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ECONOMIC SCIENCE FOR RURAL DEVELOPMENT

Proceedings of the International Scientific Conference

No. 32

Rural Development and Entrepreneurship

Marketing and Sustainable Consumption

Nordic Association of Agricultural Scientists

"ECONOMIC SCIENCE FOR RURAL DEVELOPMENT"

Proceedings of the
International Scientific Conference

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Rural Development and Entrepreneurship
Marketing and Sustainable Consumption

Jelgava
2013

TIME SCHEDULE OF THE CONFERENCE

Preparation – September, 2012 – April 20, 2013
Process – April 25-26, 2013

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Every article included into the Proceedings was subjected to a scientific, including international review.

All reviewers were anonymous for the authors of the articles.

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Foreword

Every year the Faculty of Economics, Latvia University of Agriculture holds the international scientific conference "Economic Science for Rural Development" and publishes internationally reviewed papers of scientific researches, which are presented at the conference.
This year researchers from Europe and Asia representing not only the science of economics in the diversity of its sub-branches have contributed to the conference; they have expanded their studies engaging colleagues from social and other sciences, thus confirming inter-disciplinary and multi-dimensional development of the contemporary science. The conference is dedicated to topical themes of rural development; hence, the research results are published in three successive volumes (No. 30, 31 and 32). Our first volume of scientific conference proceedings was published in 2000.
Professors, doctors of science, associate professors, assistant professors, PhD students, and other researchers from the following higher education, research institutions and enterprises participate at the International Scientific Conference held on April 25-26, 2013 and present their results of scientific research:

1. Latvia University of Agriculture, Latvia
2. Aleksandras Stulginskis University, Lithuania
3. BA School of Business and Finance, Latvia
4. Baltic Psychology and Management University College, Latvia
5. Banat University of Agricultural Sciences and Veterinary Medicine Timisoara, Romania
6. Bremen University of Applied Sciences, Germany
7. Daugavpils University, Latvia
8. Fulda University of Applied Sciences, Germany
9. Institute of Agricultural Economics and Information, the Czech Republic
10. Kaunas University of Technology, Lithuania
11. Khyber Pakhtunkhwa Agricultural University, Peshawar, Pakistan
12. Klaipeda University, Lithuania
13. "Latvenergo" JSC, Latvia
14. Latvian Rural Advisory and Training Centre, Latvia
15. Latvian State Institute of Agrarian Economics, Latvia
16. Lithuanian Institute of Agrarian Economics, Lithuania
17. Mykolas Romeris University, Lithuania
18. Pope John Paul II State School of Higher Education in Biala Podlaska, Poland
19. Poznan University of Economics, Poland
20. Poznan University of Life Sciences, Poland
21. Professional Association of Project Managers, Latvia
22. Rezekne Higher Education Institution, Latvia
23. Riga International School of Economics and Business Administration, Latvia
24. Riga Teacher Training and Educational Management Academy, Latvia
25. Riga Technical University, Latvia
26. Seinajoki University of Applied Sciences, Finland
27. Siauliai University, Lithuania
28. Slovak University of Agriculture in Nitra, Slovakia
29. State Regional Development Agency, Latvia
30. Szent Istvan University, Hungary
31. Latvian Rural Advisory and Training Centre, Latvia
32. Turiba University, Latvia
33. University of Latvia, Latvia
34. University College of Culture and Economics, Latvia
35. University of Agriculture in Krakow, Poland
36. University of Bremen, Germany

37. University of Economics in Prague, the Czech Republic
38. University of Helsinki, Finland
39. University of Social Science, Poland
40. University of Szczecin, Poland
41. University of Zielona Gora, Poland
42. Ventspils University College, Latvia
43. "Vides Centrs" Ltd, Latvia
44. Warsaw University of Life Sciences, Poland
45. West Pomeranian University of Technology in Szczecin, Poland
46. Wroclaw University of Technology, Poland

The following topical themes have been chosen for the conference:
— Production and Cooperation in Agriculture
— Integrated and Sustainable Regional Development
— Rural Development and Entrepreneurship
— Marketing and Sustainable Consumption
— Finance and Taxes
— Home Economics

The comprehensive reviewing of submitted scientific articles has been performed on international and inter-university level to ensure that only high-level scientific and methodological research results, meeting the requirements of international standards, are presented at the conference. All scientific articles are in English. Every submitted manuscript has been reviewed by one reviewer from the author's native country or university, while the other reviewer came from another country or university. The third reviewer was chosen in the case of conflicting reviews. All reviewers were anonymous for the authors of the articles. Every author received the reviewers' objections or recommendations. After receiving the improved (final) version of the manuscript and the author's comments, the Editorial Board of the conference evaluated each article. Altogether, 193 applications were received, 144 articles were submitted, and 113 articles were confirmed for publication.

All the papers of the international scientific conference "Economic Science for Rural Development" were arranged into the three following thematic volumes:

No. 30 Production and Cooperation in Agriculture
Finance and Taxes

No. 31 Integrated and Sustainable Regional Development

No. 32 Rural Development and Entrepreneurship
Marketing and Sustainable Consumption

The publishing of the Proceedings before the conference will promote exchange of opinions, discussions, and collaboration of economic scientists on the international level. The research results included into the Proceedings are available worldwide to any interested person.

The abstracts of the conference proceedings provided in English are submitted to the international databases:

AGRIS – International Information System for the Agricultural Sciences and Technology set up by the Food and Agriculture Organisation of the United Nations (FAO UN) (www.fao.org/agris/), and selected papers are submitted to especially comprehensive scholarly, multidisciplinary databases containing full research texts:

— (EBSCOHost Academic Search Complete) and
— CABI PUBLISHING databases: (http://search.ebscohost.com/login.aspx?authtype=ip,uid&profile=ehost&defaultdb=lbh as well as
— CAB ABSTRACTS (CABA) comprehensive bibliographic database.

The Conference Committee and Editorial Board are open to comments and recommendations for the development of future conference proceedings and organisation of international scientific conferences.

We would like to thank all the authors, reviewers, members of the Programme Committee and the Editorial Board as well as supporting staff for their contribution organising the conference.

On behalf of the conference organisers
Dr. oec. **Aija Eglite**
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Content

Rural Development and Entrepreneurship

Marketing and Sustainable Consumption

"ECONOMIC SCIENCE FOR RURAL DEVELOPMENT"

Proceedings of the
International Scientific Conference

RURAL DEVELOPMENT AND ENTREPRENEURSHIP

SUPPORT INSTRUMENTS FOR THE SECTOR OF SMALL AND MEDIUM ENTERPRISES WITH A PARTICULAR FOCUS ON AREAS

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Abstract. After Poland's accession to the European Union economic units are obliged to obey the legal and strategic norms ruling on the common European market, including those aimed at preservation and introduction of high standards for the protection of natural environment. The consciousness on the necessity for introducing of changes related with production in protected areas is increasing among small and medium enterprises in Poland. They are characterised by high financial outputs turning into the barriers that make implementation of sustainable production pattern more difficult in the described sector of economy.
The aim of the article is to indicate essential instruments of support for the companies of the small and medium enterprises sector based on the main areas of support application.
Key words: protected areas, sustainable development, support instruments.
JEL code: Q18

Introduction

The role that small and medium enterprises play in the market economy is significant. They bring in many innovation creation opportunities, including opportunities for entrepreneurship development and growth of economic competitiveness. The high share the sector holds in the GDP generation is a reason for strengthening the foundations of the sector operation and facilitating access to innovative solutions. A modern enterprise ought to become an innovative organisation, open to novelties, perceiving the internal and external environment from different perspectives, and, at the same time, sensitive to market signals and expectations as well as being ready to implement changes (Zuzek D., 2011).

Both theoretical and practical discussions are being conducted regarding the principles and directions for supporting small and medium enterprises. The discussions touch upon the questions of determining the subjective scope of granting aid (Piasecki B., 1998), specifying the construction, including grade structure of SME support (Safin K., 2008), the significance of public aid for the sector's development (Misiag F., 2005), and other issues related with the scope and effectiveness of the undertaken aid actions.

The aim of the article is to indicate essential instruments of support for the companies of the small and medium enterprises sector based on the main areas of support application.

Results and discussion

1. Areas of natural value as locations for business activity of small and medium enterprises

The protection of areas of natural value has presently become particularly important on account of the scope and pace of changes occurring in the environment and caused by human activities. Establishment of protected areas and systems of such areas constitutes one of the most critical trends of protection recognised in the world. The principles of nature conservation, formulated by Zarzycki and specified in the Polish Red List of Endangered Plant Species, are as follows (Zarzycki K., Wojewoda W., 1986):

- preservation of the habitat to protect species or a group of species;
- protection of the entire ecosystems or groups of ecosystems (species' habitat);
- protection of ecosystems and species in the place of their natural occurrence – *in situ* protection;
- protected ecosystems ought to occupy the largest possible areas (large ecosystems are more ecologically stable and more resistant to antropopressure);
- maintenance of spatial continuity of (protected) natural areas – ecological connection between ecosystems (enabling species migration, being a necessary condition for their long-term survival).

Insufficient effectiveness in the area of nature conservation is chiefly caused by legal regulations deficiency (inter alia, the procedure of establishing protected areas – difficulty of creating protected areas), relatively low level of financing for the activities related with nature conservation, scarcity of legal instruments generating benefits from owning protected areas, overall low ecological awareness of the society, and weak enforcement of respecting the environment protection regulations.

The Lisbon Strategy constitutes a starting point for co-operation between enterprises and nature conservation, targeted at the development of knowledge- and innovation-based economy, oriented at creating a larger number of jobs and better jobs as well as requiring

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the respect of all three dimensions of the sustainable development (social, economic, and ecological).

From the point of view of the state, pro-nature enterprises can serve as an instrument for implementing social and economic development policy in the protected areas, creating "green" jobs, economic activation of peripheral rural areas, and an instrument for counteracting geographic and social exclusion. On the contrary, those enterprises may significantly contribute to the achievement of conservation objectives set for these areas and other areas of natural value with proper technical and financial support. They constitute an example of ecologically justified and economically profitable solutions for the SME sector in such areas (Mickiewicz B., 2012).

Poland's economic development, just as is the case of any other country, causes serious changes in the natural environment. Those changes are the most visible in the areas of high industry and population concentration, where water, air and soil pollution grows in the most perceptible manner. Devastation of forest areas and agricultural crops follows; problems related with municipal and industrial waste management ensue. Protected areas and areas of natural value do not elude those changes. Economic growth, an increasing degree of society's affluence, Poland's accession to the European Union as well as higher influx of foreign tourists, have, on the one hand, caused a rise of ecologic risks and development barriers, while on the other hand, forced municipal authorities to seek such development factors which comply with the protection of the natural environment. A special situation occurs in areas legally protected (Zuzek D., 2012).

2. Instruments of support for the sector of small and medium enterprises

Specific instruments for supporting growth have become available because of creating a number of aid programmes for the analysed sector of SMEs. They are meant to serve as external sources, formalised streams of value, basically of a resource nature, stimulating qualitative and/or quantitative changes (depending on the approach to defining organisation growth) leading to SME's growth.

A special characteristics of the so-defined instruments is the necessity of their obtaining by the sector. It is linked with the requirement of such instruments fulfilling specific conditions, both quantitative ones as well as qualitative ones and with undertaking an effort to obtain growth supporting instruments.

Three groups of criteria need to be satisfied in order to enable the acquisition of growth supporting instruments for small and medium enterprises (Filipiak B., Ruszala J., 2009):

1) qualifying criteria, i.e. fulfilling the requirements for applying for support;
2) formal criteria, i.e. criteria related with, inter alia, the completeness and timeliness of prepared and submitted documentation;
3) substantive criteria, i.e. criteria regarding a positive qualitative evaluation of a project.

The development of aid programmes and strategies for the SMEs sector as well as a rise in the interest of the market environment in the potential of such enterprises have led to the emergence of a variety of support instruments in the following areas: financial, legal, organizational, informative, educational, and consultative.

Support for small and medium enterprises depends on possessing and skilful using the instruments of influence. There are two directions of support differentiated because of their type:

1) direct support, which involves financial transfers or transfers in the form of specified goods, with the use of instruments such as subsidies or free consultancy; this type of support is of selective nature, it is granted on an individual basis to entrepreneurs satisfying specific criteria;
2) indirect support, related with the formulation of material and regulatory environment for business activity with the use of instruments such as investments in material infrastructure, regulations supporting the protection of competition and intellectual property or reducing bureaucracy. Indirect support is of universal nature and it is addressed to the entire population or its specific groups. Access is not limited by the need to satisfy specific criteria, or such limitation is only of technical nature, e.g. linked with a geographic location of investment infrastructure.

Effective policy of supporting the SME sector does not need to rely on simultaneous application of all the instruments available. Their use ought to be gradual and it should correlate with the current phase of their development. Otherwise, the support policy and the instruments used may occur to be ill suited to the level of small and medium enterprises to which they are addressed (Mikolajczyk B., 2006).

Specific areas of support correspond to fundamental objectives of the support policy of the SME sector (improvement of competitiveness, economic growth, employment growth, or regional development). Such areas of support include assistance in establishing businesses, financing and access to capital, research and development (R&D) and new technologies, consultancy and education, employment, and investment. Most areas of the policy concern the fulfilment of more than one objective (Table 1).

Individual areas for support from SMEs have corresponding implementation tools.

Instruments of implementing the SME's support policy in the areas of establishing businesses as well as in financing and access to capital are presented in Table 2.

The support in the area of establishing businesses comprises the widest list of instruments out of all the areas of the policy regarding SMEs. It needs to be emphasised that programmes for the implementation of individual means of support are conducted in parallel by all the subjects of the SME's support policy, both on the supra-national, national, regional, and local level (Hoffman A.N., 2007). Furthermore, usually newly-implemented programmes are not harmonised with the already existing ones, and with the evaluation of individual programmes effectiveness. Those programmes typically link technical aid with financial support.

Instruments of entrepreneurship support policy in the areas of research and development as well as information, consultancy and education are presented in Table 3.

Table 1

Objectives of the SME's support policy and corresponding areas of direct support

Aim	**economic growth**	— investments — R&D, new technologies — financing, access to capital — establishment of businesses — internationalisation — information, consultancy and education
	improvement of competitiveness	— investments — R&D, new technologies — access to capital — internationalisation — information, consultancy and education
	employment growth	— employment — establishment of businesses — information, consultancy and education
	regional development	— employment — investments — financing, access to capital — information, consultancy and education

Source: authors' construction

Table 2

Instruments of implementing the SME's support policy in the areas of establishing businesses as well as in financing and access to capital

Financing and access to capital	— grants, subsidies — loan subsidising — loan guarantee — guarantees for venture capital funds providers — "second" capital market for the entire SMEs or for SMEs in technologically advanced sectors, investing in research and development
Establishing businesses	— grants, subsidies — loan subsidising — loan guarantee — guarantees for venture capital funds providers — public venture capital funds — feasibility studies — consultancy services — information offices and information materials for people establishing businesses — courses on entrepreneurship and starting a business — industrial and technological parks

Source: authors' construction

Table 3

Instruments of SME's support policy in the areas of information, consultancy and education as well as research and development (R&D)

Information, consultancy and education	— general information sources, comprehensive service centres — consultancy and training available free or against partial payment — Internet source of knowledge — education programmes presenting knowledge on the establishment and operations of an enterprise and creating entrepreneurial attitudes
Research and development, new technologies	— funds allocated to supporting the establishment of networks and industrial co-operation, management by research centres and universities — subsidising jobs for R&D employees — public research and development centres offering services at prices lower than market prices — guarantees for venture capital funds providers — grants and tax reductions on account of investments in innovations and R&D

Source: authors' construction

Table 4

Instruments of SME's support policy in the areas of internationalisation, employment, and investments

Employment	— subsidising remuneration — grants and tax reductions — reductions in benefits on social security — regulations in the labour code
Investments	— subsidies for jobs in order to increase funds for investments — subsidies for development of undertakings, preferential credits
Internationalisation	— information on foreign markets — trainings — export guarantees for a foreign buyer — loan subsidising — remuneration subsidising/financing — grants

Source: authors' construction

Table 5

Instruments of SME's support policy in the areas of limiting bureaucracy and in the area of regulations related with general state policy

Limiting bureaucracy	— simplified procedures enabling an easier access to licences, permits — deregulation — tax system reform (simplified system of tax collection)
Regulations related with general state policy	— unemployment benefits — taxes (conditions of personal income tax assessment) — macroeconomic regulations (maintaining low inflation, low interest rate, stimulating economic growth) — immigration and emigration regulations — regulation regarding communication and public tenders — regulations concerning business activity

Source: authors' construction

The weight of support in the area of research and development and new technologies is rising considerably. Those instruments are chiefly aimed at providing aid in the implementation of new technologies by SMEs. They comprise cost reduction for introducing new technologies as well as financial aid. The assistance in building links between research institutions, higher education institutions, and enterprises is of particular significance (Garofoli G., Musyck B., 2003).

Instruments of support in the area of information, consultancy and education are well developed in most European countries. However, this area of SME's support is a relatively new one. Information and consultancy mostly concern establishing enterprises and export business activity; yet, presently, the instruments encompass nearly all aspects of small and medium enterprises' operation as well as environment elements important to them. Many countries are extending information services by providing information specific to sectors and regions. Not all these activities, however, erase the entrepreneurs' conviction on lack of transparency in respect of institutional structure of SME's support. Education programmes put lot of emphasis on supporting knowledge and creating entrepreneurial attitudes (Henrekson M., Roine J., 2007).

Instruments of entrepreneurship support policy in the areas of internationalisation, employment, and investments are presented in Table 4.

Indirect support through the creation of friendly institutional environment and the development of material infrastructure is frequently considered as a factor of stronger impact than direct support for SMEs. The support concentrates on conducting two-directional activities – limiting bureaucracy and regulations related with general state politics (OECD, 2007) (Table 5).

Most frequently the steps undertaken in the area of limiting bureaucracy aim at eliminating individual, most often criticised regulations. Far rare are the cases of comprehensive simplification and reduction of the number of regulations on conducting business activity. The actions related with tax systems, typically coming down to simplifying tax collection and simplified bookkeeping, seem to be the most difficult ones.

The area of regulations regarding the state policy is indicated as important; however, the direction of such influence may not always be determined in an explicit and cohesive manner. It concerns elements such as taxes, unemployment benefits, regulations on business activity, immigration and emigration regulations as well as regulation concerning competitiveness and public tenders.

In the area of infrastructure, a lot of emphasis is placed on quality and availability of transport links, both locally and internationally as well as on the development of telecommunications infrastructure. Securing investment terrain, which is accounted for in land development plans, is another instrument of infrastructure development.

Conclusions

Environment protection in Poland, just as in the European Union, is regulated by already operating instruments and tools of the community policy. Still, entrepreneurs have a sense that realistically little has been done in respect of supporting SMEs that conduct business activity in protected areas. The reason for that is that so far most actions undertaken with the aim of building partnership between business and nature protection have been addressed to large enterprises and corporations, and outside the scope of interest of small and medium enterprises.

The future of the analysed sector of small and medium enterprises as well as the economic activity and prosperity of local communities will to a large extent depend on the creation of conditions conducive to the financial sectors investing in the SMEs operating based on the use of natural resources. However, these enterprises largely encounter numerous barriers, which mainly include lack of access to the sources of financing and financing instruments acceptable to SMEs as well as unfavourable procedures of the financing sector. The financing sector seems not to appreciate the SMEs that are dependent on natural resources in rural areas, which is caused by high dispersion and fragmentation of potential borrowers, high transaction costs and high investment risk, which frequently results from the lack of plans for the management of protected areas and plans of protection for protected areas.

In line with the assumptions of a created financial mechanism under a working name "Fund for Biodiversity" which starts in 2013, enterprises conducting their business activity in accordance with nature conservation are to receive a higher degree of support. It is going to be a credit fund offering preferential conditions for the implementation of projects, which ensure environmental results in pursuance of the nature conservation objectives in a particular area. Preliminary proposals demonstrate that this future fund will be used by the enterprises:

1) meeting the SME definition requirements;
2) located in Natura 2000 area or using resources located in such areas;
3) whose existence depends on the use of natural resources, especially those of biological diversity;
4) demonstrating positive influence on biological diversity in the area of their impact.

Recommendations can be drawn up for those small and medium enterprises which are interested in undertaking and developing business activity in the areas of natural value that encompass many different forms of pro-nature activities, including activities related with production, education, training, and consultations.

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DIVERSITY OF AGRARIAN STRUCTURES IN EU MEMBER STATES – DYNAMIC APPROACH*

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Abstract. The paper concerns the issue of shaping of the agricultural structures in the European Union member states. The aim is to assess the occurrence of uniform trend in changes of the volume structure of farms and owned agricultural land. Therefore, the author tries to answer the question whether the validity of the common principles of the Common Agricultural Policy in the EU causes alignment in the existing gap in this area. For this purpose, statistics on agricultural resources in the EU, showing the current shape of the agrarian structure in the EU-27 as well as the dynamics in the years 2003-2007, w used. To illustrate the degree of differentiation of the structures, Shannon Diversity Index was applied. It turns out that despite the assumptions about the dominant role of family farms in the European agriculture, agrarian structures are characterized by significant diversity. Moreover, there are no trends to its standardization, and the existing diversity is maintained.
Key words: agrarian structures, agricultural land, diversity, EU-27, dynamics.
JEL code: Q15

Introduction

Under the terms of the Treaty of Rome - Article 295 (Now Art. 345 of the Treaty on the Functioning of the European Union), the issues related to the ownership of land in the EU member states are reserved to the jurisdiction of the laws of the member states. Moreover, issues related to the agricultural sector belong to shared competence between the EU and the member states. Hence, the importance for the development of agricultural structures is attributed firstly to the national agricultural policies. Although in the EU there is no direct policy, which impacts the management of agricultural land, the EU projects introduce tools that indicate the desired direction of development of agricultural structures. First, it should be noted that one of the assumptions underlying the Common Agricultural Policy is treating of family farms as the basic production units in European agriculture. On the other hand, in the EU certain forms of agricultural land management such as land lease are promoted (The Mansholt Plan). Moreover, not without significance for agricultural structures remains the Common Agricultural Policy (Czternasty W., Smedzik K., 2009). In the 70s and 80s, in Western Europe it stimulated the transition from small family farms to large farms and agricultural enterprises, in parallel with implementing the land set-aside programmes, or the withdrawal from agricultural activities. The latter was also featured in MacSharry reform (Tomczak F., 2009). The Luxembourg Common Agricultural Policy reform parallel implements agricultural policy and the policy of rural development, which take into account the maintenance of the European model of agriculture with a focus on environmental protection (Jurcewicz A., Kozlowska B., Tomkiewicz E., 2007, Adamowicz M., 2008). For this purpose decoupling, cross-compliance and modulation were conducted (Cunha A., Swinbank A., 2011, Czyzewski A., Poczta-Wajda A., 2009). Currently, the agrarian structures are interacted for instance by efforts to reduce agricultural production potential in Europe, or at least to limit its use. On the other hand, the family nature of European agriculture, protected, inter alia, through the agricultural institutions in every country (Czyzewski B., Majchrzak A., 2010), limits the process of decreasing usage of land for production purpose.

The aim of this study is to answer the question whether in connection with the functioning of agriculture in the conditions of the Common Agricultural Policy, existing in the European Union, changes of agricultural structures are rationale for their unification. The thesis is that examined structures develop mainly in line with national interests with the use of the CAP instruments. Moreover, the differentiation of forms of support available under this policy promotes functioning of agriculture in different structures. In fact, it is an approach consistent with the concept of territorial cohesion, which does not mean striving for convergence of resources and structures, but to use the present regional disparities and ensure the harmonious development of all areas (Komunikat Komisji...2010).

The analysis concerns changes in agrarian structures in the years 2003 and 2010 and is based on the statistical material derived from the Eurostat database, viz. the Farm Structure Survey[2]. In the paper, the changes in the utilized agricultural areas (UAA) in the 27 member states

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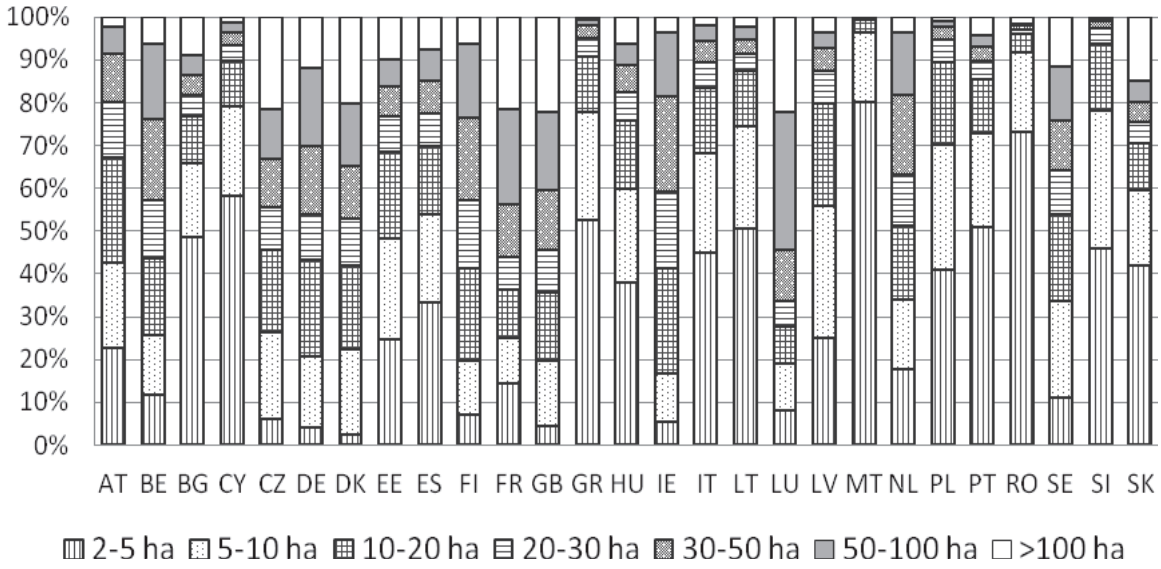
[2] One must note that in 2010 Farm Structure Survey methodology has been changed. In 2010, various Member States used survey thresholds which were above the common threshold of 1 ha of UAA. Because of the fact that in this paper threshold of 2 ha was used, the change does not influence the possibility of comparison. However, the 2010 agricultural census includes common land used for grazing in the total UAA. For some countries, this leads to significant changes in the area counted as UAA (e.g., Germany, France, Bulgaria, Hungary, Ireland, Greece, the United Kingdom), which needs to be taken into account.



Source: author's construction based on the Farm Structure Survey, 2010

Fig. 1. **The number of farms (> 2 ha) by area groups in the European Union in 2010**

were analyzed. The data were limited to the farms bigger than 2 hectares. To present the level of differentiation of structures, Shannon Diversity Index based on the following formula is used:

$$SHDI = -\sum_{i=1}^{m}(P_i \cdot \ln P_i)$$

where:

i – area groups
Pi – share of number of farms in each group or share of UAA in each group

SHDI is set to 0, when in the structure there is only one type of usage, and the maximum value (equal to the negative logarithm of the number of classes) in the case of a balance between the distribution of different types (Zawalinska K., 2010)[3]. For distinguished 7 area groups Shannon Diversity Index takes a value between 0-1.95.

The diversity of agricultural structures in the EU member states

The European Union has a high internal diversity of agricultural structures in the single countries. As evidence of this fact is that in only three countries – Romania, Poland and Italy more than 50% of all farms are located. Their number is not only determined by the available resources of agricultural land, because they have about 23% of total UAA held by households in the EU (data from 2007) (Agriculture in the ..., 2010). The largest area of agricultural land is located in France – 16.4% of UAA in the EU, while this area is used by 6.5% of the EU farms. Moreover, in Romania almost the same area as in Italy is managed by 60% more entities.

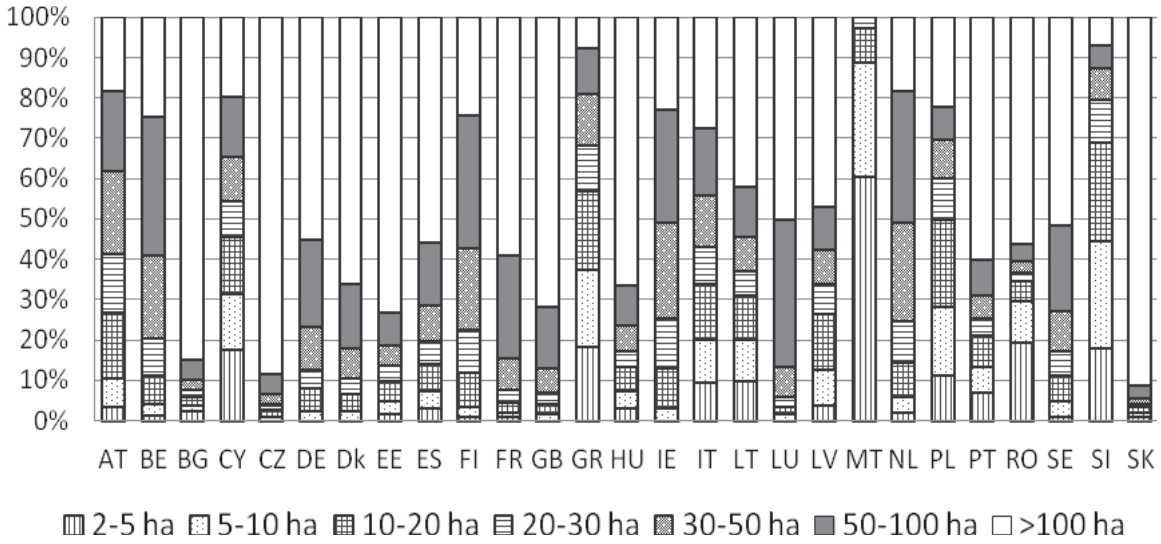
At the same time in the EU, one can distinguish countries, in which small and very small farms[4] dominate – Bulgaria, Cyprus, Spain, Greece, Hungary, Italy, Latvia, Lithuania, Malta, Portugal, Romania, Poland, Slovakia and Slovenia as well as countries where most farms have over 30 hectares of land – France, the United Kingdom, Luxembourg (Figure 1). In addition, it is worth paying attention to the distribution of holdings in each class area. Shannon Diversity Index calculated for the number of households in a particular area class equals in 2010 ranges from 0.86 in the case of Romania and 1.9 for Sweden and Belgium (Table 4).

Diversification of agricultural structures in the European Union is confirmed by the structure of the UAA owned by farms by area groups (Figure 2). In most countries, there is a concentration of agricultural land in large farms – Belgium, Bulgaria, the Czech Republic, Germany, Denmark, Estonia, Spain, Finland, France, the United Kingdom, Hungary, Lithuania, Luxembourg, Latvia, the Netherlands, Portugal, Romania, Sweden, and Slovakia. On the other hand, in Austria, Cyprus, Greece, Italy and Poland it is relatively evenly spread across the groups. Hence, the Shannon Diversity Index in 2010 accepted the values range from 0.43 in Slovakia to 1.91 in Cyprus (Table 4).

Interesting regularities can also be seen when considering the average size of farms in the EU member states (Table 1). In 2010, this parameter amounted to from 4 to 169 hectares, while the average farm size in the EU-27 amounted to just over 27 hectares. In case of average farm size in each group, in the vast majority of countries the analyzed variable for the area groups of 2-5 ha, 5-10 ha, 20-30 ha, 30-50 and 50-100 ha took values close to each other – the differences were only 1 to 9 ha, while there was a considerable diversity

[3] In the calculation of the structure diversity the case of Malta was omitted due to the lower number of distinguished classes of agricultural land, and therefore incomparability of results.

[4] The Community Farm Typology classifies farms by agricultural area as follows: less than 5 ha - very small farms, from 5 to 10 ha - small farms, from 10 to 20 ha – average – small farms, from 20 to 30 ha - average – large farms, from 30 to 50 ha – large farms, more than 50 ha - very large farms.



Source: author's construction based on the Farm Structure Survey, 2010

Fig. 2. **The share of UAA in farms (> 2 ha) by area groups in the European Union in 2010**

Table 1

Average farm size in the EU Member States in 2010 by area groups

State	> 2 ha	2-5 ha	5-10 ha	10-20 ha	20-30 ha	30-50 ha	50-100 ha	> 100 ha
AT	22	3	7	14	24	38	67	185
BE	36	3	7	15	25	39	69	148
BG	69	3	7	14	24	38	69	672
CY	10	3	7	14	24	38	66	165
CZ	169	3	7	14	24	38	70	698
DE	59	3	7	15	25	39	70	274
Dk	66	4	7	14	25	39	72	217
EE	54	3	7	14	24	39	70	400
ES	34	3	7	14	24	38	70	256
FI	37	4	7	15	25	39	69	148
FR	63	3	7	14	25	40	72	175
GB	88	3	7	14	25	39	72	288
GR	9	3	7	14	24	37	65	167
HU	38	3	7	14	24	38	70	407
IE	36	4	8	15	25	39	67	244
IT	15	3	7	14	24	38	68	218
LT	16	3	7	14	24	39	68	300
LU	66	4	7	14	25	41	74	150
LV	24	3	7	14	24	38	68	328
MT	4	3	7	12	16	-----	-----	-----
NL	30	3	7	15	25	39	67	155
PL	12	3	7	14	24	38	68	323
PT	23	3	7	14	24	38	70	347
RO	12	3	7	13	24	38	69	474
SE	44	4	7	14	25	39	71	200
SI	9	3	7	14	24	37	67	329
SK	126	3	7	14	24	38	71	781
min	**4**	**3**	**7**	**12**	**16**	**37**	**65**	**148**
max	**169**	**4**	**8**	**15**	**25**	**41**	**74**	**781**

Source: author's construction based on Agriculture in the..., 2010; the Farm Structure Survey, 2010

Table 2

Dynamics of the number of farms (> 2 ha) in the European Union by area groups during 2003-2010

State	> 2 ha	2-5 ha	5-10 ha	10-20 ha	20-30 ha	30-50 ha	50-100 ha	> 100 ha
AT	-13.5%	-15.8%	-19.5%	-19.3%	-11.9%	2.9%	16.8%	-3.4%
BE	-19.0%	-35.7%	-28.4%	-23.3%	-24.1%	-17.4%	4.6%	32.9%
BG	-1.2%	-27.4%	10.4%	71.4%	134.1%	157.1%	140.2%	41.5%
CY	-24.9%	-22.4%	-28.8%	-33.6%	-21.3%	-21.6%	-15.4%	-25.0%
CZ	-23.3%	-83.6%	-13.3%	-7.5%	2.0%	24.2%	18.6%	6.3%
DE	-25.7%	-82.5%	-21.2%	-18.3%	-22.8%	-16.4%	-6.6%	18.8%
DK	-16.0%	18.8%	0.4%	-11.9%	-23.2%	-31.6%	-37.7%	5.2%
EE	-41.1%	-61.9%	-43.9%	-35.1%	-21.7%	-20.9%	3.8%	57.8%
ES	-11.8%	-15.8%	-16.1%	-15.5%	-12.6%	3.0%	6.2%	2.1%
FI	-14.7%	-16.2%	-17.6%	-24.1%	-25.3%	-19.2%	7.0%	69.0%
FR	-15.2%	-15.9%	-18.4%	-21.3%	-26.8%	-27.2%	-17.5%	12.4%
GB	-15.3%	-75.9%	-0.7%	-3.2%	-4.7%	-6.7%	-7.5%	-1.5%
GR	-18.1%	-20.0%	-20.0%	-14.8%	-8.0%	-5.3%	10.0%	-1.3%
HU	-16.7%	-29.6%	-20.9%	-10.1%	6.4%	10.2%	22.3%	35.9%
IE	2.7%	7.0%	-21.0%	4.5%	3.5%	9.1%	12.2%	5.1%
IT	-9.3%	-15.5%	-9.4%	-1.5%	-4.0%	5.9%	11.6%	8.9%
LT	-29.6%	-37.0%	-30.3%	-24.6%	-10.9%	17.4%	60.5%	83.6%
LU	-9.1%	-27.3%	0.0%	-10.5%	-14.3%	-20.0%	-17.9%	29.4%
LV	-23.1%	-44.4%	-23.0%	-12.7%	1.6%	6.5%	22.3%	69.1%
MT	-1.4%	-4.3%	4.5%	33.3%	-----	-----	-----	-----
NL	-14.1%	-13.2%	-15.6%	-20.5%	-24.4%	-16.9%	5.8%	24.9%
PL	-5.7%	-3.6%	-10.1%	-11.4%	-0.9%	18.5%	48.6%	47.3%
PT	-17.4%	-22.5%	-14.4%	-15.1%	-13.0%	-6.2%	6.9%	8.1%
RO	-19.4%	-23.6%	-16.6%	16.6%	75.9%	107.8%	97.4%	33.7%
SE	5.3%	39.5%	54.3%	3.9%	-10.6%	-17.0%	-20.5%	0.8%
SI	-9.5%	-8.0%	-15.5%	-13.8%	22.4%	76.4%	153.3%	42.9%
SK	10.4%	-18.9%	78.5%	56.7%	73.8%	45.8%	41.8%	19.5%

Source: author's construction based on Agriculture in the..., 2010; the Farm Structure Survey, 2010

in farms bigger than 100 ha. Among them, the average farm size was 148 ha in Belgium, while the highest – more than five times higher (781 ha) was in Slovakia. For comparison, the average farm size in the group 100 ha and more in the EU-27 in 2010 was 264.6 ha.

It should be noted that the current agrarian structure in the countries of Central and Eastern Europe is an effect of changes resulting from the collectivization of agriculture. The situation occurring in Bulgaria, the Czech Republic, Estonia, Hungary and Slovakia come out of restitution process carried out in the 90s. It resulted in a highly fragmented agrarian structure, which as a result led to the diffusion of agricultural land lease. In this way, cooperatives and large farm holdings were formed. The structure of the agricultural land in the countries of Western Europe are the result of secular economic development and restructuring that took place in the early years of functioning of the CAP and in a post-war economic development (F. Tomczak, 2008). It should be noted, however, that the situation formed in those old member states shows that European integration does not lead to the unification of agricultural structures (A. Majchrzak, 2010).

The dynamics of agrarian structures in the EU member states during the period 2003-2010

Heterogeneous agrarian structure inside the European Union is also accompanied by various factors determining the dynamics, distinct in the countries of Western Europe and Central and Eastern Europe (Rynek ziemi rolniczej..., 2010). One can specify the universal stimulants, which are: growth in parallel with the increase of farms, income opportunities and facilities in the implementation of European environmental regulations. At the same time, it is worth emphasizing that the shape of agricultural structures in the European Union is affected by the instruments of the CAP. The support targeted to farms is often the condition for achieving income in these units, and the liberalization of the used instruments can cause changes in the structure of the farm size as well as in

Table 3

The dynamics of the structure of agricultural land in farms (> 2 ha) in the European Union by area groups during 2003-2010

State	> 2 ha	2-5 ha	5-10 ha	10-20 ha	20-30 ha	30-50 ha	50-100 ha	> 100 ha
AT	-11.6%	-16.9%	-19.0%	-19.1%	-11.2%	3.6%	18.7%	-32.6%
BE	-2.4%	-35.0%	-28.1%	-23.5%	-24.3%	-16.9%	6.1%	36.4%
BG	67.1%	-25.7%	13.2%	75.4%	135.0%	162.0%	142.7%	68.0%
CY	-26.8%	-22.9%	-29.3%	-34.1%	-23.4%	-22.6%	-18.8%	-31.2%
CZ	-3.8%	-82.7%	-12.2%	-6.5%	2.0%	24.7%	18.1%	-4.7%
DE	-1.6%	-82.4%	-21.5%	-17.4%	-22.8%	-16.1%	-5.8%	12.2%
DK	-0.4%	16.4%	-0.1%	-12.6%	-23.4%	-31.6%	-37.2%	27.5%
EE	19.4%	-60.7%	-42.0%	-34.2%	-20.9%	-20.2%	6.3%	52.5%
ES	-5.4%	-15.8%	-15.9%	-15.0%	-12.2%	3.1%	7.9%	-6.4%
FI	2.1%	-16.7%	-17.8%	-24.2%	-25.3%	-18.6%	9.7%	78.3%
FR	0.2%	-16.5%	-18.7%	-22.2%	-27.3%	-26.8%	-16.5%	21.2%
GB	-2.5%	-74.8%	-0.2%	-3.7%	-5.0%	-6.8%	-7.4%	-0.1%
GR	-12.6%	-20.1%	-19.7%	-14.7%	-7.5%	-4.4%	8.2%	-12.7%
HU	9.8%	-29.7%	-21.7%	-10.9%	5.6%	8.8%	22.5%	16.8%
IE	16.1%	4.6%	-21.1%	3.8%	3.7%	9.0%	12.1%	60.9%
IT	-0.7%	-15.9%	-9.3%	-2.7%	-4.3%	6.3%	12.7%	1.2%
LT	10.5%	-37.1%	-30.6%	-24.1%	-10.8%	20.7%	59.8%	74.5%
LU	2.4%	-23.0%	-1.3%	-14.3%	-15.3%	-17.7%	-17.1%	32.4%
LV	22.1%	-43.2%	-22.3%	-11.7%	2.5%	7.3%	23.1%	90.8%
MT	4.4%	-3.2%	7.7%	17.9%	-----	-----	-----	-----
NL	-6.6%	-12.0%	-15.0%	-20.3%	-24.5%	-16.2%	6.8%	12.0%
PL	1.9%	-3.8%	-10.1%	-11.2%	-0.3%	19.9%	51.3%	13.4%
PT	-1.2%	-21.9%	-14.5%	-14.5%	-13.2%	-6.2%	7.3%	6.3%
RO	-2.6%	-23.3%	-16.0%	21.3%	77.7%	110.8%	105.8%	-0.6%
SE	-1.9%	48.0%	50.8%	2.9%	-10.9%	-17.3%	-20.2%	9.3%
SI	-1.1%	-9.5%	-15.7%	-13.2%	23.6%	75.0%	162.7%	10.9%
SK	-10.5%	-15.7%	79.7%	61.1%	74.9%	43.3%	45.1%	-13.4%

Source: author's construction based on Agriculture in the..., 2010; the Farm Structure Survey, 2010

the structure of agricultural production, which could be caused, inter alia, by a number of farms bankruptcies (Jozwiak W., Mirkowska Z., 2006). Not without significance, however, are also the factors shaping the national agricultural policies such as principles of agricultural land management in the form of a lease (Tanska-Hus B., 2010) or the institutional environment, which often restrict the free flow of agricultural land as well as determine the land prices.

The dynamics of the agricultural structures in the EU member states by area groups are presented in the tables (Table 2 and Table 3). Their analysis leads to the conclusion that during the period 2003-2010, both inside the EU-27 as well as among the EU-15 and the EU-12, changes occurred in a differentiated manner. We can distinguish both the countries in which there is an increase of the biggest farms and decrease of small farms. They are not limited to the Western European countries (e.g. Bulgaria and Slovenia). In parallel, in the European Union there are countries in which a decrease of the number of farms with an area of over 100 ha and an increase of smaller units can be seen. This situation applies, inter alia, the United Kingdom and Greece. Next, one can specify the countries where there is a simultaneous increase in the number of relatively small and the largest farms, which takes place along with the decrease of middle-class area units (e.g. Poland) as well as countries with the highest increase in the number of farms in size of 5-50 ha – Romania, Slovakia. It should also be noted that in some countries there is the reduction in the use of agricultural land resources, while in others the agricultural area is growing (e.g. Bulgaria, Estonia, Hungary, Ireland, Lithuania, and Latvia). Moreover, in various ways the dynamics of the land resources at the disposal of the farm of particular area groups is shaped.

The value of Shannon Diversity Index calculated for number of farms in 2003 and 2010 shows the increasing diversity of structures within the member states (Table 4). However, the same variable calculated for

Table 4

Diversification of agricultural structures in the EU member states – Shannon Diversity Index

Number of farms by area groups								
State	**SHDI 2003**	**SHDI 2010**	**State**	**SHDI 2003**	**SHDI 2010**	**State**	**SHDI 2003**	**SHDI 2010**
AT	1.73	1.77	**FI**	1.81	1.86	**LV**	1.50	1.65
BE	1.88	1.90	**FR**	1.91	1.88	**MT**	----	----
BG	1.14	1.54	**GB**	1.92	1.87	**NL**	1.85	1.87
CY	1.27	1.25	**GR**	1.23	1.28	**PL**	1.37	1.41
CZ	1.82	1.87	**HU**	1.52	1.67	**PT**	1.35	1.42
DE	1.91	1.86	**IE**	1.80	1.79	**RO**	0.71	0.86
DK	1.83	1.83	**IT**	1.43	1.50	**SE**	1.91	1.90
EE	1.59	1.81	**LT**	1.21	1.38	**SI**	1.19	1.25
ES	1.72	1.77	**LU**	1.78	1.78	**SK**	1.39	1.64
UAA by area gruops								
State	**SHDI 2003**	**SHDI 2010**	**State**	**SHDI 2003**	**SHDI 2010**	**State**	**SHDI 2003**	**SHDI 2010**
AT	1.83	1.83	**FI**	1.67	1.61	**LV**	1.83	1.60
BE	1.68	1.60	**FR**	1.30	1.15	**MT**	----	----
BG	0.69	0.68	**GB**	1.00	0.95	**NL**	1.71	1.67
CY	1.91	1.92	**GR**	1.88	1.90	**PL**	1.84	1.87
CZ	0.51	0.52	**HU**	1.32	1.21	**PT**	1.47	1.37
DE	1.45	1.30	**IE**	1.67	1.64	**RO**	1.24	1.34
DK	1.32	1.11	**IT**	1.88	1.87	**SE**	1.43	1.41
EE	1.43	1.03	**LT**	1.84	1.70	**SI**	1.64	1.79
ES	1.42	1.41	**LU**	1.22	1.14	**SK**	0.30	0.43

Source: author's construction based on Agriculture in the..., 2010; the Farm Structure Survey, 2010

the whole EU in the whole period remained unchanged. On the other hand, the decreasing rate of SHDI for the agricultural area by area groups means the diminishing diversity of UAA structure within the member states. In this case, the variation was reduced in scope of the EU-27.

Conclusions

The analyses show that, despite the fact that European agriculture is based on family farms, agrarian structures inside the EU are formed in a various ways, which are affected by many factors – both endogenous and exogenous. This is confirmed not only by the static approach, but also by the dynamics of the presented structures. This in turn indicates that pointing out one universal model of agricultural structure, to which the EU member states tend, is not possible. What's more, the diversity of these structures will be increasingly vindicated by the range of instruments of the Common Agricultural Policy. Every EU country has the opportunity to take advantage of the forms of financial support for agriculture, which will improve its competitiveness, yet not necessarily through the impact on agrarian structure. Taking into account the reforms of the CAP, introducing support for environmental programs and rural areas instead of direct agricultural support (Czyzewski A., Stepien, S., 2010), one can expect that the multidirectional development of agricultural structures in the EU will continue. It should be noted, however, that the relative diversity of agricultural structures can provide a significant value in connection with the potential to provide unconventional food and to deliver public goods from agriculture. Coexistence of large commodity farms and small family farms in the EU realize both agricultural production and non-production functions, including the maintenance of socio-economic activity, environmental safety and rural culture. Therefore, it can be stated that the diversity of agricultural structures in the EU is a strong point of European agriculture.

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ACTIVITIES OF LOCAL AUTHORITIES IN PROMOTING ENTREPRENEURSHIP IN POLAND

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Abstract. The article brings closer to the concept and the essence of entrepreneurship in rural areas in Poland. The aim of this study was to present the action taken by the local authorities in promoting entrepreneurship, depending on the level of development of the municipality. The empirical research was done in 2009 and it encompassed 229 rural municipalities in Mazowieckie voivodship. To determine the level of development of local municipalities surveyed, the method used in the development of the standard taxonomic by Z. Hellwig (Hellwig Z., 1968) and the data relating with the activities of local business support came from the research of their own. It was found that the development of entrepreneurship in rural areas was due to the existence of a particular place and time, and adequate resources, both tangible and intangible as well as adequate capital and people with the right knowledge and willingness to bear the risk of contributing to the development of the entire area.
Key words: entrepreneurship, local government, local development, Mazowieckie, Poland.
JEL code: R11

Introduction

Effective assistance of local authorities in promoting entrepreneurship can contribute to the economic development of the region. Actions taken to increase the competitiveness of the area are particularly important in terms of access to local markets for companies integrating into Europe. In a market economy, which is an essential feature of competition on the markets, entrepreneurship as a specific way of thinking and acting is quite an important issue. It is something more than resourcefulness of life, which consists in dealing with crisis. The issue of the development of local entrepreneurship is an essential part of a broader issue, which is reflected through the development of the local economy, inter alia, increase of the GDP per capita, increase of jobs, and change of the economic structure of the area. The effects of this development should be: new businesses and jobs, increase in the volume and quality of services, resources in attractive locations (farmed land, real estate etc.), intellectual resources (skills, knowledge, qualifications of members of the local community) (Struzycki M., 2006).

The aim of this study was to present the action taken by the local authorities in promoting entrepreneurship depending on the level of development of the municipalities surveyed. Empirical studies were carried out in 229 rural communities of Mazowieckie voivodship, and the main statistical data were obtained from the Local Data Bank of the Central Statistical Office in 2009. To determine the level of development of local municipalities, the author used the method of pattern development taxonomic of Z. Hellwig (Hellwig Z., 1968) who first initiated the use of synthetic variables to organise multi-dimensional socio-economic facilities in terms of their development.

The design of local development of synthetic instrument (SI) was carried out in several successive stages. It was preceded by a process of selection of diagnostic variables that describe the phenomenon of socio-economic development of municipalities. These variables were extracted taking into account three types of criteria such as value, form, and statistics. Subsequently, the strength of relation between variables was examined, using the Pearson correlation coefficient, also called correlation coefficient.

Finally, the study selected 15 variables describing various spheres of socio-economic development of the municipalities surveyed. The choice of diagnostic variables was preceded by a literature review on the development of local entrepreneurship and local governments, and variables selected on this basis are shown in Table 1.

The next stage involves the construction of local development taxonomic using the method of Z. Hellwig. This measure is one of the taxonomic methods which measures aggregate as a synthetic measure of taxonomic distance of the object from the so-called pattern of development which is an abstract object (in particular, it may be a really existing object) (Nowak E., 1990).

The calculated SI values were the starting point for linear arrangement of rural municipalities and isolation of the typological groups. The classification of surveyed municipalities in terms of their level of development was done based on the arithmetic mean and standard deviation - s. The set of objects is divided into four groups, as shown in Table 2 (the number of classes was known in advance).

Data relating with the activities of local business support were taken from the author's own research, namely, a diagnostic survey carried out by using the technique of a standardised questionnaire survey addressed to the representatives of the local authorities. The questionnaire was sent to all rural municipalities of Mazowieckie voivodship (229 municipalities), and the return of questionnaires was obtained from 137 municipalities, representing 60% of the surveyed municipalities.

