

Global Co-operation					
Entity	Models	Options	2010	2020	2030
EU-enlargement and trade arrangements (WTO)					
Countries in EU	GTAP/IMAGE/CLUE		EU25+Romania + Bulgaria + Turkey	no further accession	-
Trade arrangements		yes			
EU - Turkey	GTAP	yes	Turkey enters EU	-	-
EU - Former Soviet Union	GTAP	yes	elimination of bilateral tariffs in manufacturing	no further arrangements	-
EU - USA	GTAP	yes	no specific arrangements	-	-
EU - Latin America and Caribbean, Middle East, Africa	GTAP	yes	no specific arrangements	-	-
Trade / WTO		yes			
Export subsidies	GTAP	yes	25% reduction	50% reduction as compared to 2010	abolished for all sectors
Import tariffs	GTAP	yes	25% reduction	50% reduction as compared to 2010	abolished for all sectors
Non-tariff barriers for agricultural products (SPS, TBT...) between trade blocks (see footnote *)	GTAP	yes	situation 2001	global SPS and TBT leads to 1% cost price increase for agricultural products in developing countries	2,5% cost price increase (as compared to 2010) for agricultural products in developing countries
Domestic support in agriculture		yes			
Intervention prices	GTAP	yes	maintained at post MTR CAP reform levels	safety net just below average world market price levels	abolished
Production quota (milk)	GTAP	yes	level as decided for 2003 MTR CAP reform and agreed with Accessing Countries	abolished	-
Production quota (sugar)	GTAP	yes	as decided in the 2003 reform	abolished	-
Coupled payments	GTAP	yes	full incorporation in decoupled single farm payment scheme	-	-
Decoupled payments (single farm payment scheme; partial, full, regional implementation)	GTAP	yes	EU: implementation of 2003 CAP reform, 2010: same decoupling in all scenarios	reduction by 25% as compared to 2010	reduction by 50% as compared to 2010
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 HIGH variant	Distribution based on EUROSTAT projections HIGH variant	Distribution based on EUROSTAT projections HIGH 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			0%	0%	0%
(CEEC)+baltic			5%	5%	5%
Turkey			0%	0%	0%
Consumer behaviour					
Preference for products from own IMAGE region	GTAP	no specific arrangements		-	-
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	+0.5 m2 per person per year due to the effect of strong economic growth but restrictive spatial planning policies (compact urbanization; about half of the average value of the trend during 1990-2000 over all EU countries)		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, minimal 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		Yes: Farming conditions are not favourable in ecological corridor areas due to restrictions, so, all agricultural land use types in these corridors face a decrease in suitability		yes	yes
Agro-biodiversity	CLUE	Incentives (agri-env schemes) to prevent abandonment of agriculture within NATURA2000 area by compensation of farmers (see 8.1b)		agricultural areas within (proposed) Natura 2000 network either remain under extensive agriculture or are used for nature development. Main grassland areas in LFA's are incorporated in Natura 2000 network (extensive pastures).	same as 2020
Local patches of (semi-)natural areas	CLUE	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					
Area (classification criteria)	CLUE	yes yes	LFA maintained at current level; also implemented for EU10+2; Except for arable agriculture in locations with high erosion risk	-	-
Incentives/compensation for farmers	CLUE	yes	abolished	same as 2010	same as 2010

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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 patterns	CLUE	Tendency to concentrate pasture/arable crops preferably in most productive areas		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 abandoned semi-natural forest reduced by 4 years			
Effect population on succession	CLUE	<p>Moderate pressure in densely populated areas due to recreational uses/hobby farming etc.</p> <p>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: 20 years 3: 10 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 and the surrounding 2 km is not retarded.</p>		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 by policy and government research.	30%	60%
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	no restrictions	same as 2010	same as 2010
Environmental legislation, public health, animal welfare etc. (incl. cross-compliance, good agricultural practices)	GTAP/IMAGE/CLUE		strong: minimization of environmental hazards	no further arrangements	-
Land conversion policy					
Large cities	CLUE		growth restricted to designated areas	same as 2010	same as 2010
Provincial towns	CLUE		designated areas adapted to demand	same as 2010	same as 2010
Small villages	CLUE		growth (if any) restricted to designated areas;	same as 2010	same as 2010
Focus of growth	CLUE		Restrictions in urban spatial planning resulting in compact urban growth; growth both in large cities and provincial towns	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 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.