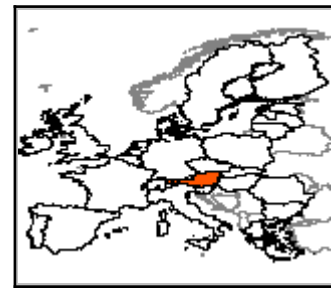


Content

Austria	1
Belgium	5
Bulgaria	9
Switzerland	13
Czech Republic	17
Germany	21
Denmark	25
Estonia	29
Spain	33
Finland	37
France	41
Greece	45
Hungary	49
Ireland	53
Italy	57
Lithuania	61
Luxembourg	65
Latvia	69
Netherlands	73
Poland	77
Portugal	81
Romania	85
Sweden	89
Slovakia	93
Slovenia	97
United Kingdom	101

Austria
GENERAL INFORMATION

Population	8	mln
Population density	99	person / km ²
Total area	8387	1000 ha
Utilised agricultural area	3352	1000 ha
Wooded area	3249	1000 ha
Other	1786	1000 ha


MAIN AGRICULTURAL INDICATORS

Arable land	1380	1000 ha	Agricultural production system	Intensive
Fallow land	106	1000 ha	Cereal yield	5,78 t / ha
Permanent crops	70	1000 ha	Fertilizers consumption	66,08 t AI / 1000 ha (*)
Permanent grassland	1896	1000 ha	Pesticides consumption	0,45 t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	173,47 1000
Cereal	455	1000 ton	Average farm size	38,87 ha
Pork	26	1000 ton		
Beef	54	1000 ton		

data average 2000-2004, EUROSTAT

(*) AI - Active Ingredients

MAIN ASSUMPTIONS
Starting Point

Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.

		Scenario S1	Scenario S2
Food consumption change	% GE (*)	8	8
Yield increase	%	10	7
Fallow land conversion	%	100	100
Permanent grassland conversion	%	5	0

(*) GE - Grain Equivalent

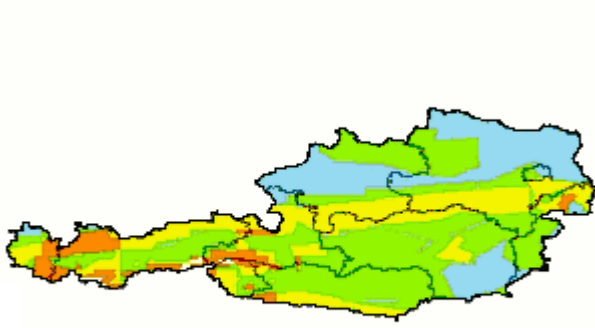
ENERGY CROPS YIELDS

Energy crops yields for three soil qualities per respective scenario

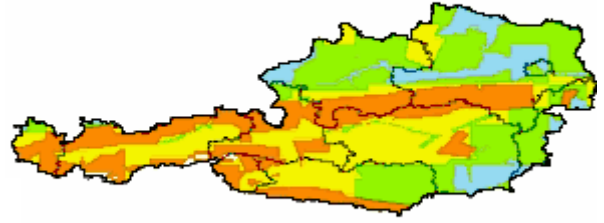
Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Willow	12,00	10,00	8,00	Willow	16,80	14,00	11,20
Poplar	13,00	10,00	8,00	Poplar	16,20	12,50	10,00
Miscanthus	16,00	11,00	8,00	Miscanthus	25,60	17,60	12,80
Triticale	14,00	11,00	9,00	Triticale	14,70	11,60	9,50
Soils:	Scenario S2			Low heat value:			
	good	average	poor				
Willow	11,76	9,80	7,84	Willow, poplar, eucalyptus	18,8	GJ / t DM	
Poplar	11,34	8,75	7,00	Miscanthus, switchgrass (panicum)	18,4	GJ / t DM	
Miscanthus	17,92	12,32	8,96	Triticale - whole crop	17,2	GJ / t DM	
Triticale	10,29	8,12	6,65				

ENERGY CROPS SUITABILITY

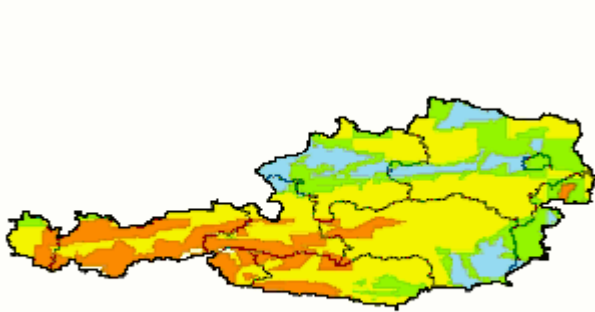
Willow



Poplar



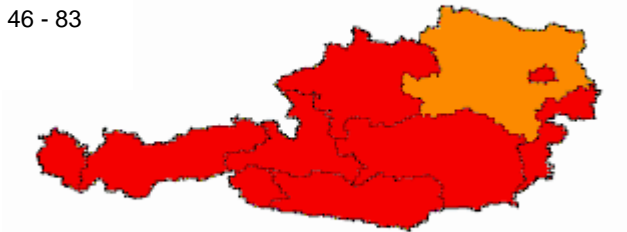
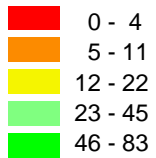
Miscanthus



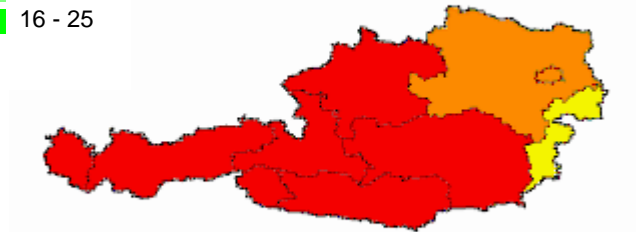
AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS

Starting Point

SP: Energy crop potential in PJ / year

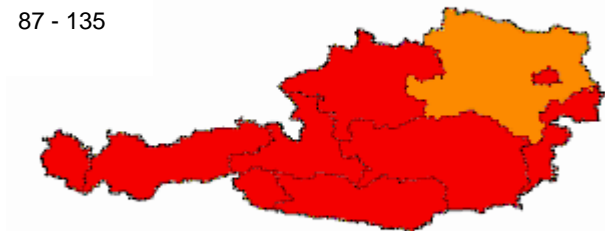
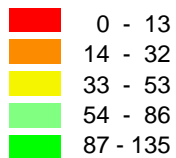


SP: Energy crop regional specific potential in GJ / ha * year

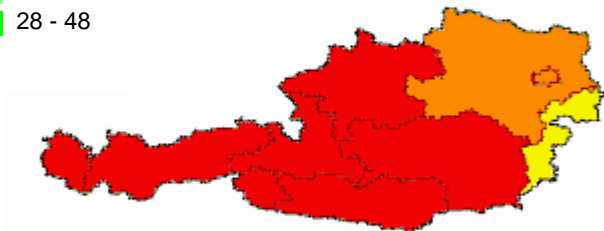


Scenario S1

S1: Energy crop potential in PJ / year

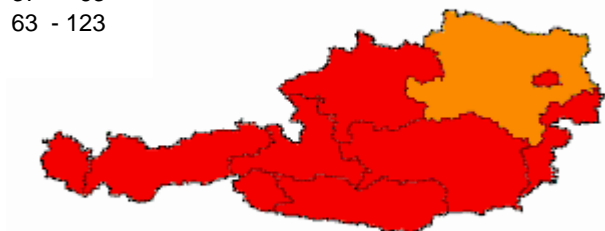
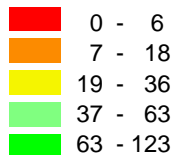


SP: Energy crop regional specific potential in GJ / ha * year

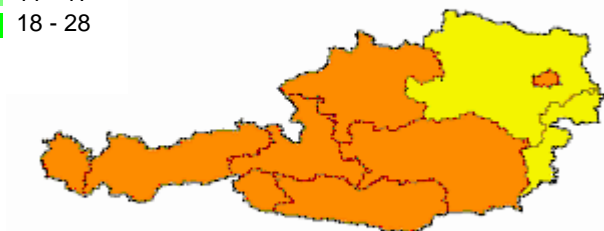


Scenario S2

S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



AT11, Burgenland

AT12, Niederösterreich

AT13, Wien

AT21, Kärnten

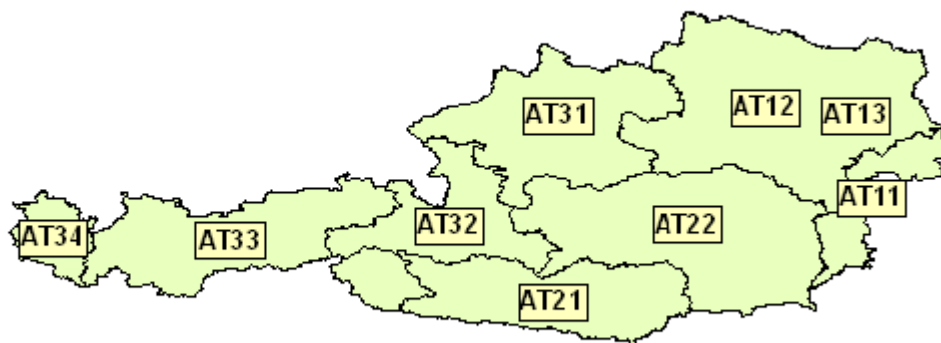
AT22, Steiermark

AT31, Oberösterreich

AT32, Salzburg

AT33, Tirol

AT34, Vorarlberg



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

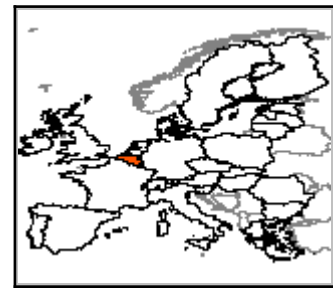
(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

	Starting Point				Scenario S1				Scenario S2			
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
AT11	20,92	3,15	3,08	3,24	23,04	4,86	5,42	3,75	20,71	3,05	3,39	2,37
AT12	56,92	8,56	8,38	8,81	108,96	20,99	23,97	16,00	55,82	8,23	9,21	6,44
AT13	0,72	0,11	0,11	0,11	1,13	0,22	0,25	0,17	0,88	0,11	0,12	0,08
AT21	4,20	0,63	0,62	0,65	20,76	4,22	4,79	3,26	6,37	0,64	0,69	0,50
AT22	7,72	1,16	1,14	1,20	33,33	6,99	8,03	5,39	10,54	1,20	1,25	0,93
AT31	15,80	2,38	2,33	2,45	46,05	8,84	10,14	6,78	27,21	2,40	2,57	1,87
AT32	0,00	0,00	0,00	0,00	14,65	3,06	3,42	2,37	0,10	0,00	0,00	0,00
AT33	0,00	0,00	0,00	0,00	20,73	4,36	4,88	3,39	0,00	0,00	0,00	0,00
AT34	0,00	0,00	0,00	0,00	5,57	1,16	1,30	0,90	0,00	0,00	0,00	0,00
TOTAL:	106,28	15,98	15,64	16,45	274,21	54,71	62,22	42,01	121,62	15,64	17,24	12,19

Belgium
GENERAL INFORMATION

Population	10	mln
Population density	344	person / km ²
Total area	3053	1000 ha
Utilised agricultural area	1393	1000 ha
Wooded area	607	1000 ha
Other	1053	1000 ha


MAIN AGRICULTURAL INDICATORS

Arable land	843	1000 ha	Agricultural production system	Intensive
Fallow land	26	1000 ha	Cereal yield	8,30 t / ha
Permanent crops	21	1000 ha	Fertilizers consumption	190,53 t AI / 1000 ha (*)
Permanent grassland	526	1000 ha	Pesticides consumption	2,39 t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	54,93 1000
Cereal	-3666	1000 ton	Average farm size	25,95 ha
Pork	484	1000 ton		
Beef	72	1000 ton		

(*) AI - Active Ingredients

data average 2000-2004, EUROSTAT

MAIN ASSUMPTIONS

Starting Point Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.	Food consumption change	% GE (*)	Scenario S1	Scenario S2
	Yield increase	%	7	7
	Fallow land conversion	%	10	7
	Permanent grassland conversion	%	100	100
		%	5	0

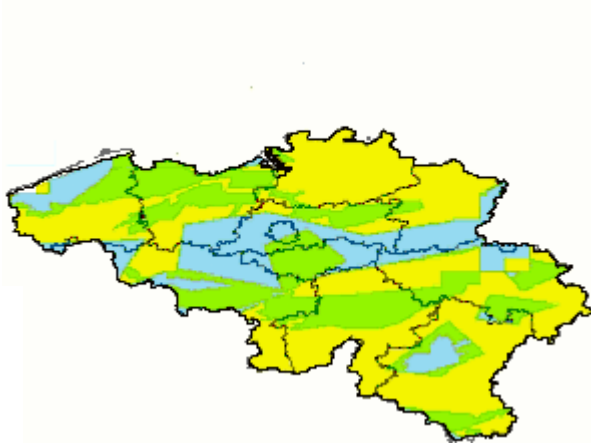
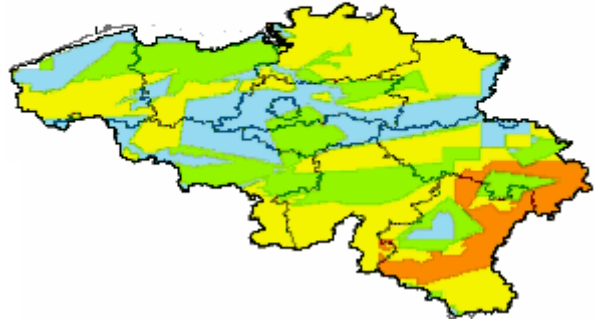
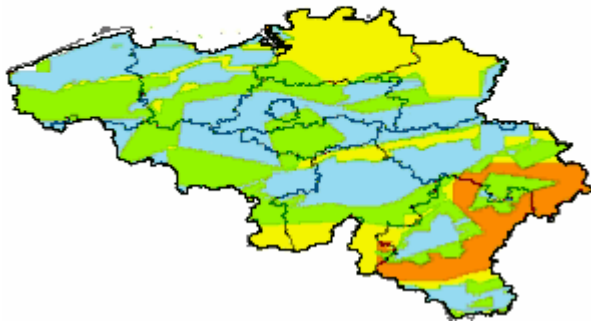
(*) GE - Grain Equivalent

ENERGY CROPS YIELDS

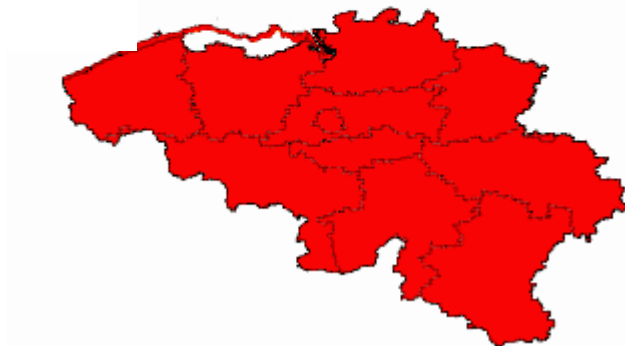
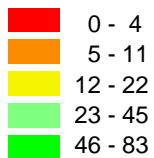
Energy crops yields for three soil qualities per respective scenario

Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Willow	12,00	10,00	10,00	Willow	16,80	14,00	14,00
Poplar	15,00	10,00	10,00	Poplar	18,80	12,50	12,50
Miscanthus	25,00	16,00	8,00	Miscanthus	40,00	25,60	12,80
Triticale	15,00	12,00	10,00	Triticale	15,80	12,60	10,50

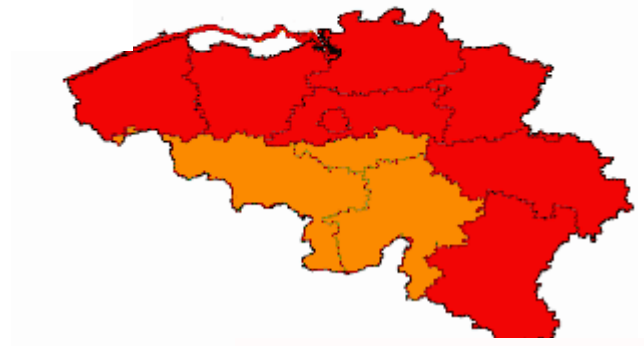
Soils:	Scenario S2			Low heat value:	
	good	average	poor		
Willow	11,76	9,80	9,80	Willow, poplar, eucalyptus	18,8 GJ / t DM
Poplar	13,16	8,75	8,75	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM
Miscanthus	28,00	17,92	8,96	Triticale - whole crop	17,2 GJ / t DM
Triticale	11,06	8,82	7,35		

ENERGY CROPS SUITABILITY
Willow

Poplar

Miscanthus

AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS
Starting Point

SP: Energy crop potential in PJ / year

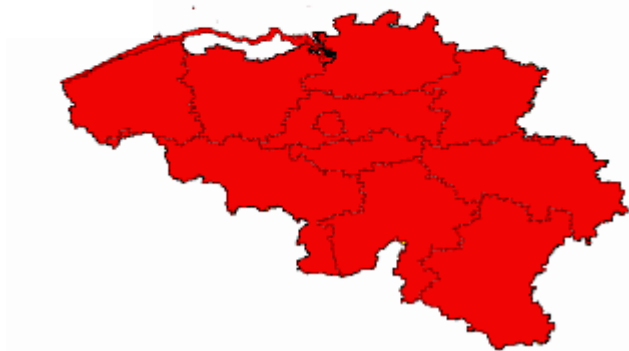
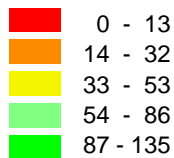


SP: Energy crop regional specific potential in GJ / ha * year

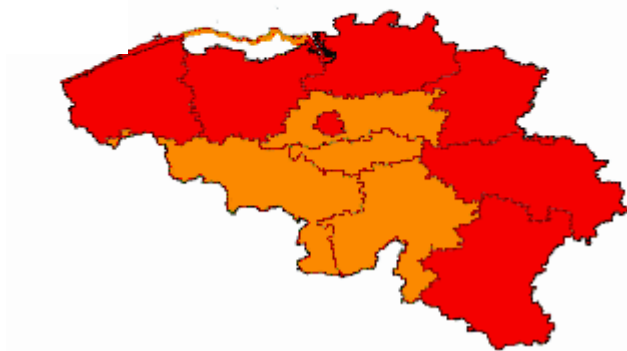


Scenario S1

S1: Energy crop potential in PJ / year

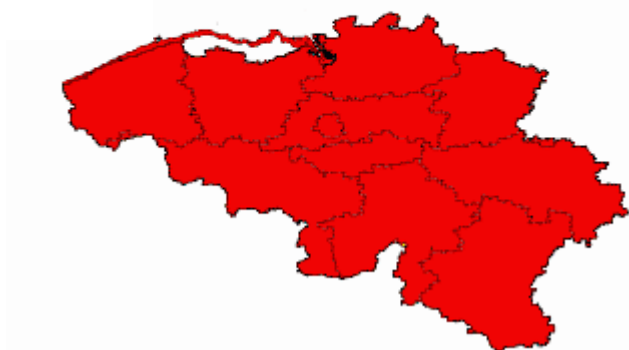
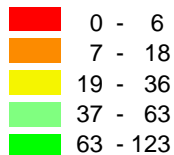


SP: Energy crop regional specific potential in GJ / ha * year

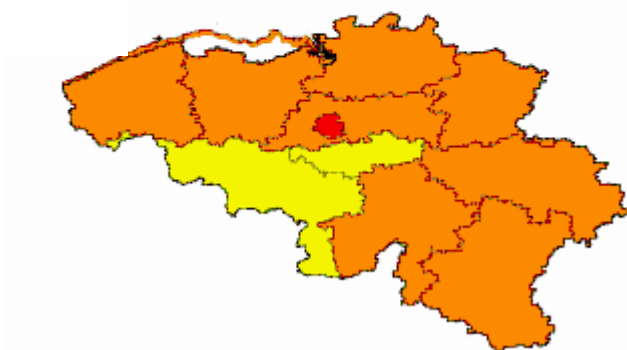


Scenario S2

S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



BE 10, Région de Bruxelles-Capitale / Brussels Hoofdstede

BE 21, Prov. Antwerpen

BE 22, Prov. Limburg (B)

BE 23, Prov. Oost-Vlaanderen

BE 24, Prov. Vlaams-Brabant

BE 25, Prov. West-Vlaanderen

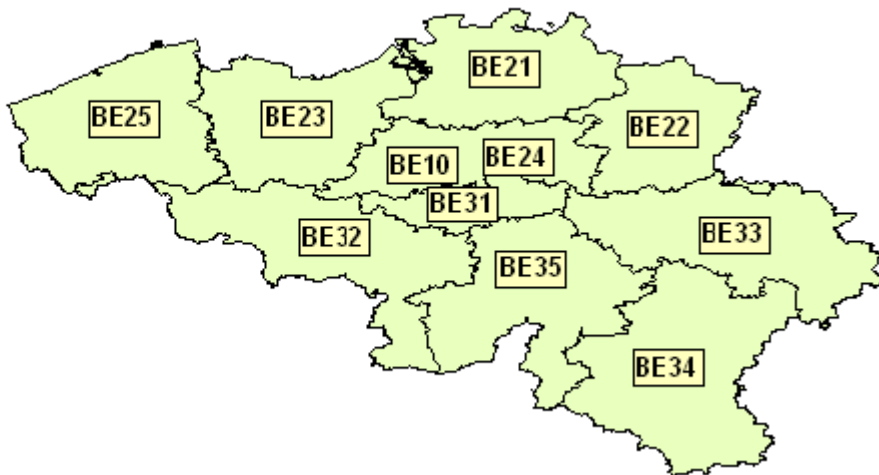
BE 31, Prov. Brabant Wallon

BE 32, Prov. Hainaut

BE 33, Prov. Liège

BE 34, Prov. Luxembourg (B)

BE 35, Prov. Namur



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

	Starting Point				Scenario S1				Scenario S2			
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
BE10	0,00	0,00	0,00	0,00	0,02	0,00	0,00	0,00	0,01	0,00	0,00	0,00
BE21	1,08	0,20	0,16	0,19	2,25	1,08	1,56	0,90	1,75	0,21	0,27	0,19
BE22	1,36	0,26	0,20	0,23	3,57	0,98	1,40	0,77	2,28	0,25	0,31	0,21
BE23	1,34	0,25	0,20	0,23	5,26	1,70	2,49	1,39	3,45	0,27	0,38	0,26
BE24	2,62	0,49	0,39	0,45	6,28	1,35	1,83	1,05	3,59	0,46	0,53	0,38
BE25	2,10	0,39	0,31	0,36	2,47	2,28	3,35	1,82	3,66	0,42	0,56	0,38
BE31	2,64	0,50	0,39	0,45	4,84	1,09	1,45	0,82	3,00	0,46	0,51	0,36
BE32	6,42	1,21	0,95	1,10	15,31	3,36	4,43	2,57	7,91	1,13	1,27	0,91
BE33	2,74	0,52	0,40	0,47	9,73	2,17	2,63	1,66	3,44	0,48	0,54	0,39
BE34	0,52	0,10	0,08	0,09	7,65	1,65	1,95	1,31	1,33	0,10	0,15	0,10
BE35	5,44	1,02	0,80	0,94	13,08	2,77	3,44	2,16	7,02	0,94	1,03	0,75
TOTAL:	26,26	4,94	3,87	4,52	70,47	18,42	24,56	14,44	37,44	4,73	5,55	3,94

Bulgaria
GENERAL INFORMATION

Population	8 mln
Population density	70 person / km ²
Total area	11100 1000 ha
Utilised agricultural area	5469 1000 ha
Wooded area	3697 1000 ha
Other	1934 1000 ha


MAIN AGRICULTURAL INDICATORS

Arable land	3330 1000 ha	Agricultural production system	Extensive
Fallow land	454 1000 ha	Cereal yield	0,00 t / ha
Permanent crops	235 1000 ha	Fertilizers consumption	28,17 t AI / 1000 ha (*)
Permanent grassland	1794 1000 ha	Pesticides consumption	n.d. t AI / 1000 ha (*)
Import / export balance		Number of agricultural holdings	661,64 1000
Cereal	861 1000 ton	Average farm size	5,15 ha
Pork	-15 1000 ton		
Beef	-17 1000 ton		

(*) AI - Active Ingredients

data average 2000-2004, EUROSTAT

MAIN ASSUMPTIONS

Starting Point		Scenario S1	Scenario S2
Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.	Food consumption change	% GE (*) (2)	(2)
	Yield increase	% 30	20
	Fallow land conversion	% 100	100
	Permanent grassland conversion	% 0	0

(*) GE - Grain Equivalent

ENERGY CROPS YIELDS

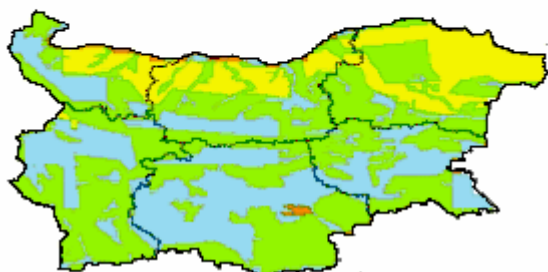
Energy crops yields for three soil qualities per respective scenario

Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Willow	12,50	9,00	7,00	Willow	17,50	12,60	9,80
Poplar	12,50	9,00	7,00	Poplar	15,60	11,20	8,80
Miscanthus	17,00	11,00	9,00	Miscanthus	27,20	17,60	14,40
Triticale	12,00	9,00	7,00	Triticale	12,60	9,50	7,40

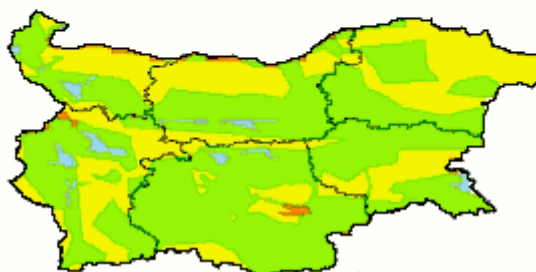
Soils:	Scenario S2			Low heat value:	
	good	average	poor		
Willow	12,25	8,82	6,86	Willow, poplar, eucalyptus	18,8 GJ / t DM
Poplar	10,92	7,84	6,16	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM
Miscanthus	19,04	12,32	10,08	Triticale - whole crop	17,2 GJ / t DM
Triticale	8,82	6,65	5,18		

ENERGY CROPS SUITABILITY

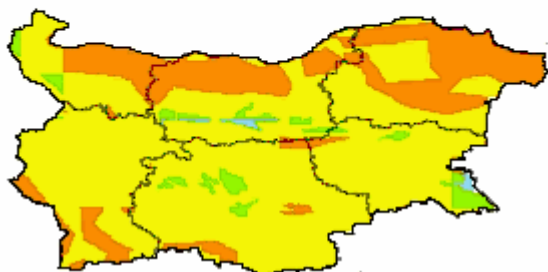
Willow



Poplar



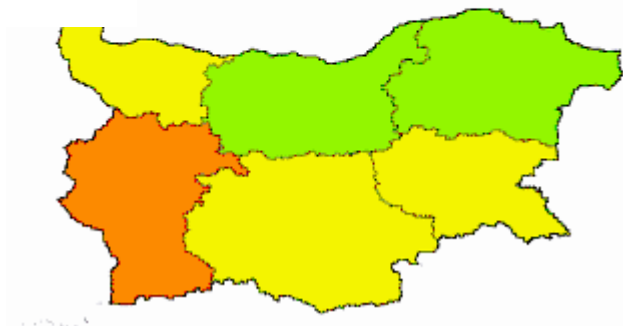
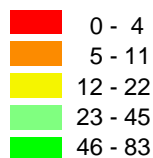
Miscanthus



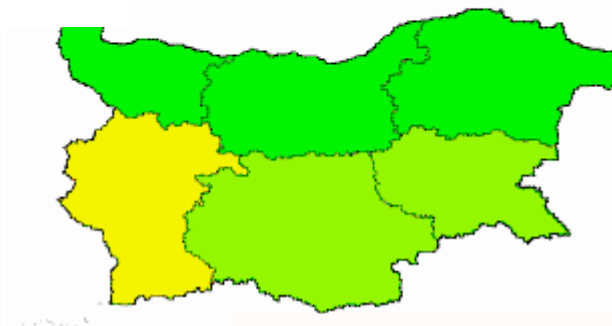
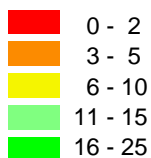
AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS

Starting Point

SP: Energy crop potential in PJ / year

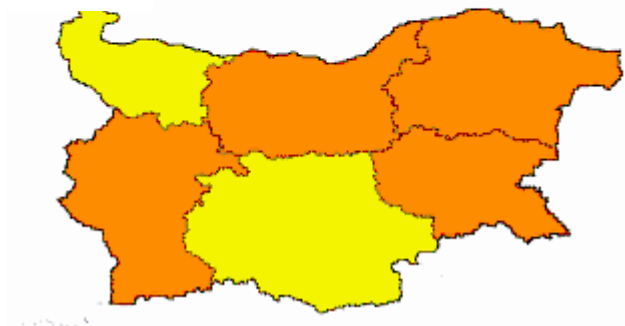
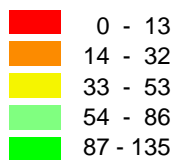


