European Association of Agricultural Economists

Institute of Agricultural Economics, Sofia, Bulgaria

University of Bologna, Italy

147th EAAE Seminar

"CAP Impact on Economic Growth and Sustainability of Agricultural Areas"

October 7-8, 2015

Sofia, Bulgaria

Scientific editing:
Prof. Dr. Dimitre Nikolov
Prof. Dr. Krasimira Kaneva

Text revised:
Dimitar Dimitrov

Theme

In 2015 a new programming period of the CAP with a major reform of policy measures and tools launched. The new CAP seeks to encourage knowledge, innovation and greater competitiveness in order to realize the potential of agriculture and food industry. The purpose of the CAP is to increase the productivity and efficiency of agricultural holdings through support of structural adaptation and income stability. CAP aims to guarantee economic growth and sustainability of agriculture and rural regions in order to reduce poverty, improve quality of life of rural households and prevent depopulation of villages. Contributing to public goods, environmental sustainability and adaptation to climate change is also a purpose of the CAP. Finally, the combination of strong financial support from the CAP and strict requirements in food safety standards is bringing about substantial and rapid changes in the whole sector.

The seminar wants on the one hand to look back in order to assess what have been the impacts of the instruments used by the CAP in the past (both in old and new member countries) and on the other hand by looking forward to evaluate the possible impact of the changes in the new CAP policy.

Background

There is a long tradition of analysing the impact of CAP. Economic models suggest that under specific conditions, the CAP could generate economic growth and net benefits for EC member states. In particular, they identify impacts on the economic growth in agriculture and rural regions, restructuring and competitiveness of agricultural holdings, food safety and quality standards for production processes and consumer goods. CAP effects are usually estimated using different methods and approaches: macroeconomic models and/or microeconomic models; for individual countries (country studies with single-country models) and/or for several countries (multi-country models). Beyond traditional economic tools, the analysis of CAP impact incorporates interdisciplinary frameworks including regional economics and sociological approaches. During the seminar we want to assess the results of these models and methodologies and evaluate the impact of past and current CAP policies.

Objectives

The objective of the seminar is to provide an overall picture as well as detailed analyses of the past and future CAP impact on the structural reform of the agrarian sector, and its impact on rural areas and food chain development. Interconnection and multiple impact of the CAP on non-agricultural sectors will be also discussed. The seminar brings together agricultural, rural and food economists and sociologists.

Topics

The Seminar focuses on the following main topics related to the impact of CAP:

1) **Structural Changes and Productivity Growth in Agriculture**
   Structural changes in the agrarian sector; Efficiency, productivity growth and competitiveness
   Risk management; Agricultural investments.
2) **Sustainable Rural Development**
   Unemployment and job creation; Income growth and poverty reduction; Diversification in rural areas; Social instability and social inclusion.

3) **Innovation and Environment**
Sustainable intensification of agriculture; Conservation and efficient use of natural resources;
Knowledge and innovation for environment.

4) **Interconnections and Multiple Impacts**
Cooperation and integration between agriculture and food industry, food chain; Food chain, food safety and food quality; Competition between agriculture and energy markets, land investors and non-agricultural land users; Contribution and adaptation of agriculture to climate change.

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European Association of Agricultural Economists

Institute of Agricultural Economics, Sofia, Bulgaria

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Dr. Tassos Haniotis (European Commission, DG Agriculture and Rural Development, Belgium)
Prof. Dr. Sofia Davidova (Kent Business School, United Kingdom)
Prof. Dr. hab. Plamen Mishev (University of National and World Economy, Bulgaria)
Prof. Dr. Davide Viaggi (University of Bologna, Italy)
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Contact person:

Prof. Dr. Krasimira Kaneva (Institute of Agricultural Economics, Sofia, Bulgaria)

Programme schedule

Wednesday 7th October, 2015

8:30 - 9:30	**Registration**
9:30 - 9:50	**Welcome Addresses and Seminar Opening** Mr. Vasil Grudev, *Deputy Minister, Ministry of Agriculture and Food, Bulgaria* Prof. Dr.Totka Trifonova, *President of Academy of Agricultural Sciences, Bulgaria* Prof. Dr. Dimitre Nikolov, *Director, Institute of Agricultural Economics, Bulgaria* Prof. Dr. Davide Viaggi, *University of Bologna, Italy*
9:50 - 12:10	**Plenary session: Keynote speakers** **Chair:** *Prof. Dr. Davide Viaggi, University of Bologna, Italy*
9:50 - 10:20	**The Role of CAP in Addressing Jobs and Growth Challenges** *Dr. Tassos Haniotis, European Commission, DG Agriculture and Rural Development, Belgium*
10:20 - 10:40	**CAP and the Challenges of Family Farming in Europe** *Prof. Dr. Sofia Davidova, Kent Business School, United Kingdom*
10:40 - 11:10	Coffee break
11:10 - 11:30	**Implication and Challenges of the new CAP for impact analysis** *Dr. Pavel Ciaian, Institute for Prospective Technological Studies, Spain*
11:30 - 11:50	**The impacts of the CAP at the farm level: bringing insights from the sequence of projects from CAP-IRE to CLAIM** *Prof. Dr. Davide Viaggi, University of Bologna, Italy*
11:50 - 12:10	**CAP and Bulgarian Agriculture** *Prof. Dr. hab. Plamen Mishev, University of National and World Economy, Bulgaria*
12:10 - 13:30	Lunch
13:30 - 14:50	**Session I: Structural Changes and Productivity Growth in Agriculture** **Chair:** *Dr. Pavel Ciaian, Institute for Prospective Technological Studies, Spain*
13:30 - 13:50	**Impact of direct payments convergence in Italy: a territorial and sector assessment** *Fabio Pierangeli, Luca Ruscio, The Agricultural Research Council, Italy*
13:50 - 14:10	**The impact of the CAP and its reforms on the productivity growth in agriculture** *Kyösti Arovuori, Tapani Yrjölä, Pellervo Economic Research, Finland*

14:10 - 14:30 **The robustness of the estimated effects of the investment support to agriculture: the experience from the analysis of the Czech RDP 2007-2013**

Tomáš Ratinger[1], Tomáš Medonos[2], Martin Hruška[2]
[1]Technology Centre ASCR, Czech Republic; [2]Institute of Agricultural Economics and Information, Prague, Czech Republic

14:30 - 14:50 **Structural changes in family farming in Poland since EU accession: lessons learned, challenges and opportunities**

Paweł Chmieliński, Bożena Karwat-Woźniak, M. Alina Sikorska, Institute of Agricultural and Food Economics, Poland

14:50 - 15:20 Coffee break

15.20 - 16.40 **Session II: Sustainable Rural Development**

Chair: *Prof. Dr. Sofia Davidova, Kent Business School, United Kingdom*

15:20 - 15:40 **Impact of EU subsidies on the well-being of rural areas in Hungary**

Imre Fertő, Research Centre for Economic and Regional Studies, Institute of Economics, Hungary

15:40 - 16:00 **The role of CAP in enhancing farm incomes: the redistributive effect of direct payments in Italy**

Stefano Ciliberti, Angelo Frascarelli, University of Perugia, Italy

16:00 -16:20 **The new direct payments paradigm in the CAP 2014-2020: economic effects of "green" and redistributive payments on Bulgarian agriculture**

Bozhidar Ivanov, Nona Malamova, Emilia Sokolova, Institute of Agricultural Economics, Bulgaria

16:20 - 16:40 **A two-step modeling approach for the impact assessment of greening in Italy**

Solazzo Roberto, Fabio Pierangeli, The Agricultural Research Council, Italy

16:40 - 18:00 **Poster Presentations**

Chair: *Prof. Dr. Diana Kopeva, University of National and World Economy, Bulgaria*

- **CAP impact on economic growth and sustainability of agriculture and rural areas: Kosovo's case**

  Kapllan Halimi[1], Ekrem Gjokaj[2]
  [1]Ministry of Agriculture, Forestry and Rural Development, Republic of Kosovo; [2]Faculty of Agriculture and Veterinary, Republic of Kosovo

- **Going international? Labor migration intentions among senior agricultural students in Bulgaria**

  Diana Traikova, Judith Möllers and Martin Petrick, IAMO, Halle, Germany

- **Effect of the new direct payments schemes on farm income inequality**

  Emilia Sokolova, Institute of Agricultural Economics, Bulgaria

- **A Data Envelopment Analysis of efficiency and sustainability of Bulgarian farms**

  Veselin Krustev, Institute of Agricultural Economics, Bulgaria

- **Innovations in the governance structure of agricultural production cooperatives**

  Angel Sarov, Institute of Agricultural Economics, Bulgaria

- **Territorial distribution of innovation in agriculture**

  Encho Ivanov, Institute of Agricultural Economics, Bulgaria

19:00 Welcome diner

Thursday 8th October, 2015

9:00 - 10:40 **Session III: Innovation and Environment**

Chair: *Tomáš Ratinger, Technology Centre ASCR, Czech Republic*

9:00 - 9:20 **Conservation and efficient use of natural resources through Payments for Ecosystem Services: the role of CAP in supporting a collective approach**

Federica Cisilino[1], Francesco Marangon[2], Stefania Troiano[2]

[1]The Agricultural Research Council, Italy; [2] Faculty of Economics, University of Udine, Italy

9:20 - 9:40 **Passive farming in Europe: hindering agricultural development or preserving valuable landscapes**

Mark V. Brady[1], Jordan Hristov[1], Christoph Sahrbacher[2] and Fredrik Willhelmsson[3]

[1]AgriFood Economics Centre, Department of Economics, Swedish University of Agricultural Sciences (SLU), Sweden; [2]Leibniz Institute of Agricultural Development in Transition Economies (IAMO), Halle, Germany; [3]AgriFood Economics Centre, Lund University, Sweden

9:40 - 10:00 **Farmers' Adaptation: What Factors Affecting Agricultural Innovations?**

Minka Anasstasova-Copeva, Dimitre Nikolov, Plamena Yovchevska, Institute of Agricultural Economics, Bulgaria

10:00 - 10:20 **The role of agroecosystems diversity towards sustainability of agricultural systems**

Yanka Kazakova-Mateva, Donka Radeva-Decheva, University of National and World Economy, Bulgaria

10:20 - 10:40 **Agricultural investment in Poland in the years 2007-2013**

Barbara Wieliczko, Institute of Agricultural and Food Economics, Poland

11:10 - 12:10 **Session IV: Interconnections and Multiple Impacts**

Chair: *Prof. Dr. hab. Plamen Mishev, University of National and World Economy, Bulgaria*

11:10 - 11:30 **Coherence and impact of the food chain policies over economic growth**

Diana Kopeva, Dimitar Blagoev, Nikolay Sterev,University of National and World Economy, Bulgaria

11:30 - 11:50 **Land conflicts in relation to land reform and common agricultural policy implementation: evidence from Romania**

Marioara Rusu, Monica Tudor, Institute of Agricultural Economics, Romania

11:50 - 12:10 **Farmers in metropolitan areas: managers of natural capital**

Nico Polmann, Wageningen University, The Netherlands

12:10 - 13:00 **Poster presentations**

Chair: *Dimitre Nikolov, Institute of Agricultural Economics, Bulgaria*

- **Food demand in Romania: estimation of expenditure elasticities based on purchased quantities vs. on actual consumption**

  Cecilia Alexandri, Bianca Pauna, Lucian Luca, Institute of Agricultural Economics, Romania

- **Quantity and quality of food losses along the Swiss potato supply chain: Stepwise investigation and the influence of quality standards on losses**

  Christian Willersinn[1], Gabriele Mack[1], Patrik Mouron[2], Andreas Keiser[3], Michael Siegrist[4]

  [1]Agroscope, Institute of Sustainable Sciences, Research Group Socio-economics, Switzerland; [2]Agroscope, Institute of Sustainable Sciences, Research Group Life Cycle Assessment, Switzerland; [3]Swiss College of Agriculture, Switzerland; [4]Institute of Consumer Behaviour, Switzerland

- **Competitiveness of Bulgarian and Hungarian dairy farms**

  Vassil Stoychev, Institute of Agricultural Economics, Bulgaria

- **Framework for assessing the eco-environmental performance of farms**

  Anton Mitov, Institute of Agricultural Economics, Bulgaria

- **Impact of investments on farm viability**

  Victoria Mendeva, Agricultural University, Bulgaria

- **Cost efficiency of organic common wheat production**

  Dimitar Yankov, Agricultural University, Bulgaria

13:00 - 13:15 Closing discussion

13:15 - 14:30 Lunch

14:30 Departure to Veliko Tarnovo

Extended abstracts

Impact of direct payments convergence in Italy: a territorial and sector assessment

Fabio Pierangeli, Luca Ruscio

The Agricultural Research Council, Italy

E-mail: pierangeli@inea.it

Introduction and Objectives

The new agreement on CAP reform reached in 2013 introduced a new architecture of direct payments. Coherently with the previous reforms, the new framework policy continues along a path, started with moving from product to producer support and now continuing to a more land-based approach. However, the new system of direct payments leaves increased flexibility for the Member States in the implementation of I-st Pillar (EC, 2013)[1].

