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Socio-economic sustainability of farms in Poland in terms of Common Agricultural Policy (CAP) of the European Union

International Conference on
“The role of small farms in sustainable development
of the food sector in the countries of Central and Eastern Europe”
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Agenda

- Introductory remarks
- Selected indicators to measure the sustainability
- Aim and hypothesis + research methodology
- Results
- Conclusions

Introductory remarks

- Sustainable development – properly structured (equal) relation between economic growth, environmental protection and the social sphere.
- A significant role of increasing social cohesion, **including limiting of income disparities**, providing equal opportunities and counteracting marginalisation, access to employment, education and healthcare.
- Present in the Common Agricultural Policy: one of the main objectives is to ensure an adequate standard of living for the agricultural community.

List of economic and social indicators to measure the sustainability

Economic	Social
<ul style="list-style-type: none">➤ macroeconomic level: Gross Domestic Product; Gross National Product; national income➤ microeconomic level: income per capita, holding's expenses, wages level, employment and professional activity indicators, workforce productivity, fixed asset capital, investment level	<ul style="list-style-type: none">➤ life expectancy and health status➤ housing conditions➤ education and culture➤ human rights➤ income distribution➤ access to the labour market➤ demographic changes➤ sustainable consumption patterns

Set of socio-economic sustainability indicators for agricultural farms

Economic	Social
<ul style="list-style-type: none">➤ production results:<ul style="list-style-type: none">○ the amount of revenue or income○ costs of production○ indices of cost-effectiveness, liquidity, stability and productivity	<ul style="list-style-type: none">➤ quality of life (i.a. equality of incomes distribution)➤ working conditions➤ level of education➤ degree of social inclusion or exclusion➤ health status➤ access to services and infrastructure in the countryside➤ access to employment



Majority of these indicators are directly or indirectly related to the level of income and its equitable distribution between holdings.

Aim and hypothesis

The **aim** – determine the influence of the Common Agricultural Policy on the level of socio-economic sustainability of farms in Poland against the European Union countries.

The **hypothesis**: the existing CAP solutions serve the achievement of economic sustainability (determined by the agricultural to non-agricultural income ratio), but they do not provide sustainability of farms in terms of the social element (taking into account disparities between incomes of farms of different economic sizes).

Research methodology

1. To assess the influence of CAP subsidies – ratio of income from a representative FADN farm (per FWU) to non-agricultural income (the average annual gross salary per employee).
2. In order to answer the question of whether farm size determine the impact of CAP support on economic sustainability of farms – ratio of farm income to non-agricultural income in economic classes groups (in SO) in two variants:
 - with subsidies included to the incomes
 - without subsidies
3. Panel regression to determine which of the CAP subsidies had the biggest impact on the increase in the economic sustainability of agriculture.

FADN – Farm Accountancy Data Network.

Family Work Unit (FWU) concerns own (family) labour input, it could be identified with one full-time employee of the family in the farm.

Relation of FADN farms incomes to non-agricultural incomes in the EU in the years 2005-2015 (in %)

UE-15	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Aver.
with subsidies	55.7	61.9	81.1	49.5	35.8	72.1	77.4	89.3	89.4	69.4	58.4	67.3
without subsidies	-37.4	-34.9	-19.8	-52.1	-90.1	-36.8	-17.8	-3.0	-5.3	-20.9	-26.9	-31.4
UE-12	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Aver.
with subsidies	20.7	-33.3	82.5	69.6	-29.9	28.0	111.2	83.9	73.7	102.5	79.3	53.5
without subsidies	-105.6	-197.7	-88.5	-155.5	-287.7	-197.3	-122.4	-121.9	-171.1	-129.4	-101.6	-152.6

Source: own study on the basis of FADN data.

Relation of agricultural to non-agricultural incomes for different economic sizes (SO) of FADN farms in EU – average values for the years 2005-2015 (in %)

UE-15	<8k EUR	8-25k EUR	25-50k EUR	50-100k EUR	100-500k EUR	>500k EUR
with subsidies	no data	21,17	36,38	63,75	113,84	232,25
without subsidies	no data	-56,25	-57,64	-33,70	1,63	60,10

UE-12	<8k EUR	8-25k EUR	25-50k EUR	50-100k EUR	100-500k EUR	>500k EUR
with subsidies	no data	39,96	69,59	124,31	320,49	3549,86
without subsidies	no data	-56,39	-64,33	-60,37	-201,85	-4464,65

Source: own study on the basis of FADN data.

Ratio of agricultural income of FADN farms to non-agricultural income in Poland in the years 2004-2013

Agricultural to non-agricultural income (%)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Average
Without subsidies	46.7	32.8	31.4	45.8	18.7	8.1	27.3	31.2	29.7	20.8	29.3
With subsidies	70.4	55.6	65.7	80.3	57.7	54.1	73.0	76.3	71.5	61.1	66.6

Source: own calculation based on FADN data.

Agricultural to non-agricultural income ratio for various economic size classes (SO) of FADN farms in Poland – average values for 2004-2013 (%)

Agricultural income to non-agricultural income ratio 2004-2013 (%)	Standard Output (SO) level (in thous. euro)					
	<8	8-25	25-50	50-100	100-500	>500
Without subsidies	16.6	19.3	59.2	106.2	614.5	-794.0
With subsidies	25.5	47.8	106.0	182.9	788.8	1205.6
Increase of the ratio through CAP support in percentage points	8.9	28.5	46.8	76.7	173.5	1999.7

Source: own calculation based on FADN data.

Impact of individual groups of subsidies on farm income in Poland in the years 2004-2013 (panel regression)

Specification	Coefficient	Stand. error	t-Student	p-value	
Constant	8.23485	0.801033	10.2803	0.0001	***
Subsidies for public goods per FWU	1.082451	0.0450463	1.7588	0.1389	
Subsidies for production per FWU	0.867666	0.059724	-2.3767	0.0634	*
SAP per FWU	1.147897	0.0551024	2.5032	0.0543	*
Subsidies for investments per FWU	1.050213	0.0199134	2.4603	0.0572	*

SAP – Single Area Payment.

Source: own calculation based on FADN data.

Share of CAP subsidies in agricultural income and the change in this share in the period of 2013/2004 for various economic size groups (SO) of FADN farms in Poland

Specification	Standard Output (SO) level (in thous. euro)					
	<8	8-25	25-50	50-100	100-500	>500
Average share of subsidies in agricultural income 2004-2013	36%	62%	46%	41%	22%	159%
Change in the share of subsidies in income 2013/2004	-16%	35%	26%	21%	10%	215%

Source: own calculation based on FADN data.

Conclusions

- Thanks to the support of the CAP the average income of farms in Poland and other EU countries approaches to the average income of the non-agricultural sector. Without support in most of EU countries agriculture could not exist.
- All CAP support groups were significant for the shaping of agricultural income; single area payments had the greatest influence;
- In each economic class of farms in Poland there was an increase in the agricultural to non-agricultural income ratio;
- The impact of CAP subsidies on changes in economic sustainability was uneven – the strongest holdings benefited the most.

The analysis confirmed the adopted hypothesis:

Common Agricultural Policy's subsidies improve the general level of economic sustainability of the agricultural sector, but they are not a tool that balances income within the agricultural sector – there is a lack of social sustainability in terms of income distribution.



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Thank you for attention

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