SP: Energy crop regional specific potential in GJ / ha * year

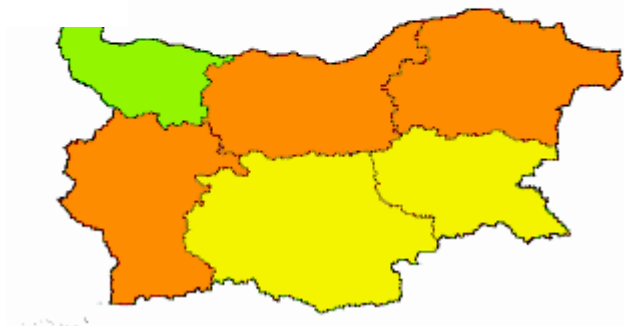


Scenario S1

S1: Energy crop potential in PJ / year

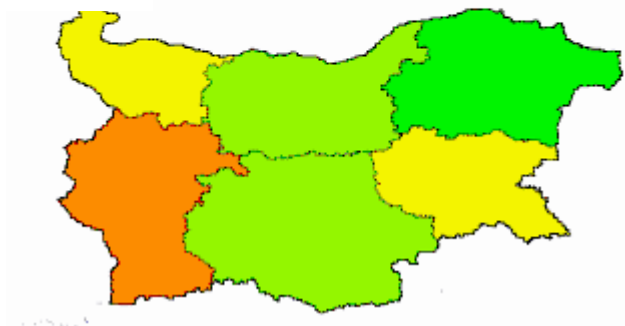
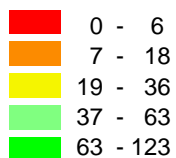


SP: Energy crop regional specific potential in GJ / ha * year

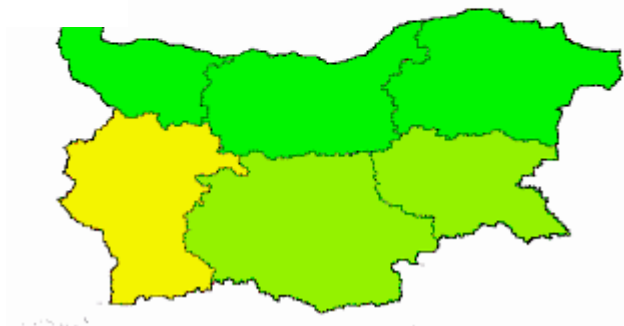


Scenario S2

S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



BG11, Severozapaden

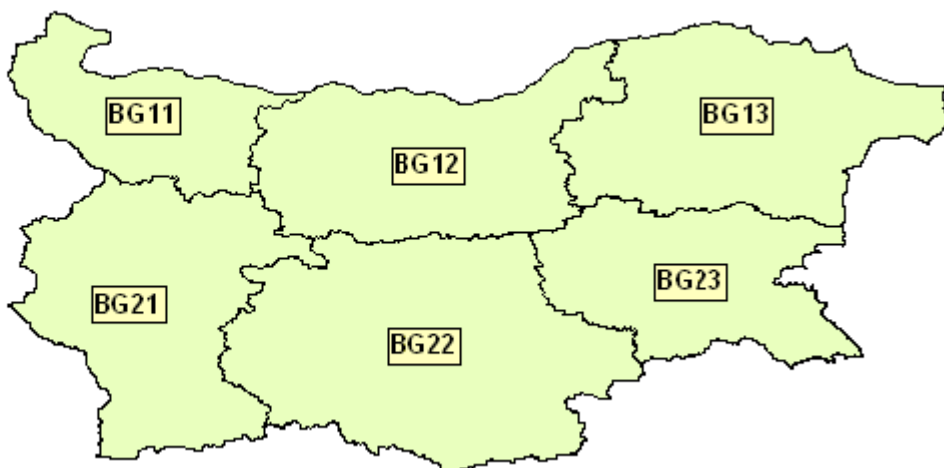
BG12, Severen tsentralen

BG13, Severoiztochen

BG21, Yugozapaden

BG22, Yuzhen tsentralen

BG23, Yugoiztochen



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

	Starting Point				Scenario S1				Scenario S2			
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
BG11	111,30	14,65	18,43	13,40	194,63	48,20	61,07	30,03	174,77	29,57	35,74	17,56
BG12	66,70	8,78	11,05	8,03	231,14	65,62	82,36	41,13	188,52	37,32	43,36	21,73
BG13	57,23	7,53	9,48	6,89	312,30	95,07	119,07	59,71	241,83	52,94	59,76	30,13
BG21	46,93	6,18	7,77	5,65	72,21	17,01	21,57	10,57	65,94	10,72	13,01	6,37
BG22	114,53	15,07	18,97	13,79	227,42	55,94	70,61	34,89	198,79	33,90	40,24	19,88
BG23	57,37	7,55	9,50	6,91	149,26	38,07	47,92	23,81	125,47	22,41	26,00	12,93
TOTAL:	454,06	59,75	75,19	54,67	1 186,96	319,91	402,59	200,14	995,31	186,85	218,10	108,59


Switzerland
GENERAL INFORMATION

Population	7	mln
Population density	185	person / km ²
Total area	4128	1000 ha
Utilised agricultural area	1525	1000 ha
Wooded area	117	1000 ha
Other	2486	1000 ha


MAIN AGRICULTURAL INDICATORS

Arable land	411	1000 ha	Agricultural production system	Intensive
Fallow land	4	1000 ha	Cereal yield	t / ha
Permanent crops	24	1000 ha	Fertilizers consumption	t AI / 1000 ha (*)
Permanent grassland	1092	1000 ha	Pesticides consumption	t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	1000
Cereal	1059	1000 ton	Average farm size	ha
Pork	22	1000 ton		
Beef	16	1000 ton		

(*) AI - Active Ingredients

data average 2000-2004, EUROSTAT

MAIN ASSUMPTIONS

Starting Point			Scenario S1	Scenario S2
Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.	Food consumption change	% GE (*)	8	8
	Yield increase	%	10	7
	Fallow land conversion	%	100	100
	Permanent grassland conversion	%	3	0

(*) GE - Grain Equivalent

ENERGY CROPS YIELDS

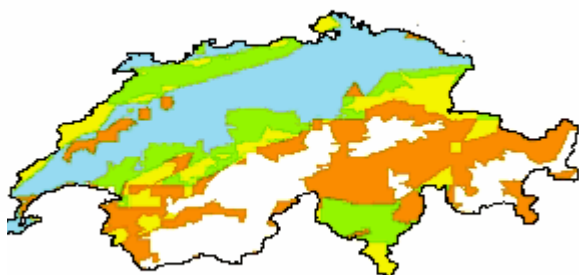
Energy crops yields for three soil qualities per respective scenario

Starting Point				Scenario S1			
Soils:	good	average	poor	Soils:	good	average	poor
Willow	12,00	10,00	8,00	Willow	16,80	14,00	11,20
Poplar	13,00	10,00	8,00	Poplar	16,20	12,50	10,00
Miscanthus	16,00	11,00	8,00	Miscanthus	25,60	17,60	12,80
Triticale	14,00	11,00	9,00	Triticale	14,70	11,60	9,50

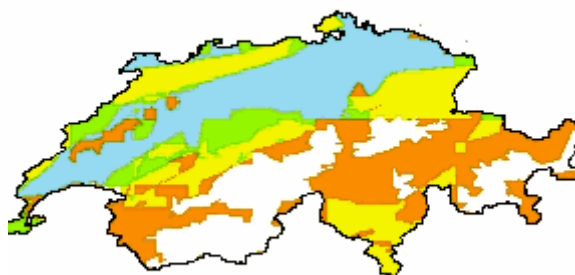
Scenario S2				Low heat value:	
Soils:	good	average	poor		
Willow	11,76	9,80	7,84	Willow, poplar, eucalyptus	18,8 GJ / t DM
Poplar	11,34	8,75	7,00	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM
Miscanthus	17,92	12,32	8,96	Triticale - whole crop	17,2 GJ / t DM
Triticale	10,29	8,12	6,65		

ENERGY CROPS SUITABILITY

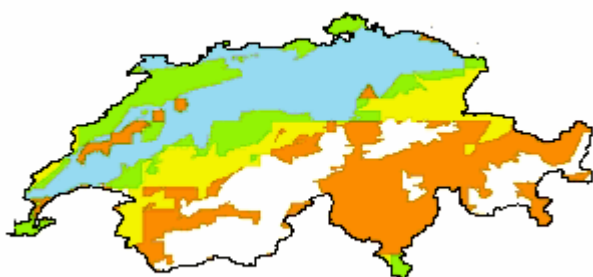
Willow



Poplar



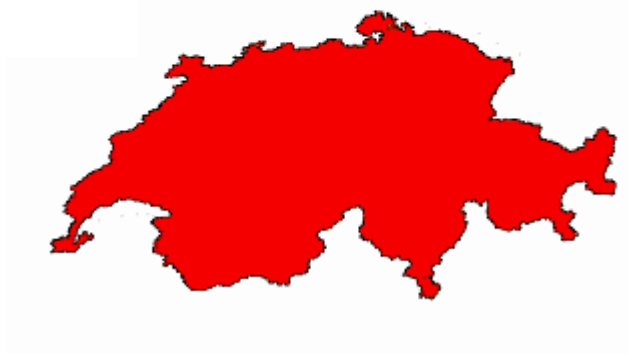
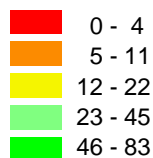
Miscanthus



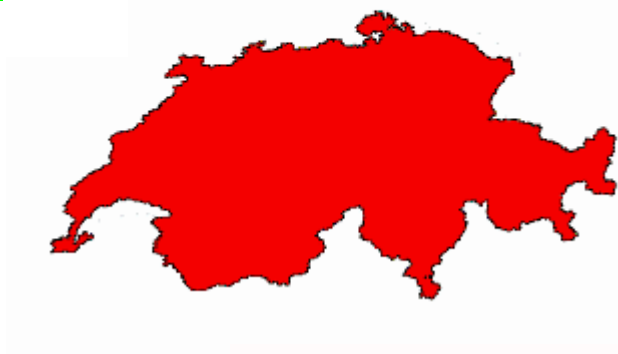
AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS

Starting Point

SP: Energy crop potential in PJ / year

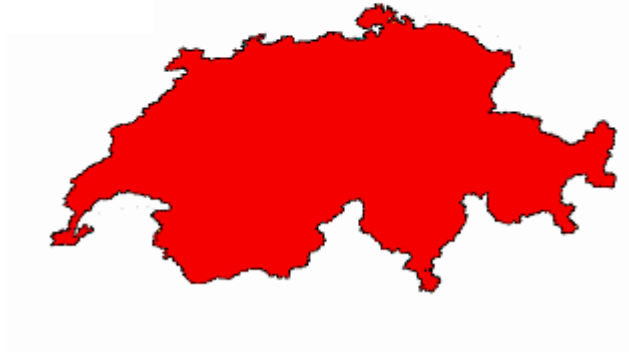
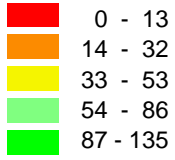


SP: Energy crop regional specific potential in GJ / ha * year

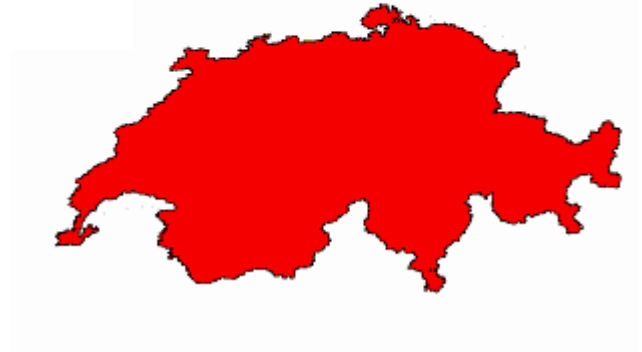
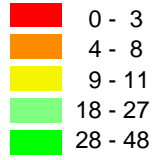


Scenario S1

S1: Energy crop potential in PJ / year

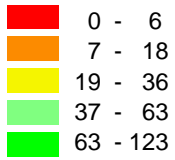


SP: Energy crop regional specific potential in GJ / ha * year

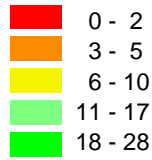


Scenario S2

S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

	Starting Point			Scenario S1				Scenario S2				
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
CH	4,00	0,60	0,59	0,62	56,53	25,50	30,39	19,40	15,34	2,66	3,28	2,06
TOTAL:	4,00	0,60	0,59	0,62	56,53	25,50	30,39	19,40	15,34	2,66	3,28	2,06

Czech Republic
GENERAL INFORMATION

Population	10	mln
Population density	132	person / km ²
Total area	7887	1000 ha
Utilised agricultural area	3902	1000 ha
Wooded area	2642	1000 ha
Other	1343	1000 ha


MAIN AGRICULTURAL INDICATORS

Arable land	2885	1000 ha	Agricultural production system	Extensive
Fallow land	100	1000 ha	Cereal yield	4,42 t / ha
Permanent crops	54	1000 ha	Fertilizers consumption	92,96 t AI / 1000 ha (*)
Permanent grassland	900	1000 ha	Pesticides consumption	0,76 t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	44,78 1000
Cereal	522	1000 ton	Average farm size	116,32 ha
Pork	-11	1000 ton		
Beef	3	1000 ton		

(*) AI - Active Ingredients

data average 2000-2004, EUROSTAT

MAIN ASSUMPTIONS

Starting Point Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.	Food consumption change	% GE (*)	Scenario S1	Scenario S2
	Yield increase	%	5	5
	Fallow land conversion	%	30	20
	Permanent grassland conversion	%	100	100
		%	3	0

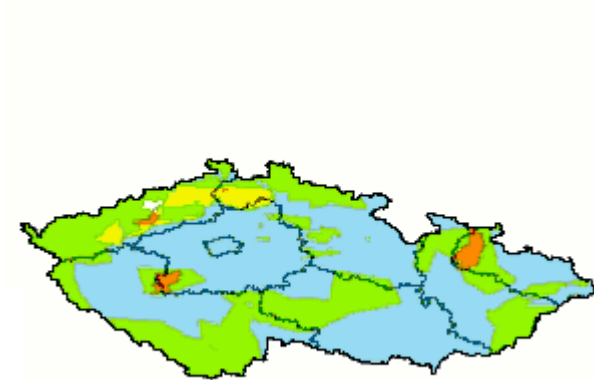
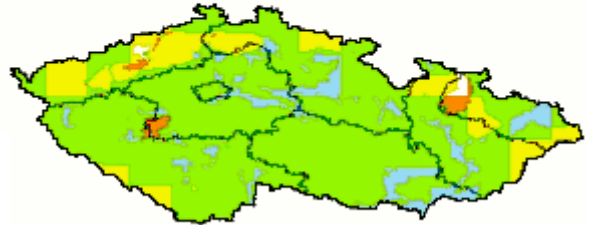
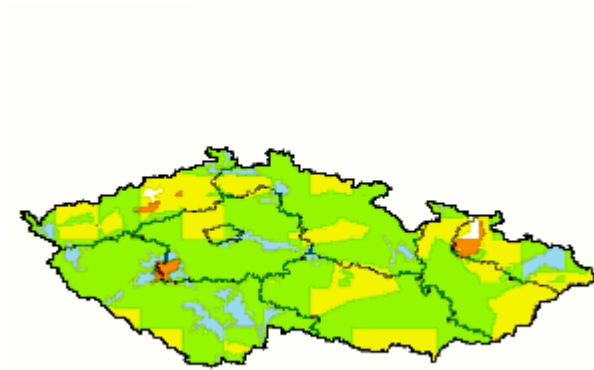
(*) GE - Grain Equivalent

ENERGY CROPS YIELDS

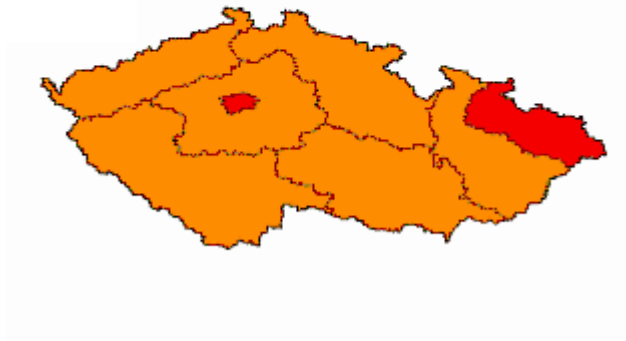
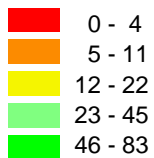
Energy crops yields for three soil qualities per respective scenario

Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Willow	12,50	9,00	7,00	Willow	17,50	12,60	9,80
Poplar	12,50	9,00	7,00	Poplar	15,60	11,20	8,80
Miscanthus	17,00	11,00	9,00	Miscanthus	27,20	17,60	14,40
Triticale	12,00	9,00	7,00	Triticale	12,60	9,50	7,40

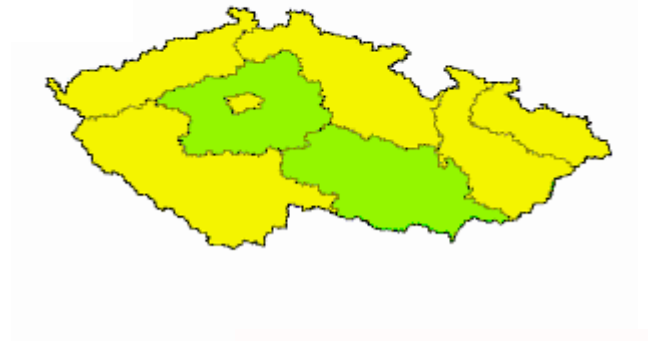
Soils:	Scenario S2			Low heat value:	
	good	average	poor		
Willow	12,25	8,82	6,86	Willow, poplar, eucalyptus	18,8 GJ / t DM
Poplar	10,92	7,84	6,16	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM
Miscanthus	19,04	12,32	10,08	Triticale - whole crop	17,2 GJ / t DM
Triticale	8,82	6,65	5,18		

ENERGY CROPS SUITABILITY
Willow

Poplar

Miscanthus

AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS
Starting Point

SP: Energy crop potential in PJ / year

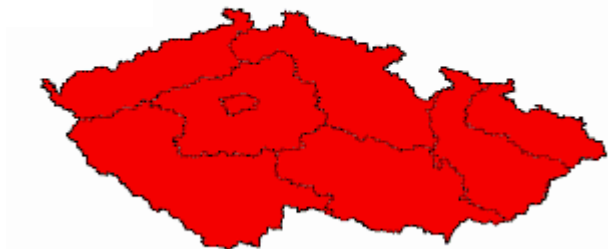
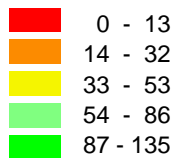


SP: Energy crop regional specific potential in GJ / ha * year



Scenario S1

S1: Energy crop potential in PJ / year

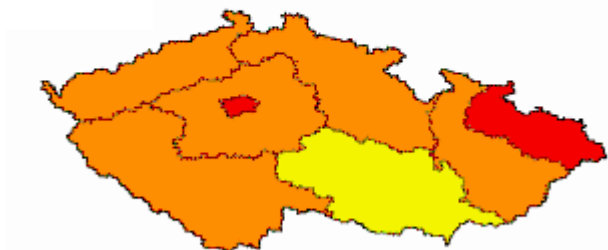
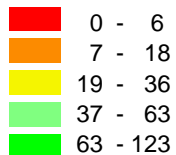


SP: Energy crop regional specific potential in GJ / ha * year

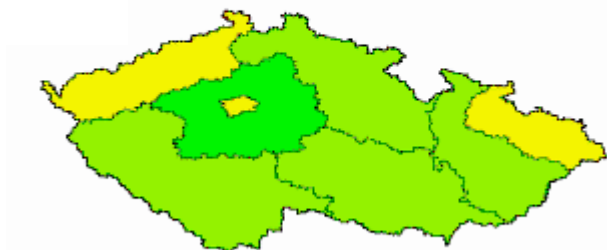


Scenario S2

S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



CZ01, Praha

CZ02, Stredni Cechy

CZ03, Jihozapad

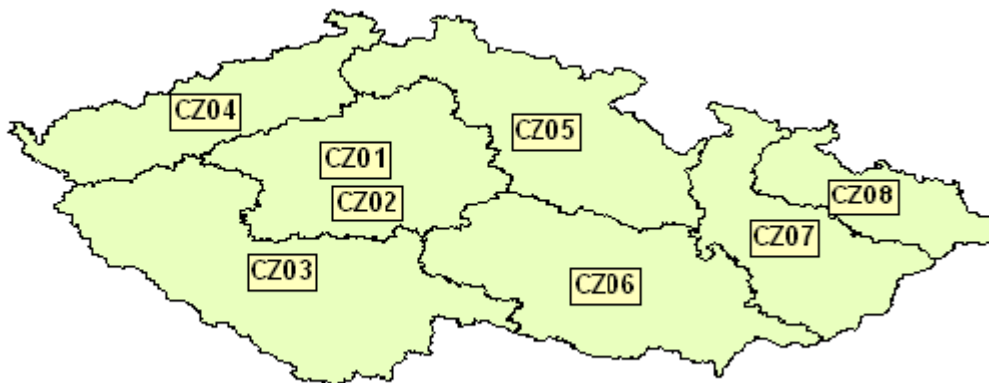
CZ04, Severozapad

CZ05, Severovycho

CZ06, Jihovycho

CZ07, Stredni Morava

CZ08, Moravskoslezsko



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

	Starting Point				Scenario S1				Scenario S2			
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
CZ01	0,34	0,04	0,06	0,04	3,21	0,70	0,96	0,46	2,21	0,32	0,43	0,21
CZ02	19,80	2,61	3,28	2,38	142,37	31,03	42,70	20,80	102,53	14,36	19,59	9,64
CZ03	16,60	2,18	2,75	2,00	146,56	31,07	42,79	21,43	101,39	13,76	18,74	9,50
CZ04	19,92	2,62	3,30	2,40	69,97	14,61	20,27	9,94	51,64	7,06	9,74	4,81
CZ05	16,26	2,14	2,69	1,96	118,76	24,76	34,14	16,59	83,16	11,17	15,25	7,49
CZ06	13,02	1,71	2,16	1,57	165,43	37,10	50,93	25,32	113,81	16,57	22,48	11,31
CZ07	7,02	0,92	1,16	0,85	79,67	17,78	24,44	11,71	52,56	7,85	10,67	5,17
CZ08	6,70	0,88	1,11	0,81	43,87	9,37	12,93	6,28	30,66	4,22	5,77	2,83
TOTAL:	99,66	13,12	16,50	12,00	769,84	166,40	229,15	112,53	537,96	75,30	102,67	50,94

Germany
GENERAL INFORMATION

Population	83	mln
Population density	231	person / km ²
Total area	35703	1000 ha
Utilised agricultural area	17022	1000 ha
Wooded area	10531	1000 ha
Other	8149	1000 ha


MAIN AGRICULTURAL INDICATORS

Arable land	11827	1000 ha	Agricultural production system	Intensive
Fallow land	846	1000 ha	Cereal yield	6,43 t / ha
Permanent crops	206	1000 ha	Fertilizers consumption	157,30 t AI / 1000 ha (*)
Permanent grassland	4982	1000 ha	Pesticides consumption	1,37 t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	412,30 1000
Cereal	8322	1000 ton	Average farm size	45,73 ha
Pork	-281	1000 ton		
Beef	288	1000 ton		

data average 2000-2004, EUROSTAT

(*) AI - Active Ingredients

MAIN ASSUMPTIONS

Starting Point		Scenario S1	Scenario S2
Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.	Food consumption change	% GE (*) 3	3
	Yield increase	% 10	7
	Fallow land conversion	% 100	100
	Permanent grassland conversion	% 5	0

(*) GE - Grain Equivalent

ENERGY CROPS YIELDS

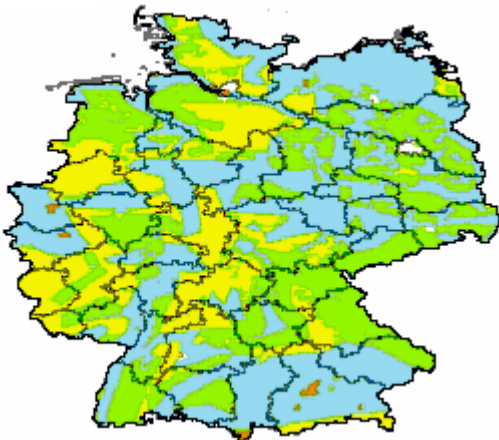
Energy crops yields for three soil qualities per respective scenario

Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Willow	12,00	10,00	10,00	Willow	16,80	14,00	14,00
Poplar	15,00	10,00	10,00	Poplar	18,80	12,50	12,50
Miscanthus	25,00	16,00	8,00	Miscanthus	40,00	25,60	12,80
Triticale	15,00	12,00	10,00	Triticale	15,80	12,60	10,50

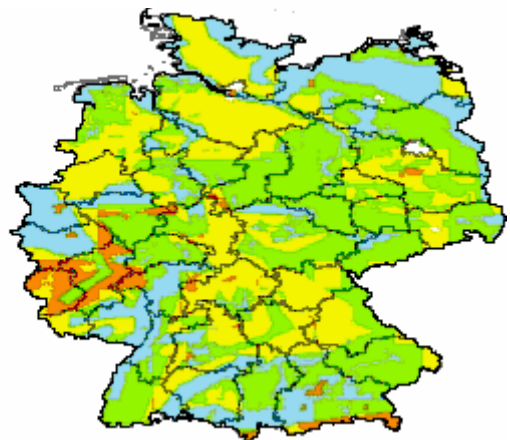
Soils:	Scenario S2			Low heat value:	
	good	average	poor		
Willow	11,76	9,80	9,80	Willow, poplar, eucalyptus	18,8 GJ / t DM
Poplar	13,16	8,75	8,75	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM
Miscanthus	28,00	17,92	8,96	Triticale - whole crop	17,2 GJ / t DM
Triticale	11,06	8,82	7,35		

ENERGY CROPS SUITABILITY

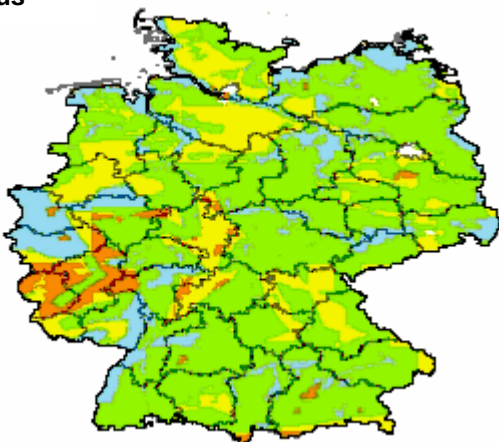
Willow



Poplar



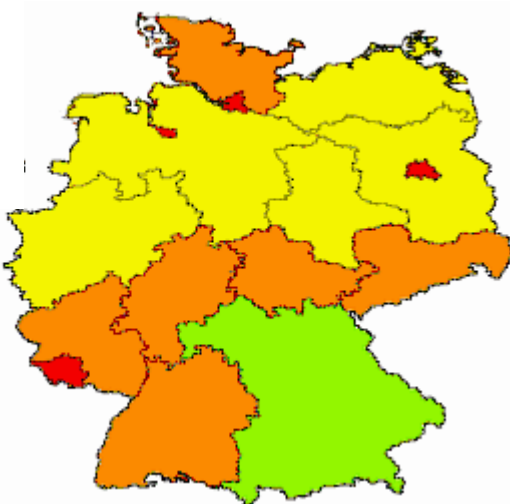
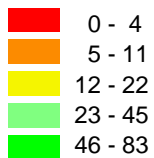
Miscanthus



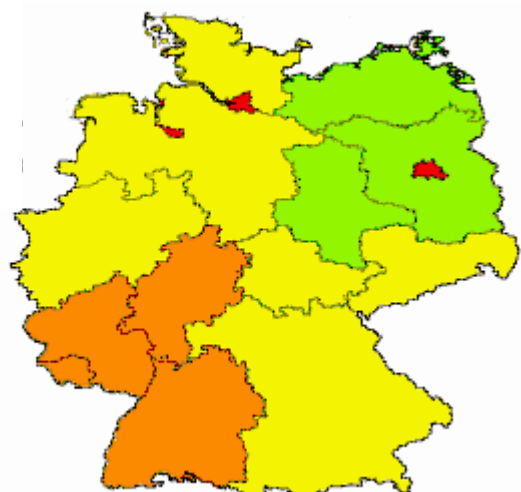
AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS

Starting Point

SP: Energy crop potential in PJ / year

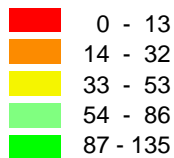


SP: Energy crop regional specific potential in GJ / ha * year

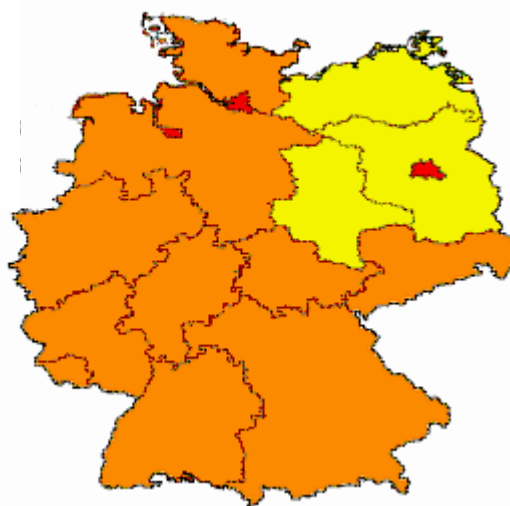
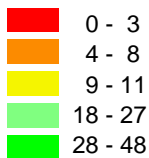


Scenario S1

S1: Energy crop potential in PJ / year

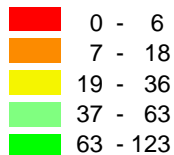


SP: Energy crop regional specific potential in GJ / ha * year

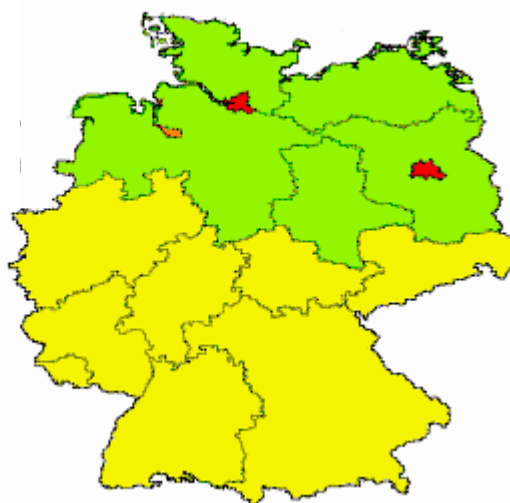


Scenario S2

S2: Energy crop potential in PJ / year

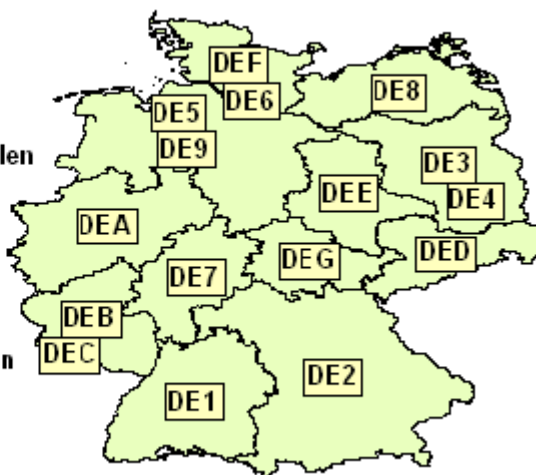


S2: Energy crop regional specific potential in GJ / ha * year



- DE1, Baden-Württemberg
- DE2, Bayern
- DE3, Berlin
- DE4, Brandenburg
- DE5, Bremen
- DE6, Hamburg
- DE7, Hessen
- DE8, Mecklenburg-Vorpommern

- DE9, Niedersachsen
- DEA, Nordrhein-Westfalen
- DEB, Rheinland-Pfaltz
- DEC, Saarland
- DED, Sachsen
- DEE, Sachsen-Anhalt
- DEF, Schleswig-Holstein
- DEG, Thüringen



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

	Starting Point				Scenario S1				Scenario S2			
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
DE1	49,28	9,26	7,25	8,48	141,61	41,73	56,39	31,26	94,40	15,17	18,41	10,52
DE2	122,50	23,03	18,03	21,07	335,34	97,49	132,03	72,73	231,65	37,42	45,41	25,84
DE3	0,10	0,02	0,01	0,02	0,14	0,04	0,03	0,03	0,11	0,02	0,02	0,01
DE4	133,52	25,10	19,65	22,97	215,08	59,60	71,74	43,55	182,32	30,63	32,19	21,17
DE5	0,14	0,03	0,02	0,02	0,53	0,14	0,13	0,10	0,16	0,03	0,03	0,02
DE6	0,48	0,09	0,07	0,08	0,87	0,23	0,22	0,16	0,52	0,10	0,09	0,07
DE7	32,74	6,16	4,82	5,63	81,28	23,37	30,92	17,30	58,15	9,21	10,79	6,34
DE8	96,46	18,13	14,20	16,59	187,05	53,08	69,03	39,33	150,28	24,87	27,91	17,17
DE9	129,12	24,27	19,01	22,21	297,16	85,62	113,54	62,81	220,87	36,18	42,67	24,76
DEA	63,78	11,99	9,39	10,97	162,39	47,79	65,51	35,28	118,52	19,21	23,28	13,10
DEB	30,58	5,75	4,50	5,26	70,23	20,02	25,77	14,64	50,81	8,15	9,33	5,58
DEC	4,34	0,82	0,64	0,75	8,93	2,46	2,93	1,80	6,30	1,03	1,10	0,71
DED	34,92	6,56	5,14	6,01	97,27	28,37	40,38	21,53	72,38	11,34	14,05	7,87
DEE	84,22	15,83	12,40	14,49	163,14	47,14	62,59	34,76	134,42	22,08	25,06	15,13
DEF	40,30	7,58	5,93	6,93	104,16	29,47	38,71	21,93	71,13	11,62	13,73	8,05
DEG	23,78	4,47	3,50	4,09	79,94	23,60	34,59	18,11	57,02	8,72	11,24	6,08
TOTAL:	846,26	159,10	124,57	145,56	1 945,13	560,16	744,51	415,30	1 449,03	235,78	275,31	162,41

Denmark
GENERAL INFORMATION

Population	5	mln
Population density	125	person / km ²
Total area	4310	1000 ha
Utilised agricultural area	2727	1000 ha
Wooded area	470	1000 ha
Other	1113	1000 ha


MAIN AGRICULTURAL INDICATORS

Arable land	2533	1000 ha	Agricultural production system	Intensive
Fallow land	200	1000 ha	Cereal yield	6,05 t / ha
Permanent crops	9	1000 ha	Fertilizers consumption	122,11 t AI / 1000 ha (*)
Permanent grassland	184	1000 ha	Pesticides consumption	0,93 t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	48,39 1000
Cereal	962	1000 ton	Average farm size	59,78 ha
Pork	973	1000 ton		
Beef	7	1000 ton		

(*) AI - Active Ingredients

data average 2000-2004, EUROSTAT

MAIN ASSUMPTIONS

Starting Point			Scenario S1	Scenario S2
Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.				
Food consumption change	% GE (*)		12	12
Yield increase	%		10	7
Fallow land conversion	%		100	100
Permanent grassland conversion	%		10	0

(*) GE - Grain Equivalent

ENERGY CROPS YIELDS

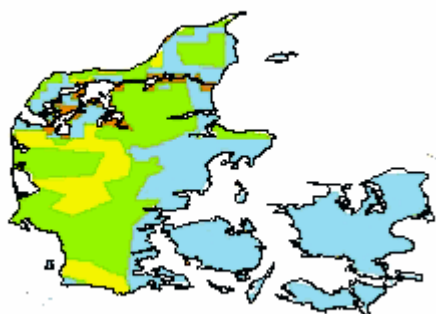
Energy crops yields for three soil qualities per respective scenario

Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Willow	11,00	9,00	7,50	Willow	15,40	12,60	10,50
Poplar	11,00	9,00	7,50	Poplar	13,80	11,25	9,40
Miscanthus	13,00	10,00	8,00	Miscanthus	20,80	16,00	12,80
Reed Canary Grass	10,00	7,50	6,00	Reed Canary G	14,00	10,50	8,40

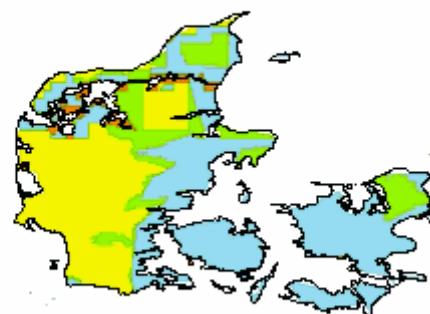
Soils:	Scenario S2			Low heat value:	
	good	average	poor		
Willow	10,78	8,82	7,35	Willow, poplar, eucalyptus	18,8 GJ / t DM
Poplar	9,66	7,88	6,58	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM
Miscanthus	14,56	11,20	8,96	Triticale - whole crop	17,2 GJ / t DM
Reed Canary Grass	9,80	7,35	5,88		

ENERGY CROPS SUITABILITY

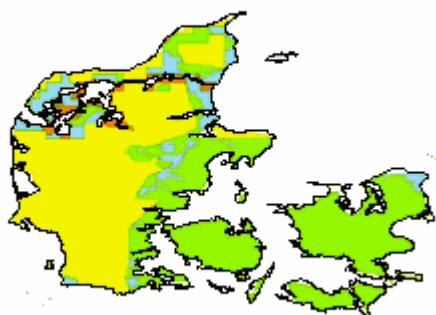
Willow



Poplar



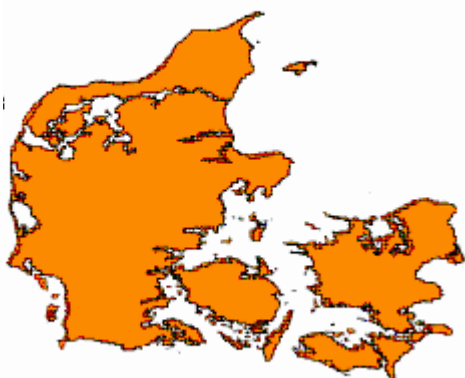
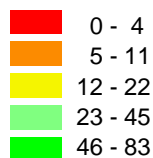
Miscanthus



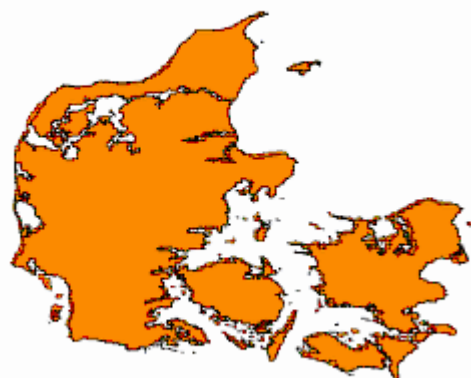
AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS

Starting Point

SP: Energy crop potential in PJ / year

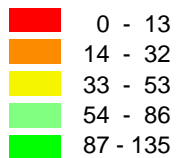


SP: Energy crop regional specific potential in GJ / ha * year

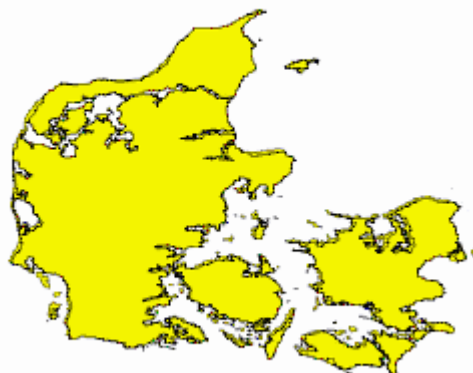
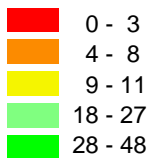


Scenario S1

S1: Energy crop potential in PJ / year

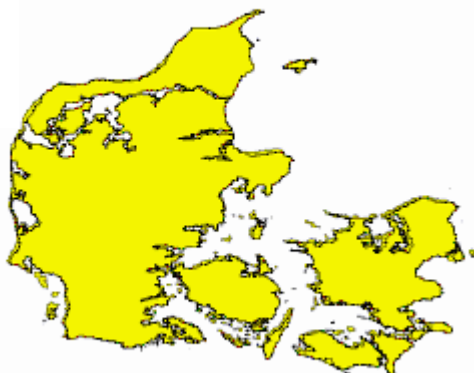
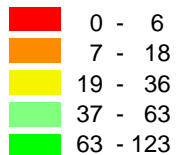


SP: Energy crop regional specific potential in GJ / ha * year

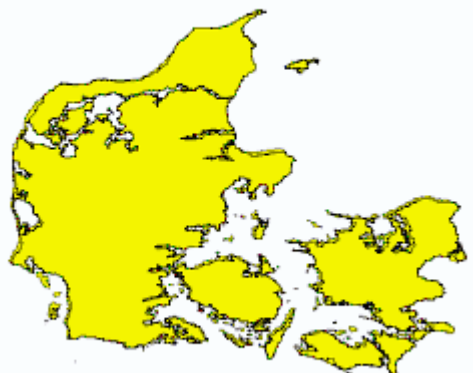


Scenario S2

S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

Starting Point				Scenario S1				Scenario S2			
1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)

DK	199,96	28,19	29,43	30,95	265,98	42,35	50,49	35,29	181,83	12,76	24,97	10,72
-----------	---------------	-------	-------	-------	---------------	-------	-------	-------	---------------	-------	-------	-------

TOTAL:	199,96	28,19	29,43	30,95	265,98	42,35	50,49	35,29	181,83	12,76	24,97	10,72
---------------	---------------	--------------	--------------	--------------	---------------	--------------	--------------	--------------	---------------	--------------	--------------	--------------

Estonia
GENERAL INFORMATION

Population	1	mln
Population density	31	person / km ²
Total area	4523	1000 ha
Utilised agricultural area	809	1000 ha
Wooded area	2255	1000 ha
Other	1459	1000 ha


MAIN AGRICULTURAL INDICATORS

Arable land	639	1000 ha	Agricultural production system	Extensive
Fallow land	28	1000 ha	Cereal yield	2,00 t / ha
Permanent crops	13	1000 ha	Fertilizers consumption	47,74 t AI / 1000 ha (*)
Permanent grassland	157	1000 ha	Pesticides consumption	0,25 t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	36,85 1000
Cereal	-150	1000 ton	Average farm size	31,89 ha
Pork	6	1000 ton		
Beef	-2	1000 ton		

(*) AI - Active Ingredients

data average 2000-2004, EUROSTAT

MAIN ASSUMPTIONS

Starting Point		Scenario S1	Scenario S2
Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.	Food consumption change	% GE (*) 3	3
	Yield increase	% 30	20
	Fallow land conversion	% 100	100
	Permanent grassland conversion	% 0	0

(*) GE - Grain Equivalent

ENERGY CROPS YIELDS

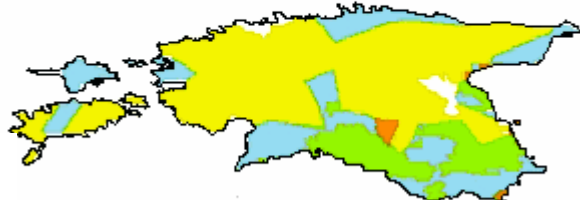
Energy crops yields for three soil qualities per respective scenario

Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Willow	12,50	9,00	7,00	Willow	17,50	12,60	9,80
Poplar	12,50	9,00	7,00	Poplar	15,60	11,20	8,80
Miscanthus	17,00	11,00	9,00	Miscanthus	27,20	17,60	14,40
Triticale	12,00	9,00	7,00	Triticale	12,60	9,50	7,40

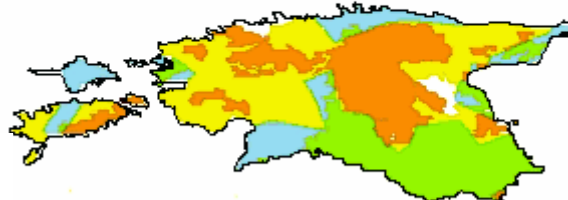
Soils:	Scenario S2			Low heat value:	
	good	average	poor		
Willow	12,25	8,82	6,86	Willow, poplar, eucalyptus	18,8 GJ / t DM
Poplar	10,92	7,84	6,16	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM
Miscanthus	19,04	12,32	10,08	Triticale - whole crop	17,2 GJ / t DM
Triticale	8,82	6,65	5,18		

ENERGY CROPS SUITABILITY

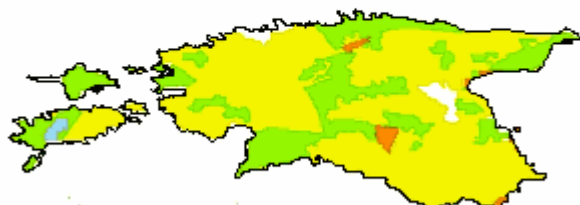
Willow



Poplar



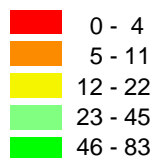
Miscanthus



AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS

Starting Point

SP: Energy crop potential in PJ / year

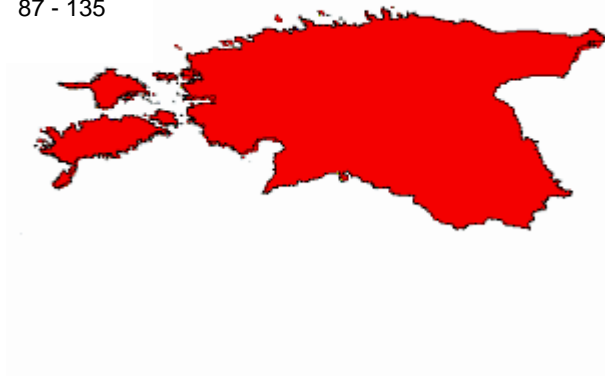
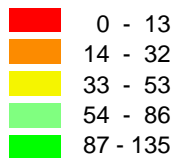


SP: Energy crop regional specific potential in GJ / ha * year

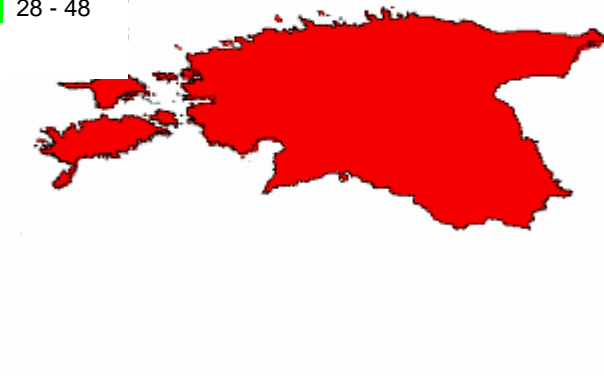


Scenario S1

S1: Energy crop potential in PJ / year

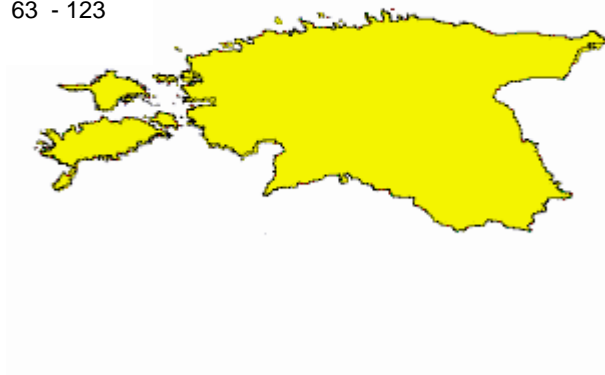
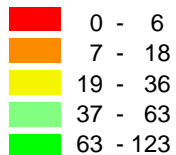


SP: Energy crop regional specific potential in GJ / ha * year

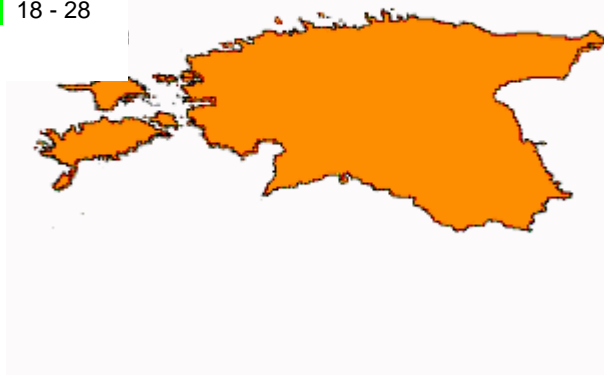


Scenario S2

S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale (*southern countries)

	Starting Point			Scenario S1				Scenario S2				
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
EE	28,26	3,72	4,68	3,40	165,91	33,86	46,66	23,36	123,79	17,09	24,31	11,79
TOTAL:	28,26	3,72	4,68	3,40	165,91	33,86	46,66	23,36	123,79	17,09	24,31	11,79

Spain
GENERAL INFORMATION

Population	43	mln
Population density		person / km ²
Total area	50518	1000 ha
Utilised agricultural area	25314	1000 ha
Wooded area	16557	1000 ha
Other	8647	1000 ha


MAIN AGRICULTURAL INDICATORS

Arable land	13266	1000 ha	Agricultural production system	Intensive
Fallow land	3320	1000 ha	Cereal yield	3,20 t / ha
Permanent crops	4956	1000 ha	Fertilizers consumption	85,58 t AI / 1000 ha (*)
Permanent grassland	6990	1000 ha	Pesticides consumption	1,26 t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	1 127,97 1000
Cereal	-7231	1000 ton	Average farm size	29,53 ha
Pork	294	1000 ton		
Beef	54	1000 ton		

(*) AI - Active Ingredients

data average 2000-2004, EUROSTAT

MAIN ASSUMPTIONS

Starting Point		Scenario S1	Scenario S2
Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.	Food consumption change	% GE (*) 4	4
	Yield increase	% 10	7
	Fallow land conversion	% 100	100
	Permanent grassland conversion	% 5	0

(*) GE - Grain Equivalent

ENERGY CROPS YIELDS

Energy crops yields for three soil qualities per respective scenario

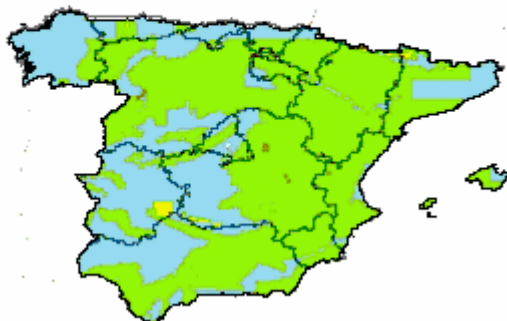
Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Eucalyptus	8,40	7,00	5,60	Eucalyptus	11,80	9,80	7,80
Triticale	9,40	7,90	6,30	Triticale	13,20	11,00	8,80
Switchgrass	10,70	8,90	7,10	Switchgrass	14,90	12,40	10,00

Soils:	Scenario S2			Low heat value:	
	good	average	poor		
Eucalyptus	8,20	6,90	5,50	Willow, poplar, eucalyptus	18,8 GJ / t DM
Triticale	9,20	7,70	6,10	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM
Switchgrass	10,00	8,70	7,00	Triticale - whole crop	17,2 GJ / t DM

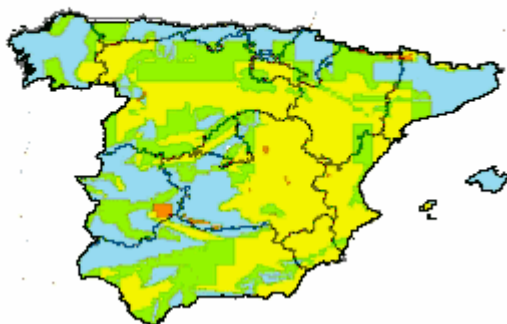
For some NUTS-2 regions of unfavorable agro-climatic conditions the yields were reduced with app. 20%

ENERGY CROPS SUITABILITY

Eucalyptus



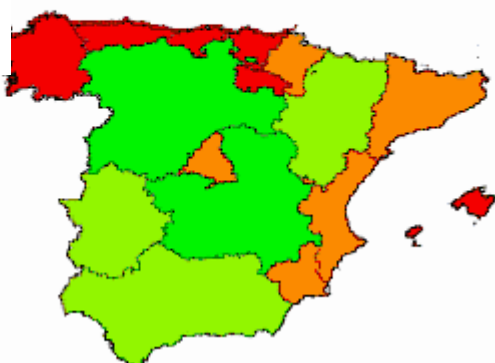
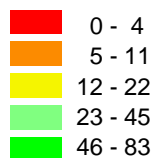
Switchgrass



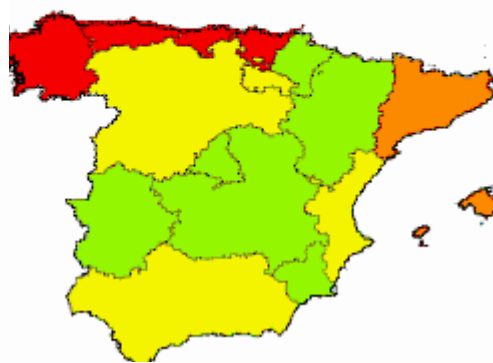
AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS

Starting Point

SP: Energy crop potential in PJ / year

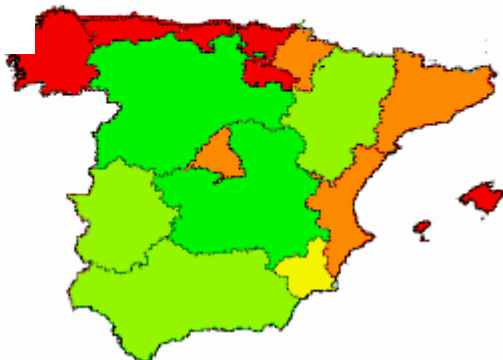
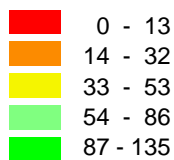


SP: Energy crop regional specific potential in GJ / ha * year

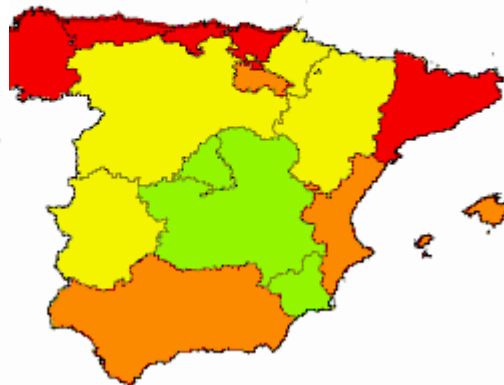


Scenario S1

S1: Energy crop potential in PJ / year

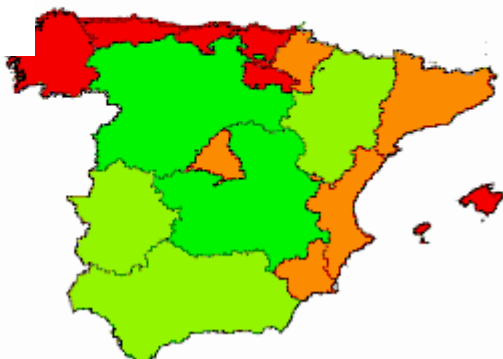
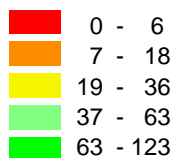


SP: Energy crop regional specific potential in GJ / ha * year

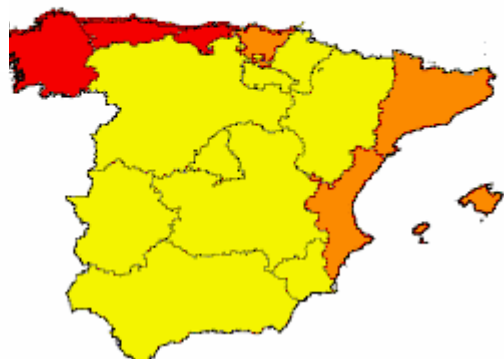


Scenario S2

S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



- ES11, Galicia
- ES12, Principado de Asturias
- ES13, Cantabria
- ES21, País Vasco
- ES22, Comunidad Foral de Navarra
- ES23, La Rioja
- ES24, Aragón

- ES30, Comunidad de Madrid
- ES41, Castilla y León
- ES42, Castilla-La Mancha
- ES43, Extremadura
- ES51, Cataluña
- ES52, Comunidad Valenciana
- ES61, Andalucía
- ES62, Región de Murcia



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

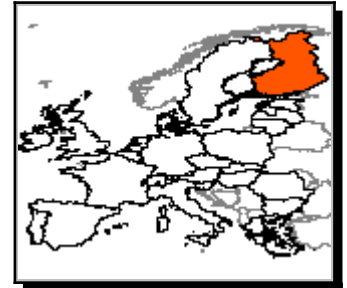
(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

	Starting Point				Scenario S1				Scenario S2			
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
ES11	12,33	1,30	1,61	1,34	51,62	8,38	10,41	8,62	18,68	2,99	2,99	3,07
ES12	0,25	0,02	0,03	0,02	15,65	1,85	2,29	0,00	0,25	0,03	0,03	0,03
ES13	0,13	0,01	0,01	0,01	8,10	0,96	1,19	0,00	0,13	0,02	0,02	0,02
ES21	5,83	0,61	0,76	0,63	18,41	2,54	3,15	2,61	9,12	1,11	1,11	1,14
ES22	66,73	7,03	8,73	7,23	99,63	14,06	17,46	14,45	80,68	10,91	10,91	11,22
ES23	22,53	2,37	2,95	2,44	31,71	4,78	5,94	4,92	24,32	3,62	3,62	3,72
ES24	502,43	42,35	52,61	43,54	599,29	71,08	88,29	0,00	539,22	62,89	62,89	64,66
ES30	77,48	8,16	10,14	8,39	90,12	13,22	16,42	13,59	81,69	11,84	11,84	12,17
ES41	717,18	60,46	75,10	62,16	1 016,70	115,63	143,64	0,42	731,05	86,68	86,68	88,95
ES42	989,78	83,43	103,64	85,78	1 173,32	134,61	167,21	0,04	1 090,51	123,03	123,03	126,48
ES43	295,68	31,16	38,70	32,03	376,37	54,98	68,30	56,53	320,59	45,88	45,88	47,17
ES51	47,40	4,99	6,20	5,14	90,09	13,45	13,37	13,83	70,58	9,06	9,06	9,32
ES52	83,80	8,83	10,97	9,08	90,11	13,46	16,73	13,84	85,55	12,54	12,54	12,90
ES53	16,05	1,35	1,68	1,39	18,14	2,20	2,73	0,00	16,97	2,03	2,03	2,09
ES61	330,90	34,87	43,31	35,85	488,62	71,22	88,49	73,26	399,40	55,83	55,83	57,41
ES62	149,35	12,59	15,64	12,94	153,37	18,90	23,48	0,00	153,63	17,84	17,84	18,34
ES70	2,33	0,20	0,24	0,20	4,09	0,52	0,64	0,00	2,55	0,30	0,30	0,31
TOTAL:	3 320,18	299,74	372,33	308,18	4 325,34	541,83	669,74	202,11	3 624,92	446,60	446,60	459,00


GENERAL INFORMATION

Population	5	mln
Population density	17	person / km ²
Total area	33814	1000 ha
Utilised agricultural area	2235	1000 ha
Wooded area	22487	1000 ha
Other	9093	1000 ha


MAIN AGRICULTURAL INDICATORS

Arable land	2203	1000 ha	Agricultural production system	Intensive
Fallow land	202	1000 ha	Cereal yield	3,30 t / ha
Permanent crops	4	1000 ha	Fertilizers consumption	133,33 t AI / 1000 ha (*)
Permanent grassland	27	1000 ha	Pesticides consumption	0,46 t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	74,83 1000
Cereal	273	1000 ton	Average farm size	88,12 ha
Pork	12	1000 ton		
Beef	-1	1000 ton		

(*) AI - Active Ingredients

data average 2000-2004, EUROSTAT

MAIN ASSUMPTIONS
Starting Point

Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.