Member States have been asked to make decisions on types of payments from wide range of measures within well-defined regulatory limits. According to the national preferences, the biggest share of resources allocated to direct payments was earmarked to the Basic Payment Scheme and the Green Payment (only the latter is 30%). Furthermore, a sensitive element of the reform was the aim to progressively achieve, over the period 2015-2019, a more evenly distribution of direct support per hectare between farmers, reducing the link to historical references by the convergence of entitlements.

The reform of direct payments is characterized by farm-specific implementation and is likely to provide different effects even between similar farms. Thus, specific tools and models able to simulate and evaluate the impact of such reform on individual farms need to be developed (Louhichi et al., 2015).

The *objective* of this paper is to evaluate the effects of convergence of direct support distribution at territorial and sector level, moving from the Single Payment Scheme (SPS) to the Basic Payment Scheme and the Green Payment. This purpose is carried out developing a simulation tool (*CAP2020-Simulation tool*) based on data at farm level, covering whole Italy.

Methodology

To this aim, a complete national dataset at farm level, from the Integrated Administration and Control System (IACS[2]), related to the payments received by farmers for the 2012 under SPS and specific support of article 68 (regulation (EC) n. 73/2009) was exploited, together with data from the Farm Register concerning the potential eligible agricultural area (2014).

The *CAP2020-Simulation tool* allows estimation, for whole Italy, of the value of the Basic Payment entitlements and of the individual Green Payment that each farm will receive as from 2015 to 2019, moving from the eligible payments received in 2012. Indeed the tool, based on the Italian authority decisions, implements the partial convergence of entitlements and the calculation of the Green Payment. To do this, the simulation tool is structured into three steps:

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[1] European Commission (2013), *Overview of CAP Reform 2014-2020,* N°5* / December 2013, http://ec.europa.eu/agriculture/policy-perspectives/policy-briefs/05_en.pdf

[2] Source: National Payment Agency

a) implementation of the so called "Irish model" of partial convergence, according to which payment entitlements with an initial unit value lower than 90% of the national unit value in 2019 shall, for claim year 2019 at the latest, have the unit value increased by at least one third of their difference;

b) implementation of the "minimum guaranteed level", according to which no payment entitlement shall have a unit value lower than 60% of the national unit value in 2019;

c) "stop loss", which allows to derogate from the previous point (b) if it would result in a maximum decrease exceeding -30% of the initial unit value.

Furthermore, the Green Payment is calculated as a percentage of the total value of the payment entitlements received by single farm ("individual green payment").

Finally, the calculation of the new value of entitlements by single farm allows matching the data with the Italian FADN database, by fiscal code or VAT, in order to carry out the related sector affected.

Results

The main outputs of the implemented simulation tool show that, if in 2012 about 61% of the farms received less than 40% of the direct support, in 2019 the latter percentage will increase to 52% as total amount of Basic and Green Payments, by means of the convergence mechanism.

At the territorial level the analysis highlights that the mountain areas will likely increase their share of resources (from 10% to 14%), and improve the value of payments per hectares while the share of other zones (plain and hills areas) will decrease. The same effect was observed for the rural areas where the most disadvantaged areas will face an increase in the payments received.

At the sector level, the productions showing to be more affected by the convergence are livestock (beef and veal in particular) and olive trees.

Keywords: CAP, convergence, Single Payment Scheme, Basic Payment Scheme, Green Payment

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Louhichi K., Ciaian P., Espinosa M., Colen L., Perni A., Gomez y Paloma S., (2015). Farm-level economic impacts of EU-CAP greening measures, *Paper presented at the 2015 Agricultural & Applied Economics Association and Western Agricultural Economics Association Annual Meeting*, San Francisco, CA, July 26-28.

The impact of the CAP and its reforms on the productivity growth in agriculture

Kyösti Arovuori, Tapani Yrjölä

Pellervo Economic Research PTT, Finland

E-mail: kyosti.arovuori@ptt.fi

Introduction and Objectives

In this paper, we analyse the effectiveness of the Common Agricultural Policy in terms of its ability to respond to the set objectives. We define the policy effectiveness as the ability of agricultural policy to respond to the stated policy objectives. In order to do this, an empirical analysis on the effects of implemented policies and policy reforms on the objective of the CAP 'to increase agricultural productivity via technological progress and rational use of inputs, especially labour' is conducted. The analysis is conducted at the EU15 level for the time period from 1975 till 2010.

We adopt agricultural value added per worker as the target variable for the development of agricultural productivity. Agricultural value added per worker measures the output of the agriculture sector less the value of intermediate inputs. The objective of the CAP is to increase agricultural productivity via technological progress and rational use of inputs, especially labour. Thus, value added per worker in agriculture is a justified approximation for the policy objective.

Methodology

In the empirical analysis, an econometric model utilising panel data for the EU15 countries is built. In the model, the development of the defined policy target variable is explained with policy variables and a set of economic and structural control variables. The target variables are selected to quantify the stated policy objectives of the CAP. The selected control variables aim to capture the general economic and structural development outside the agricultural sector.

The policy variables aim to capture both the development of initial policy instruments already in force at the beginning of the research period and the structural changes in the set of policy instruments due to the policy reforms implemented during the 1990s and 2000s.

The data for the analysis in this study are obtained from several large databases. From the original data sources, a panel for EU15 countries is compiled following the enlargement of the European Union during the research period from 1975 to 2010.

Results

Our results show that overall economic growth has contributed towards increasing the value added per worker. Increasing productivity in agriculture, especially due to technological progress, has led to a significant increase in farm output. At the same time the number of farmers and agricultural employment has decreased. The sign for the estimated coefficient for rural population suggests that, the higher the number of rural population, the slower the increase in agricultural value added per worker.

The negative sign of the coefficient for net indirect taxation indicates that increase in indirect taxes in proportion to GDP reduces the growth rate in agricultural value added. The variable implies negative indirect impacts on labour demand outside agriculture, especially if the increase in the share is due to decrease in GDP per capita or increase in indirect taxes.

The sign for nominal rate of assistance is negative. Agricultural policies have, in aggregate, kept the resources in the sector and, thus, reduced the pace of increase

in the value added per worker. However, the implemented policy reforms have shifted the direction. Two out of three policy reform dummies receive a positive sign.

The implemented agricultural policy reforms have improved the policy effectiveness in term of its impact on the agriculture value added per worker. Based on the analysis it can be argued that a policy shift from coupled price support to direct payments has released resources from agriculture to be utilised in other sectors. Moreover, it can be stated that the impact of agricultural policies is directly linked to structural and economic conditions in a particular country.

Keywords: agricultural productivity, CAP impact, economic growth

The robustness of the estimated effects of the investment support to agriculture: the experience from the analysis of the Czech RDP 2007-2013

Tomáš Ratinger[1], Tomáš Medonos[2], Martin Hruška[2]

[1] *Technology Centre ASCR, Czech Republic*
[2] *Institute of Agricultural Economics and Information, Czech Republic*

E-mail: ratinger.tomas@tc.cz

Introduction and Objectives

Encouraging investment activities has been considered an important instrument for enhancing the competitiveness of Czech agriculture since the early days of the economic transition. In spite of this fact, evaluation of effects of polices supporting agricultural investment attracted little attention of national policy makers and researchers until the start of the Rural Development Programme (RDP) 2007-2013. For the RDP 2007-2013 the Commission established the Common Evaluation and Monitoring Framework and forced Member States to follow the effects of the investment support measures. However, the simple comparison of result indicators (as production or GVA) between supported and non-supported groups, suggested by the Commission, is methodologically problematic, since it omits the multiple factors formation and the fact that the measures are targeted to or exploited by only some groups of producers/regions (Michalek 2007). To deal with these shortcomings a more precise counterfactual approach is needed for investigation what would have happened if the supported producers did not participate in the programme and then for comparison of the result indicators (Khandaker et al. 2010). In our previous research (Medonos et al., 2012, Ratinger et al, 2013) we showed using the propensity score matching approach (PSM) and the matching proposed by Abadie and Imbens (2002) that there were benefits of the investment support measures in terms of improved GVA, labour productivity and some other indicators depending on the investment orientation/farm specialisation and the farm size. Although the matching methods are increasingly popular, and their possible use for evaluating the investment support under RDP have received attention from the Commission (Metis, 2014), we found that the effects differ between the considered periods of investment and monitoring of effects, and between the sample characteristics like the number of farms or the extent of available or the considered structural characteristics of farms; in other words the robustness of estimated effects might be questionable.

The objective of this paper is to address the robustness of the results of the counterfactual approach based on Roy-Rubin-model (Khandaker et al. 2010). In turn it means: i) to investigate deeper the time consistency of results measuring the effects of the investment support, and ii) to provide a better insight in the similarity of farms and their counterfactuals.

Concerning the former (i), the data availability do not allow us to investigate more than three consequent years of the effects of the RDP investment support, awarded in the years 2007-2010 (the period when most of the budget of the modernisation and adding value measures was spent). Concerning the latter (ii), we use two samples of farms: a sample of published financial indicators of legal entities [Albertina] and FADN, which substantially differ in their numbers of respondents (Albertina 1300, FADN 600), coverage (Albertina only legal entities, FADN full coverage of farm types and sizes), and the number and nature of available indicators (Albertina – only financial data + land use, FADN – financial, production and land use data). Our hypothesis is that the samples differ in the capacity to provide appropriate

counterfactuals to each investment support measure participant, which can realistically be considered as the supported farm itself. Moreover, the appropriateness of control farms depends on the considered dimensions of similarity given either by the subjective selection of structural characteristics or by the limits of the sample i.e. the surveys differ in the number and the nature of collected variables.

The research covers measures 121 “Modernisation of Agricultural Holdings” and 123 “Increasing of value added” of the RDP 2007-2013 and their application in the Czech Republic.

To assure comparability of results over the three years we need to exclude the farms which received the support after 2010 from the both groups: the participating farms in 2007 -2010 and the controls. It appeared that about a half of the supported farms in the period 2007-2010 received the investment support also in the following period and thus had to be excluded. In addition we took into account farms which received the investment support in 2004-2006 and farms which benefited from the interest subsidies to investment credits. It was done in two ways: either by excluding them or by including the participation in these programmes among structural characteristics of farms (an additional similarity dimension).

