TRANSFORMATION OF POLISH AGRICULTURE – PAST, PRESENT AND FUTURE

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Table 1. Agricultural sector in Poland

Agricultural land [million ha]	15,5
Proportion of permanent grasslands	21,2%
Number of farms [thousands]	1558
Average farm size [ha arable land]	8,6
Number of employed [millions]	2,1
Number of cattle [thousands]	5761
of which: dairy cows [thousands]	2657
Number of pigs [thousands]	15278
Number of sheep [thousands]	268

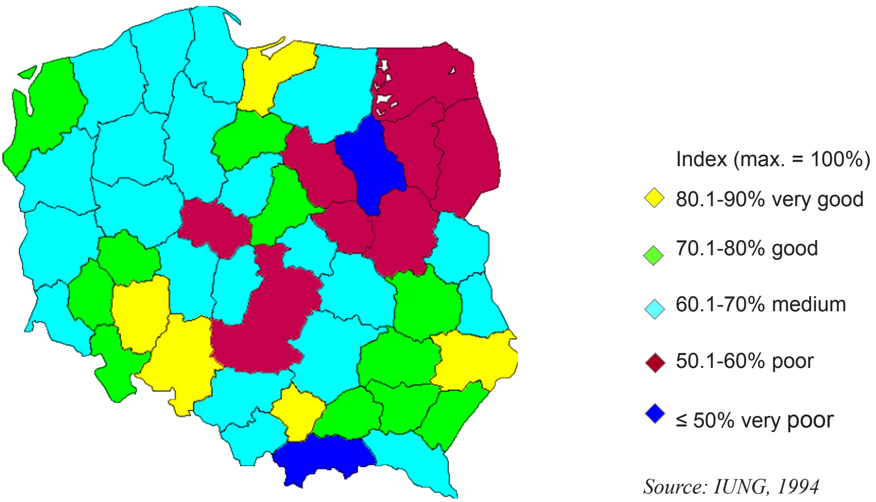
AGRO-CLIMATIC CONDITIONS

Agricultural Space Valuation Index:
- soil quality
- water conditions
- agro-climate
- lie of the land (topography)

Average for Poland

66,6% (max=100%)

Figure 1. Agro-climatic conditions in Poland



Source: IUNG, 1994

Table 2. Distribution of farm sizes 2010

Size cluster	Share (number) [%]	Share (area) [%]	Average size [ha]
1-5	55,3%	14,4%	2,5
5-10	22,6%	16,4%	7,1
10-20	14,4%	20,3%	13,8
20-100	7,3%	26,3%	35,3
>100	0,5%	22,7%	456,0

FINANCIAL SITUATION

- Income from agriculture is only 40% of average wages
  but
- Less than 50% of farmers' income is generated from agricultural production

Table 3. Incomes in different farm size clusters 2011 (euro/ha) (sample of FADN farms)

	Farm size clusters [ha]					
	< 5	5-10	10-20	20-30	30-50	>50
Net Farm Income (NFI)	2851	785	649	669	666	573
Personal Income (PI)	4549	1395	942	836	769	623
NFI as % of PI	62,7	56,3	68,9	80,0	86,6	92,0
Share of social payments in non-farm incomes [%]	20,2	21,6	22,1	26,2	28,1	19,7

Figure 2. Average farm size (>1 ha cultivatable area)

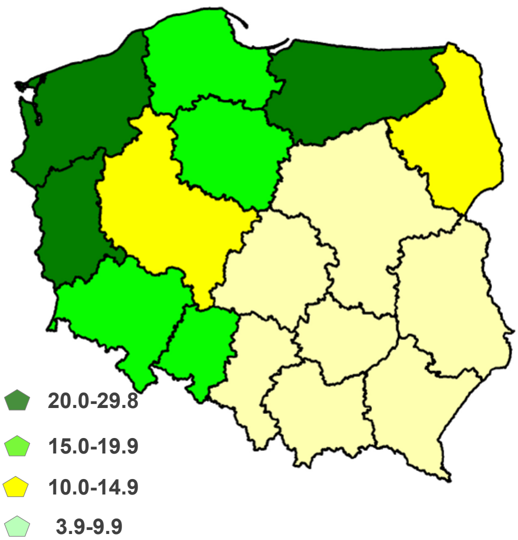


Figure 3. Proportion of households dependent upon agriculture as a main source of income [%]

