



Agriculture land availability in Europe: land use drivers

Ewa GAŃKO

Renewable Energy Centre (EC BREC)

at

Institute of Fuels and Renewable Energy
POLAND



SCOPE OF PRESENTATION

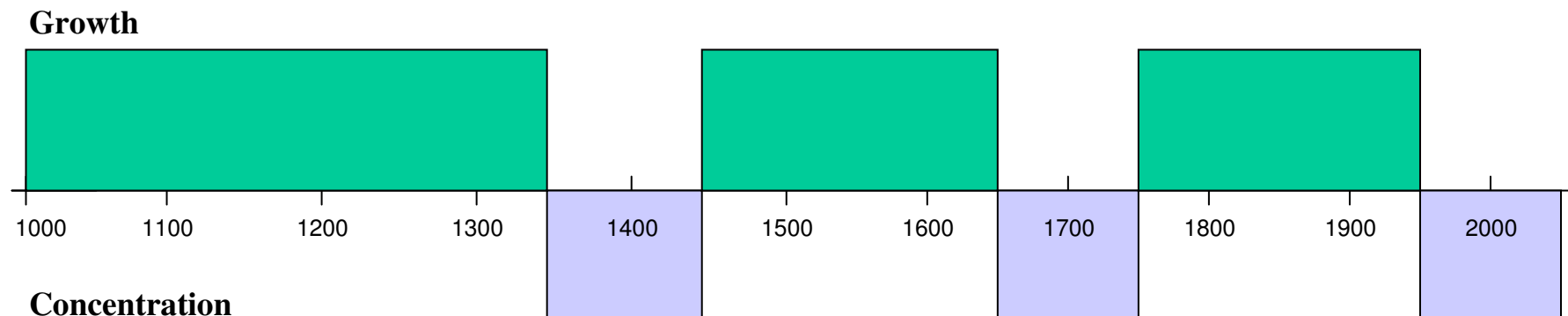
- Agricultural land use overview over time
- Changes in main crop areas
- Land use drivers
- Conclusions

Background

Changes in land use occurred frequently during the last millennium in Europe.

How and why?

- Rise in productivity per ha and per man-hour,
- Development of agricultural production methods,
- Improvement of the quality of agricultural produce





Last five decades

- Enormous productivity increase resulted from synergism innovations from various disciplines
- Agriculture with industrial characteristics (biotechnology development)
- Production disconnected from land use for particular products, e.g. vegetable in greenhouses, intensive cattle breeding
- Extreme variation in production techniques within Europe – land productivity varies with a factor 6, labour productivity with 100.

Future – mid-term prospects for EU agriculture

Cereal yield trend would stand at:

- 0.5% per year in the EU-15.
- 1.1% per year in the EU-12

Yield growth trends between 1980-2006 shows a differentiated pattern between North and South as well as West and East.

Yield growth in the EU-15 slowed down considerably over the last decade. Production is at the technological frontier even in the most competitive regions. Future annual gains limited.