Methodology

To measure the effects of the investment support we consider three groups of indicators: the performance indicators such as GVA and NVA, the productivity indicators (labour productivity, Tornquist-Theil total factors productivity) and the indicators of capital mobilisation (two bank credit indebtedness ratios (Ratinger et al 2013). As in our previous research we used PSM-kernel method, PSM-caliper method (e.g. Khandaker et al., 2010) and the nearest neighbour matching (nnmatch) by Abadie and Imbens (2002).

Results

Our analysis showed that the effects are rather marginal for the first two groups of the indicators in the first year after completing the investment, variable (depending on the sample, investment orientation and the effect measurement) in the second year and statistically significant in most aspects in the third year.

Through analysing the counterfactuals and comparing the results from the two samples we also provided the evidence that the nature and characteristics of the samples used for the counterfactual analysis matter and that the difference in the estimated effects might be substantial (even with opposite signs). Therefore, it is important to pay high attention to the sample when conducting the analysis of investment support effects, particularly, to be concerned with the richness of indicators allowing the capturing of all essential dimensions of farm similarity.

Finally to affirm the analysis we suggest looking not only at the average treatment effect, but also at its influence on controls.

Keywords: investment support, counterfactual analysis, kernel matching, nearest neighbour matching, sample, treatment effects.

References

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Structural changes in polish family farms since EU accession: lessons learned

Paweł Chmieliński, Bożena Karwat-Woźniak, M. Alina Sikorska

Institute of Agricultural and Food Economics – National Research Institute, Poland

E-mail: chmielinski@ierigz.waw.pl

Introduction and Objectives

Economic reforms carried out in the period of transformation, improvement of the macro-economic situation, in particular the implementation of the agricultural policy with the participation of the European Union resources, provided an opportunity for pro-effective reconstruction of the Polish agricultural sector. The changes taking place in the socio-economic situation of farms should be regarded as positive, and the nature of occurring transformation generally as increasing the production potential and competitive capabilities of family farms which are predominant segment of the Polish agriculture.

Methodology

The paper analyses Polish individual (family) farms in terms of socio-economic characteristics of farm managers and farming population, the farm structure and the use of land, market activities of agricultural holdings as well as the efficiency of farm management. In discussion, we analyse the compliance of farm characteristics with definition of the family farm that is used in socio-economic sciences, and we make an attempt to draw conclusions for the design of future agricultural policy.

The main data sources were surveys conducted in intervals of several years (mostly from the 1996, 2000, 2005 and 2011 studies) in 76 villages across Poland. The survey covered all agricultural holdings with more than 1 ha of agricultural land at the disposal of private individuals, namely individual agricultural farms, being *in fact* family farms. The surveyed units accounted for some 1/500 of the actual number of family farms, and in the 2011 survey their number was approx. 3,300. The sampling of villages for the surveys was deliberately selected to make the characteristics of the analysed farms proportional to the actual structure of agricultural holdings in Poland, both at national level and throughout regions. The survey questionnaire was designed to collect a great variety of detailed information, not only on the features of family farms, but also on the demographic characteristics, the educational level, economic activities of managers and members of their families.

Results

The study demonstrates that Poland's accession to the EU influenced the activation of positive structural changes as well as change in economic effects obtained in individual agricultural farms. Their efficiency improved, namely economic effectiveness, understood as the possibility to achieve specific effects from given expenditures.

During past decade, along with the intensification of competition, processes of professionalization in the Polish agriculture were observed. Despite certain symptoms for ageing of the family labour, it may still be considered relatively young. The level of enrolment of farmers and their professional skills also improved. This situation will probably foster the activation of modernization processes in agriculture, the diversification of professional activities and the process of exit farming. The studies documented the fact that the land and labour productivity were invariably diverse and showed a connection with the farm's characteristics, its role as the place for work and livelihood, as well as the farmer's age and level of education.

It was also found that Polish individual farms (i.e. those operated by private individuals and with total area of agricultural land of 1 ha and more) fully meet the eligibility criteria for the group of family farms. However, the fragmentation of agrarian structures in most cases does not allow them to achieve income parity and therefore their economic functions are limited.

Keywords: family farms, ownership and inheritance of farms, farm labour land market, farming population, Poland

Impact of EU subsidies on the well-being of rural areas in Hungary

Imre Fertő

Research Centre for Economic and Regional Studies, Institute of Economics, Hungry

E-mail: ferto.imre@krtk.mta.hu

Introduction and Objectives

In recent years, evaluating EU co-funded programmes in both rural and regional development has grown in importance. Thus it is surprising that researches on the success or failure of these programmes is relatively scarce. Although there is growing literature on the impacts of agricultural policy on labor market or on regional level (e.g. Breustedt and Glauben 2007, Esposti 2007, Elek et al. 2010, Petrick and Zier, 2012), but similar research on rural development policy is rather limited. The majority of these studies focus only on a single aspect of the impacts of subidies. However rural development policy is multidimensional in nature, thus the impact evaluation should take into account the various aspects of it. This paper is a first attempt at analyzing the impact of subsidies paid by the European Union towards upgrading rural areas in Hungary between 2002 and 2008, using a two-stage approach.

Methodology

In the first stage, by applying approach by Michalek and Zarnekow (2012), we constructed a multi-dimensional index measuring the overall level of regional development and quality of life in individual regions of Hungary. In the Regional Development Index (RDI), the development domains are represented by 132 partial socio-economic, environmental, infrastructural and administrative indicators/variables at NUTS1 level. The weights of these economic, social and environmental domains are derived empirically from an econometrically estimated, interregional migration function after selecting the “best” model from various alternative model specifications. The RDI was empirically applied to the regional development in individual rural areas of Hungary in 2002–2008. Due to its comprehensiveness, RDI is suitable for analyzing the overall level of development of rural areas and also for evaluating the impacts of various structural programmes at a regional level.

In standard policy analysis settings, the sample-average treatment effects cannot be calculated because we only observe one of the two possible outcomes for each individual (or sub-region in our case). Thus in the second stage we employed a matching estimation technique to identify the treatment effects. Following the insights of impact analysis literature we adopt a counterfactual framework developed by Rosenbaum and Rubin (1983). More specifically, farms selected into treatment and non-treatment groups have potential outcomes (RDI scores).

Data for the RDI calculations is based on Central Statistical Office regional database provided by Databank of Centre for Economic and Regional Studies of Hungarian Academy of Sciences. WE employ 132 variables covering various fields of quality of life including: demographics (15 variables), health services (9), business units (2), tourism and catering (9), retail sector (24) transport (7), community infrastructure (14), environment (4), culture (2), unemployment (4), education (16), social protection (17) personal income tax (3), number of houses (5), number of villages (1). In order to provide more comprehensiveness of the aspects of well-being, we cannot take into account unequal number of indicators per aspect. Data for the EU funding is based on Information Systems of National Regional Development. We use both value data of EU funds and number of projects funded by the EU.

Results
Estimations reveal four main findings. First, calculations suggest that EU subsidies are concentrated where there have been previous EU subsidies. Second, some convergence of support can also be observed. Third, we find considerable variation in terms of the level of subsidies during the period analyzed. This indicates that there has been a chance for poorly subsidized regions to improve their relative position or weaken their position further. Finally, our results imply that it is very difficult to identify any impacts of subsidies, because estimations are highly sensitive on the chosen parameters. The significance of identified effects is rather low and its direction can be both positive and negative. We conclude that, irrespective of estimated coefficients, the impact of regional subsidies is negligible. As a consequence, further research is needed to explore the impacts of subsidies.

Keywords: subsidies, well-being, rural areas, Hungary

The role of CAP in enhancing farm incomes: the redistributive effect of direct payments in Italy

Stefano Ciliberti, Angelo Frascarelli

University of Perugia, Italy

E-mail: stefano.ciliberti@studenti.unipg.it

Introduction and Objectives

The role played by agricultural policies in income distribution has been analysed in various literature sources. Indeed, according to Mishra (2009), farm income inequality has an impact on: (1) economic well-being, including farm family health, (2) the adoption of farming technology, (3) agricultural productivity, and (4) growth in the agricultural sector. This topic has been covered in several studies conducted in Europe and most of these analyses have found that government payments cause a decrease in income inequality (Keeney, 2000; Frawley and Keeny, 2000; Severini and Tantari, 2013a; 2013b; 2015). However other studies have concluded that government payments increase income (Allanson, 2006; Schmid et al., 2006; El Benni et al., 2012). According to the literature, European Commission has for many years expressed concerns about the inequitable distribution of farm income support, as direct payments (DPs) are very concentrated (Allanson, 2006). This confirms that large farms have been the main beneficiaries of the CAP support and, as a consequence, the aim of guaranteeing income stability in order to reduce poverty and improve quality of life of rural households is not fulfilled.

In Italy, CAP reform 2015-2020 has caused a decrease of the level of DPs as well as a shift from the "historical" model to the regional model. Since, from the one hand, the reduction of national ceiling of DPs could have negative effects on farm income distribution, on the other hand, the shift to the regional model may reduce DPs and income concentration. This paper aims to analyze whether and how the new CAP reform will affect farm income inequality in Italy. For this purpose, the following research questions were elaborated: (1) Does the new DPs scheme decrease farm income concentration in Italy? (2) Which are the Italian regions and Type of Farming most negatively affected by new direct payments scheme?

Methodology

Italian FADN database for years 2013 is used in order to carry out a simulation of economic impacts of CAP reform of DPs on farm income in 2015. Such an evaluation is provided by means of a software implemented by Ciliberti and Frascarelli (2014), that rigorously take into account all the technical mechanisms established by Reg.(EU) 1307/2013 and Italian decisions on this matter. Afterwards, the decomposition of Gini coefficient by component of income (e.g. market income, DPs and so on) is applied in order to measure the effect of different income sources on aggregated income inequality (El Benni et al., 2011; Severini and Tantari; 2013; Keeney, 2000; Lerman and Yitzhaki, 1985). In practice, using this method, the total farm income is defined as the sum of incomes from k different sources Y_k with $F(Y_k)$ denoting the cumulative distribution function of the various source under consideration. The decomposed Gini coefficient can be written as follows:

$$G = \sum_{k=1}^{K} Rk * Gk * Sk = \sum_{k=1}^{K} Ck * Sk$$

where R_k is the Gini correlation coefficient, G_k is the Gini coefficient of the k_{th} income source and S_k is the share of the k_{th} income source on total income, whereas R_k times G_k yields the concentration ratio or Pseudo-Gini coefficient C_k that measures

how income from each source is transferred across a population ranked with respect to the level of total income received.

Results

The results of the analysis of the income distribution are organized by examining the decomposition of farm income concentration in the two years under consideration (static analysis) and by observing the evolution of income distribution over the period (dynamic analysis). Since Italy will progressively shift from the historical model to a regional model during the “transition period” of 2015-2019 (by means of a partial convergence model) a decrease of direct payments and farm concentration is expected. On the other hand, the general decrease of Italian budget for Pillar 1 could negatively affect the capacity of this direct support to contrast the regressive effect due to market incomes, especially for regions and Type of Framing that mainly benefitted of the SPS introduced by 2003 Fischler reform.

Keywords: farm income, redistributive effect, direct payments, Italy

The new direct payments paradigm in the CAP 2014-2020: economic effects of “green” and redistributive payments on Bulgarian agriculture

Bozhidar Ivanov, Nona Malamova, Emilia Sokolova

Institute of Agricultural Economics, Bulgaria

E-mail: emitroshanova@gmail.com

Introduction and Objectives

The last reform of the Common Agricultural Policy aimed to expand the field of the European agricultural policy so that it could better target the changing societal and budgetary objectives. In order to do that the European commission proposed changes in the way the direct decoupled payments are being distributed between and within the member states. The single payments (single area payment in Bulgaria) were decomposed to several components - a base component, as a form of income support, a “green” component aimed at reaching certain environmental goals and other minor components that require implementation of certain conditions, or existence of certain condition (young farmers, small farmers, farming in disadvantaged conditions, etc). The base component in Bulgaria is organized as an area payment scheme but there will also be a redistributive payment – higher area rate for the first 30 ha land of the agricultural holding.