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Table 1

Diagnostic variables selected for the construction of local development synthetic instrument (SI) for Mazowieckie voivodship rural municipalities

Variable symbol	Variables by group
Income and expenditure budget of the municipality	
X_1	share of own income in total income in %
X_2	total municipal income per capita in PLN
X_3	municipal capital expenditure per capita in PLN
Municipal economy	
X_4	percentage of the population using the water supply network in the total population in %
X_5	percentage of the population using the sewerage system in the total population in %
X_6	percentage of the population using the gas network in the total population in %
Housing economy	
X_7	percentage of apartments with a bathroom in %
X_8	percentage of houses with central heating in %
X_9	average usable floor space per 1 person in m^2
Population	
X_{10}	population of non-working age per 100 people of working age
X_{11}	people per km^2 (population density)
Business entities	
X_{12}	commercial companies with foreign capital registered in the REGION in the total number of entities
X_{13}	number of registered associations and social organisations
Labour market	
X_{14}	participation of registered unemployed in the population of working age in %
Local government	
X_{15}	number of councillors with higher education

Source: author's study based on the CSO data

Table 2

Division of municipalities by classes in terms of local development

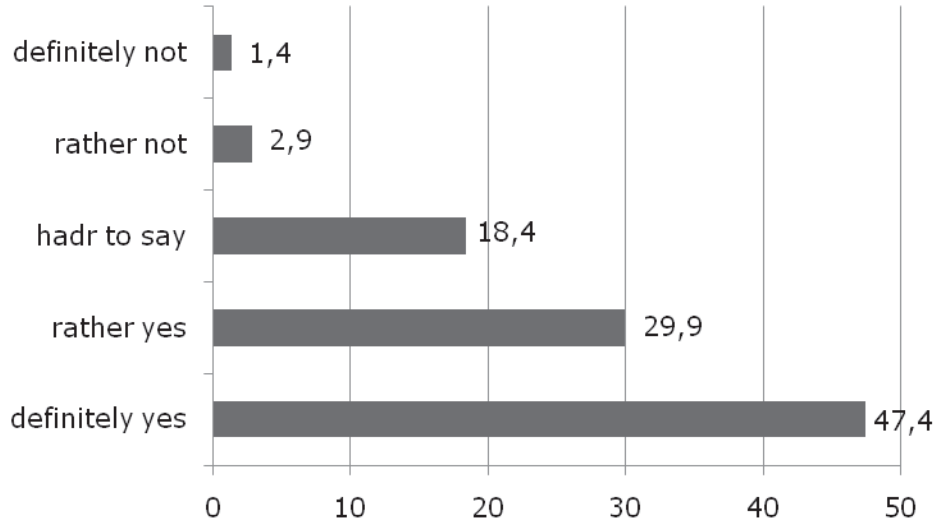
Class	Criterion	Description of the class
I	$z_i \geq \bar{z} + S_z$	High level of local development
II	$\bar{z} + S_z > z_i \geq \bar{z}$	Average level of local development
III	$\bar{z} > z_i \geq \bar{z} - S_z$	Low level of local development
IV	$z_i < \bar{z} - S_z$	Very low level of local development

Source: author's study based on Nowak E. "Methods for Taxonomic Classification of Socio-economic Issue", 1990

The nature and concept of entrepreneurship

In Poland, entrepreneurship has been recognised at the time of creation the foundations of a market economy, when it ceased to be the principle of the welfare state. Then, the people with such features as creativity, resourcefulness, ingenuity, and being open to innovation, started up their own business in various areas of life. Entrepreneurship in the economy both in terms of national, regional, or global scale is a vital link in the socio - economic progress and the complex process of an organised activity based on the cooperation of many people and implementation of undertaken activities.

In literature, one can find many interpretations of the concept of entrepreneurship, and this means that there is no single, coherent definition. Approach to entrepreneurship depends on the particular field of knowledge. Mostly, however, it is combined with economic activity and is often identified with the setting up and running a business. In terms of encyclopaedia,



N = 137 municipalities

Source: author's construction

Fig. 1. **Is Poland's accession to the European Union an opportunity for the development of the SME sector in the surveyed communities (in %)**

entrepreneurship is the ability to be entrepreneurial, have a spirit of initiative, gumption, and resourcefulness (Polish Language Dictionary, 1988). However, according to the P. F. Drucker, the world expert in knowledge of business, this is the interdependence of the entrepreneurial and innovative skills, so that it is possible to achieve the pursued objective - for success in a particular market segment or business (Drucker P.F., 1992). J. Schumpeter emphasised the close relationship between the enterprise in terms of macroeconomics, treating it as a major factor in the economic development and the concept of individual micro-entrepreneurs, whom he called an innovator (Sikorska-Wolak I., 2008).

Entrepreneurship can be seen in three aspects, as "a way of thinking, involving curiosity, knowledge and experience, critical evaluation; the behaviour and actions that can exploit this opportunity, taking risks, overcoming limitations; and the result of entrepreneurial thought and action, which is innovation, making business ventures, and creating businesses (Senczyszyn J., 2002). The economic importance of entrepreneurship is "the ability to see possibilities inherent in the environment and their use in order to do business in the form of an organised enterprise, resulting from the internal (subjective) abilities of a person, or an entrepreneur (Nogalski B., 2003). Speaking of entrepreneurs and their entrepreneurial activities should be aware of their importance for the development of the economy that gives rise to innovation, creates new jobs and contribute to the development of individual operators, and thus, becomes an important entrepreneurial economic category. It can be considered in terms of individuals, the action team and the company as well as local government units.

In summary discussion of the concept and the essence of entrepreneurship, one can conclude that this issue is quite complex, multi-faceted combining many elements from different disciplines. "Entrepreneurship in the modern economy is a symbol of success, winning the competition. Its content is making difficult, often risky ventures, production and market initiatives in order to achieve extraordinary benefits, measured as profit business (Krzyzanowska K., 2003).

Research results and discussion

An important task in the development of local governments is to develop entrepreneurial attitudes that contribute to act in different areas of human life, especially in business (Sikorska-Wolak I., Krzyzanowska K., 2010). Development of entrepreneurship in rural areas is largely dependent on the state aid and local authorities. Therefore, the development of entrepreneurship is important for creating the right conditions, and encouraging and leading business.

Poland's accession to the European Union in 2004 has become an important historical event of a political, social, and economic character. Shaping the society in which entrepreneurship is shared by a large part of it, is the basis for building a competitive economy. In this sense, the development of entrepreneurship aims to stimulate private initiative and to encourage the establishment of businesses. Establishing one's own business is associated with greater responsibility and higher risk, yet, this independence makes it possible to develop the area (Targalski J., 2009). The authorities of the municipalities surveyed also noticed that the European Union was an opportunity for the development of small and medium-sized enterprises, as shown in Figure 1.

More than three-quarters of respondents indicated that Poland's accession to the European Union was an opportunity for the development of not only the company but the entire territory of the municipality as well. Most of the respondents declared that their municipalities were

Table 2

Forms of action taken for local entrepreneurs assistance in obtaining funds from the European Union according to the level meter for local development (in %)

Specification *	Classes of municipalities by the local development level measure (data for 2009)			
	Class I N = 10	Class II N = 52	Class III N = 71	Class IV N = 4
Organisation of training courses for entrepreneurs	60.0	51.9	52.1	75.0
Supporting and promoting local leaders	30.0	42.3	42.3	75.0
Promoting cooperation with business organisations	20.0	32.7	31.0	0.0
Promoting partnerships	10.0	9.6	12.7	0.0
Creation of the municipality advisory centres for entrepreneurs	10.0	0.0	14.1	25.0

* the tested could indicate more than one answer

Source: author's research

Table 3

Factors impeding the use of the EU funds by the local development level measure (in %)

Specification *	Classes of municipalities by the local development level measure (data for 2009)			
	Class I N = 10	Class II N = 52	Class III N = 71	Class IV N = 4
Long period of waiting for a decision to grant or not to grant funds	90.0	80.8	78.9	75.0
Long period of collecting the required documents	80.0	84.6	74.6	75.0
Chargeability of financial security	70.0	82.7	83.1	100.0
No experienced person with the preparation of proposals	10.0	21.2	25.4	0.0
High costs for preparing the proposal / business plan	70.0	63.5	69.0	75.0
Too complicated legal regulations	90.0	65.4	62.0	75.0
Reporting on implementation of the proposal	80.0	73.1	70.4	50.0

* the tested could indicate more than one answer

Source: author's research

taken actions aimed at helping entrepreneurs in obtaining funds from the European Union budget for running a business (Bienkowska W., 2012).

The study looked for an answer the question of what forms municipal authorities take to provide support to entrepreneurs. Table 2 presents detailed information.

The municipalities with the lowest level of local development activities often focus on training of entrepreneurs and supporting and promoting local leaders rather than the municipalities with a higher level of development. However, this cannot be referred to the taken action in these communities in the partnership.

Local authorities, business, and local communities are aware of the right and the need to take action to create favourable conditions for the development of entrepreneurship. In fact, entrepreneurs often face many obstacles in their actions which require not only a lot of time and money but turn to be a stressful occupation which may have an effect on discouraging the next steps to be taken in developing the scale and scope of operations (Targalski J., 2009). Table 3 shows the factors hindering the use of the European Union funds, taking into account the level of development of local classes in the surveyed municipalities.

The municipalities with the lowest level of local development experienced the greatest difficulty in obtaining funds from the European Union related with the expectation of financial security. However, the lack of experienced individuals for the preparation of applications was the lowest barrier in the opinion of the respondents.

Another issue affecting the development of the municipality is financial condition, which is associated with the economic situation of the country and the region. The consequence of the unfavourable financial

Table 4

Tax reductions and exemptions for local businesses in the surveyed municipalities used to measure the level of development according to local development measure (in %)

Type of tax deductions and exemptions * on	Classes of municipalities by the local development level measure (data for 2009)			
	Class I N = 10	Class II N = 52	Class III N = 71	Class IV N = 4
Means of transportation	50.0	46.2	40.8	50.0
Agriculture	50.0	50.4	40.8	50.0
Real estate	30.0	44.2	38.0	25.0
Forestry	30.0	15.4	14.1	0.0

* the tested could indicate more than one answer

Source: author's research

Table 5

Investment directions made by the municipal government to improve the business environment by the local development level measure (in%)

Investments *	Classes of municipalities by the local development level measure (data for 2009)			
	Class I N = 10	Class II N = 52	Class III N = 71	Class IV N = 4
Construction / renovation of roads	7.3	38.0	51.1	2.9
Water supply system	6.6	30.7	42.3	2.9
Sewage system	5.8	24.1	31.4	1.5
Sewage treatment plants	2.2	20.4	24.8	1.5

* the tested could indicate more than one answer

Source: author's research

situation of economic operators is the amount of taxable income (either natural or legal persons as well as entities without legal personality), which, in turn, translates into the amount of taxes paid by them affecting the budget of the municipality (Jaremczuk K., 2004).

Table 4 presents the research results on the use of tax reliefs and exemptions for companies that decide to undertake an economic activity in the municipality.

Taking into account the division of municipalities into classes according to the level measure for local development, there were no differences in terms of tax reliefs and exemptions by the municipal authorities.

An important issue, which drew attention to the studies undertaken, were the directions of investing in communities. Made investments contribute to the attractiveness of the area for potential entrepreneurs. Table 5 shows the direction of investing in communities on the level of their development.

The study shows that most of the municipal authorities undertook investments in Class III. It is surprising that the level is small in municipalities with a very low level of local investment. It is necessary to correct infrastructure in order to arouse interest of potential entrepreneurs in the area and to find it to be appropriate to conduct a business. Therefore, the task of local authorities should be to strive to achieve the most favourable business environment.

Summary and Conclusions

The study on the actions of local authorities in promoting entrepreneurship, has led to the following conclusions.

1. The development of entrepreneurship in rural areas is associated with the existence of a certain place and time appropriate resources, both tangible and intangible. Adequate capital and people with the right knowledge and willingness to bear the risk contribute to the development of the entire area.
2. More than half of the respondents consider that Poland's accession to the European Union has become an opportunity for the development of small and medium-sized enterprises. The main action taken by local authorities to obtain funds from the European Union was the organisation of training and promoting local businesses. However, factors hindering the use of the EU funds involve a long period of decision-making by examining individual application forms, a too long period of collecting documents and financial security requirements on the part of the entrepreneur.
3. Municipal authorities placed in Class II and III in terms of local development more often undertook actions to improve infrastructure (construction/ repair of roads, water supply, sewerage, wastewater

treatment plants) technology, which greatly helps increase the attractiveness of the land.

Entrepreneurship plays an important role in the socio-economic development. It is a key factor for reducing unemployment and building a competitive economy based on private property. The SME development is thus one of the primary objectives of economic policy of the country (Babuchowska K., Marks-Bielska R., 2010).

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MULTIFUNCTIONAL DEVELOPMENT OF RURAL AREAS IN THE IMIELNO COMMUNE BEFORE AND AFTER INTEGRATION WITH THE EU

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Abstract. The main aim of the article is to present the evaluation of opinions of inhabitants about multifunctional development of rural areas in the Imielno commune. The evaluation is based on the compilation of opinions of inhabitants who expressed their views in questionnaires before and after integration with the EU.
In Poland, the territory covered by protected areas amounts to 33.1%. The region with the highest percentage of protected areas is located in the Swietokrzyskie Voivodeship – 62 %. There are 72 municipalities in the Swietokrzyskie Voivodeship, among which in 49 protected areas cover more than half of the Swietokrzyskie area. One of them is the Imielno municipality, in which protected areas occupy 51%. Most of these areas are landscape parks and protected landscape areas.
The poll was conducted among 117 inhabitants who expressed their opinions in questionnaires before the EU integration and 109 people who expressed their opinions after that event. This paper presents the conditions and courses of eco-development preferred by the inhabitants of the Imielno municipality in the Nadnidzianski Landscape Park before and after integration with the EU. The research was based on inhabitants' opinions concerning particular courses of development, i.e. tourism, services, handicraft, industry, agriculture, food processing, and environmental protection.
The results show that before the integration with the EU, agriculture and services were the most preferred courses of development in the protected areas of the Imielno municipality, whereas after the integration – the respondents preferred industry and agriculture.
Key words: multifunctional development, opinions of inhabitants, rural areas, protected areas.
JEL code: Q15, Q56

1. Introduction

The conditions of the development in the protected areas result from the potential of natural resources in this area as well as from objective conditions shaping their position in the region. Development processes should take place in the atmosphere of social acceptance of the development programme. The role of the local community, being a subject in the realisation of strategic goals, is based on the evaluation and analysis of inhabitants' attitudes, their expectations towards the courses of future development, and legal conditions specifying action proceedings.

At the end of 2003, spatial forms of nature and landscape preservation constituted 33.1% of the total country area (Rocznik…, 2003). Landscape parks together with national parks, nature reserves, and protected landscape areas make up the system of protected areas as a set of mutually complementary forms of nature preservation. Because of their specificity, protected areas are subject to particular legal statutes that define admissible human activity depending on the level of protection. Regional development can be defined as a process of economic, social, cultural, and political changes leading to the rise of the level of residents' prosperity through the process of transformation from less advanced states to the ones that are more advanced and complex (Adamowicz, 2003). What belongs to the tasks of a commune is especially securing a harmonious development, i.e. balance between social and material elements of the commune as well as between economic and ecological ones.

Communes may, and even are obliged to, prepare and accomplish strategic plans on their own as well as search for the most efficient strategies of local development. The basis of the strategy efficiency is its acceptance by the society, which can be achieved by involving the regional society in the process of strategy building, especially regional authorities and opinion-shaping circles.

The necessity of carrying research on the development of protected areas was the reason to refer to this problem in the current publication, and its goal is to show the opinions of inhabitants about multifunctional development of rural areas in Imielno commune before and after integration with the EU.

2. Materials and methods

The research composed of setting the courses of development of protected areas in Swietokrzyskie voivodeship include, among others, recognising nature and landscape value of the protected areas in the Swietokrzyskie voivodeship. This research was initiated in 1998. The assessment of environment components was limited to basic factors determining multifunctional and eco-development of rural areas and agriculture.

This paper is based on personal research, in particular: survey results, meetings with Imielno authorities and inhabitants who were concerned about the development of the area. The surveys were prepared to reflect the prospects of the protected areas development. People of different levels of education participated in surveys, and surveys involved mainly people considered as leaders according to the notion presented by Siekierski (2004)

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Table 1

The use of land for individual farming

Specification		Imielno commune		Protected area	
		(ha)	in %	(ha)	in %
Area as a whole		10060.00	100.00	3223.00	100.00
Arable land	total	8073.00	80.24	2207.19	68.48
	plough land	6668.00	66.26	1476.94	45.83
	orchards	99.00	0.98	12.96	0.40
	meadows	966.00	9.60	534.83	16.59
	grazing land	340.00	3.40	182.46	5.66
Woods and woodlands		1078.00	10.72	526.58	16.34
The rest of lands and waste land		909.00	9.04	489.23	15.18

Source: author's case study

and Zawisza & Pilarska (2003), who claimed that mainly such people set the courses of development actions within a particular rural community.

Imielno commune is located in Jedrzejow poviat in Swietokrzyskie voivodeship. Imielno commune embraces 10.060 ha, of which 5.130 ha (51 % of commune's surface) are occupied by the protected area.

The statistical data and data from the case study given by Imielno commune authorities concerning the economic potential and the population conditions supplemented the field research. The bases for defining the course of development preferred by farmers and inhabitants were: the local physical development plan and the findings of surveys conducted among the farmers cultivating the protected area. Out of 150 questionnaires handed to the inhabitants, 117 were used for analysis. In the group of people filling in the questionnaire, 66% were men and 36% women. Furthermore, 42% of respondents had primary education, 34% – vocational education, 21% – secondary, and 3% – higher education. In the next research, there were 250 questionnaires addressed directly to inhabitants, out of which 130 were filled in and 109 were analysed. The respondents were mainly white-collar workers (30.8 %) and farmers (18.7 %). The carried out survey concerned: favoured courses of development of the research area, ecological awareness, possibility of maintaining agricultural and tourist activity, problems of everyday life hindering the development, some demographic aspects, development chances, and obstacles.

The questionnaires concerned: preferred courses of development in the given area, perspectives, barriers, and chances for development of one's farm, possibilities of carrying out agricultural and tourist activity, problems of every-day life that hinder the economic development.

3. Results before integration with the EU

The commune contains twenty-two villages, which differ in size of the area, number of farms, and population. Four administrative areas of the village are situated in the park's territory and two in the protection zone. The actual number of people living in farms' households is 4300 with an average 4.24 persons per farm. The ratio of the commune's agriculture production area's quality according to the IUNG methodology amounts to 67.4 (5th place in the Jedrzejowski District), while the average rate in Poland is equal to 66.6.

The natural conditions of agricultural production of the commune in general may be reckoned as medium beneficial compared to the whole country. However, if poviat and Swietokrzyskie voivodeship are taken the into account, then Imielno commune is located much below the medium conditions.

The area of individual farms in the commune in most of cases is equal to the area from 7 to 15 ha, while in the protected area the individual farms occupy from 5 to 10 ha each. As far as the structure of land use and forms of ownership are concerned, the situation in Imielno commune and in the protected area is relatively stable. Table 1 shows the land use for individual farming (data in ha) in the commune and Landscape Park.

Arable lands occupy 77.2 % of municipality's area, and 83% of those are plough lands. Permanent green lands make up 12 % of arable land, of which 1.3 % are orchards. Woods cover about 5% of the whole area, including 6.93 ha that are owned by National Ground Found.

In the commune, the average distance from the place of living to the farthest situated area is 2.5 km, and in the given territory varies between 1.5 and 3.6 km. In the protected area, there are mostly farms of which terrain includes about 5 – 7 ha, thus altogether covers up to 783 ha. The most common farms in the commune (7- 10 ha big) occupy up to 617 ha inside the park's territory.

The average wheat crop in the protected area amounted to 23dt/ha, rye crop 15.8 dt/ha, barley crop 26.8 dt/ha, oat crop 23.5 dt/ha, and potato crop 140 dt/ha.

In the protected area, 177 farms (112 in the park itself) possess farm animals (among which there are 309 cows, 253 hogs, 264 horses, and 3 sheep). 37.6% of the inhabitants and landholders hope to set their future life on their own farm and intend to continue the hitherto existing way of running the farm, 50.4% do not see any chances for own farm's development, 6.8% of people from the latter group intend to change the production profile and 13.7 intend to start the ecological

farming. The respondents' answers to the question about the courses of development were:
— agriculture – 85 %;
— tourism – 42 %;
— services – 54 %;
— handicraft – 42 %;
— industry – 47 %.

Agricultural and food processing along with environmental protection were not researched, because at the end of 2001 nobody had thought about these courses of development yet.

Before the integration with the EU, the respondents' answers to the question about the greatest barriers that hinder the agricultural development included the following:
— lack of profitability of agrarian production – 61 %;
— lack of organized market – 31 %;
— lack of preferential credits – 9 %;
— low quality of soil – 30 %;
— too large division of farms – 27 %.

The conditions that would enable the agricultural development on the protected area are aggregated below:
— organised market – 60,7 %;
— farmer's contract – 33,3 %;
— guaranteed prices – 45,3 %;
— prices 15% higher – 2,6 %;
— prices 30% higher - 9,4 %;
— prices 50% higher – 38,5 %.

According to inhabitants of Imielno commune, the most necessary courses of municipality management activities were:
— social assurance – 71,8 %;
— health and social welfare – 19,7 %;
— shaping of social consciousness – 6,8 %;
— developing of commune's potential – 23,9 %;
— shaping and protection of environment – 12,8 %.

Lack of organised market of agricultural products, small-scale food and agricultural processing as well as broadly understood services, not intended only for agriculture, were the most often mentioned problems among respondents. Respondents also stated that the elements of technical and agricultural infrastructure were the factors that to the greatest extend made the life harder and needed to be improved.

4. Results after integration with the EU

Taking into consideration external factors, a question about institutions' influence on commune's development was asked in scope of the survey. The opinion of respondents is as follows: the most favourable influence is exerted by the commune's self-government units (47.1 %).

The respondents think that it should involve health care (53.8 %) and safety of inhabitants (59.0 %).

The respondents believe the following courses of economic development to be of highest importance for the commune:
— agriculture – 63.6 %;
— agricultural and food processing – 59.6 %;
— tourism – 53.9 %;
— environmental protection – 63.1 %;
— services – 53.3 %;
— handicraft – 44.2 %;
— industry – 65.0 %.

Later on, the respondents answered the questions concerning barriers and opportunities for development in the above-mentioned courses of development.

As main barriers for the development of tourism in the commune, they mentioned:
— lack of organised tourist network – 56.2%;
— lack of tourist infrastructure – 52.9 %.

They saw, however, an opportunity for the development in credit guarantees (39,4 %).

In respondents' opinion, the main obstacle for services' development was:
— lack of financial resources for this kind of development – 51.4 %.

An opportunity for the development would be property tax allowances and exemptions (42.3 %).

In respondents' opinion the main obstacles for handicraft development in the commune were:
— lack of any base for the development of handicraft – 40.2 %;
— lack of financial resources for such kind of development – 50.5 %.

An opportunity for the development they saw in the means of transport tax allowances and exemptions (45.3 %).

In respondents' opinion, the main obstacles for the development of industry were:
— lack of economic instruments supporting such kind of development – 47.1 %;
— lack of financial resources for such kind of development – 51.4 %.

49.0 % of the respondents regard free legal and economic consultancy as an opportunity for the development. In respondents' opinion, the main obstacles for the development of environmental protection were:
— lack of financial resources for such kind of development – 51.4 %;
— lack of infrastructure connected with environmental protection – 5.5 %.

The respondents also saw an opportunity for the development in free legal and economic consultancy services (42,7 %).

In respondents' opinion, the main obstacles for food processing development were:
— lack of investors interested in processing development – 53.9 %;
— lack of market for products of processing – 48.0 %.

In this respect, as an opportunity for the development they saw the means of transport tax allowances and exemptions (44.3 %).

In respondents' opinions, the main obstacles for the development of agriculture in the commune were the following:
— unprofitability of agricultural production – 44.2 %,
— lack of organised market for produce – 50.0 %.

The opportunity for the development they saw in free legal and economic consultancy services (46.7 %).

As the most important material and safety issues, that are possible to be carried out in the commune in the present conditions, the respondents have chosen: ensuring better public safety.

As the most urgent and possible activity to be carried out in the present conditions in the commune, the

respondents named: organised market for agricultural products and produce (62.0 %) and present offer for investors (63.5).

The inhabitants of the Imielno commune believe that the following elements of the infrastructure are underdeveloped, cause great difficulties and are in urgent need of being improved:

— communication infrastructure – 55.7 %;
— agricultural infrastructure – 56.5 %.

As far as the elements of agricultural infrastructure are concerned, in opinion of inhabitants the following objects are underdeveloped and call for urgent improvement:

— agricultural machines and equipment repair services – 50.0 %;
— provisioning and purchase points – 52.8 %.

As far as technical infrastructure is concerned, the following elements are believed to be underdeveloped:

— roads (building new ones and rebuilding the existing ones) – 61.7 %;
— building of sewerage system and sewage plants (building up) – 55.7 %.

As far as the social infrastructure is concerned, the respondents' opinion is that it would be necessary to build a culture centre (54.8%) and a secondary school in the commune (42.3 %) as an amenity of particular importance for inhabitants.

The most onerous social problems for the commune's inhabitants were:

— unemployment among adults – 72.2 %;
— unemployment among young people – 79.2 %.

As the least serious problems, the inhabitants mentioned national and ethnic problems (41.9 %).

According to the opinion of the local community, the following objectives connected with shaping and protection of environment are the most important:

— keeping the environment clean – 64.8 %;
— elimination of illegal waste dumps – 69.2 %.

The respondents thought that tourism (45, 5 %) and environmental protection (51.5 %) have positive impact on the commune's development in the protected area.

The most important objectives connected with social consciousness and attitudes are:

— availability of diverse forms of development for young people – 59.8 %;
— availability of diverse forms of culture – 53.9 %.

4. Discussion

The process of transforming the present agriculture based on the traditional way of cultivating and using the land should lead to the multifunctional development of rural areas, which also implies integrated and environment-friendly agriculture combined with recreation and tourism. Agriculture based on ecological methods should be adjusted to the local landscape and its water and soil conditions. Large labour force resources in agriculture provide a chance for alternative solutions also in such time-consuming branches of specialised agriculture as ecological agriculture, seed production, herb-cultivation, etc. Ecological agriculture should be not only recommended, but also the only one permitted in the protected areas. Considering the food production in such areas, it seems appropriate to promote the most environment-friendly direction of the development, i.e. ecological agriculture (Siekierski, Dudek 2000). The development of tourism (ecological tourism) ought to be supported and treated as an alternative source of income for farmsteads. A. Grzelak (2008), A. Biernat-Jarka (2010) and S. Jarka (2012) have presented a similar point of view.

According to the data of the analysis and surveys conducted among the local population, the author found out that the primary aim – multifunctional and eco-development of the area - is common for normal and protected areas. The long-term goal of the local authorities and the community is to create favourable social and economic conditions, in which the commune authorities will co-operate with the local community as equal partners, inspire and co-ordinate local initiatives. They will also support the multifunctional development and co-operate with the inhabitants of Imielno commune who will cultivate the land in an environment-friendly way.

The following strategic aims should serve the multifunctional and eco-development of the rural areas: transformations in agriculture and food economy, environmental protection, the development of rural areas, tourism and recreation, the dynamic increase in the service sector, and encouraging the local community to support all aspects of social development.

The implementation of long-term initiatives undertaken in the protected areas requires the activity aimed at the further development of the infrastructure, which determines not only improvement of life conditions, but also makes the area more attractive for tourists and prospective investors. It concerns particularly the improvements in the technical and agricultural infrastructure.

The efficiency of the multifunctional development policy in protected areas depends on the acceptance of the commune authorities; it should also be consistent with the development of the commune. Another indispensable aspect of the prospective success is a dynamic syllabus of courses organised for local inhabitants, which would comprise all economic spheres of the commune.

The activities connected with introduction and use of ecological methods in agriculture should be an integral part of environment protection activities and eco-development of legally protected areas. Among the factors, which would favour the activities, it is possible to mention respondents' willingness to use ecological methods, which they expressed in their opinions and declarations (30% of questionnaire's participants). The outcomes indicate the possibility of implementing eco-development and agriculture, ecological production in Imielno commune. The survey's participants have different levels of ecological knowledge, eco-development principles, and ecological production methods.

5. Conclusions

Based on the results of the research on multifunctional rural development in Imielno commune, the conclusions are as follows:

— the results of the assessment of the directions of development – handicraft and services – are assessed the same before and after the integration with the EU;

— despite the entry into the EU and a very strong support for non-agricultural activities, the respondents still indicate agriculture as the primary direction of development;
— the integration of agriculture is less preferred than before, and increasing number of people are inclined for the development of tourism and industry;
— the creation of markets for product sales and support from the state (contracting, free economy and legal advice)are very important issues for the respondents;
— one of the most important problems of the residents is their provision with a decent standard of living, by which the respondents understand ensuring public safety and fight against unemployment.

Despite many restrictions resulting from environmental protection and infrastructure insufficiency, the Imielno commune's protected areas have development possibilities. The development should be supported by financial resources designated for multifunctional development, particularly for creation of new non-agricultural work places and facilitating of structural changes in agriculture as well as environment protection infrastructure.

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IMPACT OF HUMAN CAPITAL ON DEVELOPMENT OF INNOVATION ECOSYSTEM IN LATVIA

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Abstract. The aim of the proposed scientific research is to determine whether Latvia (particularly Riga) has a potential for the development of human capital based innovation ecosystem. The paper is based on the study of definitions, statistical data, and field analysis. The authors analyse and show the significance of innovation ecosystem for sustainable development of innovation in Latvia. A part of the research results was also presented in the project "Human Capital and Innovation: Employment Policies in Local and Regional Innovation Networks for Talent Attraction and Better Job Opportunities", funded by the INTERREG IVC programme.
According to the research results, Riga has a good potential for attraction of local and foreign human capital and development of efficient innovation ecosystem.
Key words: national innovation system, innovation ecosystem, innovation environment, human capital, employment.
JEL code: J24, O15

Introduction

Every commercial success starts with an idea for a new product or service. Innovations have been said to be generated by companies that want to satisfy customer needs, yet, also by user innovators who generate new products or solutions for their very own needs (von Hippel E., 1988, 2005). New idea can turn into innovation only in corresponding environment that is often called innovation ecosystem. Innovation ecosystem can be absolute only in balanced environment in which all stakeholders are involved for sustainable growth. Functioning of the national system of innovation shall ensure its elements and performance of innovation ecosystem. On the basis of convergence of innovation system elements, it is necessary to determine the cornerstone of the system and its impact on the development of the system to promote economic growth, and the development of regions and economics.

Research results and discussion

1. National innovation ecosystem

Today's competitive business environment requires more and more attention to planning, forecasting and analysing business, especially for the development of innovation. Many authors of scientific publications have focused on the topics of innovation development but not many of them have paid attention to innovation ecosystem as a source of innovation activity. The understanding of innovation ecosystem is very close to business ecosystem, what one can confirm by comparing definitions.

The beginnings of innovation planning are dating back to the 1960s, when it started developing alongside the other theories. There are various definitions in scientific and popular literature giving insight in a meaning of "National Innovation System" (Table 1).

After examining the most crucial studies and definitions of "National Innovation System" elaborated before the beginning of the 21st century, the authors concluded that these studies mainly reflect the following key elements as fundamental of innovation system: institutions, individuals, technologies, market, processes, and competencies. Also it is obvious that human capital plays a central role in all the definitions mentioned in Table 1.

Most of the above mentioned definitions characterise the innovation system, while the meaning is very close to the existing definitions of business ecosystem (Table 2).

Business ecosystem and innovation ecosystem is very close in meaning according to the most popular definitions. For example, Jackson has given the following definition of innovation ecosystem:"...the economic rather than the energy dynamics of the complex relationships that are formed between actors or entities whose functional goal is to enable technology development and innovation" (Jackson D.J. 2012). According to this definition, the key elements in innovation ecosystem are institutions, individuals, and technologies. At the same time without any doubts, the human capital plays a significant role in the development of innovation.

Luoma-aho and Halonen have mentioned that innovation ecosystem is "a permanent or temporary system of interaction and exchange among an ecology of various actors that enables the cross-pollination of ideas and facilitates innovation" (Luoma-aho V., Halonen S. 2010). From this definition one can conclude that actors (and actors usually belong to a category 'human capital') are the key element of successful innovation ecosystem.

By analysis of findings of many thought leaders like Adner R. (2006); Subramanian V. (2012); Moore J. F. (1993); Jackson D.J. (2012); Engler J., Kusiak A. (2011); Mercan B., Goktas D. (2011) etc., the authors concluded that human capital played the most significant role in the development of innovation ecosystem.

Accordingly, the following **research question** was proposed: Does Latvia have a potential for the development of on human capital based innovation ecosystem?

For getting answers on the research question, the authors did statistic data analysis and conducted the field research.

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Table 1

National Innovation System: definitions from the literature

Definition	Key elements
"… the network of institutions in the public and private sectors whose activities and interactions initiate, import, modify and diffuse new technologies" (Freeman C., 1987)	Institutions Market Technologies
The "set of institutions whose interaction determines the innovative performance … of national firms" (Nelson R.R., 1992)	Institutions Market
"... the elements and relationships which interact in the production, diffusion and use of new, and economically useful, knowledge ... and are either located within or rooted inside the borders of a nation state" (Lundvall A.-B., 1992)	Market
"... the national institutions, their incentive structures and their competencies that determine the rate and direction of technological learning (or the volume and composition of change generating activities) in a country" (Patel P., Pavitt K., 1994)	Institutions Competencies Technologies Market
"A system of innovation is that set of distinct institutions which jointly and individually contributes to the development and diffusion of new technologies and which provides the framework within which governments form and implement policies to influence the innovation process. As such it is a system of interconnected institutions to create, store and transfer the knowledge, skills and artefacts which define new technologies" (Metcalfe S., 1995)	Institutions Individuals Technologies Knowledge Market
"The system of organisations and actors whose interaction shapes the innovativeness of the national economy and society" (Nieminen M., Kaukonen E., 2001)	Institutions Individuals
"All the actors and activities in the economy which are necessary for industrial and commercial innovation to take place and to lead to economic development" (Arnold E., Boekholt P., 2002)	Institutions Individuals Market
"At its simplest, an innovation system is the groups of organisations and individuals involved in the generation, diffusion and adaptation, and use of knowledge of socio-economic significance, and the institutional context that governs the way these interactions and processes take place" (Hall A.J. et al., 2003)	Institutions Individuals Market
"Innovation systems approaches view innovation in a more systemic, interactive and evolutionary way, whereby new products and processes are brought into economic and social use through the activities of networks of organisations mediated by various institutions and policies" (Hall A.J. et al., 2004)	Institutions Market Processes.

Source: authors' construction based on literature

Table 2

Business Ecosystem: definitions

Definition	Key elements
"Describes the structure and behaviour of a network of high-tech organisations that share a key technological platform and the ways individual firms can flourish in such an environment" (Moore J. F., 1993)	Institutions Technologies Individuals
"The network of organisations – including suppliers, distributors, customers, competitors, government agencies and so on – involved in the delivery of a specific product or service through both competition and cooperation. The idea is that each business in the "ecosystem" affects and is affected by the others, creating a constantly evolving relationship in which each business must be flexible and adaptable in order to survive, as in a biological ecosystem" (Investopedia, 2012)	Institutions Individuals Market Interdependency
"A network of interlinked companies, such as suppliers and distributors, who interact with each other, primarily complementing or supplying key components of the value propositions (benefits for customers) within their products or services" (Subramanian V. 2012)	Institutions Interdependency Market

Source: authors' construction based on literature

2. Statistics on regional innovation

A comprehensive innovation level analysis among the EU Member States has been included in the Innovation Union Scoreboard 2011 which characterises Latvia's strengths and weaknesses in the area of innovation and growth of innovation indicators. Among all the EU Member States Latvia has the lowest level of innovation, thus, Latvia is grouped with some other countries under the category of "modest innovators" (European Commission, 2012). According to The Information

Technology and Innovation Foundation survey conducted among 40 countries worldwide, Latvia takes the 31st position in terms of creating, implementing and developing innovations (The Information Technology …, 2009). However, according to the World Bank Knowledge Economy Index, in 2012 Latvia takes the 37th position out of 146 countries, just as 12 years ago (The World Bank, 2012).

According to the calculations of the Central Statistical Bureau, the number of innovative enterprises in Latvia has decreased in the period after 2009, namely, if there were 707 enterprises in the sector of industry in 2006-2008, and then in 2008-2010, the number had reduced to 364 which constitute only 19.2% of the total number of enterprises in industry in Latvia. Likewise, the total turnover of innovative enterprises has reduced from LVL 68.9 to 62.3 million. Total expenditure on innovation has decreased significantly between 2008 and 2010, i.e. from LVL 210.3 to 47.0 million respectively, which shows a trend to save on machinery and equipment. The number of workforce employed by innovative enterprises in Latvia has decreased from 54.1% in 2008 to 47.3% in 2010 (Central Statistical Bureau …, 2010).

Latvia has the lowest research and development activity in the EU (0.22% of the total GDP in 2010); also income from licensing and patents is relatively low (European Commission, 2012a). In terms of the EU fund distribution between Latvia's regions, Riga Planning Region had received the largest portion of the envelope (total of LVL 291.4 million distributed between 1301 projects) in the period between 2007 and 2011. Also in terms of the EU funds contribution to innovation and entrepreneurship, Riga Planning Region takes the leading position with LVL 62.5 million (Ministry of Environmental …, 2012).

According to the statistics, the number of scientific institutions and scientific personnel had increased in 2010-2011 (from 319 in 2010 to 468 in 2011). Funding allocated to science and research has almost doubled since 2009, namely, it has increased from LVL 59.9 million to LVL 99.4 million in 2011. Although funding earmarked for the entrepreneurship has reduced, the general trend is positive (Central Statistical Bureau …, 2010). However, it should be taken into account that funding in Latvia in comparison with other European countries is insufficient to ensure higher competitiveness. Innovations can only be generated through developing education, science and research, which, of course, require appropriate investments.

The demographic forecasts for Riga and Pieriga 2030 (Eglite P. et al., 2012) are not overly optimistic. However, in comparison with the overall situation in Latvia, these regions are expected to maintain a relative stability in terms of population. It is expected that the population will drop significantly both in Riga City and nationwide by 2030.

3. Methodology of the research

The research is based on the study of literature (Section 1) and statistical data analysis (Section 2) as well as a consequent proposition of the research question. The research was conducted to obtain the potential of human capital as a main part of innovation ecosystem. The interview method (Section 4) was chosen as the most appropriate method for collecting detailed information in a short time and graphical method was used for visualisation of the results of interviews.

Crawford and Benidetto about the interview method have mentioned: "The most common method by far is direct, one-on-one interviewing. Sometimes this is a full scale very formal and scientific survey. Other times the discussion with lead users who often are first to sense a problem... " (Crawford C.M., Benidetto C.A.D., 2005). Creating of high quality information channel directly from the customer (target audience can be also included under the meaning "customer" – the authors' remark) and gathering of data involves contact with customers and experience with the use environment of the produce. Three methods are commonly used: interviews, focus groups, and observing the product in use (Ulrich K.T., Eppinger S.D., 2007). Interviews are usually conducted in the customer's environment and typically last one or two hours. Research by Griffin and Hauser shows that one 2-hour focus group reveals about the same number of results as two 1-hour interviews (Griffin A., Hauser J.R., 1993).

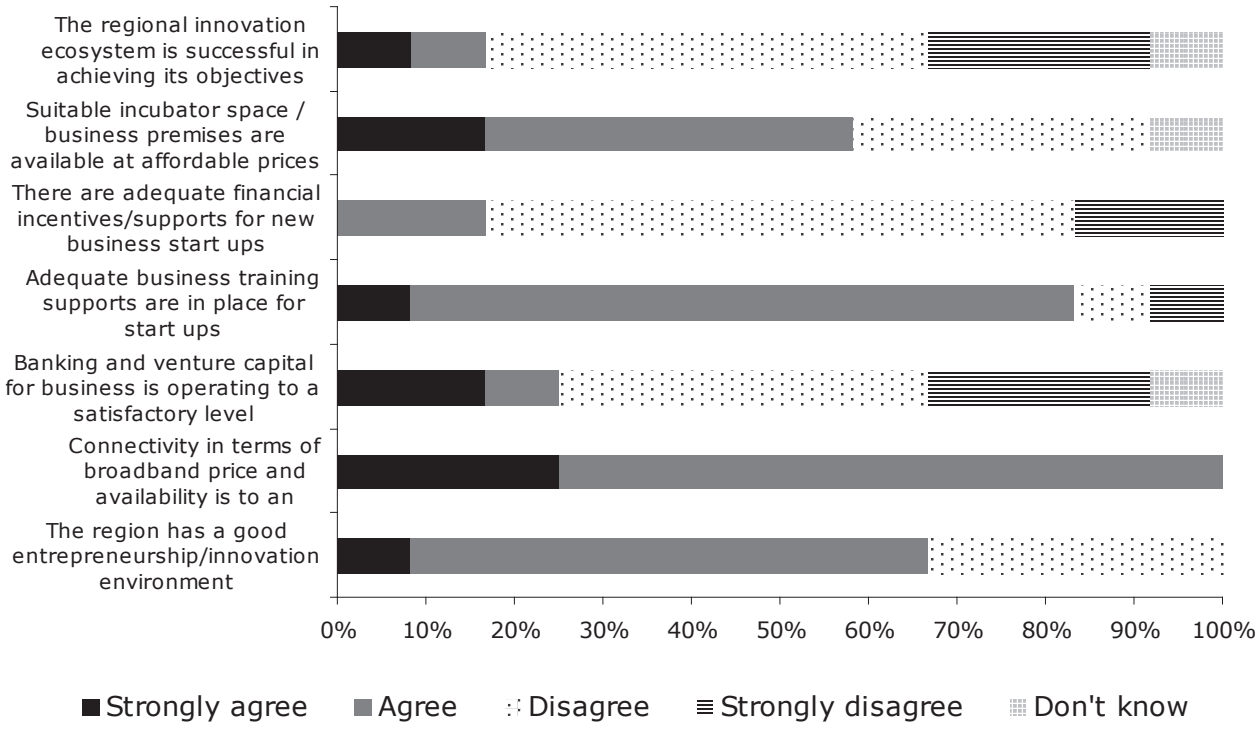
Ulrich and Eppinger have pointed out that "interviews are usually less costly (per hour) than focus groups, and because an interview often allows the product development team to experience the use environment of the product, we recommend interviews to be the primary data collection method" (Ulrich K.T., Eppinger S.D., 2007).

Twelve structured interviews were carried out with four representatives of the education and research sector, four businesspeople and four policy-makers to obtain expert opinions on the attraction of highly qualified human capital and the innovation system in Riga. Seven questions were stated for interviews. The main conclusion on innovation ecosystem in Latvia (Riga) was developed on the basis of interviews (part of the research results was also presented in the project "Human Capital and Innovation: Employment Policies in Local and Regional Innovation Networks for Talent Attraction and Better Job Opportunities" funded by the INTERREG IVC programme). Results and conclusions from the interviews are presented further.

4. Results of the field research

With the aim of characterising business innovation and the business environment in Riga experts were asked to assess the regional innovation ecosystem, the availability of business premises and broadband services, financial and educational support for new entrepreneurs, availability of banking services and venture capital as well as the business and innovation environment as a whole (Figure 1).

More than half of the experts (67%) agreed or fully agreed that Riga had a good business/innovation environment. However, only 17% agreed or fully agreed that the innovation ecosystem successfully achieved its goals, 50% disagreed and 25% fully disagreed with this statement, thus, indicating a crucial difference between the business environment and that of innovation, and pointing to the prerequisites of the innovation environment and the results achieved. A little over half (58%) of the experts agreed or fully agreed that business premises were available for adequate prices. In turn, 75% agreed and 25% fully agreed that communication services, considering the price and availability of broadband,



Source: authors' construction based on the data of interviews

Fig. 1. **Assessment of business innovation and the business environment in Riga**

were adequate, thus, acknowledging this as the region's strongest aspect of those assessed. In general, 83% of the experts agreed or fully agreed that business training support for new entrepreneurs was adequate (8% disagreed and another 8% fully disagreed with this statement). However, the experts had the opposite opinion regarding financial support for new entrepreneurs – 83% thought that it was inadequate and only 17% thought it to be sufficient. The experts' assessment of the availability of banking services and venture capital for businesses was ambiguous. The experts pointed out those banking services that are more readily available than venture capital.

In order to determine the attractiveness of Riga as a place of employment and residence for highly qualified human capital, experts were asked to assess transport and accessibility, education and research opportunities as well as culture and entertainment options. The experts described protection and personal safety, opportunities for families, living costs, quality of life, and environment. Of the given factors that affect the attractiveness of Riga as a place if employment and residence for highly qualified human capital only the culture and entertainment options can be considered as a clear strong-point – 25% of the experts assessed this factor as excellent, 67% thought it good, and 8% viewed it as average. Other strong-points include transport and accessibility (half of the experts rated it as good and the other half – as average), protection and personal safety as well as quality of life and environment which were rated similarly (58% - good, 42% - average). Opinions differ regarding opportunities for families and living costs. However, education and research opportunities may be considered a weak spot – only 42% assessed this factor as good or excellent, while 58% thought it to be average or poor.

Answering the question on Riga's attractiveness, experts highlighted several problems hindering the attraction of highly qualified human capital to Riga and Latvia as a whole, although Riga received a rather positive rating compared with the overall situation in the country. Insufficient social guarantees, relatively high prices of goods and low quality of health care were stated as the weak points.

"Education and research opportunities are good but there is no information about it in the mass media/ society. Foreigners cannot understand the price of local public transportation, nor which public transport goes where. Social guarantees are poor" (Business sector).

Riga is highlighted as the country's cultural, education and scientific centre which has relatively more chances for attracting highly qualified human capital. Riga is described as a city of culture in the European context. Established infrastructure, higher salaries and more chances for finding work are the factors stated in favour of Riga in comparison with other regions of the country. However, Pieriga (Riga surrounding, further in the text Pieriga), is a significant threat to Riga's standing.

"Many inhabitants move to Pieriga where kindergartens and other facilities are available. Salaries are higher in Riga compared with other regions in Latvia, which makes it more attractive. It is also easier to find work in Riga, if one wants to. There is too little information on the opportunities for families and there is also an imbalance between the level of costs of living and other expenses. For example, education should be made available for a lower price so that the education level of society could

*be capitalised upon to achieve a better earning capacity" (*Policy-maker).

The experts assessed new employment opportunities for highly qualified and talented individuals in the government and state administration, education/ scientific institutions as well as in local and multinational enterprises. In total, 92% of the experts were of the opinion that new employment opportunities for highly qualified and talented individuals were more often available in multinational enterprises (*frequently* – 42%, *occasionally* – 50%) and local enterprises *frequently* – 17%, *occasionally* – 75%), rather than in education/ scientific institutions (*frequently* and *occasionally* – 50%, *rarely* – 50%) and the government and state administration (*occasionally* – 17%, *rarely* – 67%). Overall the expert assessment shows that new employment opportunities for highly qualified and talented individuals are offered relatively rarely.

Regarding the attraction of highly qualified human capital to Riga as a place of employment and residence, the experts assessed the possibilities to obtain visas or work permits, language skills (how an immigrant will be able to learn the local languages), support and physical considerations, quality of employment, salary and working conditions as well as future career prospects as the strengths and weaknesses of the region. The expert assessment shows that there are no factors that can be considered clear strengths or weaknesses of the region. Relative strengths are physical considerations (*strong* – 75%) and language skills (*strong* – 67%), whereas relative weaknesses are salary and working conditions (*weak* – 58%), support and quality of employment (*weak* and *very weak* – 50%), and the possibility to easily obtain a visa or work permit (50% of those who rated this factor rated it as *weak* or *very weak*). The rating of future career prospects was the most ambiguous – 50% thought it to be a strength and 50% - a weakness.

Conclusions, proposals, recommendations

Summarising results of the study, the authors concluded that human capital was one of the most important components of the innovation ecosystem. It was confirmed by the analysis of definitions as well as by the research conducted by the authors. Main conclusions of the field research are:

— in spite of Latvian innovation backwardness (among all the EU Member States, Latvia has the lowest level of innovation) in the European research area, Latvia and particularly Riga, has very good potential for further development;

— interview results showed that Riga had a good potential for attraction of local and foreign human capital (experts highlighted Riga as the country's cultural, education and scientific centre which had relatively more chances for attracting highly qualified human capital than other regions in Latvia) confirming that there was as place for the development of efficient innovation ecosystem;

— The research results also show that there is a gap in communication between state officials, municipality, and general population in various aspects. It should and can be improved, especially because the part of the research results was also presented to the City Development Department of Riga City Council.

The research confirmed that human capital had tremendous impact on innovation ecosystem development and there were possibilities to continue research on this topic.

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CHANCES FOR THE DEVELOPMENT OF MULTIAPARTMENT DWELLING HOUSES' POLICY IN LATVIA

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Abstract. Over the past 20 years, there have been a number of considerable *aspects* in the housing policy of Latvia that affect the development of housing policy in general. *In 1995,* the Law "On *Privatisation* of State and Local Government Residential Houses" was adopted. According to the Central Statistical Bureau of Latvia data, exactly 20 753 multi-storey apartment houses owned by the state or local government or 53% of the total number of multi-storey residential houses in Latvia were placed under the privatisation process. It should be highlighted that only 20% of the apartment house owners have taken over the house in their possession, while 95% of the apartments are privatised (Database of the Central Statistical Bureau, 2012).
The aim of the presented study is a systematic evaluation of the information on dwelling houses' policy development trends in Latvia from 1995 and regeneration of the national industry in the period after the crisis.
The novelty of the study is the assessment of a three-level model for housing management and maintenance in Latvia, which considers the location of houses in the respective area, and full privatisation process of a house consistent with the provisions laid in the Law "On Privatisation of State and Local Government Residential Houses".
Results of the research are going to become the basis for sustainable development of Latvia dwelling houses policy.
Keywords: cities, regions, housing policy, multi-storey apartment building, sustainable development.
JEL code: D23, E65, K11, O18, P14, P26, R38.

Introduction

When Latvia regained its independence in the 1990s, the new government had to think of a new perspective for the development of the state housing policy. The transition from centralised planning of the national economy to the developed market economy of the democratic country had to be carried out simultaneously requiring the solution to the problems encountered in 50 years of the existing regime in the field of housing. In the middle of 1990s ca. 69% of the country population lived in the cities of Latvia, thus, resulting in a continuous housing shortage. In particular, this shortage was felt in Riga, where 1/3 of the population had settled. Overpopulation facilitated a rapid deterioration of the housing fund - the number of worn-out buildings and buildings in critical condition amounted to 11.5% of the total number of residential houses in the country, while the percentage of houses being in the possession of local municipalities reached 12.3% (Cabinet Protocol No. 39, 1996). *In 1995*, the government passed the Law "On *Privatisation* of the State and Local Government Owned Houses" which *aimed* to develop the real estate market and facilitate the development of residential house facility management, thus, protecting interests of the population. According to the data of the Central Statistical Bureau, 20 753 multi-storey apartment houses owned by the state or local government, as at 2010, or 53% of the total number of residential houses in Latvia (three and more apartment houses) were placed under the privatisation process.

The aim of the research within the cycle phase is a systematic evaluation of the information on dwelling houses' policy development trends in Latvia from 1995 and regeneration of the national industry in the period after the crisis.

Tasks for the research: an analytical analysis of legal documents since 1995 and implementation of dwelling houses policy concept defined in 1996; an evaluation of trends and problems of dwelling houses policy development.

The quality methods used in the research: sociological observation of experts, research discussion, and content analysis.

Research results and discussion

The development of national housing policy began in 1996 with the preparation of the Latvian National Report on the Implementation of the National Action Plan for the United Nations Conference on Human Settlements, Habitat II (1996). On *30 July 1996* the Cabinet adopted "The Housing Policy Concept" which was developed by the Ministry of Environmental Protection and Regional Development (Cabinet Protocol No. 39, 1996).

Housing Policy Concept was defined as a regulatory framework for housing policy, which prescribes goals, principles, and objectives for the housing policy development.

