A questionnaire on Europe in the 2050s

Tim Carter

Finnish Environment Institute, SYKE

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Scenarios questionnaire

Your task:

- To consider the current state of the society, economy and environment in Europe
- To think about plausible developments of these by the 2050s
- To assign subjective probabilities to different outcomes

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Scenarios questionnaire

Some rules:

- Anonymous
- Please respond to all questions even if you think you know nothing about the measures listed
- Please complete this tonight
- No conferring with your neighbour
- You can complete it directly into an Excel sheet on your laptop or by hand and transfer to computer later
- Please return your completed file to me or to Rik

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AVEC 2050 Scenarios questionnaire

Please enter your estimate of the percentage likelihood of each outcome listed occurring by 2050

Population of Europe (505 million in 1995)											Totals
Population (million)	< 405	405-430	430-455	455-480	480-505	505-530	530-555	555-580	580-605	> 605	
Likelihood of occurrence (%)											0
Gross Domestic Product (GDP) per capita (OECD Europe = 23600; Eastern Europe = 2800 in 1995)											
OECD Europe (thousand US$)	< 23.6	23.6-28.6	28.6-33.6	33.6-38.6	38.6-43.6	43.6-48.6	48.6-53.6	53.6-58.6	58.6-63.6	> 63.6	
Likelihood of occurrence (%)											0
Eastern Europe (thousand US$)	< 2.8	2.8-7.8	7.8-12.8	12.8-17.8	17.8-22.8	22.8-27.8	27.8-32.8	32.8-37.8	37.8-42.8	> 42.8	
Likelihood of occurrence (%)											0
Change in emissions of acidifying and eutrophying compounds (relative to 2000)											
Change in SO_2 emissions (%)	< -80	-80 - -60	-60 - -40	-40 - -20	-20 - 0	0 - 20	20 - 40	40 - 60	60 - 80	> 80	
Likelihood of occurrence (%)											0
Change in NO_x emissions (%)	< -80	-80 - -60	-60 - -40	-40 - -20	-20 - 0	0 - 20	20 - 40	40 - 60	60 - 80	> 80	
Likelihood of occurrence (%)											0
Change in European land use (relative to 1995)											
Change in agricultural area (%)	< -20	-20 - -15	-15 - -10	-10 - -5	-5 - 0	0 - 5	5 - 10	10 - 15	15 - 20	> 20	
Likelihood of occurrence (%)											0
Change in urban area (%)	< -20	-20 - -15	-15 - -10	-10 - -5	-5 - 0	0 - 5	5 - 10	10 - 15	15 - 20	> 20	
Likelihood of occurrence (%)											0
Change in forest area (%)	< -20	-20 - -15	-15 - -10	-10 - -5	-5 - 0	0 - 5	5 - 10	10 - 15	15 - 20	> 20	
Likelihood of occurrence (%)											0

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Entries in percent

Check that total = 100

AVEC 2050 Scenarios questionnaire

Please enter your estimate of the percentage likelihood of each outcome listed occurring by 2050

