Regional Communities

Entity	Models	Options	2010	2020	2030
EU-enlargement and trade arrangements (WTO)					
Countries in EU	GTAP/IMAGE/CLUE		EU-25	+Romenia + 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	elimination of bilateral tariffs in manufacturing	no further arrangements
EU - USA	GTAP	**yes**	no specific arrangements	elimination of bilateral tariffs in manufacturing	no further arrangements
EU - Latin America and Carribean, Middle East, Africa	GTAP	**yes**	no specific arrangements	elimination of bilateral tariffs in manufacturing and **food**	elimination of bilateral tariffs in manufacturing and **food**
Trade / WTO		**yes**			
Export subsidies	GTAP	**yes**	25% reduction	abolished for all sectors	-
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**	3% increase increase compared with 2001	3% increase compared with 2010	4% increase compared with 2020
Domestic support in agriculture		**yes**			
Intervention prices	GTAP	**yes**	maintained at levels decided for 2003 MTR CAP reform	5% increase	additional 5% increase
Production quota (milk)	GTAP	**yes**	level decided after 2003 MTR CAP reform	set at level to safeguard self-sufficiency	no further arrangements
Production quota (sugar)	GTAP	**yes**	as decided in the 2003 reform	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	further modulation: additional cut of 10% as compared to 2010 on payments exceeding Eur 5000	further modulation: additional cut of 10% as compared to 2020 on payments exceeding Eur 5000
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**	Continued in EU15; introduced in EU10 between 2008 and 2013 at a rate of 1% per year up to 5% in total; 50% of the newly set-aside area is assumed to be already in the land use data as 'unproductive land'; the other 50% will increase the area needed for arable	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 LOW variant	Same as 2010	Same as 2010
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 concentrated in depending on the current spread of population, also small growth in the thinly populated areas (villages etc.). Decreases in population take place in the thinly populated areas.	Same as 2010	Same as 2010

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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	same as 2010	same as 2010
EU-25: per country			numbers from CPB study adjusted for individual EU25 countries based on EU-study	same as 2010	same as 2010
Agro-technology (including introduction of GMO's)					
Effects on productivity growth (irt FAO projection)**	GTAP/IMAGE		-5%	-5%	-5%
EU25 + CEEC					
Turkey					
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	5% lower than endogenous outcome	10% lower than endogenous outcome
Change in built-up area per person per year (including all built-up area: residential/services/recreation/industry/infrastructure)	CLUE		-0.1 m2 per person per year as result of lower economic growth and strong restrictive spatial planning policies (compact urbanization)	same as 2010	same as 2010

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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, mimimal area determined by protected areas	same as 2010	same as 2010
Protected areas	CLUE		Forest, semi-natural, recently abandoned > all other uses not allowed in Natura 2000 locations (except succession); Other restrictions in Natura 2000 areas: Agricultural uses > urban: not allowed; Arable > grass: allowed; Grass > arable: not allowed; Arable & grass > permanent not allowed; Permanent > grass & arable: not allowed; Agriculture > recently abandoned: allowed, but incentives to prevent this by compensation to farmers (agri-env schemes)	same as 2010	same as 2010
Policy measures to control fragmentation	CLUE		Incentives aimed at limiting fragmentation of natural areas	same as 2010	same as 2010
Efforts to establish ecological corridors at national and international level			no	no	no
Agro-biodiversity	CLUE		Incentives (agri-env schemes) to prevent abandonment of agriculture within NATURA2000 area by compensation of farmers (see 8.1b)	no further arrangements	-
Local patches of (semi-)natural areas	CLUE		Very strong protection of local patches; but in case of strong competition and in main agricultural regions some patches may disappear	same as 2010	same as 2010
Less favoured areas		**yes**			
Area (classification criteria)	CLUE	yes	LFA maintained at current level; also implemented for EU10+2 Except for arable agriculture in locations with high erosion risk	no further arrangements	-
Incentives/compensation for farmers	CLUE	yes	full compensation; i.e. strong resistance to	no further arrangements	-

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Entity	Models	Options	2010	2020	2030
Land policies					
Shifts in permanent pasture area	CLUE		Incentives to prevent the conversion of permanent pasture to arable land. Implemented through a decrease in suitability for arable land on land currently assigned to pasture	same as 2010	same as 2010
Shifts in arable cropping paterns	CLUE		No change from current location preferences for arable crops	same as 2010	same as 2010
Effect population on succession	CLUE		Low 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 1: 100 years (no succession) 2: 15 years 3: 8 years 4: 0 years 5: 0 years 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. Succession in Natura 2000 locations and the surrounding 2 km is not retarded.	same as 2010	same as 2010
Effects of active nature restoration on succession			Within NATURA2000 sites is, due to favourable management/reforestation the succession time of recently ab>seminat & semi-nat>forest reduced by 4 years	same as 2010	same as 2010
Erosion risk	CLUE		Conversion to arable land is not allowed in erosion sensitive areas; incentives are provided to abandon arable land in erosion sensitive areas or convert to grassland/permanent crops.	same as 2010	same as 2010

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Energy crops		**yes**			
Crops for biofuels (sugarbeet, potatoes, coleseed), coppice, firewood:	GTAP/IMAGE/CLUE	**yes**	output IMAGE	output IMAGE	output IMAGE
Crop residues / manure (ethanol, methane…)	?	**yes**	10%; reuse of crop residues and manure is stimulated; farm size is too small to do it very efficiently; government stimulates farm cooperatives	20% farm size is too small; though government stimulates; this leads to a rather slow implementation of manure & residue processing	40%
Proportion of bio-energy in energy consumption	GTAP/IMAGE/CLUE	**yes**	52 Mton	52 Mton	52 Mton
Proportion of bio-fuels in transport fuel consumption	GTAP/IMAGE/CLUE	**yes**	5,75%	5,75%	5,75%
Import restrictions / tariffs for bio-fuels	GTAP/IMAGE	**yes**	Full import restriction - 100% produced in EU; this might limit the amount of biofuels in total fuel consumption though	same as 2010	same as 2010
Environmental legislation, public health, animal welfare etc. (incl. cross-compliance, good agricultural practices)	GTAP/IMAGE/CLUE		very strong: minimization of environmental hazards	no further arrangements	-
Land conversion policy					
Large cities	CLUE		restrictions on growth;	same as 2010	same as 2010
Provincial towns	CLUE		incentives for growth	same as 2010	same as 2010
Small villages	CLUE		targetted to maintain existing size and structure	same as 2010	same as 2010
Type of growth (compact/sprawled)	CLUE		Restrictions in urban spatial planning resulting in compact urban growth with a focus/incentives for growth of provincial towns. Small villages are targeted to maintain existing size and structure	same as 2010	same as 2010
Nature and urbanization	CLUE		Semi-natural and forest may not change into residential uses	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 Arfica / 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.