The new organization of the direct payments in Bulgaria marks a new period for the Bulgarian agriculture policy development aimed at more balanced and targeted public support. The main aim of the paper is to analyze and present the expected impact of some of the support mechanisms on the farm incomes and economic activity. The main tasks are:

- To study the effects of the redistributive area payment on farm incomes grouped by their size and specialization.

- To calculate the economic effects from the introduction of some of the “green” requirements - the crops diversification.

Methodology

The main methodological tools used in the analysis are:

- Econometric methods for quantification the results from the introduction of redistributive element for the main farm specialization types – grain production, oilseed production, technical crops and potato vegetable production, fruit production, essential oil and grasslands.

- Calculating the average annual cost of implementing crop diversification requirements, taking into account the typology of the farms;

- Multi-option approach to study the potential effect from the introduction of the green component of the CAP in the following areas: economic impact on agriculture sector; Cost-benefit analysis; Analysis of the significance of the environmental effects; Effect on agricultural commodity markets.

The data used for the analysis is from Bulgarian Agrostatistics, FADN and the national statistical institute.

Results

The results of the analysis show the effects of the redistributive payment in Bulgaria in the period 2014-2020. The potential effect of green payments has also been analyzed. According to the research results net increase in SAPS subsidy is expected with redistributive payment in farms less than 150 ha (i.e. 95.09% of the SAPS recipients) provided that artificial fragmentation is avoided. The introduction of

ecological focus areas and crop diversification would be economically unviable for producers of vegetables and livestock farms. On the basis of the analysis some measures for enhancing the effects of support for achieving balanced sector development, competitiveness of agriculture and sustainable development are proposed.

Keywords: green, redistributive, CAP, Bulgaria

A two-step modeling approach for the impact assessment of greening in Italy

Roberto Solazzo, Fabio Pierangeli

The Agricultural Research Council, Italy

E-mail: solazzo@inea.it

Introduction and Objectives

On 16 December 2013 the Council of EU Agriculture Ministers formally adopted the Common Agriculture Policy (CAP) reform package which sets out the new rules related to the implementation of the First Pillar for European farms in the next 5-year period. A relevant share of the total amount of resources earmarked to direct payments, equal to 30%, will be allocated on the green payment, conditioned to the production of public goods (the so-called "greening"). The final CAP agreement established three greening requirements: i) crop diversification; ii) maintenance of permanent grassland; iii) allocation of arable land to Ecological Focus Area (EFA). The greening measures, as the whole CAP, have been thought up for a specific application at single farm level. The green payment, resulting from the convergence process, and the application of greening constraints, may affect in a different way similar farms located in the same geographical area. Specific tools able to estimate and evaluate the effects of the greening measures on the individual farmers' behavior are required (Louhichi et al., 2015; Solazzo et al., 2014; Waş et al. 2014).

The objective of this paper is to develop a two-step modeling approach for the impact assessment of greening at farm level, able to estimate: i) the amount of green payment per farm in 2019 and ii) the farms behavior, in terms of land use (and consequent income effects), due to the greening application, taking into account the reduction of payment for non-compliance.

The two-step model proposed is based on the national choices on the convergence method for the calculation of payment entitlements under the Basic payment scheme and the greening. Indeed, Italy chose to implement the payments at national level adopting the so called "Irish model" (aiming to a partial convergence in 2019) with "individual" green payment, as a share of the basic payment by single farms. The evaluation of the greening effects is carried out on a Farm Accountancy Data Network (FADN) sample of more than 2,000 farms, located in three regions of Northern Italy (Lombardy, Emilia-Romagna and Veneto).

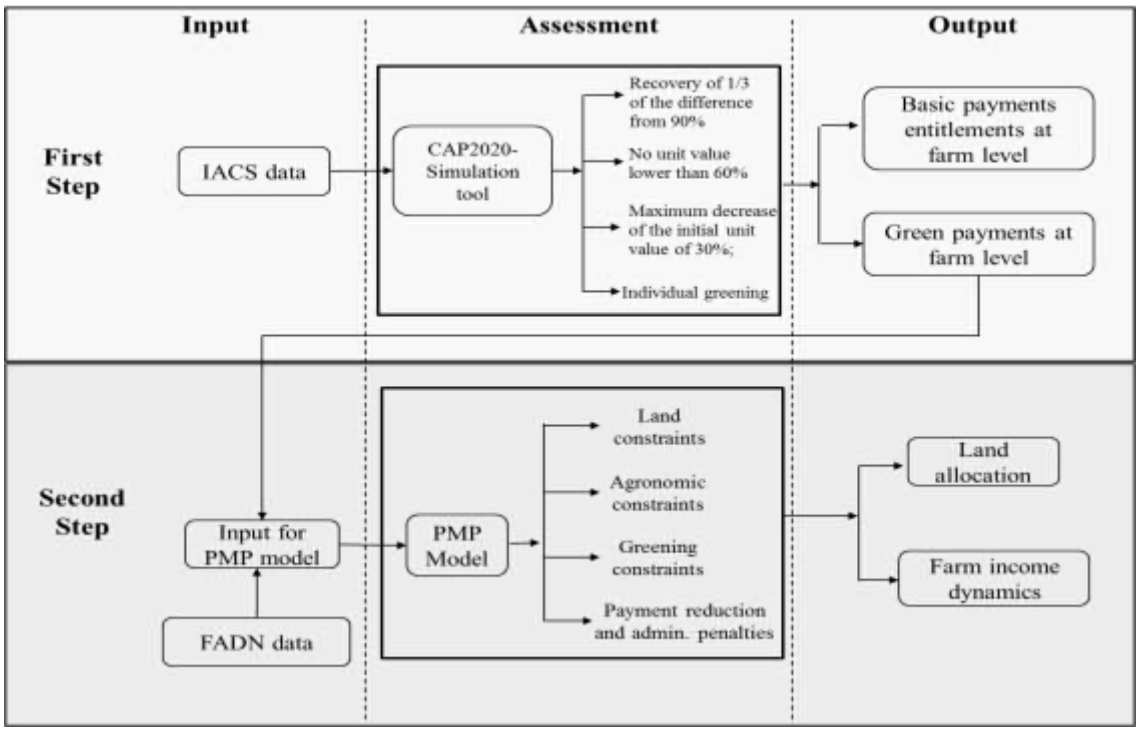
Methodology

The *first step* of the proposed methodology concerns the estimation of the basic and green payments. For this part, a Simulation tool (*CAP2020-Simulation tool*) based on micro data at the farm level covering the whole Italy was developed. For this purpose we used the Integrated Administration and Control System (IACS[3]) dataset for the 2012 accounting year that represents the only source with complete data, at farm level, on payment received from all Italian agricultural farms and the data from Farm Register on the eligible agricultural area (2014). All convergence mechanisms provided by new CAP Reform was implemented in order to estimate the value of basic payment entitlements and so the individual green payment that each farm will receive as from 2015-2019. At this stage the use of IACS data, on all Italian farms, is necessary for the proper implementation of convergence and the following redistribution of payments from farms which - having the initial unit value higher than

[3] Source: National Payment Agency

the national unit value - will face a reduction of the payments to farms which will increase their entitlements.

The values of the estimated green payments at farm level were used, in the *second step*, as exogenous information within a Positive Mathematical Programming (PMP) model (Paris and Howitt, 1998) for the assessment of the effects of the greening measure on farmer's behavior. Other information on the analysed farms was extracted from FADN database and included land use, yield, output prices and variable costs per activity at farm level. The model implements all constraints and application thresholds of the three greening measures and evaluates the response of farms in terms of land use change and resulting income reduction. Every single farm has the possibility to fully, partially or not respect the greening constraints, taking into account, in the objective function, the resulting reduction (and penalty) in the payment. The FADN weighting system was used in order to make the simulation results more consistent with the production structure of the area.



Results

The main findings on the three Northern Italy regions (Lombardy, Emilia-Romagna and Veneto) show that the weakening of greening measures, much less demanding than the original Commission proposal, along with the relevant amount of green payments and with the payment reduction system are strong incentives to the greening compliance. Almost all farms affected by those agricultural practices have incentives to fully apply the greening constraints.

In terms of changes in the land use, greening produce a decrease in cereal crop area with an increase in nitrogen-fixing crop surface, mainly soya and alfalfa, qualified as EFA. In terms of lower gross margin incurred by farmers for fulfilling the greening requirements, the model estimates an income reduction lower than 0.5% at regional level.

Keywords: CAP, greening payments, farm level, farmer's behavior, land use, income effects

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CAP impact on economic growth and sustainability of agriculture and rural areas: Kosovo's case

Kapllan Halimi[1], Ekrem Gjokaj[2]

[1] *Ministry of Agriculture, Forestry and Rural Development, Republic of Kosovo;* [2] *Faculty of Agriculture and Veterinary, Kosovo*

E-mail: Ekrem.Gjokaj@rks-gov.net

Introduction and Objectives

The economic development at global level during 2013 has featured positive trends although the rate of economic increase has been slightly lower compared to the previous year. The IMF evaluated the global economic growth during 2013 to be 3% compared to the 3.2% in the previous year. In 2013 the Eurozone has faced recession with a 0.4% negative rate of economic growth while Kosovo's economy continues to grow. According to KAS data on main macroeconomic development indicators, real economic growth in 2013 amounted to 3.1%. However, compared to the previous year, consumption contributed with a more moderate rate of 0.8%. The investment component in 2013 has also had a positive contribution of 1.1% to economic growth compared to 2012 when the component marked a negative contribution.

The paper is aimed to analyse the ARDP 2007 - 2013 socio – economic impact on the agriculture development of Kosovo

Results

The GDP at current prices in Kosovo for the period 2008-2013 has increased from 3,882.8 mil. € to 5,326.6 mil. €, that was 37% more in 2013 than in to 2008. The GDP per capita has marked an increasing trend from 2,258 Euro in 2008 to 2,935 Euro in 2013, respectively 29.9% more in 2013 than in 2008. The final consumption expenditure has experienced a positive trend with an increase of 5.4% in 2013 compared to 2012.

Investments in 2013 had a share of 28.1% in GDP, which represents a similar level as in the previous year. However, compared to the previous years when the public sector through capital investments was considered the main holder of investment growth, in 2013 the main contribution to the increase in this component is attributable to the private sector. The private investment growth with a share of 60% out of total investments is estimated to be a result of foreign direct investments (FDI) and investment loans (CBK estimate 2013).

The net export in 2013 marked a deficit of 1.68 billion €, which represents a decrease of 2.5% compared to 2012. The greatest increase (13%) was in the category of final consumption expenditure in 2013 compared to 2012. Economic development in 2013 was not sufficient to improve the situation as far as poverty and unemployment are concerned; these continue to be quite high in Kosovo (30%).

In line with the overall objectives of the Agriculture and Rural Development Strategy, based on the overall SWOT and needs identified and in accordance with the IPA II priorities, the ARDP 2014-2020 interventions in Kosovo will support the competitiveness of the agro-food sector, alignment with EU veterinary, phytosanitary, food safety and environmental standards, as well as its restructuring and modernization. The ARDP Programme will also contribute to the development of sustainable land management practices by supporting organic farming and other agro-environmental practices, sustainable forest management and afforestation. The IPARD programme will contribute to sustainable rural development by supporting

diversification of economic activities and strengthening the LEADER approach as well as knowledge transfer by supporting vocational training and the provision of advisory services to farmers, forest managers and the rural population.