Population of Europe (505 million in 1995)											Totals
Population (million)	< 405	405-430	430-455	455-480	480-505	505-530	530-555	555-580	580-605	> 605	
Likelihood of occurrence (%)	0.00	0.00	5.00	10.00	20.00	40.00	20.00	5.00			100
Gross Domestic Product (GDP) per capita (OECD Europe = 23600; Eastern Europe = 2800 in 1995)											
OECD Europe (thousand US$)	< 23.6	23.6-28.6	28.6-33.6	33.6-38.6	38.6-43.6	43.6-48.6	48.6-53.6	53.6-58.6	58.6-63.6	> 63.6	
Likelihood of occurrence (%)											0
Eastern Europe (thousand US$)	< 2.8	2.8-7.8	7.8-12.8	12.8-17.8	17.8-22.8	22.8-27.8	27.8-32.8	32.8-37.8	37.8-42.8	> 42.8	
Likelihood of occurrence (%)											0
Change in emissions of acidifying and eutrophying compounds (relative to 2000)											
Change in SO_2 emissions (%)	< -80	-80 - -60	-60 - -40	-40 - -20	-20 - 0	0 - 20	20 - 40	40 - 60	60 - 80	> 80	
Likelihood of occurrence (%)											0
Change in NO_x emissions (%)	< -80	-80 - -60	-60 - -40	-40 - -20	-20 - 0	0 - 20	20 - 40	40 - 60	60 - 80	> 80	
Likelihood of occurrence (%)											0
Change in European land use (relative to 1995)											
Change in agricultural area (%)	< -20	-20 - -15	-15 - -10	-10 - -5	-5 - 0	0 - 5	5 - 10	10 - 15	15 - 20	> 20	
Likelihood of occurrence (%)											0
Change in urban area (%)	< -20	-20 - -15	-15 - -10	-10 - -5	-5 - 0	0 - 5	5 - 10	10 - 15	15 - 20	> 20	
Likelihood of occurrence (%)											0
Change in forest area (%)	< -20	-20 - -15	-15 - -10	-10 - -5	-5 - 0	0 - 5	5 - 10	10 - 15	15 - 20	> 20	
Likelihood of occurrence (%)											0

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AVEC 2050 Scenarios questionnaire

Please enter your estimate of the percentage likelihood of each outcome listed occurring by 2050

Population of Europe (505 million in 1995)											Totals
Population (million)	< 405	405-430	430-455	455-480	480-505	505-530	530-555	555-580	580-605	> 605	
Likelihood of occurrence (%)											0
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OECD Europe (thousand US$)	< 23.6	23.6-28.6	28.6-33.6	33.6-38.6	38.6-43.6	43.6-48.6	48.6-53.6	53.6-58.6	58.6-63.6	> 63.6	
Likelihood of occurrence (%)											0
Eastern Europe (thousand US$)	< 2.8	2.8-7.8	7.8-12.8	12.8-17.8	17.8-22.8	22.8-27.8	27.8-32.8	32.8-37.8	37.8-42.8	> 42.8	
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Change in emissions of acidifying and eutrophying compounds (relative to 2000)											
Change in SO_2 emissions (%)	< -80	-80 - -60	-60 - -40	-40 - -20	-20 - 0	0 - 20	20 - 40	40 - 60	60 - 80	> 80	
Likelihood of occurrence (%)											0
Change in NO_x emissions (%)	< -80	-80 - -60	-60 - -40	-40 - -20	-20 - 0	0 - 20	20 - 40	40 - 60	60 - 80	> 80	
Likelihood of occurrence (%)											0
Change in European land use (relative to 1995)											
Change in agricultural area (%)	< -20	-20 - -15	-15 - -10	-10 - -5	-5 - 0	0 - 5	5 - 10	10 - 15	15 - 20	> 20	
Likelihood of occurrence (%)											0
Change in urban area (%)	< -20	-20 - -15	-15 - -10	-10 - -5	-5 - 0	0 - 5	5 - 10	10 - 15	15 - 20	> 20	
Likelihood of occurrence (%)											0
Change in forest area (%)	< -20	-20 - -15	-15 - -10	-10 - -5	-5 - 0	0 - 5	5 - 10	10 - 15	15 - 20	> 20	
Likelihood of occurrence (%)											0
Relative sea-level change (cm)											
Helsinki, Finland	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)											0
Hamburg, Germany	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)											0
Venice, Italy	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)											0