Housing development *priorities identified in 1996* were the following:

1. Social objective of the housing development is to provide opportunity for every person to participate in the housing selection and development process, in accordance with the existing living level and housing standard, at the same time building and ensuring provision of social (social benefit) apartments for low-income or socially-disadvantaged families (persons);
2. The aim of changing structural properties of the housing fund is to facilitate:

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1) the increase in the proportion of the detached and other types of low-rise residential buildings of the housing fund;
2) the increase in the proportion of owner-occupied apartments in the multi-apartment residential housing fund due to the privatisation (Cabinet Protocol No. 39, 1996).

Determining "The Housing Policy Concept" tasks the same problems are still referred to: "Due to the increase in the number of low-income families which currently reaches already 21%, the difficulties with rent and other housing-related payments have incurred that, in turn, leads to failure to properly maintain and ensure provision of facility management services of the housing fund" (Cabinet Protocol No. 39, 1996).

The following *objectives* of the housing policy concept were determined in this paper:

1) balanced polycentric development of the network of settlements by putting an emphasis on the development of medium-size towns and the related remote rural regions, particularly, ensuring implementation of such measures that form the basis of sustainable development of these settlements and rural territories;
2) ensuring an opportunity for each individual to access housing, according to the market relations set in the housing sector and in accordance with the existing level of living and housing standard;
3) activation of the construction industry emphasising renovation of the existing housing fund and modernisation, increasing the proportion of the resource-saving constructions and technology application, and increasing the proportion of saving in energy production and use;
4) humanisation of the city and village environment in Latvia (Cabinet Protocol No. 39, 1996).

To ensure the implementation of this objective, the Cabinet approved the *"Housing Development Lending Program"* on *13 June 2000* providing the credit granting system and the developing a mechanism for housing reconstruction, renovation, repair, construction, purchase, and ensuring provision of long-term credits. To facilitate the implementation the afore-mentioned objective, the Ministry of Economics was requested to develop the support programme for promotion of renovation of multi-apartment buildings for 2007 - 2010, which was approved by the Cabinet Order No. 350 of 30 June 2008. The programme was developed in accordance with the guidelines provided in the National Development Plan for 2007-2013, which, regarding the housing policy situation and solutions, states that:

"The gap between the average income of the population and the relatively high charges for housing hinders effective maintenance and renewal of the existing housing fund. At the same time, it creates the preconditions for segregation, as the higher-income households choose to move to higher-quality housing" (Cabinet Regulations No. 564, 2010).

Taking into account the diverse purchasing, it is necessary to provide a range of choices for the housing supply, for instance, development of the rent sector, including development of the social rent sector, public funds co-operation in construction projects, promotion of public and private partnership projects as well as new construction projects in the regions" (Cabinet Regulations No. 564, 2010).

Tasks to be solved:

1) to facilitate efficient use of existing housing (including progressive management, renovation and modernisation);
2) to create conditions for diverse housing supply to increase the accessibility of diverse types of housing for population groups with different income levels;
3) to implement efficiently a comprehensive assistance system in the housing sector by sharing obligations and responsibility among the state, local governments, and individuals themselves;
4) to establish a system for monitoring the quality of new housing;
5) to introduce financial assistance instruments for making housing more available to specific target groups (for instance, families with children, young specialists) (Cabinet Regulations No. 564, 2010).

A new law – *the Law "On Administration of Residential Houses"* was developed and became effective as of *1 January 2010* to ensure completion of the set tasks.

With the entry into force of the Law on Administration of Residential Houses, the main purpose of this Law is as follows:

1) to ensure the exploitation and maintenance of the residential houses;
2) to promote improvement of residential houses during the whole exploitation time thereof;
3) to *ensure the continuity of the administration process* for every residential house;
4) to preserve and develop the aesthetic values of residential houses as environmental objects;
5) to prevent risks related with the public safety and the environmental safety during the exploitation of residential houses; and
6) to improve *the qualifications of the persons* involved in the administration of residential houses.

Two important concepts, which are determined by the Law "On Administration of Residential Houses", refer to the field of housing and facility management:

1) administration of a residential house, if the total area of an apartment house exceeds 1500 square metres, can be performed by the person who has the required vocational education;
2) an appointed residential house administrator shall be appointed by the local government.

In accordance with the Law, *residential house administrator* shall be required for the houses if the total area of the house exceeds 1500 square metres. None of the explanatory documents provide clarification (explanation) why the size of 1500 square metres is taken as the basis of this requirement. According to the values measured by the Central Statistical Bureau, the number of residential houses is the value to be measured but not the proportion of residential houses by their size and location. Following informal information, it can be assumed that the largest number of houses with the total area of less than 1500 square metres is located in the regions, especially in villages and small towns. Therefore, it can be concluded that the law does not require house administrator's competence for the house the total area of which does not exceed 1500 square metres if it is managed by apartment owners themselves.

With regard to the afore-mentioned, it must be concluded that there is a conflict in the following issue: an increase in the proportion of low-rise residential buildings of the housing fund was set as one of its priorities in the housing policy concept developed in 1996. However, the new law determines that the house administration competence is not required for this type houses. The guidelines of the new law on residential house management did not take into account that a specific 3-level model of house administration has developed in Latvia: large cities, towns and villages, and rural areas.

The legislator in the new residential house administration law has introduced a new concept - *appointed administrator*. The main *objective* of introducing the concept of appointed administrator was to be the mediator, primarily, in the situations where residential house owners could not agree upon a common decision regarding the proper maintenance of the joint property, in order to avoid causing of threats to the society and damage to the environment. Pursuant to the Law "On Administration of Residential Houses", the appointment of the appointed administrator in the local government of the respective territory may be initiated by any person (including tenants) whose rights have been infringed by this Law or any institution in the competence of which is the supervision of the fulfilment of the requirements of the regulatory enactments regulating the administration of residential houses.

Local government in performing the functions and observing the procedures specified in this Law, has a duty to appoint an assigned residential house administrator, if:

1) the residential house owner does not perform the mandatory administrative activities or has not assigned the performance thereof to the administrator, and it has resulted in threats to human life, health, safety, property, or the environment (hereinafter – threats);
2) the residential house administration is performed in such a way that causes threats (Law on Residential House Management, 2010).

Competence of the appointed administrator:

— the appointed administrator has a duty to prevent, within the time period indicated by the local government, the existing or potential threats to the residential house;
— the appointed administrator does not have the right to lodge new tenants or lessees to enter into rent and lease agreements regarding the use of premises;
— the appointed administrator is eligible to request the tenants and lessees of the premises of the residential house to cover the mandatory expenditure;
— activities of the appointed administrator are supervised by a special supervising official (Law on Residential House Management, 2010).

During the meetings of different government and association expert working groups, it can be concluded that within these three years the parties involved in development of the residential house administration concept have failed to implement the objective of the law – appoint the appointed administrator for a particular apartment house in order to ensure that residential house owners are more capable to make decisions regarding their house facility management and administration. According to the authors, the legislator had not taken into account the circumstances and the related information regarding the situation in residential housing in Latvia, in general, it has not been compiled and evaluated in sufficient detail but instead, considering only the situation in Riga or in definite cities or regions.

In rural areas or villages, where residential houses have not even had the administrator or this management has been insufficient and of low quality, there is no clear procedure how to ascertain that the residential house administrator does not perform the duties assigned to him and who is the person who supervises the activities of the appointed administrator. While, in Riga, the City Council requires to appoint an administrator for the house and ensure provision of the necessary services if not all of the apartments are sold in the newly built residential house and the house needs heating in winter.

The issues related with the housing policy are addressed differently in the regions of Latvia. There are regions where residential house management is performed by the companies that provide not only the management and maintenance services but also some of the utility services. There are also situations when this type of service (house administration and facility management) in the remote villages is carried at a cost of this service or covered from the profit of other services.

Evaluating different documents, which have been developed since 1996, and which refer to the development of the housing policy in Latvia, it must be concluded that both "The Housing Policy Concept" of 1996 and in the Cabinet Regulations on the National Development Plan of Latvia for 2007-2013 adopted in 2006 and 2013 serve as the basis for housing policy development. The documents developed during these years include a statement and the conclusion that residential house tenants and owners have not sufficient income to pay for housing services. According to the authors, the legislators have not solved any of the following most important causes and reasons:

1) ensuring of the provision of continuous service to apartment owners who have received the service and have made a payment, while some other apartment owner has not paid for the received service due to certain reasons;
2) there is no procedure determining who and to what extent has to compensate financial losses if the apartment owner is declared to be insolvent person or the like and is not able to make payment for the received services.

The legislation prescribes that the apartment property consists of a separate property – principal property and joint property, which is considered to be auxiliary property (Civil Law, Part 3, 1992). This means that the apartment owner alone can make a decision regarding the residential property space, while the decision regarding the maintenance of the shares of co-ownership should be made jointly and democratically - 50 + 1 vote of all of the residential house owners. This way of implementation of the housing policy during 18 years has not shown successful results, because it is not possible for the owners who are from different social classes, with different income levels, values, goals etc., to make decision in a democratic way.

Conclusions, proposals, recommendations

Taking into account the afore-mentioned, the authors come to the following **conclusions.**

1. The Housing Policy Concept developed in 1996 is not implemented. Consequently, it can be concluded that, currently, there are no clear and specific housing policy guidelines in Latvia.
2. An increase in the proportion of low-rise residential buildings of the housing fund was set as one of priorities in the housing policy concept of 1996, while the Law "On Residential House Management" determines that the house administration competence is not required for this type houses. The guidelines of the new law on residential house management did not take into account that a specific 3-level model of house administration has developed in Latvia: large cities, towns and villages, and rural areas.
3. The Law "On Privatisation of State and Local Government Residential Houses" adopted in 1995 had not reached the determined objective, yet, it has created even more dramatic situation when none of the long-term decisions are made for housing preservation and maintenance.

Proposals:

1. The legislator shall take into account the fact that residential house management in cities and regions significantly differs. Therefore, it is necessary to develop specific methodological guidelines of the Cabinet of Ministers or other regulatory enactments determining the procedure for the local government how to identify insufficient or poor quality housing management and which discusses (describes) and provides possible solutions for the situations most frequently appearing in the practice.
2. The Ministry of Economics or any other subordinate authority has to perform data collection on residential houses in Latvia, not only collecting the number of such but also compiling information, which is binding for developing the housing policy. Based on the data collected, the law provisions on the qualifications needed for the administration of residential houses over 1500 m^2 shall be reviewed considering residential house location features and character in the regions and cities.
3. The legislation should establish a procedure for solving two major causes that prevent the development and improvement of good practice in housing policy across the country:
   a) ensuring of the provision of continuous service to apartment owners who have received the service and have made a payment, while some other apartment owner has not paid for the received service due to certain reasons;
   b) there is no procedure determining who and to what extent has to compensate financial losses if the apartment owner is declared to be insolvent person or the like and is not able to make payment for the received services.

To summarise the afore-described, the authors conclude that *"The Housing Policy Concept"* adopted on 30 July 1996 by the government of Latvia served as the basis for policy-making. Nineteen years have passed and it is necessary *to review* this policy concept, since the Law "On Privatisation of State and Local Government Residential Houses" passed in 1995 has not reached its objectives - 95% of the apartments are privatised, while only 20% of apartment house owners have taken over the house in their possession. Besides, in 2013 paying for the received services is still a problem for residential house owners like in 1996. It would be beneficial for Latvia and facilitate the development of Latvian economy as a whole to compile and evaluate in detail information regarding the residential housing issues in the entire country, taking into account the 3-level model of house administration which exists in practice, and to find solutions for the causes of insolvency.

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CZECH FOOD PROCESSING INDUSTRY IN THE PERIOD OF UNCERTAINTY ABOUT THE SUPPORT FROM RURAL DEVELOPMENT PROGRAMME

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Abstract. The economic recession has affected many sectors including food industry. It has increased the level of risk not only for suppliers, especially for farmers, but for the whole agribusiness and rural regions. The goal of the paper is to assess the economic (financial) effects of investment support targeting at adding value to food products in the Czech Republic. From a methodological point of view, the results are based on counterfactual analysis. Propensity score matching (PSM) based on Mahalanobis distance within propensity score calipers (no matches outside calipers) is used to match supported and non-supported companies. The financial ratio indicators evaluate the effects of support. Results of the analysis show that the supported businesses consolidate their economic position to a certain extent. The investment support has a positive impact on financial stability, as the decrease in profitability in the period 2007 – 2010 was smaller in the case of project participants as compared to non-participants. The investment support also increases labour productivity. The investment support of the adding value to food products should continue in the upcoming programmer period 2014-2020.
Key words: food industry, economic indicators, investment support
JEL code: Q18, L66

Introduction

The food sector belongs among the key branches of manufacturing in the Czech Republic, similarly as in the EU. The branch ensures good nutrition of population with the production and sales of healthy, quality and mostly also price accessible foodstuffs.

Because of the importance of the food sector in the Czech Republic and the need to increase its performance and competitiveness, a conception of this branch was prepared for the period after the country's accession to EU, i.e. from 2004 to 2013, by the Ministry of Agriculture in co-operation with the Institute of Agricultural Economics and Information, and other institutions and experts. Now a new strategy for growth is being prepared. The Czech food sector is characterized as a perspective industry with a relatively significant potential for further development. Mezera and Mejstrikova (2012) evaluated the support provided from Rural Development Programme (RDP) of the Czech Republic, which is coming-out from the National Strategic Rural Development Plan.

The goal of the paper is to assess the economic effects of investment support targeting at adding value to food products in the Czech Republic. It especially attempts to answer the following research question: Are there any differences in financial performance of the supported companies in comparison to the companies without public investment support? The results are based on counterfactual analysis and identify the main impacts on the food industry using economic indicators.

Research results and discussion

1. Fundamental characteristics

The food industry is broadly diversified with a number of product groups, some of which are directly connected with agriculture. Other productions represent higher stages of processing of agrarian commodities.

Economic situation of the individual branches or their groups, in 2011, specified according to their shares in receipts from sales of own products and services, is illustrated in Figure 1.

Figure 2 presents a comparison of the development of the basic production indicators in the manufacture of food products (CZ – NACE 10) and production of beverages (CZ – NACE 11) with the manufacturing industry (MI) in the period 2005 – 2011. The comparison shows that the crisis period was the year 2009 for MI and the year 2011 for CZ – NACE 10 and CZ – NACE 11.

Puticova and Mezera (2011) have discussed the problems of competitiveness and the performance of the Czech food industry. Both these attributes are evaluated in the framework of the domestic manufacturing sector and market as well as from the point of view of the relations in foreign trade, which means in the context of the European and world market. They conclude that the sector competitiveness is not in a critical situation. However, the sector competitiveness assessed by the RCA index and foreign trade is not going to be improved because of the coming stagnation. According to their SWOT analysis, the problem is that the opportunities of the sector are not fully utilised. Food producers are facing the basic problems in the output sphere mainly in the domestic market.

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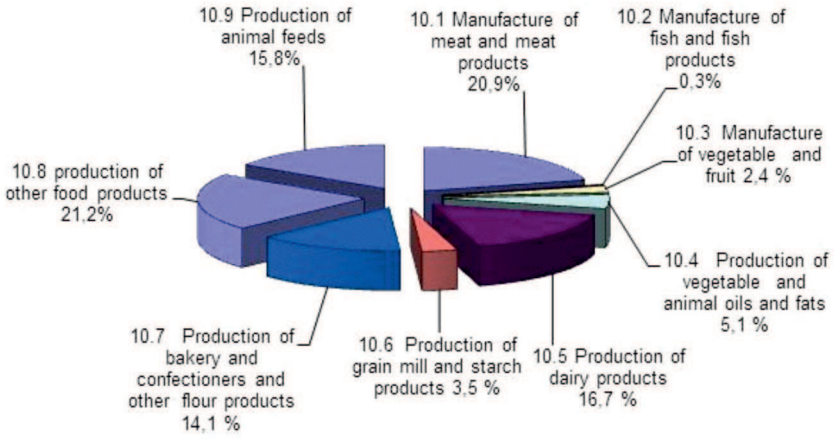
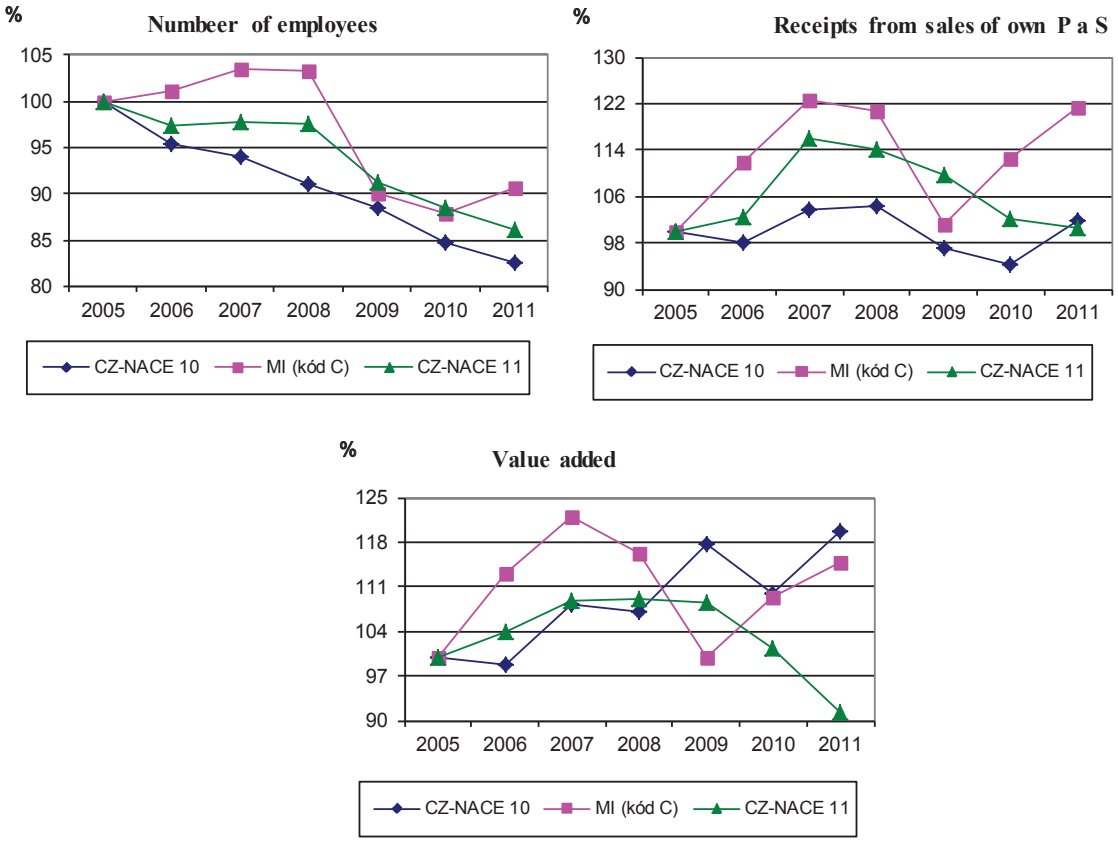


Source: author's construction based on estimate by Ministry of Industry and Trade (MIT)

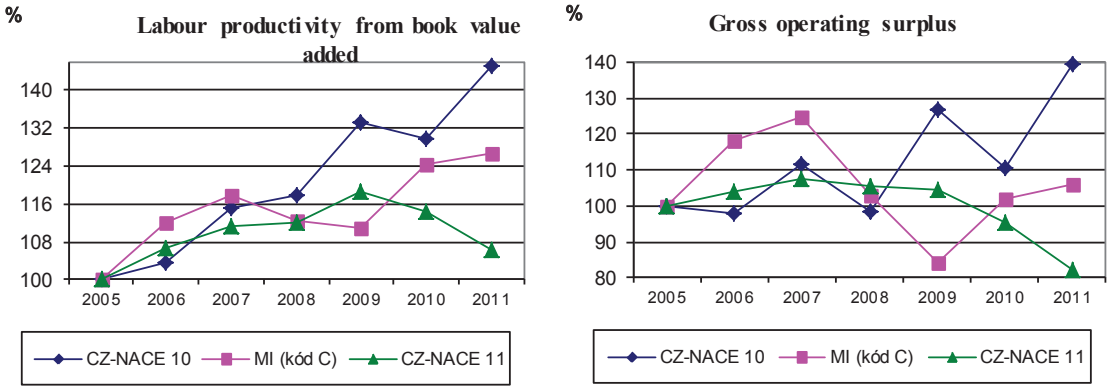
Fig. 1. **Shares of the individual branches in receipts from sales of own products and services in 2011**



Source: author's construction based on preliminary CZSO data (Czech Statistical Office) and estimate by MIT (2011)

Fig. 2. **Development of main production indicators in the period 2005 – 2011**

As Cechura (2009, 2012) states, the technical efficiency in the food processing industry did not change significantly within the period from 2000 to 2007. The common feature of all analysed branches (food processing industry total, slaughtering, dairy, milling, feedstuffs, and beverages) of the food processing industry is that the technological change did not contribute significantly to the development of efficiency in the analysed period. However, the distribution of technical change suggests that the gap between the best and the worst food processing companies increased within the analysed period. On the other hand, he concludes that TFP (Total Factor Productivity) in the food processing industry significantly increased within the



Source: author's construction based on preliminary data CZSO and estimate MIT (2011)

Fig. 3. **Chosen economic indicators of competitiveness in the period 2005 - 2011**

analysed period. The technological change is an important factor determining the TFP increase. Nevertheless, the improvement in production possibilities has been more due to the diffusion of knowledge generated in another part of the economy, or imported from abroad, than to the sector's own research and development.

2. Economic characteristics

The comparison of the labour productivity trend of CZ – NACE 10 and CZ – NACE 11 industry in the period 2005 – 2011 with the entire manufacturing sector total is presented in Figure 3. Labour productivity is measured using a book value added in current prices and the gross operating surplus. The labour productivity from the book value added grew more rapidly in CZ - NACE 10 and manufacturing sector (MI) than in CZ – NACE 11. Similar trend is obvious when using gross operating surplus as an indicator.

As Mejstrikova, Mezera and Plasil (2011) concluded, one of the important factors for the next development of this industry and its competitiveness will be the length of the economic recession both in the Czech Republic and mainly in the countries targeting crucial part of export.

3. Effects of investment support from RDP

The chapter focuses on the economic effect of investment support targeting at adding value to food products in the Czech Republic. From a methodological point of view, the solution is based on counterfactual analysis and identifies the main effects for the food industry using economic indicators.

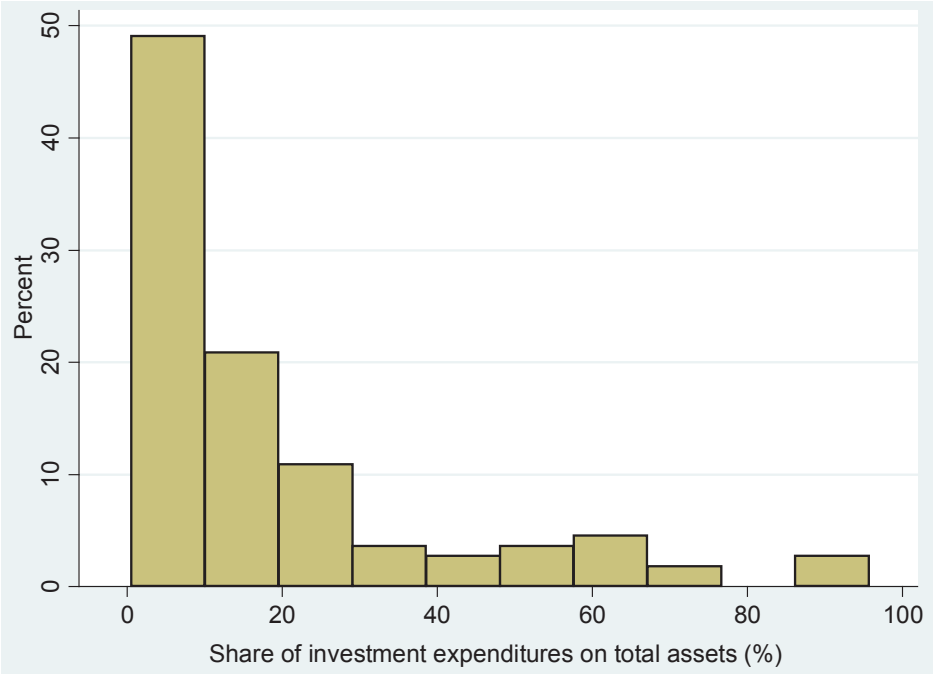
The data on investment projects within the RDP measure I.1.3.1 "Adding value to agricultural and food products" are obtained from the Ministry of Agriculture (MoA). We linked the MoA database with information from the database Soliditet - Albertina, which contains data from financial statements of companies in the CR as well as an overview of the company headquarters, industry, number of employees, and total turnover.

For the counterfactual analysis, it is necessary to have one sample of supported enterprises and another sample of enterprises with similar structural characteristics that were not supported by RDP in the same period. Because accounting data are available with the lag of t-2, it is possible to use data only for the period 2007 - 2010. Complete accounting data in 2007 and 2010 are available only for 110 companies, so it is the final basic set of supported subjects for counterfactual analysis (labelled as "participants"). On the opposite side, 313 enterprises from food and beverage industry without investment support from RDP between 2007 and 2010 and with available full accounting data in both years are identified. From this group of non-participants it is necessary to select companies with similar characteristics as supported companies. The characteristics shall express company size, branch, capital endowment and capital structure in the base year 2007 (i.e. before public intervention). In addition, selected variables do not correlate with each other (Pearson correlation coefficients did not exceed ± 0.30). Following available indicators for matching participants and non-participants, the authors selected:

— total assets (TA) as an indicator of company size;
— debt ratio (DR) as an indicator of capital structure;
— share of current assets to total assets (CA_TA) as an indicator of asset structure;
— share of bank loans to total liabilities (BL_TL) as an indicator of using structure of liabilities;
— current ratio (CR) as a measure of company liquidity;
— share of depreciation and amortization to total assets (DEP_TA).

Data matching procedure is used to create treatment-control matches based on propensity scores and/or observed covariate variables. Propensity score matching (PSM) constructs a statistical comparison group that is based on a model of the probability of participating in the treatment, using observed characteristics (Khandker et al., 2010). Mahalanobis distance within propensity score calipers (no matches outside calipers) is chosen in this paper as a distance calculation method (Bozik, 2011 and 2012).

After creating a group of participants (110 supported companies) and non-participants (110 not supported companies), the next step is to make counterfactual analysis, i.e. to make impact evaluation of investment



Source: author's construction

Fig. 4. **Relative importance of investment expenditures in the supported enterprises**

Table 1

Indicators of profitability, labour productivity and cost efficiency

Indicator	Units	Mean (participants) N = 110			Mean (non-participants) N = 110		
		2007	2010	Index	2007	2010	Index
ROA	%	6.79	5.23	0.77	4.56	2.98	0.65
ROCE	%	13.31	8.72	0.66	11.54	6.34	0.55
ROE	%	11.85	6.36	0.54	7.71	4.00	0.52
ROS	%	3.09	2.60	0.84	1.99	1.50	0.76
Value Added per Total Assets	%	31.80	30.03	0.94	30.29	27.74	0.92
Value Added per Firm	´000 CZK	28 835	36 285	1.26	18 460	18 788	1.02
Staff Costs per Firm	´000 CZK	16 592	19 131	1.15	13 061	13 622	1.04
Value Added per Staff Costs	CZK	1.74	1.90	1.09	1.41	1.38	0.98
Fixed Assets per Firm	´000 CZK	39 751	52 023	1.31	33 548	32 796	0.98
Share of Fixed Assets per Total Assets	%	42.56	47.37	1.11	43.16	42.74	0.99
Depreciation per Firm	´000 CZK	4 384	5 454	1.24	3 241	3 832	1.18
Depreciation per Total Assets	%	4.51	5.32	1.18	4.26	4.34	1.02
Sales of Production per Cost of Sales	CZK	1.19	1.22	1.02	1.16	1.18	1.01
Total Revenues per Total Costs	CZK	1.03	1.02	1.00	1.02	1.01	1.00

Note: 1 LVL = 39.655 CZK (2007), 35.686 CZK (2010)

Source: author's calculations

and investment support in biogas energy. First, it is necessary to select the relevant indicators. In order to make a complex impact evaluation mainly based on financial statements, the following indicators of profitability, value added and productivity are identified as suitable for counterfactual analysis.

A) Indicators of profitability:

— Return on Assets (ROA) = EBIT/Total Assets;

- — Return on Capital Employed (ROCE) = EBIT/(Equity + Provisions + Long-term payables + Long-term bank loans);
- — Return on Equity (ROE) = EAT/Equity;
- — Return on Sales (ROS) = EBIT/(Sales of Production + Sales of Goods).

B) Value added indicators: Value added = (Sales of goods – Cost on goods sold) + (Sales of production – Cost of sales):
- — Value Added per Total Assets;
- — Value Added per Firm;
- — Staff Costs per Firm;
- — Value Added per Staff Costs.

C) Other indicators:
- — Fixed Assets per Firm;
- — Share of Fixed Assets per Total Assets;
- — Depreciation per Firm;
- — Depreciation per Total Assets;
- — Sales of Production per Cost of Sales;
- — Total Revenues per Total Costs.

As shown in Figure 4, about 50% of the participants have total investment expenditures up to 10% of total assets. It is obvious that the investments in adding value to food products are less important investments that can affect economic results of companies in the food sector. Table 1 gives information about effects of investment support on profitability, labour productivity and cost efficiency.

The effects of investment support also arise from the change of fixed assets and depreciation per firm (Table 1). The participants increased the mean level of fixed assets by 31%, while non-participants did not substantially change the value of fixed assets from 2007 to 2010. This is also evident from the share of fixed assets in total assets. Moreover, the participants had significantly higher depreciation per firm as well as per total assets than non-participants did in 2010.

Results in Table 1 indicate higher profitability of supported companies. This finding can raise a question: whether the investment support by the RDP is targeted at generally more profitable companies or should help less profitable companies to improve their economic results. In the period 2007 – 2010, the indicators of profitability dropped for both participants and non-participants. The general decline of profitability was caused by systematic global economic recession that affected most industries worldwide. The positive effect is that a relatively slower decline in profitability is observable in the group of participants compared to non-participants. It can be explained as an effect of investment support. Nevertheless, the indicator ROE does not prove such obvious effect of support, thus the investment support is not so beneficial for shareholders as for the whole company.

Investment support has an important effect on productivity. The participants have higher value added than non-participants do. Furthermore, they also increased the mean value added by 26 % between 2007 and 2010. However, in relation to the total assets, the value added slightly dropped in both groups of companies because the rise of the value added was reduced by the rise of total assets in the group of participants as a consequence of investment. Concerning labour productivity, it is necessary to compare the parallel changes of value added and staff costs, which can be expressed by an indicator value added per staff costs. Labour productivity of participants grew by 9 %, while there was a slight decline in the group of non-participants in the reporting period. Therefore, higher labour productivity can be considered as one of the positive effects of the investment support by the RDP.

Even if the effects of investment support on profitability and labour productivity are shown, the impact on cost efficiency is not obvious. There is some positive effect, if cost efficiency of production is considered (sales of production per cost of sales). When total costs and total revenues are calculated, the effect is zero probably because of higher depreciation and staff costs in the group of participants. Depreciation and staff costs are not included in the sales costs, and their growth eliminates the effect of higher total revenues.

Conclusions

The goal of the paper was to assess the economic (financial) effects of investment support targeting at adding value to food products in the Czech Republic.

The results of the analysis show that the supported businesses consolidate their economic position to a certain extent. The investment support has a positive impact on financial stability because participants of the projects had smaller decrease of profitability than non-participants did in the period 2007 - 2010. The investment support also increases labour productivity. The participants have higher value added than non-participants do. The participants increased the mean level of fixed assets more than non-participants did. Moreover, the participants had significantly higher depreciation per firm as well as per total assets than non-participants did in 2010.

The investment support of the adding value to food products should continue in upcoming period 2014-2020. Only the targeted support can be the incentive for enhancing economic "viability" of enterprises as well as the tool for improving competitiveness of the food industry. This plan corresponds with the vision of forming the European food sector as a world "leader" being competitive in the long term.

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EVOLUTION OF SOCIAL AND ECONOMIC SITUATION IN POLISH AGRICULTURE SINCE THE ACCESSION TO THE EUROPEAN UNION

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Abstract. Ten years after the accession to the European Union, and despite all the funding and efforts, which have been undertaken during the recent years, Polish agriculture is still based on small – sized family-owned farms with low economic efficiency.
The position of agriculture in this Central European country is underprivileged due to its peripherality as well as topographic restrictions and over-employment. This situation causes integration problems with the common market. In the whole country, small-scale and low-tech agriculture still prevails and suffers from a lack of many natural resources and lack of investments. The dominant traditional economy is not adapted to the market conditions.
Currently, Polish situation in the primary sector and in the whole economy becomes even more critical due to the problems with global financial crisis and economic problems in the euro-zone countries. The Polish Gross Domestic Product per capita equals only about 60% of the European average. The main goal of Poland's budget strategy for the year 2013 is to reduce the general government deficit below 3% of GDP. In addition, Poland plans to keep public debt below the constitutional threshold of 55% of GDP in the year 2013. During the past years, the population of Poland has witnessed a spectacular decrease in the contribution of the agricultural sector to Poland's total employment and total value added of the whole economy. However, despite this, the process of structural changes in Poland's agricultural employment exceeds 13% of labour force and value added is close to 3% of GDP.
Key words: Poland, agriculture, European Union, Structural Funds.
JEL code: F150, O100, Q10

Introduction

The situation in Polish agriculture will be analysed in the present article. This country has been a part of the European Community since the EU enlargement in the year 2004; though, even almost one decade later, the Polish economic situation and the level of development is far behind the West European economies. Unprivileged situation is agriculture is one of the reasons. The primary sector in Poland is still one of the crucial sectors of economy but its lack of efficiency makes reconstruction of this sector the top priority for the Polish government.

The aim of the research is to present the current situation in Polish agriculture. Accession to the European Community, along with uptaking of the Structural Funds, and access to the common market have been the most important factors which have determined positive changes in the whole Polish economy and, in particular, in agriculture over the past ten years. The European structural aid has resulted in a significant reduction of labour force engaged in the primary sector activities and created new jobs outside agriculture, especially in a service sector.

From the perspective of other Central European countries, the changes having taken place in Poland can be very important, since the necessity of structural changes lies ahead of them. Any lessons learned from the mutual experience are crucial for undertaking the right decision in the times of crisis. This paper focuses on changes on the national level. The research is based on the analysis of reports prepared by the European Commission. The data the author analyses here were collected or estimated by the Central Statistical Office of Poland (Glowny Urzad Statystyczny) and Directorate-General for Agriculture. The EUROSTAT and AMECO (annual macro-economic database of the European Commission's Directorate General for Economic and Financial Affairs) have also been used for the research purpose.

1. Situation of agriculture in Poland

After the latest two enlargements in the middle of the first decade of the 21st century, over 50% of the European Community population lives in rural areas. This figure underlines the significance of rural areas development and the importance of the aims of the Common Agriculture Policy (CAP) set by the European Commission. Importance of agriculture in Poland is even higher than in the Western countries, and despite all changes, which have occurred in Poland during the past two decades, it is still a crucial sector for the Polish economy. The contribution of agriculture to the total GDP is falling; though, it is still relatively important at an estimated level of 4.0%. The agricultural labour force still holds a 13% share of the total employment. This high figure is inflated by a certain amount of underemployment and hidden unemployment in rural areas. Nevertheless, this essential difference between the GDP contribution and persons employed in agriculture indicates on a very low labour productivity and reflects the importance of part-time farming. Due to strong dependence of Polish economy on agriculture, the financial support under the Common Agriculture Policy of the European Community is a crucial instrument speeding up a process of restructuring the Polish primary sector. The origins

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Table 1

Value added by activity in 2000 – 2010 (%)

	Agriculture, hunting and forestry; fishing		Industry, including energy		Construction		Wholesale and retail trade, repairs; hotels; transport		Financial intermediation; real estate, renting and business activities		Other services activities	
	2000	2010	2000	2010	2000	2010	2000	2010	2000	2010	2000	2010
Poland	**5.0**	**3.5**	**24.0**	**24.7**	**7.7**	**7.0**	**27.3**	**27.3**	**18.1**	**18.1**	**18.0**	**19.3**
Germany	1.3	0.9	25.1	23.7	5.2	4.1	18.2	17.2	27.5	30.5	22.8	23.6
USA	1.2	1.0	18.4	15.9	5.0	4.1	20.0	18.0	31.7	34.2	23.7	26.8
China	15.1	10.3	40.4	39.7	5.6	6.6	8.2	8.5	8.3	10.7	22.5	24.2
Russia	6.4	4.7	31.1	27.3	6.6	5.5	33.1	30.3	4.6	17.6	18.3	14.6
Euro area	2.5	1.7	22.2	18.5	5.7	5.9	21.2	20.6	26.3	29.0	22.2	24.3
OECD	2.3	1.8	22.0	20.6	5.7	5.9	21.4	20.7	27.1	28.6	21.7	22.5
EU-27	**2.4**	**1.7**	**22.4**	**18.7**	**5.6**	**6.0**	**21.6**	**20.9**	**25.9**	**28.8**	**22.1**	**23.9**

Source: author's construction based on the OECD, Fact Book 2011 - 2012, Paris 2012

of the Common Agricultural Policy date back to the late 1950s when the first six Member States started to build a common market.

With time, the system allowed the European Community to achieve not only self-sufficiency but also permanent surpluses of the many farm products. These actions had many consequences (high budgetary cost, distorted world markets, and lack of acceptance of consumers). The European Commission undertook some actions such as introduction of the quota on products as well as a ceiling on the EC expenditure in this area (European Communities, 2004).

Next changes in the CAP were even more far-reaching. Production limits helped reduce surpluses and an accent was put on a shift from price support to direct support as an income compensation for farmers. Environmentally-friendly production became an essential condition for financial support. Finally, at the beginning of the 21st century, the EU adopted a fundamental reform of the CAP, based almost entirely on "decoupling" subsidies from a particular crop (Lopaciuk W., Judzinska A., 2011).

Agriculture not only plays an important role for rural communities' standard of living but it is also responsible for ties of cooperation between the members of local communities. As it was mentioned before, the level of unemployment rate in Polish regions is also connected with the necessity of agricultural restructuring. Regions located in the Eastern part of Poland, especially Lubelskie, Podkarpackie, Swietokrzyskie, Podlaskie, and Warminsko-Mazurskie, are highly dependent on activities in the primary sector. These regions also belong to the group of the less developed areas, both in Poland and in the European Union. Difficulties on the labour market had a negative impact on those regions where low level of economic development coexists with the lack of possibility for non-agricultural job creation.

Poland, just like almost all other countries located in the Central and Eastern Europe, can be still described as less developed economy with strong dependence on agricultural production. The position of the analysed country is somehow underprivileged due to topographic limitations and great distance to the main European marketplaces, which cause integration problems with the common market. Small-scale and low-tech agricultural holdings still prevail in the majority of Polish regions. This traditional economy is not adapted to the market conditions. However, the contributions of primary, secondary, and tertiary activities to the total value added have changed strongly in Poland over the recent decade (Table 1).

Especially, the share of agriculture, fishing, and forestry has sharply decreased in the total value added of the whole economy, and in 2010, it was much closer to well developed economies of the European Union than ten years earlier and accounted for 3.5%. The share of manufacturing has increased only insignificantly, while the sector of services now account for almost 65% of the total gross value added.

A spectacular decrease in the contribution of the agricultural sector in total employment has been observed during the past years (Table 2). In 2000, more than 18% of labour force was employed in the primary sector. The share of employment in agriculture in the total employment in Poland has decreased almost by five percentage points to 13.4% of labour force by 2011. High level of employment is the only one problem connected with labour force in Poland's rural areas; the other one is hidden unemployment and low farms income, which is a characteristic attribute of these areas.

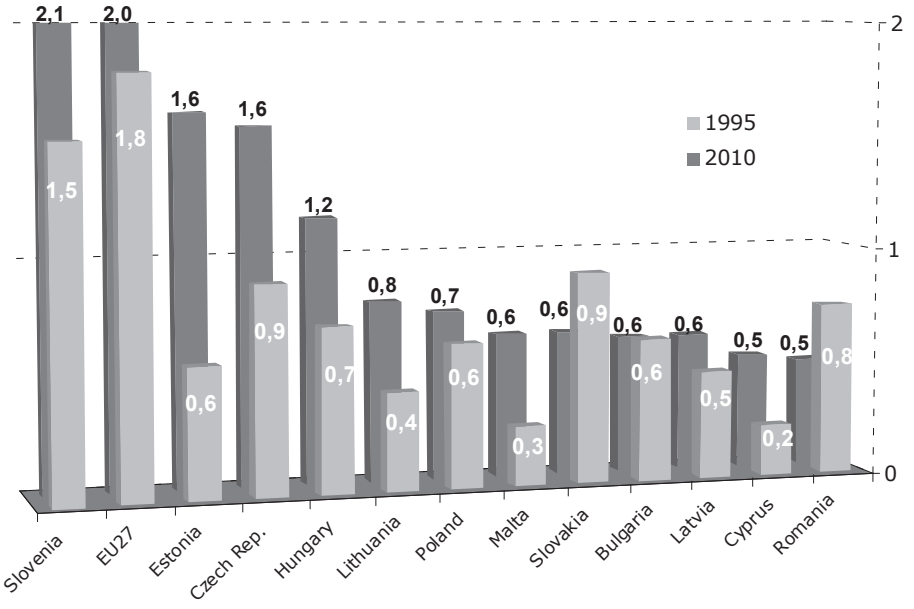
In 2010, approximately 1.5 million of agricultural holdings were recorded in Poland. The General Agricultural Census carried out in 2010 verified the trend of changes in Polish agriculture. Number of holdings has decreased significantly from the time of accession. The number of holdings has decreased by more than ¼ of the total number compared with 2007 (2.4 million in 2007 and 1.5 million in 2010). All agricultural holdings in Poland occupied little more than 14.4 million hectares (ha) of the utilised agricultural area (UAA). An average physical farm size in Poland amounted to 13 ha in 2007 (compared with 12 ha in 2005), which was less than the average physical farm size in all 27 Member States. In 2007, more than 55% farms had less than 5 ha land, while approximately 10% had more than 50 ha. In 2007, 56% of the farms in

Table 2

Employment by sectors in Poland in year 2000 and 2011

	2000	2011	2000	2011
	Employees (1000)		%	
Agriculture, hunting and forestry; fishing	2555.1	2114.0	18.1	13.4
Industry, including energy	3489.7	3782.0	24.7	23.9
Constructions	932.2	1216.4	6.6	7.7
Wholesale and retail trade, repairs; hotels and restaurants; transport	3061.1	3753.8	21.6	23.7
Financial intermediation; real estate, renting and business activities	958.8	1405.5	6.8	8.9
Other services activities	3147.4	3545.1	22.3	22.4
Total	14144.3	15816.8	100.0	100.0

Source: author's construction based on the OECD, Fact Book 2011 - 2012, Paris 2012



Source: author's construction based on the European Commission (2011), Science, Technology and Innovation in Europe, Eurostat PocketBooks, European Union 2011 edition

Fig. 1. **Gross domestic expenditure on R&D in the new Member States in 2005-2010, % share of GDP**

this group had more than 100 ha (Rural Development..., 2009).

In 2010, Polish holdings employed approximately 1886 thousand annual work units (AWU). These holdings had 10.3 million livestock units (LSU), i.e. 3% less than in 2007. In 2007, amongst all holdings, 20% of them produced just for their own consumption and less production was meant for direct sales.

Almost half (42.5%) of the livestock units analysed in the Polish holdings were cattle. Pigs took the second position with the share of 35.2%, followed by poultry with approximately 20% share of the Polish livestock units. Polish agriculture stands out as having one of the biggest proportions of pigs and poultry in the total LSU. Polish holdings also specialise in cereals, sugar beet, and rape. Poland is the biggest producer of apples in the European Union – 22.5% of the total production (Eurostat, 2012).

Family labour force in Poland accounts for the majority of total labour force. Only 23% of sole workers are women. The major problem of agricultural labour force in Poland as well in other East and Central European economies is the age structure. Majority of Polish workers are of advanced age, just about 23% of them are 55 or more years of age and only 17% of all workers are younger than 35 years. The population working in the primary sector has also a very low degree of training and

Table 3

Structural Funds and Cohesion Fund in Poland and selected countries in the Central Europe during the programming period 2007 – 2013 (million EUR, in prices of 2004)

Member States	Convergence Objective			Regional Competitiveness and Employment Objective		European Territorial Cooperation Objective	Total	
	Cohesion Fund	Convergence	Phasing-out	Competitiveness	Phasing-in		Mln EUR	%
Czech Rep.	8 819	17 064	-	419	-	389	26 692	7.7
Latvia	1 540	2 991				90	4 620	1.3
Lithuania	2 305	4 470				109	6 885	2.0
Slovenia	1 412	2 689				104	4 205	1.2
Estonia	1 152	2 252				52	3 456	1.0
Hungary	8 642	14 248	-	-	2 031	386	25 307	7.3
Slovakia	3 899	7 013	-	449	-	227	11 588	3.4
Poland	22 176	44 377	-	-	-	731	67 284	19.4
EU-27	69 578	199 322	13 955	43 556	11 409	8 723	347 410	100.0

Source: author's construction based on the European Commission, 2007; Cohesion policy 2007 – 2013

education level. What is even more important, the Polish rural areas suffer from the problems of depopulation and migration. This unfavourable process is currently the biggest challenge to the central and local governments. Changes undergone in the first decade of the 21st century have resulted in a significant reduction of labour force engaged in the primary sector activities and led to creating of new jobs outside agriculture, especially, in services (Teichgraber M., 2011). Further spending and efforts are necessary to maintain this trend in Poland. In particular, expenditure on research and development is essential. Unfortunately, Poland's expenditure on R&D is almost the smallest of all the countries (Figure 1).

In general, the Member States with the lowest R&D expenditures were located in the Central and Eastern Europe. In 2010, R&D expenditure as a percentage of GDP (R&D intensity) as an average in the EU-27 stood at 2%, which is 1/3 below the 3% target set for 2010 by the Lisbon strategy and Europe 2020 strategy. The 3% target of R&D intensity will be maintained as one of the five key targets of the Europe 2020 strategy. The R&D intensity in the EU was below that in most powerful global economies – Japan, South Korea, or the United States. Without this type of investments, further growth and competitiveness is not possible (European Commission, 2011).

More than half of Poland's territory can be described as less favourable area. Agricultural land in mountain and less favourable areas accounted for 77% of total farming land. Low effectiveness of production in less favourable area forces 32% of all farmers to look for another gainful activity (Rural Development..., 2009).

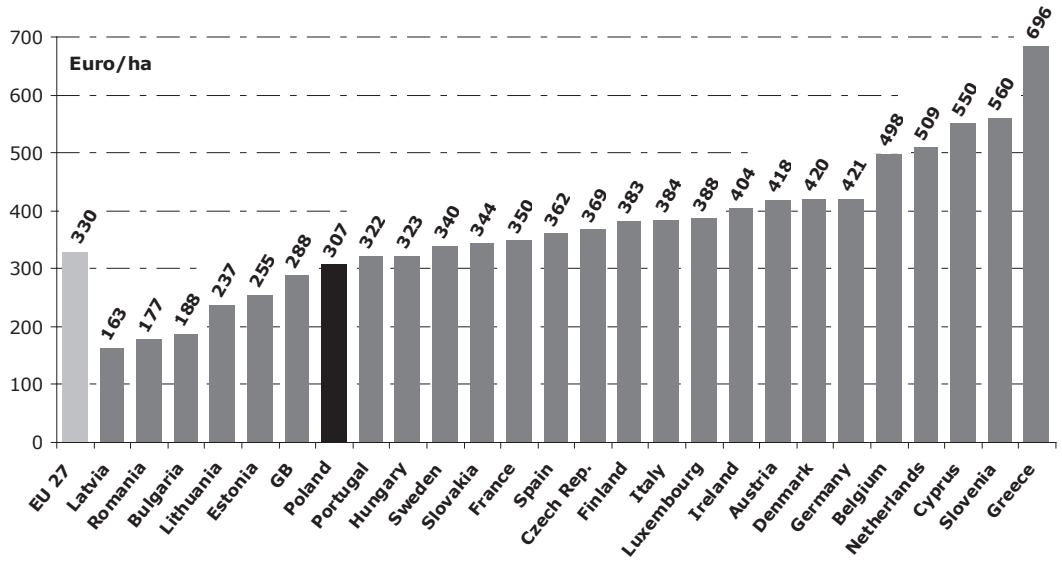
In 2007, the UAA in Poland accounted for approximately 50% of the total land area; in addition, wooded areas on farm holdings accounted for a further 3.8% of the total land area. Arable land made up 76% of the UAA and permanent grassland - 20%, while the land for permanent crops accounted for around 2.5% of the UAA (European Commission, 2012).

The total organic area in Poland (the fully converted area and area under conversion) continues to show an upward trend. The total organic area in 2010 was about 0.5 million ha compared with 0.16 million ha in 2005 (Eurostat, 2012). Among the arable crops, cereals and green fodder occupied the biggest area. In Poland, these two categories together accounted for 87.5% of the fully converted area in 2008. In 2010, there were 20.6 thousand organic producers in Poland. The number of organic producers in the Iberian country rose by 25% between 2008 and 2010 (Eurostat, 2010).

2. The role of Structural Funds in the development of the Polish agriculture

Many of positive changes in Poland and other Central European countries were possible particularly thanks to the European Structural Funds. The European financial aid for less developed regions and agriculture has a significant effect in reducing disparities in economic performance across Europe and in narrowing the gap in GDP per capita between them and the rest of the European Union.

The Structural Funds (ERDF, ESF) and the Cohesion Fund have contributed to three objectives: Convergence, Regional Competitiveness and Employment, and European Territorial Cooperation for the period of 2007-2013 (European Commission, 2007). As before, regions with a regional GDP below 75% of the EU average are eligible for the Convergence objective. The main aim of the Convergence objective is to improve growth conditions and factors, which affect real convergence in less developed regions and all Member States. The whole Poland is eligible for funding from the Structural Funds under the Convergence objective in the current programming period. Poland - with GNP per capita less than 90% of the EU average - is also eligible for resources from the Cohesion Fund.



Source: author's construction based on the Ministry of Agriculture and Rural Development, 2011; Agriculture and Food Economy in Poland

Fig. 2**. Pillar I of the CAP (in 2013) and Pillar II of the CAP (average yearly 2007 - 2013) EUR per one hectare**

The financial resources for the three objectives in Poland are shown in Table 3. In the programming period 2007-2013, Poland became the major beneficiary of the European Cohesion Policy and Structural Funds with the Cohesion Fund in Programming Period 2007-2013 reaching the level over EUR 67 billon Poland also benefits from the Rural Development Programme for 2007-2013 (EUR 13.2 bln) and Direct Payments (EUR 3.2 bln per year) with the total value of EUR 307 per one hectare (Figure 2).

The support in the present programming period is implemented within four axes (priorities), concerning the main directions of support for rural and agricultural development:

— Axis 1: Improvement in the competitiveness of agricultural and forest sectors;,
— Axis 2: Improvement of natural environment and rural areas;
— Axis 3: Quality of life in rural areas and diversification of farming;
— Axis 4: Leader - to develop social potential in the rural areas by encouraging its residents to be active.

In Poland, the RDP 2007-2013 provides for support out of public funds in the amount of EUR 17.2 billion, whereas EUR 13.2 billion come from the EU budget and the share of national public funding accounts for approximately EUR 4 billion (Ministry of Agriculture, 2011).