LAND USE CHANGES in main crop areas 2008

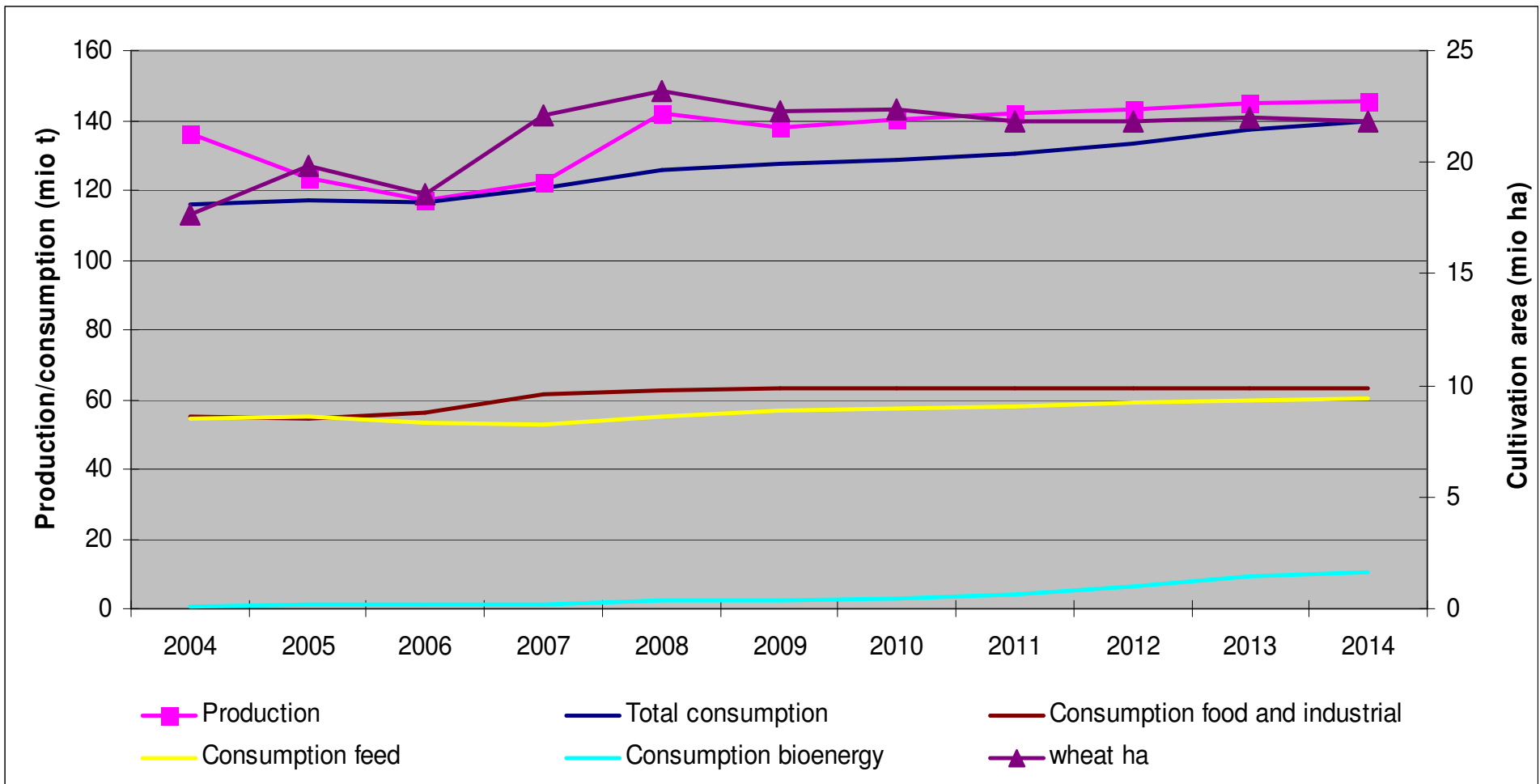
Increase in cereals area (+5,7%): a response to very high producer price
- imbalance between supply and demand for cereals worldwide,
importanta reduction of fallow land area.

Rapeseed area decreases (-3.1%): possibly a partial shift from rapeseed