Global mean annual CO_2 concentration (~377 ppm at Mauna Loa, Hawaii in 2004)											
C02 concentration (ppm)	< 270	270-370	370-470	470-570	570-670	670-770	770-870	870-970	970-1070	>1070	
Likelihood of occurrence (%)											0
Climate in northern Europe (north of 47.5°N) relative to 1961-1990											
Mean winter (DJF) temperature change (°C)	< -8	-8 - -6	-6 - -4	-4 - -2	-2 - 0	0 - 2	2 - 4	4 - 6	6 - 8	> 8	
Likelihood of occurrence (%)											0
Mean winter (DJF) precipitation change (%)	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)											0
Mean summer (JJA) temperature change (°	< -8	-8 - -6	-6 - -4	-4 - -2	-2 - 0	0 - 2	2 - 4	4 - 6	6 - 8	> 8	
Likelihood of occurrence (%)											0
Mean summer (JJA) precipitation change (%	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)											0
Climate in southern Europe (south of 47.5°N) relative to 1961-1990											
Mean winter (DJF) temperature change (°C)	< -8	-8 - -6	-6 - -4	-4 - -2	-2 - 0	0 - 2	2 - 4	4 - 6	6 - 8	> 8	
Likelihood of occurrence (%)											0
Mean winter (DJF) precipitation change (%)	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)											0
Mean summer (JJA) temperature change (°	< -8	-8 - -6	-6 - -4	-4 - -2	-2 - 0	0 - 2	2 - 4	4 - 6	6 - 8	> 8	
Likelihood of occurrence (%)											0
Mean summer (JJA) precipitation change (%	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)											0

Are you more familiar with regions north or south of latitude 47.5°N?

You have been allocated the following random number: 3179488

Error: row totals

EXIT

28.10.2005

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Global mean annual CO_2 concentration (~377 ppm at Mauna Loa, Hawaii in 2004)											
C02 concentration (ppm)	< 270	270-370	370-470	470-570	570-670	670-770	770-870	870-970	970-1070	>1070	
Likelihood of occurrence (%)					**20.00**	**20.00**	**30.00**	**20.00**	**10.00**		100
Climate in northern Europe (north of 47.5°N) relative to 1961-1990											
Mean winter (DJF) temperature change (°C)	< -8	-8 - -6	-6 - -4	-4 - -2	-2 - 0	0 - 2	2 - 4	4 - 6	6 - 8	> 8	
Likelihood of occurrence (%)				**50.00**	**50.00**						100
Mean winter (DJF) precipitation change (%)	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)				**40.00**	**60.00**						100
Mean summer (JJA) temperature change (°	< -8	-8 - -6	-6 - -4	-4 - -2	-2 - 0	0 - 2	2 - 4	4 - 6	6 - 8	> 8	
Likelihood of occurrence (%)			**20.00**	**30.00**	**50.00**						100
Mean summer (JJA) precipitation change (%	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)					**40.00**	**60.00**					100
Climate in southern Europe (south of 47.5°N) relative to 1961-1990											
Mean winter (DJF) temperature change (°C)	< -8	-8 - -6	-6 - -4	-4 - -2	-2 - 0	0 - 2	2 - 4	4 - 6	6 - 8	> 8	
Likelihood of occurrence (%)						**70.00**	**20.00**	**10.00**			100
Mean winter (DJF) precipitation change (%)	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)				**10.00**	**20.00**	**40.00**	**20.00**	**10.00**			100
Mean summer (JJA) temperature change (°	< -8	-8 - -6	-6 - -4	-4 - -2	-2 - 0	0 - 2	2 - 4	4 - 6	6 - 8	> 8	
Likelihood of occurrence (%)					**30.00**	**50.00**	**20.00**				100
Mean summer (JJA) precipitation change (%	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)					**20.00**	**80.00**					100

Are you more familiar with regions north or south of latitude 47.5°N?