The eligible interventions in the EU IPA Rural Development policy area are grouped into 4 priority areas: Priority 1: Enhancing farm viability and the competitiveness of all types of agricultural and primary food processing while progressively aligning with EU standards; Priority 2: Restoring, preserving and enhancing the eco system dependent on agriculture and forestry; Priority 3: Promoting social and economic inclusion, poverty reduction and balanced territorial development in rural areas; Priority 4: Transfer of innovation and knowledge in agriculture, forestry and rural areas and strengthening public administration capacity in implementing rural development programs.

Keywords: rural development, economic inclusion, direct payments, grants, funds, LEADER, sustainability

Going international? Labor migration intentions among senior agricultural students in Bulgaria

Diana Traikova, Judith Möllers and Martin Petrick

IAMO, Germany

E-mail: traikova@iamo.de

Introduction and Objectives

Qualified agricultural practitioners are needed in Bulgaria to catch up in terms of agricultural structural adjustment and increasing farm efficiency. However, especially bigger livestock farms face a lack of motivated and qualified young specialists. At the same time, the universities have difficulties to prepare their absolvents for the practical needs of the farms. A possible solution to fill the gap between theory and practice could be to send students in internship to gain experience on a modern farm abroad. Here we investigate the interest Bulgarian students demonstrate in eventual temporary migration for employing as a qualified farm labour in rural Germany. Most rural migration studies focus on the out-migration trend or deal with the emigration of non-qualified seasonal workers from poorer to richer countries. There appears to be hardly any works on the determinants of high-skilled international migration to rural areas of the EU, and this unique research effort makes a step for filling this gap.

Methodology

The analysis is built on the well-known Theory of Planned Behavior (TPB) (Ajzen, 1991), which depicts intention as driven by attitudes, social norms and perceived control. We integrate into it the push-pull concept (Lee, 1966) and insights from the New Economics of Labor Migration (Stark & Bloom, 1985). The data stems from a 2015 farm students survey administered with a structured questionnaire at four universities in Bulgaria, known to educate specialists with farm-related profile (veterinary-, livestock- and crop specialists, and economists). The final sample consists of 461 students. We analyze the factors shaping the migration intentions with the help of a variance-based structural equations model (PLS), which accommodates bundling a relatively rich set of variables to mirror the theoretical model without high losses of statistical power.

Results

Only 42% (193 students) plan to work in the farm sector. From these, just 40% (77 students) state that it is very likely for them to emigrate within the next five years for a qualified farm employment in rural Germany. All three intention antecedents known from TPB turned out significant in our model. The main role is played by a positive attitude towards migration. Pull factors prevail, with the desire for skill improvement being the main motive. The need for earning income is the main push factor, and it is explained with the perception for unsatisfactory job chances on the local labour market. Language barriers and the belief that integration in the host country will be difficult lower the migration intention. Potential emigrants have preference for working with animals and are not attracted by the urban lifestyle. The decision for emigration is made with the consent of the family. Further group-specific nuances are explored.

The pool for recruiting farm specialists in Bulgaria is actually significantly smaller than the overall number of the absolvents. Accessible German courses and reliable information about positive experiences with the welcoming culture on German farms could make a difference. Future longitudinal studies could follow the qualified migrants, their learning curves, income development and propensity to return home. Then it could become clear if the farm sector in Bulgaria could benefit from the international labour migration of qualified farm specialists.

Keywords: migration, students, Bulgaria

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Effect of the new direct payments schemes on farm income inequality

Emilia Sokolova

Institute of Agricultural Economics, Bulgaria

E-mail: emitroshanova@gmail.com

Introduction and Objectives

One of the main goals of the European agricultural policy is to ensure fair standard of living for those employed in agriculture. Policy measures aimed at income support are trying to implement this goal and in doing so they could be considered as social measures. There have been a number of studies on the impact of subsidies on agriculture and farm activities, both in Europe and in Bulgaria. The farm income distribution, however, was not in the focus of many studies in our country. The CAP 2014-2020 reform made provisions to overcome part of the inequality in the income support distribution by introducing new direct payment schemes, such as the redistributive payments, and by capping the support over certain limits. The newly introduced "green" direct payments could further affect the income distribution.

The main aim of the research is to determine the farm income inequality in Bulgaria and the impact of the Single Area Payment Scheme (SAPS) payments, as well as the expected effects of the new DP schemes on farm income distribution. The main limitations of the analysis are associated with the fact that the only policy tools analyzed are the SAPS payments and the new decoupled schemes, while there are other policy measures that could also affect the farm income distribution in Bulgaria.

Methodology

The main methodological approach used in this study is the calculation of the Gini coefficient (Stuart, 1995) for farm net incomes. To measure the effect of any different income source on the total income inequality a decomposition approach was applied (1) (Pyatt et al, 1980, Lerman and Yitzhaki, 1985). The Pseudo-Gini coefficient and the Gini elasticities were also calculated (Lerman and Yitzhaki, 1985).

The Net farm income was considered to consist of two sources – Farm Market Income and Single Area Scheme payment. The Farm market income was calculated by subtracting the direct payments for each farm in the sample from the Net Income received by them**.**

Farm-level income data from FADN over the period 2007 to 2011 was used in the analysis. A panel of 713 farms was analyzed for the 5 year-period. The simulation was implemented based on the 2011 data from the FADN panel (713 farms) and included two scenarios – keeping the former policy DP rates in place and using the new DP rates. The total sum of the new direct payments was calculated based on the eligible land per each farm in the sample and following the new DP requirements and rates – basic payment, green payment, capping, redistributive payment, all other factors (including farm market incomes) *ceteris paribus*.

Results

The result showed that the direct payments had equalizing effect on income distribution for all the analyzed years with the effect growing with the increase of the payments. The Farm Market Income was the major source of inequality. The Gini coefficient of the new direct payments per farm is lower which means that the new payments are more equally distributed. Their effect for reducing the total farm income inequality, although still positive, declined.

Keywords: direct payments schemes, income, inequality

A Data Envelopment Analysis of efficiency and sustainability of Bulgarian farms

Veselin Krustev

Institute of Agricultural Economics, Bulgaria

E-mail: veselin.krustev@gmail.com

Introduction and Objectives

The concept of sustainability is multidimensional. It includes ecological, social and economic objectives, of which the ecological has a key role. There are basic indicators for sustainability assessment covering the three main dimensions. However, the assessment is typically very extensive and complicated, and sometimes requires interpretation of indicators which are not mutually supportive and even contradict each other. In order to avoid this shortcoming recently many studies have been focused on the construction of a composite sustainability indicator, applying Data Envelopment Analysis (DEA) approach. It facilitates the evaluation of influence of a set of variables on farm sustainability and also provides clues for policy-makers that intend to design sustainability-increasing agricultural policies.

The focus of the most papers devoted to sustainability assessment is eco-environmental component measured through environmental consequences of the inputs. In this paper, we evaluate farm sustainability through farm efficiency performance where eco-environmental component is the efficiency of main detrimental inputs usage.

Methodology

The farm sustainability is estimated using input oriented and assuming constant returns to scale (CRS) DEA model. Technical efficiency scores are computed for a sample of Bulgarian cereal farms taken from the FADN survey. Three categories of variables: desirable outputs, inputs and detrimental inputs (pollutants) in the form of undesirable inputs which usage creates the effects, are used. The desirable outputs are net income (economic) and gross output from diversified activity (social) per unit area. Land and labour inputs are included in the model in terms of area and annual working units (AWUs), and the pollutants with their costs per unit area.

The model is solved in four variants with different number and combination of variables, separately for 2008 and 2012. In order to take into account the difference in natural and socio-economic conditions among planning regions in Bulgaria, the efficiency scores are calculated for five out of the six regions, where cereal farms are observed.

Results

The results reveal that cereal farms are technically inefficient and unsustainable. In common the sustainability declines but trends differ among the planning regions. The sustainability of farms in North West and North Central regions which is the lowest in 2008 improves to 2012, reaching the first two highest levels. This is due to the increase of ecological efficiency (the efficiency of usage of detrimental factors), particularly in the North West region. The sustainability in the remaining three regions decreases, the most in the South East where the efficiency of all inputs usage worsen but mainly of land use. The profitability of land increases only in the North East region which is a typical grain-producing area, but the efficiency of the pollutants use in this region diminishes. A diversified production contributes to increasing the farm sustainability in all regions, excluding North West, the most socioeconomically lagging region.

Keywords: sustainability, efficiency, DEA

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Innovations in the governance structure of agricultural production cooperatives

Angel Sarov

Institute of Agricultural Economics, Bulgaria

E-mail: angelsarov@abv.bg

Introduction and Objectives

In the last decade we witnessed globalization, changing market environment, growing competition and reduction of the agricultural cooperatives in Bulgaria.
This paper explores different innovations in the governance structure of agricultural producers cooperatives in Bulgaria. In worldwide scientific literature, this issue has been studied by many researchers such as Chaddad and Cook (2004), Williamson (2008), Bijman, Sangen, Hanisch (2012) and others.

The aim of the paper is to analyze the innovations in the governance structure of agricultural production cooperatives and to seek for more effective changes in the governance model. The main focus is to study the innovations in the internal governance that either improve or deteriorate the governance structure.

The key issues covered in the case studies are as following:

- What are the innovations in governance structures?
- What is the attitude of the governance bodies for implementation of innovations in governance structures?
- How are accepted changes in governance structure by their members?
- Does the internal governance in cooperatives resemble the corporative governance of the firms, owned by investors?
- To what extent are important the cooperative values and principles?

Methodology

Qualitative research techniques are used: Case study, Interview, Analytical Narratives, Observation, which are suitable for gaining an understanding of decision making. These techniques are used simultaneously and when the results are synthesized rich qualitative data can be assembled.

Results

Agricultural production cooperatives in Bulgaria involve new formal and informal bodies which support innovation of governance structure. An example of such a body is the Member Council to whom the General Assembly delegates some of its rights. This provides an opportunity to strengthen the control over the cooperative management. Members' commitment to their cooperatives is strongly influenced by their participation in the governance.

Cooperatives invite experts for assisting and improving the management. This is a step towards professionalization of governance and orientation to more customer focus.

The results show the great importance of such studies. The innovations in the governance structure of agricultural production cooperatives in Bulgaria are in line with the legal framework and in compliance with the cooperative values and principles. Cooperatives need their members to engage in efficient operations and to participate in the governance.

Keywords: agricultural production cooperatives, governance structure, innovation

Territorial distribution of innovation in agriculture

Encho Ivanov

Institute of Agricultural Economics, Bulgaria

E-mail: Ivanov.encho@gmail.com

Introduction and Objectives

This research aims to reflect the impact of the relief to the type of the implemented innovations. The terrain is a combination of the forms of the earth's surface, which are different in shape, height, origin and history of development. It is a basis for the development of other natural components. It also has marked influence on the climate.

The terrain affects significantly farms, depending on what type of innovation they have implemented. The sustainable development of each farm is associated with innovations. For this purpose we must clearly identify the specific area and landscape characteristic of the terrain.

Methodology

To achieve the aim of the research we used the methods of survey and benchmarking. With the choice of interview method we can study the conditions and progress of different phenomena and processes. And also the factors that determine them and based on this to predict their future development. The issues concerned are related to the different reliefs of the farm: flat; hilly; mountainous and the types of innovations that have been implemented to date.

Results

- Most farms are located on flat terrain - 64%, followed by hilly and mountainous with 22% and 14% respectively.
- Farmers in mountainous regions that have implemented innovations in the form of new machinery and equipment or new crop varieties are 46%. Other types of innovations are ranging between 8% and 11% and the ones distinguished by their low results are 5% new computers and internet and 4% new animal breeds.
- In hilly regions, the highest percentage of innovation is incorporated into new machinery equipment, and secondly the new crop varieties and both together form 45% of the implemented innovation. In third place with 12% are new channels for the sale of agricultural production.
- Most of respondents in flat terrain have implemented innovations into new crop varieties. This also helps farmers to be more competitive. Expectations are that this percentage will increase, because the trade of traditional cultures is influenced by international stock exchanges markets.