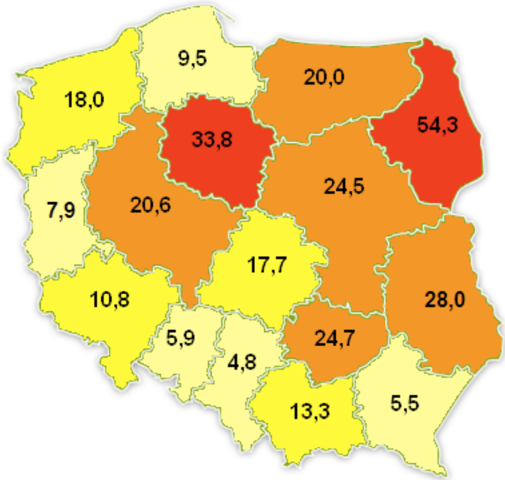


Table 4. Characteristics of different farm size clusters (FADN data 2010)

Item	Small	Medium	Large	Mean
Farm size	15,9	54,4	138,3	19,3
Livestock density (LU per 100 ha)	134	164	108	132
Net Value of fixed assets (milion €)	2,1	8,9	14,9	14,5
Fertilization (kg NPK/ha)	100	158	189	128
NFI (Euro/farm)	8618	39234	83138	10220
Personal Income (Euro/fully employed)	5320	20330	40438	6240
Farms without successor	25%	11%	11%	21%

Table 5. Polish Agriculture's position in the World and EU in 2007

Agricultural Products	Percentage of Production		Position	
	World	EU	World	EU
Wheat	1,4	6,9	16	4
Rye	21,2	41	2	1
Potatoes	3,8	18,4	6	1
Sugar beet	5,1	11	6	3
Oilseed Rape	4,2	11,6	6	3
Apples	1,6	9,9	13	4
Meat	1,3	7,9	14	5
Dairy (cows only)	2,1	8,2	10	4