You have been allocated the following random number: 8565239

Ready to exit

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EUROPE
Barents Sea
ARCTIC CIRCLE
Norwegian Sea
Iceland
Faroe Islands (Denmark)
Norway
Finland
Russian Federation (European Russia)
Ural Mountains
Sweden
Estonia
Latvia
Lithuania
Atlantic Ocean
North Sea
Baltic Sea
Netherlands
Belgium
Ireland
UK
Denmark
Poland
Belarus
Germany
Czech Rep.
Ukraine
Luxembourg
Liechtenstein
Switzerland
Moldova
Romania
France
Slovenia
Croatia
Bosnia Herzegovina
Monaco
Serbia Montenegro (Yugoslavia)
Georgia
Italy
Bulgaria
Black Sea
San Marino
Andorra
Corsica (France)
Vatican
Sardinia (Italy)
Spain
Turkey
ASIA
Mediterranean Sea
Albania
Macedonia
Greece
Portugal
Malta
Sicily (Italy)
Crete (Greece)
Cyprus
Syria
Lebanon
Algeria
Israel
Jordan
Morocco
Tunisia
Libya
Egypt
Saudi Arabia
AFRICA
400 mi
400 km
15° W
0°
15° E
30° E
45° E
60° E
60° N
50° N
40° N
30° N
©GraphicMaps.com
47.5 °N
Vienna = 48.2°N

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Global mean annual CO_2 concentration (~377 ppm at Mauna Loa, Hawaii in 2004)											
C02 concentration (ppm)	< 270	270-370	370-470	470-570	570-670	670-770	770-870	870-970	970-1070	>1070	
Likelihood of occurrence (%)					**20.00**	**20.00**	**30.00**	**20.00**	**10.00**		100
Climate in northern Europe (north of 47.5°N) relative to 1961-1990											
Mean winter (DJF) temperature change (°C)	< -8	-8 - -6	-6 - -4	-4 - -2	-2 - 0	0 - 2	2 - 4	4 - 6	6 - 8	> 8	
Likelihood of occurrence (%)				**50.00**	**50.00**						100
Mean winter (DJF) precipitation change (%)	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)				**40.00**	**60.00**						100
Mean summer (JJA) temperature change (°C)	< -8	-8 - -6	-6 - -4	-4 - -2	-2 - 0	0 - 2	2 - 4	4 - 6	6 - 8	> 8	
Likelihood of occurrence (%)			**20.00**	**30.00**	**50.00**						100
Mean summer (JJA) precipitation change (%)	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)					**40.00**	**60.00**					100
Climate in southern Europe (south of 47.5°N) relative to 1961-1990											
Mean winter (DJF) temperature change (°C)	< -8	-8 - -6	-6 - -4	-4 - -2	-2 - 0	0 - 2	2 - 4	4 - 6	6 - 8	> 8	
Likelihood of occurrence (%)						**70.00**	**20.00**	**10.00**			100
Mean winter (DJF) precipitation change (%)	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)				**10.00**	**20.00**	**40.00**	**20.00**	**10.00**			100
Mean summer (JJA) temperature change (°C)	< -8	-8 - -6	-6 - -4	-4 - -2	-2 - 0	0 - 2	2 - 4	4 - 6	6 - 8	> 8	
Likelihood of occurrence (%)					**30.00**	**50.00**	**20.00**				100
Mean summer (JJA) precipitation change (%)	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)					**20.00**	**80.00**					100