Keywords: landscape, innovation, farm

Conservation and efficient use of natural resources through Payments for Ecosystem Services: the role of CAP in supporting a collective approach

Federica Cisilino[1], Francesco Marangon[2], Stefania Troiano[2]

[1]The Agricultural Research Council, Rome, Italy; [2]University of Udine, Italy

E-mail: cisilino@inea.it

Introduction and Objectives

The debate about public intervention through CAP is mainly based on the role – social and environmental – of agriculture. "The CAP towards 2020: meeting the food, natural resource and territorial challenges of the future" have marked a new start. The greening component of Pillar I (30% of direct payments - crop diversification, maintenance of permanent pasture and establishment of ecological focus areas) will probably have less impact on sustainability than expected, but a new model based on extended role of public intervention will be applied. According to Cooper et al. (2009) there are three types of EU policy measures in order to support the provision of environmental public goods (PG): those with a direct focus on public goods (agri-environmental measures, cross-compliance…), those with a partial focus on public goods (modernization, infrastructures, Less favored Areas, Natura 2000 Areas…) and those with no direct focus on public goods (Direct payments and Rural Development measures, diversification tourism…). The challenge is to improve sustainability by focusing attention on the environment and the delivery of PG. The actions needed to achieve an appropriate provision of PG depend on several issues, such as: the type of PG itself, the capacity of government in financing the capacity-building measure, subsidies and direct payments. At EU level, recent studies aim to integrate issues related to the demand side approach (supply vision/demand vision and the implicit treatment of externalities) facing new institutional priorities related to rural areas - not only landscape, sustainable water management, biodiversity; but also tourism, energy and food (organic products, quality schemes…). Public intervention will focus preferably on a collective dimension in order to implement more effective territorial policies, supporting bottom-up initiatives, public-private partnership or other mixed solutions. This innovative institutional approach aims at involving several stakeholders. The most important determinants in a successful collective experiences seem to be, on the one hand an active (pro-active) engagement of farmers, and on the other side an innovative coordination of collective actions (Learning and Innovation). The role of social capital remains crucial, as well as, the role of formal and informal organizations that contribute to the development of local networks and groups.

Methodology

Although it may seem paradoxical to use market instruments for a situation of market failure, sometimes the use of these tools appears to provide a suitable solution. The market-based instruments include direct payments, used to maintain or restore the supply of ecosystem services, and PES, which is constituted by a payment for the provision of an ecosystem service (or use of the soil which allows the service to be produced). According to a revised, broader definition PES is a transparent system for the additional provision of environmental services through conditional payments to voluntary providers. Although PES originated as a market solution for the sustainable management of ecosystem services with the specific goal of creating an alternative to public management, the role of government in developing PES could be decisive. In particular, its role in reducing transaction costs related to the nature of the traded

goods is relevant. The government may take part in a PES scheme in order to remove barriers that could prevent or cause difficulties in starting a market between suppliers and users of ecosystem services. In fact, there are some situations that could prevent its development, among which, high transaction costs related to the implementation of a PES scheme and relative negotiation of agreements. The key role that the government can play is that of bringing together buyers and sellers or stimulating the market mechanism by providing appropriate information, training and awareness in the community.

Results

In this study, we analyzed the content of a number of Italian Draft Regional Rural Development Programmes 2014-2020 submitted to EU Commission for approval and pointed out the presence of tools to support collective approach among priorities. Our findings revealed that institutional intervention is still mainly not so strong as it should be in order to promote successful collective experiences in providing PG, like for example PES.

Keywords: ecosystem, services, payments, CAP, collective approach

Passive farming in Europe: hindering agricultural development or preserving valuable landscapes?

Mark V. Brady[1], Jordan Hristov[1], Christoph Sahrbacher[2] and Fredrik Willhelmsson[3]

[1]*AgriFood Economics Centre, Department of Economics, Swedish University of Agricultural Sciences (SLU), Lund, Sweden.* [2]*Leibniz Institute of Agricultural Development in Transition Economies (IAMO), Halle, Germany.* [3]*AgriFood Economics Centre, Lund University, Lund, Sweden*

E-mail: Jordan.Hristov@slu.se

Introduction and Objectives

Passive farming has emerged in the EU as a consequence of the decoupling of Common Agricultural Policy (CAP) direct payments in 2005. Today, farmers don't need to produce commodities to receive support as long as they keep their land *in good agricultural and environmental condition* (GAEC). As the ceiling on set-aside (fallow entitled to area payments) was also removed, there are now land owners that manage their entire farm (predominantly in low-yielding regions) as grass fallow (set-aside), resulting in passive farming. It is claimed to be impeding agricultural development and the competitiveness of European farming, because it prevents farmers "active" in commodity production from accessing land and expanding their farms.

We aim to identify and evaluate factors that might influence the incidence and scale of passive farming, and ultimately conclude whether it is hindering agricultural development or contributing to the preservation of valuable landscapes.

Methodology

First, we develop a theoretical model that captures the characteristics of the land owners' land-use decision and determine under what conditions they would: i) farm, ii) maintain passively, iii) rent out or iv) abandon their land. In a complementary empirical analysis we use the agent-based AgriPoliS model (extended for the purpose) to study the effects of passive farming on regional agricultural development and to what extent different factors (principally land productivity, level of payments and their conditions, and transaction costs) might support the contention that passive farmers are withholding (locking in) land from active farmers and hence hindering their expansion.

We show in the theoretical analysis that despite decoupled support making passive farming a land-use option, it is only rational to choose it when it is neither profitable for the owner to farm their land themselves nor for a potential lessee to offer a *sufficiently* high rent to make it worthwhile for the owner to let the land. Therefore if a rental offer is made but falls short of the land owner's acceptable rent, it could explain the frustration experienced by active farmers: there is someone "willing" to farm arable land but is not given access; the land is locked in.

Results

The results of the empirical simulations show that more land is kept in agricultural production as a result of having decoupled support than without it. Not only is the area managed by passive farmers abandoned if these payments are reduced, but also an even larger area that is managed by "active farmers". Their total area is comprised of set-aside as well as an area that is farmed, because it is the cost-efficient way to meet the GAEC obligation for support. Increasing the single farm payment from the current level, however, did not increase the area managed by passive farmers, since lessees' willingness to pay increased symmetrically. Rather

the higher payment is being capitalized into rental prices, thereby increasing transfers to land owners and raising costs for expanding farmers. Consequently the existence of passive farming is not likely to be hindering agricultural development but preventing land from being abandoned and hence preserving European landscapes. Moreover, measures to combat passive farming would most likely harm active farmers even more.

Overall, passive farming should be seen as a service to society in the form of landscape preservation and ensuring land for future food production. This service is a public good and it is justified to be funded through policy payments. However, payment levels and associated GAEC criteria should be optimized to avoid abandonment of land and capitalization effects.

Keywords: passive farming, service, landscape, GAEC, CAP

Farmers' adaptation: What factors affecting agricultural innovations?

Minka Anasstasova-Copeva, Dimitre Nikolov, Plamena Yovchevska

Institute of Agricultural Economics, Bulgaria

E-mail: dnik_sp@yahoo.com

Introduction and Objectives

This paper addresses the topic of which factors influence a farmer's decision to adopt an innovation. A basic prerequisite for improving the competitiveness and sustainable development of farms is the degree of implementation of innovations in their activities. The aim of the paper is to present the findings on the socio-demographic and economic profile of the innovative groups in agriculture and innovation intentions underlying factors.

The research question is related to the analysis of the specific of farmers' innovation potential and the demand factors influencing the behaviour of the innovative farmers in rural areas.

Methodology

There are various new approaches that are used to make agriculture more attractive and to help reducing poverty in rural areas. However, the chances for innovation are reduced when innovative approaches are attached to certain systems of implementation, which are forced to comply with the expected effects without the sensitivity of farmers to innovation. One of the current debates is connected with the concept of agricultural innovation systems and the benefits of research and their results in agriculture.

We used definition for innovation as that is new to the farmer. We used a model of Rogers grouping of farms according to their level of innovation intentions. Beside of this we implemented a model to investigate quantitative depending on the economic potential of agricultural holdings on the level of their innovation activity. Data from the Bulgarian farmers are collected with interview method as we conducted a survey among 333 farmers. The studied intentions in these innovative fields are: agricultural machinery and equipment; manufacturing technology; crop varieties; breed animals; biological methods and means to combat disease, pests and plant pests; methods and drugs for the treatment of animals; irrigation methods; information technology.

Results

The results were obtained in the process of developing the research project "Innovation Management in Agriculture" (IAE, 2013-2014). The breakdown of the different types of incentives and disincentives factors and also sources of financing are similar in the three groups of farmers (innovators, early and late-receptive embrace innovation). Primary motivating factors are those with production and economic character (higher production results and correspondingly higher economic effects). Social and environmental factors especially are in the background. The structure of the disincentives of paramount importance is the lack of sufficient financial resources for innovation, and secondly as quite distinct stands the lack of developed markets for innovations in agriculture. In making potential attitude for innovation in the industry with the greatest significance in the survey indicators stand the educational level of farmers and the legal status of holdings. The strongest interest for implementation is of new agricultural machinery, equipment and facilities. Their level of innovation activity is almost two times higher than the average for all types of innovation.

Keywords: innovation, farmer, incentive, factor

The role of agroecosystems diversity towards sustainability of agricultural systems

Yanka Kazakova-Mateva[1] and Donka Radeva-Decheva[2]

University of National and World Economics, Bulgaria

E-mail: donka.radeva@unwe.bg

Introduction and Objectives

One of the major challenges of this millennium is ensuring food security in times of climate change, increasing population, environmental needs, economic and energy crisis. The sustainability of agricultural production systems is the main response to these challenges, and its maintenance could be found in the agro-ecosystems' diversity in the form of integration and proper combination of crops, trees, animals, soil and water (Elkington and Hailes, 1988, Shiva, 1992).

The objective of this study is to analyze the existing scientific knowledge about agro-ecosystems diversity, agro-ecology, traditional and alternative farming systems based on permaculture and bio-dynamical principles. Permaculture is defined as "a method of establishing permanent, self-sustaining systems of agriculture, adaptable to both rural and urban locations, designed to produce an efficient, low-maintenance, optimally productive integration of trees, plants and animals, structures and human activities within a specific environment" (Elkington and Hailes, 1988). Biodynamic agriculture represents a series of holistic management practices that address the environmental, social, and financial aspects of the farm, where the emphasis is on the integration of crops and livestock, recycling of nutrients, maintenance of soil, health and wellbeing of crops and animals; and the farmer is part of the whole system.

Methodology

This study is based on literature review. Analysis and synthesis as scientific methods are used to: 1) discuss and summarize current findings on the role of agro-ecosystems diversity on the sustainability of agriculture; 2) evaluate the "state of the art" pointing out methodological solutions and research gaps in systematic approach towards sustainability solutions in agricultural production systems; 3) conclude on the future global developments and certain actions needed at local, national and European levels to adapt agricultural practices for sustainability improvement.

Results

According to our findings, the adoption of the principles of diversification of crops, trees and animals increases the resilience of farms to climate change and environmental pressures on the one hand, and on the other, improves their economic results via low-input decisions and stability in yields. Man-made agricultural systems can resemble the natural diverse systems through appropriate design and management decisions and at the same time to provide economic and environmental efficiency like in permaculture designed farms, for example.