area to cereal area, the policy of encouraging biofuels put in question
- biofuels may compete with word food demand. However, this area is
still significantly above the 2003-2007 average (+23.9%).

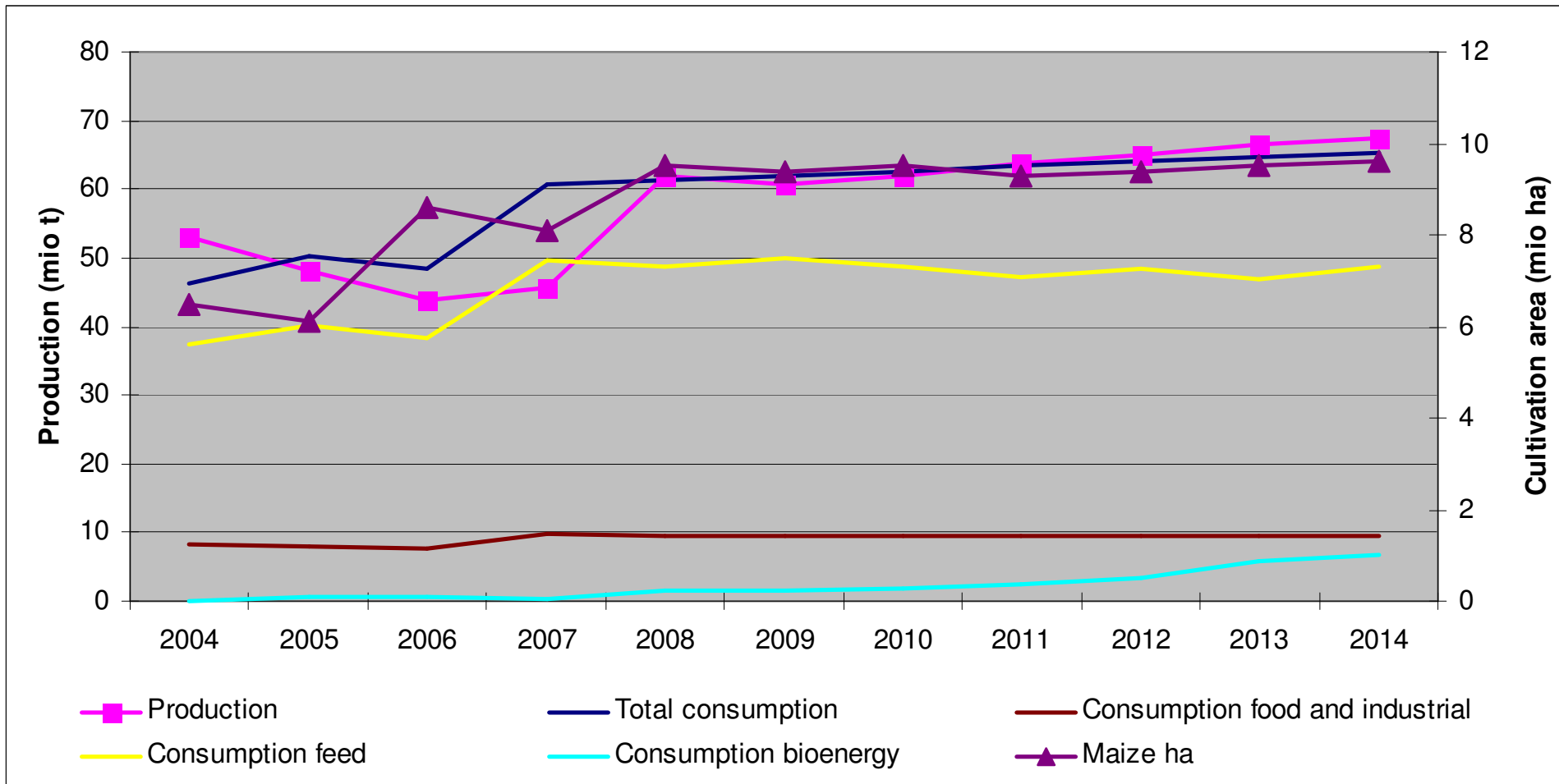
Protein crops area continue its negative trend (-13.4%): decrease with
35.5 % over the past five years.