CHANGES IN POLISH AGRICULTURE

Figure 4. Horse Power in Poland

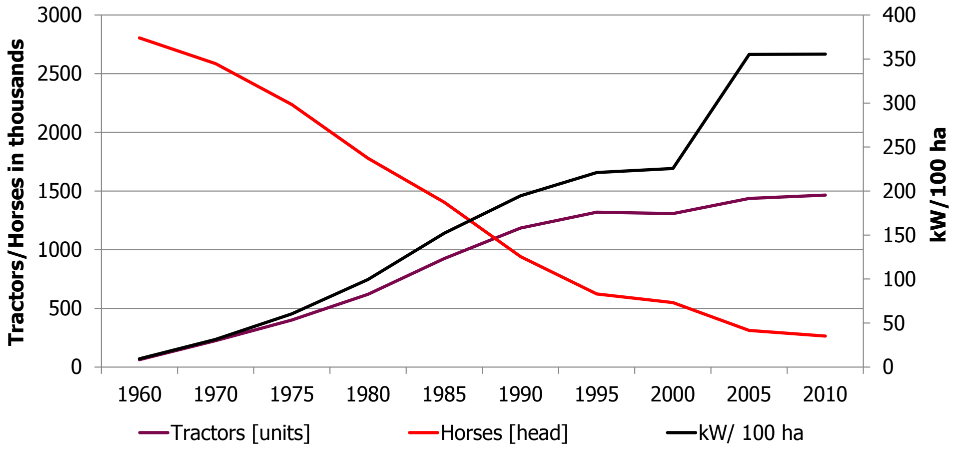


Table 6. Mechanization

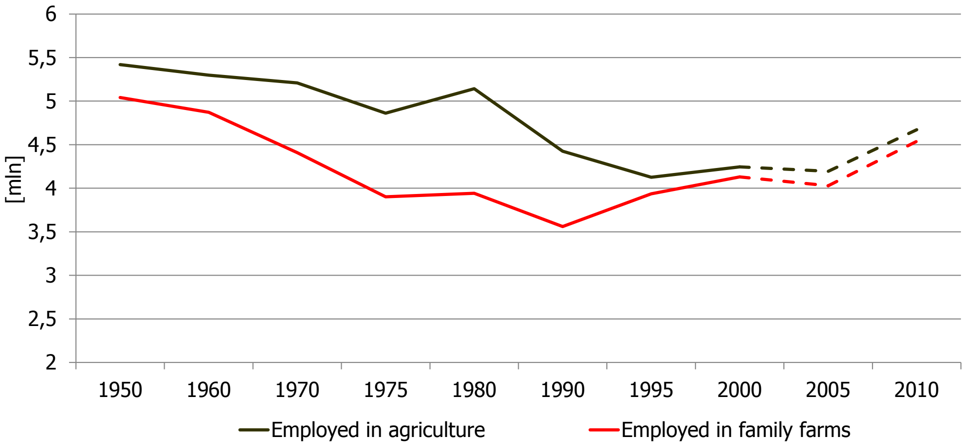
Year	Number of Tractors		Average Tractor Power	Total Tractor Power	
	[in thousands]	[number/ farm]	[kW]	[thousand kW]	per 100 ha AL
1960	63	0,02	27	1694	8,3
1970	225	0,08	27	6117	31,3
1975	401	0,14	29	11589	60,3
1980	619	0,24	30	18830	99,4
1985	925	0,40	31	28663	152,1
1990	1185	0,55	31	36498	194,6
1995	1319	0,64	31	41165	221,1
2000	1307	0,69	32	41553	225,7
2005	1437	0,80	39	56482	355,1
2010	1466	0,94	38	55133	355,6

Table 7. Agriculture in the Polish Economy

Item	1980	1990	2000	2003	2010
Agricultural land [mln ha]	19,1	18,8	17,8	16,2	15,5
Employment in agriculture [millions]	5,1	3,8	3,9	2,1	2,3*
% of working population	29,5	25,6	26,2	16,5	16,5
Share of GDP (%)	12,8	8,3	5,0	4,4	3,5

** change of methodology in 2002 – real change is not significant*

Figure 5. Agricultural employment



** own estimation – based on proportions from 2002*

Table 8. Ownership of agricultural land

Item	1990	1995	2000	2010
Private	75,8	92,3	94,0	96,3
Of which: Family farms	71,9	84,8	86,8	88,1
Public	24,2	7,7	6,0	3,7

Table 9. Cropping structure [%]

	1980	1990	1995	2000	2004	2010
Cereals	54,1	59,5	66,1	71	74,2	73,3
Potatoes	16,1	12,9	11,8	10,1	6,3	3,7
Fodder Crops	18,1	14,2	8,5	7,4	7,0	8,3
Oilseed Rape	2,2	3,5	4,7	3,5	4,8	9,0

Table 10. Yields of main crops [t/ha]

Crop	1981-1985	1986-1990	2000	2005	2010
Cereals average	2,8	3,1	2,6	3,2	3,6
Wheat	3,3	3,8	3,2	4,0	4,4
Rye	2,5	2,6	1,9	2,4	2,7
Potatoes	16,8	19,0	19,4	17,6	21,1
Sugar Beet	33,1	34,6	39,4	41,6	57,4 (2011)

Table 11. Concentration in milk production

	Percentage of Number of Cows			
Herd size for Dairy Cows	1-2	3-4	5-9	> 10
1991	40,6	33,5	24,3	1,6
2000	34,6	21	23,5	22,9
2010	13,2	6,7	12,6	67,5