The European structural aid has resulted not only in reorganisation of the primary sector but also in a significant reduction of labour force engaged in agriculture. Creating of new jobs outside agriculture, especially, in services, was possible thanks to a wide range of activities undertaken in the framework of structural policy and the CAP.

Conclusions

The accession of Poland and other countries from the Central and Eastern Europe to the European Union was a right step on the road to better developed and competitive economies. Integration with the EU structures forced them to restructure and liberalise the economy.

These positive changes are currently less obvious when one focuses on some disadvantageous aspects connected with the global financial crisis. The Central and East European countries still have huge amount of unsolved economic and social problems, particularly, in rural areas due to problems of the euro-zone countries and low internal demand contract possibilities of positive economic growth and new jobs creation. Polish agricultural sector, despite the 10 years of the EU membership, provides work for approximately 13% of the total employment. The share of the primary sector in total value added of the whole economy has sharply decreased but it still remains relatively large in comparison with other EU countries. The large part of agricultural land is located in disadvantaged areas, which decrease costs of agricultural production. It also suffers from the structural problems such as small-scale and low-tech agriculture and the domination of traditional economy, which is not adapted to the market conditions. Despite these negative aspects, the primary sector in Poland is currently much more modern and competitive as an effect of implementation of the structural adjustments than it was a decade ago.

Adjustments required by the EU internal market along with the Structural Funds from the EU budget resulted in an increase of competitiveness and higher income from agricultural production. Currently, the biggest challenge for Poland is to stop the process of depopulation in rural areas.

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POSSIBILITIES OF DIMINISHING OF DIFFERENCES IN REGIONAL SOCIAL ECONOMICS AND DAIRYING IN LATVIA

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Abstract Based on dairying as an agricultural industry, the authors have tried to find out possibilities that promote balanced regional development in Latvia.
After a closer study of the specifics of dairying in Latvia regions, the authors have analysed the use of production resources in dairy pointing out the existing differences in farming among rural areas.
In the conclusion, there the authors have accentuated the ways favouring the improvement of production conditions in rural areas and contributing to the wealth and welfare of the producers and the population in rural areas of Latvia regions.

Introduction

The intention to approach to the average social economic level of the EU has not been realized as rapidly as expected initially. It is evidenced by a comparatively slow increase in the GDP: in total and per capita. If in 2005, the GDP per capita in Latvia accounted for 48 per cent of the average in the EU, then in 2010 – 52 per cent. It means that in 2010, the GDP per capita in Latvia was 2.6 times less than in the Netherlands and 2.4 times less than in Austria, Denmark and Sweden. Due to the above mentioned scores Latvia still remains in one of the last places among the Member States of the European Union, outpacing only Romania and Bulgaria (Latvijas Statistikas Gadagramata, 2011).

The principal cause hampering Latvia to approach to the average social economic level of the EU in a more rapid way is uneven and unbalanced social economic development mainly in the territorial aspect. In 2008, the GDP had increased by 75 per cent in comparison with the 2000. Yet, due to the following recession caused by the crisis, in 2010, the excess over the level of the 2000 was only 43 per cent. This recession had caused a negative impact on the economy. As a result, the consumption of households had decreased by one third, but the investments – nearly twice. The differences between the well off and the people with low income continued to increase, and the distribution of the income became more and more uneven (Kazaks M., 2010). According to the EUROSTAT data, one fourth of Latvia inhabitants are still subjected to the risk of poverty. In the result of the lasting unbalanced social economic territorial development, there has developed a situation that, practically, in one pole there is the capital Riga, but in the other – the rest of Latvia. In 2008, Riga provided 54 per cent of the GDP; and in 2009, received 55 per cent of all financial investments (Latvijas Statistikas Gadagramata, 2011). It means that, overall, the share of other regions, i.e. the share of the other pole, makes less than one half of the GDP and investments.

Therefore, the unbalanced and uneven social economic development influences mostly rural territories, in which, among other kinds of activities, the agricultural production plays the dominant role employing the most part of economically active inhabitants of rural households. In order to oppose the obviously unfavourable development tendencies and to facilitate a successful farming, it is necessary to carry out measures oriented on diminishing of regional differences and to the improvement of production in agriculture in compliance with the conditions for sustainable development. It, as a rule, requires creating of a closer relationship between the activation of economic processes in rural regions and the regional policy of the state that must be oriented to increase of efficiency in the use of disposable resources of rural farms on the basis of increase of the productivity of the labour and capital and targeted and skilful use of natural and obtained advantages of every region. S. Keiss, A. Sprogis, K. Spogis, B. Rivza, H. Jirgena et at. have carried out research in this field especially accentuating the role of agriculture as the basis of existence and welfare of rural inhabitants.

Primarily, it is essential to pay attention to the production areas, the development of which requires less investments and, as a result, contributes more to the improvement of living standard quality of the rural areas. Dairying industry belongs to such agricultural production area.

The **aim** of the paper is to have a closer look at the possibilities of dairying improvement that favour balanced regional development.

The **tasks** of the investigation are:

1) to characterise the development peculiarities of dairying;
2) to evaluate the role of activities promoting the development of dairying;

Based on statistical data, inquiry results, financial reports and such research methods as monographic, statistical analysis and others, the authors have evaluated the use of resources in dairying at the national, regional and farm level.

Key words: regions, resources, dairying, farmers.

Discussion and Results

In the course of time, the formation and development of dairying in Latvia regions has been influenced by drastic changes. As soon as this industry had recovered

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Table 1

Dairying and its Changes in Latvia Regions, 2006 – 2011

Regions/years	2006	2007	2008	2009	2010	2011
Number of dairy cows						
Pieriga	28 896	27 329	26 338	25 404	25 335	24 426
Vidzeme	39 623	41 600	39 011	37 729	37 615	37 783
Kurzeme	35 549	29 896	32 021	31 355	31 220	31 355
Zemgale	32 503	32 063	30 603	29 978	30 184	30 048
Latgale	45 804	49 532	42 424	41 045	39 706	39 484
Latvia	182 375	180 420	170 397	165 511	164 060	164 096
Production of milk, tons						
Pieriga	141 056	135 533	154 606	152 870	153 350	152 991
Vidzeme	188 343	202 213	197 402	198 250	202 523	202 057
Kurzeme	165 132	144 519	161 743	167 344	163 954	165 427
Zemgale	150 983	162 122	166 191	158 972	156 954	164 534
Latgale	178 558	197 259	155 526	152 016	157 686	160 218
Latvija	815 072	841 646	835 468	831 452	834 467	845 227
Production of milk per capita, kg						
Pieriga	382	363	406	396	394	
Vidzeme	775	841	830	841	872	
Kurzeme	506	472	533	561	550	
Zemgale	527	569	586	563	563	
Latgale	496	556	446	442	467	
Latvia	355	369	367	367	371	

Source: based on the data of the CSB of the Republic of Latvia

from the ravage caused by the First World War, the first soviet period with its specific changes followed; then the four-year period of war, bringing its damages came; it was followed by the four decades of collectivization. Then, after restoring of independence, a not very successful privatisation took place bringing with it the transition from a large-scale production to an individual farming. As a result, the changes not always resulted in taking opportunity to find the best and most profitable solutions and to adopt the best and the most useful previous experience. Nevertheless, dairying has always maintained its significance in Latvia.

Recently, Latvia is characterised by 10 per cent decrease in the number of dairy cows, and by 2.4 per cent increase in the milk production. In 2006, the average number of cows per 100 ha of used agricultural area made 10 and the production of milk – 43.9 tons, whereas, in 2010, the respective figures were 9 cows and 46.9 tons of milk (Latvijas Statistikas Gadagramata, 2011). In 2011, milk accounted for 23 per cent in the structure of Latvia agriculture product. (Latvijas lauksaimniecība, 2012).

In the regional aspect, dairying in Latvia is characterised by a comparatively regular dispersion and by rather little changes (Table 1).

As it can be seen from the data in Table 1, in 2011, in comparison with 2006, the number of cows in Latgale has decreased by 13.1 per cent, in Pieriga – by 12.0 per cent, in Kurzeme – by 11.8 per cent, in Zemgale – by 7.6 per cent, and in Vidzeme – by 4.6 per cent. The highest proportion of cows is characteristic to Latgale region with a certain tendency to decrease, whereas the lowest proportion – to Pieriga region with a tendency to remain unchangeable. With regard to the milk production, in Zemgale region, it has increased by 9.0 per cent, in Pieriga region – by 8.5 per cent, in Vidzeme region – by 7.3 per cent, in Kurzeme region – by 6.0 per cent, whereas in Latgale region – decreased by 10 per cent. A specific feature is that in all the analysed regions, with exception of Latgale region, the proportion of milk production exceeds the proportion of the number of cows. Whereas, the situation in Latgale region is contrary, and the proportion of milk production is less than the proportion of the number of cows changing from 3.3 percentage points in 2006 to 6.5 percentage points in 2009. The production of milk per capita differs a great deal.

If calculated per unit within the area, then, in 2010, the production of milk per ha of agricultural area would account for: Pieriga – 0.676 tons; Vidzeme – 0.531 tons; Kurzeme – 0.470 tons; Zemgale – 0.401 tons, and Latgale – 0.352 tons. If the level of milk production intensity had been as the one achieved by Pieriga, then, in 2010, the amount of production of milk in Latvia might have been by 45.5 per cent higher.

The comparatively low increase in production of milk is obtained on the account of the milk yield. In all regions, it has a tendency to increase, however there are certain differences among the regions (Table 2).

Table 2

Milk yield (kg/cow) in Latvia regions, 2006-2011

Year/Region	Average	Pieriga	Vidzeme	Kurzeme	Zemgale	Latgale
2006	4 469	4 882	4 753	4 392	4 645	3 898
2007	4 663	4 959	4 861	4 834	5 056	3 982
2008	4 903	5 870	5 060	5 051	5 431	3 666
2009	5 024	6 018	5 255	5 401	5 303	3 704
2010	5 086	5 228	5 384	5 252	5 200	3 971
2011	5 151	6 017	5 348	5 276	5 476	4 058

Source: based on the data of the CSB of the Republic of Latvia

Table 3

Grouping of farms in accordance with the number of cows in Latvia, 2010

Number of farms		Number of cows		Number of cows in a farm
Total	Percentage of the total	Total	Percentage of the total	
15 855	52.8	15 855	9.7	1
5 543	18.5	11 086	6.8	2
3 784	12.6	13 894	8.5	3-5
1 857	6.2	13 409	8.2	6-9
1 578	5.3	21 176	12.9	10-19
512	1.7	12 200	7.4	20-29
408	1.4	15 332	9.3	30-49
291	1.0	19 892	12.1	20-99
104	0.3	14 397	8.8	100-199
31	0/1	7538	4.6	200-299
41	0.1	19 281	11.7	>=300
30004	100.0	164 060	100.0	Kopā

Source: Statistical Yearbook of Latvia, 2011.

During the period 2006-2011, the production of milk has increased in Pieriga region by 23.2 per cent, in Vidzeme region – by 12.5 per cent, in Kurzeme region – by 20.1 per cent, in Zemgale region – by 17.9 per cent, whereas in Latgale region – by 4.1 per cent, while the average level of increase in Latvia was 15.3 per cent. In 2011, the highest milk yield was achieved in Pieriga region that exceeded the respective indicator in Vidzeme by 12.5 per cent, in Kurzeme – by 14.5 per cent, in Zemgale – by 9.8 per cent, and in Latgale – by 48.3 per cent.

If we compare the milk yields within the period 2000-2010, one can see that the yields increased by 28.2 per cent. However, in spite of a certain increase, the average milk yield in Latvia continues to drop far behind the level achieved in the old Member States of the EU, in which it is two times higher (the data of the CSB of the Republic of Latvia and the CSB of the Kingdom of the Netherlands).

It means that, in scope of the milk production increase, it is necessary to emphasize the importance of the increase in both the number of cows and the milk yield. The evaluation of the possibilities of milk production in Latvia shows that, in this respect, the tendency to overcome the great recession after 1990 might have played a certain role as the production of milk decreased more than by half. Hereby, farming and milk price behaviour might have played an important role.

At present, farming is fragmented that can be seen from the data about grouping of farms in accordance with the number of cows in them (Table 3). The number of farms decreases gradually, mainly on the account of the small farms.

More than half of the dairy farms (52.8 per cent) have only one cow. Farms that own from one to five cows account for 83.9 per cent of all farms, however these farms own only 25 per cent of the total number of cows owned by farms. The proportion of farms with 50 and more cows accounts only for 1.5 per cent, whereas the number of cows in them accounts for 37.2 per cent. The farms with the number of cows more than 300 comprise 11.7 per cent of the total number of cows. The fact that the number of farms keeping one to five cows tends to decrease has to be evaluated positively. In 2010, the average number of cows in one farm was 5.47. In the previous years (2003-2007), Latvia has been one of the Member States of the EU-27, in which the number of dairy farms decreased most rapidly. The farms with large number of cows are able to more successfully

Table 4

Grouping of farms according to profit and loss accounts in Latvia regions in 2010

Regions	Profit LVL per ha							Farms with losses	Total of farms
	to 50	*50 - 100*	*100 - 200*	*200 - 300*	*300 - 500*	*500 - 1000*	*above 1000*		
Number of farms									
Pieriga	10	3	7	7	-	1	-	3	31
Vidzeme	10	7	8	8	4	6	3	5	51
Kurzeme	6	5	19	8	3	3	-	1	45
Zemgale	5	5	8	4	4	2	1	5	34
Total	31	20	42	27	11	12	4	14	161
Percentage of the total									
Pieriga	32.2	9.7	22.6	22.6	-	3.2	-	9.7	100.0
Vidzeme	19.6	13.7	15.7	15.7	7.8	11.8	5.9	9.8	100.0
Kurzeme	13.3	11.1	42.2	17.8	6.7	6.7	-	2.2	100.0
Zemgale	14.7	14.7	23.5	11.8	11.8	5.9	2.9	14.7	100.0
Total	19.3	12.4	26.1	16.8	6.8	7.4	2.5	8.7	100.0

Source: elaborated by the authors based on the data of annual reports

attract the financial resources for modernization and, thus, function more effectively and provide a good quality of milk.

The conditions and results of farming are variable and different. The milk realisation price reflects the results of dairy farming, and, since the price is prone to change, it does not satisfy dairy farmers. In 2010, the average price in Latvia was above 200 LVL per ton; however, there were also farms close to the critical line (Latvijas Piensaimnieku centralas savienibas informacija, 2012). The milk realisation price is influenced by many different factors, and the decrease in price caused difficulties for farms to carry out the credit payments and to pay off other services. It is important how high the credits of farms and the production costs are.

The changes in the prices and their level are interpreted differently. There are experts who underline the inefficiency of dairying, whereas dairy farmers protest against the obstacles, to which the dairy farmer is exposed: the farms are obsolete, the handwork amount is high, but the modernisation requires great investments that are accessible with difficulties (Latvijas Piensaimnieku centralas savienibas informacija, 2012). Farmers regard the unacceptable milk prices as the cause of a comparatively large amount of milk exports to other countries, for example, to Lithuania for a further processing that, respectively, decreases the budget revenues and the contribution to the GDP of Latvia.

The differences in farming conditions are evidenced by a survey of a group of farms that included the farms of Latvia regions exceeding the area of 20 ha. The same evidence was also given by the inquiry and the interviews. The land used in dairying is characterised by different farm areas per cow. It may be regarded as implications of the impact of the crisis and large fluctuations in the milk prices. Similarly, the revenue from milk realisation differs as well. In 2006, the highest level of revenue from realisation of milk per ha in Latvia regions was achieved in Kurzeme – 420 LVL per ha, whereas the lowest – in Vidzeme – 325 LVL per ha. In 2007, the respective figures were 484 LVL per ha in Kurzeme and 383 LVL per ha in Zemgale; in 2008, they were respectively 513 LVL per ha in Pieriga and 371 LVL per ha in Zemgale; and, in 2009, respectively, 415 LVL per ha in Kurzeme and 301 LVL per ha in Zemgale; but in 2010, 536 LVL per ha in Zemgale and 389 LVL per ha in Vidzeme.

At the farms' level, the interval of fluctuations in the revenue of dairying is rather large. In 2010, in Pieriga it was within 100 LVL per ha and 1490 LVL per ha. Regarding the revenue from milk realisation, the survey revealed that from a total of 31 farms included in the survey in four farms the revenue exceeded 1000 LVL per ha, whereas, in 14 farms – from 500 to 1000 LVL per ha, and in 13 farms revenue were up to 500 LVL per ha. In 2010, in Vidzeme region the interval of fluctuations was larger: from 25 LVL per ha to 3796 LVL per ha. The revenue exceeding 1000 LVL per ha was observed in 13 farms, the revenue from 500 to 1000 LVL per ha – 10 farms, but the revenue of 28 farms was less than 500 LVL per ha. In Kurzeme, the revenue from milk realisation in 2010 was within the interval from 92 to 4851 LVL per ha. From 45 farms, in six farms the related revenue exceeded 1000 LVL per ha; in 17 farms revenues were from 500 to 1000 LVL per ha, and in 22 farms – less than 500 LVL per ha. In Zemgale region, the interval was within 73 to 3605 LVL per ha. From 34 farms, in six the revenue exceeded 1000 LVL per ha, in 10 farms – from 500 to 1000 LVL per ha, and in 18 farms – less than 500 LVL per ha. The differences in income might have been caused by differences in the production structure, the technological level, the price, and the milk realisation possibilities. It means that the farms have faced different preconditions for intensification of dairying.

The situation is also similar in relation to the revenue of milk realisation per cow. During the period 2006-2010, the highest rate was observed in Zemgale, but the lowest: in 2006 and 2007, in Vidzeme – respectively 833 and 963 LVL per cow, in 2008 and 2009, in Kurzeme – respectively – 986 and 844 LVL per cow, and in 2010 – in Vidzeme – 957 LVL per cow. The fluctuations in the revenue of milk realisation may be explained by the implications of the crisis and sharp changes in the milk prices, which, in its turn, had impeded the investments for improvement of dairying. In 2010, in Pieriga, Kurzeme, and Zemgale more than a half of the farms generated the revenue from the milk realisation within 1000 - 2000 LVL per ha, whereas in Vidzeme the number of such farms accounts only for 33.3 per cent.

The profit per ha and per farm is also rather different in Latvia regions. In 2009, it decreased significantly.

The analysis of the farms according to their profit and loss accounts in 2010 (Table 4) shows that more than one fourth of the farms had the profit within 100 – 200 LVL per ha. As a whole, ¾ of the farms had profit less than 300 LVL per ha. One fifth of the farms had profit less than 50 LVL per ha, and the highest proportion of such farms was in Pieriga (32.2 per cent). The profit depends on the production costs and realisation prices. The production costs in Latvia regions differ a great deal. In nearly 4/5 of the farms, the production costs are less than 200 LVL per ha, and in one third of the farms – less than 50 LVL per ha. The highest proportion (35.3 per cent) of farms with production costs less than 50 LVL per ha is characteristic to Zemgale. This region is also characteristic with the proportion of farms that have production costs within 50 to 100 LVL per ha. The highest proportion of farms with production costs within 100 to 200 LVL per ha was observed in Pieriga and Vidzeme. In Pieriga, the proportion of farms with production costs exceeding 200 LVL per ha accounts for 25.8 per cent, in Vidzeme – 17.6 per cent, in Kurzeme – 22.2 per cent, and 29.4 per cent – in Zemgale. These rates lead to the conclusion that with regard to production costs, the improvement possibilities in Zemgale region differ from those of Vidzeme and Kurzeme.

The long term investments, which are an integral part of production development that allows modernization of the production and shaping it in accordance with nowadays requirements, have been the highest per ha in Zemgale region. In 2006, they exceeded the figures of Vidzeme by 54.2 per cent, in 2007 of Pieriga – by 27.8 per cent, in 2008 – of Pieriga – 1.8 times, in 2009 of Vidzeme – 1.9 times, and in 2010 of Pieriga – 2.2 times.

It is interesting that in all the regions there are farms with different amount of financial investments per ha that varies from less than 100 LVL per ha to some thousand LVL per ha. In 2010, the investments of 7.8 per cent of farms in Vidzeme were less than 100 LVL per ha, 35.4 per cent of farms – within 100 to 500 LVL per ha, 23.5 per cent of farms – within 500 to 1000 LVL per ha, 15.7 of farms – within 1000 to 2000 LVL per ha, 17.6 per cent of farms – more than 2000 LVL per ha, and in six farms - within 2000 to 3000. One farm had the investments of 3600 LVL per ha, one – 4150 LVL per ha, and one – 6700 LVL per ha. The situation is similar also in Kurzeme and Zemgale.

The authors carried out an inquiry to find out the opinion of employed persons about the farms' development opportunities. The inquiry results showed that, for example, the biggest investments in formation of fodder basis had taken place in Zemgale region, but the lowest – in Vidzeme region. In the formation of dairy cattle, Kurzeme had invested most, but Zemgale – least. As to milking equipments, Latgale region is in the first place. Relating to cooling equipment, Pieriga, Vidzeme and Latgale had invested more than Kurzeme and Zemgale. The investments in keeping of dairy cattle are comparatively low in all the regions.

In the analysed regions, the use of credits differs a great deal. During the period 2006-2010, the lowest use of credits per ha was in Vidzeme, but the highest in Zemgale, where, in 2006, they were 1.7 times, in 2007 – 1.4 times, in 2008 – 2.6 times and 2010 – 2.0 times higher than in Vidzeme. The highest use of credits per farm was detected in Zemgale and exceeded its level in Vidzeme: in 2006 – 2.0 times, 2007 – 1.7 times, 2008 – 2.7 times, 2009 – 3.1 time, but in 2010 – 2.3 times.

In the context of the analysis carried out based on comparison of the four regions according to the revenue, R. Zvirgzdina in her investigation especially mentions Latgale region. As shown by the author's previous study, this region has achieved good results, sometimes exceeding the results of farms in other regions. During the period 2006-2010, these farms in Latgale have had the highest revenue from the realisation of milk per ha of the farm area. In 2006 and 2010, the profit of these Latgale farms per ha was higher than in other regions. During the period 2006-2009, the long-term investments per ha were also the highest in these farms of Latgale. In 2010, the realised amount of milk per cow in the surveyed farms of Latgale was within 4.55 to 7.99 tons that is very close to the highest level achieved in other Latvia regions. It gives evidence that the dairying of this region possesses potential development possibilities.

It may be concluded from the above-mentioned that a farmer, as the central figure who combines the production factors and looks for opportunities to lower production costs and gets a possibly higher return to be well-off and capable for a normal farming, will be obliged to take into consideration the impact of a number of internal and external factors, especially the impact of such changes as:

- anticipated foreign countries' impact on the price of products with a low value added. It may come from the countries with low production costs in dairying industry and high processing efficiency as well as with considerable dairying amounts;
- enlargement of production for exports in case of increase in dairying;
- access to a desirable market niche and formation of export contacts;
- production of products with possibly high value added, especially for exports;
- the necessity to constantly increase the competitiveness.

Wherewith, the question arises – what the farmer needs most in such situation. Based on the inquiry results

Table 5

Agricultural education of farmers in Latvia regions in 2010

Education	Total	In regions				
		Pieriga	Vidzeme	Kurzeme	Zemgale	Latgale
Higher	4 917	812	1 153	724	1 063	1 165
Professional	16 868	1 698	3 968	2 788	2 975	5 439
Primary	10 334	1 230	2 309	1 956	1 777	3 062
Practical experience	51 267	5 831	9 151	6 973	8 126	21 186
Total	**83 386**	**9 571**	**16 581**	**12 441**	**13 941**	**30 852**
Percentage of the total						
Higher	5.9	8.5	7.0	5.8	7.6	3.8
Professional	20.2	17.7	24.0	22.4	21.3	16.7
Primary	12.4	12.9	14.0	15.7	12.7	9.9
Practical experience	61.5	60.1	55.2	56.0	58.2	67.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: elaborated by the authors based on the data of the CSB of the Republic of Latvia

Table 6

Characteristic features of livestock quality, 2006 – 2011

Indicators	2009	2010	2011
The number of cows under supervision, thousand	132.2	122.0	123.1
Average milk yield per cow, kg/year	4892	4998	5064
Average milk yield per cow under supervision, kg/year	5785	5987	5128
Milk fat of the cows under supervision, %	4.38	4.29	4.26
Protein of the cows under supervision, %	3.36	3.31	3.31

Source: elaborated by the authors based on Latvijas lauksaimnieciba 2012.

and expert recommendations, the authors conclude that farmer needs knowledge and investments. With regard to knowledge, it is highly necessary to provide farmer with abilities to fully realise his enterprise, talent, experience, and skills. The higher his education level will be, the more successfully he will be able to direct his initiatives and activities in an innovative channel. In authors' opinion, Latvia regions have unused possibilities in this area that may be evidenced by differences and the existing educational level of farmers in Latvia regions (Table 5).

The situation in Latvia has something in common with the situation of the EU as a whole. One third of all farmers are in the age group of 65 years or more (the following 20 percent account for the age group in 55 and 64 years), and 80 per cent of the farmers are without agricultural education, having only practical experience. It becomes highly necessary to improve the level of farmers' knowledge, especially taking into consideration that the fragmented and differentiated structure in the EU agriculture will dominate also in the perspective, however, changing gradually. Nevertheless, the structural differences, with maintaining of small-scale farms, will remain at a rather high level until 2020, mainly on the account of such factors as economic and social development, legal framework related to the land, accessibility of production factors, and different agronomical conditions.

The increase in complexity of solutions related to revenue problems require an approach, the implementation of which is impossible without a closer consideration of the established cooperation forms, using the opportunities provided by cooperatives, and franchising aimed to provide a full cycle. A cooperative that belongs to farmers is an instrument that facilitates the finding and attracting of possible profitable services and partners for farmers. It is important to take into account that in the formation of the market strategy the basic principle of a dairy processor belonging to the cooperative is selling of products at the price that is balanced between the milk purchase price and the price of the dairy produce of the processor. As a result, there is no invincible lack of funds for both farmers and processors. If farms that are members of a cooperative provide that a full cycle of dairying and processing, in which milk is gained, collected, and processed in an enterprise belonging to the cooperative, then by delivering the products to consumers, the cooperative provides farmers with a feeling of safety that there will be a market for their production. Wherewith, it strengthens the conviction of the farmers that they are well off. Moreover, in this sense, the feeling of security is very important for farmers. The farms' advantages multiply with increasing of the level in cooperation all over the cycle of dairying in farms, processing, and realisation. The use

of these advantages can be favourable for stability and welfare of farming, which can be seen from a comparison of dairying cooperatives depending on the level of milk processing in the framework of the cooperative. The main advantages related to the support of farmers' initiatives and facilitation of production are:

— realisation of the planned price in the interests of farmers;
— modernisation of technological equipment at all levels;
— strengthening of farmers' protection against the fluctuation of prices;
— increased vertical integration.

In the framework of cooperatives, it would also be possible to facilitate the pedigree cattle breeding and organic farming. The development of this kind of cattle has a positive impact on milk yield, and in Latvia dairy farming, the pedigree cattle breeding organisations realize that. In 2011, the number of cows under supervision included 75 per cent of cows. The productivity of the cows under supervision turned out to be significantly higher.

According to the data in Table 6, the average milk yield of the cows under supervision is 1.2 times higher than in herds without supervision. The best results of milk yield constantly are observed with Holstein black-white cows, the average milk yield of which in 2011 was 6868 kg or by 40 per cent higher than the average of the cows under supervision. It is important that the genetic quality in most of the farms is very good, and the demand has increased in breeding calves for exports (Latvijas lauksaimnieciba, 2012).

Organic farming, involving more and more new farms, expands, and dairying gains the dominance in this area. In 2011, there was 57 thousand tons of milk produced, of which cows' milk accounted for 56.3 thousand tons, which is 6.8 per cent of the total in dairying. Still, smaller part of the production reaches the market. In 2011, only 31.6 per cent of that milk was sold in the market. Nevertheless, in our country, the processing of organic milk tends to increase; and, in 2011, 19 enterprises participated in it, processing 491.1 tons of milk.

The increase in investments is closely related to farmers' support from the EU that may be helpful in solution of many urgent problems, especially, those related to the employment in rural areas and maintaining of social structure, further improvement of rural economy and facilitation of diversification, improvement of conditions for the small farms, and promoting of rural attractiveness and identity. Not least significant is the accentuating of competitiveness in the context of rural development, facilitating innovations and restructuring that provides opportunities for farms to use the resources more rationally. It relates to the strategic aims of the CAP that foresees the maintaining of the production potential on a sustainable basis all over the EU to guarantee a long term providing with food and with support of rural production communities, maintaining of viable rural communities, the agriculture for which is an important economic activity providing local employment. It will lead to a multiplied economic, social, environmental, and material benefit.

The CAP especially accentuates that it is important to maintain all that has already been achieved, at the same time taking an orientation to increased use of new opportunities in the future. What is essential for Latvia regions is to take the best of the achieved at present and to support and develop it skilfully in the future as a precondition that facilitates the maintaining of the identity of the regions contributing in such way to their development.

Conclusions and Recommendations

1. In Latvia, dairying is an area that has experienced great changes without losing its significance.
2. Dairying industry in Latvia is fragmented. The productivity in dairying is comparatively low and differs in Latvia regions.
3. The financing and knowledge have become significant conditions for the development of dairying.
4. In dairying industry, the facilitation of cooperation becomes more and more significant.
5. In case of production enlargement, the marketing problems may become more urgent.
6. In order to diminish social economic differences in dairying, it is necessary to improve the level of farmers' special education to facilitate the use of disposable resources in the area.
7. In spite of a comparatively high level of cattle breeding in the country, further improvement is necessary to favour balanced revenue in dairying of Latvia.
8. It is an urgent necessity to substantiate the attracting of the EU funds and investments to development dairying industry in Latvia.

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CONSUMER BEHAVIOUR ON THE VENISON MARKET IN LATVIA

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Abstract. A study on consumer behaviour was conducted to identify trends in demand on the venison market, to ascertain consumer perception regarding venison products, and to get an understanding of consumer opinions on possibilities to purchase and consume venison and on qualitative characteristics of venison. The survey was performed from 15 December 2011 to 25 May 2012. Randomly selected respondents who had ever purchased and/or consumed venison were questioned during the research. The research aim is to identify the factors affecting the behaviour of venison consumers. The survey results showed that the consumers regarded the quality and taste aspects of venison as the most significant criteria for purchasing venison; yet, the majority of them pointed that they used an opportunity to purchase quality venison at a lower price, i.e. by avoiding retailers. The consumers were informed about raising deer on Latvian farms as well as qualitative characteristics of venison. However, they had no information on the possibilities to purchase venison, the sale sites, and the market price of venison. The consumers pointed that the best venison purchase sites were specialised meat stores, farm product fairs, and deer farms as well as the fact that selling food through the Internet is not developed. Although consumers are increasingly interested in using venison in their diet, there is no real point of contact among producers, processors, and buyers. Venison and especially venison products are available to consumers in Latvia in limited quantities, and the possibilities to purchase such products are limited and episodic. The respondents' replies to a question on the origin, value, and purchase possibilities of venison products indirectly revealed that the consumers were poorly informed about them.
Key words: deer farming, venison market, consumer perception.
JEL code: O13

Introduction

Deer farming is a new and non-traditional industry in Latvia, thus, one may assume that consumers are not or are insufficiently informed about the purchase possibilities of venison produced in Latvia and the positive effect of it on human health. Revealing of the motives of present and potential customers, now and in the near future, might be crucial regarding the consumption of goods and services provided by deer farming. Actually, a question has to be answered – what final consumers gain from consuming goods or services provided by deer farming. The satisfaction of consumers with meat quality has been studied quite extensively. Consumers increasingly start thinking of using healthy and safe products in their diet. Of the assortment of meat products on the market, consumers prefer fresh, lean, juicy, and good smelling products of high nutritional value (Dransfield, 2001, 2003; Ngapo, Dransfield, 2006). These studies emphasise that product recognition and consumer knowledge are important, as consumers are motivated to buy more appropriate food products (Cottingham, Winkler, 2007).

Consumer behaviour is closely related with economic growth in a country (Gaile-Sarkane et al., 2009). Since the society is stratified by income, consumers differently value the same product. Obtaining knowledge on consumer needs, factors, and motives affecting consumer behaviour is a way of providing the competitiveness and development of corresponding businesses. Consumer behaviour has to be understood to satisfy fully consumer needs. Making a purchase decision and consumer behaviour are a complicated process, yet, to make it easily perceivable, general (or easily perceivable) consumer behaviour models are often available (Sheth, 2011). Consumer behaviour regarding purchasing food products is considered variable and difficult to predict; thus, creating problems for producers in identifying market trends (Grunert et al., 1997). To analyse the decision making process in detail, first, it has to be found out why consumers make corresponding decisions and what they wish to gain. From the viewpoint of consumers, a range of causes for their choice may be mentioned: income, knowledge and information obtained, products consumed; security in future as well as lifestyle, occupation, social status etc. (Sheth, Parvatiyar, 1997; Kotler et al., 2008; Malhorta, 2006).

Based on consumer behaviour studies (Kotler et al., 2008), it is stressed that consumer behaviour on the meat market is complicated. It has to be emphasised that the meat of non-traditional agricultural animals, including venison, is a group of products not known to the target audience, as consumers do not know their qualities and they are not available at sale sites. At the same time, a wide assortment of meat is available, and, according to studies, consumers prefer traditional products such as pork and poultry. Consumers usually do not notice small differences among similar and homogenous goods (Kotler et al., 2008). It means that inadequacies in consumer behaviour have to be avoided. From the practical point of view, consumers have to be informed about the characteristics of venison and other information related to venison as a quality product – its differences from other similar products, its availability on the market, its country of origin etc. – has to be provided freely. Kotler et al. (2008) stresses that buyers, obtaining information on

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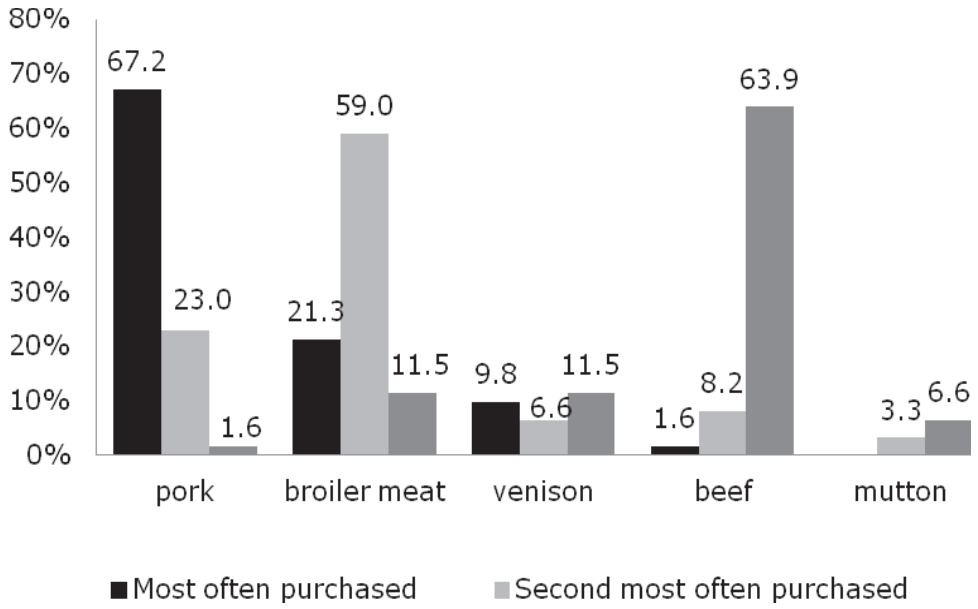


Source: author's calculations based on the survey results

Fig. 1. **Types of meat purchased and/or used in the diet most often in Latvia**

a product of certain type, tend to reduce the risk related with their purchase as well as increase their satisfaction with the product.

It has to be noted that, for instance, in Great Britain where deer farming as one of the agricultural industries exists from the beginning of the 1970s, only 30% of respondents know about health aspects of venison (high contents of proteins and omega fat acids, low contents of fat and cholesterol) (Annual Review, 2010).

Quality is a significant criterion in purchasing meat, thus, it is important to find out the perception and knowledge of consumers on the quality characteristics of venison, which, at the same time, influence trends in demand. A survey on consumer perception was performed to identify the demand for venison on the market and to ascertain consumers' perception of products of deer farming. The research **aim** is to identify the factors affecting the behaviour of venison consumers. To achieve the aim, the following **tasks** were set:

1) to investigate the types of meat purchased most often and the criteria for their purchase;
2) to analyse the consumer awareness of venison and the possibilities to purchase it;
3) to identify the motivation of consumers to purchase venison and its products in the market.

Materials and methods

In this research, deer farming is defined as a relatively new and non-traditional industry of agriculture. Foreign experience shows that in a situation when information is insufficient or incomplete for analysing a new and non-traditional industry, a survey of this industry's stakeholders (producers, processors, sellers etc.) may be used (Mjelde et al., 1992; Gillespie et al., 1998). A quantitative survey of consumers was carried out to get an understanding of consumer opinions on the possibilities to purchase and consume venison and on the quality characteristics of venison (Churchill et al., 2010; Aaker et al., 2007). The research object is consumers who have ever purchased and/or consumed venison. The survey was carried out electronically, and randomly selected individuals participated in it; 368 questionnaires were received back, of which 349 were valid. The survey included questions on meat purchase habits, opinions on meat quality criteria, and the use of venison in the diet. To exclude respondents who do not fit the research object and to verify whether a potential respondent complies with the chosen criteria, questions for the selection of respondents were included in the survey. The survey included open questions enabling respondents to explain their replies in detail. To answer closed questions, respondents had several options, which were important to them, for their reply. Respondents' attitudes to assertions regarding deer farming were evaluated by using questions with an evaluation scale and hierarchical questions. The questionnaire ended with classification questions on age, education etc. The survey was performed from 15 December 2011 to 25 May 2012. The data obtained were processed by employing Microsoft Excel statistical methods.

Results and discussion

1. Characteristics of the purchase and consumption of meat

Initially, the survey established how consumers made their decision to make a purchase. In the questionnaire, consumers were asked questions about the type, price, quality, and choice criteria of meat purchased most often (Figure 1). As regards the questionnaire's question on the most frequently purchased and/or consumed type of meat, 67.2% of the consumers admitted that they most often bought and consumed pork, 21.3% preferred broiler meat, and 9.8% bought or consumed hunted animal meat.

According to researchers (Jemeljanovs, Sterna, 2008; Partikas un lauksaimniecibas..., 2006), pork is consumed owing to historical consumption traditions in Latvia.

The respondents pointed to broiler meat as the second most purchased type of meat (59.0%), which may be explained by the availability of this meat at supermarkets and specialised meat stores (Kekava, Bauska, Lielzeltini) at a relatively low price (Figure 1). Pork as the second most popular meat was preferred by 23.0% of the respondents. An inverse relationship may be observed in this case – 80.5% of the respondents for whom pork was the most popular meat chose broiler meat as the second most popular meat, while 92.3% of the respondents for whom broiler meat was the most popular meat preferred pork as the second most popular meat. It may be explained by the availability of pork and broiler meat and the relatively low price on these types of meat as well as food consumption habits in Latvia.

As regards wild animal meat, 6.6% of the respondents pointed to it as the second most preferred meat and for 11.5% it was the third most purchased meat. The author believes that such indicators are good considering the present development of deer farming in Latvia.

The Latvian State Institute of Agrarian Economics (LVAEI) reported in its study "Research, Analysis and Prospects of Food Consumption in the Territory of the Republic of Latvia" conducted in 2007 that 53% of the respondents purchased food products at supermarkets, 37% shopped at small food stores, and 7% made their daily purchases on the marketplace, which, to a great extent, determine meat purchase and consumption traditions in Latvia.

In the survey conducted by the author, 67.7% of the respondents pointed to specialised meat stores as the most popular site for purchasing meat, for 57.4% it was a supermarket, 44.3% preferred farm product fairs, and 37.7% purchased meat directly from meat producers, while only 1.6% of the respondents mentioned the Internet as a way of buying meat. Therefore, these customer habits have to be taken into consideration to develop the venison market.

The US agricultural market specialists Dietmann N.P. and Ridder E. (2004) who pointed to the facts that consumers were interested in small specialised producer stores or farm product fairs as well as that expenses were lower in case products were bought directly from a producer, made a similar conclusion.

From the viewpoint of producers, it is important to understand the main leitmotif of consumers to purchase meat and its products. The reply options included in the survey had assertions related with organoleptic properties of products, quality of goods, price on goods, and subjective wishes of consumers.

The price of goods is a significant factor in the majority of countries. Such a finding was made in a study of "BnB NORD Latvian Barometer" – Latvian residents considered quality as one of the key factors when choosing food products (68%), yet, for 79% it was price (Partikas produktu paterins, 2010). However, Danilane L. and Lubkina V. (2007) in their research pointed that price was important but not the most significant criterion in making a purchase decision. In a study ordered by the supermarket chain Elvi, the medium agency Media Planning Group reported that the quality of goods was essential for 66% of customers. It is one more proof that Latvian consumers prefer quality products that are fresh and human-health-friendly. Foreign researcher Moffat D.A. (2005) pointed that meat taste was one of the factors being attractive for the majority of consumers.

The author found, analysing criteria for meat choices, that price was not the determining factor for Latvian consumers when they chose meat and its products. A study on the industry of food services, conducted by Tume L. (1997), reported that 80% of the respondents believed that the quality of venison was worth the relatively high price of it.

An analysis of the survey results revealed that Latvian consumers, when purchasing meat, based their choice on their subjective wishes, and the main criteria were the availability and quality of products, followed by their price. Therefore, the author believes that there are possibilities to increase sales of venison.

Assuming that the meat purchase criterion "low price" might be a dominant one for the population group with low incomes, the author assessed the meat choice according to income per family member.

When purchasing meat, according to the survey (Figure 2), the most important criterion for the group of responds with an income less than LVL 100 per family member was the taste and availability of meat. The respondents of this group pointed to specialised meat stores as the most popular meat purchase site, which, to a certain extent, may be explained by the fact that it is an opportunity to buy quality meat at lower prices than at supermarkets.

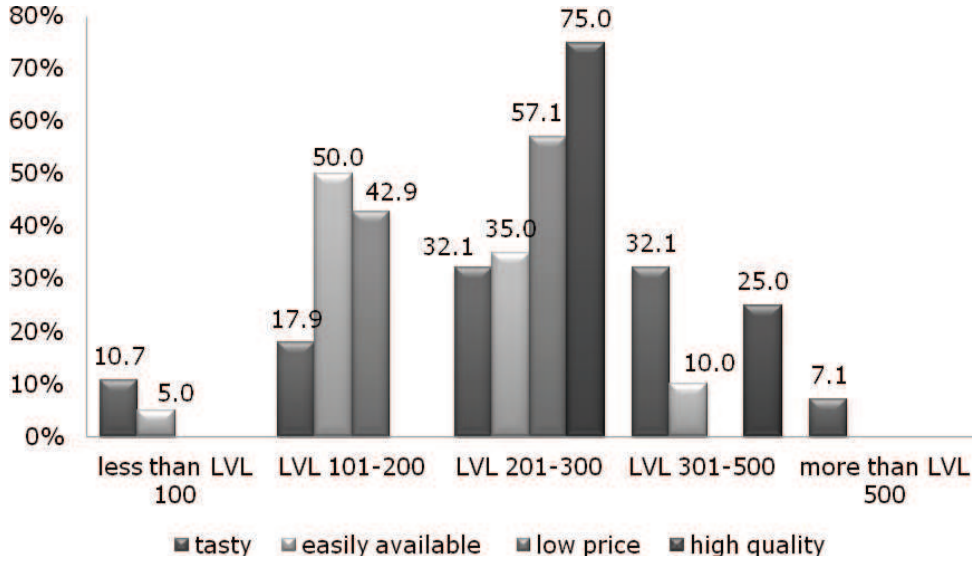
In the income group of LVL 101-200, the respondents pointed to the availability of meat (50%) and the price of meat (42.9%) as the main meat purchase criteria, thus, not stressing the role of meat quality. The respondents of this group purchased meat mostly at supermarkets (72.2%) and in farm product fairs (61.1%).

For the respondents whose income per family member was within a range of LVL 201-300, the most significant meat choice criterion was meat quality (75%), followed by meat price (57.1%). A similar opinion dominated among households having an income per family member within a range of LVL 300-500. For these groups, specialised meat stores were the most popular meat purchase site (69.6% and 71.4%, respectively). The author believes that venison producers have to focus on regular sales of venison at specialised stores and farm product fairs as well as search for opportunities for selling their venison at supermarkets.

2. Consumer awareness of venison

Many respondents pointed to hunted animal meat as one of the most frequently purchased types of meat. In this aspect, it is important to find out what wild animal meat and meat products consumers use in their diet and the consumers' opinion on venison qualities and its consumption.

According to the survey, one can conclude that wild animal (wild boar, deer, roe deer, and elk) meat had been consumed by 88.5% of the respondents, including venison – by 63.9%, while venison products had been consumed by 31.2% of the respondents.



Source: author's calculations based on the survey results

Fig. 2. **Most significant meat purchase criteria by monthly income per family member in Latvia**

The opinions, expressed in the survey, on venison qualities were different, in some cases even controversial; yet, there were some respondent groups providing similar replies. Of all the respondents, one in five or 21.3% could not tell the difference between venison and traditional meat (pork, broiler meat, and beef).

Some respondents had a negative opinion on venison qualities. Of the respondents, 4.9% believed that venison was tough and hard to be cooked, saying "… I really do not know but I assume it might be tougher, with a specific taste". In one questionnaire, it was pointed that "…children are allergic to venison, and it might not be used in the diet of children". At the same time, there were respondents who asserted that venison was "… very healthy, hypoallergenic, and dietetic".

The majority of the respondents (57.3%) said that venison was healthy, of high quality, with a low level of cholesterol, environmentally clean, and hypoallergenic (appropriate for being consumed by allergic people and children). The respondents stressed the environmental criteria as quality characteristics of venison: "it is GMO-free, free of food colourings, food supplements, antibiotics, growth hormones, and other components not needed and harmful for consumers." "First, this meat does not originate from artificially raised animals (as broiler meat and pork from livestock specially fed to grow faster and be ready for selling). Second, it contains a lot of nutrients that have formed naturally." At the same time, it was noted that venison had a specific colour, taste, and smell.

Further in the survey, the respondents expressed their opinion on various assertions regarding the purchase and consumption of venison.

The respondents were provided with three reply options: 1 – I agree with the assertion, 2 – I do not agree with the assertion, and 3 – I have no opinion on the assertion. Given the specifics and short history of deer farming, the third reply option was included in the questionnaire, as respondents might have no idea about deer farming. The results are presented in Table 1.

An analysis of the survey results showed that 78.7% of the respondents knew that deer were raised on farms in Latvia for meat. The majority of the respondents (77%) believed that venison was healthy, as animals were raised in the natural environment, while 57.4% of the respondents believed that it was healthy because the cholesterol level in it was lower than in beef and pork. It has to be noted that the number of those respondents who did not agree with the two mentioned assertions was small (3.3% and 0%, respectively). The respondents expressed a similar opinion on the nutritional value of venison – 55.7% agreed and 3.3% did not agree with the assertion.

The assertions on purchases of venison indicated that the consumers loved to buy venison for holiday feasts (67.2%) and loved to buy venison if the price were acceptable (65.6%). Only 18% of all the respondents said that they did not want to buy venison.

Attention has to be paid to the respondent replies to Assertion 7 – about half (47.5%) agreed with the assertion that they did not know where to buy venison and only a third of the respondents (31.1%) knew where it was possible to buy venison. Similar replies were given to Assertion 12 (*Venison is not offered at a store*) – 50.8% agreed and 39.3% had no opinion.

The fact that the respondents had not seen venison in the assortment of stores and did not know where to buy it is proven by their replies regarding venison prices. The most frequent reply to the assertions – *the price of venison at a store is acceptable to me* and *the price of venison at a store is too high* – was the reply option "I have no opinion on the assertion", 85.2% and 86.3%, respectively, which indicated that the consumers had not seen venison in the assortment of stores.

Table 1

Purchase and consumption of venison assessed from the viewpoint of consumers in Latvia

No.	Assertions	Percentage distribution of respondent replies		
		agree	do not agree	do not know
1	More and more people consume venison	14.8	36.1	49.2
2	Deer are raised on Latvian farms for meat	78.7	1.6	19.7
3	I would love to buy venison for regular consumption	29.5	36.1	34.4
4	I would love to buy venison for special holiday feasts	67.2	13.1	19.7
5	I would certainly buy venison if it is available at stores	36.1	29.5	34.4
6	I would certainly buy venison if its price is acceptable to me	65.6	6.6	27.9
7	I do not know where I can buy venison	47.5	31.1	21.3
8	I would buy venison even if I have to go to a special store	23.0	41.0	36.1
9	I do not want to buy venison	18.0	63.9	18.0
10	The price of venison at a store is acceptable to me	6.6	8.2	85.2
11	The price of venison at a store is too high	9.8	6.6	83.6
12	Venison is not offered at a store	50.8	9.8	39.3
13	Venison is healthy, as the cholesterol level in it is lower than in beef and pork	57.4	0.0	42.6
14	Venison is healthy, as animals are raised in the natural environment	77.0	3.3	19.7
15	The nutritional value of venison is higher than that of traditional meat	55.7	3.3	41.0
16	Venison is soft and juicy	41.0	29.5	29.5
17	Venison is easy to cook at home	45.9	19.7	34.4

Source: author's calculations based on the survey results

3. Consumer motivation and behaviour on the venison market

According to the survey, price did not always played the crucial role in purchasing food, yet, it is important to ascertain consumers' opinion on the preferable price of venison on the market for the purpose of planning the development of deer farming. First, it was found out that the respondents considered venison an expensive meat of special category. The range of prices mentioned by the respondents was very broad – from LVL 1.50 to LVL 50.00 per kilogram of venison. The average preferred venison price ranged from LVL 4.16±1.976 to LVL 8.31±6.956.

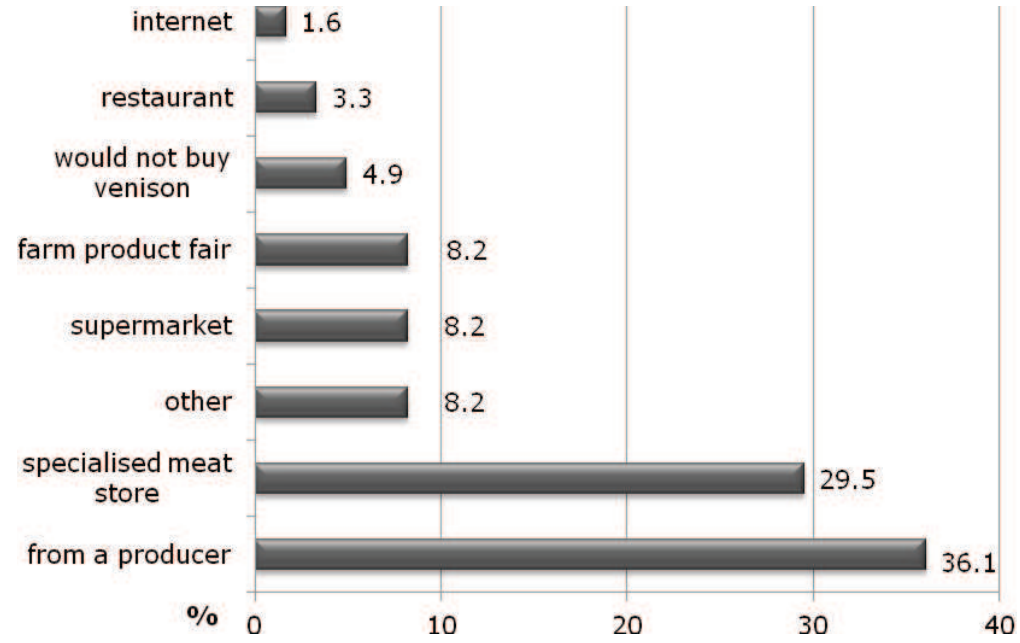
An analysis of the frequency and sites of purchasing venison showed that only 27.9% of the respondents had bought venison or its products. As the site of purchasing venison, the respondents mentioned the store *Desa&Co* in Riga, in some cases venison was bought directly from its producer or from hunter teams (venison from deer hunted in the wild). Those respondents who had never bought venison said that they had eaten venison of deer hunted in the wild by their relatives or friends or tasted it at degustation fairs or during a tour on a farm.