Are you more familiar with regions north or south of latitude 47.5°N? N

You have been allocated the following random number: 855

Region
Enter N or S

Ready to exit

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Global mean annual CO_2 concentration (~377 ppm at Mauna Loa, Hawaii in 2004)											
C02 concentration (ppm)	< 270	270-370	370-470	470-570	570-670	670-770	770-870	870-970	970-1070	>1070	
Likelihood of occurrence (%)					**20.00**	**20.00**	**30.00**	**20.00**	**10.00**		100
Climate in northern Europe (north of 47.5°N) relative to 1961-1990											
Mean winter (DJF) temperature change (°C)	< -8	-8 - -6	-6 - -4	-4 - -2	-2 - 0	0 - 2	2 - 4	4 - 6	6 - 8	> 8	
Likelihood of occurrence (%)				**50.00**	**50.00**						100
Mean winter (DJF) precipitation change (%)	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)				**40.00**	**60.00**						100
Mean summer (JJA) temperature change (°C)	< -8	-8 - -6	-6 - -4	-4 - -2	-2 - 0	0 - 2	2 - 4	4 - 6	6 - 8	> 8	
Likelihood of occurrence (%)			**20.00**	**30.00**	**50.00**						100
Mean summer (JJA) precipitation change (%)	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)					**40.00**	**60.00**					100
Climate in southern Europe (south of 47.5°N) relative to 1961-1990											
Mean winter (DJF) temperature change (°C)	< -8	-8 - -6	-6 - -4	-4 - -2	-2 - 0	0 - 2	2 - 4	4 - 6	6 - 8	> 8	
Likelihood of occurrence (%)						**70.00**	**20.00**	**10.00**			100
Mean winter (DJF) precipitation change (%)	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)				**10.00**	**20.00**	**40.00**	**20.00**	**10.00**			100
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Likelihood of occurrence (%)					**30.00**	**50.00**	**20.00**				100
Mean summer (JJA) precipitation change (%)	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)					**20.00**	**80.00**					100

Are you more familiar with regions north or south of latitude 47.5°N? N

You have been allocated the following random number: 8550550

Press to exit

Ready to exit

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AVEC 2050 Scenarios questionnaire

Please enter your estimate of the percentage likelihood of each outcome listed occurring by 2050

AVEC Questionnaire
Welcome.
You are a new respondent.
Please supply entries to the empty boxes under each category. You should provide responses to all 20 categories. Have fun!

million in 1995)											Totals
	< 405	405-430	430-455	455-480	480-505	505-530	530-555	555-580	580-605	> 605	
											0
GDP) per capita (OECD Europe = 23600; Eastern Europe = 2800 in 1995)											
	< 23.6	23.6-28.6	28.6-33.6	33.6-38.6	38.6-43.6	43.6-48.6	48.6-53.6	53.6-58.6	58.6-63.6	> 63.6	
Likelihood of occurrence (%)											0
Eastern Europe (thousand US$)	< 2.8	2.8-7.8	7.8-12.8	12.8-17.8	17.8-22.8	22.8-27.8	27.8-32.8	32.8-37.8	37.8-42.8	> 42.8	
Likelihood of occurrence (%)											0
Change in emissions of acidifying and eutrophying compounds (relative to 2000)											
Change in SO_2 emissions (%)	< -80	-80 - -60	-60 - -40	-40 - -20	-20 - 0	0 - 20	20 - 40	40 - 60	60 - 80	> 80	
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Change in NO_x emissions (%)	< -80	-80 - -60	-60 - -40	-40 - -20	-20 - 0	0 - 20	20 - 40	40 - 60	60 - 80	> 80	
Likelihood of occurrence (%)											0
Change in European land use (relative to 1995)											
Change in agricultural area (%)	< -20	-20 - -15	-15 - -10	-10 - -5	-5 - 0	0 - 5	5 - 10	10 - 15	15 - 20	> 20	
Likelihood of occurrence (%)											0
Change in urban area (%)	< -20	-20 - -15	-15 - -10	-10 - -5	-5 - 0	0 - 5	5 - 10	10 - 15	15 - 20	> 20	
Likelihood of occurrence (%)											0
Change in forest area (%)	< -20	-20 - -15	-15 - -10	-10 - -5	-5 - 0	0 - 5	5 - 10	10 - 15	15 - 20	> 20	
Likelihood of occurrence (%)											0
Relative sea-level change (cm)											
Helsinki, Finland	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)											0
Hamburg, Germany	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)											0
Venice, Italy	< -40	-40 - -30	-30 - -20	-20 - -10	-10 - 0	0 - 10	10 - 20	20 - 30	30 - 40	> 40	
Likelihood of occurrence (%)											0

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Scenarios questionnaire

Good luck!

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