At the same time, promoting and mainstreaming agroecosystems diversity across farms and regions in Europe requires targeted and simultaneous actions at the local, national and European levels both in terms of institutional and policy support and development of markets: (1) the need of integration of science and traditional knowledge in engaging all the stakeholders towards a system-oriented thinking for sustainability of agricultural systems; (2) the importance of educating and training farmers in professional design and management of their agricultural holdings towards agro-ecosystems diversity; (3) the access to professional and experienced advisory and extension services; (4) the access to funding for small-scale farmers; (5) the

support of local community organizations; (5) the development of local and farmers' markets; and (7) the increase of trust between contracting parties (consumers, producers and intermediaries) for lowering of transaction costs.

Keywords: agroecosystem, diversity, sustainability, permaculture

Agricultural investment in Poland in the years 2007-2013

Barbara Wieliczko

Institute of Agricultural and Food Economics – National Research Institute, Poland

E-mail: Barbara.Wieliczko@ierigz.waw.pl

Introduction and objectives

The Polish agriculture has been undergoing rapid changes since the EU accession in 2004. The pace of these changes varies between regions and farm types. Support from the CAP is seen as an important catalyst of these changes, although in some cases it is a hindrance. Undoubtedly, the participation in the common EU market gave a significant boost to the development of the Polish food industry and by increasing its quality demands, the industry created a demand for investments in the agriculture.

The investment process is a complex issue influenced not only by economic factors, related to market conditions and farms' economic performance, but also by farmers' investment attitudes and by the stage in the farmer's family life cycle. However, the availability of capital for investment is the key factor in influencing the final decision on undertaking investment and determining its scale.

The aim of the paper is to analyse the scale and types of investments made by Polish farms in the period 2007-2013 and the sources of the capital for the undertaken investment projects. The analysis is based on the Polish FADN database.

The research questions that are to be answered are as follows:

- What was the scale and type of investment made in the analysed period?
- What were the sources of the capital for investment?
- Were there any regional differences in investments?
- Was the type and/or the scale of investment related to the type of production conducted by a farm?

Methodology

The research will verify a hypothesis that credit constraints affect investment decisions leading to prevalence of larger farms with more own capital within the structure of investing farms. To verify this hypothesis an augmented accelerator investment model will be applied in the form applied by Czekaj [2011] for the Polish agriculture.

Results

The results show that the investments are conducted in larger farms in the agriculturally more developed Polish FADN regions. The structure of capital sources of these investment projects shows that still most of the projects are invested from own resources. Thanks to the receiving of direct payments farms have more financial resources to invest and this is visible both in the scale of investment and in the structure of investing farms. The investments co-financed by public funds amount to app. 12% of all the investments conducted in a given year. Moreover, most of the credits used as a source of capital are preferential credits with lower interest rates than the commercial ones thanks to state aid.

Keywords: investment, farms, capital, sources, Poland

Coherence and Impact of the Food Chain Policies over Economic Growth

Diana Kopeva, Dimitar Blagoev, Dr. Nikolay Sterev

University of National and World Economy, Bulgaria

E-mail: dkopeva@unwe.bg

Introduction and Objectives

The theoretical knowledge of economic system and its players has well-developed in recent days, especially in agri-food production. The researchers, the governance authorities, and policy-makers, meet the challenges of changing environment, which creates necessity to study the new requirements and how the business response to it and adjust their behaviour.

Agricultural and food chains face problems related to: establishment; enlargement and growth; internationalization that requires a new point of understanding of their added value; support – not just money, but a huge diversity of benefits: faith, trust, empathy and etc.; coherence between different policies' legislation and practices. Agricultural and food chains face the social, environmental and economic dimensions of sustainability in every EU policy measure, and have to take into account them.

Ongoing studies, mainly focused on competitiveness, dynamic growth, organisation structure, and management of agri-food business, scarcely take into account the influence of different policies and their measures, the impact of the insufficient policies' harmonization and coherence on the efficiency along the chains and the overall effect for growth.

The EU policy-makers stress on the need for growth, modernization and innovation of member-states economies, as well as the EU food policies is targeted to achieve stable and sustainable development and growth for different agri-food subsectors. But neither the impact of these policies nor the coherence between them are sufficiently investigated and practically used.

The paper tries to answer the questions: how to use the synergy effect of policies along the food chain for fostering the economic growth? The objectives of the paper are: (i) to identify and analyze the effect (impact and coherence) of separate policies along the food chain for the economic growth, as well as the complex policies' influence; (ii) to argue the conceptual framework and the necessary policies and measures to support agri-food chains with growth potential.

Methodology

The inter-connections between food policies and dynamic growth in the paper are based on studies and papers of Marleba, Nelson, Orsenigo and Winter (2001), Sharp (2003), Pack and Saggi (2003), Rodrik (2008), et all. The food production growth aspects are based on the understanding of the economic growth as it is given by Cobb-Douglas and Solow-Swan, and respectively focused on the classical production function factors (resp. capital, labor, R&D and material inputs). But the paper covers also the change of the production based on Baily et all (1992), Olley and Peaks (1996), Griliches and Regev (1995), et all.

Results

The basic results of the paper that derived from the proposed methodology and suitable database are as follows:

- Presentation of contemporary methodological approaches that measure economic growth and estimates the intensity of factors impact.

• Adjustments of the proposed methodological approach that gives into account the used food production database.
• Quantitative evaluation (quantification) the inter-connection between economic growth and food chain policies.
• Proposition for amendments of food chain policies that are relevant to the role of food production for the economic growth.

Keywords: food chain policies, food production, economic growth, policy impact, policy coherence

Land conflicts in relation to land reform and CAP Implementation: evidence from Romania

Marioara Rusu, Monica Tudor

Institute of Agricultural Economics, Romania

e-mail: rusu.marioara@gmail.com

Introduction and Objectives

The objective of this paper is the better understanding and managing of land conflicts. The paper analyzes the characteristics and types of land conflicts resulting from land reform and their impact on Common Agricultural Policy measures applied in Romania.

This paper follows three main research questions: i) which factors favour land conflicts; ii) which are the main types of rural land conflicts and with what intensity do they occur; iii) what are the effects of these conflicts on the implementation of the Common Agricultural Policy.

Methodology

Since the Revolution of 1989, in Romania, the number and complexity of land conflicts have increased, primarily, as a result of the problems encountered in the implementation of land reform. While extensive studies have been devoted to the analysis of the implementation of land reform, research on the types and nature of conflicts, their rate of occurrence and resolution mechanisms is scarce. In this context, analysis of land conflicts as a potential disruptive factor of land tenure and economic development relationship is important and topical. In this paper, land conflict was considered a social fact involving at least two parties and whose roots are in different interests over land ownership and operation. To capture a number of issues concerning the types and determinant factors of land conflicts we used information gathered in a field survey implemented in the rural communities from Arges County. The study area was chosen based on those attributes that can become key sources of conflicts and disputes concerning land property structure and characteristics of land operation, both consequence of the implementation of the land reform. As a tool, we used a dedicated questionnaire.

Results

The analysis implemented answered the main research questions. Thus, the main variables that have catalyzed the emergence and development of land conflicts were identified, namely: high population pressure on agricultural land resources; excessive fragmentation of land holdings; and rural community status during communism - whether it was or not collectivized. As a second research question, a typology of land conflicts was obtained. Thus, we identified two categories of land conflicts: i) interpersonal land conflicts - manifested in individual relations/arrangements concerning land ownership and exploitation (in this category we included conflicts between co-owners, neighbors, rural residents and nonresidents); ii) intrasocietal land conflicts involving formal and informal collective structures. This typology is important in terms of measures that could be taken to solve them, each requiring a particular corrective action. The answer to the third research question has resulted in the identification of the most important effects of different types of land conflicts in the implementation of the Common Agricultural Policy (direct payments and rural development measures).

Keywords: land conflicts, land reform, CAP

Farmers in metropolitan areas: managers of natural capital

Nico Polmann

Wageningen University, The Nethelands

E-mail: nico.polman@wur.nl

Introduction and Objectives

"Natural capital" is the stock of natural resources (like soils, water and biodiversity) that supplies a stream of ecosystem services to society. Property rights in form of use rights or the right to exclude others from using represent a value to the owner of those rights. To add natural capital in an annual balance sheet, it is needed to keep account of it. Accounting information is a core element of economic decision-making (Obst and Vardon, 2014). To secure an accounting system for natural capital in agriculture, it is crucial to allow this capital to be part of the farming business in the long run.

In the Netherlands, natural capital is not explicitly mentioned at the business of fiscal balance sheets of farmers. Natural assets will only be partly included in farmland prices (Caldecott et al., 2013). However, the incorporation of information on the use of natural capital and the production of ecosystem services is important for economic decision making on sustainability (see also Obst and Vardon, 2014; Guerry et al., 2014). It could serve as an evidence base for sustainability claims. Collected data may highlight a "natural capital deficit" that may require policy intervention (Guerry et al., 2014), however, loose definitions will undermine accounting systems (Boyd and Banzaf, 2007).

The CAP provides instruments and measures to encourage the preservation of natural capital (e.g. EC, 2013; EEA, 2015). Within the first pillar, prevention of land abandonment and fragmentation are supported. Agro-environmental climate measures are supported through the second pillar. Payments foster coherence of landscape elements (e.g. hedgerows, buffer strips and terraces, etc.), to manage field boundaries and to conserve terraces. The aim of this paper is to gain insight into the potential role that natural capital accounting can play in the farming sector.

Methodology

To analyse natural capital and ecosystem services, we mapped the ecosystem service food production for the Netherlands, for dairy farming, arable farming and horticultural farming. For this purpose we used net value added per agricultural plot. To do this, the average value for each type of crop (including fodder crops such as grass) per hectare was assigned to each plot of farmland in the Netherlands. This was done for a period of four years, so as to take crop rotations into account. These total output values were converted into value added by using a branch-specific coefficient for pasture-based livestock (mainly dairy), arable farming, and four types of horticulture (not including greenhouses). An expert workshop was implemented to gain insight into practical aspects of natural capital for farming and ecosystem services for agriculture.

Results

From our analysis it is concluded that keeping record of (development in) natural capital gives advantages to farmers as well. This could be tax deduction in case of positive development or development opportunities. For valuation and decision making it is important to be able to isolate the natural capital element within the production of goods (see also Bateman et al., 2011). Finally, such a system should be acceptable and recognized for other stakeholders. This will give consequences for mapping practices of ecosystem services and natural capital.

Keywords: natural capital, accounting system, farmers, CAP

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Food demand in Romania: estimation of expenditure elasticities based on purchased quantities vs. on actual consumption

Cecilia Alexandri, Bianca Pauna, Lucian Luca

Institute of Agricultural Economics, Romania

E-mail: luca@eadr.ro

Introduction and Objectives

To offer a solution of the self-consumption issue, i.e. the modality in which it can be included in an analysis of consumption demand of self-produced food, because in an economy like that of Romania self-consumption plays an important role, mainly in rural areas. Not taking into consideration the self-consumption leads to a higher accuracy of data (prices and bought foodstuffs). The interest to estimate the food demand elasticities led to the decision to make the analysis on the purchased foodstuffs, for which a price could be calculated. This option probably induces certain distortions in estimating a complete system of food demand, which can be corrected using the quantity consumed, but in this case we might not have the correct price.

The objective of the study is to estimate the food demand system for Romania

Methodology

The approach uses the AIDS methodology developed by Deaton and Muellbauer (1980). The main property that makes the use of AIDS very attractive is that the model gives a first order approximation to all demand systems derived from utility maximizing behavior. Another very important property that explains the attractiveness of the model is the ease of estimation - the functional form of the model is linear, and therefore very easy to estimate.