As regards replying to a question what encouraged them to buy or consume venison, many respondent replies were as follows: "*…what is hunted in the forest has to be eaten*". Such an assertion was expressed by the respondents who consumed venison of deer hunted in the wild by their relatives or friends. The respondents who bought venison at a store mainly had an opinion that they just tasted venison as well as consumed it because it was healthy and unpolluted.

According to a survey conducted in Russia, the significance of the country of origin, to a great extent, depends on the category of goods. It is especially important for such food necessities as meat, fruit, vegetables, fresh fish etc. (Honkanen, Frewer, 2008).

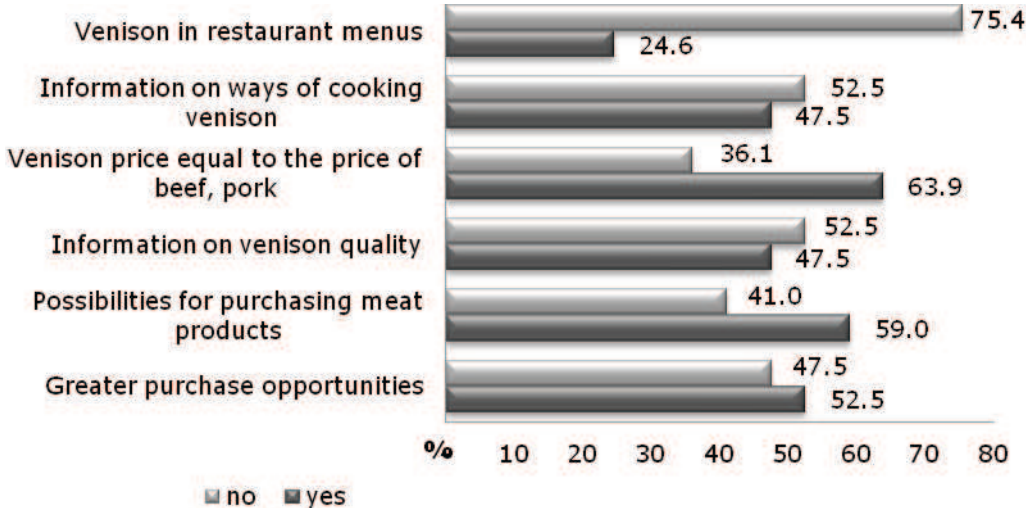
In Latvia, consumers pay special attention to products of local producers when making a purchase decision. One of the most significant factors for the choice of venison and its products, along with price and taste, is the place of origin. Latvia as the place of origin of venison as a significant factor for purchasing meat was mentioned by 86.9% of the questioned individuals.

The present and potential demand for products determines the development of deer farming, thus, the respondents' wishes regarding purchasing venison in future and the preferred venison purchase site were identified (Figure 3). The survey revealed that 4.9% of the respondents wanted neither to buy nor to consume venison. However, the majority of the respondents were interested in using venison in their diet and pointed that if they decided to purchase venison in the near future, they would prefer to buy it directly from the producer (36.1%) or at a specialised store (29.5%). As other preferred sites for purchasing venison, the respondents mentioned a supermarket (8.2%), a farm product fair (8.2%), and restaurants (3.3%). The most unpopular



Source: author's calculations based on the survey results

Fig. 3. **Venison purchase sites preferred by customers in Latvia**



Source: author's calculations based on the survey results

Fig. 4. **Consumer motivation for purchasing venison and its products in Latvia**

venison purchase site was the Internet (1.6%). In case the reply option "other" was chosen for the preferred venison purchase site, the respondents explained that they would probably buy venison from familiar hunters, thus, purchasing venison of deer hunted in the wild.

In Europe, venison sales are often practised on the spot on farms. It is related with consumers' opinion on food quality. Conducting a study on the consumer understanding of meat quality, Becker T., Benner E., and Glitsch K. (2000) point that consumers prefer to buy meat at specialised stores, while purchasing meat directly from a producer is the third most popular meat purchase site (Becker et al., 2000).

In European countries – Germany, Denmark, Great Britain, and the Czech Republic – where on average 80-90% of deer farming enterprises fit the status of micro-enterprise, venison is mainly sold in the local market, on the spot on farms, at agricultural fairs, or sold to public catering companies. In this aspect, researches of LVAEI scientists Melece L., Romanova D., and Sena I. (2008), which set two economically viable priorities for food production, have to be stressed. Medium and large meat enterprises have to focus mainly on export markets and the regional market. Small meat enterprises, in their turn, have to focus their sales on the local market (Melece, Romanova, Sena, 2008). The majority of deer farming

enterprises in Latvia fits the status of micro-enterprise, and, according to scientific studies and experiences of other countries, the most popular type of sales for them is direct sales. According to the survey performed by the author, an opinion prevails among consumers in Latvia that meat and its products are human-health-friendly and of high quality if these products are purchased from a local producer.

Consumer motivation studies serve for identifying the target audience and further marketing activities (Sheth, 2011; Kotler et al., 2008; Malhorta, 2006). From the supply side, a broad assortment is a prerequisite for stimulating demand. It means that the development of venison processing is directly related not only with broadening a product assortment but also with increasing demand on the market (Michelsen et al., 1999).

The determinant criteria, based on which consumers purchase meat and its products and which, largely, reveal the consumer motivation, were identified in the survey (Figure 4).

The venison price being equal to the price of beef and pork would motivate the questioned individuals most to buy and consume venison and its products (63.9%). The possibility to purchase venison products (sausages, smoked products, semi-finished products etc.) would motivate 59.0% of the respondents, while greater availability of venison could motivate 52.5% of them. Of the respondents, 47.5% pointed that information on quality characteristics of venison, ways of cooking venison, and recipes would motivate them to buy venison. Only about a fourth (24.6%) of the respondents noted that the availability of venison in restaurant menus would motivate them to buy venison. Some respondents said that they would love to consume venison products at fast food restaurants (snacks, pizzas, sandwiches etc.).

The economic activity of deer farms in Latvia generates income for Latvian residents from producing products of deer farming, processing hunted animals, trade, and providing tourism services, thus, reducing social and economic tension in rural areas. The increasing area used in deer farming promotes the use of agricultural land in agriculture and the preservation of rural landscapes. Therefore, the rural environment as a place of residence and recreation improves and the number of domestic and foreign tourists rises.

Low efficiency is specific to the chains of supply of deer farming products in Latvia. It is due to the individual activities of producers in organising sales of their products. Deer farming products are mostly sold as unprocessed or minimally pre-processed products, delivering them in small quantities to consumers or sale sites.

According to the analysis of the most significant development stages of the deer agribusiness market in Latvia, developing production and processing are equally significant as well as promoting marketing activities and actively informing the public on the qualitative characteristics, assortment, and sale sites of venison are also significant. At the same time, the local market's expansion may be provided by small deer enterprises that develop their home production for the purpose of processing and selling their products directly to final consumers on the local market.

Conclusions

1. Based on the survey, the author concludes that the most significant meat purchase criteria for customers are the quality and taste of meat, while the majority of customers pointed that they used an opportunity to purchase quality meat at a lower price, i.e. by avoiding retailers.
2. The consumers were informed about raising deer on Latvian farms as well as qualitative characteristics of venison. However, they had no information on the possibilities to purchase venison, the sale sites, and the market price of venison.
3. The consumers pointed to specialised meat stores, farm product fairs, and deer farms as the best venison purchase sites. At the same time, they stressed that food trade via the Internet was not developed in Latvia, although there were several Internet sites offering hunted animal meat, mainly it was wild animal meat.
4. The possibilities to purchase venison in Latvia are limited and episodic. Venison and especially its products are available to customers in limited quantities. Although consumers are increasingly interested in using venison in their diet, there is no real point of contact among producers, processors, and buyers. It indicates on limited availability of venison and the possibilities to purchase venison.
5. The respondents' replies to a question about the origin, value, and purchase possibilities of venison products indirectly revealed that the consumers were poorly informed about it.

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AGRICULTURAL LAND MARKET IN POLAND AND THE EUROPEAN UNION

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Abstract. The aim of this study was to compare the agricultural land market in Poland and in the selected countries of the European Union. The present paper compares the price changes of agricultural land in Poland and the EU. This research contains the information on institutions involved in agricultural land management in the selected EU countries. The paper presents the current state of the Polish market and its prospects for the land. Therefore, the development of the agricultural real estate market in Poland covers the years from 2004 to 2012. Agricultural land market can be described by agricultural land resources, a form of possession of land, soil quality, lease payments, and agricultural land prices. Agricultural land market in Poland is in a constant stage of development. However, it is difficult to determine the size of agricultural real estate because it does not lead to transaction summary records of the transfer of agricultural land. The main characteristic of the agricultural market is the price. Agricultural land market in Poland is of a great interest to investors despite some problems related with the lack of liquidity of the land. One believes that the land market opening to foreigners should stabilise the agricultural land market in the short term.
Key words: agriculture land market, land management.
JEL code: F16, R19

Introduction

In Poland, the land area and its quality is still very important in the formation of production. Some analyses show that the quality of land is one the main factors of production efficiency because of a moderate level of technology (Wicki, Dudek, 2009). The direction of change was seen in recent years, i.e. an increase of the land productivity through intensification of production did not change the fact that land was limited and at the same time it was an indispensable means of production in agriculture. In developed countries, which are strong in economic terms, the production provides a certain degree of independence from the land of agriculture as a means of production. The European agricultural model is aimed at reconciling the land as a factor of production and environmental aspects of the environment (Kauko, d'Amato, 2008). Institutions that are responsible for land management have been established in the majority of the EU Member States. Attitude towards the land shows the importance of this factor. In the opinion of financial advisors, agricultural land will be the best investment of capital in the current year. The aim of this study was to compare changes in the price of agricultural land in Poland and in the selected countries of the European Union.

Research results and discussion

Agricultural land market can be described by agricultural land resources, a form of land possession, soil quality, lease payments, and agricultural land prices. The agricultural real estate market is the field where one finds the biggest price increase related with other financial assets. It should be noted that the price of agricultural land has been growing steadily since 2004; however, there is some slowdown in the growth (Pietrzykowski, 2012). This paper presents the problems associated with the land management. The study of agricultural land market was characterised mainly by the land prices. The results presented relate with land prices, area, and land quality. The tasks of the research were twofold: 1) to compare the level of land prices; and 2) to compare the dynamics of changes in agricultural land prices. The data used in the paper came from the base of the CSO and APA in the period from 2002 to 2012.

1. Agricultural land management

The functioning of the agricultural land market is regulated by a set of laws that apply to trade with land, sales, and exchange of land. In individual countries of the European Union, various institutions have been established for this purpose. In Poland, the Agricultural Property Agency (formerly the Agricultural Property Agency of the State Treasury) is an institution responsible for agricultural property owned by the State Treasury. The Agency performs its activity based on two legal acts: the Act on the Management of Agricultural Real Estate of the State Treasury dated 19 October 1991 and the Act on the Formation of Agricultural System dated 11 April 2003. The Agricultural Property Agency is responsible for:

— creating and improving agricultural land structure of family farms;
— creating conditions conducive to the rational use of the productive potential of the Property Stock of the State Treasury;
— restructuring and privatisation of the State Treasury property used for agricultural purposes;
— real estate and other assets of the State Treasury to be used for agricultural purposes;
— administration of the resources of the State Treasury property intended for agricultural purposes;

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— organising support for private holdings on land of the State Treasury.

The Agricultural Property Agency can also act on behalf of the State to exercise control over the agricultural land market and, if necessary, intervene with pre-emption of the state law. As a result, the Agency may take decisions distribution of acquired properties (http://www.anr.gov.pl). In Poland, the Agricultural Property Agency performs tasks, which are in line with the activities of the institutions shaping the structure of the market for agricultural real estate in the "old" EU Member States.

In France, the institution managing agricultural land is the SAFER (Federation Nationale des Societes d'Aménagement Foncier et d'Etablissement Rural), which acts as a joint stock company and has been under the control of the body of public authorities since 1960. The SAFER like the APA performs control of the purchase and sales of agricultural land. Any purchase or sale shall be registered by the notary office to SAFER, which has the right of first refusal. The SAFER concentrates on land holdings in order to increase, consolidate, replace, or use them for public purposes.

In 1990, Germany started the privatisation of the former East Germany agriculture. The State Treasury privatisation was conducted by the escrow office - Treuhandtanstalt. From 1992, this task is performed by the Company Valuation and Land Management (Bodenververtungs und Verwaltungs GmbH) and supervised by the Federal Ministry of Finance. In Germany, this function is affiliated to the Land Federation of Rural supervised by the Federal Ministry of Agriculture. The tasks of the association are to purchase, use, and collect free land areas to improve the structure of farms in Germany. Associations like the French SAFER have the right of first refusal of agricultural land as well as acquiring new territories in the land reclamation, conducting modernisation of old objects, and construction of new livestock buildings and residential buildings. The Agencies evaluate real estate purchases for public projects.

The Shaping Centre Property Fund (Cassa per la Formazione della Proprieta'Contadina - CFPC) exists in Italy from 1948. At the beginning of its activities, the CFPC had similar responsibilities as institutions in other European countries. At the moment, the CFPC provides trainings for farmers.

In contrast to the previously described countries, there are two land institutions in Belgium managed by the State Treasury: the Flemish Association of Land (Vlaamse Landmaatschappij - VL) and the Walloon Rural Development Office (L'Office de Developpement rural wallon - OWDR). The Flemish Association of Land collects data on agricultural land in the region of Flanders and deals with the promotion of rural development and environmental protection. The task of the OWDR is conducting research in the field of land policy, data collection, and consolidation of land surveying. The Flemish Association of Land has the right of first refusal of land according to the environmental protection projects.

Apart from the "old" EU Member States, one should also take into account those European countries, which have operated the central control model of the economy in the previous century. For those countries, the primary purpose was the privatisation of land or state cooperative agriculture, and restitution of the property rights to agricultural land. The central body in charge of agricultural land was established in the new EU Member States as well as in the mentioned EU countries. In Hungary, the National Land Fund (NLF) responsible for purchasing of the abandoned property and the management of state-owned land operates from 2002. In Lithuania, Latvia, and Croatia, the task of land managing is controlled by administration of the government, which is supervised by the central state authorities. In Latvia, the responsibility for the restitution of land ownership was undertaken by the central committee of land with its affiliations on the level of regions and municipalities. However, the land committees were liquidated after 1997 and their job were taken over by the State Land Service operating under the supervision of the Ministry of Justice. The State Land Service is responsible for keeping a record of real estate cadastre and collecting data on land prices. In Bulgaria, the institution responsible for the implementation of the law on ownership and use of land was subjected to the national agricultural commission under the control of the Ministry of Agriculture. The restitution of ownership rights to the land is regulated by courts from 1992. In addition to the land, which was privatised in Bulgaria, there is a free state-owned land available for sales and lease. In Croatia, the land of the State Treasury is sold or leased through public tenders by local authorities supervised by the Ministry of Agriculture. The responsibility of the authorities is the development of land management programmes of the State Treasury approved by the Ministry of Agriculture. In Lithuania, the Land's national office under the Ministry of Agriculture is responsible for the use of the State Treasury land. The Office is responsible for the restitution of property rights, the sales and lease of land, and land administration. Moreover, it cooperates with the state land registration system and cadastre. In the Czech Republic, the State Land Fund is responsible for privatisation and restitution of property rights to agricultural land. The Fund can compensate for confiscated property by offering bills. It can also allocate public property for the purpose of land. Similarly, agricultural land management is carried out in Slovakia. The Slovak Land Fund (Fond Pozemkovy Slovensky - SPF) reconstructs land registers and borders of former landowners to restitution.

2. Agricultural land in Poland and the EU

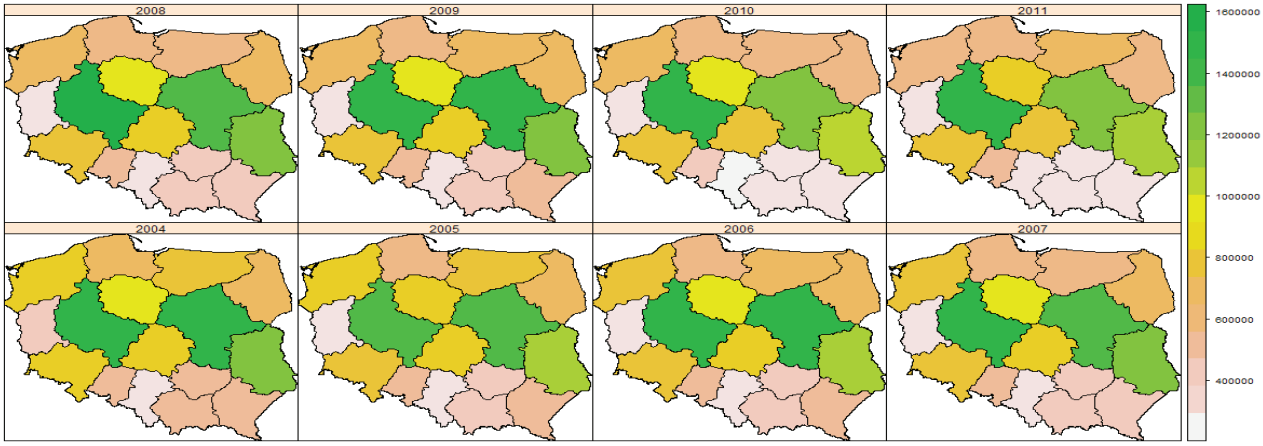
In 2005, after Poland's accession to the EU, agricultural land accounted for about 16 million hectares, representing 51% of the total area of the country. Agricultural land area systematically decreases because of land set aside for investment or excluded from agricultural production. The development of the agricultural land market caused, among others, changes in the political system through the transfer of land from the public sector to the private sector. The average size of agricultural land on a farm in Poland was 10.38 ha in 2012. Table 1 shows the changes in the average size of agricultural land on the farm in the years between 2006 and 2012. During this period, the average area of agricultural land holding in the above-mentioned regions followed a similar pattern. The highest average area of agricultural land on the farm is observed in the following provinces: Zachodniopomorskie, Warminsko-mazurskie, and Lubuskie. The smallest average size of

Table 1

The average size of agricultural land on a farm in Poland by provine in the years between 2006 and 2012

Province	The average area of land on the farm in hectares						
	2006	2007	2008	2009	2010	2011	2012
Dolnoslaskie	14.63	15.08	15.35	15.52	15.72	16.01	16.05
Kujawsko-pomorskie	14.47	14.65	14.79	14.94	15.01	15.04	15.04
Lubelski	7.15	7.28	7.34	7.4	7.4	7.46	7.45
Lubuskie	18.88	19.34	19.67	20.11	20.32	20.82	20.78
Lodzkie	7.19	7.3	7.34	7.41	7.42	7.49	7.52
Malopolskie	3.62	3.71	3.75	3.8	3.83	3.86	3.88
Mazowieckie	8.17	8.36	8.37	8.44	8.44	8.52	8.5
Opolskie	16.72	16.86	17.46	17.71	17.83	18.0	17.99
Podkarpackie	4.23	4.38	4.41	4.46	4.47	4.54	4.56
Podlaskie	11.72	11.87	11.96	12.05	12.11	12.22	12.2
Pomorskie	17.99	18.3	18.48	18.82	18.84	19.0	18.94
Slaskie	6.2	6.53	6.55	6.71	6.83	7.01	7.14
Swietokrzyskie	5.18	5.31	5.33	5.39	5.42	5.49	5.49
Warminsko-mazurskie	22.5	22.68	22.81	22.95	22.95	23.07	22.88
Wielkopolskie	13.2	13.37	13.36	13.46	13.43	13.47	13.41
Zachodniopomorskie	28.37	29.18	29.68	30.15	30.3	30.7	30.67

Source: ARiMAR



Source: author's construction

Fig. 1. **The area of arable land in the provinces in the period from 2004 to 2011**

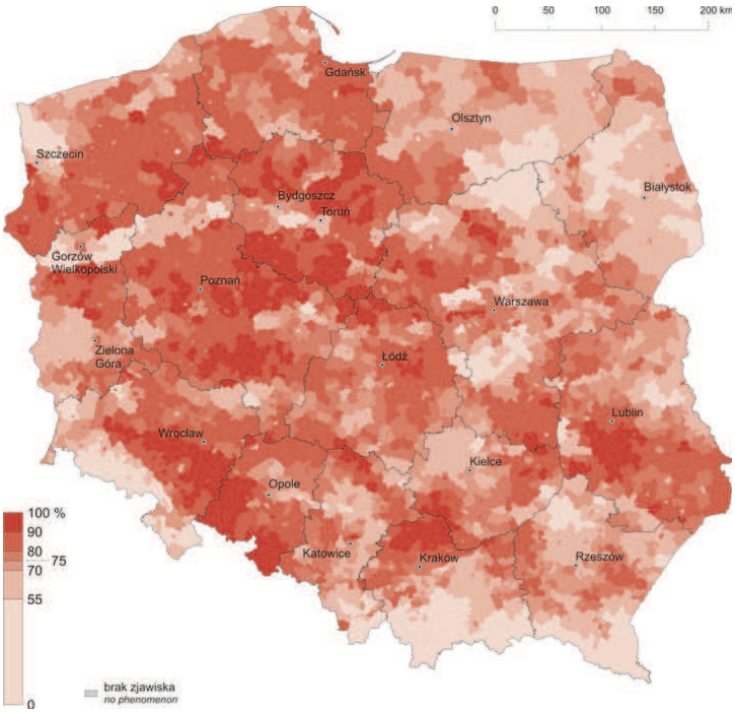
agricultural land is located in the provinces: Malopolska, Podkarpackie, and Swietokrzyskie.

According to the Central Statistical Office (Agricultural Census, 2010), the area of households has decreased by 6.5% compared with 2002. This, in turn, involves the reduction of sown areas on farms by 3.1% and reduction of the area of agricultural land by 8.3%.

Figure 1 shows the changes in the area of arable land in the provinces in the period from 2004 to 2011. The largest area of agricultural land is observed in Wielkopolska region. It has not really changed during the study period. A similar situation is seen in Mazowieckie, while a decrease of the land area has been observed in the province from 2009.

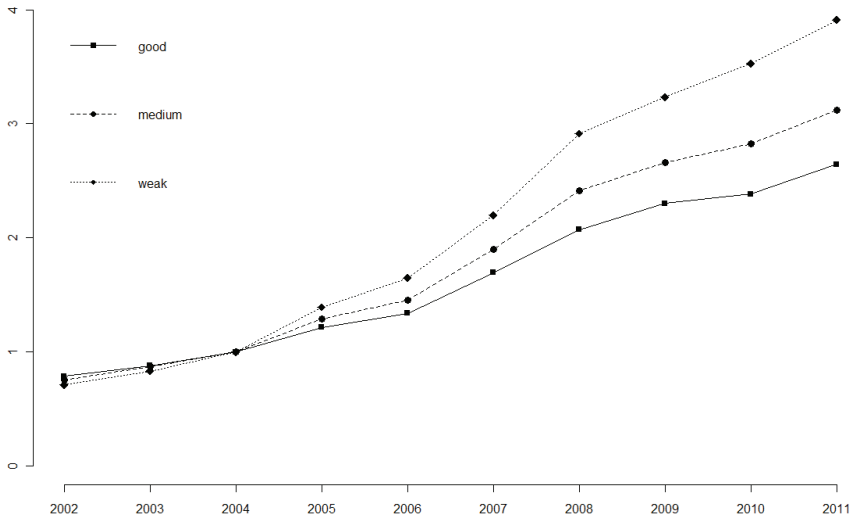
Figure 2 shows the proportion of arable land in the total area of agricultural land in the second year after Poland's accession to the EU. It can be seen that land use has more advantages in the Western part of Poland related with the total surface area.

Agricultural land market in Poland is in a constant state of development. However, it is difficult to determine the size of agricultural real estate because it does not



Source: J. Banski, 2010; Polish Agriculture Atlas

Fig. 2. **The share of arable lands in the total area of agricultural land, 2005**



Source: author's construction

Fig. 3. **Dynamics of changes in agricultural land prices (poor, medium, and good) in the years from 1999 to 2011**

lead to transaction summary records of the transfer of agricultural land. From July 2003, the APA is obliged to monitor the private market, evidencing the area of the property. As it was mentioned previously, the land market in Poland is monitored by the APA, which sells or leases land of the State Treasury. Buyers of agricultural land from the APA are mainly individuals and farmers managing their farms. Legal entities - companies engaged in agricultural production are in the vast minority. In addition to this market, there are individuals who make sales or donations. This applies in most cases to minor property. It should also include transactions made by investors when buying agricultural land for investment purposes (change of use of agricultural land for construction purposes or recreational).

Transactions with agricultural land in Poland may be determined on the basis of the data from the Ministry of Justice, which obtains these data from notaries. The

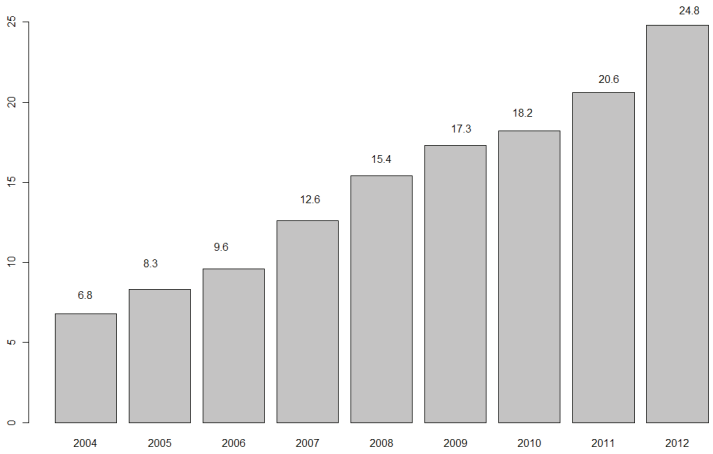


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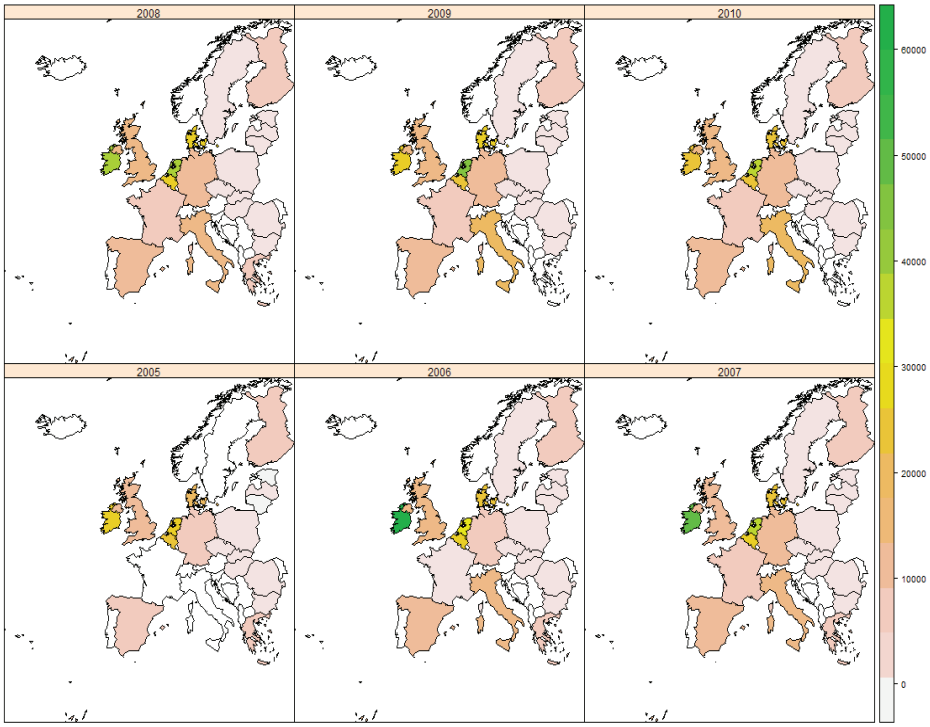
Fig. 4. **The average price of arable land in Poland, in thousand PLN per hectare**



Source: author's construction

Fig. 5. **Price changes in the selected European countries in the period of 2005-2010**

overall agricultural real estate in Poland is determined by the number of sales transactions and donations. Therefore, the Ministry of Justice is another institution that collects information on agricultural real estate market. Some differences have appeared after 2004 (the EU accession) with regard to the dynamics of price changes due to the quality of soil. Prior to 2004, changes in agricultural land prices were insignificant. After 2004, the prices for all types of land are increasing, while the largest increase is seen for the poor quality land (Figure 3). The explanation for such changes on the land market is related with the direction of the previously mentioned investments of private investors.

In Poland, one can notice the biggest changes in the prices of land in Europe. Figure 4 shows the changes in the prices of arable land in Poland after the year 2004, which turned to be crucial for the agricultural land market. An increase in land prices amounting to 278% of the average price of land in 2012 at 25,000 per hectare has been observed since Poland's accession to the EU.

The progressive increase in the price of agricultural land is probably due to the general belief in the growth of

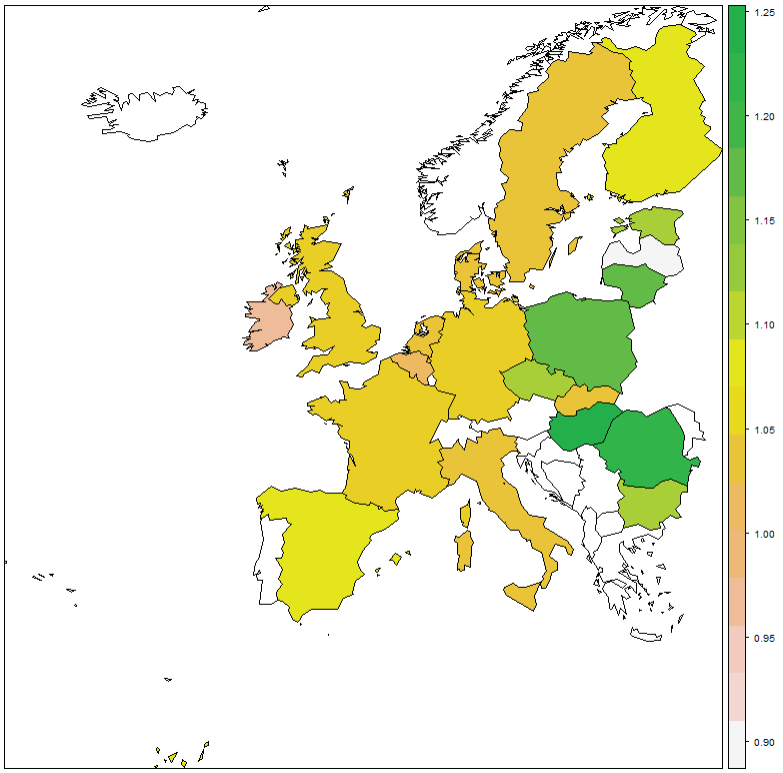


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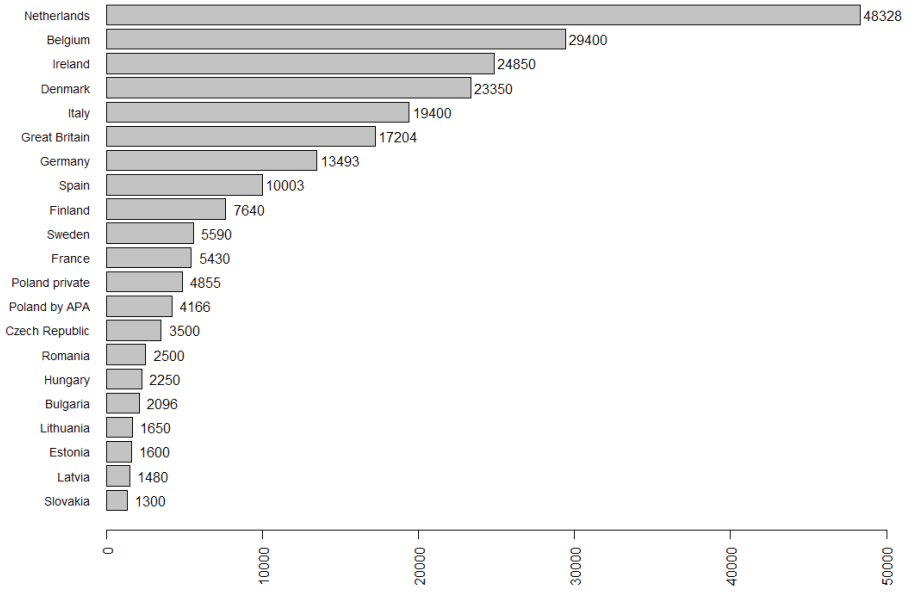
Fig. 6. **The average rate of changes in the period from 2005 to 2011**



Source: author's calculations based on the EUROSTAT

Fig. 7. **The average price of agricultural land in the selected European countries in 2011 (EUR/ha)**

demand for land in 2016. This year the Polish market is going to be opened to foreigners. Moreover, it is expected to increase the level of direct payments (this follows from the assumptions of the EU Common Agricultural Policy) in the years 2014 – 2020. It seems that in the face of uncertainty, the purchase of agricultural land is a good investment. Problems that shall be overcome by the investor include restrictions introduced by the Polish government. It is necessary to be a farmer and to cultivate the land in order to use the subsidies. The

second problem is the need for large capital investment. According to economists, one needs to have financial resources at least PLN 200,000. It should be noted that the purchase of land is treated as a kind of long-term investment (3 - 5 years). The solution to this problem is the placement of capital in the investment fund of land. The investment fund earns from the increase in value of land direct payments and the sale of agricultural crops. The projected rate of return on the fund is 10-16% per annum after taking into account the management fees. Another way is to give money to companies that buy agricultural property situated in the prime locations. Then, the purchased agricultural land is converted into building lots, the value of which is higher than the agricultural parcel. These companies sell the purchased property to individuals or institutions. Profits are derived from the difference in the prices of agricultural land and buildings. The difference between the price of land in Poland and other EU countries is large. In particular, these imbalances can be seen when comparing the level of land prices in the provinces. Figure 5 shows the land prices in the selected European countries. During the study period, one can see that the prices in different European countries were similar with the exception of Ireland, where land prices have decreased significantly.

Figure 6 presents the average rate of change in the period from 2005 to 2011. One can see that the biggest change was observed in Poland and the countries of the former Eastern Bloc countries.

The land market in the old EU countries reached a stability that cannot be said for other countries like Poland and the Czech Republic, Hungary, Romania, Lithuania, and Estonia. It seems that the land market in Poland may continue to grow, i.e. prices of agricultural land will increase in Poland. In addition, one will notice a difference in the prices of land in the Western provinces of Poland and the Eastern Europe. After opening the land market to foreigners in the Western provinces, land prices may increase due to the interest of investors from Germany and the Netherlands, where land prices are much higher.

Figure 7 shows the average prices in the selected EU countries in EUR per hectare. For Poland, the average prices are given for the private market (Poland private) and the State Treasury (Poland by the APA). The highest price of agricultural land is still in the Netherlands. The price of land is below 2000 EUR/ha in Slovakia, Lithuania, Latvia, and Estonia.

Conclusions

The agricultural land market in Poland has developed since Poland's accession to the EU. Difficult economic situation has an impact on the land market development. Investors are looking for capital investment bearing the lowest risk. Agricultural land in Poland is one of the cheapest in Europe (USD 5,685 per hectare). In Romania, the price is USD 5,030 per hectare. The most expensive country regarding the price of land is the Netherlands, where a hectare of land costs USD 65,449. Land prices are attractive for farmers in Germany or the Netherlands but there are land market restrictions in Poland associated with fragmented supply from small farms. It results is in difficulties for farmers to buy more than a few acres. The exception is the sales of land of the former state farms managed by the APA. Unfortunately, the supply of land is only in few provinces so it is impossible to expand households in all the country. Rising land prices can slow down the process of expansion of farms in Poland. The increase in land prices in Poland, however, is normal owing to the factors like the EU accession, the global economic crisis etc. It should be noted that the land prices have not risen as much as in other European countries. The prices of agricultural land in Poland have increased by about 352% (poor land) in the years 2004-2010 compared with the world average (400%). However, in Romania, the price of land has increased by 1817% and in Hungary up to 800% in the same period. Looking at the experience of other countries, one should consider a further increase in land prices. During the crisis, financial advisers recommend investing in gold. Can the investment in land be treated similarly? Agricultural land market in Poland is of a great interest to investors despite some problems related with the lack of liquidity of land. The author expects that land market opening to foreigners should stabilise the agricultural land market in the short term.

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CULTURE HERITAGE AS IMPORTANT PRODUCT OF RURAL TOURISM

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Abstract. Processes of reduction of the dominating share of agriculture industry in the employment structure, having occurred in the Western Europe as far as in the 60s of the previous century, have taken place in the last decades in the rural areas of Latvia as well. The land owners, who are not able to survive on agriculture production, have involved in multifunctional economic activities, such as tourism, craft, construction, various technical, and social services thus maintaining rural communities and their lifestyle. The research is devoted to the inclusion of the culture heritage in the rural tourism product in order to promote its successful development as diversification of rural economy.
Keywords: diversification of rural economy, rural tourism, culture heritage as tourism product.
JEL code: M31, L83

Introduction

At the end of the 20th century and at the beginning of the 21st century, the rural area as a sub-system of society and its development trends have become an issue of various discussions. Since the adoption of Cork declaration, declaring sustainable rural development as one of the basic development principles of the European Union (Cork ..., 1996), the issues of rural development are in the focus of political and economic institutions. The EU Rural Development policy 2007-2013 is focused on improving the competitiveness of the agriculture and forestry sector, the environment, the quality of life in rural areas and encouraging diversification of rural economy (Rural development..., 2009). The Parliament of the European Union has appealed to continue this policy in the second decade of the 21st century promoting the rural area as a place for diverse and inclusive development of economic and living space to maintain rural communities (European Parliament resolution, 2010). Similarly, the 4th European Congress of Rural Tourism in October of 2012 highlighted the role of rural tourism in the development of rural space, maintenance of rural community, and culture heritage (Innovative Tourism..., 2012).

As regards Latvia, the Agrarian Reform of the beginning of the 90s of the previous century resulted in a large number of small-sized farms, which continue to exist; besides agriculture production is carried out by less than a half of them. The Agricultural Census of 2010 gave evidence that 76.5% of privately-owned farm land did not exceed 30 ha, and 56.5% out of farms did not carry out agriculture production. Thus, only 16.5% of farm residents worked full-time, but 83.5% worked part-time (CSB ..., 2010), therefore a number of people with insufficient work load were able to involve in additional activities. The above described situation enhances the necessity of promoting multifunctional farming and studying the factors that could foster the choice of multifunctional farming. Similarly to the trends of finding income outside traditional farming in the European Union, tourism has become one of the typical forms of farming diversification in Latvian rural areas.

The result of economic activities in farms as in any business activity depends on the external conditions, a farmer's personality, and his/her competence. The relevant knowledge and skills could become a precondition of success in farm diversification, since it is not enough with the knowledge in agriculture production; in addition, the knowledge is required in the chosen form of additional activities of farm diversification. If it is tourism, the knowledge of tourism business is of importance. Latvia has a wide range of tourism resources: the diversity of landscape and culture and historical heritage, areas of rich biological and geophysical systems, which have mainly developed as untouched by civilization. The business success is largely determined by the skill of offering this product to consumers. **The aim of the study:** to compare the historical district farmers' willingness to use cultural heritage as a tourism product and the most appropriate version of the cultural heritage.

The method of research. General methods of research and sociological methods were used: comparative analysis and synthesis.

The study **is based on the documents** of the European Union and the Republic of Latvia, **the data** of Central Statistical Bureau of Latvia, the survey's results of the participants/farmers (N=269) of regional conferences of the Ministry of Agriculture of the Republic of Latvia.

Methodology of the research. The present study is based on the theories of competition, risk management, and networking as well as the study of the perception of culture heritage as a tourism product.

Businesses exist in competitive environment, and competitive advantages of entrepreneurs determine their opportunities in the market. Competition is one of the factors that promotes the launch of new products and services, development and improvement of the existing ones, improvement the quality, safety and design of products, competition in production, sales of one type of products or their substitutes or competition in providing services. It is a battle for a customer (consumer), for the dominating situation in the market or its segment (Porter M., Krugman P., Libermanis G.).

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Table 1

Evaluation of tourism as a form of farming diversification (% of the respondents)

Territorial location of the respondents	Tourism as one of the forms of farming diversification			
	Positive, I am ready	Positive, I don't want myself	No opinion	No answer
Farmers from Kurzeme	7 – 28.0	12 – 48.0	5 – 20.0	1 – 4.0
Farmers from Vidzeme	12 – 30.0	10 – 25.0	17 – 42.5	1 – 2.5
Farmers from Zemgale	25 – 29.1	22 – 25.6	38 – 44.2	1 – 1.2
Farmers from Latgale	38 – 31.4	37 – 30.6	45 – 37.2	1 – 0.8
Total	82 – 30.1	81 – 29.8	105- 38.6	4 – 1.5

Source: created by the authors based on the survey

The World Economic Forum identified 12 pillars of competitiveness that mutually interact and influence global competitiveness of an individual, a company, an industry, and an economy. (The Global..., 2010).

The diversification becomes more common in rural areas; rural tourism in addition to agriculture production, is gaining popularity. (Zobena A. etc., 2005; Sustainable Development of ..., 2005; CSB 2010. gada lauksaimniecibas skaitisanas…, 2010; Liscova A., 2011; Latvijas Turisma attistibas…, 2008). The growth of participants in a respective market segment influences the significance of competitiveness. M. Porter states that, besides the analysis of conditions of competitiveness in entrepreneurship, competitive environment in the respective industry should be studied (Kalve I., 2005).

Competitiveness of businesses is associated with risk situations. Risks are divided into external and risks manufactured by actors themselves (Giddens A., 1999). The risks caused by activities of the actors are closely connected with the choice of variants, but the choice of a variant is in the hands of an individual (Luhmann N., 1993). In addition, the choice of the variant depends not only on the general knowledge of actors, but also on the professional knowledge and the understanding of improvement of knowledge for successful business activities (Risk and ..., 2007).

Economic processes become more and more mutually dependent, social networks (Ferragina E., 2012) and electronic networks (Castells M., 2006) are increasingly involved in the business activities. The networks are applied in the design, improvement of the tourism product, and they are used to inform the target audience about the product (Latvijas Turisma..., 2008).

Culture tourism is one of the forms of tourism concerned with culture activities and artefacts. However, only a part of culture activities could be referred to as culture heritage. The draft of the Law on National Culture Heritage of Latvia states that the culture heritage refers to "the entity of knowledge, skills, values, models of behaviour, and practice having been created by an individual, group, community in interaction with environment, history and nature and then inherited from generation to generation." (Tradicionalas kulturas..., 2011) Rural tourism, especially agro-tourism, is a branch with the help of which it is possible to retain various aspects of ancient legacy, if the new functional meaning is possible to create in the new context (Vike-Freiberga V., 2010). The 4th European Congress of Rural Tourism held in October 2012, Bulgaria, highlighted the same opinion about tourism as the rural population and cultural heritage preservation mode (Innovative Tourism ..., 2012).

Research results and discussion

1. Tourism in rural areas as variant of farming diversification

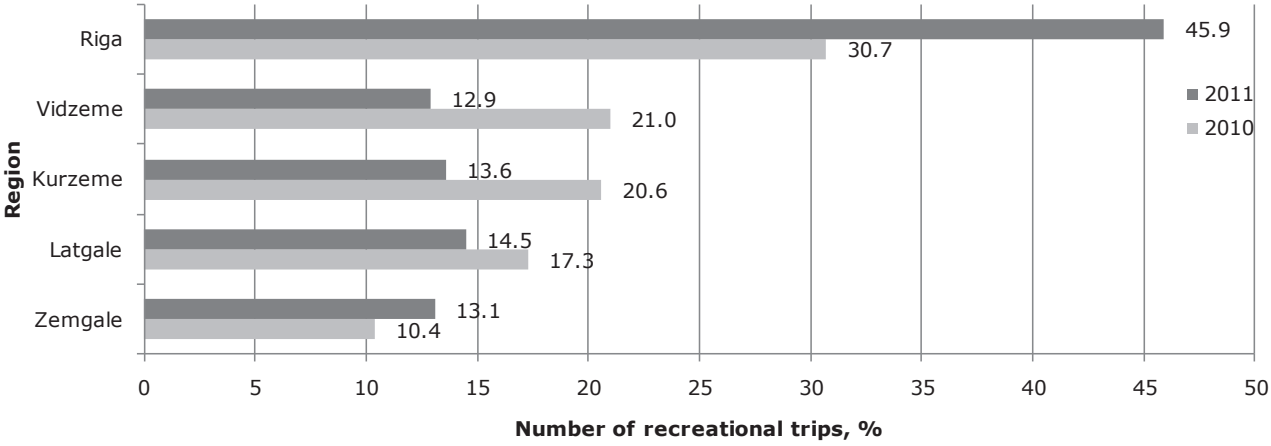
Tourism in rural areas is a type of tourism the aim of which is to offer tourists an opportunity to relax or to use tourist accommodation in rural areas on the basis of local social, culture, and nature resources. Two different terms are used: *rural tourism* and *farm tourism* or *agro-tourism*. (European Parliament resolution (2010/2206(INI)); Helloway J.Ch., 2006). As regards *rural tourism*, it is defined as a type of business for the rural population not involved in agriculture sector*;* but *agro-tourism* is defined as an additional economic activity of farms involved in agriculture production.

In 2010, the survey was carried out among the farm managers of Zemgale Planning Region, and the results showed that 2.5% of the respondents performed tourism activities as a part of their farm's business activities (Liscova A. etc., 2011; Liscova A., 2011).

To proceed with the research and to find out the opinions all over the country, the survey was carried out among participants of the conferences organized by the Ministry of Agriculture in the autumn of 2012 regarding Latvian farmers' opinion on rural tourism. In addition, the opinions of the representatives from all four regions Zemgale, Kurzeme, Vidzeme, and Latgale of Latvia regarding tourism as one of the forms of farming diversification, were compared in scope of the study. The results showed that 59.9% of all respondents gave a positive evaluation to the development of tourism. On the other hand, almost two fifths of the respondents did not have any opinion at all.

The analysis of the opinions concerning the geographical location led to the following conclusions. The representatives of Kurzeme region were more positive towards tourism as farming diversification than the representatives of other regions; those from Kurzeme region, who did not have an opinion, accounted only for one fifth.

As regards general evaluation and willingness to get involved in tourism personally, it is interesting to note



Source: created by the authors based on CSB data

Fig.1. **Trends of inland travelling in Latvia**

Table 2

The evaluation of culture heritage as tourism product (% of the respondents)

Territorial location of the respondents	Culture heritage as tourism product				
	Very positive	Positive, but insufficient knowledge	Not ready	No opinion	No answer
Farmers from Kurzeme	9 – 36.0	5 – 20.0	10 – 40.0	1 – 4.0	-
Farmers from Vidzeme	13 – 32.5	4 – 10.0	6 – 15.0	16 – 40.0	1 – 2.5
Farmers from Zemgale	22 – 25.6	15 – 17.4	16 – 18.6	32 – 37.2	1 – 1.2
Farmers from Latgale	30 – 24.8	23 – 19.0	13 – 10.7	54 – 44.6	1 – 0.8
Total	74 – 27.2	47 – 17.3	45 – 16.5	103 – 37.9	3 – 1.1

Source: created by the authors based on the survey

that Kurzeme and Latgale farmers expressed a positive opinion but did not plan to get involved themselves in the rural tourism, i.e. they showed less than average interest in it.

The expressed opinions could be connected with recent (2010 – 2011) inland travelling trends. Even though in 2011 the number of holiday travellers around Latvia has increased by 1.4%, the destinations have changed giving priority to nearby places. That is why there is an increase in Riga and Zemgale region, but there is a decrease in Vidzeme, Kurzeme, and Latgale region. A more detailed analysis will be possible after the publication of inland travelling data of 2012 that could show the development of the process in the time period of three years, taking into account that the survey took place at the end of 2012.

The change of inland travellers' destinations could influence the interest of getting involved in tourism as a form of farming diversification, hoping for greater numbers of guests and higher income.

2. Culture heritage as agro-tourism product

The respondents' attitude towards culture heritage as a part of the tourism product was rather positive. Thereby, 44.5% of the respondents gave a very positive or positive evaluation to the inclusion of culture heritage in the tourism product. However, a positive attitude towards culture heritage as the tourism product does not mean readiness of starting this form of tourism activity, since every sixth respondent having a positive attitude towards culture heritage as the tourism product stated that he/she was not ready for such a challenge and every sixth respondent – that there was not sufficient knowledge.

As regards the ideas for the product that could attract tourists, the respondents suggested food (26.8%), handiwork (24.4%), craft (24.4%), traditions (24.4%), historic places, places of attraction and landscapes (11.0%) thus offering a wide range of options.

3. From opinion to action

A positive attitude towards tourism as an economic activity does not signify that all such opinion holders are involved in it or are ready to be involved in tourism business. According to the results, 30.1% of respondents dealt with tourism or were ready to do it. The authors studied the profile of respondents of the above mentioned group in order to outline further steps in evaluation and promotion of rural entrepreneurship.

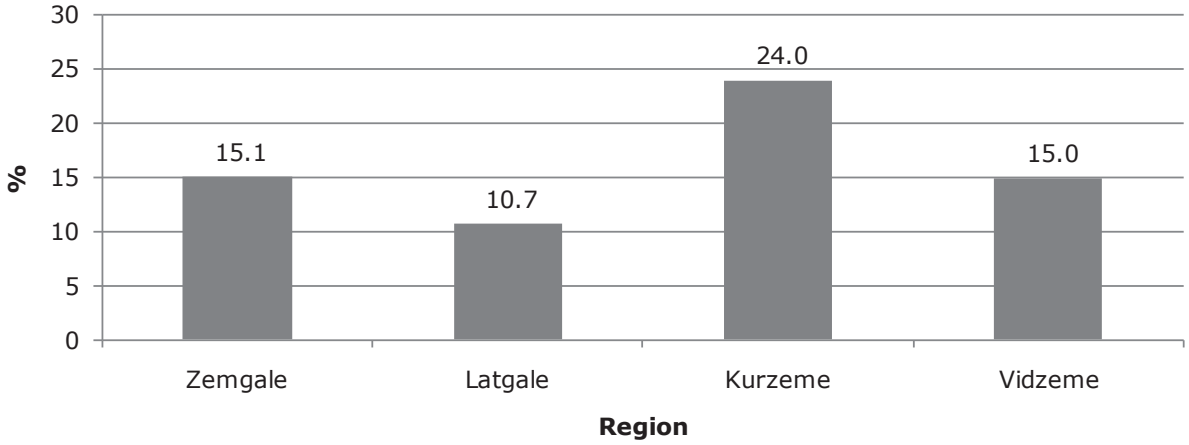
However, the results show that the group ready to start this business activity was not homogeneous:

Table 3

The opinions accepting tourism as farming diversification and inclusion of culture heritage in the tourism product (% of respondents in the respective group)

	Total	Incl. territorial location			
		Kurzeme	Vidzeme	Zemgale	Latgale
Very positive	38 – 46.3	6 – 85.7	6 – 50.0	13 – 52.0	13 – 34.2
Positive, but insufficient knowledge	13 – 15.9	0 – 0.0	1 – 8.3	3 – 12.0	9 – 23.7
Not ready	4 – 4.9	1 – 14.3	1 – 8.3	2 – 8.0	0 – 0.0
No opinion	27 – 32.9	0 – 0.0	4 – 33.3	7 – 28.0	16 – 42.1
Total	82 – 100.0	7 – 100.0	12 – 100.0	25 – 100.0	38 - 100.0

Source: created by the authors on the basis of the survey



Source: created by the authors based on the survey

Fig. 2. **The share of respondents with readiness to start business in tourism and to involve culture heritage in the tourism product**

46.3% of respondents had a positive opinion, 15.9% pointed to the lack of knowledge, but 4.9% were not ready to get involved in this type of business even though they were interested in using culture heritage as the tourism product. Consequently, at least 20.8% of the group's respondents were potentially ready to start tourism as a form of diversification with culture heritage as the tourism product after the improvement of their knowledge or strengthening confidence thus increasing competition in this sphere of economic activity.