		Scenario S1	Scenario S2
Food consumption change	% GE (*)	6	6
Yield increase	%	10	7
Fallow land conversion	%	100	100
Permanent grassland conversion	%	0	0

(*) GE - Grain Equivalent

ENERGY CROPS YIELDS

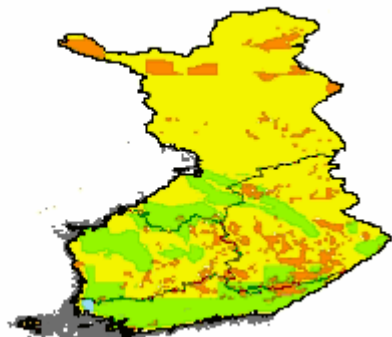
Energy crops yields for three soil qualities per respective scenario

Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Willow	11,00	9,00	7,50	Willow	15,40	12,60	10,50
Poplar	11,00	9,00	7,50	Poplar	13,80	11,25	9,40
Reed Canary Grass	10,00	7,50	6,00	Reed Canary G	14,00	10,50	8,40
Miscanthus	13,00	10,00	8,00	Miscanthus	20,80	16,00	12,80

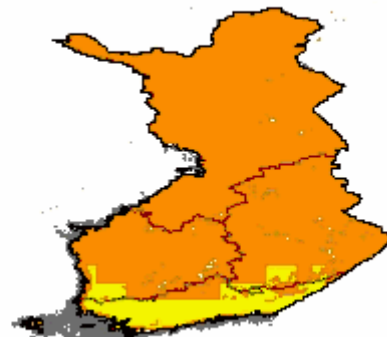
Soils:	Scenario S2			Low heat value:	
	good	average	poor		
Willow	10,78	8,82	7,35	Willow, poplar, eucalyptus	18,8 GJ / t DM
Poplar	9,66	7,88	6,58	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM
Reed Canary Grass	9,80	7,35	5,88	Triticale - whole crop	17,2 GJ / t DM
Miscanthus	14,56	11,20	8,96		

ENERGY CROPS SUITABILITY

Willow



Poplar



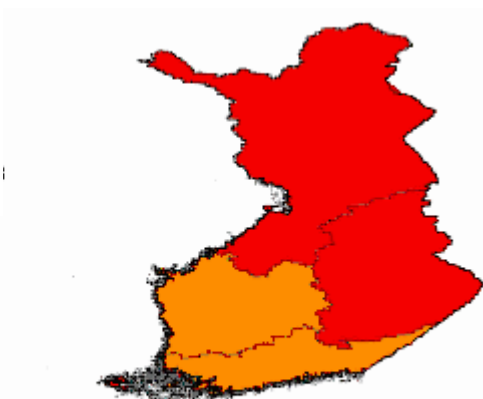
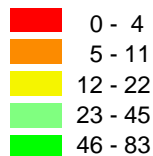
Reed Canary



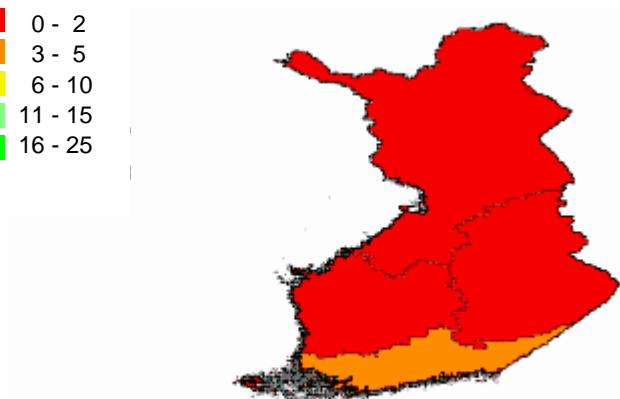
AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS

Starting Point

SP: Energy crop potential in PJ / year

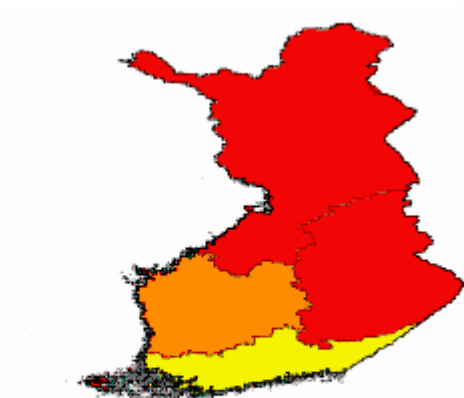
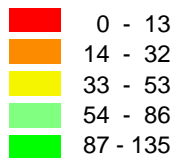


SP: Energy crop regional specific potential in GJ / ha * year

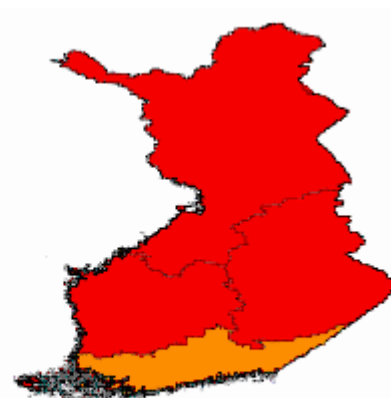
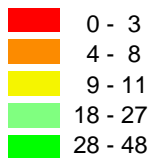


Scenario S1

S1: Energy crop potential in PJ / year

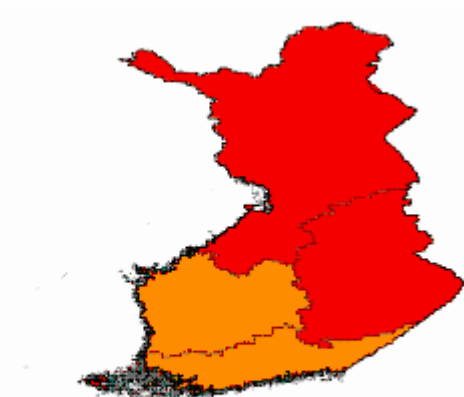
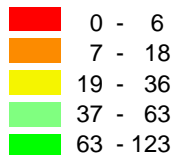


SP: Energy crop regional specific potential in GJ / ha * year

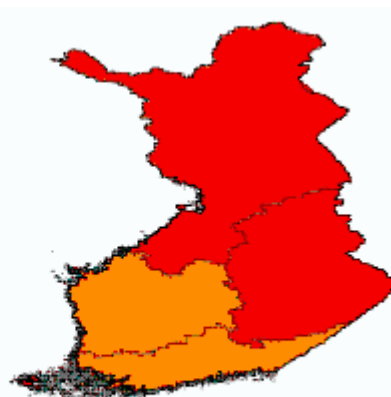


Scenario S2

S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



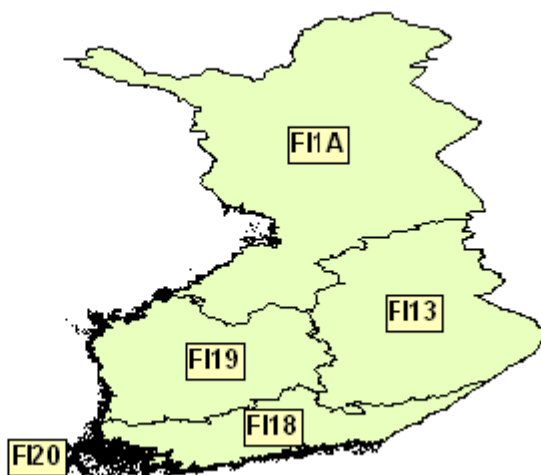
FI13, Itä-Suomi

FI18, Etelä-Suomi

FI19, Länsi-Suomi

FI1A, Pohjois-Suomi

FI20, Lland



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

	Starting Point				Scenario S1				Scenario S2			
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
F113	24,06	3,39	2,66	3,72	39,51	7,16	5,69	5,95	31,68	3,57	2,72	2,87
F118	84,12	11,86	9,29	13,02	137,45	24,07	19,09	19,87	117,96	12,43	9,56	10,06
F119	74,04	10,44	8,17	11,46	124,76	21,58	17,13	17,88	103,77	11,00	8,46	8,91
F11A	18,70	2,64	2,06	2,89	31,02	5,65	4,49	4,70	25,10	2,80	2,12	2,23
F120	1,08	0,15	0,12	0,17	1,78	0,32	0,25	0,26	1,46	0,16	0,12	0,13
TOTAL:	202,00	28,48	22,30	31,27	334,51	58,79	46,65	48,66	279,98	29,97	22,98	24,21


France
GENERAL INFORMATION

Population	60	mln
Population density		person / km ²
Total area	54909	1000 ha
Utilised agricultural area	29212	1000 ha
Wooded area	15412	1000 ha
Other	10285	1000 ha


MAIN AGRICULTURAL INDICATORS

Arable land	18245	1000 ha	Agricultural production system	Intensive
Fallow land	1262	1000 ha	Cereal yield	7,00 t / ha
Permanent crops	1133	1000 ha	Fertilizers consumption	142,46 t AI / 1000 ha (*)
Permanent grassland	10021	1000 ha	Pesticides consumption	2,11 t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	614,00 1000
Cereal	28345	1000 ton	Average farm size	48,19 ha
Pork	94	1000 ton		
Beef	-22	1000 ton		

(*) AI - Active Ingredients

data average 2000-2004, EUROSTAT

MAIN ASSUMPTIONS

Starting Point Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.	Food consumption change	% GE (*)	Scenario S1	Scenario S2
	Yield increase	%	8	8
	Fallow land conversion	%	10	0
	Permanent grassland conversion	%	100	100
		%	0	0

(*) GE - Grain Equivalent

ENERGY CROPS YIELDS

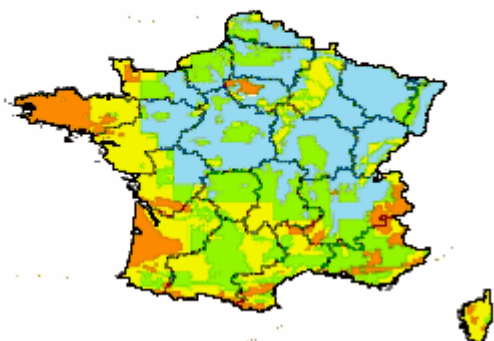
Energy crops yields for three soil qualities per respective scenario

Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Willow	12,00	10,00	10,00	Willow	16,80	14,00	14,00
Poplar	15,00	10,00	10,00	Poplar	18,80	12,50	12,50
Miscanthus	25,00	16,00	8,00	Miscanthus	40,00	25,60	12,80
Triticale	15,00	12,00	10,00	Triticale	15,80	12,60	10,50

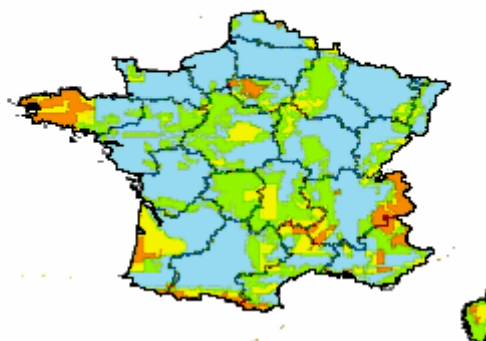
Soils:	Scenario S2			Low heat value:	
	good	average	poor		
Willow	11,76	9,80	9,80	Willow, poplar, eucalyptus	18,8 GJ / t DM
Poplar	13,16	8,75	8,75	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM
Miscanthus	28,00	17,92	8,96	Triticale - whole crop	17,2 GJ / t DM
Triticale	11,06	8,82	7,35		

ENERGY CROPS SUITABILITY

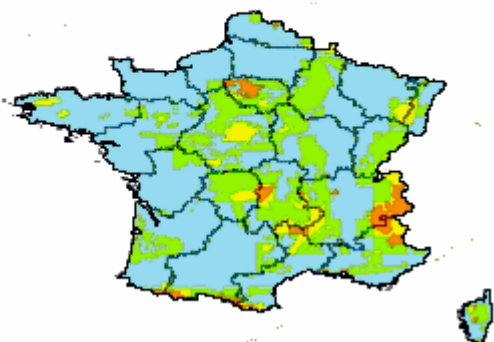
Willow



Poplar



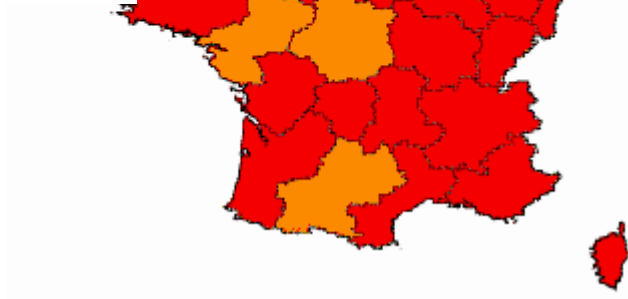
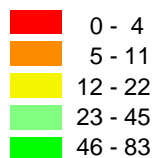
Miscanthus



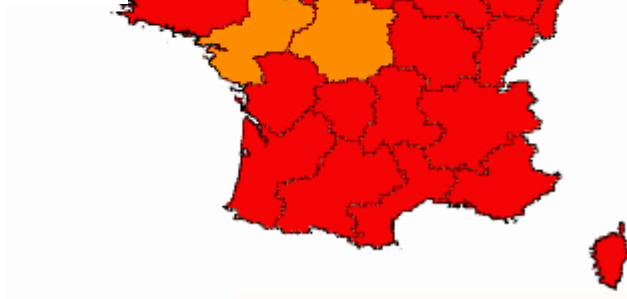
AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS

Starting Point

SP: Energy crop potential in PJ / year

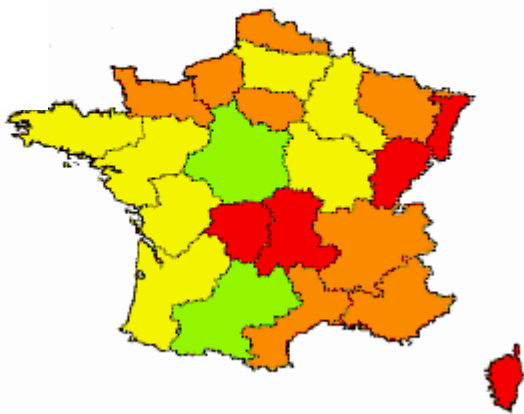
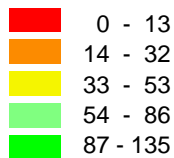


SP: Energy crop regional specific potential in GJ / ha * year

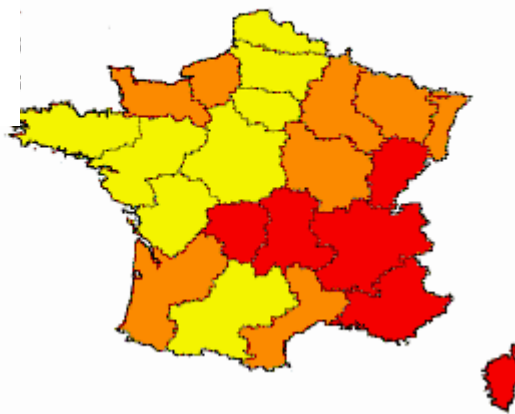
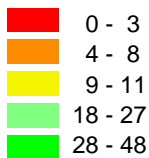


Scenario S1

S1: Energy crop potential in PJ / year

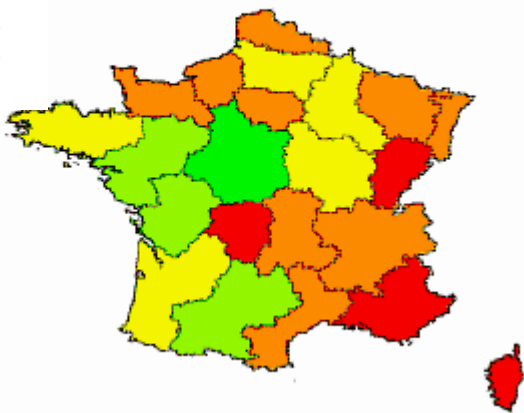
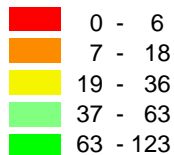


SP: Energy crop regional specific potential in GJ / ha * year

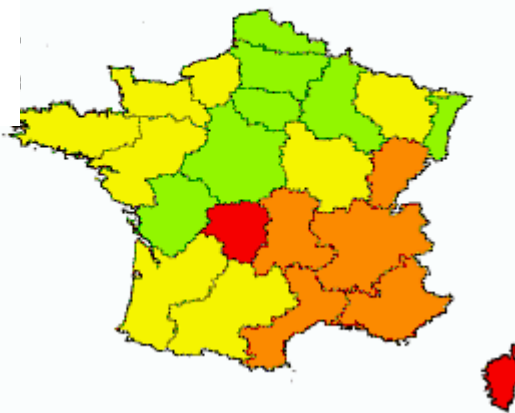


Scenario S2

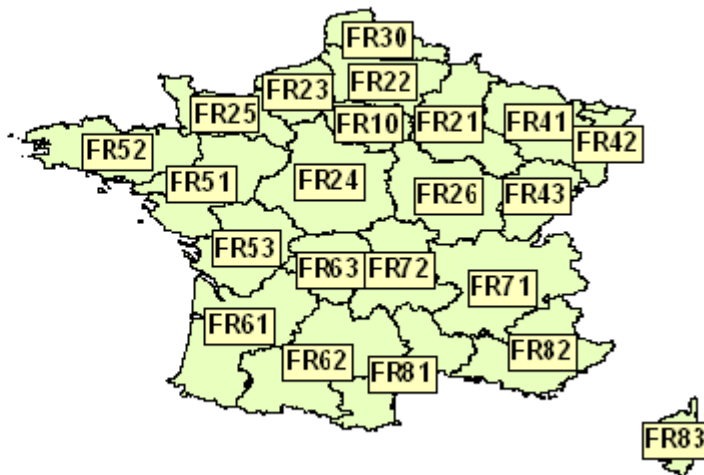
S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



- | | |
|----------------------------|----------------------------------|
| FR19, Île de France | FR51, Pays de la Loire |
| FR21, Champagne-Ardenne | FR52, Bretagne |
| FR22, Picardie | FR53, Poitou-Charentes |
| FR23, Haute-Normandie | FR54, Aquitaine |
| FR24, Centre | FR55, Midi-Pyrénées |
| FR25, Basse-Normandie | FR56, Limousin |
| FR26, Bourgogne | FR57, Rhône-Alpes |
| FR39, Nord - Pas-de-Calais | FR58, Auvergne |
| FR41, Lorraine | FR59, Languedoc-Roussillon |
| FR42, Alsace | FR60, Provence-Alpes-Côte d'Azur |
| FR43, Franche-Comté | FR61, Corse |



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*)southern countries

	Starting Point				Scenario S1				Scenario S2			
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
FR10	41,76	7,85	6,15	7,18	76,31	25,05	40,38	21,41	21,13	2,41	9,68	6,58
FR21	68,32	12,84	10,06	11,75	136,07	45,72	75,55	39,34	20,98	1,96	16,50	11,05
FR22	64,02	12,04	9,42	11,01	129,75	43,80	72,71	37,43	29,50	3,57	15,81	10,52
FR23	29,42	5,53	4,33	5,06	61,13	20,42	34,01	17,67	8,26	0,73	7,26	4,83
FR24	180,52	33,94	26,57	31,05	304,57	96,07	150,01	82,07	112,70	10,95	39,28	27,20
FR25	35,70	6,71	5,26	6,14	63,90	19,88	31,43	17,01	31,53	3,38	7,44	5,23
FR26	69,04	12,98	10,16	11,87	127,34	41,48	66,87	35,76	40,10	2,13	15,77	10,75
FR30	38,98	7,33	5,74	6,70	73,05	23,92	38,77	20,39	10,32	1,02	9,09	6,13
FR41	33,16	6,23	4,88	5,70	71,59	24,46	41,21	21,36	6,66	-0,56	8,38	5,53
FR42	20,86	3,92	3,07	3,59	45,55	14,82	24,80	12,89	13,30	0,29	5,28	3,48
FR43	12,40	2,33	1,83	2,13	26,03	8,90	14,91	7,76	7,26	-0,07	3,10	2,05
FR51	108,38	20,38	15,95	18,64	182,03	54,78	84,27	46,60	96,62	10,33	21,48	15,36
FR52	78,46	14,75	11,55	13,50	141,20	44,45	70,62	38,16	13,32	-2,64	16,10	11,36
FR53	109,68	20,62	16,14	18,86	192,64	59,71	93,86	51,11	59,32	4,07	23,63	16,42
FR61	102,28	19,23	15,06	17,59	157,20	48,18	72,48	40,74	78,82	5,64	21,96	15,27
FR62	126,28	23,74	18,59	21,72	212,54	64,38	99,31	54,81	93,84	8,47	26,94	18,78
FR63	5,30	1,00	0,78	0,91	15,72	5,07	8,91	4,48	4,61	0,54	1,21	0,82
FR71	41,12	7,73	6,05	7,07	84,73	26,76	43,94	23,19	36,64	2,38	9,58	6,48
FR72	17,08	3,21	2,51	2,94	41,97	14,17	24,36	12,43	13,26	0,56	4,27	2,83
FR81	46,36	8,72	6,82	7,97	58,85	16,23	21,59	13,29	37,30	5,46	8,52	6,26
FR82	31,80	5,98	4,68	5,47	44,40	12,79	18,14	10,65	26,67	3,88	6,30	4,51
FR83	1,44	0,27	0,21	0,25	1,62	0,42	0,50	0,33	0,94	0,13	0,26	0,19
TOTAL:	1 262,36	237,32	185,82	217,13	2 248,17	711,46	1 128,62	608,89	763,07	64,66	277,84	191,63


GENERAL INFORMATION

Population	11	mln
Population density		person / km ²
Total area	13196	1000 ha
Utilised agricultural area	3869	1000 ha
Wooded area	2940	1000 ha
Other	6387	1000 ha


MAIN AGRICULTURAL INDICATORS

Arable land	2216	1000 ha	Agricultural production system	Intensive
Fallow land	468	1000 ha	Cereal yield	3,68 t / ha
Permanent crops	1125	1000 ha	Fertilizers consumption	113,21 t AI / 1000 ha (*)
Permanent grassland	148	1000 ha	Pesticides consumption	1,55 t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	823,73 1000
Cereal	-1241	1000 ton	Average farm size	5,22 ha
Pork	-205	1000 ton		
Beef	-188	1000 ton		

(*) AI - Active Ingredients

data average 2000-2004, EUROSTAT

MAIN ASSUMPTIONS

Starting Point Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.	Food consumption change	% GE (*)	Scenario S1	Scenario S2
	Yield increase	%	8	8
	Fallow land conversion	%	10	7
	Permanent grassland conversion	%	100	100
		%	0	0

(*) GE - Grain Equivalent

ENERGY CROPS YIELDS

Energy crops yields for three soil qualities per respective scenario

Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Eucalyptus	8,40	7,00	5,60	Eucalyptus	11,80	9,80	7,80
Triticale	9,40	7,90	6,30	Triticale	13,20	11,00	8,80
Switchgrass	10,70	8,90	7,10	Switchgrass	14,90	12,40	10,00

Soils:	Scenario S2			Low heat value:	
	good	average	poor		
Eucalyptus	8,20	6,90	5,50	Willow, poplar, eucalyptus	18,8 GJ / t DM
Triticale	9,20	7,70	6,10	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM
Switchgrass	10,00	8,70	7,00	Triticale - whole crop	17,2 GJ / t DM

For some NUTS-2 regions of unfavorable agro-climatic conditions the yields were reduced with app. 20%

ENERGY CROPS SUITABILITY

Eucalyptus



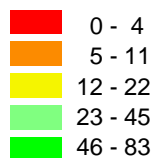
Switchgrass



AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS

Starting Point

SP: Energy crop potential in PJ / year

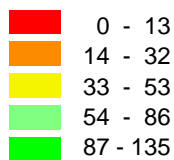


SP: Energy crop regional specific potential in GJ / ha * year

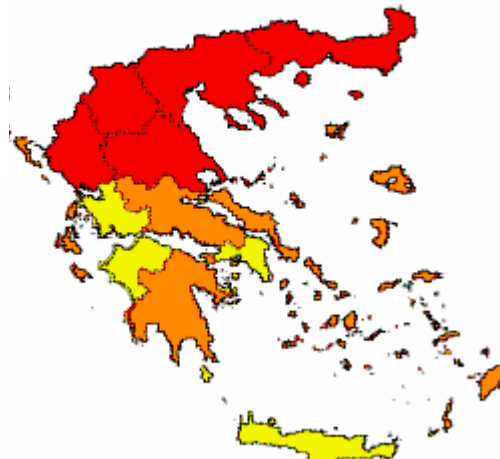
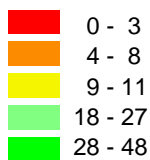


Scenario S1

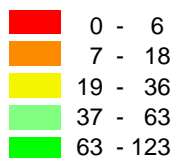
S1: Energy crop potential in PJ / year



SP: Energy crop regional specific potential in GJ / ha * year


Scenario S2

S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



GR11, Anatoliki Makedonia, Thraki

GR12, Kentriki Makedonia

GR13, Dytiki Makedonia

GR14, Thessalia

GR21, Ipeiros

GR22, Ionia Nisia

GR23, Dytiki Ellada

GR24, Sterea Ellada

GR25, Peloponnisos

GR30, Attiki

GR41, Voreio Aigaio

GR42, Notio Aigaio

GR43, Kriti



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

	Starting Point				Scenario S1				Scenario S2			
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
GR11	24,50	2,58	3,21	2,65	26,57	4,00	4,97	4,11	23,01	3,34	4,15	3,43
GR12	28,30	2,39	2,96	2,45	37,46	4,76	5,92	4,85	21,68	2,21	2,74	2,28
GR13	13,40	1,13	1,40	1,16	16,49	2,08	2,58	2,13	10,98	1,18	1,47	1,22
GR14	22,60	2,38	2,96	2,45	29,13	4,57	5,68	4,71	17,87	2,35	2,91	2,41
GR21	15,60	1,64	2,04	1,69	16,22	2,44	3,03	2,51	15,40	2,20	2,73	2,26
GR22	9,40	0,79	0,98	0,81	9,79	1,13	1,40	1,16	9,61	1,10	1,36	1,13
GR23	86,00	9,06	11,26	9,32	87,03	12,88	15,99	13,24	85,29	12,56	15,60	12,91
GR24	43,40	3,66	4,54	3,76	44,77	5,32	6,61	5,47	42,36	4,97	6,17	5,11
GR25	71,30	6,01	7,47	6,18	71,78	8,48	10,54	8,72	70,97	8,37	10,39	8,60
GR30	23,50	1,98	2,46	2,04	23,54	2,78	3,45	2,86	23,47	2,77	3,44	2,85
GR41	15,50	1,31	1,62	1,34	15,54	1,83	2,28	1,89	15,48	1,83	2,27	1,88
GR42	22,10	1,86	2,31	1,92	22,21	2,62	3,26	2,70	22,03	2,60	3,23	2,67
GR43	64,90	5,47	6,80	5,62	65,12	7,69	9,55	7,91	64,80	7,64	9,50	7,86
TOTAL:	440,50	40,27	50,02	41,40	465,64	60,59	75,27	62,24	422,96	53,10	65,96	54,61