Sugar beet area shows a reduction (-6.8%): effect of the reform of sugar
regime, (-19.3% relative to the 2003-2007)

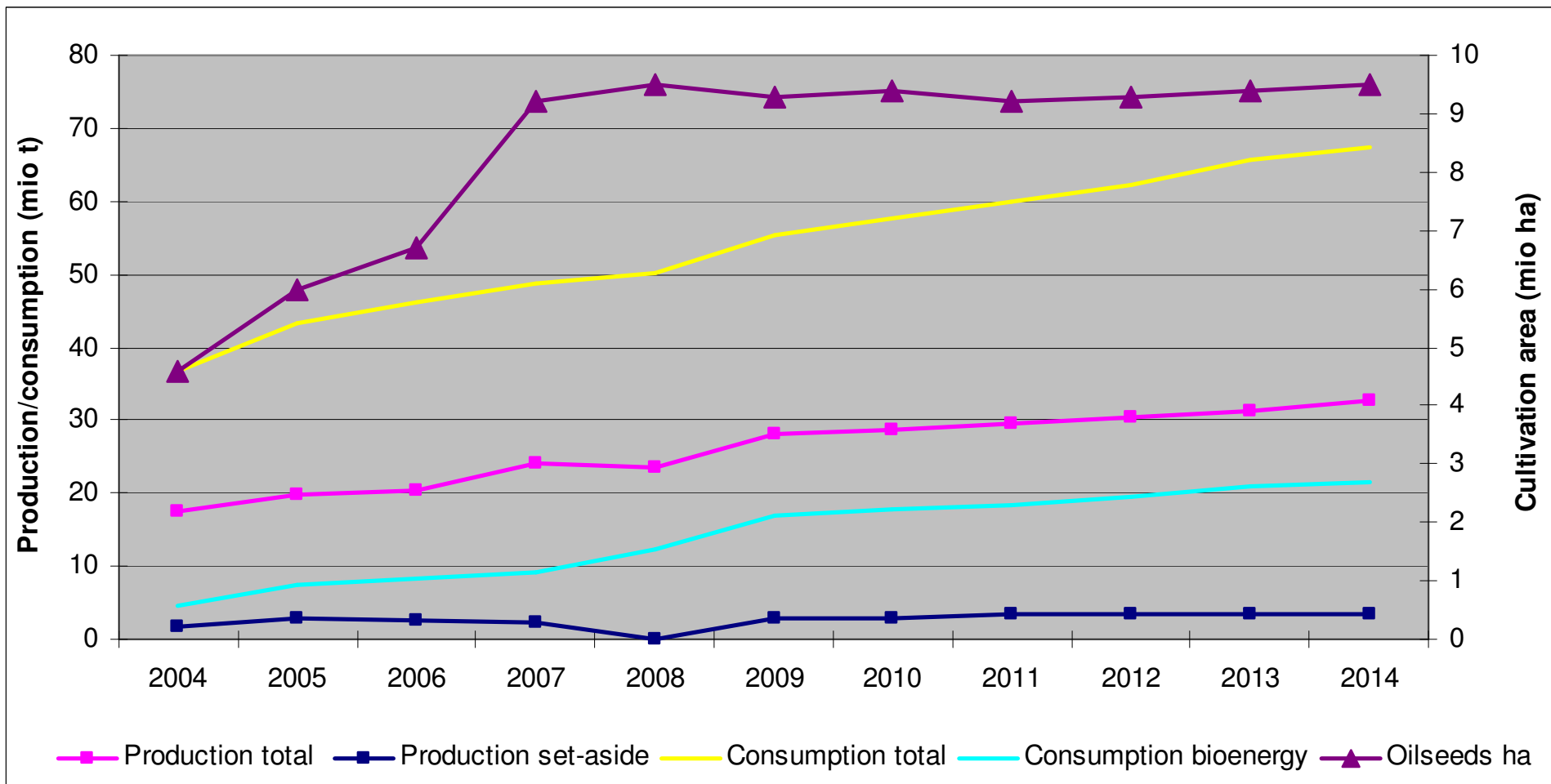
Wheat



Maize



Oilseeds



Set-aside

Compulsory set-aside rate:

- 5% for the 2004/05 marketing year,
- 10% since 2005/06,
- Zero for 2008/09 and then fixed at a level of 10%.
- For EU-12 which opted for the single area payment scheme, the set-aside apply from 2011 onwards (and from 2014 onwards in BU and RO).

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Compulsory set-aside	1,9	4	4	4	4	4	4	5	5	5	5
of which EU-15	1,9	4	4	4	0	4	4	4	4	4	4
EU-10	0	0	0	0	0	0	0	1	1	1	1
EU-2	0	0	0	0	0	0	0	0	0	0	0,5
of which non-food oilseeds	0,8	0,8	0,8	0,8	0	0,9	0,9	1	1	1	1
of which non-food cereals and sugar beet			0	0	0	0,1	0,1	0,4	0,4	0,5	1,1
Voluntary set-aside	3,1	3	3	3	5,3	3	3	3	3	3	3,2
Total set-aside	5	7	6,9	7	5,3	7	7	8	8	8	8,7

Direct payments

Single payment scheme - direct payments to farmers are no longer linked to production, hence the term “decoupled”

On the basis of Member States decisions, it has been estimated that in 2015 almost 100% of the direct payments will be the decoupled single farm payment.

However, the extension of the Single Area Payment in the EU-10 by two more years would lead to an additional annual production of 4.5 mio t of cereals in the EU-10 in 2009 and 2010 and about 1.5 mio t in Bulgaria and Romania in 2012 and 2013.

Bioenergy sector 1

Domestic production and use of oilseeds and cereals in the EU is projected to increase – effect of the emerging bioethanol and biomass industry

Increase of production for energy purposes on mandatory set-aside land in intensive production regions.

This should lead to a non-food oilseed area of around 0.9 to 1 mio ha and to about 1.1 mio ha for non-food cereal and sugar beet by 2015.

However, the production potential for non-food oilseeds would remain constrained by the limitations of the Blair House agreement (max. production of 1 mio t of soybean meal equivalent on set aside land).

Bioenergy sector 2

In the next decade 2nd generation biofuel technologies will become commercially viable and lead to a slow down in the cereal and sugar beet demand for bioethanol production.

Perennial energy crops:

9000 ha in PL, 20000 ha in SE, 10000 ha UK, FI 15000 ha

Special payments for perennial crops plantation establishment introduced by some Member States

DG Agriculture 2008: Prospects for agricultural markets and income in the EU 2007-2014.

Production quota: sugar reform

The reform of the sugar regime aims at lowering the production of sugar by 6 mio t until 2015, reaching 12 mio t. The area would fall as a consequence from 2.2 to 1.5 mio ha. This would bring additional area 0.7 mio ha.

Out of this about 0.4 mio ha would be allocated to oilseed production, 0.15 mio ha to soft wheat production and about 0.15 mio ha to maize.

However, the expected strong expansion of bioethanol production from sugar beet is projected to contribute to a stabilisation of the total sugar beet area, particularly in the most competitive sugar production regions.



Nature conservation

Limitations to intensive productions:
Sustainability issues (including crop rotation limits)
Conservation areas (NATURA 2000)
Biodiversity
GMO
Organic farming
Climatic conditions

Conclusions

The structural drivers for land use allocation:

- Steady rise in global food demand,
- The emergence of the biofuel market,
- The significant slow-down in cereal-yield growth in the EU,
- Direct payment decoupling in the EU and other CAP reulations

Other factors :

- Adverse climatic conditions,
- Nature conservation,
- GMO authorisation.