4. Main directions of action

In the survey, 14.0% of all respondents, participants of the conferences organized by the Ministry of Agriculture expressed the opinion that they were involved or they were ready to get involved in tourism as a form of farming diversification and the use of culture heritage as the tourism product. However, the readiness of respondents varied significantly regarding the territorial location of respondents.

The respondents from Kurzeme showed the highest rate of willingness to start tourism business, but the respondents from Latgale were the most unwilling. The opinion of the respondents from Zemgale supported the results expressed in 2010, however, with a slight increase that could be explained by gradual involvement of people in the tourism business during two years.

Two restrictions for starting tourism business were mentioned by the respondents with positive evaluation: first, the lack of knowledge; second, the level of readiness to start a new business form. Thereby, 4.8% pointed out the lack of knowledge, and 1.5% expressed the view that they were not ready for such a step. The data in the group selected by the authors were noticeably higher.

The respondents required integrated knowledge (41.5%), the knowledge of specific questions (20.7%). As regards the territorial location, the willingness to improve the knowledge was shown by the respondents from Kurzeme (85.7%), they were followed by the respondents from Vidzeme (66.7%), Zemgale (64.0%), and Latgale (55.2%). The respondents' awareness of the necessity of knowledge was very significant. In comparison, the results of the survey of 2010 among farm managers from Zemgale Planning Region involved in rural tourism working with profit, showed that 42.1% of respondents noted the lack of knowledge and skills creating obstacles for successful business activities (Kruzmetra M. etc., 2012), and thus the motivation to improve knowledge was enhanced.

Table 4

Restrictions for starting business activities (% of respondents in the respective group)

Respondents	I evaluate the use of culture heritage very positively	I evaluate positively, but I do not have sufficient knowledge	I am not ready
Total number of respondents (N=272)	14.0	4.8	1.5
Selected group of respondents (N=82)	46.3	15.9	4.9

Source: created by the authors based on the survey

It is obvious that the expansion of business diversification is closely connected with sufficient amount of necessary knowledge, in this case, in tourism business, in which culture heritage is included in the tourism product, therefore the knowledge should include at least three viewpoints: culture heritage as the tourism product, competitive environment as a result of boom of inclusion of culture heritage in the tourism product, and specific management techniques caused by diversification of business in the sphere of tourism.

Conclusions

The first part of the conclusions touches upon methodology. The official documents of the European Union and a range of European countries suggest two types of tourism in rural areas: farm or agro-tourism that is implemented in addition to agriculture production and rural tourism that is carried out by rural residents not involved in agriculture production. The first type is defined as farming diversification, the second type is defined as economic diversification in rural areas. This division has not been observed yet in the rural areas of Latvia.

The second part of conclusions refers to the analysis of the results obtained in the survey and characterizes the perception of agro-tourism or farm tourism and inclusion of culture heritage in the tourism product. It would not be correct to consider that the obtained data are true for the whole community of Latvian farmers; however, the obtained insight into the problem permits to make several conclusions.

1. The interest about tourism as a form of diversification is sufficiently high in all the four regions of Latvia. The survey's results highlighted the resources (not enough knowledge, I am not ready) for the potential increase of farming diversification in all the Latvian regions. However, from the economic point of view, it is important to be aware of the amount of potential participants in this diversification type, since the number of tourists is and will be restricted.
2. The interest in the improvement of the tourism product, including culture heritage, is sufficiently high. However, the lack of knowledge mentioned by respondents, especially by the selected group, suggests that a clarification of the term *culture heritage* is necessary concerning what tangible and intangible culture values should be included in the tourism product and how it should be offered to users of a product or service.
3. The respondents' opinions regarding tourism as a form of diversification with culture heritage included in the tourism product, are influenced by territorial differences in the number of interested individuals, the amount of knowledge, and readiness to improve it. Institutions, promoting business diversification, should disseminate information to farmers of Latgale, the region with the lowest number of positive answers in this question of the survey.
4. The analysis of survey's results of the participants of the conferences of the Ministry of Agriculture identifies the future directions of the research: the in-depth analysis of culture heritage from the point of view of the content and a territorial place; the innovation of the tourism product with the economic return of culture heritage; the characteristics of farmers and farms involved in this form of diversification, the level of cooperation of farms involved in the diversification to identify a niche. The significance of each of the above mentioned aspects depends on the number of participants in the niche.

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ROLE OF INNOVATIVE PROCESSES IN ENSURING THE COMPETITIVENESS OF COMPANIES

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Abstract. Nowadays, people are having and holding ideas, which become more in demand than working and serving technique (Howkins J., 2007). It can be argued that creativity (as a style of thinking) is more important than hard work. Currently, the USA, Japan, and South Korea are at the stage of creative development, while the EU and China tend to move to this stage.
The aim of this study is to determine the level of competitiveness of Lithuania on the European Union market in the context of relationship between creativity and innovation. The article emphasises the importance of creative thinking in the management of organisations as a pledge of competitive advantage on the market. It also examines the level of innovative activity of Lithuanian organisations on the background of the European Union.
Considering the costs of R&D in Lithuania, it is observed that mostly they are invested in applied research, while overall investment is fairly evenly distributed. If one evaluates the cost of R&D by sectors, the research sector is clearly superior to other sectors. Lithuanian organisations seeking to become more creative, as a consequence, need to develop more competitive organisational performances, to reduce operating costs, to eliminate antagonistic contradictions, to bring the coalition aims together, to organise social partnership, and to develop external economic relations.
Key words: innovative activity, creative management, creative society.
JEL code: O32

Introduction

At present, enterprises are forced to react to the processes of globalisation and use their opportunities. Now, intellectual property plays a key role and it is increased by the usage of creative abilities.

Today, creativity, as a style of thinking, has become more **topical** than hard work. People who have ideas are becoming more popular than the workers (Howkins J., 2007). Currently, the USA, Japan, and South Korea are at the stage of creative development, while the EU and China tend to move to this stage. Stressing the need for creativity in business and management, scientists have begun to explore new forms of social transformation - *creative society* and its characteristic *creative industries*, *creative economy*, and *creative management*.

The aim of this study is to determine the level of competitiveness of Lithuania on the European Union market in the context of relationship between creativity and innovation.

Tasks of the study: to determine the role of creative thinking in the organisation competitiveness analysis of the scientific literature (Florida R. L., 2002, 2005; Howkins J., 2007; Gubanova S. J., 2008; Zhuravljov V.A., 2010; Maljukova J. M., 2010; Spivak V.A., 2010). The authors used data from the Lithuanian Statistics for the analysis of the competitiveness level of Lithuanian organisations in the context of relationship between creativity and innovation.

Research results and discussion

1. The role of creative thinking in the organisation competitiveness

Issues relating with the competitiveness of a company are the key to its leadership at every stage of business development. Especially these issues are urgent in the times of crisis. Businesses struggling for leadership mostly use the same methods, most of which are based on the use of material benefits. However, on modern conditions one often needs to use a different approach to change the position of the company on the market based on the use of non-material benefits. Therefore, these advantages allow the company to differ from the competitors. The objective necessity of search for unconventional solutions has one goal – to consolidate its position on the market and help the company in most efficient way. It is clear that creativity, innovation, and unconventional look at familiar things often ensure companies competitive advantages.

According to J. M. Maljukova (2010), only creativity embodied in innovation, allows going from one stage of development to another, moving higher and making it a new qualitative state, and, accordingly, its forward movement. As noted by V. A. Spivak (2010), these creatively minded organisations coming out with new materials, products, services, and technologies as well as their know-how and competent organisation promote their ability to receive exclusive pricing and controlling over the spread and development of innovations. The experience of successful

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Table 1

R&D costs in Lithuania (by sectors) in 2009

	Total	Business sector	Government sector	Research sector
Million LTL	765	181.6	180.6	402.8
Proportion	100	23.7	23.6	52.7
R&D costs in the share of GDP, %	0.84	0.20	0.20	0.24

Source: Lietuvos ..., 2011

Table 2

The number of staff involved in the R&D in 2009 compared with the total labour force

EU-27	Proportion	EU-27	Proportion
1. Luxembourg	55.3	15. Austria	39.0
2. Denmark	51.8	16. Spain	39.0
3. Netherlands	50.9	17. Latvia	38.9
4. Finland	50.7	18. Czech Republic	37.9
5. Sweden	49.6	19. Poland	34.9
6. Belgium	48.2	20. Italy	34.3
7. Estonia	45.6	21. Hungary	33.2
8. Germany	44.8	22. Malta	32.3
9. Ireland	44.7	23. Bulgaria	32.2
10. United Kingdom	44.4	24. Slovakia	32.0
11. France	43.2	25. Greece	31.8
12. Cyprus	43.0	26. Romania	24.1
13. Lithuania	41.7	27. Portugal	23.5
14. Slovenia	40.6		

Source: Lietuvos ..., 2011

companies shows that creative solutions and innovations not only provides a powerful competitive advantages but also completely changing markets (Maljukova J. M., 2010).

Creative thinking organisation is the ability to custom-associative perception of the situation on the market based on the system knowledge. As noted by J. M. Maljukova (2010), the essential characteristics of creativity are originality, novelty, a high degree of attracting the attention of consumers and recalling the brand, and the content of communication.

It is useful to consider G. Morgan's concept of organisation for the formation of a creative proposal for the organisation's image. The organisation as brain and the organisation as culture are two closest images out of eight images (metaphors) of the organisation identified by G. Morgan for the concept of a creative, innovative organisation (Spivak V. A., 2010).

The image of the *organisation as brain* (as neural network) is related with such features: the organisation is always busy processing information, training (which is close to the idea of P. Senge's *Learning organisation*), knowledge management, and self-organisation. A self-organising and constantly evolving system quickly and creatively uses the knowledge and information to develop new ways for gaining success. Managers and other employees are open to changes; they manage knowledge and enhanced potential of creativity, and actively manage the changes.

Organisation as culture deals with the creation of social reality and perceives itself as a cultural phenomenon in which an important role is played by the values, norms of behaviour, expectations, traditions, and customs. In addition to the organisational culture, the object of attention and factor of existence encompass the subculture units, effective communication (formal and informal), availability of information to all members of the organisation, general understanding of the organisation effectiveness, and the need to maintain it.

Creative management aims to develop creative potential of an individual by creating conditions for developing synergies at the level of teams working in the organisation and the level of interaction between the two groups, i.e. it is based on the integration of human resources of the organisation.

The consistency of staff, team, and organisational design is required to form a creative organisation (Gubanova S. J., 2008). As noted above, only a creative

approach and the work embodied in innovation provide organisations with new qualitative state and allow becoming them more competitive. Therefore, the level of innovation activity is very important.

2. The competitiveness of Lithuanian organisations in the context of the relationship between creativity and innovations

According to the Lithuanian Department of Statistics (Lietuvos statistikos departamentas, 2011), in 2009 the expenditure on research and technological development (R&D) in Lithuania amounted to 2.01 % of the total GDP of the European Union (EU). In the EU context, the figure was the highest in Finland (3.96%) and Sweden (3.62%), and the lowest – in Cyprus and Latvia (0.46%). The costs for R&D in Lithuania suggest that they are most invested in applied research (36.4% of the total expenditure on R&D) and the least – in the development of technology (28.6% of the total expenditure on R&D), while the overall investment is fairly evenly distributed. If one evaluates the costs for R&D by sector, the research sector is clearly superior – 52.7% of the total expenditure on R&D (Table 1).

R. L. Florida (2002) emphasises that a new society class – "creative class" has been formed in the 21st century. Analysing the generation of economic benefits by human potential of creativity, R. L. Florida (2005) proposes the concept of 3Ts: technology, talent, and tolerance. These are the key elements contributing to the formation of a creative society. They emphasise the need to invest in human resources, disclosure and use of staff talents, and open society, where diversity is welcomed and creativity is easily implemented in the cultural sense.

For Lithuania, the number of staff involved in the R&D is 41.7% compared with the total labour force in the country (Lietuvos statistikos departamentas, 2011). According to this indicator, Lithuania takes the 13th place among the EU-27 countries (Table 2). The best index is shown by Luxembourg (55.3%), the worst – by Portugal (23.5%), while the EU-27 produces 40.1%. It can be argued that almost half of the population of Lithuania, if not creative class, then, at least, has the characteristics of this new class of the 21st century.

If one treats innovation as a result of creativity, the need to select an object of management is an *innovative organisation susceptibility* to those innovations that are the result of the intellectual capital of the organisation or innovation that exist in the area of innovation. A basic element of the mechanism of innovation susceptibility in organisations shall be certain imperatives of governance.

It makes the following *imperatives for the innovation susceptibility of the development management* (Zhuravljov V.A., 2010): 1) the development of organisational characteristics; 2) the reduction of transaction costs; 3) the elimination of antagonistic contradictions; 4) the approach of coalition goals; 5) the organisation of social partnership; and 6) the development of external economic relations. These imperatives are recommendations for organisations that want to become more creative, and thus, more competitive.

Conclusions

1. Creativity, innovation, unconventional look at familiar things often ensure competitive advantages for companies. Creatively minded organisations coming out with new products, services, and technologies receive exclusive features. Creative thinking organisation is the ability to custom-associative perception of the situation on the market based on the system knowledge. Two out of eight images of organisation proposed by G. Morgan - the organisation as and the organisation as culture are considered as useful for the formation of an ideal creative organisation. The consistency of staff, team, and organisational design are required to generate creative organisation needs.
2. The costs for R&D in Lithuania suggest that mostly they are invested in applied research; yet, the overall investment is fairly evenly distributed. If one evaluates the costs of R&D by sectors, the research sector is clearly superior to other sectors. Almost half of the population in Lithuania, if not creative class, then, at least, has the characteristics of this new class of the 21st century, since half of the labour force is involved in R&D compared with the total labour force in the country. Organisations seeking to become more creative, as a consequence, need to develop more competitive organisational performances, to reduce operating costs, to eliminate antagonistic contradictions, to bring the coalition aims together, to organise social partnership, and to develop external economic relations.

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COORDINATION OF THE OBJECTIVES AND OPTIMAL SELECTION OF INNOVATIVE BIOFUEL MARKET PARTICIPANTS

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Abstract. The main fuel in Lithuania is natural gas, and biofuels account for only 16%, while the EU Directive on the Promotion of Renewable Energy in Lithuania requires that Lithuania should increase this indicator to 23% by the year 2020. The aim of the research is to develop a model of compatibility of biofuel market after having analysed the trends of biofuel development and low usage of raw materials (timber harvesting and municipal waste, straw, green energy etc.) for energy production. The compatibility model of innovative biofuel market participants (raw material suppliers, manufacturers, and users) presented in this article will allow to coordinate their interests and to implement the best practices and business structures initiative.
Key words: biofuel, processing, compatibility, material.
JEL codes: Q160, Q230, L730.

Introduction

Renewable energy is already the third source of energy generation in the world (after coal and gas), and there are many possibilities to expand its production capacity, while increasing benefits for the environment and the economy.

Every year central heating becomes significantly more expensive. The usage of natural gas could be reduced by half – about 40% through using only local renewable energy resources of Lithuania. Burning of forest harvesting, municipal waste, willow and straw, grown in special energy plantations, one could get an additional 5.1 million MWh of eneregy, and the total consumption of the country's cities is 10 million MWh of thermal energy (Caplikas A., 2009). Currently, only about 17% of heat is generated by using biofuels in Lithuania. There are plans to produce 20% in 2010, 30% in 2015, and 50% in 2030 of district heat by using biomass in Lithuania. This means that it is planned to cover half of the heat demand for local fuels in Lithuania (Avizienis A., 2007).

It is necessary to install alternative heating production technologies in order to modernise the usage of domestic renewable energy resources and domestic waste. These problems can be efficiently solved using the innovations: scientific and technological achievements, best practices, and business structures initiative.

However, the competitiveness and development of enterprises is limited by insufficient relations of biofuel market participants; thus, it is necessary to look for closer and deeper cooperation between science and business, increasing the availability of local resource - biomass and all types of biofuel production and usage. Successful cooperation between the participants and installation of alternative energy (e.g. heat) production system is one of the most important prerequisites to guarantee the success of biofuels usage (Lietuvos energetikoje vietos ..., 2008).

The aim of the research is to develop the models of objectives coordination for innovative biofuel market participants (raw material suppliers, manufacturers, and users) and to present optimal selection models after having analysed the trends of biofuel development and low usage of raw materials (timber harvesting and municipal waste, straw, green energy etc.) for energy production.

Research methodology – a systematic analysis and synthesis of scientific literature and legal documents (AVEI naudojimo didinimas ..., 2003; Baltic Biomass Network, 2006; GreenFuel Technologies Corporation, 2007, International Energy Outlook, 2006; Kugelevicius J. A., Kuprys A., 2006; Kuro ir energijos ..., 2008, Saladis J., 2007; United States Department..., 2007; Vrubliauskas S., Pedisius N., 2005), and formalised expert method of priorities allocation and selection (Zilinskas J. V., 2010). The questionnaire survey was carried, using telephone conversations and direct meetings with the respondents. They were divided into three groups: representatives of raw materials suppliers (12 respondents), biofuel producing companies (8 respondents), and biofuel using boiler companies (9 respondents). Totally, questionnaires were sent to 29 recipients. The list of biofuel market players was made and the members for experts' commission were chosen during this research. The most important task for experts' commission members was to define partial evaluation indicators (criteria) and their significance as well as to perform expertise using non-transitive paired comparison system. *The methods used in the research include* the analysis of scientific literature and legal documents, logical analysis and synthesis, comparative analysis, structural and relational analysis, statistical data analysis and synthesis, formalising expert modified allocation of priorities and selection (MPAS), and graphical visualisation methods.

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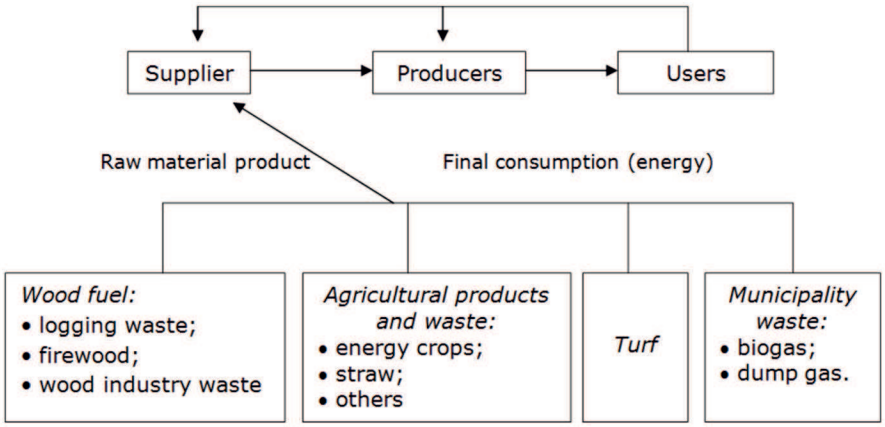
Table 1

Fuel expenses for heat production

Heat sources	Structure, %	
	Lithuania	Sweden
Natural gas	77.7	3.0
Biofuel	16.2	63.0
Another fuel	1.5	2.0
Oil	4.6	5.0
Coal	0	4.0
Heat pumps	0	11.0
Municipal waste energy	0	12.0
Total	100	100

Source: authors' construction



Source: Tyla, 2008

Fig. 1. **Objectives coordination model of biofuel market participants**

Research results and discussion

The production and usage of alternative renewable sources of energy in Lithuania is deficient. Approximately 3.3% of the electricity (small hydro) is received from renewable sources of energy. First steps are taken for teh use of solar energy, photo electricity, biofuels, biogas, heat pumps (geothermal heating) and wind energy. The experience of leading countries in this field shows that it is possible to alter substantially the situation (Table 1).

As can be seen from the data of Table 1, the main type of fuel in Lithuania (in contrast to Sweden) is natural gas, and biofuel accounts for only 16%. However, the EU Directive on the Promotion of Renewable Energy requires Lithuania to increase this parameter to 23% by the year 2020.

According to the survey results (Inovaciju pletra modernizuojant ..., 2007), it can be said that the majority of economic subjects in projects pay little or no attention to the production of alternative renewable energy sources or to their usage for the projects. Modern facilities require huge investment, so, in Lithuania, the priority is given to civilisation investments checked by time. It is believed that one of the most important prerequisites to guarantee the success of biofuels usage is a successful collaboration between the participants installing alternative energy (such as heat) production system. Heat generation model is analysed from three aspects: 1) biofuel raw material suppliers; 2) biofuel producers; and 3) biofuel users.

Raw materials suppliers, having sold their products, hope to get as much income as possible, *biofuel producers* hope to buy these raw materials cheaply and to sell produced biofuel for high price, and the goal of *biofuel users* is to pay as little as possible for the fuel and sell it more expensively to heat consumers. The performed research allowed making exact objectives coordination model of biofuel market participants (Figure 1).

Biofuel raw material suppliers. A large part of the district heat in Lithuania could be produced using local biomass fuel, as it is 25% cheaper than natural gas. There are six main types of biofuels.

Wood fuel - one of the most important biofuels, whose main resources include timber cutting waste and coppice; minor stands (primarily alder), and shrubs. Statistical data show that the Lithuanian forests annually produce more than 2 million m^3 of timber cutting waste, approximately 0.8 million m^3 of it could be used for biofuel production. So far, only one-tenth of this waste volume is being used. Specialists recognise that private forest owners in Lithuania (there are about

232 thousand of them) rarely use of the option to sell the logging waste and generate additional revenue.

Currently, more and more small businesses are established, the establishment of which is supported from the EU funds. The development objective of these companies is to organise wood chips production, using shrubs and low value trees, growing at roadsides of the forests and villages as raw material. The production is organised at temporary sites near the cleaned roads and block lines, removing the produced wood chips to the base warehouse and from the warehouse to the customer warehouses (sites). These companies are operating profitably and contribute to the objective of improving the quality of life for a significant number of rural population (3–4 employees at each such company).

Such solution of this problem is chosen, because during the past 4–6 years the number of boilers, using wood waste, is constantly increasing in the world and in Lithuania. The heat produced in these boilers helps flush out oil and gas products, and it will become more popular in thermal energy, which is foreseen in *"National Renewable Energy Resource Development Programme"*. It is also important that a company's activity has a full cycle: starting from preparation of low value wood as a raw material, finishing with the crushing and presenting to the users.

It is important that the raw material resources for the production are practically unlimited: shrubs growing at the roadsides are not cut; the roads are rather long and over 5–6 years shrubs grow back again. Logging waste is also used as raw material.

Energy crops. It is expected that the cultivation and usage of herbaceous plants and short rotation forestry for energy production will expand, as there is a lot of unused, abandoned land, which could be planted with energy crops plantations. The estimated preliminary herb-energy potential is about 722 GWh (2.6 PJ).

Agricultural residues. Straw can also be used for energy purposes. Its amount is determined by the area used for cereal crops, their yields, and applied technology. Straw in agriculture is used for animal bedding, feed, and building insulation. In addition, a sizeable proportion of straw is not collected due to weather conditions or other circumstances. Having eliminated these potential losses, straw energy potential could reach 500 thousand t/year (1.5 TWh).

Turf. Lithuania has 22 industrial (operated) and 45 derelict turf clusters with about 105 million tonnes of turf suitable for the production of fuel. This amounts to about 250 million MWh of useful thermal energy. It is possible to reach 500 thousand tonnes of turf fuel production potential using new turf fuel production technologies (Nacionalines biomases ir ..., 2006).

Municipal waste. Lithuania has more than 300 active landfills. It was found that only in Lapiu landfill (Kaunas), the extractable quantity of biogas could be 990 m^3/h, which is equivalent to 45 MW capacity.

Biofuel producers. Wood briquettes and pellets started to be produced in Lithuania from 1994 and 1999, respectively. There are 16 organisations working in this area at present. Briquette production capacity is about 30,000 tonnes/year and pellet production capacity is about 46000 tonnes/year. Unfortunately, about 85% of wood briquettes and almost 100% of wood pellets are exported abroad due to the high price, mainly to the Scandinavian countries, Germany, and the United Kingdom. Steadily rising energy prices and emerging local producers of the boilers for wood pellet fuel, allow expecting that these convenient for use types of fuels will be popular in Lithuania as well (Medzio atlieku kuro ..., 2008).

Recently, there are four companies producing sawdust pellets, and more than 10 companies producing briquettes. The part of local fuel resources in the general balance of the fuel is growing every year, yet, the input of the same types of fuel in energy system is different, and the development opportunities of its usage are also different. Recently, the consumption of peat and peat briquettes is reduced and the share of wood fuel on local fuel market has increased up to 85%. So extensive prospects of wood fuel production and usage development are determined by substantial material resources, low cost, simple and relatively inexpensive combustion technology, and low emissions of combustion products. This accelerates rapid growth of the consumption of wood in energy production system.

Biofuel users. Already few years ago, Lithuanian district heating manufacturers evaluated the advantages of renewable energy sources usage for heat production: about 200 boilers have been producing heat-using biofuel. However, in order to expand the use of biofuels and to produce "green" energy for heating in large cities, the coordination of biofuel market participants' actions becomes one of the main challenges.

Today, about 15% of the district heating is produced from biofuel; wood fuel is used for heating 12 regional centres, 60 MW capacity biofuel boiler has started its operation in Vilnius and it is considered to be the largest in the Central and Eastern Europe. A large part of the boilers use sawmill waste and wood chips, which make up almost 90% of the total amount of wood used, and only about 8% of the boilers use cutting waste as fuel (Janulis P. P., 2007).

Until this year, the overall capacity of boilers using wood fuel in Lithuania was about 300 MW (calculating only those boilers, which power is more than 0.5 MW). These boilers annually operate 5000 hours on average and in one year period they produce about 1,500 thousand MWh of energy. Taking into consideration that one m^3 of wood chips is necessary to produce 1.8 MWh of energy; the boilers should consume 833 thousand m^3 of wood chips. Based on the Swedish experience, they need about 714 thousand m^3 of wood (Medienos pramones jmoniu ..., 2004).

Lately, Lithuania faces a number of non-traditional challenges associated with the innovation process. Implementation and development of innovations enable the modernisation of production and service delivery structures, the development of products and technologies, enhancement of their quality and international competitiveness. The assessment of innovative alternatives, selection and implementation management is an important way to guarantee innovations effectiveness (efficiency). The assessment of alternative projects selection allows determining the effectiveness of innovative investment options according to certain indicators (criteria) that shall be based on both the investment project implementing entity and

state interests. On the conditions of market economy, innovation investment activity is closely related with the design and implementation of innovative projects in order to achieve the set objectives. This is how companies can successfully develop their investment activities in modern competition.

Complex evaluation methodology, guaranteeing the assessment of state and biofuel market participants' goals, is necessary for rational coordination of innovative biofuel market participants' goals and for setting optimal expedience of the selection. One of the most important assumptions of company's activity development warranties is the coordination of its objectives and optimal evaluation as an integral part of the management function, as one can only manage what one can evaluate. The results do not indicate the true position of a future project only evaluating the financial criteria; so, seeking for rational goals coordination of innovative biofuel participants and for optimal selection and management, it is necessary to evaluate other factors – long-term success, risks, and competitiveness – as well.

Innovative alternatives evaluation and selection methods are summarised in various methodologies, the analysis of which shows that they have several drawbacks: lack of consistent evaluation of the effectiveness according to different indicators (criteria) blocks and hierarchy levels, in other words, there is no alternative project evaluation algorithm, which could be used for a systematical and consistent evaluation and selection of the best option, since it is practically impossible without complex (total, integral) evaluation of indicator. It is necessary not only to select the best option (alternative) but also to place all the other options in ascending or descending order according to the priority level. The main reason for difficulties in defining complex evaluation is that the individual indicators (criteria) are of different origin, qualitatively different, and in many cases, they have different vague measures, so it is difficult to combine them into a single integral (total). The method of allocating and selecting the priorities (ASP) method (Bljumberg V.A., Gluschenko K.F., 1982) helps solve similar multi-criteria decision management tasks with the precision and degree of justification needed for rational management decisions.

It would be appropriate to use formalised expert method of priorities allocation and selection (MPAS) modified by one of the authors of this article (Zilinskas V. J., 2010) for the analysis, coordination, evaluation and final selection of innovative biofuel market participants objectives. This method permits evaluation of innovative alternatives according to individual partial indicators (criteria) and the meaning of their importance, and to receive a complex evaluation of selected alternatives, which enables to rank and to select the most optimal innovation (innovative solution) and to ensure its successful, long-term implementation, seeking for effective usage of tangible and intangible resources in different types of biofuel market companies. This MPAS method is appropriate to use when one needs to evaluate simultaneously the influence of quantitative and qualitative indicators (criteria). Integrated evaluation methodology and expert assessment procedure are more widely presented in a scientific article (see Zilinskas V. J., 2010; 2012). This MPAS method unlike the ASP method is based on more reasonable logical procedure for converting qualitative characteristics used for making pair alignment into quantitative estimations received in relative scale. Since the rational management decision making (in this case – the cooperation of foals of an innovative biofuel market participants and selection of optimal alternatives) is associated with one of the many variants of solution selection, the necessary complex evaluation condition in evaluation and selection process, when there is different origin and sizes of determinants (indicators), shall be the conversion of their values into relative sizes, which are normalised uniformly and into one size (expressed in a unit). Another prerequisite is the evaluation of each partial indicator of importance (significance). Then, after measuring the sub-indicators (criteria) in a scale of one measurement and evaluating their significance, it is possible to satisfy complex evaluation formation and to record a complex (total, integral) ratio as total evaluated amount of these indicators, showing that this indicator is the function of partial indicators.

$$P_i^{kompl.} = \sum_{i=1;j=1}^{m;n} P_{i(j)}^{S} \cdot Y_j ,$$

where

P_i^{kompl} - *i* alternative complex indicator (total priority);

$P_{i(j)}^{s}$ - *i* alternative according to *j* partial indicator relative evaluation (priority);

Yj - *j* partial indicator (criteria) meaning of importance.

The calculation of cross ratio (total priority) P_i^{kompl} and selection of priority having alternative (innovative variant) is performed according to each individual indicator, taking into consideration the importance (significance) of every evaluation indicator. Each alternative is evaluated separately, indicating the rating, and the assessment of a complex indicator (overall priority) is calculated for each of them. According to this indicator, the final ranking is made and priority innovative alternative is selected, showing that it is superior to the other, measured by selected indicators (criteria). The institution, evaluating innovative project or experts commission, chooses the one that has the highest cumulative assessment and presents the conclusion, stating the choice of methodology and evaluation. The method of network planning and management PERT (Programme Evaluation and Review Technique) (Griskevicius A., Silickas J., 1998), created in the USA, is suitable for rational and efficient implementation of selected innovative alternatives.

Conclusions

1. In Lithuania, biofuel constitutes only about 16% of all fuels used for heat production. it is expected to double energy production, using local renewable

energy resources in the next decade through combining science and business opportunities. District heat production using biofuels and waste should make 20% by 2015, 50% - by 2030, while biofuel should make 20% of energy consumption and fuel amount.

2. Biofuel use development opportunities are associated with the possibilities of biofuels raw materials suppliers, producers, and potential users; however, the influence of individual participants of this market on biofuel usage has not been established yet.
3. The proposed coordination model of innovative biofuel market participants (raw material suppliers, manufacturers, and consumers) will align their interests and implement best practices and initiative of business structures.
4. The rating of innovative alternative selection efficiency (effectiveness) is an urgent problem that is not examined enough currently. Financial analysis is not enough evaluating and selecting optimal alternatives, it is necessary to coordinate and evaluate these alternatives and their consequences for the development of national, regional, or enterprise economy.
5. Formalised expert method of priorities allocation and selection (MPAS), modified by the authors of this article, is proposed for coordination of the objectives and optimal selection of innovative biofuel market participants. It is possible to carry out objectively and justify the effectiveness of innovative bio-fuels using complex (total, integral) evaluation under different partial quantitative and qualitative indicators (criteria) and the meaning of their importance (significance) by applying this method. The coordination and optimal selection complex evaluation methodology of participants objectives of this innovative biofuel market is proposed because of its versatility, accuracy and the degree of justification, which is necessary for making rational management decisions. This can be a strong basis for granting the EU Structural Funds or the selection and ranking of innovative projects that contribute to better implementation of the state investment programme.

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STRATEGIC ORIENTATIONS FOR RURAL EMPLOYMENT DEVELOPMENT: THE CASE OF TELSIAI DISTRICT LABOUR MARKET

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Abstract. This article provides the results of analysis of indicators, reflecting the main aspects of economic development and rural employment in Telsiai district municipality (LAU1) in Telsiai county (NUTS3), which were chosen as pilot areas of Lithuania. Potentials for and constrains on rural economic diversification in the researched pilot area, which under the typology could be classified as "developing" and "significantly rural" areas were identified by means of semi-structured interviews. Vision of rural employment development and factors effecting changes in rural labour market taking into account the influence of the economic crisis of 2008 was prepared during the focus groups meetings. The SWOT and SOR analysis were provided based on the collected data and opinions of local labour market actors. Strategic orientations and recommendations for the solution of problems by saving the existing and creating new labour places for rural inhabitants were identified in focus groups meetings.
Key words: rural development, labour market, rural employment, strategic orientation.
JEL code: C14, C61, Q13.

Introduction

The aim of the research is to identify the strategic orientations for the development of rural employment. *The research tasks* are as follows*:* to analyse the pilot area on the labour market; to conclude whether any employment problems of a specific rural nature existed through the interview of local actors; and to identify the current employment patterns and opportunities for rural economy diversification in Telsiai district municipality. This research is based on two ideas: there are unused local resources, which can be used to ensure better and more jobs in rural areas; "top-down" and "bottom-up" constraints can be used to identify the employment growth potentials and to draw the recommendations for better targeting of future rural development measures.

The empirical research was carried out to identify employment needs and new sources of employment as well as constraints affecting the labour market; to evaluate the past and current employment development policies; and to make recommendations targeting on the new rural development measures for the pilot area.

The synthesis of bibliography and an overview of the employment situation in rural areas have provided a basis for defining the initial means of investigation (Jazepcikas; Raupeliene; Vitunskiene, 2009; Vitunskiene, Jazepcikas, Janusauskaite, 2007). A typology of rural areas was subsequently drawn up based on the analysis of existing typologies and in particular the one put forward by the OECD (Raupeliene, Jazepcikas, 2009).

This ***research object*** focuses on the Telsiai district labour market areas. The territory has been chosen because of the following reasons:

1) the boundaries of Telsiai labour market areas are coincident with the administrative territories of Telsiai municipality;
2) Telsiai district Local Action Group (LAG) has been implementing the Strategy for Improvement Quality of Life in Rural Areas;
3) the official periodical statistics presented the demographic and socio-economic decline in Telsiai district municipality.

An analysis of the area was carried out based on a thorough, joint diagnosis of the situation, mainly from an economic and social point of view and using the data from Lithuanian Official Statistics. To ensure the trend analysis, the stakeholders of Telsiai labour market were enabled to identify the issues at stake and give thought to the strategic orientations. The subject of the SWOT analysis was the rural labour market in the pilot area. The provisional SOR matrix results and the draft wording of the operational objectives were validated during the focus group meetings, attended by interviewees and other key local stakeholders.

Research results and discussion

1. Analysis of the labour market at Telsiai district municipality

Telsiai municipality is one of four LAU1 level areas in Telsiai county (NUTS3), where 40.9% of the population of Telsiai county lives in rural areas. Under the typology, the area of Telsiai municipality can be classified as "remote", "developing", and "significantly rural".

According to the 2011 Lithuanian census, the Telsiai county (NUTS3) had a total population of 151 352 (i.e. 5.1% of the total national population) and it covers an area of 4350 km^2 (12% of the total national territory). Telsiai region is defined by the OECD (2004) as "significantly rural", i.e. 44% of the total population live in rural communities (i.e. in LAU2 areas

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Table 1

Total (T) number of citizens living in Telsiai county (NUTS3) and in Telsiai district municipality (LAU1), and its share in rural areas (R) in 2011

NUTS3 region (county)		Population (total)	Area (km²)	LAU1 region (municipality)		Population (total)	Area (km²)
Telsiai county	T	151 352	4350	Telsiai district municipality	T	46 768	1439
	R	60 970	4289		R	19 968	1421
		40.9%	98.6%			42.3%	98.8%

Source: the Statistics of Lithuania, 2012

Table 2

Hired employees by type of economic activity in Telsiai county (NUTS3) and Telsiai district municipality (LAU1) in 2011

	Hired employees (main working place) by type of economic activity, % of total (NACE 1.1)								
	A,B	C,E	D	F	G,H	I	J,K	L,M,N	O,P,Q
Republic of Lithuania	3.6	3.3	22.2	6.1	17.1	7.7	6.1	29.6	4.3
Telsiai county	2.8	2.0	30.0	8.8	17.3	3.2	2.9	29.0	4.1
Telsiai district municipality	2.8	2.0	19.7	12.7	16.9	3.0	1.9	35.2	5.9

Note: according to the NACE 1.1: A,B - agriculture and fishing; C,E - energy and water; D - manufacturing; F - construction; G,H - distribution, hotels and restaurants; I - transport and communications; J,K - banking, finance and insurance; L,M,N - public administration, education and health; O,P,Q - other services

Source: annual research of workplace in business (employment estimates)

defined as rural). The population density of the county equalling 41.4 inhabitants per km² was below the OECD population density threshold of 150.

In 2011, the GDP of Telsiai county was EUR 1302.4 million (4.2% of the total national GDP) or GDP per capita amounted to EUR 8602 (28% of the EU-27 average). The GDP of the County has increased by 96%, while the GDP per capita in the County has increased by 103% since 2001 and it shows a decrease of population. The GDP per capita in the County was 3% less than the national average and it indicates relatively good level of the economic development.

Telsiai County is a remote region, just over 13% of the population in the county can access to urban centres by car in 45 minutes or less (Raupeliene, Jazepcikas, 2009).

The total area of Telsiai district municipality is 1439 km² (rural area - 1421 km² or 98.8% of the total area of municipality). Telsiai district municipality accounts for 32% of the total population and 33% of the total area of Telsiai County. The share of rural population in Telsiai district municipality is equal to the share of rural population in Telsiai county (Table 1). Telsiai municipality (LAU1) had 11 elderships on the LAU2 level.

The number of population in Telsiai county decreased by 16% during the period of 2001-2011, i.e. from 180.0 thousand in 2001 to 151.4 thousand in 2011. The decrease speed was equal to the national average. Population decrease in urban areas was faster than in rural areas.

Population age structure in Telsiai county is a little bit different from the national average. There was a larger share of children (up to 14 years), i.e. 18%, people of working age (from 15 to 64 years) accounted for 61% and people of 65 years and older accounted for 21% in 2011. During the period of 2001-2011, the share of children decreased by almost 5 percentage points, while the share of population aged 65 and more increased by 2 percentage points.

Population of Telsiai municipality decreased by more than 19% from 57.7 thousand in 2001 to 46.8 thousand in 2011, i.e. by 1.4 percentage points more than the national average or the county average. Rural population in the municipality has decreased by almost 5%, while urban population decreased by 4%.

Hiring process in Telsiai district municipality was very dynamic in the sector of agriculture and fishing, where the share of hiring increased by more than three times from 2.8% to 8.0% in period from 2001 to 2011. The same tendency was observed in the sector of public administration, education, and health, where the share of hiring in the analysed period decreased by 5 percentage points from 35.2% to 30.2%. In the period of 2001-2011, the share of hiring also increased in the sectors of manufacturing and construction, and it decreased in the sector of energy and water.

Different tendencies in some sectors are seen comparing the data of Telsiai district municipality and Telsiai county, i.e. hiring process in the sector of agriculture and fishing has decreased by 1 percentage point, in manufacturing, it decreased by 2.5 percentage points and in the sector of distribution, hotels and restaurants it increased by 0.9 percentage points. Other sectors outlined similar tendencies but not so significant (Table 2).

Table 3

Aggregate employment-related data in Telsiai county (NUTS3) and in Telsiai district municipality (LAU1) totally (T) and split for rural (R) and urban (U) areas in 2001, disaggregated by sex and age

		Activity rate, %	Males activity rate, %	Females activity rate, %	In employment, %	Employees, %	Self-employed, %	Unemployed, %
Republic of	T	57.4	63.1	52.7	48.7	42.7	11.7	11.0
Lithuania	R	52.0	59.6	45.0	41.0	29.7	15.6	15.6
	U	60.1	65.5	56.2	52.0	45.6	9.4	10.7
Telsiai county	T	65.5	71.8	59.9	52.7	39.0	13.5	13.4
	R	58.6	67.2	49.8	44.9	25.9	19.0	13.8
	U	72.3	75.1	69.9	57.2	47.2	10.0	15.1
Telsiai district municipality	T	64.0	69.5	58.8	50.2	35.1	15.1	11.7
	R	57.2	67.1	47.0	45.1	23.9	21.2	12.1
	U	68.8	71.3	66.6	53.7	42.9	10.8	11.1

Note: data are taken from the 2011 census and include people aged 15-64

Source: the Statistics of Lithuania

Urban population is much more economic active than rural population in Telsiai county. Rural economic activity is lower and urban economic activity is higher comparing with the national average. Males in rural areas of Telsiai municipality are much more active than females. Male activity was higher than female activity by 9.4 percentage points (in rural areas by 17.4 percentage points). There was a larger share of self-employed in Telsiai municipality than the county average. Especially it was true for rural area of Telsiai municipality, where the share of self employed was 21.2% of the total working age population in 2011 (Table 3).

The unemployment rate in Telsiai municipality was in line with the national average. The unemployment rate in rural areas of Telsiai municipality was 12.1% in 2011 and it was by 1.7 percentage points lower than the average of the county.

A high unemployment rate among young people is a big problem of the local administration of Telsiai district municipality. It is estimated that there were 22% of young people unemployed at the beginning of 2011. These young people are usually uneducated and without any work experience. They do not have any qualification. Therefore, they fit only for a low paid physical work. Sometimes these young people even do not fit for the vocational training programmes because of their illiteracy. These marginal young employees are at the risk of economic and social exclusion.

2. Potentials and constraints on rural economic diversification on the labour market of Telsiai district

Labour market dynamism has increased due to the increase of travel to work area in Telsiai district. Local population began to travel longer distances to the cities in order to get a job. The travel costs were cut by cooperation among them to travel with one car or minivan. Specific services of transporting such employees to the city in the morning and taking them back home in the evening evolved later.

Rural entrepreneurs in Telsiai municipality still see agriculture as the main source of business activity and employment in rural areas. Production of agricultural goods is the main occupation for local population. Despite that agricultural land is relatively good for cultivation in Telsiai municipality, milk production is the most influential agricultural sector there. The conditions of international (global and regional) markets of milk products are strongly affecting incomes of local producers in Telsiai. They are very dependent on the export flows of milk products from Lithuania.

Telsiai district municipality is not fully dependent on agriculture of crafts. It has an alcohol manufacturing line there. Production of spirit and alcoholic drinks support local farmers in terms of consuming agricultural products the farmers deliver to the market. It could be an example of small cluster of agriculture and food products in the local economy.

The great unused potential of Telsiai district municipality is hiding in data industry development. Data collection, analysis, and sharing among rural population would reveal additional incentives to take economic activities in rural areas. In that way more knowledge-based jobs would be created in local economy which would create higher value added. The municipality of Telsiai together with farm and agricultural associations and with local communities should develop a mechanism of transferring good practice across the district municipality population.

Local policy is encouraging employment in Telsiai district municipality. There were some public programmes for stopping the increase of unemployment in the district municipality. Local municipality set priorities for helping small and medium sized economic activities, increasing information and data flows (accessibility, share, and usage) on the local market, and improving environment for the development of a family business. In addition, the municipality was actively working on the indirect support mechanism for local labour market, e.g. tax discounts, social initiatives, and easing the requirements

for manufacturing process or delivering products to the market.

One of the major effects of the economic crisis for Telsiai district municipality was that many of local population who had left their living places and travelled to a city or abroad in order to find a job came back home without any job. Therefore, the number of unemployment in Telsiai district municipality has grown substantially. According to the opinion of some interviewees, about 60% of those who emigrated from Telsiai district municipality came back in time of the economic crisis.

Interviewees emphasise that making progress in their life is related with the financial resources they have. Starting a new business or investing in new training programmes requires substantial financial resources. However, low savings and relatively small amount of wealth that is at disposal of common rural habitant stand as a major hardship for the progress.

Negative externality of the Rural Development programme is that the ongoing funding is concentrated into large farms or agricultural companies. Large farms and agricultural enterprises have competitive advantage compared with the small or medium sized businesses when receiving financial credits from the banks. Besides, large agricultural enterprises have better human resources for filling applications for the support. Therefore, some local people think that the EU funding should be distributed more equally across the economic actors in rural areas.

Another traditional occupation of rural citizens in Telsiai municipality is crafting. According to the interviewees, craft centres are risky due to the underdeveloped supply to the market chain of craft products. Thereby, investing own money is too risky due to the uncertainty of the product sales. Hence, marketing of craft products is the main problem of the development of crafts activities in the local area.

Human capital constraints play a fundamental role in low labour market dynamism. Business management abilities are the major constraint here. Insufficient skills of business planning, organising and analysing market data, preparing an application for support or managing business risks cut the incentives to develop economic activities by rural population. Rural entrepreneurs feel incompetent to develop a relevant business plan by themselves. The future is very uncertain, thus, there is too much risk for taking action. Lack of managerial skills of rural labour force could be solved by developed business services in the local area, initiating better-targeted vocational trainings and developing an institution of local community (or local action groups - LAGs).

The EU policy is targeted at smart (i.e. knowledge-based) economy. Knowledge-based economy is better suited for urban development. Rural development is under the threat due to the low concentration of population, low purchasing power, and lagging behind the technological, social, and cultural development of the cities. However, the most important issue one needs to pay attention to is the fact that data are becoming a major production factor (i.e. ahead the land, labour, and capital); thus, the quantity and quality of data flows play a crucial role in the development of a local area. Businessmen in Telsiai district municipality say that there is lack of market and technology data available for local entrepreneurs in Telsiai. Business services are poor and slowly developing. The process of data (or information) transfer or good practice transfers is long in rural areas.

From institutional analysis point of view, the organisation of economic activities is chaotic, i.e. they have been evolved under the forces of stochastic business cycles and the short-term economic policy measures adopted by local or national government bodies. There is no strategic evolvement of economic relations in Telsiai. Interviewees see that there is a lack of links between the elements of economic system in the rural areas for faster growth. The interaction among economic activities, types and forms of business actors, and ongoing economic processes is weak.

Interviewees emphasise that it is very important to have a community leader who could initiate various processes in order to increase economic activity of local population.

The travelling longer distance to the work could increase employment in Telsiai district municipality but local people are attached to their living place. Most of them are living in a particular rural area from generation to generation. They cannot even imagine living somewhere else. Especially it is true for older rural population. The attachment to the living area decreases labour force mobility and thus local labour market dynamism.

Survey of the pilot area revealed a fact that there was a shortage of good practise for the local population on how to increase their economic and/or social activity. The survey also revealed that many of local population in Telsiai district municipality did not trust successful good practices of others. So, there is no just a shortage of data or information for local communities but also psychological issues of believing in them. Employment policy in rural areas should not only "show" how to be employed but also to "persuade" to be employed. Therefore, it is a continuous process of inclusion of rural population into the labour market, which requires a lasting infrastructure of services for promoting human capital there.

Mechanisms of data or knowledge transfers/sharing exist in Telsiai district municipality. There were number of consultancy companies, which could help with business organisation, accountancy, or development. There were also public exhibitions in the region, which attracted lots of local population and were an interesting and attractive way of transferring good practice, new technologies, or products for local communities.

Leader could inspire other members of the community to take actions, help organise social events when local community gathers together or initiate community projects targeted at improving living conditions in the local area.

Finally, summarising the results of pilot research in Telsiai municipality, the most important constraints of rural employment development were identified:

1) complicated demographic situation and migration;
2) lack of own financial resources and lot of bureaucratic barriers;
3) insufficient managerial abilities and problems with marketing, business, and good practice information exchange;

4) lack of entrepreneurship, leadership and risk fear;
5) low quality of life and decrease of purchasing power.

Summarising the research of labour market in Telsiai district municipality the following potentials could be emphasised for rural employment creation:

1) changes of personal values and mobility of rural citizens;
2) better usage of existing resources and skills;
3) activation of exchange of business information and usage emphasised ICT infrastructure;
4) expansion of activity of local office of labour exchange.

3. SWOT and SOR analysis for Telsiai district municipality labour market

The following Strengths, Weaknesses, Opportunities, and Threats were considered by experts to be the most relevant to the rural employment in Telsiai municipality.

Strengths (S)

S1. Extensive network of institutions providing public services to the labour market
S2. Attractive market places for agricultural products
S3. Attractive environment and countryside, rich in natural recreational resources
S4. Developed traditional agriculture and ecological farming
S5. Competitive SMEs (wood processing, bio fuel production, canned food production, furniture manufacturing)
S6. Good geographical location for local tourism development. Good road network to visitors from Latvia, Russia, Poland, Germany, and Sweden
S7. Established public Internet access points in rural areas

Weaknesses (W)

W1. Significantly lower turnovers in retail and service business
W2. Lack of labour places for the qualified specialists
W3. Underdeveloped physical and social infrastructure in rural areas
W4. Low entrepreneurship levels among rural population and weak motivation for the unemployed to find a job
W5. Lack of cooperation among rural population involved in different economic activities
W6. Professional retraining and education are insufficiently based on the market and marketing research or specific suggestions/calculations related with the development of new economic activities
W7. Lack of territory attractiveness due to the underdeveloped sector of entertainment and leisure, passive social life

Opportunities (O)

O1. The EU and national financial support for the improvement of the rural life quality
O2. Growing supply of qualified labour force
O3. Improvement of place marketing system
O4. Development of cooperation between local actors
O5. Increase in education and consulting service supply
O6. Financial support for the environment protection and forest management
O7. Development of the non-traditional trades, crafts and cultural heritage
O8. Development of the information infrastructure

Threats (T)

T1. The state social support policy fails to encourage work
T2. Very high sanitary, safety at work and other standard requirements for business, compared with other EU countries
T3. Non-sustainable investment into physical and social infrastructure of rural areas
T4. Growth of bureaucratic practices in administration of the EU and national support to business
T5. Reorganisation and centralisation of the rural public sector (local authorities, schools, libraries, cultural centres, and public utilities)
T6. Growth of living alone, disabled people, social risk families and people number, who need social care
T7. Macro-environment unattractive to foreign investment

The pair-wise combining of SOR factors was done by the experts from Telsiai municipality. The above table lists the issues for each combination. Each issue is given a mark according to the importance to be attributed to it for the implementation of the strategy (from 0 - not important, to 3 - very important). The SOR analysis conducted in Telsiai municipality identified 19 relationships, which were "extremely important" to rural employment in Telsiai municipality (i.e. scored 3) and 13 relationships, which were "very important". Twenty-two relationships were "important" and the other 33 were "not important". The total score of Maxi-maxi strategy was 39; Mini –maxi strategy – 32; Maxi-mini strategy - 21; and Mini-mini strategy – 16. Maxi-maxi strategy has a priority over others in Telsiai municipality.