Hungary
GENERAL INFORMATION

Population	10	mln
Population density	109	person / km ²
Total area	9303	1000 ha
Utilised agricultural area	5863	1000 ha
Wooded area	1773	1000 ha
Other	1668	1000 ha


MAIN AGRICULTURAL INDICATORS

Arable land	4511	1000 ha	Agricultural production system	Extensive
Fallow land	205	1000 ha	Cereal yield	4,24 t / ha
Permanent crops	194	1000 ha	Fertilizers consumption	63,12 t AI / 1000 ha (*)
Permanent grassland	1059	1000 ha	Pesticides consumption	0,86 t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	769,25 1000
Cereal	2857	1000 ton	Average farm size	8,06 ha
Pork	60	1000 ton		
Beef	3	1000 ton		

data average 2000-2004, EUROSTAT

(*) AI - Active Ingredients

MAIN ASSUMPTIONS

Starting Point		Scenario S1	Scenario S2
Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.	Food consumption change	% GE (*) 6	6
	Yield increase	% 30	20
	Fallow land conversion	% 100	100
	Permanent grassland conversion	% 3	0

(*) GE - Grain Equivalent

ENERGY CROPS YIELDS

Energy crops yields for three soil qualities per respective scenario

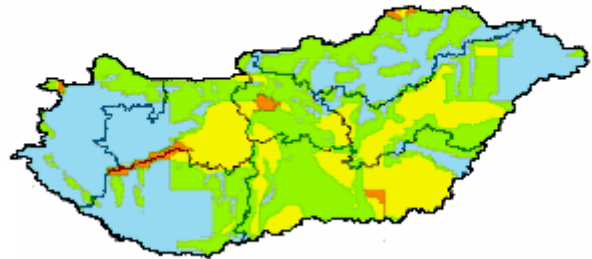
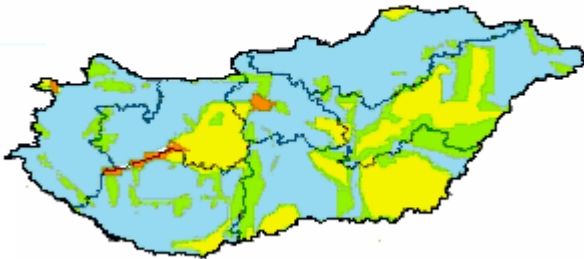
Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Willow	12,50	9,00	7,00	Willow	17,50	12,60	9,80
Poplar	12,50	9,00	7,00	Poplar	15,60	11,20	8,80
Miscanthus	17,00	11,00	9,00	Miscanthus	27,20	17,60	14,40
Triticale	12,00	9,00	7,00	Triticale	12,60	9,50	7,40

Soils:	Scenario S2			Low heat value:	
	good	average	poor		
Willow	12,25	8,82	6,86	Willow, poplar, eucalyptus	18,8 GJ / t DM
Poplar	10,92	7,84	6,16	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM
Miscanthus	19,04	12,32	10,08	Triticale - whole crop	17,2 GJ / t DM
Triticale	8,82	6,65	5,18		

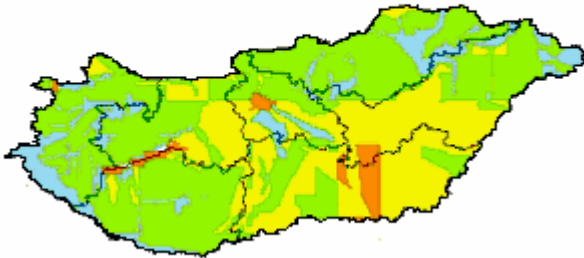
ENERGY CROPS SUITABILITY

Willow

Poplar



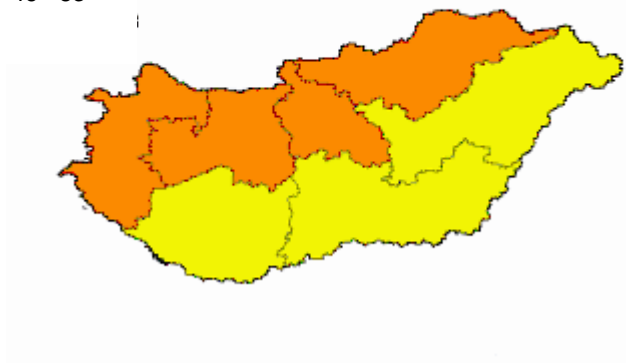
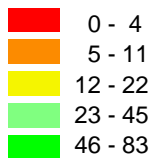
Miscanthus



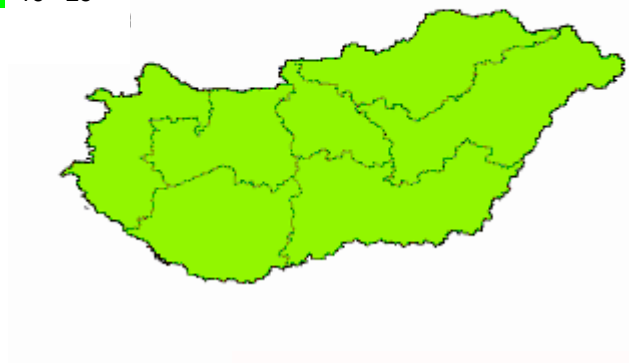
AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS

Starting Point

SP: Energy crop potential in PJ / year

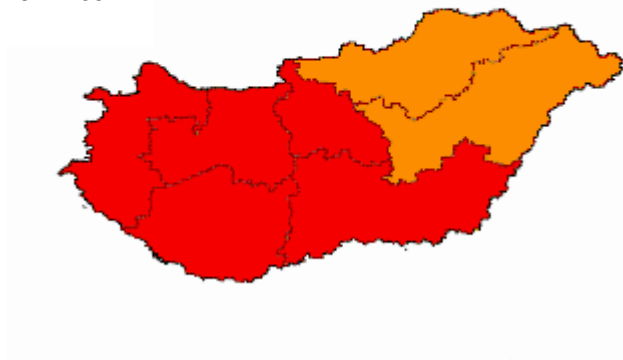
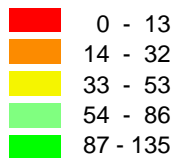


SP: Energy crop regional specific potential in GJ / ha * year

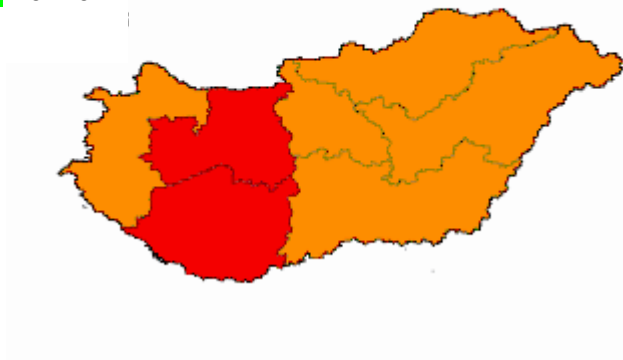


Scenario S1

S1: Energy crop potential in PJ / year

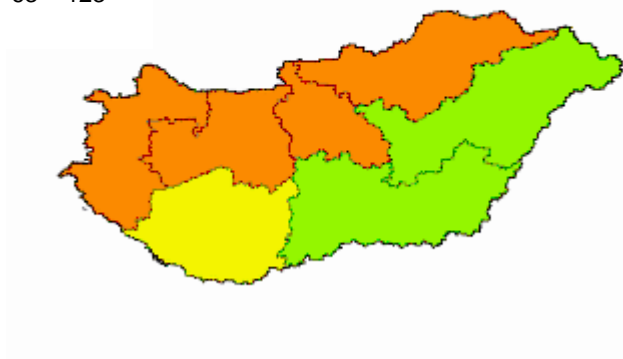
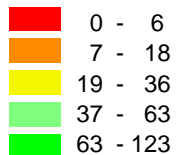


SP: Energy crop regional specific potential in GJ / ha * year

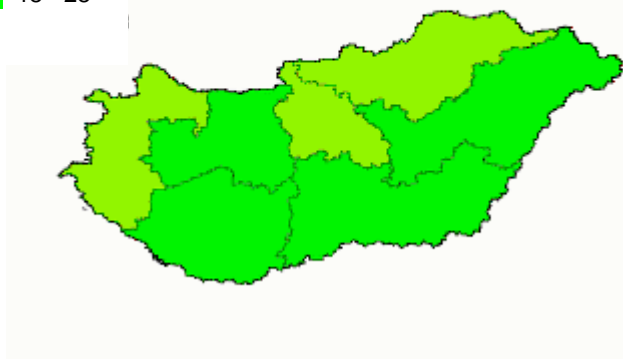


Scenario S2

S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



HU10, Közép-Magyarország

HU21, Közép-Dunántul

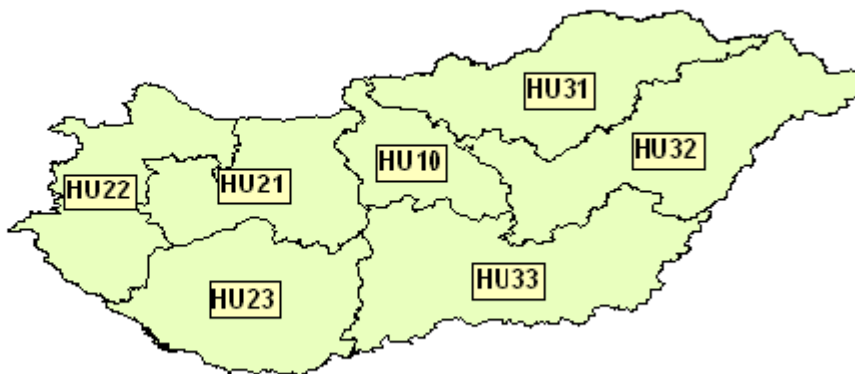
HU22, Nyugat-Dunántul

HU23, Dél-Dunántul

HU31, Észak-Magyarország

HU32, Észak-Alföld

HU33, Dél-Alföld



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

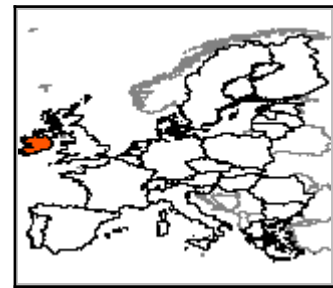
(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

	Starting Point				Scenario S1				Scenario S2			
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
HU10	26,24	3,45	4,35	3,16	83,77	18,59	28,89	14,31	64,76	8,45	13,19	6,38
HU21	10,60	1,39	1,76	1,28	123,39	31,34	48,35	24,16	86,13	12,41	19,16	9,30
HU22	18,30	2,41	3,03	2,20	123,23	30,16	46,61	22,99	88,81	12,32	19,08	9,15
HU23	19,76	2,60	3,27	2,38	180,74	50,16	77,39	38,76	120,11	20,07	31,01	15,09
HU31	49,80	6,55	8,25	6,00	152,77	32,21	50,13	24,84	116,14	14,73	23,02	11,15
HU32	49,00	6,45	8,11	5,90	257,66	63,88	98,84	48,88	184,39	26,73	41,48	19,96
HU33	31,00	4,08	5,13	3,73	248,29	62,43	96,42	48,10	177,01	25,26	39,07	18,95
TOTAL:	204,70	26,94	33,90	24,65	1 169,86	288,77	446,62	222,04	837,34	119,96	186,01	89,98


Ireland
GENERAL INFORMATION

Population	4	mln
Population density		person / km ²
Total area	7027	1000 ha
Utilised agricultural area	4380	1000 ha
Wooded area	0	1000 ha
Other	2647	1000 ha


MAIN AGRICULTURAL INDICATORS

Arable land	1172	1000 ha	Agricultural production system	Intensive
Fallow land	14	1000 ha	Cereal yield	7,44 t / ha
Permanent crops	2	1000 ha	Fertilizers consumption	133,83 t AI / 1000 ha (*)
Permanent grassland	3206	1000 ha	Pesticides consumption	0,28 t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	135,21 1000
Cereal	-608	1000 ton	Average farm size	34,84 ha
Pork	58	1000 ton		
Beef	291	1000 ton		

(*) AI - Active Ingredients

data average 2000-2004, EUROSTAT

MAIN ASSUMPTIONS
Starting Point

Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.

		Scenario S1	Scenario S2
Food consumption change	% GE (*)	16	16
Yield increase	%	10	7
Fallow land conversion	%	100	100
Permanent grassland conversion	%	10	0

(*) GE - Grain Equivalent

ENERGY CROPS YIELDS

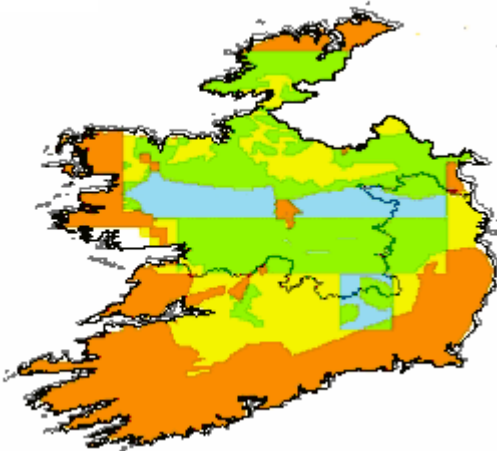
Energy crops yields for three soil qualities per respective scenario

Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Willow	14,00	13,00	11,00	Willow	19,60	18,20	15,40
Poplar	14,00	13,00	11,00	Poplar	17,50	16,20	13,80
Miscanthus	19,50	18,00	15,00	Miscanthus	31,20	28,80	24,00
Triticale	18,00	18,00	13,00	Triticale	18,90	16,80	13,60

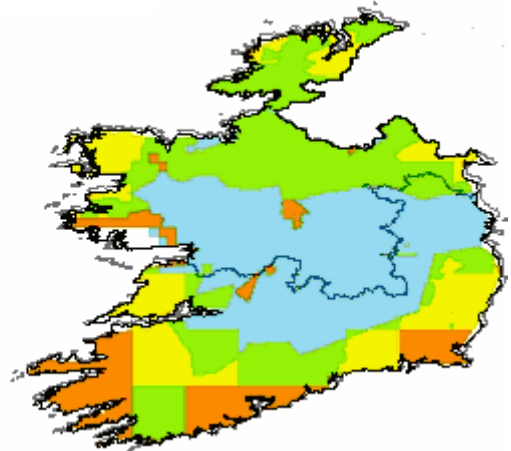
Soils:	Scenario S2			Low heat value:	
	good	average	poor		
Willow	13,70	12,70	10,80	Willow, poplar, eucalyptus	18,8 GJ / t DM
Poplar	12,30	11,30	9,70	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM
Miscanthus	21,80	20,20	16,80	Triticale - whole crop	17,2 GJ / t DM
Triticale	13,20	11,80	9,50		

ENERGY CROPS SUITABILITY

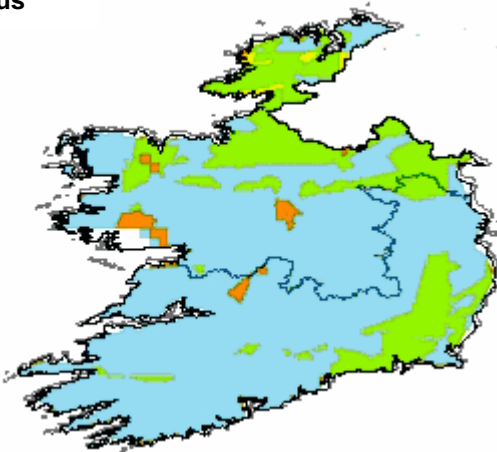
Willow



Poplar



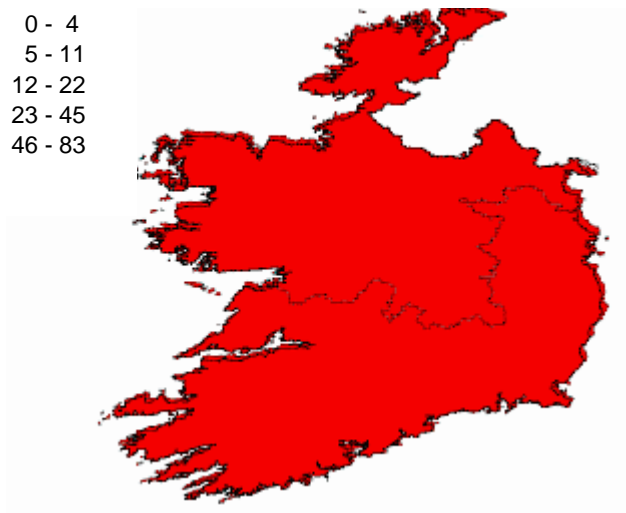
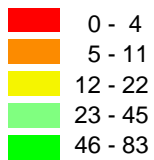
Miscanthus



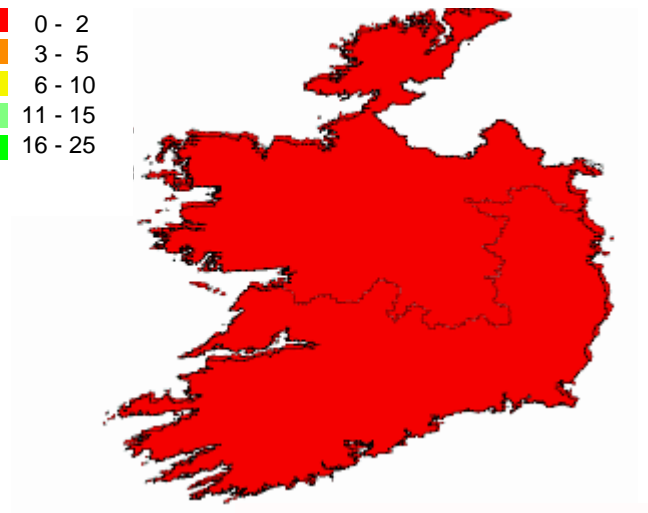
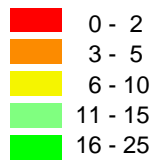
AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS

Starting Point

SP: Energy crop potential in PJ / year

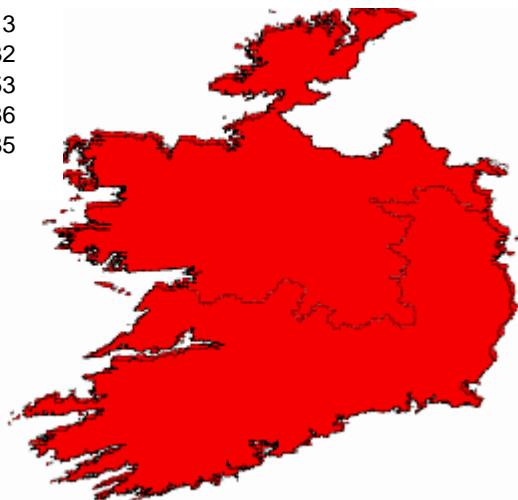
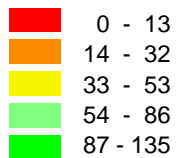


SP: Energy crop regional specific potential in GJ / ha * year

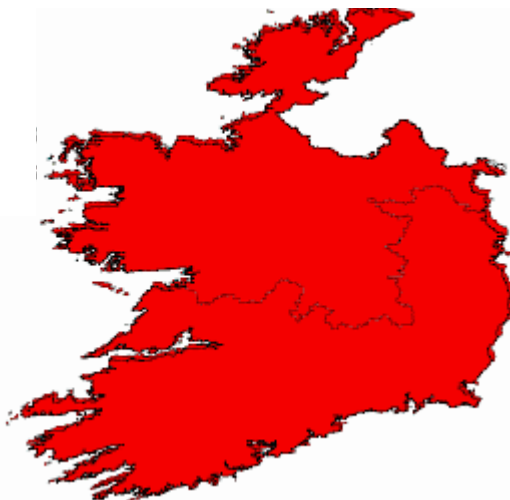


Scenario S1

S1: Energy crop potential in PJ / year

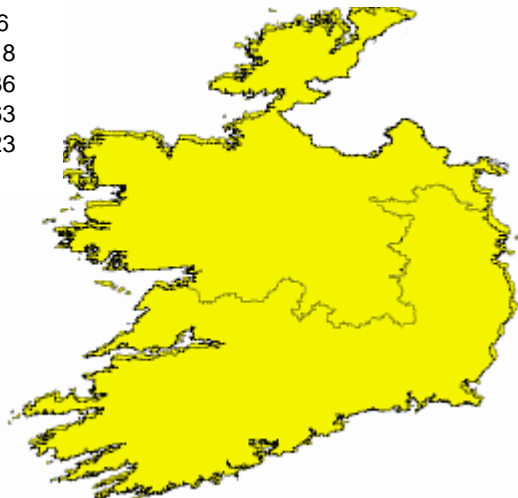
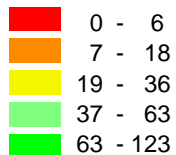


SP: Energy crop regional specific potential in GJ / ha * year

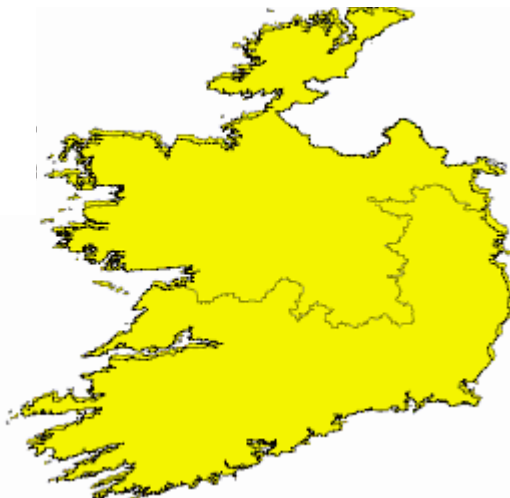


Scenario S2

S2: Energy crop potential in PJ / year

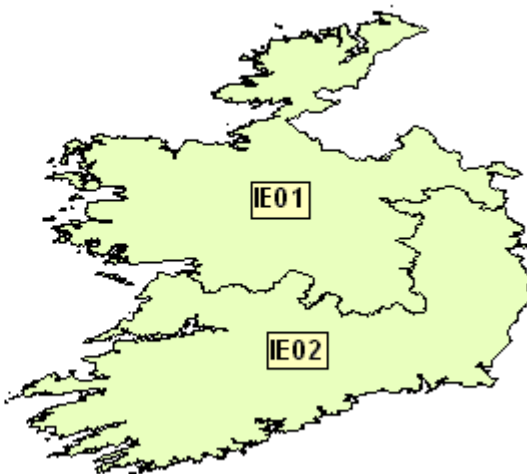


S2: Energy crop regional specific potential in GJ / ha * year



IE01, Border, Midland and Western

IE02, Southern and Eastern



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

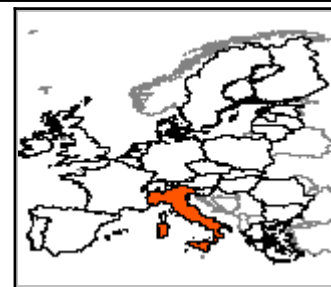
(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

	Starting Point			Scenario S1				Scenario S2				
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
IE01	4,93	1,02	1,36	1,10	158,19	39,28	66,82	35,37	6,18	-0,16	-0,25	-0,20
IE02	9,50	1,97	2,62	2,12	179,35	42,76	72,64	38,37	2,85	-2,32	-3,83	-2,31
TOTAL:	14,43	2,98	3,98	3,23	337,54	82,04	139,46	73,74	9,03	-2,48	-4,08	-2,51


GENERAL INFORMATION

Population	58	mln
Population density	197	person / km ²
Total area	30133	1000 ha
Utilised agricultural area	15400	1000 ha
Wooded area	6856	1000 ha
Other	7878	1000 ha


MAIN AGRICULTURAL INDICATORS

Arable land	8252	1000 ha	Agricultural production system	Intensive
Fallow land	655	1000 ha	Cereal yield	4,78 t / ha
Permanent crops	2697	1000 ha	Fertilizers consumption	110,81 t AI / 1000 ha (*)
Permanent grassland	4364	1000 ha	Pesticides consumption	2,00 t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	1 963,25 1000
Cereal	-7405	1000 ton	Average farm size	9,29 ha
Pork	-747	1000 ton		
Beef	-258	1000 ton		

(*) AI - Active Ingredients

data average 2000-2004, EUROSTAT

MAIN ASSUMPTIONS

Starting Point		Scenario S1	Scenario S2
Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.	Food consumption change	% GE (*) 5	5
	Yield increase	% 10	7
	Fallow land conversion	% 100	100
	Permanent grassland conversion	% 0	0

(*) GE - Grain Equivalent

ENERGY CROPS YIELDS

Energy crops yields for three soil qualities per respective scenario

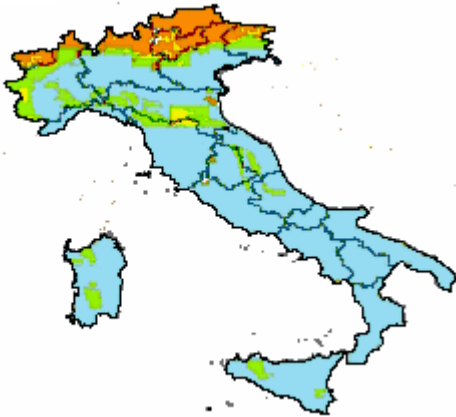
Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Eucalyptus	8,40	7,00	5,60	Eucalyptus	11,80	9,80	7,80
Triticale	9,40	7,90	6,30	Triticale	13,20	11,00	8,80
Switchgrass	10,70	8,90	7,10	Switchgrass	14,90	12,40	10,00

Soils:	Scenario S2			Low heat value:	
	good	average	poor		
Eucalyptus	8,20	6,90	5,50	Willow, poplar, eucalyptus	18,8 GJ / t DM
Triticale	9,20	7,70	6,10	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM
Switchgrass	10,00	8,70	7,00	Triticale - whole crop	17,2 GJ / t DM

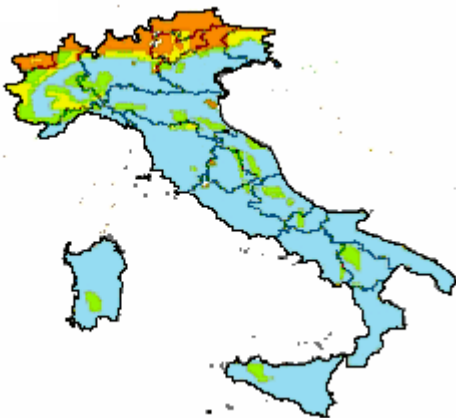
For some NUTS-2 regions of unfavorable agro-climatic conditions the yields were reduced with app. 20%

ENERGY CROPS SUITABILITY

Eucalyptus



Switchgrass



AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS

Starting Point

SP: Energy crop potential in PJ / year

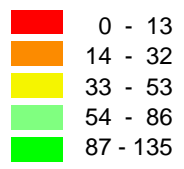


SP: Energy crop regional specific potential in GJ / ha * year



Scenario S1

S1: Energy crop potential in PJ / year



SP: Energy crop regional specific potential in GJ / ha * year



Scenario S2

S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



- | | |
|----------------------------------------|------------------|
| ITC1, Piemonte | ITE2, Umbria |
| ITC2, Valle d'Aosta/Valle d'Aoste | ITE3, Marche |
| ITC3, Liguria | ITE4, Lazio |
| ITC4, Lombardia | ITF1, Abruzzo |
| ITD1, Provincia Autonoma Bolzano/Bozen | ITF2, Molise |
| ITD2, Provincia Autonoma Trento | ITF3, Campania |
| ITD3, Veneto | ITF4, Puglia |
| ITD4, Friuli-Venezia Giulia | ITF5, Basilicata |
| ITD5, Emilia-Romagna | ITF6, Calabria |
| ITE1, Toscana | ITG1, Sicilia |
| | ITG2, Sardegna |