Figure 6. Changes in milk yields

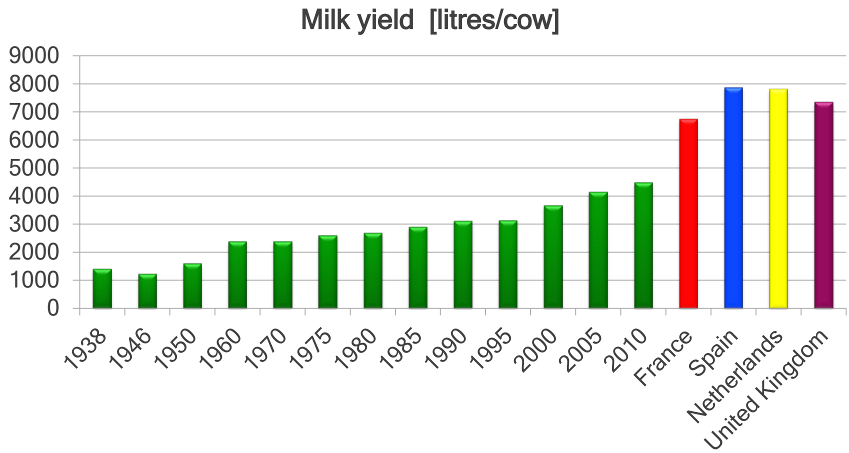
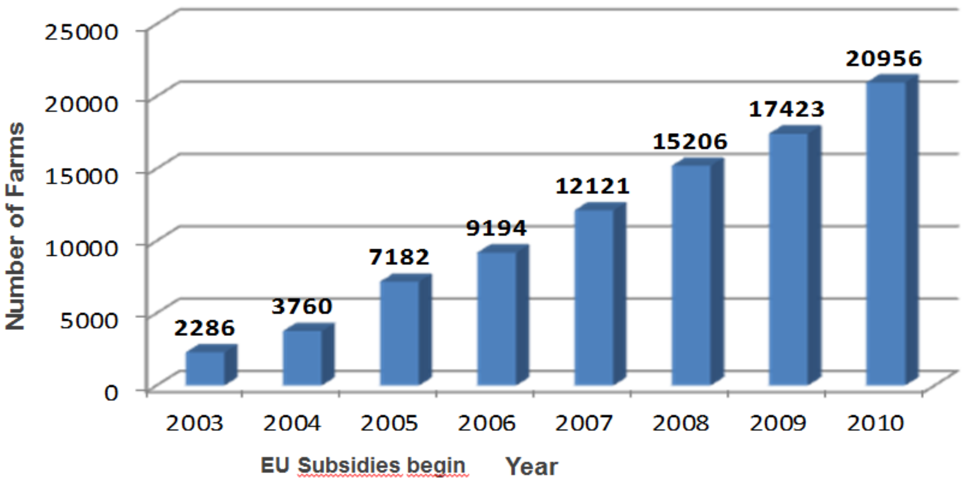


Table 12. Concentration in pig production

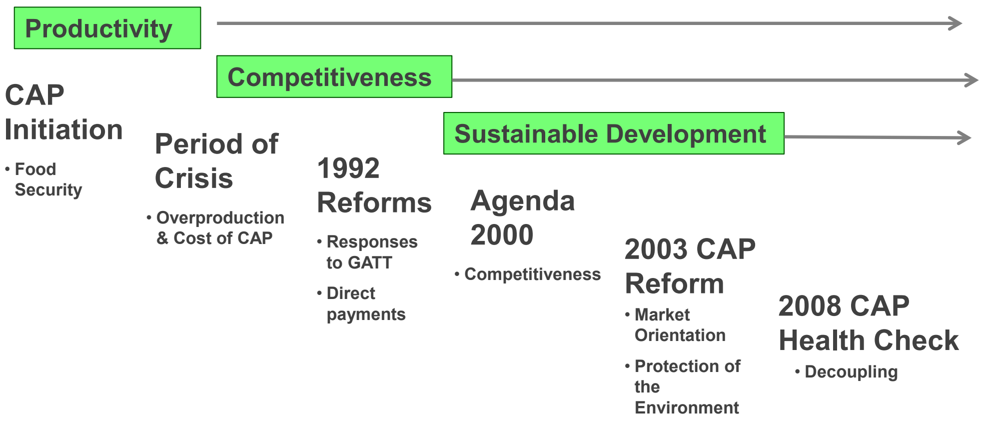
	Percentage Number of Pigs			
Herd Size	1 - 4	5 - 19	20 - 99	> 100
1991	12,4	39,4	42	6,2
2000	3,8	19,4	46,2	30,4
2010	1,9	9,1	28,6	60,4

