

Continental Market					
Entity	Models	Options	2010	2020	2030
EU-enlargement and trade arrangements (WTO)					
Countries in EU	GTAP/IMAGE/CLUE		EU-25	+Romania + Bulgaria	no further accession
Trade arrangements		yes			
EU - Turkey	GTAP	yes	Customs Union	no further arrangements	-
EU - Former Soviet Union	GTAP	yes	no specific arrangements	-	-
EU - USA	GTAP	yes	no specific arrangements	elimination of bilateral tariffs	no further arrangements
EU - Latin America and Caribbean, Middle East, Africa	GTAP	yes	no specific arrangements	-	-
Trade / WTO		yes			
Export subsidies	GTAP	yes	no change	no change	no change
Import tariffs	GTAP	yes	no change	no change	no change
Non-tariff barriers for agricultural products (SPS, TBT...) between trade blocks (see footnote *)	GTAP	yes	no specific arrangements	-	-
Domestic support in agriculture		yes			
Intervention prices	GTAP	yes	maintained at levels decided for 2003 MTR CAP reform	no further change	-
Production quota (milk)	GTAP	yes	level as decided for 2003 MTR CAP reform and agreed with Accessing Countries	set at level to safeguard self-sufficiency	no further arrangements
Production quota (sugar)	GTAP	yes	as decided in the 2003 reform	set at level to safeguard self-sufficiency	no further arrangements
Coupled payments	GTAP	yes	maintained at maximum levels of 2003 MTR CAP reform	no further arrangements	-
Decoupled payments (single farm payment scheme; partial, full, regional implementation)	GTAP	yes	EU: implementation of 2003 CAP reform, 2010: same decoupling in all scenarios	no further arrangements	-
Rural development funds (2nd CAP pillar)	Downscaling		Downscaling and added to agricultural income	same as 2010	same as 2010
Compulsory set-aside of arable land (excl. organic farms)	GTAP/IMAGE/CLUE	yes	Never introduced in EU10; gradually abolished in EU15 from current level to 0% between 2018 and 2022 (equal change per year); 50% of area in set-aside is released as available area for arable land.	same as 2010	same as 2010
% of set-aside land used for biofuel cultivation			5%	15%	20%
Demography					
	GTAP/IMAGE				
Global population					
Population EU-25, including distribution within countries			Distribution based on EUROSTAT projections BASE variant	Distribution based on EUROSTAT projections BASE variant	Distribution based on EUROSTAT projections BASE variant
Distribution of population within NUTS2 regions (increase/decrease)(dense: > 500 inh/km2; intermediate: 60-500 inh/km2; thin <60 inh/km2) (average of circle with radius 3 km)			Increase in population is spread in both the dense and intermediately populated areas. Decreases in population take place in the thinly populated areas	Increase in population is spread in both the dense and intermediately populated areas. Decreases in population take place in the thinly populated areas	Increase in population is spread in both the dense and intermediately populated areas. Decreases in population take place in the thinly populated areas

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Macro-economic growth					
	GTAP/IMAGE				
Global / global region		numbers from CPB study adjusted for individual EU25 countries based on EU-study (EPC projection of age-related expenditure)		same as 2010	same as 2010
EU-25: per country		numbers from CPB study adjusted for individual EU25 countries based on EU-study (EPC projection of age-related expenditure)		same as 2010	same as 2010
Agro-technology (including introduction of GMO's)					
Effects on productivity growth (irt FAO projection)**	GTAP/IMAGE				
EU25 + CEEC			-5%	-5%	-5%
Turkey			-10%	-10%	-10%
Consumer behaviour					
Preference for products from own IMAGE region	GTAP	1% shift (i.e. stronger preference)		additional 2% shift	additional 2% shift
Consumption of animal protein from meat	GTAP	endogenous GTAP outcome		endogenous GTAP outcome	endogenous GTAP outcome
Change in built-up area per person per year (including all built-up area: residential/services/recreation/industry/infrastructure)	CLUE	+1.18 m2 per person per year (average value of trend during 1990-2000 over all EU countries)		same as 2010	same as 2010
EU and national policies					
Nature development (EU)					
Area (EU)	GTAP/IMAGE/CLUE	Area nature is determined by interplay of change in agriculture/built-up area and natural succession, minimal area determined by protected areas		same as 2010	same as 2010
Protected areas	CLUE	Forest & semi-natural & recently abandoned >agriculture not allowed in Natura2000 locations; all other conversions allowed in Natura 2000 locations, including urbanization/abandonment		same as 2010	same as 2010
Policy measures to control fragmentation	CLUE	No specific incentives		same as 2010	same as 2010
Efforts to establish ecological corridors at national and international level		no		no	no
Agro-biodiversity	CLUE	No specific arrangements; agriculture within NATURA2000 may be abandoned		agricultural areas within (proposed) Natura 2000 network either remain under extensive agriculture or are abandoned	no further arrangements
Local patches of (semi-)natural areas	CLUE	No specific efforts		same as 2010	same as 2010