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

	Starting Point				Scenario S1				Scenario S2			
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
ITC1	48,97	5,16	6,41	5,30	71,53	12,38	15,38	12,74	60,44	9,62	11,95	9,90
ITC2	0,03	0,00	0,00	0,00	0,04	0,01	0,01	0,01	0,03	0,00	0,00	0,00
ITC3	0,73	0,06	0,08	0,07	0,93	0,12	0,14	0,12	0,83	0,10	0,12	0,10
ITC4	63,40	6,68	8,30	6,87	93,10	16,56	20,58	17,04	78,03	12,69	15,76	13,05
ITD1	0,33	0,03	0,03	0,03	0,47	0,06	0,07	0,06	0,40	0,05	0,06	0,05
ITD2	0,25	0,02	0,03	0,02	0,36	0,05	0,06	0,05	0,30	0,04	0,05	0,04
ITD3	49,19	5,18	6,44	5,33	71,76	13,57	16,85	13,95	60,49	10,31	12,81	10,60
ITD4	17,23	1,82	2,26	1,87	25,96	5,00	6,21	5,14	21,65	3,74	4,64	3,84
ITD5	74,84	7,89	9,80	8,11	130,15	18,43	22,91	18,99	110,86	14,42	17,91	14,84
ITE1	37,66	3,17	4,03	3,49	64,59	7,30	9,06	7,45	46,46	5,81	7,22	5,96
ITE2	21,05	2,22	2,76	2,28	30,60	4,99	6,20	5,13	25,93	4,06	5,05	4,18
ITE3	34,67	2,92	3,71	3,21	52,59	6,82	8,48	6,79	43,09	5,37	6,68	5,44
ITE4	36,48	3,08	3,90	3,38	56,12	6,82	8,48	6,98	47,52	5,45	6,78	5,59
ITF1	15,27	1,29	1,63	1,42	25,14	2,83	3,52	2,87	21,51	2,27	2,82	2,32
ITF2	14,91	1,26	1,60	1,38	22,19	2,85	3,54	2,90	18,33	2,27	2,82	2,32
ITF3	30,85	2,60	3,30	2,86	49,88	5,51	6,84	5,66	43,35	4,48	5,56	4,60
ITF4	61,96	5,22	6,63	5,74	112,61	11,00	13,67	11,21	98,84	8,98	11,16	9,19
ITF5	27,45	2,31	2,94	2,54	52,13	4,92	6,12	5,06	45,70	4,00	4,97	4,11
ITF6	26,14	2,20	2,80	2,42	41,19	4,47	5,56	4,59	36,04	3,71	4,61	3,81
ITG1	63,71	5,37	6,82	5,91	101,77	10,84	13,46	11,14	89,42	9,01	11,20	9,27
ITG2	29,62	2,50	3,17	2,75	49,81	5,25	6,52	5,37	42,95	4,29	5,32	4,40
TOTAL:	654,76	60,98	76,62	65,00	1 052,92	139,78	173,66	143,24	892,16	110,67	137,49	113,61



Lithuania

GENERAL INFORMATION

Population	3 mln
Population density	53 person / km ²
Total area	6530 1000 ha
Utilised agricultural area	2888 1000 ha
Wooded area	2005 1000 ha
Other	1637 1000 ha



MAIN AGRICULTURAL INDICATORS

Arable land	1857 1000 ha	Agricultural production system	Extensive
Fallow land	164 1000 ha	Cereal yield	2,78 t / ha
Permanent crops	42 1000 ha	Fertilizers consumption	54,54 t AI / 1000 ha (*)
Permanent grassland	970 1000 ha	Pesticides consumption	0,19 t AI / 1000 ha (*)
Import / export balance		Number of agricultural holdings	272,11 1000
Cereal	247 1000 ton	Average farm size	10,42 ha
Pork	4 1000 ton		
Beef	8 1000 ton		

(*) AI - Active Ingredients

data average 2000-2004, EUROSTAT

MAIN ASSUMPTIONS

Starting Point		Scenario S1	Scenario S2
Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.	Food consumption change	% GE (*) 4	4
	Yield increase	% 30	20
	Fallow land conversion	% 100	100
	Permanent grassland conversion	% 3	0

(*) GE - Grain Equivalent

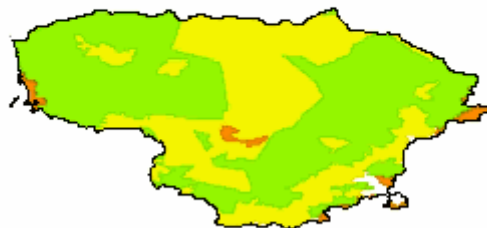
ENERGY CROPS YIELDS

Energy crops yields for three soil qualities per respective scenario

Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Willow	12,50	9,00	7,00	Willow	17,50	12,60	9,80
Poplar	12,50	9,00	7,00	Poplar	15,60	11,20	8,80
Miscanthus	17,00	11,00	9,00	Miscanthus	27,20	17,60	14,40
Triticale	12,00	9,00	7,00	Triticale	12,60	9,50	7,40

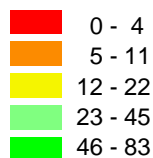
Soils:	Scenario S2			Low heat value:	
	good	average	poor		
Willow	12,25	8,82	6,86	Willow, poplar, eucalyptus	18,8 GJ / t DM
Poplar	10,92	7,84	6,16	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM
Miscanthus	19,04	12,32	10,08	Triticale - whole crop	17,2 GJ / t DM
Triticale	8,82	6,65	5,18		

ENERGY CROPS SUITABILITY
Willow

Poplar

Miscanthus

AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS
Starting Point

SP: Energy crop potential in PJ / year

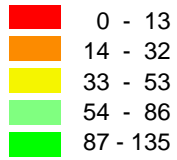


SP: Energy crop regional specific potential in GJ / ha * year



Scenario S1

S1: Energy crop potential in PJ / year

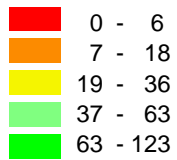


SP: Energy crop regional specific potential in GJ / ha * year

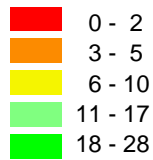


Scenario S2

S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

	Starting Point				Scenario S1				Scenario S2			
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
LT	164,46	21,64	27,23	19,80	520,86	107,08	148,92	73,02	393,79	52,24	72,92	35,66
TOTAL:	164,46	21,64	27,23	19,80	520,86	107,08	148,92	73,02	393,79	52,24	72,92	35,66


Luxembourg
GENERAL INFORMATION

Population	1	mln
Population density	175	person / km ²
Total area	259	1000 ha
Utilised agricultural area	129	1000 ha
Wooded area	88	1000 ha
Other	41	1000 ha


MAIN AGRICULTURAL INDICATORS

Arable land	63	1000 ha	Agricultural production system	Intensive
Fallow land	2	1000 ha	Cereal yield	5,45 t / ha
Permanent crops	1	1000 ha	Fertilizers consumption	190,64 t AI / 1000 ha (*)
Permanent grassland	65	1000 ha	Pesticides consumption	2,40 t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	2,45 1000
Cereal	0	1000 ton	Average farm size	56,38 ha
Pork	0	1000 ton		
Beef	0	1000 ton		

(*) AI - Active Ingredients

data average 2000-2004, EUROSTAT

MAIN ASSUMPTIONS

Starting Point			Scenario S1	Scenario S2
Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.				
Food consumption change	% GE (*)	7	7	
Yield increase	%	10	7	
Fallow land conversion	%	100	100	
Permanent grassland conversion	%	0	0	

(*) GE - Grain Equivalent

ENERGY CROPS YIELDS

Energy crops yields for three soil qualities per respective scenario

Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Willow	12,00	10,00	10,00	Willow	16,80	14,00	14,00
Poplar	15,00	10,00	10,00	Poplar	18,80	12,50	12,50
Miscanthus	25,00	16,00	8,00	Miscanthus	40,00	25,60	12,80
Triticale	15,00	12,00	10,00	Triticale	15,80	12,60	10,50

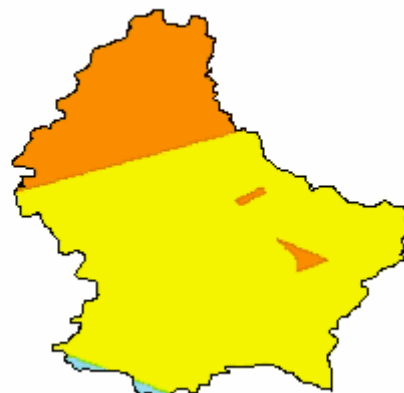
Soils:	Scenario S2			Low heat value:	
	good	average	poor		
Willow	11,76	9,80	9,80	Willow, poplar, eucalyptus	18,8 GJ / t DM
Poplar	13,16	8,75	8,75	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM
Miscanthus	28,00	17,92	8,96	Triticale - whole crop	17,2 GJ / t DM
Triticale	11,06	8,82	7,35		

ENERGY CROPS SUITABILITY

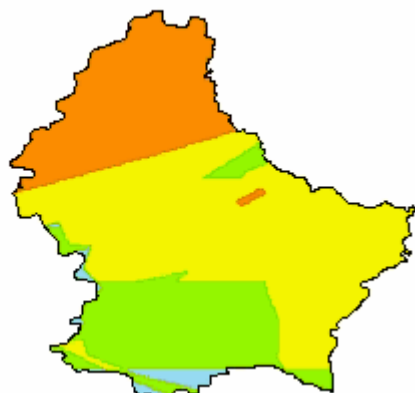
Willow



Poplar



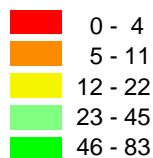
Miscanthus



AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS

Starting Point

SP: Energy crop potential in PJ / year

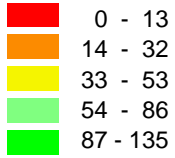


SP: Energy crop regional specific potential in GJ / ha * year

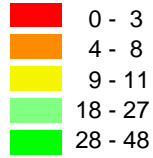


Scenario S1

S1: Energy crop potential in PJ / year

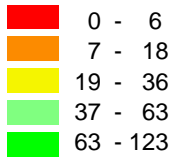


SP: Energy crop regional specific potential in GJ / ha * year

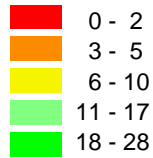


Scenario S2

S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

	Starting Point			Scenario S1				Scenario S2				
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
LU	1,74	0,46	0,41	0,31	5,46	0,94	1,27	0,71	1,87	0,34	0,30	0,26
TOTAL:	1,74	0,46	0,41	0,31	5,46	0,94	1,27	0,71	1,87	0,34	0,30	0,26

Latvia
GENERAL INFORMATION

Population	2	mln
Population density	37	person / km ²
Total area	6459	1000 ha
Utilised agricultural area	1951	1000 ha
Wooded area	2869	1000 ha
Other	1639	1000 ha


MAIN AGRICULTURAL INDICATORS

Arable land	1327	1000 ha	Agricultural production system	Extensive
Fallow land	97	1000 ha	Cereal yield	2,25 t / ha
Permanent crops	12	1000 ha	Fertilizers consumption	29,30 t AI / 1000 ha (*)
Permanent grassland	612	1000 ha	Pesticides consumption	0,13 t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	126,61 1000
Cereal	55	1000 ton	Average farm size	22,00 ha
Pork	-10	1000 ton		
Beef	-3	1000 ton		

(*) AI - Active Ingredients

data average 2000-2004, EUROSTAT

MAIN ASSUMPTIONS

Starting Point Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.	Food consumption change	% GE (*)	Scenario S1	Scenario S2
	Yield increase	%	0	0
	Fallow land conversion	%	30	20
	Permanent grassland conversion	%	100	100
		%	0	0

(*) GE - Grain Equivalent

ENERGY CROPS YIELDS

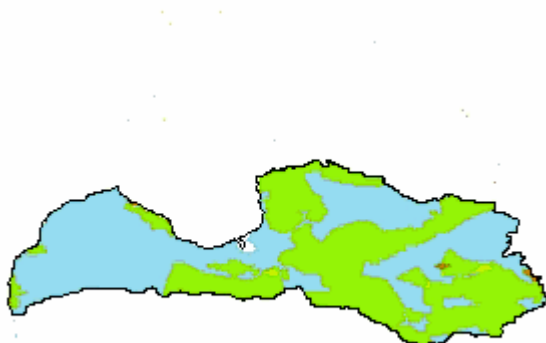
Energy crops yields for three soil qualities per respective scenario

Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Willow	12,50	9,00	7,00	Willow	17,50	12,60	9,80
Poplar	12,50	9,00	7,00	Poplar	15,60	11,20	8,80
Miscanthus	17,00	11,00	9,00	Miscanthus	27,20	17,60	14,40
Triticale	12,00	9,00	7,00	Triticale	12,60	9,50	7,40

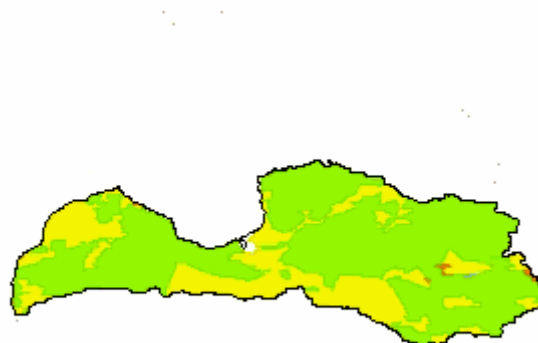
Soils:	Scenario S2			Low heat value:	
	good	average	poor		
Willow	12,25	8,82	6,86	Willow, poplar, eucalyptus	18,8 GJ / t DM
Poplar	10,92	7,84	6,16	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM
Miscanthus	19,04	12,32	10,08	Triticale - whole crop	17,2 GJ / t DM
Triticale	8,82	6,65	5,18		

ENERGY CROPS SUITABILITY

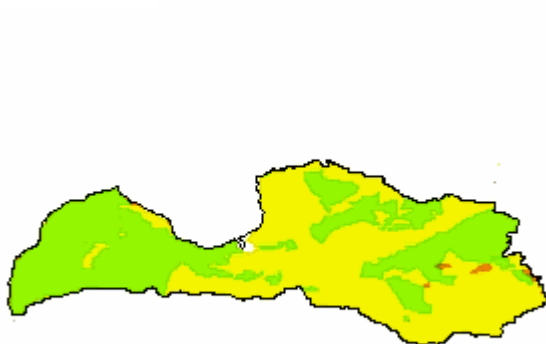
Willow



Poplar



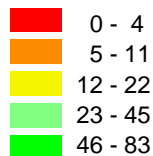
Miscanthus



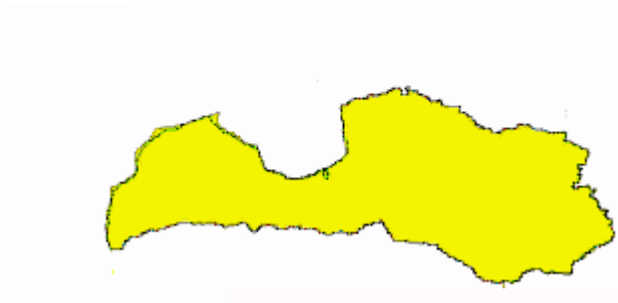
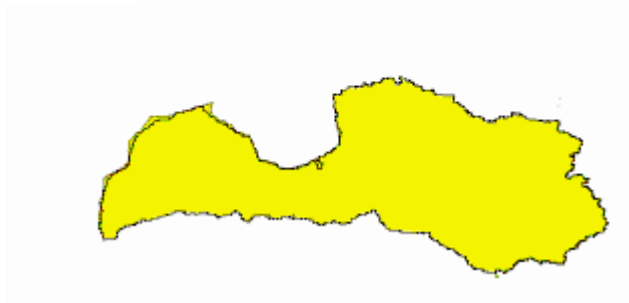
AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS

Starting Point

SP: Energy crop potential in PJ / year

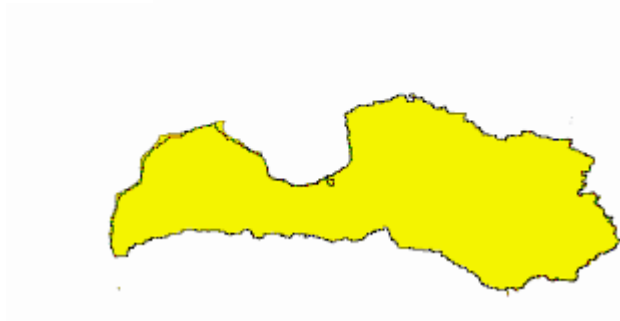
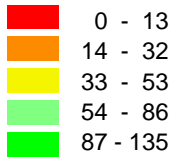


SP: Energy crop regional specific potential in GJ / ha * year

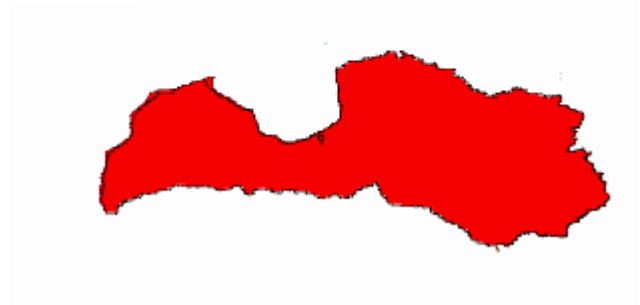
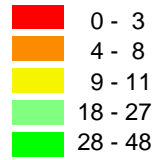


Scenario S1

S1: Energy crop potential in PJ / year

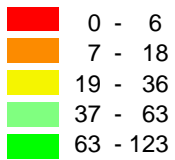


SP: Energy crop regional specific potential in GJ / ha * year

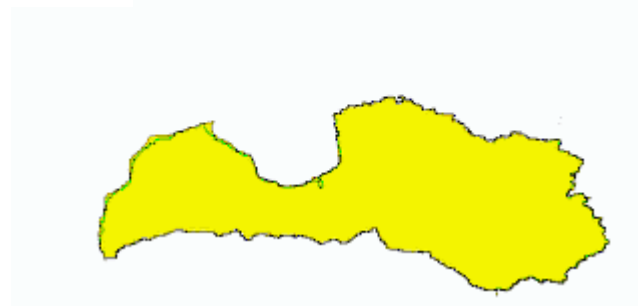
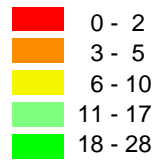


Scenario S2

S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

	Starting Point			Scenario S1				Scenario S2				
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
LV	97,30	12,80	16,11	11,71	284,23	60,18	83,54	41,00	234,42	33,52	46,72	22,87
TOTAL:	97,30	12,80	16,11	11,71	284,23	60,18	83,54	41,00	234,42	33,52	46,72	22,87



Netherlands

GENERAL INFORMATION

Population	16	mln
Population density	482	person / km ²
Total area	3986	1000 ha
Utilised agricultural area	1937	1000 ha
Wooded area	350	1000 ha
Other	1698	1000 ha



MAIN AGRICULTURAL INDICATORS

Arable land	1045	1000 ha	Agricultural production system	Intensive
Fallow land	27	1000 ha	Cereal yield	7,47 t / ha
Permanent crops	32	1000 ha	Fertilizers consumption	213,47 t AI / 1000 ha (*)
Permanent grassland	845	1000 ha	Pesticides consumption	2,60 t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	85,50 1000
Cereal	-5592	1000 ton	Average farm size	25,62 ha
Pork	486	1000 ton		
Beef	108	1000 ton		

(*) AI - Active Ingredients

data average 2000-2004, EUROSTAT

MAIN ASSUMPTIONS

Starting Point

Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.

		Scenario S1	Scenario S2
Food consumption change	% GE (*)	9	9
Yield increase	%	10	7
Fallow land conversion	%	100	100
Permanent grassland conversion	%	5	0

(*) GE - Grain Equivalent

ENERGY CROPS YIELDS

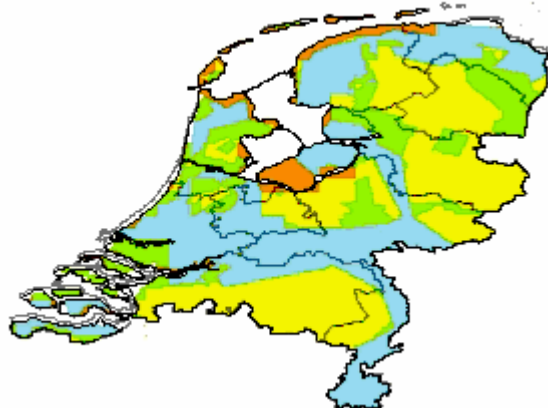
Energy crops yields for three soil qualities per respective scenario

Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Willow	12,00	10,00	10,00	Willow	16,80	14,00	14,00
Poplar	15,00	10,00	10,00	Poplar	18,80	12,50	12,50
Miscanthus	25,00	16,00	8,00	Miscanthus	40,00	25,60	12,80
Triticale	15,00	12,00	10,00	Triticale	15,80	12,60	10,50

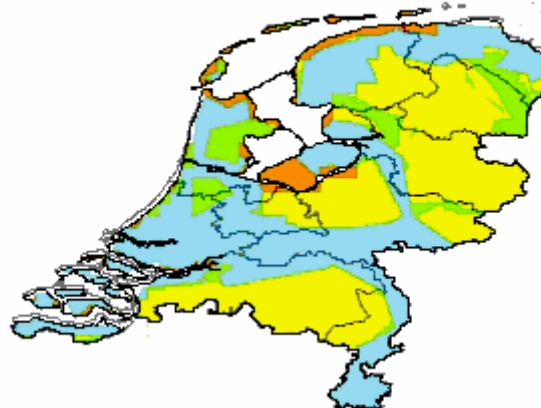
Soils:	Scenario S2			Low heat value:	
	good	average	poor		
Willow	11,76	9,80	9,80	Willow, poplar, eucalyptus	18,8 GJ / t DM
Poplar	13,16	8,75	8,75	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM
Miscanthus	28,00	17,92	8,96	Triticale - whole crop	17,2 GJ / t DM
Triticale	11,06	8,82	7,35		

ENERGY CROPS SUITABILITY

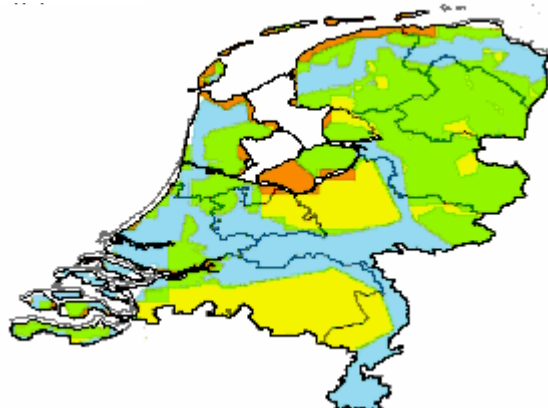
Willow



Poplar



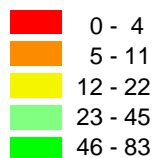
Miscanthus



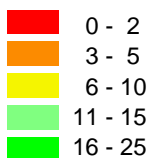
AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS

Starting Point

SP: Energy crop potential in PJ / year

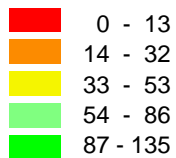


SP: Energy crop regional specific potential in GJ / ha * year

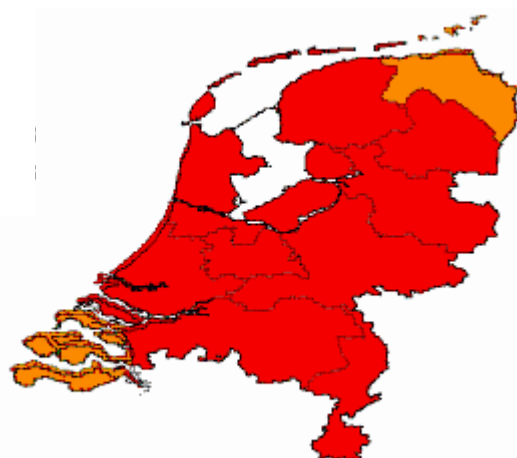
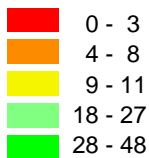


Scenario S1

S1: Energy crop potential in PJ / year

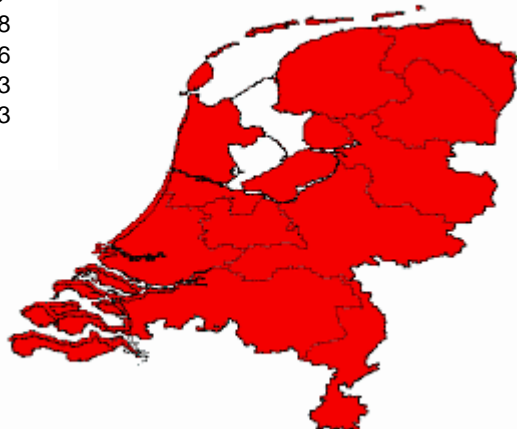
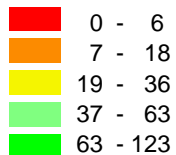


SP: Energy crop regional specific potential in GJ / ha * year



Scenario S2

S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



- NL11, Groningen
- NL12, Friesland
- NL13, Drenthe
- NL21, Overijssel
- NL22, Gelderland
- NL23, Flevoland

- NL31, Utrecht
- NL32, Noord-Holland
- NL33, Zuid-Holland
- NL34, Zeeland
- NL41, Noord-Brabant
- NL42, Limburg (NL)



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

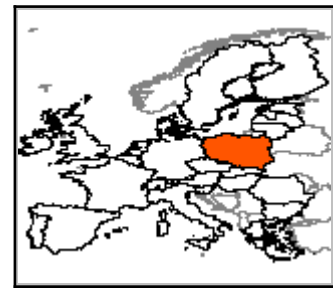
(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

	Starting Point				Scenario S1				Scenario S2			
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
NL11	4,96	0,93	0,73	0,85	9,21	1,99	2,19	1,53	4,30	0,58	0,50	0,47
NL12	1,30	0,24	0,19	0,22	10,82	2,49	2,60	1,92	0,78	0,09	0,05	0,08
NL13	2,18	0,41	0,32	0,37	6,39	1,29	1,48	0,99	1,79	0,15	0,07	0,14
NL21	1,22	0,23	0,18	0,21	8,00	2,00	2,20	1,56	0,72	-0,03	-0,10	-0,02
NL22	2,50	0,47	0,37	0,43	10,68	2,54	2,78	1,98	2,52	0,13	0,04	0,11
NL23	1,36	0,26	0,20	0,23	2,23	0,49	0,58	0,36	0,84	0,11	0,07	0,12
NL31	0,34	0,06	0,05	0,06	3,17	0,74	0,75	0,57	0,34	0,06	0,06	0,04
NL32	2,12	0,40	0,31	0,36	5,79	1,32	1,42	1,01	1,64	0,24	0,20	0,20
NL33	2,00	0,38	0,29	0,34	6,04	1,40	1,49	1,07	1,44	0,22	0,18	0,19
NL34	2,94	0,55	0,43	0,51	4,37	0,99	1,16	0,75	1,92	0,29	0,21	0,25
NL41	4,02	0,76	0,59	0,69	8,31	2,07	2,50	1,63	4,21	0,17	0,00	0,15
NL42	2,26	0,42	0,33	0,39	4,55	0,96	1,13	0,74	2,74	0,18	0,11	0,16
TOTAL:	27,20	5,11	4,00	4,68	79,56	18,29	20,29	14,10	23,25	2,20	1,38	1,88

Poland
GENERAL INFORMATION

Population	38	mln
Population density	122	person / km ²
Total area	31269	1000 ha
Utilised agricultural area	17240	1000 ha
Wooded area	9070	1000 ha
Other	4958	1000 ha


MAIN AGRICULTURAL INDICATORS

Arable land	13302	1000 ha	Agricultural production system	Extensive
Fallow land	1761	1000 ha	Cereal yield	3,07 t / ha
Permanent crops	275	1000 ha	Fertilizers consumption	91,10 t AI / 1000 ha (*)
Permanent grassland	3671	1000 ha	Pesticides consumption	0,59 t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	2 163,36 1000
Cereal	-783	1000 ton	Average farm size	7,87 ha
Pork	46	1000 ton		
Beef	36	1000 ton		

(*) AI - Active Ingredients

data average 2000-2004, EUROSTAT

MAIN ASSUMPTIONS

Starting Point Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.	Food consumption change	% GE (*)	Scenario S1	Scenario S2
	Yield increase	%	10	10
	Fallow land conversion	%	30	20
	Permanent grassland conversion	%	100	100
		%	5	0

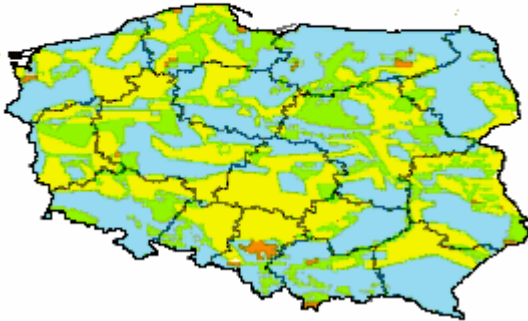
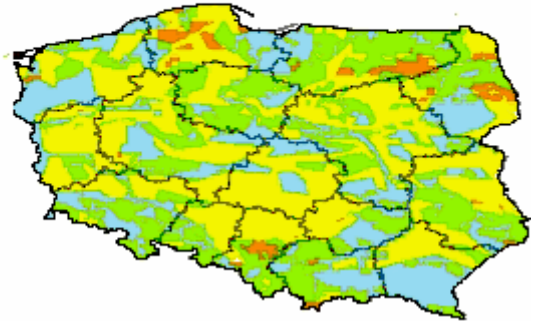
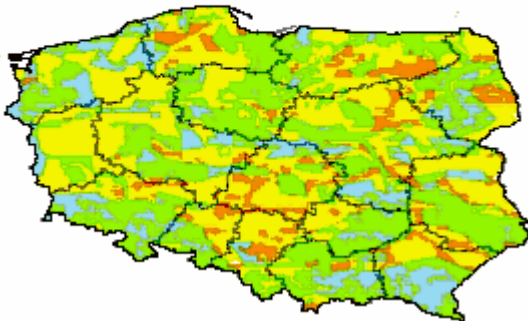
(*) GE - Grain Equivalent