The relationships, which scored 3 or 2 in the SOR analysis were grouped into "strategic orientations" (SO) as follows:

SO1. Promote multifunctional agriculture and new economic activities

— Develop the economic activities like wood processing, bio fuel and furniture manufacturing, canned food manufacturing, regional food products, and traditional craft items
— Facilitate the diversification of agricultural activities based on local resources
— To achieve high productivity activities through innovations and new technologies
— To promote nature-friendly behaviour in rural areas

SO2. Promote cultural and natural tourism

— Develop cultural and natural tourism: creating and offering unique services (reflecting customs and traditions of region)
— Organise marketing of rural tourism and its services
— Develop the poles of rural tourism near memorials of nature and National park
— Promote cooperation between businesses, producers of regional products, actors from tourism sectors, and the government

Table 4

SOR matrix of Telsiai municipality Labour Market Area

Factors affecting Telsiai local labour area	O1. Demand for the EU and national resources for the implementation of regional strategies	O2. Growing supply of qualified free labour force	O3. Improving image of Telsiai	O4. Development of cooperation between local actors	O5. Increasing education and consulting service supply	T1. Insuffisant state social support policy	T2. Extensive SME business control	T3. No sustainable investment policy into physical and social infrastructure of rural areas	T4. Growth of bureaucratic practices in administration of the support
S1. Developed labour market infrastructure	3	1	2	1	1	0	1	1	2
S2. Attractive market places for agricultural products	0	0	0	2	0	3	2	1	0
S3. Many potentials of natural and cultural resources	3	3	3	3	1	2	1	0	0
S4. Developed rural tourism service	2	3	3	3	2	0	3	2	3
S5. Developed traditional agriculture and viable new SMEs	1	0	1	0	1	3	2	3	3
W1. Lower traditional activities processing volumes	1	1	0	1	3	1	2	2	3
W2. Limited labour places in public administration service sector and for the qualified specialists	1	3	0	0	0	0	0	0	0
W3. Rather weak motivation for the unemployed to find a job, low entrepreneurship levels among rural population	0	0	0	0	1	3	0	1	1
W4. Underdeveloped physical and social infrastructure in rural areas	0	0	2	0	0	0	1	2	0
W5. Insufficient cooperation among rural population involved in different economic activities	1	1	1	2	3	0	0	0	0
Total	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**

SO3. Enhance rural physical and social infrastructure

— Develop a strategy for sustainable and integrated rural physical and social infrastructure development
— Increase and develop social service in rural areas for senior people involving local communities
— Develop transport system in the remote areas of region
— Create information infrastructure based on e-service for rural people

SO4. Promote entrepreneurship among rural population

— Promote consultation and continuing education taking into account the specifics and needs of SMEs working in rural areas
— Create the Labour information system orientated to the jobs seekers and offers from rural areas
— Reinforce motivation of the unemployed, entrepreneurship education, creating possibilities to work and earn money

The main recommendations, based on four strategic orientations, to increase rural employment in Telsiai district municipality were identified.

1. Cooperation among local development stakeholders: partnership strategies and networks; correlating activities: agriculture, production, manufacturing, processing, tourism, retail, and transport (logistic).
2. Manufacturing high value added products and services: agriculture - traditional agriculture, organic farming, horticulture, alternative business (snails); production, manufacturing, processing - manufacturing of organic food, rape processing, wood processing, biofuel, solid fuel briquettes, manufacturing of regional products, agricultural food production, confectionary, crafts; tourism - agro tourism, sightseeing tourism, rehabilitation services; retail - selling local products in internal marketing; transport - logistic services centre, transit transport services.
3. Stimulating young people's interest in living and doing business in rural areas: education (knowledge centres in rural area); social infrastructure and quality of services; cooperation between institutions: providing services to the labour market and the employers, schools, and families.
4. Improvement of business development, employment and social policies: liberalisation of the legal, political, and economic (tax system) environment; cooperation between public policy administration institutions.
5. Decentralisation of decision-making, wide use of "bottom up" approach.

Conclusions and recommendations

1. The economic and employment situation in Telsiai municipality (LAU1) of Telsiai county (NUTS3), which were chosen as pilot areas in Lithuania was analysed for the implementation of the research aim. These areas under the regions typology could be classified as "developing" and "significantly rural", while Telsiai labour market area is characterised as "remote" region.
2. Empirical analyses show that the pilot area is different in the local labour market performance in Telsiai. The regions are affected by local-specific shocks and they react differently to national shocks. Therefore, the labour market policy is increasingly being decided on the regional or local level.
3. Rural entrepreneurs in Telsiai district as the main source of business activity and employment in rural areas still see agriculture, because land is relatively good for cultivation. Another traditional occupation of rural inhabitants of Telsiai municipality is crafting but this type of economic activity is relatively weak and information about crafting products is scarce. Consumers often do not know how a craft product could be applied in daily life. There have been efforts of establishing centres of crafts with support from the EU Structural Funds but the results did not fully meet expectations.
4. The main recommendations to increase rural employment in Telsiai rural areas were identified during the research together with local actors from Telsiai pilot areas: 1) to increase cooperation among local development stakeholders: partnership strategies and networks; 2) to ensure high value added manufacturing of products and services; 3) to stimulate young people's interest in living and doing business in rural areas; 4) to improve business development, employment and social policies; and 5) to decentralise decision-making and wide use of "bottom up" approach.

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MARKETING AND SUSTAINABLE CONSUMPTION

CONSUMERS' COMPLAINTS AND COMPLAINT HANDLING AS A CRUCIAL ASPECT OF GOOD MARKET FUNCTIONING

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Abstract. Despite a generally high level of consumer protection guaranteed by the EU legislation, the problems encountered by consumers are still too often left unresolved. At the same time, the fact that consumers do complain when they experience problems is an important feedback mechanism for businesses, allowing businesses to improve their performance. Therefore, the paper presents the analysis of actual consumer behaviour in the EU and Latvia in case if a complaint is necessary to protect their as consumers' rights, the tendencies for the complaint submission and appeal to public authorities or consumer organizations, or to a seller/provider/manufacturer. The aim of the paper is to analyse the tendencies of complaint submission, the behaviour of consumers when complaint is necessary, and importance of complaining for good market functioning. The study is based on the review of legislation, the documents of the European Commission, and literature on consumer rights' protection and behaviour. In the study, the authors applied descriptive method and secondary data analysis. Complaints and complaint handling are crucial aspects for a good market functioning. If consumers do not complain when they experience a problem, redress is denied to them, and valuable feedback is lost by the business. A quarter of citizens do not complain when they have a problem. Therefore, both – the consumers and sellers/providers/manufacturers should be more active to solve the experienced problem. Consumers should complain, but sellers/providers/manufacturers – improve the process of complaint handling.
Key words: consumers' complaints, complaint handling, feedback, consumer behaviour.
JEL code: M390

Introduction

The role of consumers increases owing to sophistication of retail markets. Confident, informed and empowered consumers are the motor of economic change, as their choices drive innovation and efficiency (Commission of the…, 2007). Despite the high level of consumer protection already achieved in the EU, it is still possible to improve fundamentally the situation for the EU consumers. While the technological means are increasingly in place, yet business and consumers' behaviour lags far behind. According to 2011 figures, 17% of the EU consumers reported that they had encountered problems when buying something in their country (same proportion as in 2010). In Accordance with the Empowerment Report of 2011, the overall financial loss incurred by European consumers due to their encountered problems was estimated at 4 % of the GDP of the EU (European Commission, 2012[A]).

Therefore, the Commission will work towards the following two specific objectives: 1) improving information and raising awareness of consumer rights and interests among both consumers and traders; 2) building knowledge and capacity for more effective consumer participation in the market (European Commission, 2012[C]). If consumers are able to play fully their role in the market, making informed choices, and rewarding efficient and innovative businesses, they contribute to stimulating competition and economic growth. On the other hand, markets, where consumers are confused, misled, find it hard to switch or have little choice will be less competitive and generate more consumer detriment, to the expense of the efficiency of the overall economy. Therefore, it is important to identify, which parts of the market are not working well for consumers (European Commission, 2012[B]).

In this connection, the aim of the paper is to analyse the tendencies of complaint making, the behaviour of consumers when complaint is necessary, and importance of complaining for a good market functioning. In the framework of the research, the following tasks were undertaken: 1) to examine how often consumers encountered a problem with goods or services and their reaction to the experienced problem; 2) to analyse consumers' propensity to complain as a whole, and find out where they are ready to complain; 3) to understand the reasons for not complaining; 4) to analyse the level of consumers' confidence in their rights, trust, and satisfaction in the market; 5) to work out recommendations for better complaint handling taking into account the importance of complaint for a good market functioning.

The study is based on the review of legislation, the literature on consumer rights' protection, and behaviour as well as on statistical data available from the European Commission's Analytical Reports, the EU Consumer Conditions Scoreboard, and Consumer Markets Scoreboard conducted in 2009-2012. In the study, the authors applied descriptive method and secondary data analysis.

Research results and discussion

Markets that respond more efficiently to consumer demand will perform better in competitiveness and innovation terms and will be more in tune with the lives

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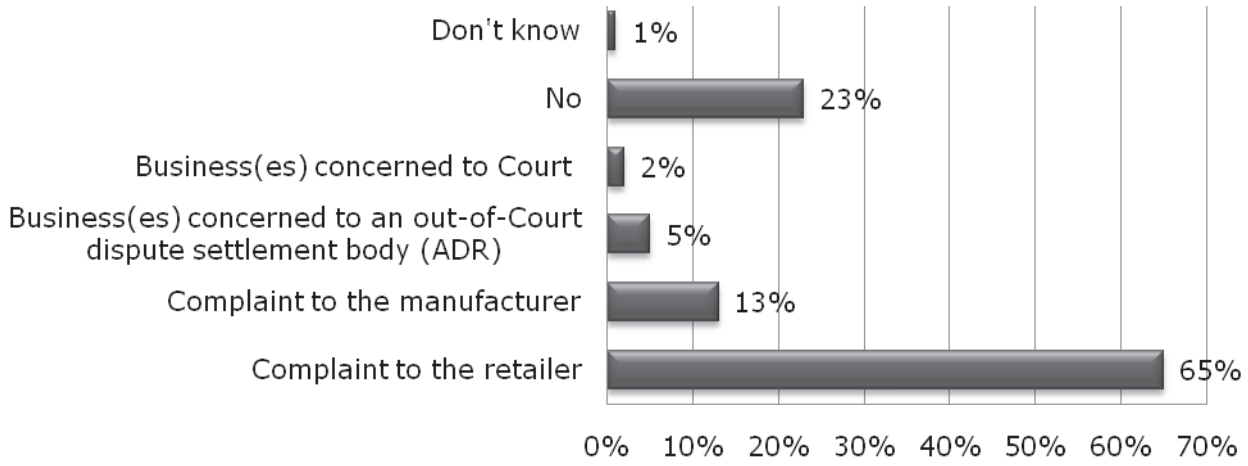


Source: authors' construction based on TNS Opinion & Social, 2011

Fig. 1. **Actions undertaken by consumers in response to experienced problem**

and goals of the EU citizens. The outcomes for consumers in economic and non-economic terms are the ultimate arbiter of whether markets are failing or succeeding in terms of citizens' expectations. However, the final outcomes for consumers are based on consumers' real experience in the market.

According to the survey of consumers' opinion (TNS Opinion & Social, 2011), more than one in five respondents (21%) in the EU 27 had encountered a problem with a commodity, a service, a retailer, or a provider in the past 12 months, for which they had legitimate cause for complaint. In Latvia, the respondents had encountered a problem in 16% of cases. However, in some cases consumers might lack awareness what a "legitimate cause for complaint" implies. It is evidenced by the fact that most frequently the reply "have encountered any problem for which they had legitimate cause for complaint" was chosen by the respondents aged 25-39 (26%), the respondents with highest education levels, i.e. educated and older than 20 years (29%), and managers (32%). The respondents that reported the lowest incidence of such problems were among the oldest respondents aged 55 and older (16%) and the less educated who had left school at age 15 or younger (13%), retired persons (15%), and those who had never used a computer (10%). Consequently, those consumers, who knew their rights better, were the ones, who had more encountered a problem (TNS Opinion & Social, 2011).

More than three-quarters of consumers, who had experienced problems in the last 12 months, took some form of action in response to their problems (77%), while 23% took no action at all. Those who took action (multiple answers were possible) were most likely to respond in the form of making a complaint to the retailer or provider (65% of all experiencing a problem). Comparatively smaller number of consumers had made a complaint to the manufacturer (13%) (Figure1).

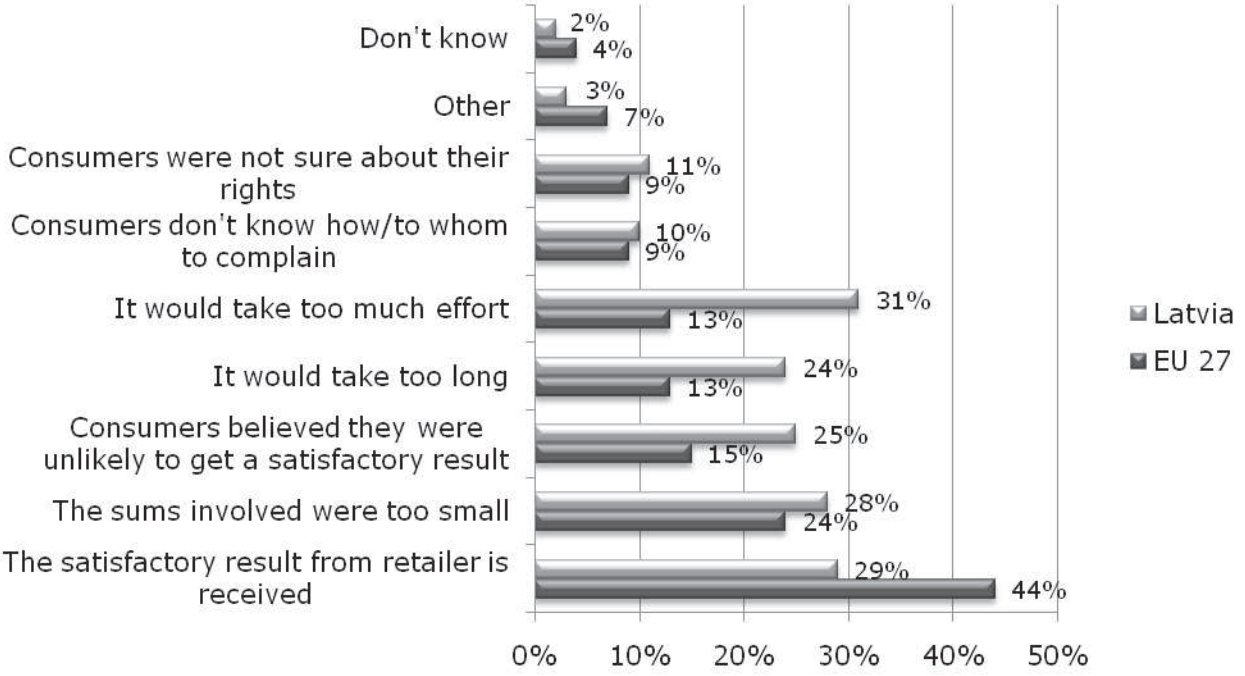
By contrast, consumers in Latvia were the least likely to take any action (only 55% took some form of action). That was the second lowest percentage of consumers, who were ready to take some actions in response to experienced problem in the EU 27.

According to the data of the Consumer Conditions Scoreboard (European Commission, 2012[A]), consumers, who encountered a problem after they had bought something, complained about it to the seller/provider/ manufacturer in 80% cases in the EU 27 and in 58% of cases in Latvia. That demonstrates a huge difference between the EU 27 and Latvia: consumers in Latvia are much more passive, compared with the EU 27. Therefore, and especially in Latvia, it is important to encourage consumers to communicate their problems and to seek solutions, since complains benefits not only consumers themselves but also the market as a whole.

The indicator of complaints captures the severity of a problem, given that it takes more time and effort to complain to an official body than to family or friends. In another research, based on the annual market monitoring survey (European Commission, 2012[B]) it was detected that 76% of consumers who had encountered a problem complained about it to the company, the complaint body, friends, or family. Consumers' propensity to complain has considerably dropped both for goods and services' markets, as compared with 2011 (81%) and 2010 (79%).

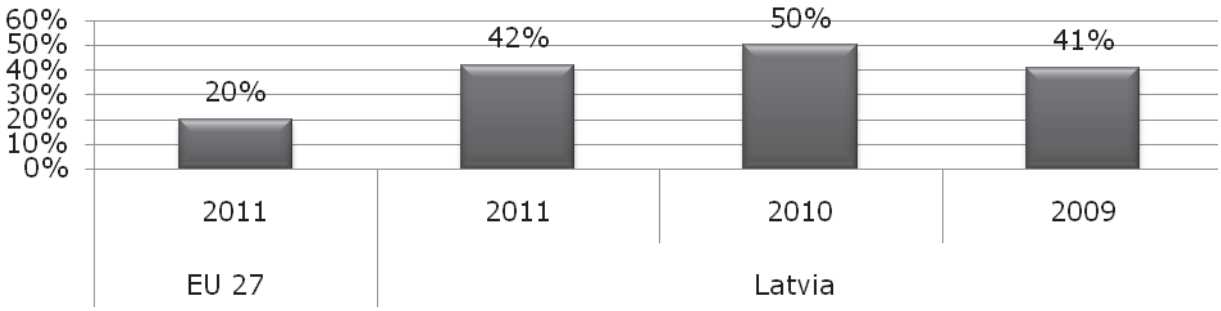
For all goods and services' markets, by far the most likely party to be addressed is the seller of the product or the provider of the service, i.e. the immediate and known point of contact (approached by 60% of respondents who encountered a problem). Only 5% of those, who had a problem, addressed their complaint directly to a manufacturer. Complaints addressed to a third party such as a public authority or consumer organisation remained rare (7%) and were more likely to occur in services' markets (9% as against 4% in goods markets). Finally, almost a third of consumers (31%) shared their problems with friends and family, confirming the importance of „word-of-mouth" in reporting bad experiences.

Having established the fact that very few consumers after having experienced problems had made a complaint to a public authority or a consumer organisation, the surveyors asked those consumers who had not taken any action to explain the reasons for not taking their complaint to the relevant bodies. The most frequently cited reason (multiple answers were possible) for not



Source: authors' construction based on TNS Opinion & Social, 2011

Fig. 2. **Reasons for not taking complaint to consumer organization**



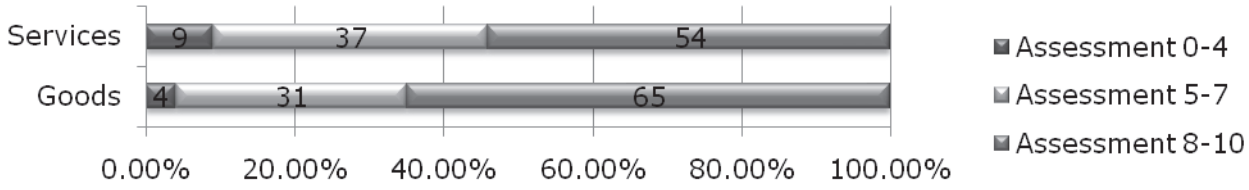
Source: authors' construction based on the European Commission, 2012[A]

Fig. 3. **Consumers who felt they had a reason to complain, but didn't, %**

making a complaint to a public authority or consumer organisation was the fact that the person had already received a satisfactory result from the retailer/provider of the good/service (44%) (Figure 2.) In Latvia, this percentage is much lower compared with the EU 27, only 29% of consumers had received a satisfactory result from the retailer/provider of the good/service. The retailers and providers in Latvia are not so loyal to consumers and their problems as in the EU 27.

The next most common reason, mentioned by close to a quarter of respondents, was that the sums involved were too small (24%), in Latvia – 28%. Obviously, relatively few respondents did not perform this procedure due to their expectations of an unsatisfactory response or outcome. For example, only 15% believed they were unlikely to get a satisfactory result, and similar number of respondents replied that in their opinion it would take too long or take too much effort (13% each). Whereas, 19% of respondents answered that either it would take too long or it would take too much effort. The reasons mentioned by Latvian consumers were even more important – 25% believed they were unlikely to get a satisfactory result, 24% answered that in their opinion it would take too long, and 31% thought it would take too much effort. It means that consumers in Latvia are less confident in their rights than in the EU 27 (Figure 2).

Moreover, Latvian consumers most likely admitted that their main reason for not complaining to a public authority or a consumer organisation was their opinion that this process would take too much effort. Moreover, the situation was similar in case of complaining to a seller/provider/manufacturer. The study of the Consumer Conditions Scoreboard (European Commission, 2012[A]) shows that even those consumers who felt they had a reason to complain to a seller/provider/manufacturer, did not do that in 20% of cases in the EU 27 and in 42% of cases in Latvia (Figure3).



Source: authors' construction based on the European Commission, 2012[B]

Fig. 4. **Consumers' satisfaction level in EU 27**

The data in Figure 3 reveal a dramatic difference between the EU 27 and Latvia in reaction on suspicion that consumers had reasons for complaining to a seller/provider/manufacturer. Therefore, consumer empowerment seems poor, since 42% of consumers did not complain despite having a reason to do so; it is the second highest rate in the EU. It approves the fact that consumers in Latvia are not confident and do not believe in a positive result of complaining.

The analysis of consumer confidence shows that those interviewees, who feel confident and those who feel protected by consumer law, less often say that taking a complaint to a public authority or a consumer organisation would take too much effort than those, who do not feel that way. Consequently, the lack of awareness undermines the ability of consumers to uphold their rights by not complaining since it would take too much effort, and it is due to consumers' lack of confidence and poor level of knowledge about consumers' rights.

The two relatively rarely cited reasons for not initiating a complaint procedure were lack of knowledge to whom to complain to (9% in EU 27 and 10% in Latvia) and lack of confidence in one's as consumer's rights (9% in EU 27 and 11% in Latvia). Therefore, the study leads to a conclusion that there are some problems at the EU 27 level connected with not complaining to a public authority or a consumer organisation, whereas consumers in Latvia are less confident, and retailers are less loyal to consumers and their problems compared with the EU 27.

According to the European Consumer Centre (ECC) data (European Consumer, 2012), year after year the pattern of complaints remains basically the same: more than half of them relate to a purchase on the internet and 20% by distance selling. The major concerned sectors are transport, especially by air, recreation and leisure, hotels, and restaurants (respectively, 31.9%, 20.3%, and 11.7% of all complaints). The problems are relatively highly distributed among the product/service itself, the delivery, the price and payment, and the contract terms (respectively 34.1%, 28.6%, 11.1%, and 10.2% of all complaints).

Sellers, providers and manufacturers are not interested in situation, when complaints are submitted directly to consumer organizations. The first reason is that they could be imposed by penalty. The second reason is that they lose a valuable feedback from consumers. They should create their own relationships with consumer for long-term collaboration, based on satisfying of needs and trust.

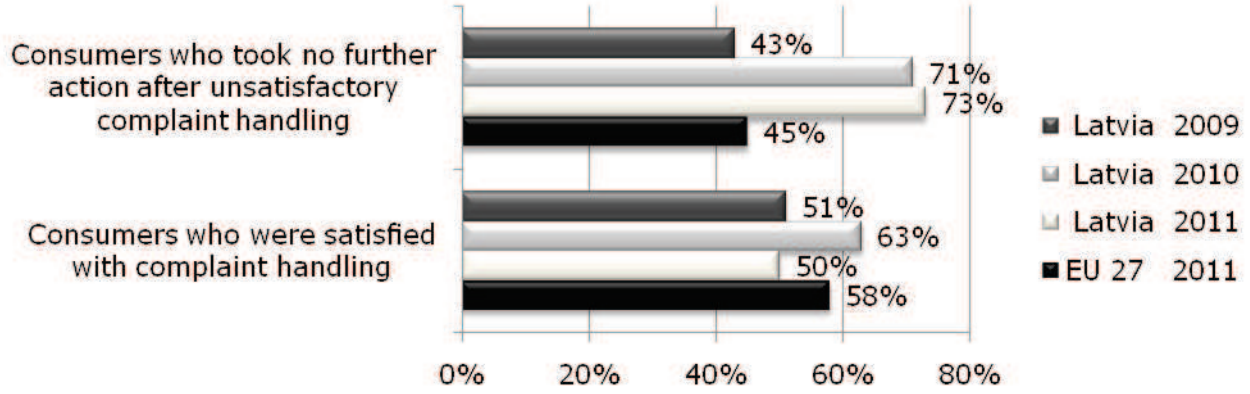
The trust component measures the extent to which consumers feel confident that businesses comply with consumer protection rules (European Commission, 2012[B]). Consumer trust is fundamental to well-functioning markets — as Kenneth Arrow observed, "virtually every commercial transaction has within itself an element of trust" (Kenneth A., 1972). Proper enforcement of consumer legislation is also of crucial importance to protect reputable businesses from unfair competition. Consumers' trust in suppliers' compliance with consumer protection rules has seen a slight but steady increase over the past three years (European Commission, 2012[B]). In 2012, less than half of the EU 27 respondents (47%) expressed a high level of trust, while 13% were not confident of businesses' compliance with consumer protection rules. Trust is evaluated higher in Western and Northern European countries, while in Eastern European countries it is assessed below the EU27 average.

According to data of the Consumer Conditions Scoreboard (European Commission, 2012[A]), more than six out of ten respondents in 2011 (same proportions as in 2010) believed that public authorities protect their as consumers' rights (62%) and that retailers (65%) respect these rights.

The "satisfaction" component measures the extent, to which different markets meet consumers' expectations. Nearly 60% of the EU 27 consumers stated that, overall, the markets surveyed live up to their expectations (score 8-10) (Figure 4). The average score for this component (7.5) has been stable over the past three years.

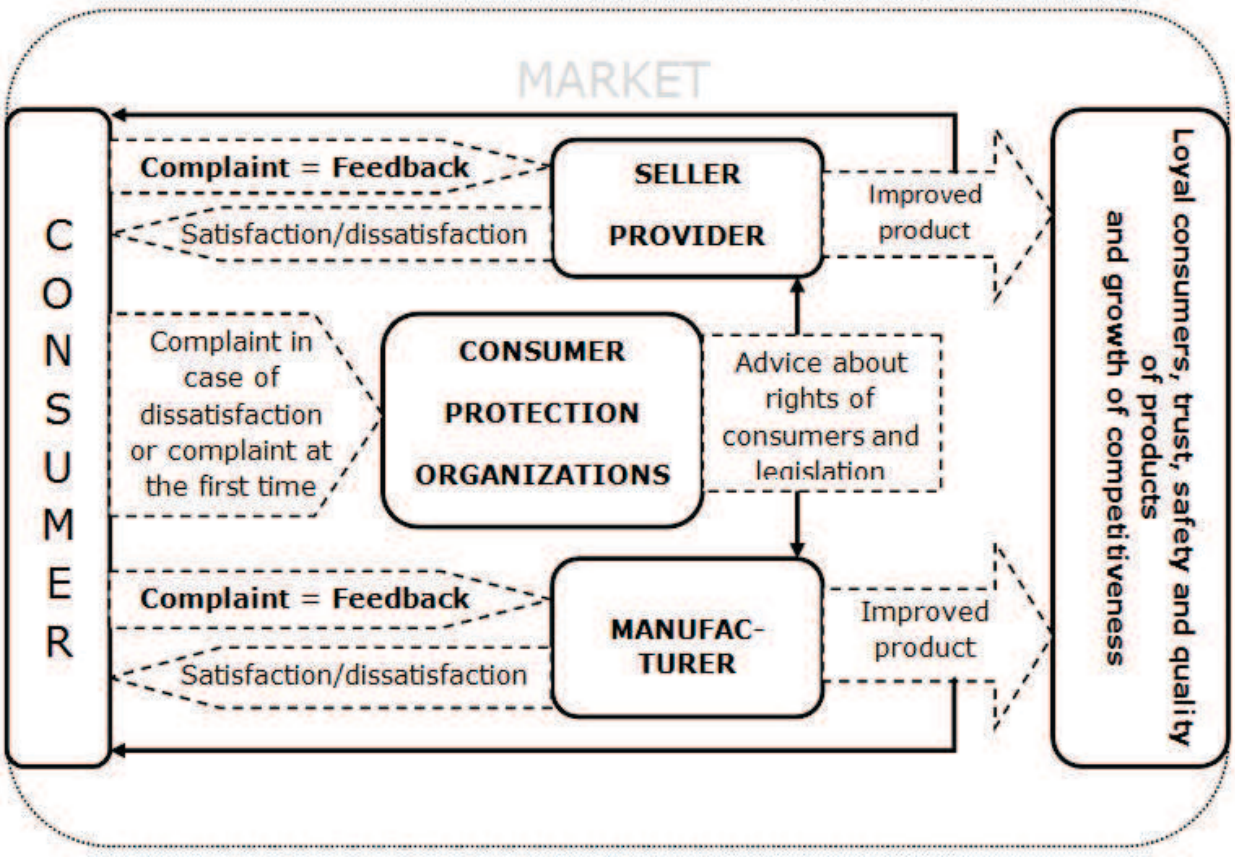
Goods' markets score better on this component (as with all other components) than services' markets with average scores of 7.8 and 7.3, respectively. Consumers in Eastern European countries are considerably less likely to think that markets "deliver" to the desired level, while consumers in Western Europe are more positive in this regard. These regional differences are most striking for the banking and insurance markets.

At the same time, the fact that consumers do complain when they experience problems is an important feedback mechanism for businesses, allowing them to improve their performance and provides useful information for authorities indicating, where policy intervention might be necessary (Figure 6). Dissatisfied consumers can directly address the retailer and/or a third-party organisation dealing with consumer complaints – national authorities, consumer organisations etc. Consumer organisations play an essential role in improving consumer information and knowledge, and identifying market problems, thus, they could provide information to sellers, providers, or manufacturers about consumers' legislation if the problem arises or some advice is needed for better market functioning. Such help is essential for effective complaint handling and good market functioning since



Source: authors' construction based on the European Commission, 2012[A]

Fig. 5. **Consumers' satisfaction level with complaint handling and decision about further action in Latvia and the EU 27, %**



Source: authors' construction based on Consumer Rights…1999; Procedures for…,2006; Blackwell R. D., Miniard P.W., 2007.

Fig. 6. **Importance of complaint as an aspect of a good market functioning**

previous research showed that some problems would also arise when sellers and providers are not informed about their obligations according to consumer legislation. For example, the retailer Eurobarometer survey in 2011 found that only 26% of retailers knew the exact period during which consumers have the right to return a defective product. (Spakovica E., Moskvins G., 2012)

Responsibility for the product quality helps to guarantee that sellers, providers, and manufacturers will satisfy their clients, it will strengthen the trust between parties, and could increase repeated purchases (Blackwell R. D., Miniard P.W., 2007). Similarly, poor complaint handling by companies is both a source of harm to consumers and a missed opportunity to

reinforce consumer loyalty. At the same time, in line with previous years, only around half of those consumers who complained to companies were satisfied with the result (European Commission, 2012[A]) (Figure5).

The data in the figure demonstrates that in 2011 the level of consumers satisfied with complaint handling was low – in the EU 27 (58% of consumers). However, in Latvia, this level was even lower – 50% in 2011, and it has decreased compared with 2010. It means that situation has not improved during these years. In addition, being not satisfied with how their complaint was handled, most consumers gave up and took no further action (73% of consumers – the highest in the EU). In the EU, the percentage of consumers, who were not ready to take further actions was much lower – 45% (Figure 5).

In case, when consumers complain first to the seller/provider/manufacturer, but not to consumer organizations, it is possible to react on consumers' dissatisfaction about quality of goods or services, improve it, and prevent consumers' decision to address complaint to the consumer organization (Figure 6).

Basing on the survey analysis and requirements of legislation, the authors conclude that sellers/providers/manufacturers should play more active role in the process of complaint handling, for example, they should undertake some steps when they receive a complaint:

1) to analyse the situation, requirements of legislation, ask for advice from consumer organizations, and analyse causes of consumer's dissatisfaction;
2) to work out a complaint handling mechanism for quick and effective reaction on consumer's complaint;
3) to analyse who was at fault for non-qualitative goods or services. In case, if it was a manufacturer or supplier's fault, the seller or provider should change its supplier. Whereas, if that was a seller or provider's fault, then they need to take into account consumer's opinion, respect it, and to be grateful for the feedback since it gives possibility to detect problems with goods or services and improve their problematic points.

The detection of problematic points based on complaints and complaints' handling system, helps to increase consumers' level of satisfaction and provide stable communication and relationship between a consumer and a seller, a provider, or a manufacturer. Moreover, it gives possibility to react more quickly to the challenges of global supply chains and to get timely information about emerging product safety risks for improving quality and safety of goods, services, and competitiveness in the market.

Conclusions, proposals, recommendations

1. More than one in five respondents (21%) in the EU 27 has encountered a problem with a good, a service, a retailer, or a provider. More than three-quarters of consumers, who have experienced problems in the last 12 months, took some form of action in response to their problems (77%), while 23% took no action at all.
2. The seller of the product or the provider of the service is by far the most likely party to be addressed by the consumer. Complaints addressed to a third party such as a public authority or consumer organisation remain rare (7%). Consumer organisations play an essential role in the improving consumer information, knowledge, and identifying market problems. Yet, Latvian consumers (31%) are more inclined to consider that complaining to a public authority or a consumer organisation would take too much effort, and Latvia is the only exception in the EU 27 in choosing this substantiation as the main reason for not complaining to a public authority or a consumer organisation.
3. Consumers in Latvia are much more passive compared with the EU 27. One of the reasons is that consumers in Latvia are not confident and do not believe in a positive result of complaining. The second reason is that retailers and providers in Latvia are not so loyal to consumers and their problems as in the EU. Only 29% of consumers received a satisfactory result from the retailer/provider. In addition, being not satisfied with how their complaint was handled, most consumers give up and take no further action (73% of consumers – the highest in the EU). In the EU, the percentage of consumers, who are not ready to take further actions, is much lower – 45%.
4. The lack of awareness undermines the ability of consumers to uphold their rights: not complaining since it would take too much effort is influenced by consumer's lack of confidence and poor level of knowledge about consumers' rights.
5. Sellers/providers/manufacturers are not interested in situation, when complaints are submitted directly to consumer organizations. The first reason is that they could be imposed by penalty. The second reason is that sellers/providers/manufacturers lose a valuable feedback from consumers, preventing them from improving their performance. Similarly, poor complaint handling by companies is both a source of harm to consumers and a missed opportunity to reinforce consumer loyalty. At the same time, in line with previous years, only around half of those consumers who complained to companies were satisfied with the result.
6. On basis of the survey analysis and requirements of legislation, it was concluded that sellers/providers/manufacturers should play a more active role in the process of complaint handling and create relationships with consumers for a long-term collaboration, based on satisfaction of needs and trust. Detection of problematic points based on complaints and complaints' handling system gives possibility to react more quickly on the challenges of global supply chains and get timely information about emerging product safety risks for improving quality and safety of goods, services, and competitiveness in the market. It is also important to encourage consumers to communicate their problems and seek solutions, since their activities provide benefits not only for consumers themselves, but also for the market as a whole.

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USE OF GENETICALLY MODIFIED ORGANISMS IN FOOD PRODUCTION AND FUTURE CHALLENGES

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Abstract. This is a theoretical research with the aim to assess some of the most important achievements regarding the use of genetically modified organisms (GMO) in food production with an emphasis on genetically modified (GM) crops, GM microorganisms (GMM) and GM animals. The main task of this review is to summarize different literature and data available to find out and investigate applications of GMO in food production all around the world providing an insight into future prospects of GMO used in agriculture and food production highlighting the use of GMO at different stages of food chain. There is a substantial challenge for the world food system, as for several years it is evident that the global population is growing, and diets and consumption levels change. Obviously, we will need to produce more food, and genetic modification is one of the opportunities we cannot ignore. The results of the summarized information and data suggest that the future of GMO used in food production looks encouraging, although success of this technology depends on many factors.
Key words: GMO; GM crop, GMM, GM animal, genetic modification.
JEL code: N50; O13; O31; Q16

Introduction

The aim of this article is to present a theoretical assessment of some of the most important achievements regarding the use of GMO – organisms in which the genetic material has been altered in a way that does not occur naturally by mating and/or natural recombination (the European Parliament and the Council, 2001) – in food production. Respectively, GM food is food obtained from GMO. The main tasks are to summarize different literature and data available to show what role GMO play in the food chain and in the field of agriculture in general; and to examine possible challenges and benefits of this new technology, which could play a very important role not just in food production, but also in different sectors of national economics.

For centuries humans have altered plants and animals by selective reproduction (breeding, hybridizing) in order to increase crop yields and food quality. As a result, we have a wide range of domestic animals and plants grown for food (Dharmananda S., 2005). Genetic modification is more targeted as it allows to predict the results and to improve necessary traits of the organisms: resistance to certain pests, herbicides, plant viruses or microscopic fungi cause diseases (so called first generations plants), enhanced or altered nutritional properties (second generation plants). Nowadays, food production broadly uses GMM, especially in acquisition of enzymes. GM animals, although still under investigation, can also benefit to food chain enhancing the productivity of farm animals, or alter their products.

In spite of huge progress and new technologies introduced in food production processes, environmental conditions and cataclysms arouse daily problem of hunger to about one billion people. In developing countries, inadequate and unbalanced nutrition or malnutrition is a cause of premature death or disability for every third inhabitant of the world (Cohen, M.J., 1994).

With the help of genetic modification, it is possible to resolve at least some of these important problems, and the data and information reviewed in this article provide an insight into different applications and prospects of GMO.

Summarization of the available information regarding the use of GMOs in food production allows predicting the market demand in the future and consumers' willingness to buy as well as consumers' expectations of the technology, which can benefit to all of us.

Research results

In 1994, the US Food and Drug administration (FDA) formally acknowledged that GM tomato *Flavr Savr* developed by the Californian Company is as safe as its conventional counterpart is, and issued permission to distribute them on the market. *Flavr Savr* tomato was genetically modified to slow its ripening process and thus prevent it from softening, while still allowing the tomato to retain its natural colour and flavour (Redenbaugh K, 1992).

The year 1996 was the first year in which a significant area of crops containing GM traits was planted. Consequently, every year more and more GM crops enter the food market increasing in areas from 1.7 million hectares in 1996 to 160 million hectares in 2011 making GM crops the fastest adopted crop technology in the history of modern agriculture (ISAAA, 2011).

In the world, there are 16.7 million farmers in 29 countries, including 19 developing countries and 10 industrial countries growing GM crops. The main of them is the US (69 million/hectares) followed by Brazil (30.3), the other main countries planting GM crops in 2011 were Argentina (23.7), India (10.6) and Canada (10.4).

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Table 1

Use of soy in the food production in 2011

Soy ingredient	Use
Lecithin and other emulsifiers	Chocolate, desserts, baked goods, and other processed foods
Oils and fats	Margarine, vegetable oils, mayonnaise, and many other fat products
Tocopherol / Vitamin E	Prevents oxidation in many fatty foods; used in vitamin fortified products
Soy protein additives, soy isolate	Prepared foods (soups, sauces), meat substitutes, diet foods, imitation milk products, e.g. non-dairy creamer
Hydrolysed soy protein	Soy sauce, seasonings
Soy meal, semolina flour	Bread, snacks, pasta
Products from whole soybeans	Tofu, soy drinks, miso, soy flour

Source: author's construction based on GMO Compass (Accessed 19 September 2012)

Presently, the first generation of GM crops is widely used in food production. Although there are hundreds of first-generation GM varieties developed in the world, just some of them have reached the global market: the mainly grown and GM soy, maize, canola and cotton.

Genetically modified soy

Soybeans are about 18% oil and 38% protein. Because soybeans are high in protein, they are a major ingredient in livestock feed. Most soybeans are processed for their oil and protein for the animal feed industry. A smaller percentage is processed for human consumption and made into products including ingredients, additives, and vitamins. It is estimated that soy plays at least a small part in 20000 to 30000 products that are on the market today (Table 1), whether directly as an ingredient or indirectly as feed or a nutrient source (*GMO Compass*).

GM soybeans are now widely grown in many countries all around the world. In 2011, soybean plantings occupied 75.4 million hectares or 47% of global biotech area (ISAAA, 2011); the main growers are the USA, Brazil, Argentina and Canada.

Genetically modified maize

The importance of maize grains to the nutrition of millions of people around the world is widely recognized. They make up a large part of diets in developing countries. The major chemical component of the maize kernel is starch, which provides up to 72 - 73% of the kernel weight (FAO, 1992). Mostly maize is used for feeding livestock and as raw material for the starch industry. Starch, however, forms the basis of many foods and food additives.

GM maize was grown for the first time in the US and Canada in 1997. Since then, GM maize production has expanded to more than 51 million hectares worldwide (32% of global biotech area (ISAAA, 2011)). Many countries in North and South America, Africa, and Asia grow GM maize; areas of GM maize are increasing also in the European Union (EU). Currently, only eight EU countries cultivate GM insect resistant maize MON810, occupying 114525 ha in 2010 (Organic farming…, 2011).

Maize, along with wheat and potatoes, is an important source of starch in Europe. Maize starch is used as a raw material in the production of numerous food additives such as corn syrup, corn sugar (glucose or dextrose), modified starch, and sugar substitutes.

According *GMO Compass,* only a few foods are produced directly from maize, for example, cornflakes, popcorn, canned sweet corn, corn on the cob, or corn oil.

Genetically modified rape

Already more than 40 years ago, oilseed rape with very low toxic erucic acid content was obtained using selection methods. In nowadays, rape is the main raw material in the world used for the production of vegetable oil. Cultivation areas of GM rape occupy 8.2 million hectares or 5% of the global biotech crop area (ISAA, 2011). The main GM rape growers are the USA, Canada and Australia.

Refined rapeseed oil has been used extensively for the production of margarine. With its high content of monounsaturated fatty acids (60-70%), rapeseed oil has also become important as healthy cooking oil. Rapeseed can be used to produce certain emulsifiers, vitamin E, and substances0 that can help lower cholesterol levels (*GMO Compass*).

Genetically modified cotton

In 2011, the cultivation areas of GM cotton according to ISAAA reached 24.7 million hectares or 15% of the global biotech crop area.

The major end uses for cotton fibre include wearing apparel, home furnishings, and other industrial uses (such as medical supplies). However, in many West and Central African countries, cottonseed oil provides the main source of fat and oil supply, and has several food applications (ICAC, 2003). Cottonseed oil is a high-value cooking or frying oil and is sometimes used to make margarine. The oil is also a source of vitamin E (tocopherol).

Besides the four main GM crops cultivated in the world, there are also some more commercialized food plants:

— Herbicide tolerant sugar beet, the commercial planting of which was started in the USA in 2008. Genetic modification makes weed management

Table 2

GM crops in the pipeline worldwide

Crop	Trait	Possible commercialisation
Bean	Virus resistance (to geminivirus)	2012
Eggplant	Insect resistance	
	Abiotic stress tolerance	2014
	Fungus resistance	
Eggplant	Fungus resistance	2014
Tomato	Abiotic stress tolerance	2014
	Extended shelf-life	2014
Cabbage	Insect resistance	Biosafety research level, 2015
Cauliflower	Insect resistance	
Okra	Insect resistance	
Mustard	Male sterility (for plant vigour)	
Wheat	n/a	Pre-production trials, 2012-2014
Chilli	n/a	
Peanuts	n/a	Environmental release, 2015
Cabbage	n/a	
Rice	Beta carotene content	2014/2015

Source: author's construction based on Stein, A.J. and Rodríguez-Cerezo, E., 2009

simpler and more effective (Mishutkina, I.V. et al., 2010); in 2011 GM sugar beet was cultivated in small quantities in the US and Canada;

— Ringspot virus resistant papaya; in 2011 cultivated in the USA and China. It is one of the nutritious fruit crop in developing countries, rich in vitamin A and C. Papaya ringspot virus is often a limiting factor in the production of papaya worldwide (Arun Kumar R., et al., 2011);

— GM squash, tomato, sweet pepper according to ISAAA is also cultivated in small quantities in some countries, but their proportion is not significant.

Most GM crops under development by the industry are major commodity crops (especially soya and maize) which have been genetically modified with several stacked traits i.e. including resistance to one or more herbicides and several different toxins intended to kill pests. The analysis of available data reveals that extensive period is required for any new crop to be commercialized.

Taking into account the complicated, expansive and time-consuming process of commercialization, the pipeline of GM crops for the next few years is already determined. Currently, in the pipeline most of the crops are with genetically modified traits ensuring insect resistance and herbicides tolerance. Although it is also found that some GM crops with traits modified to improve product quality as well ensure virus resistance and abiotic stress tolerance (Deunwell J.M., 2010).

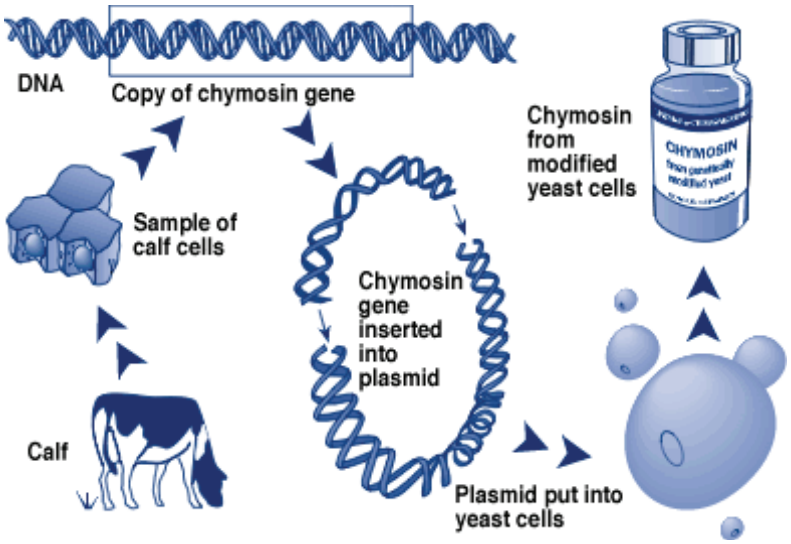
The Table 2 shows some of the most popular GM crops in the pipeline expected to be commercialized until 2015.

One of the most discussible crops during last years is Golden rice. The search for it started off as a Rockefeller Foundation initiative in 1982 (*Golden rice project*). Rice is the most important component of diet for hundreds of millions of people in developing countries. Hence, delivery of β-carotene with the help of Golden Rice could contribute to a reduction of chronic health problems caused by vitamin A deficiency, which is widely acknowledged as a cause of blindness, but more importantly – exacerbates susceptibility to infections, including HIV-AIDS, measles, and other childhood diseases. This leads to an increased mortality rate, especially among children. (Dawe et al., 2002). It is expected that Golden rice will be commercialized in 2013/2014.

Genetically modified microorganisms

The significance of microorganisms in food production has long been recognised: although some microorganisms cause crop diseases and food spoilage, others have been used for food preservation, and to create new textures and flavours – indeed, entirely new foods, as through brewing, bread making and cheese making (Robinson C., 2002). Additives, amino acids, vitamins, flavours, enzymes – countless substances used in food production are produced with the help of GMM. In many ways, these biotechnological methods have replaced chemical, synthetic production (*GMO Compass*). In production of different type of food (bread, wine, beer or cheese), the microorganisms function during the production process, but are not present as viable (live) cells in the final product. Enzymes of animal or plant origin may be produced independently of the supply of animal and plant tissue (Sarrouh B. et al., 2012).

For example, *chymosin* is widely used in cheese industry; this enzyme is stable in the production process and guarantees a high quality product. *Chymosin* is extracted from calf stomachs and is considered an ideal enzyme for cheese production because of it coagulation properties. As *chymosin* occupies a significant place in the cheese production, and since the consumption of cheese



Source: author's construction based on NCBE

Fig. 1. **How *chymosin* is made by GM yeast**

is increasing every year, it is not profitable anymore to use calf stomachs to obtain the *chymosin*. Moreover, that is why parallel to *chymosin* obtained through fermentation process, for example, with the help of *Aspergillus niger*, nowadays enzymes produced by genetic modification (Fig. 1) play an important role in the cheese production.

The GMM is separated from the enzyme product before the latter is used for food processing. Some consumer groups who have concerns regarding the potential threat of bovine spongiform encephalopathy as well as vegetarians support such use of enzymes

Until now, no GMM have been approved somewhere for use in food products – e.g. yoghurts, cheese – where they would be present as viable organisms, but there is a list of enzymes (Table 3) used in food production obtained with the help of GMM.

With the exception of lysozyme in cheese, invertase in confectionary and glucose oxidase used as an antioxidant in soft drinks, most enzymes are used as processing aids, rather than as additives, in that they are inactive, degraded, or removed from the final product (Robinson C., 2002).

With help of genetic engineering, about 40 food enzymes are now produced from GMM; this amounts to more than 150 microbial enzymes overall used in food production.

Genetically modified animals

Despite the fact that the first GM animals were obtained about 30 years ago, no animals are commercialized for food production, primarily because of ethical concerns and public perception.

Genetic modification of an animal involves the modification of its genetic material by adding, changing or removing certain DNA sequences to modify the characteristics of the animal or introduce a new trait, such as disease resistance or enhanced growth, in a predetermined way (EFSA, 2012). Changes introduced in an animal's genetic make-up can therefore be transmitted to the next generation.

At present, animals are being genetically modified for the purposes of scientific and medical research, treatment of human disease and production of modified food-producing animals (BSAS, 2012).

Applying genetic modification for production of modified food-producing animals can enhance the productivity of farm animals, or alter their products, e.g. by creating strains which grow faster, which show greater resistance to disease, or which produce novel proteins in their eggs or milk that are beneficial to human health. In some countries, such applications are being investigated experimentally, but the routine use of direct genetic modification in food-producing animals is unlikely in the short to medium term as well as taking into account that most agricultural products have a relatively low value, and gene transfer methods are inefficient and expensive (BSAS, 2012).

There are numerous potential applications of genetic engineering of agricultural animals to develop new or altered strains of agriculturally important livestock. According to FDA, many kinds of GM animals are in development, although none has yet been approved for commercial use, for example:

— disease resistant animals may be used either for food use or biopharm applications. These animals have received modifications that make them resistant to common diseases, such as mastitis (a very painful infection of the udder) in dairy cows, or particularly deadly diseases, such as bovine spongiform encephalopathy;
— food use animals have been engineered to provide healthier meat, such as pigs that contain healthy omega-3 fatty acids at levels comparable to those in fish;
— GM fish intended to grow faster;
— drought and heat tolerant animals may allow high quality food to be produced in parts of the world where disease, climate, or accessibility of forage material have previously limited the ability to raise food animals.

