

	Sweden (n=1343)		Norway (n=1184)	
	Easy	Difficult	Easy	Difficult
Wood production forests	79 %	3 %	79 %	3 %
Natural forests	79 %	3 %	78 %	3 %
The red line state border in map	81 %	2 %	85 %	3 %
The sizes of the park areas on each side of the border	77 %	3 %	78 %	3 %
The green area showing the park - a mix of bare rock and natural forests	69 %	3 %	71 %	5 %
The sizes of the squares showing 20, 40 and 60 sq.km	59 %	9 %	61 %	9 %
The yellow-striped areas outside the park that could be included	71 %	7 %	72 %	6 %
The sizes of possible extensions of the park	64 %	7 %	67 %	7 %
Size matters in nature preservation	72 %	5 %	72 %	5 %
The cost of extension - financing by increased tax	55 %	11 %	57 %	12 %
The issue that government could need money for financing other public goods than nature protection	53 %	10 %	48 %	14 %

# Validity of results

- Further analyses of the data are in process
- The scientific publication process is also ongoing
- However, respondents stated understanding of the questionnaire and the fact that WTP increases in sq.km extension of the national park contribute to the validity of the WTP estimates



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Research in motion