ENERGY CROPS YIELDS

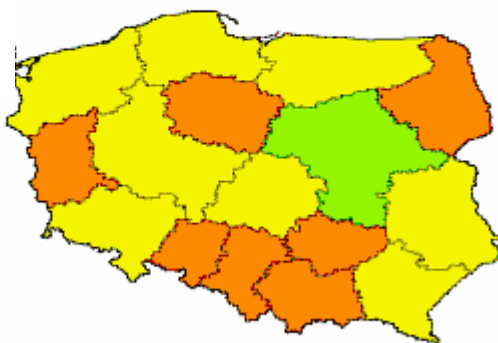
Energy crops yields for three soil qualities per respective scenario

Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Willow	12,50	9,00	7,00	Willow	17,50	12,60	9,80
Poplar	12,50	9,00	7,00	Poplar	15,60	11,20	8,80
Miscanthus	17,00	11,00	9,00	Miscanthus	27,20	17,60	14,40
Triticale	12,00	9,00	7,00	Triticale	12,60	9,50	7,40

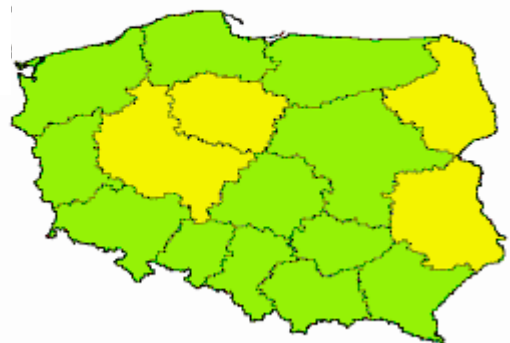
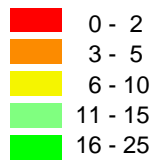
Soils:	Scenario S2			Low heat value:	
	good	average	poor		
Willow	12,25	8,82	6,86	Willow, poplar, eucalyptus	18,8 GJ / t DM
Poplar	10,92	7,84	6,16	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM
Miscanthus	19,04	12,32	10,08	Triticale - whole crop	17,2 GJ / t DM
Triticale	8,82	6,65	5,18		

ENERGY CROPS SUITABILITY
Willow

Poplar

Miscanthus

AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS
Starting Point

SP: Energy crop potential in PJ / year

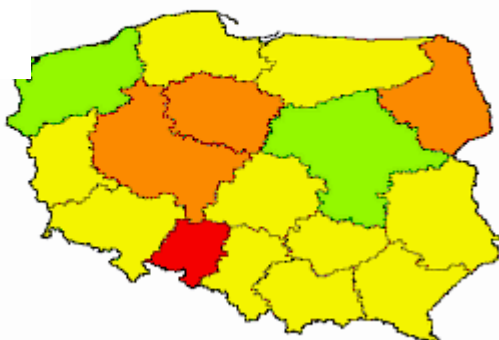
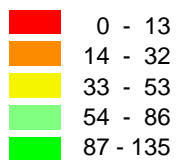


SP: Energy crop regional specific potential in GJ / ha * year

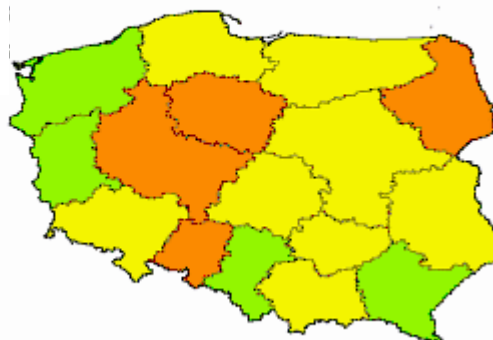


Scenario S1

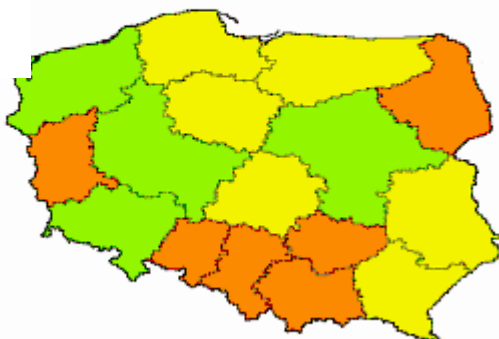
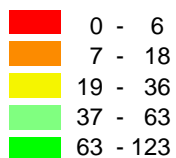
S1: Energy crop potential in PJ / year



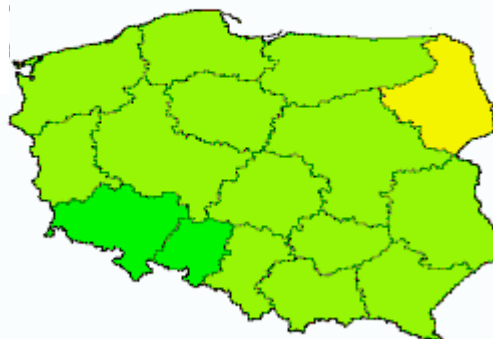
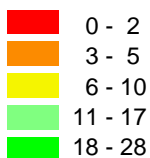
SP: Energy crop regional specific potential in GJ / ha * year


Scenario S2

S2: Energy crop potential in PJ / year

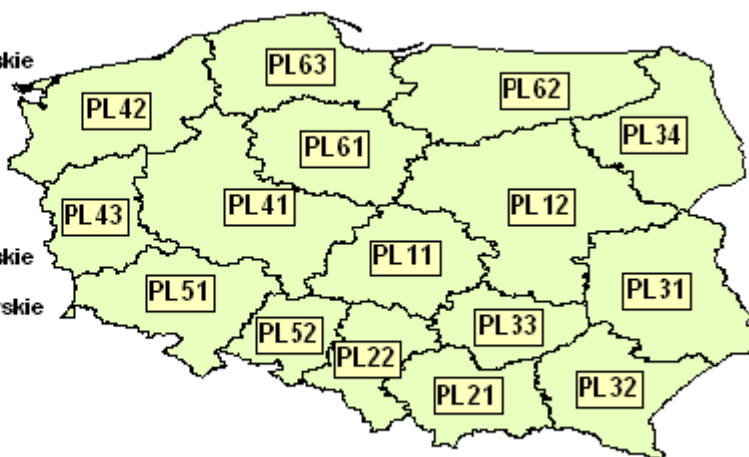


S2: Energy crop regional specific potential in GJ / ha * year



- PL11, Łódzkie
- PL12, Mazowieckie
- PL21, Małopolskie
- PL22, Śląskie
- PL31, Lubelskie
- PL32, Podkarpackie
- PL33, Świętokrzyskie
- PL34, Podlaskie

- PL41, Wielkopolskie
- PL42, Zachodniopomorskie
- PL43, Lubuskie
- PL51, Dolnośląskie
- PL52, Opolskie
- PL61, Kujawsko-Pomorskie
- PL62, Warmińsko-Mazurskie
- PL63, Pomorskie



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

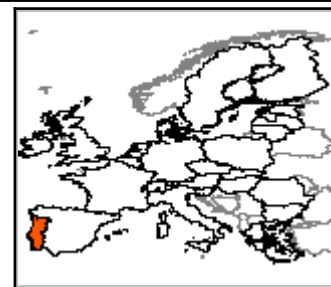
(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

	Starting Point				Scenario S1				Scenario S2			
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
PL11	90,58	11,92	15,00	10,91	255,72	38,82	54,38	26,50	196,16	19,46	27,38	13,27
PL12	217,84	28,67	36,07	26,23	503,35	78,27	110,19	53,39	394,00	40,83	57,73	27,87
PL21	89,86	11,83	14,88	10,82	179,84	30,52	43,06	21,02	142,56	16,04	22,72	11,03
PL22	112,18	14,76	18,58	13,51	183,98	30,91	43,80	21,27	157,60	17,92	25,51	12,33
PL31	101,94	13,42	16,88	12,27	333,53	49,98	69,85	33,37	252,30	24,04	33,74	16,11
PL32	149,90	19,73	24,82	18,05	240,43	41,55	58,93	28,52	203,28	23,81	33,88	16,34
PL33	84,80	11,16	14,04	10,21	177,55	27,51	38,81	18,73	143,46	14,99	21,24	10,22
PL34	62,58	8,24	10,36	7,53	188,81	27,59	38,78	18,88	134,45	12,84	18,10	8,78
PL41	71,26	9,38	11,80	8,58	324,90	56,67	78,58	37,69	235,56	24,80	34,50	16,52
PL42	193,88	25,51	32,11	23,34	299,98	60,49	85,37	41,41	245,67	33,66	47,78	23,09
PL43	112,30	14,78	18,60	13,52	151,20	30,06	42,65	20,69	129,99	17,60	25,08	12,12
PL51	133,12	17,52	22,04	16,03	325,20	56,71	79,41	38,42	261,57	28,65	40,36	19,47
PL52	28,42	3,74	4,71	3,42	155,86	25,60	35,42	17,10	69,60	11,15	15,48	7,46
PL61	49,56	6,52	8,21	5,97	256,74	37,99	52,66	24,88	187,82	16,94	23,57	11,14
PL62	151,96	20,00	25,16	18,30	304,89	49,72	70,20	34,19	243,76	26,58	37,71	18,29
PL63	111,30	14,65	18,43	13,40	246,92	39,62	55,73	26,99	198,78	21,04	29,76	14,37
TOTAL:	1 761,48	231,81	291,70	212,08	4 128,90	682,00	957,82	463,06	3 196,55	350,33	494,53	238,39

Portugal
GENERAL INFORMATION

Population	11	mln
Population density	114	person / km ²
Total area	9191	1000 ha
Utilised agricultural area	3828	1000 ha
Wooded area	3465	1000 ha
Other	1898	1000 ha


MAIN AGRICULTURAL INDICATORS

Arable land	1577	1000 ha	Agricultural production system	Intensive
Fallow land	542	1000 ha	Cereal yield	2,76 t / ha
Permanent crops	769	1000 ha	Fertilizers consumption	58,39 t AI / 1000 ha (*)
Permanent grassland	1460	1000 ha	Pesticides consumption	3,48 t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	359,25 1000
Cereal	-2912	1000 ton	Average farm size	13,61 ha
Pork	-95	1000 ton		
Beef	-58	1000 ton		

(*) AI - Active Ingredients

data average 2000-2004, EUROSTAT

MAIN ASSUMPTIONS

Starting Point		Scenario S1	Scenario S2
Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.	Food consumption change	% GE (*) 11	11
	Yield increase	% 10	7
	Fallow land conversion	% 100	100
	Permanent grassland conversion	% 0	0

(*) GE - Grain Equivalent

ENERGY CROPS YIELDS

Energy crops yields for three soil qualities per respective scenario

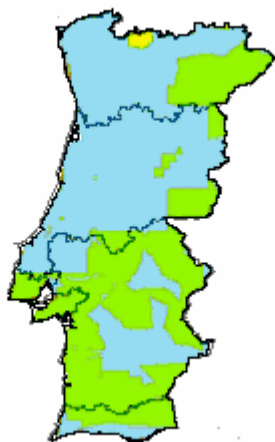
Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Eucalyptus	8,40	7,00	5,60	Eucalyptus	11,80	9,80	7,80
Triticale	9,40	7,90	6,30	Triticale	13,20	11,00	8,80
Switchgrass	10,70	8,90	7,10	Switchgrass	14,90	12,40	10,00

Soils:	Scenario S2			Low heat value:	
	good	average	poor		
Eucalyptus	8,20	6,90	5,50	Willow, poplar, eucalyptus	18,8 GJ / t DM
Triticale	9,20	7,70	6,10	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM
Switchgrass	10,00	8,70	7,00	Triticale - whole crop	17,2 GJ / t DM

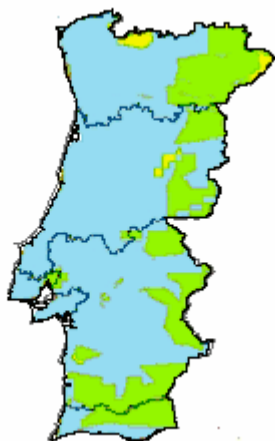
For some NUTS-2 regions of unfavorable agro-climatic conditions the yields were reduced with app. 20%

ENERGY CROPS SUITABILITY

Eucalyptus



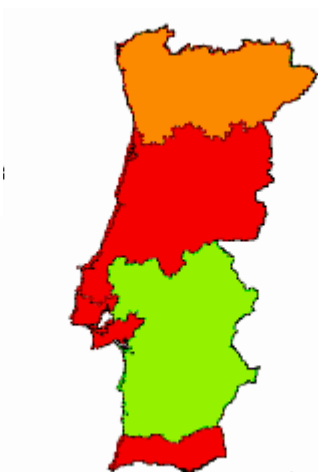
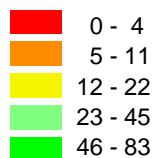
Switchgrass



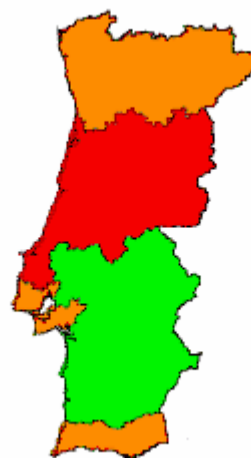
AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS

Starting Point

SP: Energy crop potential in PJ / year

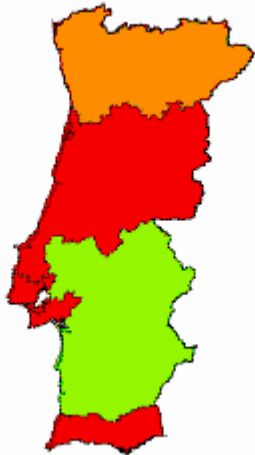
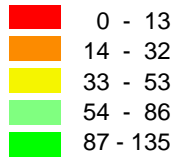


SP: Energy crop regional specific potential in GJ / ha * year

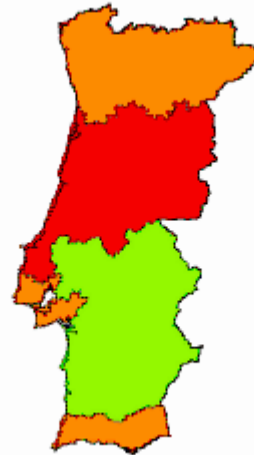
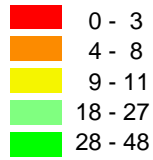


Scenario S1

S1: Energy crop potential in PJ / year

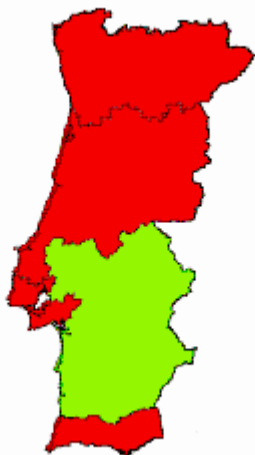


SP: Energy crop regional specific potential in GJ / ha * year

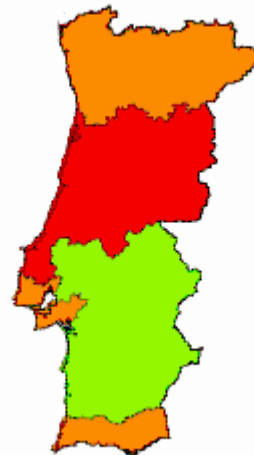
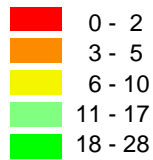


Scenario S2

S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



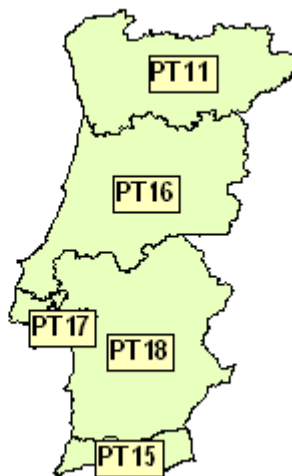
PT11, Norte

PT15, Algarve

PT16, Centro (P)

PT17, Lisboa

PT18, Alentejo



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

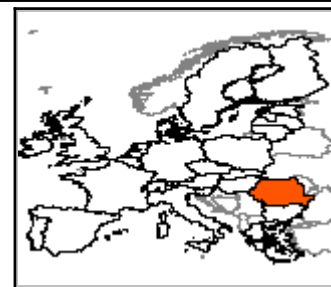
(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

	Starting Point				Scenario S1				Scenario S2			
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
PT11	50,60	5,33	6,62	5,48	50,10	7,46	8,72	7,21	46,09	7,46	8,24	6,82
PT15	21,28	1,79	2,23	1,84	21,92	2,51	3,09	2,56	21,44	2,51	3,00	2,48
PT16	36,92	3,11	3,87	3,20	37,37	4,36	4,90	4,06	30,14	4,36	3,24	2,68
PT17	9,12	0,96	1,19	0,99	9,01	1,35	1,59	1,32	8,06	1,35	1,33	1,10
PT18	423,68	44,64	55,45	45,90	444,33	62,50	76,35	63,19	426,91	57,96	71,99	59,59
TOTAL:	541,60	55,84	69,37	57,41	562,73	78,18	94,64	78,34	532,63	73,64	87,80	72,67

Romania
GENERAL INFORMATION

Population	22	mln
Population density	94	person / km ²
Total area	23839	1000 ha
Utilised agricultural area	14816	1000 ha
Wooded area	6619	1000 ha
Other	2404	1000 ha


MAIN AGRICULTURAL INDICATORS

Arable land	9399	1000 ha	Agricultural production system	Extensive
Fallow land	551	1000 ha	Cereal yield	2,43 t / ha
Permanent crops	501	1000 ha	Fertilizers consumption	21,32 t AI / 1000 ha (*)
Permanent grassland	4916	1000 ha	Pesticides consumption	n.d. t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	4 464,95 1000
Cereal	-568	1000 ton	Average farm size	3,51 ha
Pork	-62	1000 ton		
Beef	-6	1000 ton		

data average 2000-2004, EUROSTAT

(*) AI - Active Ingredients

MAIN ASSUMPTIONS

Starting Point		Scenario S1	Scenario S2
Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.	Food consumption change	% GE (*) 5	5
	Yield increase	% 30	20
	Fallow land conversion	% 100	100
	Permanent grassland conversion	% 0	0

(*) GE - Grain Equivalent

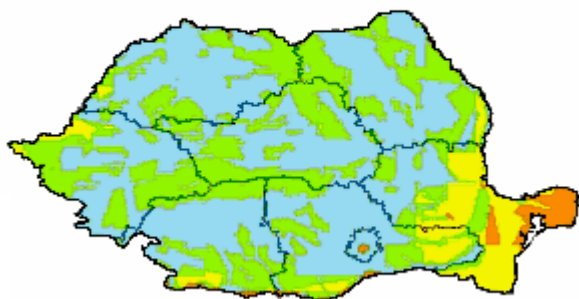
ENERGY CROPS YIELDS

Energy crops yields for three soil qualities per respective scenario

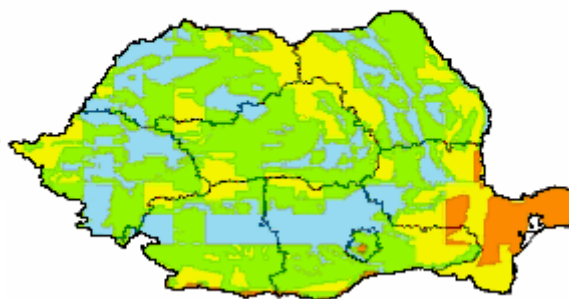
Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Willow	12,50	9,00	7,00	Willow	17,50	12,60	9,80
Poplar	12,50	9,00	7,00	Poplar	15,60	11,20	8,80
Miscanthus	17,00	11,00	9,00	Miscanthus	27,20	17,60	14,40
Triticale	12,00	9,00	7,00	Triticale	12,60	9,50	7,40
Soils:	Scenario S2			Low heat value:			
	good	average	poor		Willow, poplar, eucalyptus	18,8 GJ / t DM	
Willow	12,25	8,82	6,86	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM		
Poplar	10,92	7,84	6,16	Triticale - whole crop	17,2 GJ / t DM		
Miscanthus	19,04	12,32	10,08				
Triticale	8,82	6,65	5,18				

ENERGY CROPS SUITABILITY

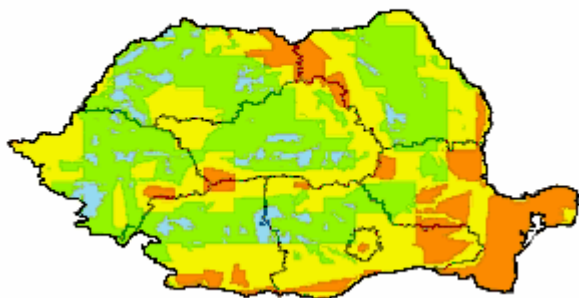
Willow



Poplar



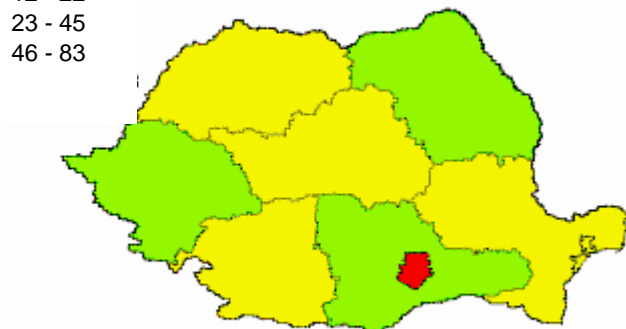
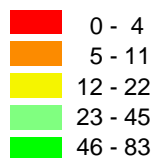
Miscanthus



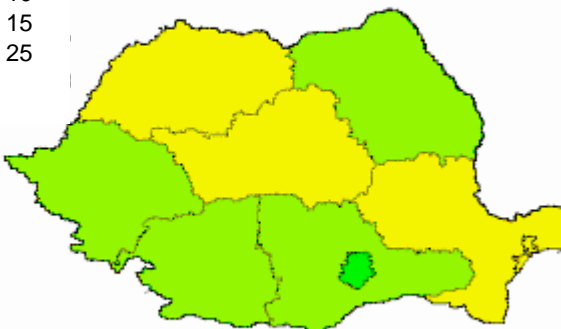
AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS

Starting Point

SP: Energy crop potential in PJ / year

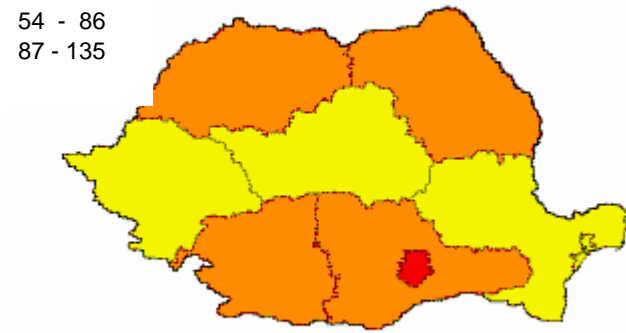
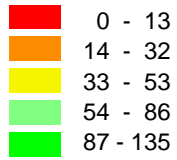


SP: Energy crop regional specific potential in GJ / ha * year

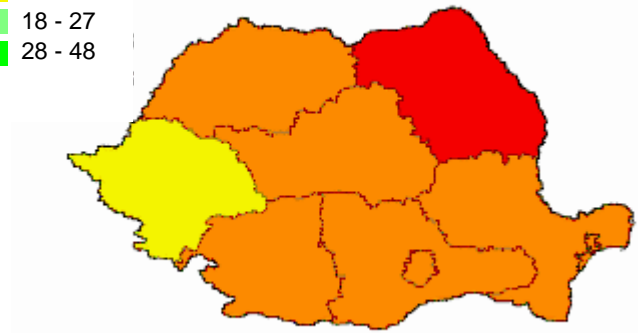
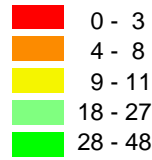


Scenario S1

S1: Energy crop potential in PJ / year

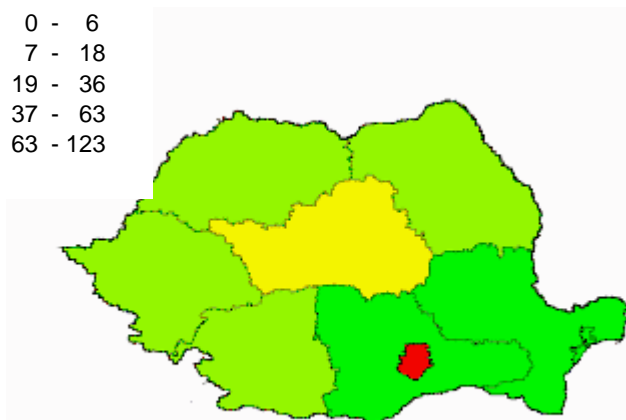
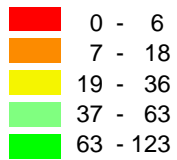


SP: Energy crop regional specific potential in GJ / ha * year

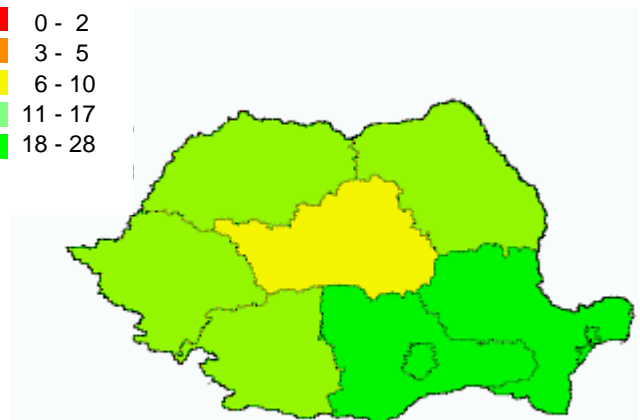
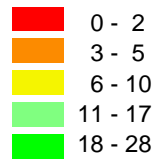


Scenario S2

S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



R001, Nord-Est

R002, Sud-Est

R003, Sud

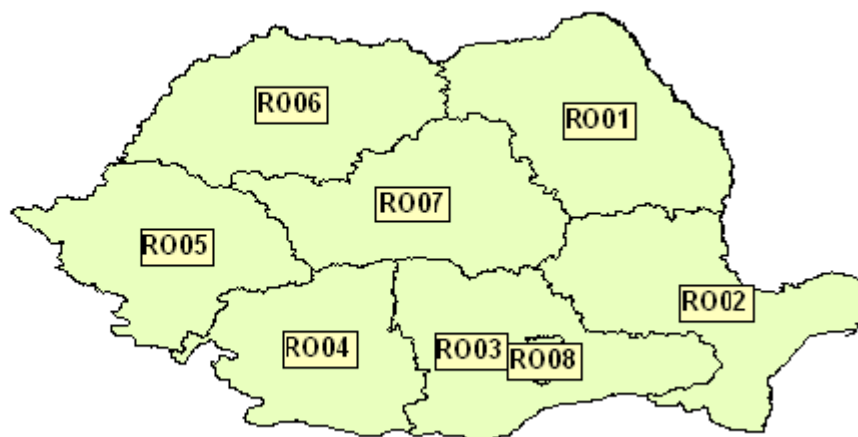
R004, Sud-Vest

R005, Vest

R006, Nord-Vest

R007, Centru

R008, Bucuresti



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

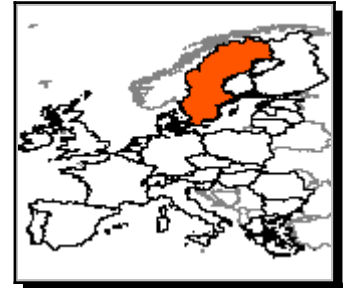
	Starting Point				Scenario S1				Scenario S2			
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
RO01	39,95	5,26	6,62	4,81	323,75	80,45	124,15	61,81	234,29	37,29	57,65	28,65
RO02	90,13	11,86	14,93	10,85	501,80	115,43	178,48	89,36	201,37	26,83	41,93	20,70
RO03	57,98	7,63	9,60	6,98	483,89	113,73	175,52	88,15	341,04	52,77	81,59	40,89
RO04	59,90	7,88	9,92	7,21	300,20	73,62	113,86	57,05	219,09	35,12	54,45	27,20
RO05	125,30	16,49	20,75	15,09	344,60	72,77	113,24	56,24	277,65	37,53	58,64	28,99
RO06	81,28	10,70	13,46	9,79	277,71	59,88	92,95	46,19	216,53	29,96	46,67	23,10
RO07	89,70	11,80	14,85	10,80	224,68	44,55	69,45	34,20	182,35	23,54	36,86	18,07
RO08	7,00	0,92	1,16	0,84	27,94	6,39	9,90	4,95	20,74	3,12	4,86	2,42
TOTAL:	551,24	72,54	91,29	66,37	2 484,58	566,82	877,56	437,95	1 693,05	246,16	382,65	190,02



Sweden

GENERAL INFORMATION

Population	9	mln
Population density	22	person / km ²
Total area	42619	1000 ha
Utilised agricultural area	3119	1000 ha
Wooded area	22560	1000 ha
Other	16939	1000 ha



MAIN AGRICULTURAL INDICATORS

Arable land	2679	1000 ha	Agricultural production system	Intensive
Fallow land	264	1000 ha	Cereal yield	4,70 t / ha
Permanent crops	3	1000 ha	Fertilizers consumption	91,29 t AI / 1000 ha (*)
Permanent grassland	443	1000 ha	Pesticides consumption	0,71 t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	67,63 1000
Cereal	1118	1000 ton	Average farm size	99,93 ha
Pork	-22	1000 ton		
Beef	-36	1000 ton		