Figure 7. Number of ecological farms for the years 2003-2010



CAP AND FARM INCOMES

Common Agricultural Policy Development



Subsidies for Polish Agriculture

Before accession:

- subsidies to bread quality wheat and rye for intervention, high quality milk;
- credits at preferential rates;
- subsidies to diesel fuel

After accession: Simplified Area Payment Scheme (SAPS), LFA payments, structural measures (e.g. investment grants, early retirement scheme, young farmer scheme)

Benefits of EU Accession and the CAP

- Direct Payments (growth and stabilization of farm incomes);
- Investment Subsidies (modernization);
- Actions for Environmental Protection;
- Easier Access to Markets for Farm and Food Products (forced quality improvements)

Table 13. Capitalization (thousand PLN/Farm) (representative sample of FADN farms)

Specification	2004	2005	2006	2007	2008	2009
Assets (current prices)	458	487	473	502	579	623
Assets (relative to 2004 prices)	458	477	459	475	525	547
Liabilities	67.3	66.8	66.2	71.5	84.6	89.7
Proportion of Liabilites over Assets [%]	14.7	13.7	14.0	14.2	14.6	14.4

Figure 8. Land prices [PLN/ha]

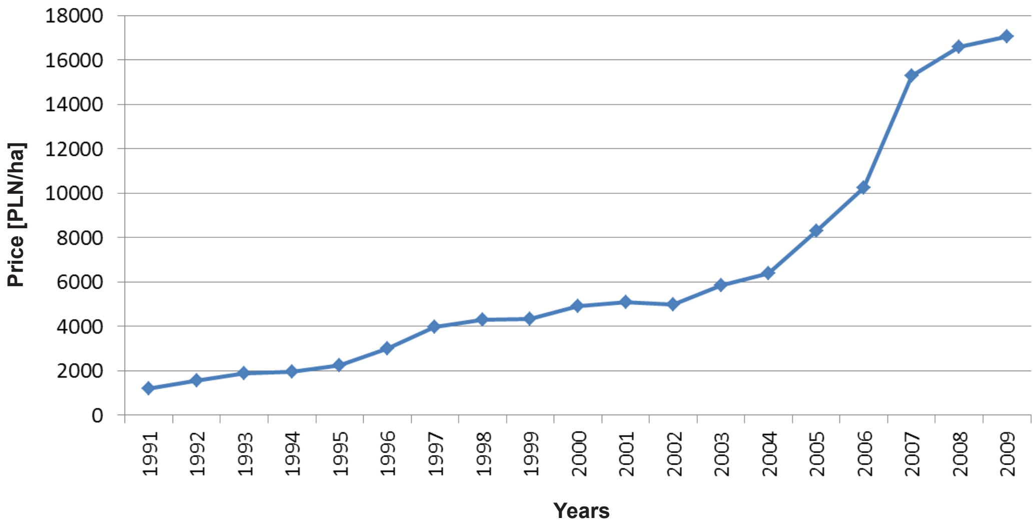


Figure 9. Farm incomes by farm size clusters (FADN)