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Less favoured areas					
Area (classification criteria)	CLUE	yes	LFA maintained at current level; also implemented for EU10 +2	same as 2010	same as 2010
Incentives/compensation for farmers	CLUE	yes	no change in financial compensation level of LFA stays the same (Note see also comment A1, we cannot yet vary this in time)	same as 2010	same as 2010
Land Policies					
Shifts in permanent pasture area	CLUE		Fully allowed, dynamic land allocation possible	same as 2010	same as 2010
Shifts in arable cropping patterns	CLUE		No change from current location preferences for arable crops	same as 2010	same as 2010
Effect population on succession	CLUE		<p>High pressure in densely populated areas due to recreational uses/hobby farming etc. Conversion of recently abandoned to semi-natural takes longer (years added to 'natural' succession time per population pressure class</p> <p>1: 100 years (no succession) 2: 25 years 3: 15 years 4: 2 years 5: 0 years</p> <p>Due to grazing it is assumed that succession is retarded by 5 to 10 years depending on livestock density in neighborhood. If the mean density of land-based systems in the neighborhood (circle radius 3 km) exceeds 75 LSU/km2 it is assumed that succession (both stages) is retarded by 10 years; if livestock density is between 30 LSU/km2 it is assumed that succession (both stages) is retarded by 5 years.</p> <p>Succession in Natura 2000 locations is not retarded</p>	same as 2010	same as 2010
Effects of active nature restoration on succession	CLUE		No	No	No
Erosion risk	CLUE		No specific measures	No specific measures	No specific measures

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Energy crops		yes			
Crops for biofuels (sugarbeet, potatoes, coleseed), coppice, firewood:	GTAP/IMAGE/CLUE	yes	Outcome IMAGE. Upto 50% of set-aside land is used for energy crops; remainder (mostly coppice and firewood) on abandoned land if available.	Outcome IMAGE	Outcome IMAGE
Crop residues / manure (ethanol, methane...)	?	yes	5%	25%; larger farmers can process manure efficiently at their location	50%; uptake of new technologies leads to growth of farms with fermentation installations on site
Proportion of bio-energy in energy consumption	GTAP/IMAGE/CLUE	yes	0 Mton; no obligations	0 Mton	0 Mton
Proportion of bio-fuels in transport fuel consumption	GTAP/IMAGE/CLUE	yes	0% obligation; implemented only if competitive with fossile fuel	same as 2010	same as 2010
Import restrictions / tariffs for bio-fuels	GTAP/IMAGE	yes	imports are only allowed from US and other transatlantic partners	same as 2010	same as 2010
Environmental legislation, public health, animal welfare etc. (incl. cross-compliance, good agricultural practices)	GTAP/IMAGE/CLUE		loose interpretation of directives and regulations	no further arrangements	-
Land conversion policy					
Large cities	CLUE		no restrictions; in practice, growth of urban centres is favoured in this scenario	same as 2010	same as 2010
Provincial towns	CLUE		no incentives or restrictions	same as 2010	same as 2010
Small villages	CLUE		no incentives or restrictions; in practice, rural population will tend to decrease in regions with land abandonment	same as 2010	same as 2010
Focus of growth	CLUE		No restrictions/spatial urban planning. Autonomous focus of growth of urban centres; Sprawled growth	same as 2010	same as 2010
Nature and urbanization	CLUE		No restrictions for conversions into residential	same as 2010	same as 2010

* Regional blocks:

1 Netherlands / Rest of EU15 / CEEC / Baltic countries / Rest of Europe;

2 Canada / USA / Central America / South America;

3 Oceania;

4 Japan;

5 East Asia / South-east Asia;

6 South Asia;

7 Former Soviet Union;

8 Middle Africa / South Africa

9 Turkey / Middle East / North Africa;

10 Rest of World.

** Effects on productivity growth are the resultant of a combination of environmental constraints and technology development.