(*) AI - Active Ingredients

data average 2000-2004, EUROSTAT

MAIN ASSUMPTIONS

Starting Point Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.	Food consumption change	% GE (*)	Scenario S1	Scenario S2
	Yield increase	%	13	13
	Fallow land conversion	%	10	7
	Permanent grassland conversion	%	100	100
		%	0	0

(*) GE - Grain Equivalent

ENERGY CROPS YIELDS

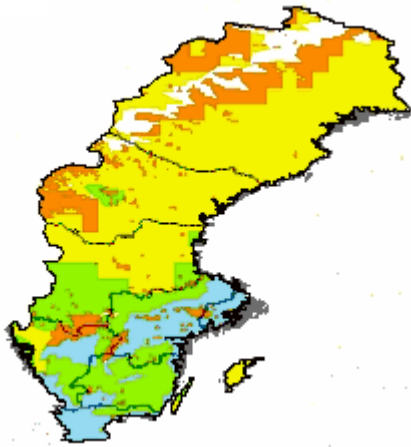
Energy crops yields for three soil qualities per respective scenario

Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Willow	11,00	9,00	7,50	Willow	15,40	12,60	10,50
Poplar	11,00	9,00	7,50	Poplar	13,80	11,25	9,40
Miscanthus	13,00	10,00	8,00	Miscanthus	20,80	16,00	12,80
Reed Canary Grass	10,00	7,50	6,00	Reed Canary G	14,00	10,50	8,40

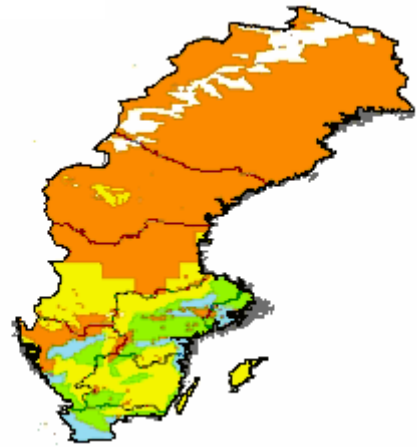
Soils:	Scenario S2			Low heat value:	
	good	average	poor		
Willow	10,78	8,82	7,35	Willow, poplar, eucalyptus	18,8 GJ / t DM
Poplar	9,66	7,88	6,58	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM
Miscanthus	14,56	11,20	8,96	Triticale - whole crop	17,2 GJ / t DM
Reed Canary Grass	9,80	7,35	5,88		

ENERGY CROPS SUITABILITY

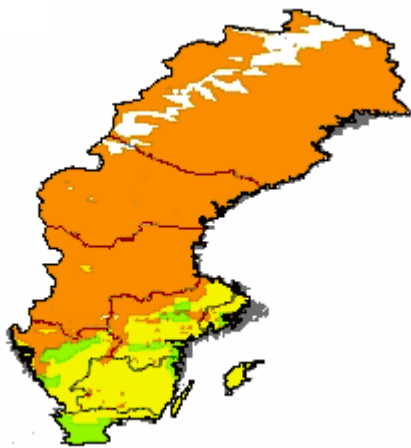
Willow



Poplar



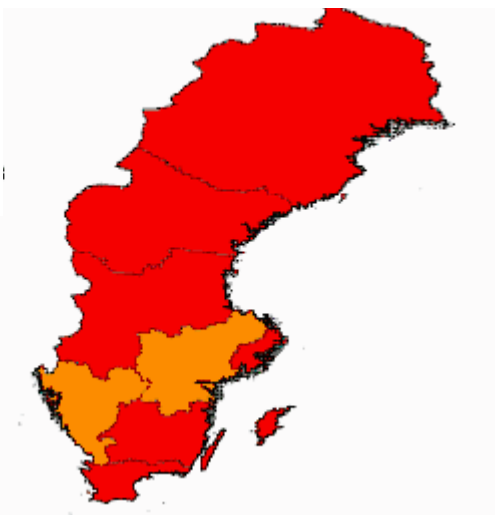
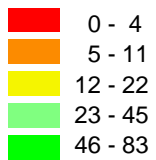
Miscanthus



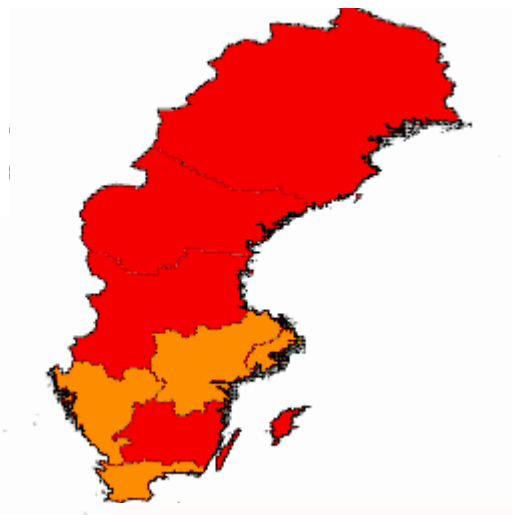
AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS

Starting Point

SP: Energy crop potential in PJ / year

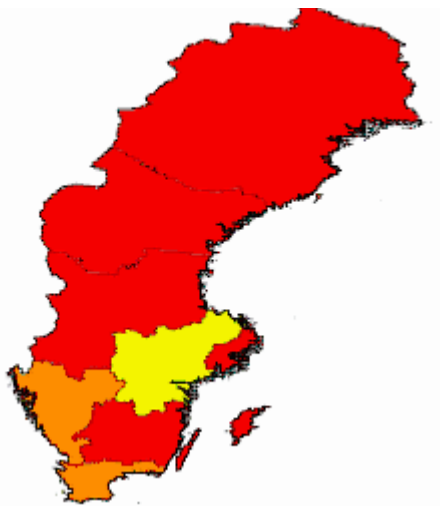
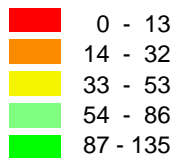


SP: Energy crop regional specific potential in GJ / ha * year

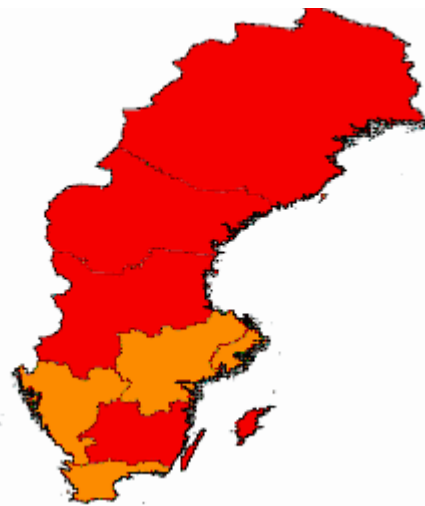


Scenario S1

S1: Energy crop potential in PJ / year

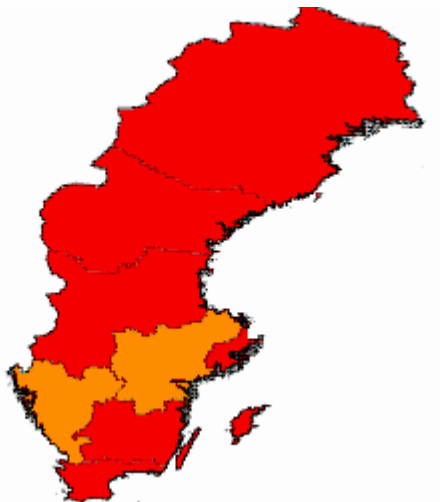
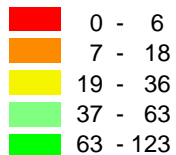


SP: Energy crop regional specific potential in GJ / ha * year

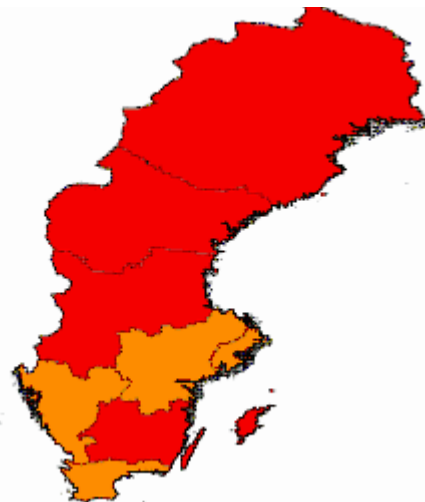


Scenario S2

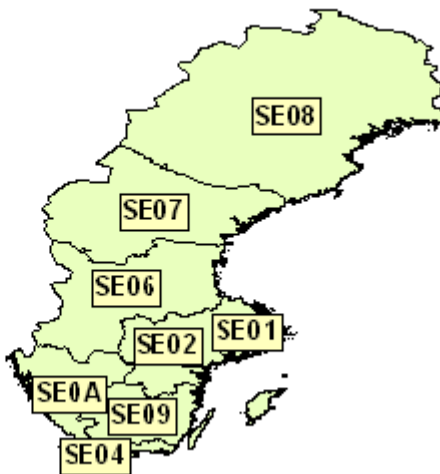
S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



- SE 01, Stockholm
- SE 02, Östra Mellansverige
- SE 04, Sydsverige
- SE 06, Norra Mellansverige
- SE 07, Mellersta Norrland
- SE 08, Övre Norrland
- SE 09, Småland med öarna
- SE 0A, Västsverige



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

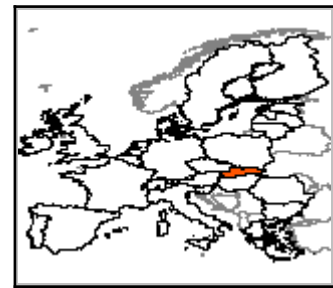
	Starting Point				Scenario S1				Scenario S2			
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
SE01	11,94	1,68	1,32	1,85	14,29	2,66	2,09	2,20	12,43	1,64	1,01	1,10
SE02	100,48	14,17	11,09	15,55	126,43	22,80	17,95	18,90	110,11	13,68	7,96	8,69
SE04	33,24	4,69	3,67	5,15	46,35	7,63	6,00	6,60	34,16	3,36	0,84	1,50
SE06	20,92	2,95	2,31	3,24	23,21	4,06	3,18	3,36	17,24	2,00	1,00	1,17
SE07	3,00	0,42	0,33	0,46	1,10	0,05	0,02	0,04	-1,27	-0,35	-0,33	-0,30
SE08	8,12	1,14	0,90	1,26	6,29	1,02	0,78	0,84	3,67	0,29	0,17	0,23
SE09	22,40	3,16	2,47	3,47	24,67	4,09	3,19	3,42	15,47	1,49	0,35	0,59
SE0A	64,38	9,08	7,11	9,97	80,11	14,48	11,39	12,01	66,16	8,33	4,57	5,05
TOTAL:	264,48	37,29	29,20	40,94	322,46	56,78	44,60	47,36	257,96	30,43	15,56	18,03



Slovakia

GENERAL INFORMATION

Population	5 mln
Population density	110 person / km ²
Total area	4903 1000 ha
Utilised agricultural area	2286 1000 ha
Wooded area	2002 1000 ha
Other	616 1000 ha



MAIN AGRICULTURAL INDICATORS

Arable land	1406 1000 ha	Agricultural production system	Extensive
Fallow land	5 1000 ha	Cereal yield	2,90 t / ha
Permanent crops	32 1000 ha	Fertilizers consumption	52,04 t AI / 1000 ha (*)
Permanent grassland	808 1000 ha	Pesticides consumption	0,62 t AI / 1000 ha (*)
Import / export balance		Number of agricultural holdings	71,73 1000
Cereal	-74 1000 ton	Average farm size	47,90 ha
Pork	-12 1000 ton		
Beef	-1 1000 ton		

data average 2000-2004, EUROSTAT

(*) AI - Active Ingredients

MAIN ASSUMPTIONS

Starting Point

Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.

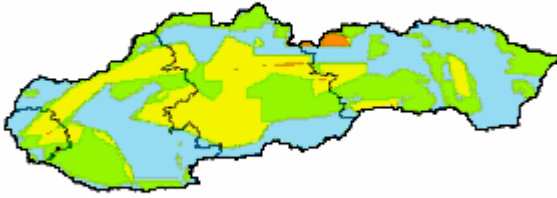
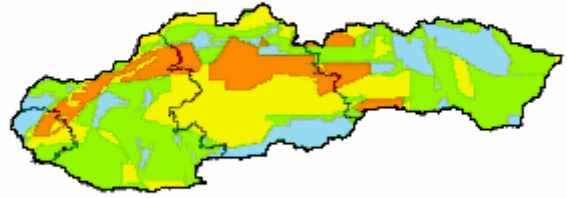
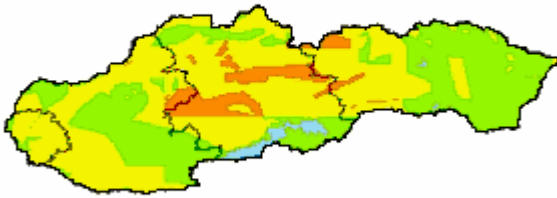
		Scenario S1	Scenario S2
Food consumption change	% GE (*)	8	8
Yield increase	%	30	20
Fallow land conversion	%	100	100
Permanent grassland conversion	%	3	0

(*) GE - Grain Equivalent

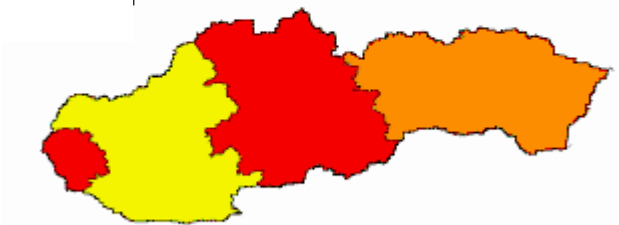
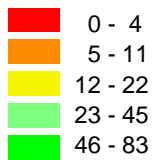
ENERGY CROPS YIELDS

Energy crops yields for three soil qualities per respective scenario

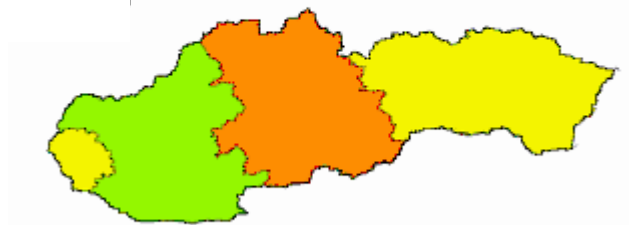
Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Willow	12,50	9,00	7,00	Willow	17,50	12,60	9,80
Poplar	12,50	9,00	7,00	Poplar	15,60	11,20	8,80
Miscanthus	17,00	11,00	9,00	Miscanthus	27,20	17,60	14,40
Triticale	12,00	9,00	7,00	Triticale	12,60	9,50	7,40
Soils:	Scenario S2			Low heat value:			
	good	average	poor				
Willow	12,25	8,82	6,86	Willow, poplar, eucalyptus	18,8 GJ / t DM		
Poplar	10,92	7,84	6,16	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM		
Miscanthus	19,04	12,32	10,08	Triticale - whole crop	17,2 GJ / t DM		
Triticale	8,82	6,65	5,18				

ENERGY CROPS SUITABILITY
Willow

Poplar

Miscanthus

AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS
Starting Point

SP: Energy crop potential in PJ / year

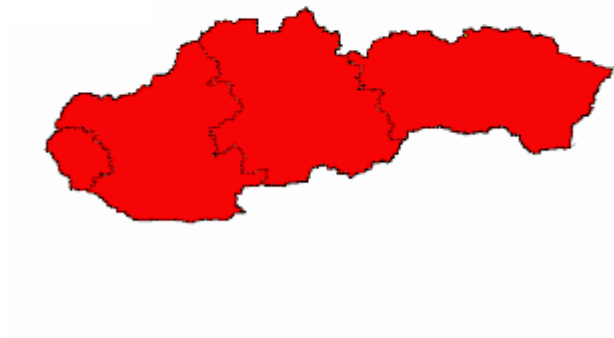
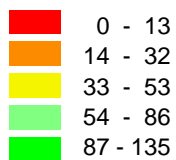


SP: Energy crop regional specific potential in GJ / ha * year

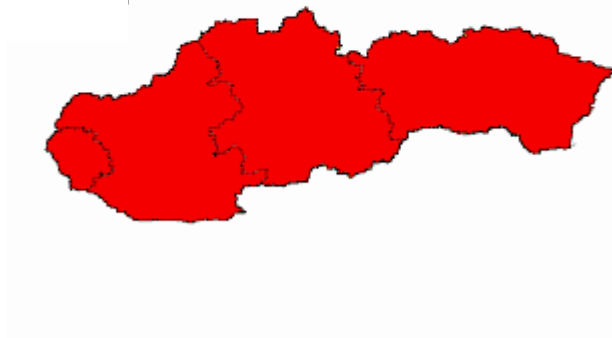


Scenario S1

S1: Energy crop potential in PJ / year

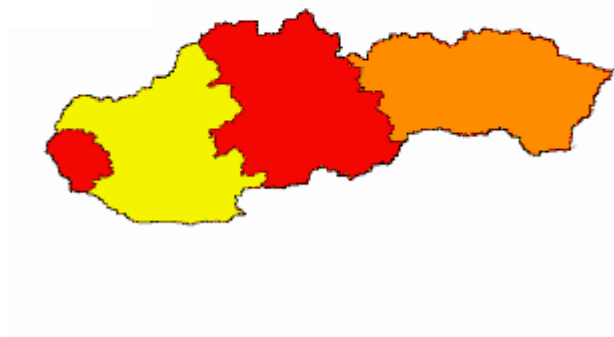
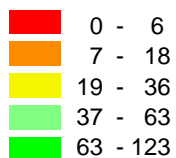


SP: Energy crop regional specific potential in GJ / ha * year

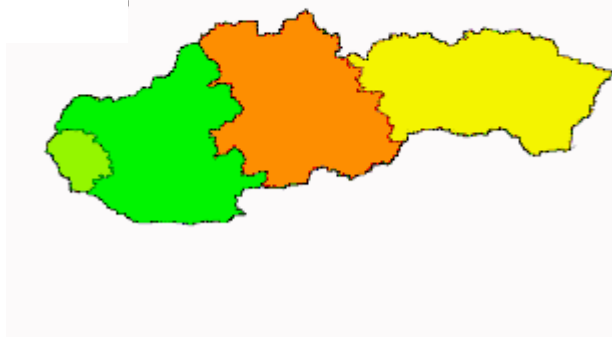


Scenario S2

S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



SK01, Bratislavsky kraj

SK02, Zapadne Slovensko

SK03, Stredne Slovensko

SK04, Vychodne Slovensko



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

	Starting Point				Scenario S1				Scenario S2			
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
SK01	0,38	0,05	0,06	0,05	18,24	3,94	5,39	2,68	12,70	1,80	2,47	1,23
SK02	1,05	0,14	0,17	0,13	166,02	42,43	58,02	28,44	110,10	19,27	26,36	12,92
SK03	0,68	0,09	0,11	0,08	52,37	11,49	15,72	7,86	36,20	5,24	7,17	3,58
SK04	2,50	0,33	0,41	0,30	87,95	19,09	26,13	13,10	61,32	8,76	12,00	6,01
TOTAL:	4,61	0,61	0,76	0,56	324,57	76,95	105,26	52,08	220,33	35,08	48,00	23,74



Slovenia

GENERAL INFORMATION

Population	2	mln
Population density	99	person / km ²
Total area	2027	1000 ha
Utilised agricultural area	506	1000 ha
Wooded area	1270	1000 ha
Other	251	1000 ha



MAIN AGRICULTURAL INDICATORS

Arable land	173	1000 ha	Agricultural production system	Extensive
Fallow land	1	1000 ha	Cereal yield	5,20 t / ha
Permanent crops	29	1000 ha	Fertilizers consumption	146,26 t AI / 1000 ha (*)
Permanent grassland	304	1000 ha	Pesticides consumption	0,79 t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	77,14 1000
Cereal	-362	1000 ton	Average farm size	12,01 ha
Pork	-19	1000 ton		
Beef	4	1000 ton		

data average 2000-2004, EUROSTAT

(*) AI - Active Ingredients

MAIN ASSUMPTIONS

Starting Point

Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.

		Scenario S1	Scenario S2
Food consumption change	% GE (*)	8	8
Yield increase	%	30	20
Fallow land conversion	%	100	100
Permanent grassland conversion	%	3	0

(*) GE - Grain Equivalent

ENERGY CROPS YIELDS

Energy crops yields for three soil qualities per respective scenario

Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Willow	12,50	9,00	7,00	Willow	17,50	12,60	9,80
Poplar	12,50	9,00	7,00	Poplar	15,60	11,20	8,80
Miscanthus	17,00	11,00	9,00	Miscanthus	27,20	17,60	14,40
Triticale	12,00	9,00	7,00	Triticale	12,60	9,50	7,40
Soils:	Scenario S2			Low heat value:			
	good	average	poor				
Willow	12,25	8,82	6,86	Willow, poplar, eucalyptus	18,8	GJ / t DM	
Poplar	10,92	7,84	6,16	Miscanthus, switchgrass (panicum)	18,4	GJ / t DM	
Miscanthus	19,04	12,32	10,08	Triticale - whole crop	17,2	GJ / t DM	
Triticale	8,82	6,65	5,18				

ENERGY CROPS SUITABILITY

Willow



Poplar



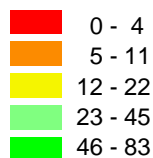
Miscanthus



AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS

Starting Point

SP: Energy crop potential in PJ / year

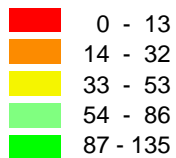


SP: Energy crop regional specific potential in GJ / ha * year



Scenario S1

S1: Energy crop potential in PJ / year

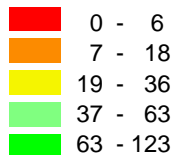


SP: Energy crop regional specific potential in GJ / ha * year



Scenario S2

S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

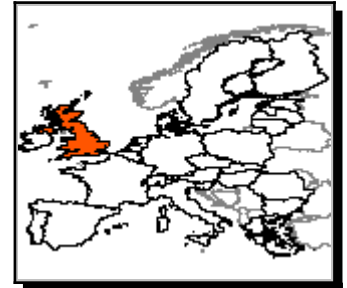
	Starting Point			Scenario S1				Scenario S2				
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
SL	0,00	0,00	0,00	0,00	34,00	8,83	12,20	5,93	15,53	2,91	3,98	1,94
TOTAL:	0,00	0,00	0,00	0,00	34,00	8,83	12,20	5,93	15,53	2,91	3,98	1,94



United Kingdom

GENERAL INFORMATION

Population	60	mln
Population density		person / km ²
Total area	24382	1000 ha
Utilised agricultural area	16388	1000 ha
Wooded area		1000 ha
Other	7994	1000 ha



MAIN AGRICULTURAL INDICATORS

Arable land	6396	1000 ha	Agricultural production system	Intensive
Fallow land	33	1000 ha	Cereal yield	6,84 t / ha
Permanent crops	50	1000 ha	Fertilizers consumption	112,06 t AI / 1000 ha (*)
Permanent grassland	9935	1000 ha	Pesticides consumption	0,91 t AI / 1000 ha (*)
Import / export balance			Number of agricultural holdings	250,40 1000
Cereal	705	1000 ton	Average farm size	67,56 ha
Pork	-190	1000 ton		
Beef	-201	1000 ton		

(*) AI - Active Ingredients

data average 2000-2004, EUROSTAT

MAIN ASSUMPTIONS

Starting Point

Available land for energy crops based on 100% fallow land and current ligno-cellulose energy crop cultivation area.

		Scenario S1	Scenario S2
Food consumption change	% GE (*)	15	15
Yield increase	%	10	7
Fallow land conversion	%	100	100
Permanent grassland conversion	%	0	0

(*) GE - Grain Equivalent

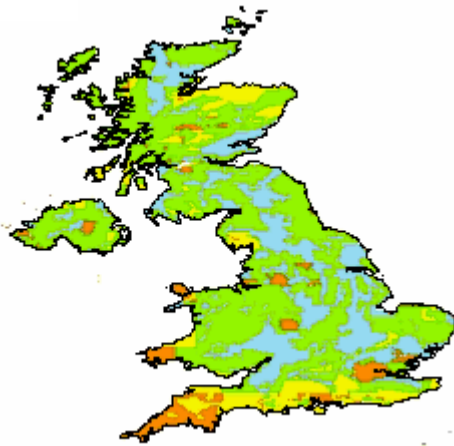
ENERGY CROPS YIELDS

Energy crops yields for three soil qualities per respective scenario

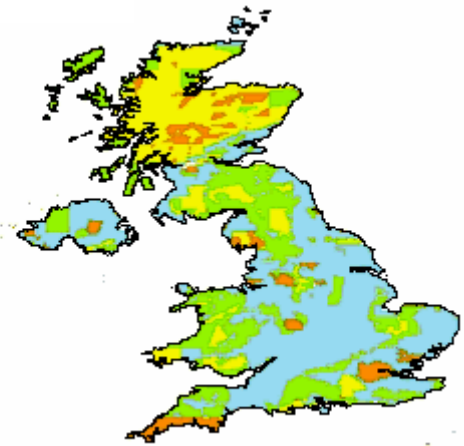
Soils:	Starting Point			Soils:	Scenario S1		
	good	average	poor		good	average	poor
Willow	14,00	13,00	11,00	Willow	19,60	18,20	15,40
Poplar	14,00	13,00	11,00	Poplar	17,50	16,20	13,80
Miscanthus	19,50	18,00	15,00	Miscanthus	31,20	28,80	24,00
Triticale	18,00	18,00	13,00	Triticale	18,90	16,80	13,60
Soils:	Scenario S2			Low heat value:			
	good	average	poor				
Willow	13,70	12,70	10,80	Willow, poplar, eucalyptus	18,8 GJ / t DM		
Poplar	12,30	11,30	9,70	Miscanthus, switchgrass (panicum)	18,4 GJ / t DM		
Miscanthus	21,80	20,20	16,80	Triticale - whole crop	17,2 GJ / t DM		
Triticale	13,20	11,80	9,50				

ENERGY CROPS SUITABILITY

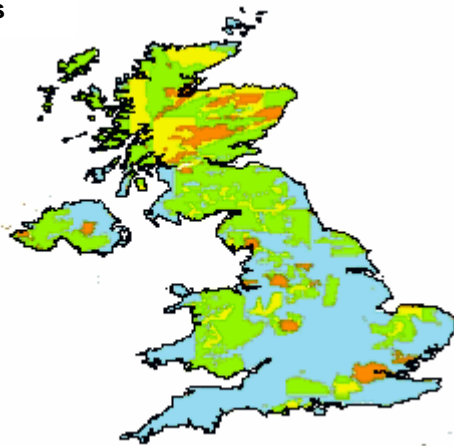
Willow



Poplar



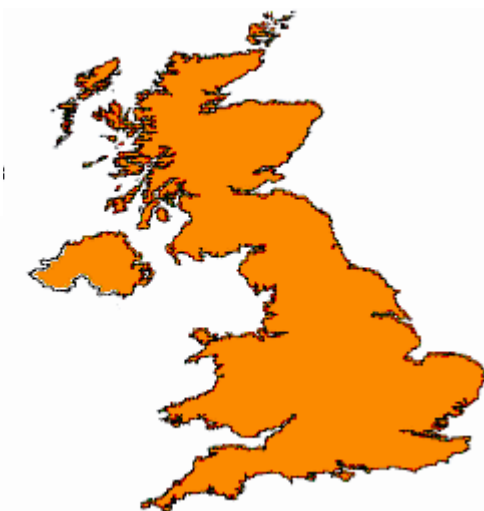
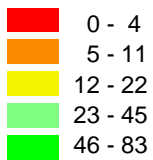
Miscanthus



AVAILABLE LAND AND ENERGY CROP POTENTIAL - MAPS

Starting Point

SP: Energy crop potential in PJ / year

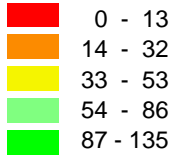


SP: Energy crop regional specific potential in GJ / ha * year



Scenario S1

S1: Energy crop potential in PJ / year

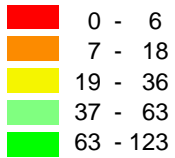


SP: Energy crop regional specific potential in GJ / ha * year

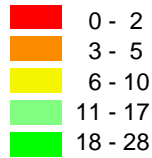


Scenario S2

S2: Energy crop potential in PJ / year



S2: Energy crop regional specific potential in GJ / ha * year



AVAILABLE LAND AND ENERGY CROP PRODUCTION POTENTIAL - FIGURES

Energy crop potential for three different types of crops as alternatives

(1) land available; (2) short rotation coppice / eucalyptus(*); (3) miscanthus / switchgrass(*); (4) triticale

(*southern countries)

	Starting Point			Scenario S1				Scenario S2				
	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ	1000 ha	PJ	PJ	PJ
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
UK	33,43	6,91	9,23	7,47	33,43	9,68	14,76	7,82	33,43	6,78	10,33	5,47
TOTAL:	33,43	6,91	9,23	7,47	33,43	9,68	14,76	7,82	33,43	6,78	10,33	5,47