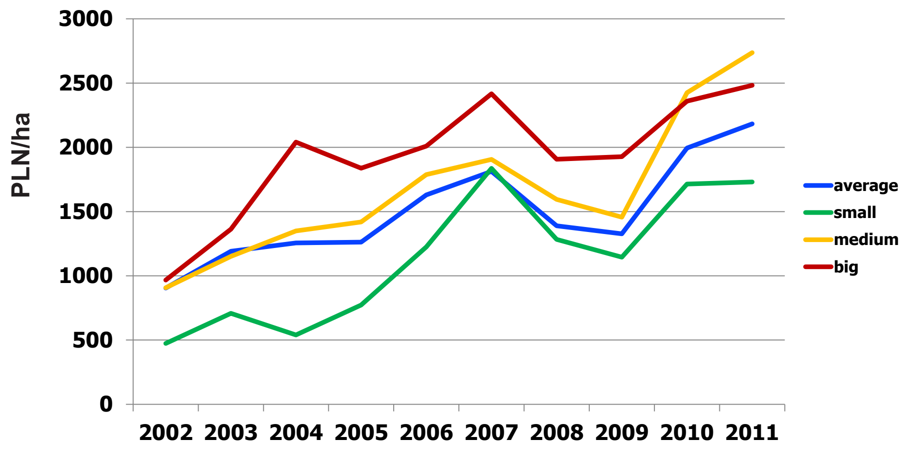
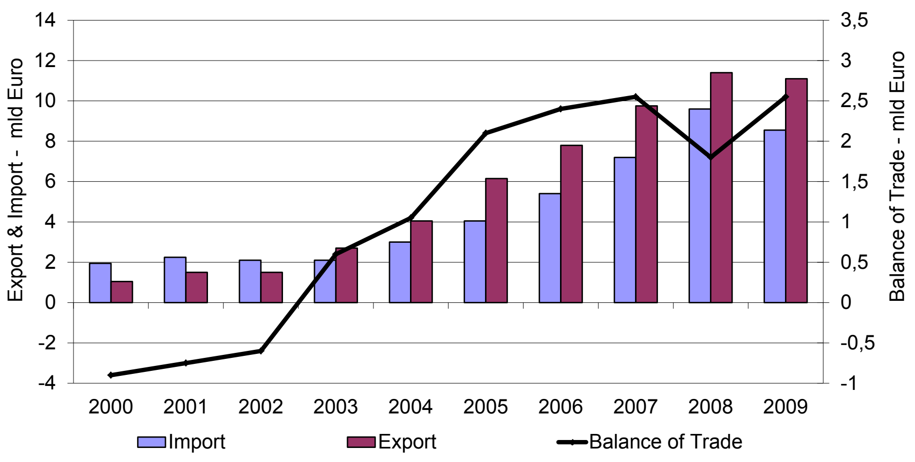


Figure 10. Balance of trade in agricultural goods and food



THE FUTURE?

The 2014 CAP Reform Greening

- Diversification (min. 3 crops per holding) - max. 70% of area; min. 5%.
- 5% Ecologically Focussed Area
- 95% of Permanent grassland area fixed for duration.

Model Appraisal of Greening

Production:		Share of cropping:
Barley	>9%	
Wheat	>6%	-0.9 p.p. of area
Oilseed Rape	>6%	-0.5 p.p. of area

Farm income:	-3.8% on average
Good soils	-8.9%
Monocultures	-13.2%
Cereal farms	-6.5%
Mixed farms	-3.1%

Table 14. Animal welfare cost/effect analysis [% of price to compensate impact of AW regulations]

Species	Required	Upgraded
PIGS Increased space for sows, limitation of slatted floors; Upgrades: feeding with roughage, access to outdoor run, facilities to avoid competition for feed, more light, avoidance of castration and tail docking	10,7%	18,4%
HENS More space/hen + enriched cages; Upgrades: no-cage systems, more space +outdoor run	28,0%	38,9%
Broilers, beef cattle	Additional costs small	
Dairy cows	Small benefits	

What's in the Pipeline?

- Rural Demographic Change;
- Further structural changes – concentration of land and capital;
- Continuing Polarization of Farm Structure;
- Intensification and specialization of farms and regions.

Emerging Issues

- CAP changes – which direction?
- Carbon Economy – Bioenergy
- GM Crops
- Further expansion of quality systems, traceablity and certification schemes for all types of production.