An estimation of the food demand system in Romania was done on the basis of an AIDS (Almost Ideal Demand System) model, in order to analyze the statistical data referring to the food expenditures on the household, collected by the National Institute for Statistics through the Household Budget Survey (HBS) of the 1st quarter of the year 2011. Since there are over 100 records of different categories of foods in the survey, we aggregated them in eight broad groups as follows: Bread, cereals and pasta (Cereals); Meat and meat products, fish and sea food (Meat); Milk, dairy products (Milk); Fruits and fruit derivatives (Fruits); Vegetables and vegetable derivatives (Vegetables); Sweets and non-alcoholic beverages (Sweets); Adult goods, as coffee and alcoholic beverages (Alcohol); Other. The data records both the quantity purchase, as well as the household consumption (self-consumption inclusively).

Results

The groups of products cereals, meat and alcohol appear as necessity goods. Expenditure elasticities calculated on basis of purchased quantities of food for the urban area are comparable to other countries, but in the rural area the interaction with self-consumption can be important, as many food groups are considered luxury goods. This situation is corrected by elasticities calculated on basis of actual consumption of food, at least in the case of cereals and vegetables.

Estimated expenditure elasticities for Q1 2011 in Romania, by area

	Based on purchases			***Based on consumption***		
	Total sample	*Urban area*	*Rural area*	*Total sample*	*Urban area*	*Rural area*
Cereals	0.917	0.781	1.005	0.628	0.640	0.628
Meat	0.991	0.951	1.100	1.042	1.070	1.012
Milk	1.109	1.090	1.137	1.081	1.020	1.146
Fruit	1.079	1.117	1.052	1.114	1.093	1.127
Vegetables	1.121	1.172	1.069	0.963	0.991	0.940
Sweets	1.070	1.188	0.922	1.224	1.226	1.203
Alcohol	0.810	0.958	0.761	1.688	1.302	2.208

Keywords: food demand, consumption, expenditure elasticities

Quantity and quality of food losses along the Swiss potato supply chain: Stepwise investigation and the influence of quality standards on losses

Christian Willersinn[1], Gabriele Mack[1], Patrik Mouron[2], Andreas Keiser[3], Michael Siegrist[4]

[1]Agroscope, Institute of Sustainable Sciences, *Research Group Socio-economics, Ettenhausen, Switzerland; [2]Agroscope, Institute of Sustainable Sciences, Research Group Life Cycle Assessment, Zurich, Switzerland; [3]Swiss College of Agriculture, Bern, Switzerland; [4]ETH Zurich, Institute of Consumer Behavior, Zurich, Switzerland*

E-mail: christian.willersinn@agroscope.admin.ch

Introduction and Objectives

This study presents the results of a stepwise investigation of the quantity and quality of food losses along the Swiss potato supply chain. The influences of technological, institutional (business and economy; legislation and policy) and social drivers on the generation of fresh potato and processed potato products losses were assessed. Losses due to quality standards driven by food safety and consumer preferences for certain aesthetic standards have been evaluated, too.

Data were collected from field trials, from structured interviews with wholesalers, processors and retailers and from consumer surveys in combination with a 30-day diary study. Also statistical data from private institutions have been analyzed.

Results

Across the entire potato value chain, approximately 53%–55% of the initial fresh potato production and 46%–41% of the initial processing potato production are finally lost. Losses between organic and non-organic supply chains differ from 2%–5%. The highest loss rates of fresh potatoes occur at agricultural production and at private households, whereas for processing potatoes, production level and the processing industry have been identified as loss hot spots. Approximately the half of total potato losses are caused by qualitative defects according to applied potato quality standards. Only 25%–34% of these losses are driven by food safety and consumer health reasons and the remaining part is caused by consumer preferences or the suitability for storage, respectively processing. In total, 2/3 to 3/4 of all fresh potato losses are socially driven (e.g., consumer preferences, behavior or socio-demographical factors) while these drivers just cause 40%–45% of all processing potato losses where technological drivers cause circa 1/3 of the total losses. The majority of the rejected potatoes is used as animal feed (67%–90%) in Switzerland. Approximately 30% of all fresh potato losses are disposed while just 4%–5% of all processing potato losses are thrown away. The interviewed experts assessed that lower quality specifications might cause lower loss rates at the first stages of the supply chain but higher ones at the later stages due to worse storage or processing abilities of potatoes with defects which also might affect proper tubers. A better understanding of consumer preferences and behaviors as well as improved potato qualities through better cultivation or breeding methods might be the best strategies to reduce potato losses in Switzerland. Nevertheless, improvements in cultivation and breeding are often determined by trade-offs between better potato quality and ecological impacts (e.g. wire worm control).

Keywords: food losses, potato, quality standards

Competitiveness of Bulgarian and Hungarian dairy farms

Vassil Stoychev

Institute of Agricultural Economics, Bulgaria

E-mail: vasilst@mail.bg

Introduction and Objectives

A fundamental question in economic theory is how to allocate resources in the best possible way in order to achieve social welfare, including high living standard and highest possible employment rate. For this type of analysis often the concept of competitiveness is used in order to explore and evaluate development of national economy (Latruffe, L., 2010). According to the Organization for Economic Co-operation and Development (OECD), competitiveness is "the ability of the companies, industries, regions, nations and supranational regions to generate, while being exposed to international competition, relatively high factor income and factor employment levels on a sustainable basis." This definition reflects the concept that national competitiveness is related to firms' competitive performance. Nowadays competitive advantage becomes the key component of economic performance (Wienert, H., 1997).

The aim of this study is to examine the competitiveness of Bulgarian and Hungarian dairy farms after accession to the European Union and to compare them to EU average where it is possible.

Methodology

Criteria for competitiveness are applied on macroeconomic and farm levels. On macro level as criterion is used the share of milk production from total EU production for 2005-2012. On farm level a system of criteria measuring productivity and efficiency are applied. Also indicators for sustainability such as indebtedness of the farms are used. An attempt to assess the impact of subsidies on the farm income is made.

Data for specialized milk farms in Bulgaria and Hungary are analysed. They are taken from FADN (Dynamic Reporting Tool typology TF8) and Eurostat.

Results

Bulgarian dairy farms are more efficient but less competitive due to the lower income and insufficient investments. Hungarian dairy farms have higher revenues from milk production due to higher productivity per cow and bigger subsidies per farm. These facts gave them the opportunity to invest more and to become more efficient and competitive. Inefficient use of labor of Bulgarian farms compared to Hungarian is depicted by low ratio of Farm Net Value Added (FNVA) per Annual Work Unit (AWU). Increased indebtedness of Bulgarian dairy sector poses questions for sustainability in the long run and indicates a need for bigger investment support.

Keywords: dairy, competitiveness, investments, Bulgaria, Hungary

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Framework for assessing the eco-environmental performance of farms in Bulgaria

Anton Mitov

Institute of Agricultural Economics, Bulgaria

anton.mitov@gmail.com

Introduction and Objectives

The impacts of agriculture on the environment and the achievement of sustainable agriculture are of major public concern in the context of agricultural policy reform, trade liberalization, and multilateral environmental agreements (MEA`s). Monitoring the environmental performance of agriculture and assessing the environmental effects of policies requires information on agri-environmental interactions.

Eco-agriculture is a vision for improving the human management of the land and natural resource base so that it simultaneously meets three goals: (1) conserving a full complement of native biodiversity and ecosystem services (2) providing agricultural products and services on a sustainable (regular?) basis, and (3) supporting viable livelihoods for the local people. The concept frames an approach for managing natural areas and agricultural landscapes in complementary ways.

Agri-environmental indicators are a useful tool for analysing the relationship between agriculture and the environment and identifying trends in this evolving interaction. Agri-environmental indicators have to cover positive and negative effects of agriculture and should be sufficiently differentiated to be able to capture regional differences in environmental conditions.

Methodology

In this study we assess agri-environmental performance in Bulgaria applying three groups of indicators. The first group consists of farm management indicators corresponding to the set of OECD agri-environmental indicators; secondly we are using farm inputs indicators by working with official data that FAO provides. The third group embraces indicators for the impact of agriculture on the environment. To achieve the stated objectives we also use official data from agricultural statistics, as well as those of FADN.

Results

We attempt to explore the dynamic development of indicators, as the focus of analysis covers the changes. Also a comparison between Bulgaria and EU countries is made.

Keywords: agri-environmental performance, agri-environmental indicators, assessment, farms

Impact of investments on the farm viability

Viktoriya Mendeva

Agricultural University, Plovdiv

E-mail: viktoriq_km@abv.bg

Introduction and Objectives

Investments are a key determinant of economic growth and the viability of farms, which is necessary to improve product quality and competitiveness. The development of the economic viability of farms is directly related to their financial condition. Based on neoclassical economic theory, financial condition is accepted as a process of sustainable development. Farm solvency means efficient use of capital and resources to achieve financial balance. The assessment of solvency is based on a system of indicators that are part of the analysis.

Methodology

The aim of the study is to determine the effectiveness of investments in farms and their impact on farm viability. A comparative analysis of two farms' viability, having different legal status, was carried.

The object of the study is the viability of these two farms in different directions - plant growing and stock- breeding. Quality and purity of grain leads to its best commercial appearance. It is of great importance that no redundant matter exists, which brings better indices and higher quality. Therefore the farm plans to purchase a tractor with equipment that increase product quality and reduce costs as it uses rental machinery.

Results

The livestock farm has one hundred and sixty dairy cows. It sells milk to a dairy farm which produces various dairy products. These products are sold directly to the consumers by the livestock farm. The farmer plans to make its own dairy farm, to introduce assembly line and obtain a closed production cycle. Both farms are compared before and after the planned investments.

The necessity of applying a system of indicators to analyze the financial condition of farms is well grounded in the article. The survey results show that as a result of the planned upgrades, the investments of both farms produce positive effects. In livestock farm the indicators of financial analysis show better figures as the farm plans to produce and sell finished products directly to consumers.

As a result of the analysis, it is concluded that the evaluation of financial performance related to viability should be performed in accordance with the specifics of plant-growing and stock–breeding.

Keywords: investments, viability, dairy farm

Cost efficiency of organic common wheat production

Dimitar Yankov

Agricultural University, Plovdiv

E-mail: mitkopl798@abv.bg

Introduction and Objectives

The requirements for sustainable farming of agricultural crops, characterized by decreased investments for pesticides and synthetic fertilizers and increased biodiversity, in Europe are growing. The most demanding production system with low investments is the organic farming, defined by directive 2092/91 of the EU as such farming which does not allow the use of pesticides or synthetic fertilizers. A large number of imperative requirements which require additional specific costs to be made have been imposed. Thus, the question arises “What is specific about organic farming and organic grain production?” so that obligatory additional costs and precise cost accounting concerning the crops occur.

The present paper aims to analyze the specific expenses in the organic production of common wheat (Tr. aestivum) and to determine the cost efficiency of the production.

Methodology

Cost efficiency of organic wheat production is estimated on basis of technological maps and actual results from the activity of the company Agrointegral Ltd., Sofia – Novi Izvor branch.

Organic farming of wheat requires more detailed research of the main costs related to agricultural equipment and development of resistant varieties. The specific costs related to the transition to organic production are: the use of more manual labour and specific mechanical techniques which are applied more frequently and increase the value of the products; management of the soil fertility and provision of nutrients without mineral fertilization; weed control without the use of herbicides; disease and pest control without pesticides; production quality improvement and development of a feeding system with organic livestock farming.

Results

Due to the predominantly small size of the farms significant economies of scale are not achieved, and this additionally increases the costs for distribution of a product unit. The costs for inspection and certification are additional and significant. The costs for bulk sales and retail sales are also higher due to the specific requirements for the farmer, processor and trader of organic products. In organic farming not only a change of technological practices is required, but also of the level of the investments or the combination of investments. Structural changes in the agricultural system as a whole are needed as well. The results of the activities of organic grain production are closely connected to the management of the production expenses. The used raw materials alsorequire the whole production and resource management cycle to be taken into account at the interpretation and analysis of the results from the activity.

Keywords: organic production, common wheat, costs, efficiency.