Table 3

Commercialized food enzymes obtained from GMM

Enzyme activity	Production organism	*Donor* organism	Food application
Alpha-acetolactate decarboxylase	Bacillus amyloliquefaciens or subtilis	Bacillus sp.	Beverages
Aminopeptidase	Trichoderma reesei or longibrachiatum	Aspergillus sp.	Cheese, dairy, flavours
Alpha-amylase	Bacillus amyloliquefaciens or subtilis Bacillus licheniformis	Bacillus sp. Thermoactinomyces sp. Bacillus sp.	Baking, beverages, starch Baking Beverages, starch and sugars
Arabinofuranosidase	Aspergillus niger	Aspergillus sp.	Beverages
Catalase	Aspergillus niger	Aspergillus sp.	Egg-based products
Chymosin	Aspergillus niger Kluyveromyces lactis	Calf stomach	Cheese
Cyclodextrin-glucosyl transferase	Bacillus licheniformis	Thermoanaerobacter	Starch
Beta-glucanase	Bacillus amyloliquefaciens or subtilis Trichoderma reesei or longibrachiatum	Bacillus sp Trichoderma sp.	Beverages Starch
Glucoamylase	Aspergillus niger	Aspergillus sp.	Beverages, baking, starch, fruit-based products
Glucose isomerase	Streptomyces lividans Streptomyces rubiginosus	Actinoplanes sp. Streptomyces sp.	Starch Starch
Glucose oxidase	Aspergillus niger	Aspergillus sp.	Baking, egg-based products
Hemicellulase	Bacillus amyloliquefaciens or subtilis	Bacillus sp.	Baking, starch
Lipase, triacylglycerol	Aspergillus oryzae	Candida sp. Rhizomucor sp. Thermomyces sp.	Fats Cheese, fats, flavours Baking, fats
Maltogenic amylase	Bacillus amyloliquefaciens or subtilis	Bacillus sp	Baking, starch
Pectin lyase	Aspergillus niger Trichoderma reesei or longibrachiatum	Aspergillus sp.	Beverages, fruit-based products
Pectinesterase	Trichoderma reesei or longibrachiatum	Aspergillus sp.	Beverages, fruit-based products
Phospholipase A	Trichoderma reesei or longibrachiatum	Aspergillus sp.	Baking, fats
Phospholipase B	Trichoderma reesei or longibrachiatum	Aspergillus sp.	Baking, starch
Polygalacturonase	Trichoderma reesei or longibrachiatum	Aspergillus sp.	Beverages, fruit-based products
Protease	Aspergillus oryzae Bacillus amyloliquefaciens or subtilis Bacillus licheniformis	Rhizomucor Bacillus sp. Bacillus sp.	Cheese Baking, beverages, cheese Fish-, meat-based products
Pullulanase	Bacillus licheniformis Bacillus subtilis Klebsiella planticola	Bacillus sp. Bacillus sp. Klebsiella sp.	Starch Beverages, starch Beverages, starch
Xylanase	Aspergillus niger Aspergillus niger Aspergillus oryzae Bacillus amyloliquefaciens or subtilis Bacillus licheniformis Trichoderma reesei or longibrachiatum	Aspergillus sp. Aspergillus sp. Aspergillus sp. Thermomyces sp. Bacillus sp. Bacillus sp. Trichoderma sp.	Baking, beverages Baking Starch Baking Baking, beverages, starch Starch Beverages, starch

Source: author's construction based on Robinson C., 2002

Conclusions

It is obvious that impact and progress of technologies is unstoppable inter alia in the field of food production. Every year more and more new technologies are introduced in the sector of agriculture and food production. It is important now to be conscious of their impact on exposure of products to predict market demand in the future, and to be able to manage food production processes in the right direction thereby fulfil consumers' expectations, ensuring competitiveness and stimulating the development of national economics.

1. To date, the data and information available on commercial GM crops mostly give evidence of the delivered benefits in crop production. However, there is also a number of products in the pipeline which will make more direct contributions to food quality, for example, rice with higher levels of b-carotene; tomatoes with improved shelf-life; drought tolerant maize; edible vaccines from fruit and vegetables.
   It is possible that GM crops could contribute to decreasing poverty by maximizing crop productivity and ensuring developing countries with crops of high quality and nutrition.
2. The importance of GMM application in food chain is also indisputable. GMM have been developed to benefit human health, agriculture and the environment. Although GMM are not directly used in food products, many enzymes used in food production are now produced by GMM (about 40 amounts to more than 150 enzymes overall used in food production). Production of enzymes via the genetic engineering approach focuses on economic production, enhanced enzyme purity, and environmentally friendly production processes.
3. Although GM animals are not still allowed to place on the market, investigations in this field are extensive, and we cannot ignore the benefits this technology can introduce in the food chain. GM animals have improved food production capabilities, enabling them to help meet the global demand for more efficient, higher quality and lower-cost sources of food. GM animals can contribute to improving the environment and human health by consuming fewer resources and producing less waste.
   The future of GMO used in food production looks encouraging, although, which of these technologies will be successful, depends on many factors such as safety, politics, economics, ethics, moral and other.

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ENVIRONMENTALLY FRIENDLY TRANSPORT SOLUTIONS

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Abstract. An effective transport system is a necessary part of modern life. Industry and commerce depend on it, and increasing use of the car has shaped today's social and recreational lifestyles. The key sustainable development objective is to strike the right balance between the ability of transport to serve economic development and the ability to protect the environment and sustain quality of life, both now and in the future.
The objective of this paper is to study indicators of environmentally friendly transport's purchase and contributing socio-economic factors of its popularity, to identify and recommend fiscal policy instruments for the integration of environmentally friendly solutions into the road sector. Content analysis was used to find available political, economic, infrastructure, and information instruments that facilitate development of transport economy in Latvia. Analysis of statistical data and observation were used to draw conclusions on public benefits from involvement in development of environment friendly solutions.
The significant regional and socio-economic differences between countries do not give an opportunity to adopt a uniform policy and, as a result, each country has mainly its own initiative regarding the direction of environmentally friendly decision.
Key words: indicators, transport, system, industry, EU.
JEL code: L62, L91

Introduction

An effective transport system is a necessary part of modern life. Industry and commerce depend on it, and increasing use of a car has shaped today's social and recreational lifestyles. The key sustainable development objective is to strike the right balance between the ability of transport to serve economic development and the ability to protect the environment and sustain quality of life, both now and in the future.

Economic activity always affects the environment, but the potential degree of this impact a lot depends on consumption and production patterns (Brizga J. et al, 2011). Companies must adapt quickly to the political, social, economic, and fiscal drive towards a global low carbon economy. Businesses that can turn this challenge into an opportunity, by developing business models to enable adoption of low carbon solutions, will be in a stronger position to mitigate rising carbon emissions and adapt to the world dealing with the impacts of climate change (SMART 2020, 2012). A radical approach is required that incorporates different ways of thinking, living, working, playing, doing business, and developing solutions. Action is no longer an option; it has become an urgent necessity.

The objective of this paper is to study indicators of environmentally friendly transport's purchase and contributing socio-economic factors of its popularity, to identify and recommend fiscal policy instruments for the integration of environmentally friendly solutions into the road sector. This paper is structured as follows: first, we briefly examine global impact of transport on environment and society, then statistical data are analysed and society opinion and practice of the EU countries are summarized, and finally, conclusions are made and suggestions for environment friendly transport solutions in Latvia are stated. Statistical data of Latvia and Europe, the European Automobile Manufacturers Association (EAMA) and Latvian Authorized Automobile Dealers Association and data of other sources are used in the work.

Research results and discussions

1. The concept of environment friendly transport sector

In the context of this research, environment friendly branches of the economy (include transport sector) are those with the lowest consumption of resources and those that create the minimal possible damage (pollution) to environment (Atstaja D. et al., 2011).

Sustainable transport refers to the broad subject of transport that is or approaches being sustainable. It includes vehicles, energy, infrastructure, roads, railways, airways, waterways, canals, pipelines, and terminals. Transport operations and logistics as well as transit-oriented development are involved. Transportation sustainability is largely being measured by transportation system effectiveness and efficiency as well as the environmental impacts of the system (Jeon C., 2005).

Sustainable transport systems make a positive contribution to the environmental, social, and economic sustainability of the communities they serve. Transport systems exist to provide social and economic connections, and people quickly take up the opportunities offered by increased mobility (Schafer A., 1998).

One such definition from the European Union Council of Ministers of Transport defines a sustainable transportation system as one that:

— allows the basic access and development needs of individuals, companies, and society to be met safely and in a manner consistent with human and

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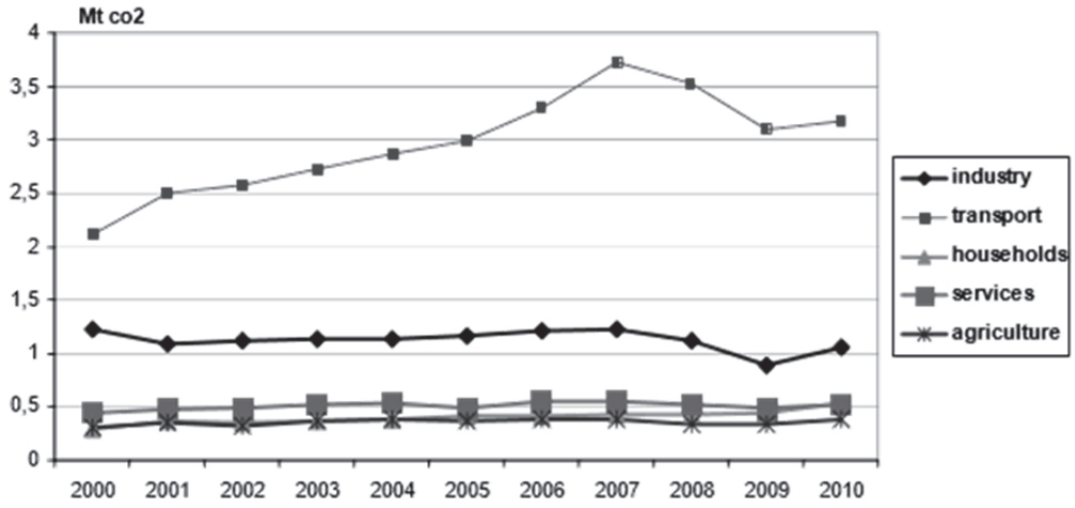
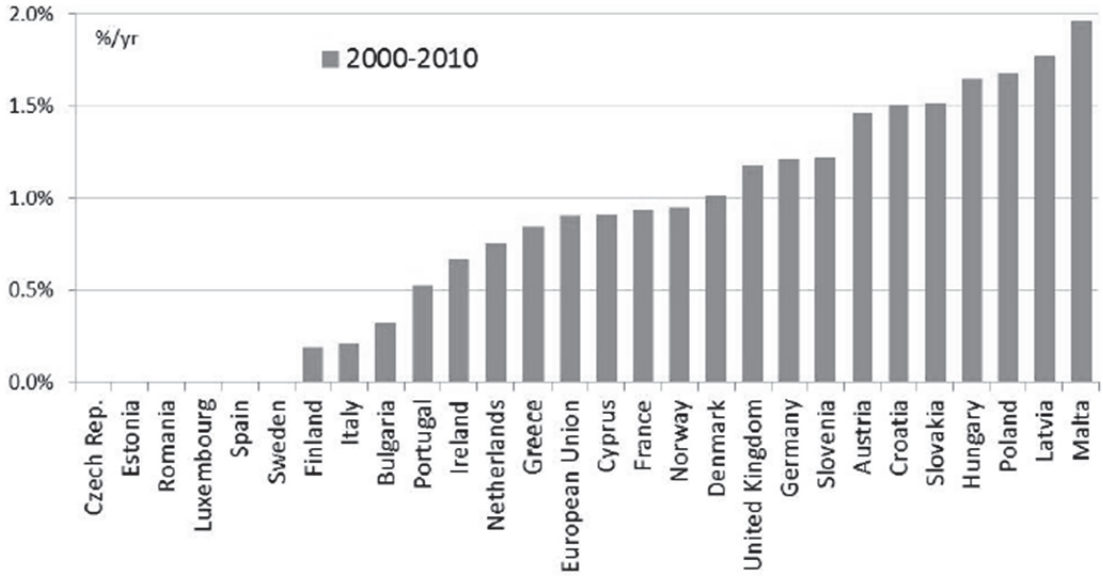


Source: ODYSSEE, 2010

Fig.1. **Development of CO_2 emission by ODYSSEE sectors, 2000-2010**



Source: ODYSSEE

Fig.2. **Energy efficiency progress in transport in the EU countries 2000–2012, %/year**

ecosystem health and promotes equity within and between successive generations;

— is affordable, operates fairly and efficiently, offers a choice of transport mode, and supports a competitive economy as well as balanced regional development;

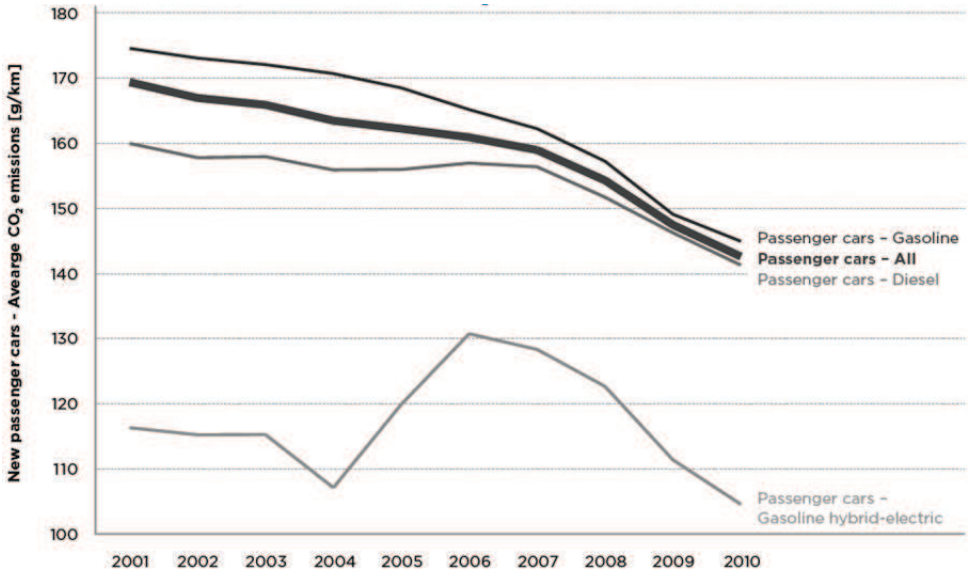
— limits emissions and waste within the planet's ability to absorb them, uses renewable resources at or below their rates of generation, and uses non-renewable resources at or below the rates of development of renewable substitutes, while minimizing the impact on the use of land and the generation of noise.

The key measures in greening economy are investment in natural capital, decarbonising of the economy and creation of green jobs, and the main areas for implementation of these changes are renewable energy, manufacturing, waste management, building, transport, tourism, and urban development (Atstaja D. et al., 2012).

2. Description of situation

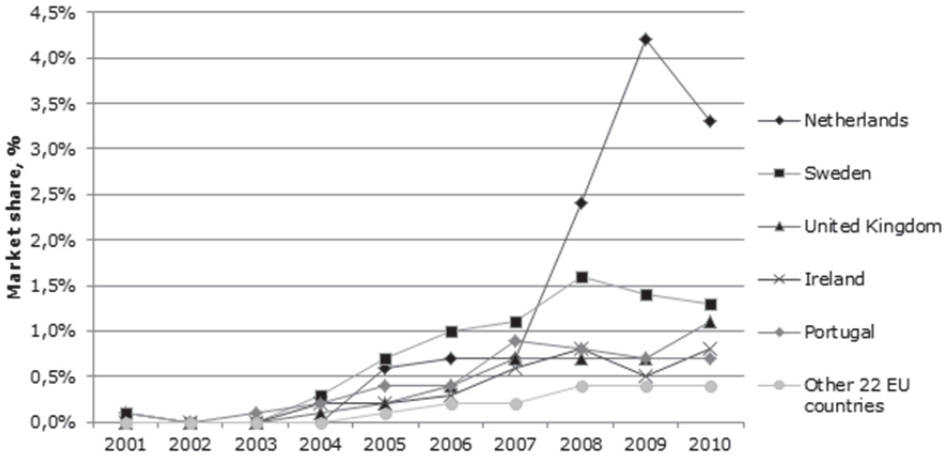
2.1. Globally and the EU

The research problem is characterised by Figure 1 that shows the dynamics of growth of intensity of global CO_2 emissions. Since 2000, CO_2 emissions have increased by 50.2% in the transport sector, while in the industry sector – by 18.7%. These two sectors mentioned above show the greater CO_2 growth proportion and accounts for a significant impact on the ecological processes.



Source: ICCT European Vehicle Market Statistics, 2011

Fig.3. **New passenger cars average CO_2 emissions by engine technology**



Source: author's construction based on ICCT European Vehicle Market Statistics, 2011

Fig.4. **New passenger cars: market share of gasoline hybrid-electric vehicles by the EU Member States**

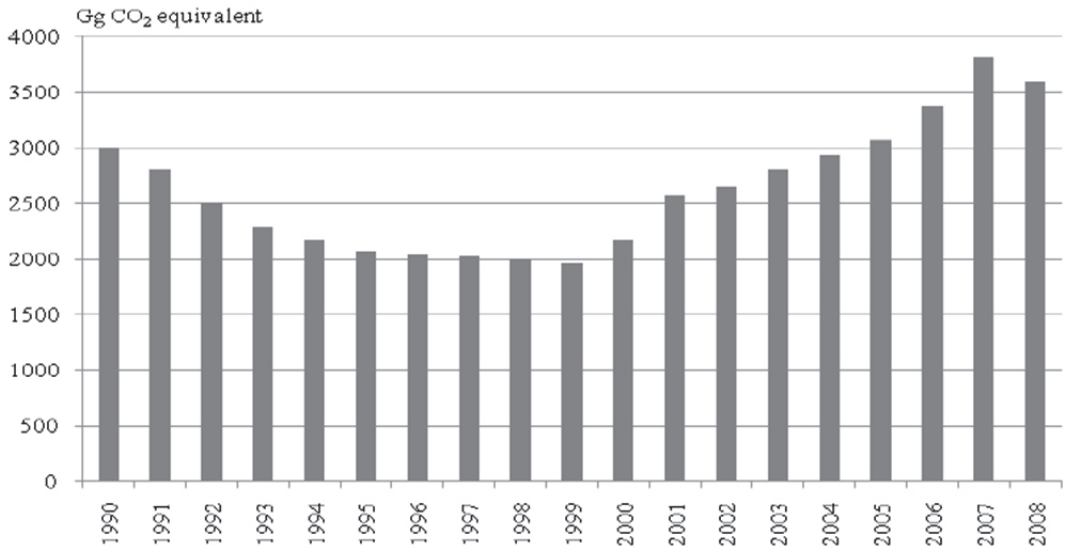
A general increase in economic activity in the last decade has contributed to the transport fleet efficiency indicators' improvements in most EU countries. Figure 2 describes the EU transport sector's energy efficiency progress by country.

Figure 3 demonstrates an environmentally friendly technology - CO_2 emissions efficiency parameters of gasoline-electric hybrid passenger vehicle and stresses the need for solution to promote the progress of CO_2 reduction at the national level.

Based on the data of Figure 4, the authors have conducted a study of the state support programmes (EAMA, 2010-2011) actualised in three countries with the greater proportion of hybrid trade.

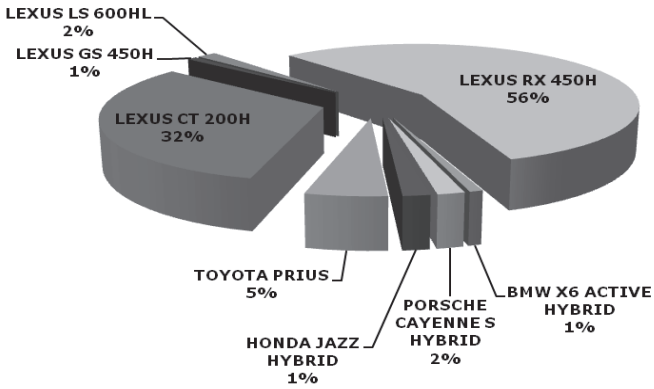
The Netherlands – hybrid vehicles with an energy efficiency label A benefit from a maximum reduction of EUR 6 400 of the registration tax. For hybrid vehicles with a B label, the maximum bonus is EUR 3 200. The registration tax is based on price and CO_2 emissions. Electric vehicles are exempt from the registration tax (Car and motorcycle tax - BPM) and from the annual circulation tax. Other vehicles, including hybrid vehicles, are also exempt from these taxes, if they emit less than 95 g/km (diesel) or less than 110 g/km (petrol), respectively.

Sweden – hybrid vehicles with CO_2 emissions of 120 g/km or less and electric cars with an energy consumption of 37 kwh per 100 km or less are exempt from the annual circulation tax for a period of five years from the date of their first registration. For electric and hybrid vehicles, the taxable value of the car for the purposes of company car taxation is reduced by 40% compared with the corresponding or comparable petrol or diesel car.



Source: author's construction based on Statistics data

Fig.5. **Greenhouse gas emissions in Latvia transport sector in 1990–2008, Gigagrams (Gg) CO_2 equivalent**



Source: author's construction based on Latvian Authorized Automobile Dealers Association, Latvian vehicle statistics, 2009 - 2011

Fig.6. **The proportion of new hybrid vehicles sold in Latvia in 2011 by makes and models**

The United Kingdom – purchasers of electric vehicles and plug-in hybrid vehicles with CO_2 emissions below 75 g/km receive a premium of GBP 5 000 (maximum) or 25% of the value of the vehicle provided they meet a series of eligibility criteria (for example, minimum range 70 miles for electric vehicles, 10 miles electric range for plug-in hybrid vehicles). Electric vehicles are exempt from the annual circulation tax. This tax is based on CO_2 emissions and all vehicles with emissions below 100 g/km are exempt from it. Electric cars are exempt from company car tax for a period of five years from the date of their first registration. Electric vans are exempt from the van benefit charge for a period of five years.

2.2. Latvia

Although Latvia shows one of the highest transport efficiency progresses in Figure 2 (it was affected by a partial restoration of the old fleet), the average fleet age of Latvia was 12.2 years in 2011, while the average fleet age of the European Union (EU) was 7.8 years (Latvian Authorized Automobile Dealers Association, 2012). Figure 5 shows a significant increase of CO_2 emissions in Latvia transport sector within the period from 1999, which indicates a rapid growth in total number of motor vehicles as well as increase in range of cargo shipments, which was influenced by the economic growth. The increase of the average fleet's age affects the proportion of CO_2 emissions on a pro rata basis; it increases the risks of traffic accidents, reduces transport costs' efficiency, limits the mobility of the population, and negatively effects state's economic indicators.

In Figure 6, authors are examining segmentation of environmentally friendly vehicles of the new hybrid vehicle technologies by makes and models sold in 2011 in Latvia. The authors conclude that premium brand Lexus dominates at the market with the share of 91%. This characteristic tendentiously points at the market segmentation with the consumers having

Table 1

Impact of environmentally friendly transport solutions on economy

Factor	Type of impact	Necessary adjustments	Result
Sustainable tax policy implementation and simplifying support mechanisms:	1) Declining of collected transport taxes; 2) rising costs of tax administration;	1) Applicable tax shall be calculated proportionally to the source of pollution; 2) the tax revenue from the EU support funds should be offset;	1) The society is motivated to use environment-friendly technologies; 2) growing demand for environmentally friendly cars.
Trade tends to increase the average purchase price of a car:	1) Reduce the purchasing power of citizens and businesses in other sectors;	1) New customer acquisition and financing mechanism should be created;	1) The emergence of new business lines, subsidized vehicles offer may appear.
Maintenance area will reduce fuel demand:	1) Declining tax and related tax revenue;	1) Changes in excise and related tax policy;	1) The tax burden is proportional to the pollution source.
Changing technology in after-sales service industry:	1) Perhaps structural unemployment and the deficit of qualified staff;	1) Additional investment in new equipment and staff retraining should be attracted;	1) Increase in the cost of external financing, 2) merchants lower liquidity.

high incomes and, relatively lower price brackets' proportion of 6% (Honda Jazz, Toyota Prius) gives proof to the economic cost-efficiency gap in hybrid vehicles' purchase or service.

The popularity of environment-friendly transport in Latvia is on average lower than in the EU countries, the main reason for which might be the overall economic situation in the country as well as the legislation and supporting programmes' deficit in the direction of promotion of green technology's application.

Latvia legislation on transport's tax (Law on car…, 2010) is applied to the vehicles during their initial registration as a calculating basis (Law on the vehicle…, 2010), depending on the quantity of CO_2 emissions. In the view of authors, the annual tax calculation is discouraging to the environmentally friendly vehicles' users, because vehicles' efficiency and environmental impact have not been measured in the process of rates' calculations, while parameters such as gross weight, engine's capacity, and maximum engine's power of the hybrid vehicles, in comparison with traditional analogues' technology, are inversely proportional to fuel's consumption and indices of emissions caused by greenhouse gas. Current fiscal policy does not stimulate the change of public opinion about the choice of environmentally friendly technology in the long term, meanwhile European auto makers therefore support taxation for passenger cars that is exclusively based on CO_2 emissions, technologically neutral, linear, and budget neutral (ACEA, 2012).

3. Research of public opinion and data modelling

In order to clarify public opinion on the environmentally friendly vehicles and to explore the socio-economic factors that affect their acquisition, the authors conducted a comparison between two studies – the survey among Australian, North American, Asian, and European citizens, conducted by the research agency Accenture and the survey among the Baltic citizens study, conducted by SEB Bank in 2011 (Accenture, 2012; SEB, 2011). As a result, authors concluded the following.

— The largest proportion among survey respondents, to whom driving habits' impact on the environment is important, is economically active population with higher education.
— The Baltic States' population is less concerned on the preservation of the environment and quantity of CO_2 emissions, respectively. Lower purchase's price and/or lower fuel's consumption are critical factors in the selection of a new vehicle in the Baltic States (the fact justifies the statistics of new pre-viewed car market and cause of low proportion of environmentally friendly vehicle's purchase).
— The factors of road taxes, duties, and special parking availability are an essential part to the potential buyers of environmentally friendly vehicles of government support's instruments.

Based on the comparative results of the study, the authors identify characteristics of environmentally friendly transport's consumer groups in the Baltic States - with secondary or higher education, who are economically active, with the age over 40, with incomes above average and higher, and with the inelastic response to the overall price increases.

The authors conclude that characteristics of the aforementioned consumer groups can be explained by the tendencies displayed in Figure 6, and that the proportion of consumers who prefer environmentally friendly vehicles has minor effect on substantial decrease of greenhouse gas emissions. The existing tools of financial support and legislation are not effective enough to motivate other consumer groups, which make it necessary to look for new solutions on the macro-economical level.

According to the massive entry of environment-friendly technologies in the transport industry, the authors predict significant changes in the economical processes and model the changes of the impact on the related industries. The aim of the modelling is not to

make numerical predictions but to encourage debate and to show correlations of how the changes in car sales, maintenance, service, and recycling processes may affect the commercial environment in the country.

Based on the example of the three Baltic States in the Figure 4, the authors have identified the conditions of transport tax policy, the use of whom could increase the activity of consumers – i.e. annual tax exemption for the hybrid-electric vehicles; the change in the tax calculation base replacing the criteria of the power and volume of engine by an inverse proportion of CO_2 emissions, and fuel consumption; to plan gradual transition of environmentally friendly transportation use in sustainable development programmes of all the municipalities; the simplification of the conditions of support programmes; the development of tax advantages for individuals and businesses.

Conclusions, proposals and recommendations

1. Sustainable transport systems make a positive contribution to the environmental, social, and economic sustainability and allow developing the needs of individuals as well as support balanced regional development. For stimulation of sustainable management and to contribute green economy, authors recommend a unified approach to environmentally friendly transport solutions in the integrated policy guidelines at all local government's levels with defined certain achievable criteria and strategy.
2. Exempt or reduce the registration and annual circulation taxes and/or partly reimbursement of the value of the sustainable friendly vehicles as well as taxation policy exclusively based on CO_2 emissions are the most effective support programmes in the EU countries with the greater proportion of hybrid and electric vehicles trade. The authors recommend implementing of these solutions at the national level as well as to change the process of rates' calculations based on vehicles' efficiency and environmental impact to stimulate general economic interest in the vehicle fleet replacement for application of the technologically more advanced units in Latvia.
3. The significant regional and socio-economic differences between countries do not give an opportunity to adopt a uniform policy and, as a result, the direction of environmentally friendly decision in each country is mainly its own initiative. The easily achievable entirety of the national supporting programmes can have a positive impact on the public's reaction, the development of market supply can be stimulated, and the growth of a general economic activity is predictable. The authors recommend the development of a new certification system for the criteria of the establishing environmentally friendly businesses.

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METHODS OF KNOWLEDGE MANAGEMENT IN ORGANISATIONS AND THEIR INFLUENCE ON ENTREPRENEURSHIP

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Abstract. Under the conditions of a knowledge-based economy and in the view of the concept of lifelong learning, it is necessary to find the methods for knowledge management ensuring the principle of equal opportunities and narrowing the gap between the development of urban and rural population. During the implementation of the project "Vocational Education 2005-2006", 2562 people in 119 groups in 21 regions of Latvia participated in trainings. In the course of training, it was established that the majority of adults in the regions did not have cognitive skills necessary for understanding, processing, and independent use of new knowledge in practice. The aim of the training was to develop such new skills and abilities in adults, which would contribute to the development of entrepreneurship, marketing, project management, and other skills most sought after in today's economy as well as those skills that would ensure that employees in the regions possessed competences improving their competitiveness in the labour market in accordance with the national programme. The authors have identified the limiting factors having influence on the development of employees in the regions and proposed solutions to the problem. In the course of the research conducted, the basic skills that should be developed in people living in the regions in order to facilitate the development of entrepreneurship were defined as well as theoretical substantiation of the knowledge management methods was developed alongside with the model for implementation of these methods in organisations.
Key words: methods of knowledge management, regional development, adult training
JEL code: D8, M12

Introduction

In accordance with the "Memorandum on Lifelong Learning" issued by the European Commission, it is necessary to implement the principle of equal opportunities for the development of regions and large cities. There is a gap between how implementation of this principle is described in the theory and what happens in practice. The problem lies in the knowledge management methods used in the regions and the difference between theoretical prerequisites of what people must know and be able to do and the real situation. This article is the authors' attempt to convert implicit knowledge about the real situation in the regions of Latvia into formal knowledge. As the learners before had faced the difficulties with obtaining new knowledge and processing it, in the course of adult training, innovative methods of teaching involving fast memorisation techniques and text structuring methods in the form of logicographic symbols were for the first time used in Latvia on a large scale.

The research aims to determine the ways of improving the methods of knowledge management in organisations to facilitate entrepreneurship. The objectives of the research are: to analyse knowledge management methods in organisations, especially in regions; to investigate the main factors having influence on sharing, dissemination of knowledge, and knowledge updating processes in organisations and their influence on entrepreneurship; to research and analyse the possibilities of use of innovative methods of teaching as a tool necessary for improvement of knowledge management methods. For the evaluation of the results gained in the course of training, the authors used the first and fourth levels of Kirkpatrick's model in their work.

The scope of the research was limited by the project requirements. However, despite the above-mentioned limitations, the conclusions may be drawn in relation to the possibility of using knowledge management methods proposed in this article to increase the competitive advantage of employees in the regions.

Topicality of Research

Lately, considerable attention is paid to the regional development. There are state-run programmes focused on this development. Nevertheless, the authors consider that the skills people have in regions today should be studied more profoundly in order to understand with the help of which methods they can manage their knowledge. This question becomes quite topical if the state-run programmes for regional development are considered from the perspective of the result rather than just a process.

Description of the issue

The European Union (EU) pays a lot of attention to the regional development. Every EU Member State implements the programmes focused on narrowing the gap between educational opportunities and availability of information for urban and rural population and regional development. Every state implements these programmes

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taking into consideration national and cultural characteristics. In Latvia, the project "Vocational Training 2005-2006" was implemented within the framework of the national programme "Support to Vocational Education". The project provided trainings in 119 groups in 21 regions of Latvia. Overall, 2562 people involved in agriculture completed the above-mentioned training.

On the part of the EU, the requirements to the project implementation were quite flexible. If it was necessary, the training providers could tailor and teach topics to learners with different preliminary knowledge levels; they had the right to change training topics up to 15% (of the number of topics) eventually replacing irrelevant topics with those requested by the learners. However, in the course of trainings conducted in the regions, the training providers faced a problem that the cognitive (educational) functions of the learners prevented them from mastering the topics described in the EU requirements as compulsory. People from regions demonstrated significant differences in the levels of initial training; at the same time, those levels were dramatically different from the one necessary for conducting the training on such special fields as project management, marketing, entrepreneurship, etc (Lando I., 2012 a).

The idea to conduct such training was correct and well timed; however, when theoretically developing such training, the level of people's initial training should be taken into consideration. Unfortunately, information at the disposal of officials by no means always reflects the real situation.

In the contemporary scientific literature on the management theory, there are no criteria that could evaluate the initial level of learners' training not from the point of view of their knowledge of the subject matter but from the point of view of their learning abilities or development of their cognitive functions.

People should be aware that under the conditions of today's economy highly skilled employees are becoming more demanded on the labour market (Chroneer D. and Stenlund K., 2006).

To explain the situation in simple terms, the authors use a metaphor applying analogies (Nonaka I. and Takeuchi H., 2000). To explain the mechanisms of knowledge acquisition and gaining new experience, Robert Wilson, a doctor of philosophy, (Wilson R., 2006) compared the human brain to a computer. The authors will apply the same analogy but in a different context explaining the need of learning and self-improvement.

Let us assume that a person has the latest computer but the software installed on it is out-of-date. Is there a sense in working on such a computer? A person will not be able to make use of the computer to the maximum since the software would hinder this process. Now, let us imagine that a person has the latest software versions but the computer is very old. Again, this person will not be able to use the software to the maximum because of poor computer specifications. In the regions, employees in organisations, managers and training providers face the same problems. This limitation lies in peculiarities of adults in relation to cognition and their readiness to receive new information. In this case, it is not the question of motivation. A big gap appears between rural and large city population, for instance, in the field of entrepreneurial studies and acquisition of knowledge related to this field, such as marketing, project management, etc (Lando I., 2012 b).

Novelty

Employee development methods, including in the regions, are regarded from the point of view of improving cognitive abilities of employees and managers, and through this – from the point of view of the environment focused on studying and learning. In this way, a possibility to intensify the processes of searching for, acquiring, processing, comprehending, and transferring of knowledge is associated with self-improvement of managers and employees, which would contribute to the development of organisation's competitiveness and entrepreneurship.

Materials and methods

The particular research is the authors' attempt to convert informal knowledge about the real situation in the regions of Latvia into formal knowledge. During the implementation of the project "Vocational Education 2005-2006" within the framework of the national programme, the co-author of this article Irina Lando personally conducted trainings in the regions to identify the levels of training in groups. The purpose of this initiative was to understand in what form information should be presented for people to enable them to apply the obtained knowledge practically rather than just theoretically. To improve the effectiveness of adult training, such training should be conducted by specialists who are able to use this knowledge and apply it in practice (Levy M., 2011).

In the course of training, at the initial stage it was established that adults in the regions face cognitive difficulties while working with new information, and even more while converting it into new knowledge for its further use. Therefore, in accordance with the opportunities provided by the project, a course on "Contemporary Methods of Information Processing" using innovative methods of teaching, i.e. fast memorisation and text structuring techniques, was organised as the first learning course in all possible regions. Therefore, prior to giving information on different educational trends, the skill "how to learn" was developed in adults. Upon completion of the training, the questionnaire survey was conducted with the aim to evaluate the training according to the first level of Kirkpatrick's model.

Results

Training modules were chosen because they represent active methods of teaching. Studying new material is a joint and active process allowing creating new knowledge (Rycroft R., 2006).

In the process of teaching employees, a problem arises due to the general level of their education and development, professional training, creative potential and readiness to receive new knowledge. Learning and development of employees allows an organisation to develop more successfully (Barczak G. et al., 2007). During trainings, innovative methods of teaching were used with the aim to involve people into cognitive processes more actively. As a result, a greater output is gained from further training contributing to the development

Table 1

Evaluation of the quality of learning within the project "Vocational Education 2005-2006"

Questions under discussion	Number of people who gave evaluation "excellent" and "good"	Proportion % from the overall number of respondents
The course in general	2.353	92
Work of the teacher-lecturer		
ability to explain	2.341	91
use of practical examples	2.117	85
contact with course participants	2.098	82
Course materials		
content	2.128	83
design	2.094	82
materials are comfortable to work with	2.345	92
Working conditions during the course	2.315	90
Your benefit from the course		
new knowledge, ideas	2.472	97
practically applicable material	1.896	74

n=2562

Source: Authors' research

Table 2

Corporate trainings conducted in Latvia in scope of the programmes offered by the authors

Organisations (in order)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
meets strategic aims		X	X			X				X	X	X	X			X	
topicality				X	X	X	X				X	X	X				
availability	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
reasonable price	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
result stability		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
increased performance	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X
fast knowledge dissemination			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
shared vision	X	X	X	X	X	X		X	X	X			X		X	X	
competence development	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
meeting personal goals	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
increased client satisfaction	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

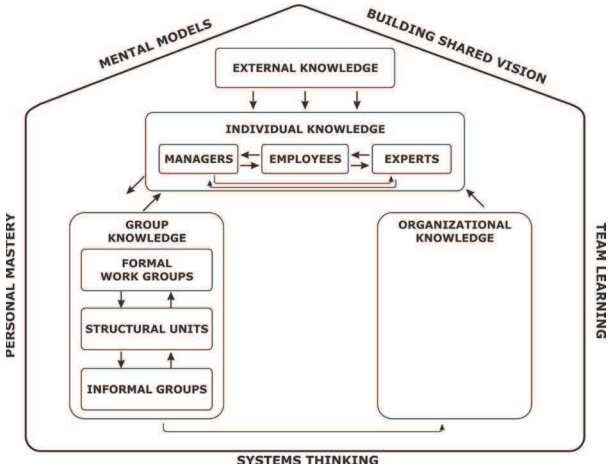
Source: Authors' research

of entrepreneurship in the regions (Voronchuk I. and Lando I., 2012 a).

Employee training programmes that were approved and supported by the learners help in production of new knowledge that, as a result, leads to innovative solutions (Egbu C., 2006). Authors believe that in the process of planning employee training it is necessary not only to understand what knowledge they must have but also to bear in mind their own opinion, which would allow an organisation to gain a competitive advantage (Voronchuk I. and Lando I., 2012 b).

In the course of implementation of the project "Vocational Education 2005-2006", the use of innovative methods of teaching gave positive results. Table 1 shows that 97% of respondents pointed out new knowledge and ideas. In scope of the research, positive attitude towards innovative methods of teaching was established; the effectiveness of use of specific methods was measured using Kirkpatrick's model. Due to the complexity and expensiveness of the evaluation that may require even greater costs than the training itself, only 7% of organisations in the USA and 16% in Great Britain perform evaluation of the reaction to the trainings conducted (i.e. Level 1 of Kirkpatrick's model) (Hale R., 2003). To assess training effectiveness, the authors used Level 1 of Kirkpatrick's model (Table 1) (Kirkpatrick D., 1994).

At Level 1, the learners' reaction was measured right after the end of training (they filled in the questionnaires). The training course was considered to be mastered only if the learners were able to acquire not less than 75% of the information presented during the course.



Source: Authors' design based on the ideas of Senge and Jackson (Senge P., 1994), (Jackson T., 2007)

Figure 1. **The Relationship between self-improvement of managers and employees and knowledge management in a learning organisation**

Level 4 of Kirkpatrick's model was used to evaluate the impact of the training results on the organisation's performance results. Evaluation according to the fourth level was performed in a specific period of time; the best time for evaluation is one year after the end of training. Table 2 presents the data obtained from questionnaires filled in by top-level managers from seventeen large organisations in Latvia, subordinates of which had completed the training using innovative methods of teaching. The skills acquired in the course of training offered by the authors not always have a direct impact on the career growth (Rowold J. and Kauffeld S., 2008); nevertheless, they will undoubtedly be useful and demanded under the conditions of a knowledge-based economy, which is proved by the questionnaire results (Table 2).

The authors developed semi-structured questionnaires and sent them to respondents by e-mail. The replies were afterwards specified during semi-structured phone interviews. The authors used a system of evaluation of qualitative indicators of trainings. In this way, after some time it is possible to evaluate the effect of learning results on Level 4 of Kirkpatrick's model (Table 2).

As it follows from Table 2, evaluation of learning in positive indicators favourably characterises trainings conducted by the authors. The first three indicators presented in Table 2 are the ones recommended by Professor Pineda (Pineda P., 2010) and may be evaluated by top-level managers. Table 2 was created based on the data provided by managers. In the survey, respondents pointed out that during their learning process for the first time the authors had provided that it was taken into consideration that the term "availability" might be regarded as employees' possibility to acquire the techniques offered.

The evaluation of learning effectiveness according to Level 4 of Kirkpatrick's model leads to the conclusions regarding the effectiveness of the personnel-teaching model proposed by the authors and possibility to introduce the model in the general knowledge management system of an organisation. This table is presented in the article with the aim to demonstrate the evaluation provided by top-level managers who in this case may act as experts of the efficiency and necessity of such training. Enhancement of entrepreneurship in the regions is facilitated by availability of qualified employees who are able to ensure competitive advantage of an organisation. The data presented in Table 2 reflect the opinion of top-level managers (1- Shipyard; 2- Lindekss Ltd; 3-Guron Ltd; 4-Lindex; 5-BTA Insurance; 6-Skonto; 7-Rietumu Bank; 8-Real Estate; 9-Kronus; 10-TD Baltic; 11-Rezekne City Council; 12-Rezekne Higher School; 13-Norvik Bank; 14-Principals and teachers of Daugavpils school; 15-Maxima directors; 16-Swedbank; and 17-JSC Troja) on the effectiveness of using innovative teaching methods for improving the competitiveness of employees as well as how such training assists in meeting personal goals of the learners, which in its turn contributes to the development of entrepreneurship.

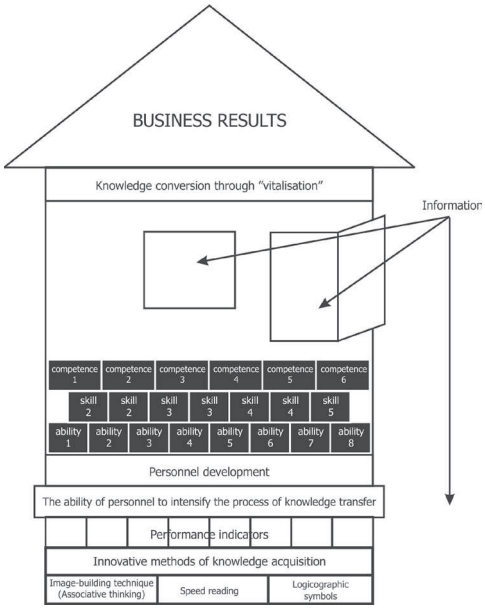
Theoretical substantiation of theoretical approach

The data obtained in the course of practical researches require the development of theoretical foundation. The authors proceeded from the fact that organisation's learning capability allows to create new knowledge and makes this knowledge more diverse and this way increases the level of organisation's competitiveness (Morales V. et al., 2007).

Peter Senge's idea of a learning organisation (Senge P., 1994) has been used as a vision which does not practically exist but to which organisations should strive for in their development. This idea serves as an external contour in Figure 1.

The direct influence of the manager and employees on searching for, receiving, processing, using, and transferring information and knowledge in organisations is used as a basic idea.

If an organisation succeeds in finding a possibility to increase the effectiveness of these processes, then this organisation will gain additional competitive advantage taking into consideration that in the context of a knowledge-based economy, knowledge has become



Source: Figure developed by the authors on the grounds of the conducted researches

Figure 2. **Model for use of the knowledge management system in organisations**

the most crucial asset for organisations (Grant R., 1996). A manager has a direct influence on the style of work and the employees' attitude towards knowledge (Jeroen P. et al., 2007). In this context, a two-sided process of converting individual knowledge into group knowledge and vice versa should be considered (Jackson T., 2007).

A manager has a strong influence on the employees through communication encouraging the subordinates' self-improvement, if the manager him/herself is focused on constant enhancement of his/her level of development (Krause D., 2004). If a manager has skills of fast information processing, he/she will be interested in his/her colleagues having the same skills, since by letting knowledge and information pass through them, the subordinates and colleagues share the knowledge and information with their supervisors. Manager's self-improvement has a positive effect on the overall division, subdivision, and organisation. In the process of evaluation the work with knowledge, it is necessary to be aware of the fact that knowledge obtains its value only if it is used by employees in an organisation and, particularly, if it is reused (Liyanage Ch. et al., 2009). In practice, managers quite often face cognitive (educational) limitations of employees, i.e. a problem related to limitations of the employees' abilities to receive and perceive new knowledge and information. These limitations may have a considerable effect on the understanding of information and knowledge in a more complicated context (Hinds P. and Pfeffer J., 2003). Manager who is constantly engaged in self-improvement will create an environment focused on self-improvement in his/her division, subdivision, and organisation. On the other hand, individual characteristics of any employee should be taken into consideration since there is a possibility to multiply knowledge in organisations by "vitalising" it and "letting it pass through oneself" at the expense of employees and their individual knowledge (Tonnessen T., 2005). The importance of discovering and developing new methods that could be used in different organisations and that would be effective in the work with knowledge may be spoken of herein (Lambe P., 2011).

An important knowledge management method, i.e. the social constructivism approach, regards an organisation as the only enterprise that is able to learn. Consequently, we may consider a person as a part of a system who reacts to changes in the system in any case rather than works individually (Jackson T., 2007). Self-improvement of managers and employees will have a direct impact not only on the basic elements of the model of a learning organisation but also on the use and production of new knowledge in an organisation.

For intensification of these processes, the authors propose to use such innovative methods of personnel teaching as knowledge management methods that may be introduced in the general personnel development system at any level or stage. To gain the maximum effectiveness in return for use of the innovative methods of teaching, they should be introduced at a stage that is before any other training or development (Figure 2). Figure 2 demonstrates a model for implementation of knowledge management methods.

Innovative methods serve as a basis for the whole further education and development where a person's ability to process specific amounts of information is a limiting factor. According to the authors' opinion, the arrows depict contemporary knowledge management methods in organisations. This model may be used both by organisation's managers and by managers of divisions and subdivisions for self-improvement and development of their subordinates.

The authors propose to compare these methods with the foundation of a house that is not seen and the importance of which is hard to evaluate. However, if one tries building the second floor on the basis of a one-

storey house without strengthening the foundation, the house may either break down or remain standing. It can happen if one slightly increases the load. Yet, if one has to urgently build, let us say, four floors, it is clear that the old foundation will hardly bear this construction. The excellent quality of materials used in construction does not matter unless the foundation is duly strengthened; and knowledge management methods are implied in a similar way. This model allows developing new personnel competences that are in-demand under the conditions of a knowledge-based economy. These competences allow personnel to perform their work duties contributing to the organisation's development in accordance with the strategy and to achieve business results.

Discussion

The authors are aware that their claim may seem rather bold. However, according to the authors, prior to investing large amounts of money into adult training, it is necessary to teach them first how to learn. Although innovative methods of teaching as a new tool are placed in the employees' service, cognitive problems in adults still are noticeable, especially in the regions. Despite growing demand for highly skilled labour force, the concept of lifelong learning, state-run programmes, and the EU requirements, people living in the regions are not used to constantly improve their qualification. Manager's self-improvement may contribute to the creation of an environment inspiring self-improvement of employees. In this way, knowledge in organisations will increase in terms of quantity and improve in terms of quality and reusing thereof, which will facilitate the enhancement of the organisation's competitiveness and contribute to the development of entrepreneurship.

Conclusions and proposals

1) In the course of trainings conducted for adults in the regions, it was established that adults lacked reasonable skills necessary for knowledge acquisition that would be a requisite for the development of entrepreneurship, for instance, for the sake of mastering the skills of marketing, project management, etc.
2) For the first time in practice, adult training using innovative teaching methods has been implemented in the regions to such an extent within one country (in 21 out of 24 regions of the Republic of Latvia).
3) To contribute to the development of entrepreneurship in the regions, people should have skills allowing them to quickly process information, learn something new and retrain improving both their personal and their organisation's competitive advantage.
4) The article presents a theoretical substantiation of the necessity to apply new information processing skills alongside with the developed model for implementation of these skills in organisations that can be successfully used for regional development. The theoretical findings have been practically tested by the authors.
5) The results of the questionnaires filled out by top managers proved that improving of the knowledge management methods allows developing the skills facilitating enhancement of entrepreneurship in employees and managers.

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CORPORATE SOCIAL RESPONSIBILITY COMMUNICATION AND THE FOOD INDUSTRY

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Abstract. Sustainability has become a relevant issue for consumers due to human rights violations and the environmental problems society faces. These problems are a consequence of unmeasured consumerism and massive production, which has led to the questioning of the current production-consumption paradigm. This has resulted in the creation of Corporate Social Responsibility initiatives by companies and an increased interest in communicating them to their key stakeholders. This literature review, including the analysis of 77 publications printed in English from 2000 to 2012, concentrates on the techniques and media used by companies in the food and beverage sector to communicate their CSR strategies to consumers as strategic stakeholders. This is relevant not only for businesses of all industries, but could incentivize further research on CSR communication and the use of the Web as a determinant of consumer behaviour in the aforementioned industry.
Key words: Corporate Social Responsibility, communication, food and beverage industry
JEL code: M 14

Introduction

One of the central propositions of Corporate Social Responsibility (CSR) is that consumer behaviour should have a strong impact on how companies do business. The way, in which current goods are consumed and produced, is unsustainable, and it strongly contributes to today's environmental problems (European Commission, 2010). Society expects organisations, including food and beverage producerd, to commit to social, environmental, and economic goals, and to demonstrate this commitment through their actions. That is because consumers have become more socially responsible, are better informed, more demanding, and are more aware of the consequences of their consumption habits on the environment. They are increasingly interested in expressing their social and/or environmental concerns through their consumption choices (European Commission, 2010; Gonzales C. et al., 2009; Valor C., 2008) and require companies to meet their expectations (Smith, 2003). In order to do so, they are demanding CSR information from businesses, and the information they receive has an effect on their consumer behaviour (Pomering A. and Dolnicar S., 2009). Therefore, it is necessary for companies to create more sophisticated and on-going stakeholder awareness, which can only be achieved through improved CSR communications strategies (Morsing M. and Schultz M., 2006). The objective of this paper is to offer insights on CSR communication, the way in which these policies are communicated, and the tools being used for information disclosure, focusing on the food and beverage sector.

Research, results and discussion

The authors carried outAa literature review, as defined by Fink (1988 . As a result, the conceptual content of CSR communication was identified with the aim of further developing the theory related to it. The literature review was implemented, as proposed by Seuring and Müller (2008) following four steps: material collection, descriptive analysis, inductive approach to select the categories of analysis, and then analysis. It was limited to papers and books in English with either a management/business, consumer studies, marketing, public relations/communication, or accountability focus. All of the references used were published after the year 2000, with the exception of those that discuss the history and definition of CSR. Lastly, the publications dealing with the view of stakeholders different to those of consumers (e.g. government) were not taken into account, whereas those that offer a general scope, which can be applied to different types of stakeholders, were considered.

A structured keyword search was carried out using major available databases such as Elsevier (www.elsevier.com), Springerlink (www.springerlink.com), Wiley (www.wiley.com), and Emerald (www.emeraldinsight.com). Additionally, the authors consulted library services like EBSCO (www.ebscohost.com) and Scopus (www.scopus.comd. The keywords used for the search included Corporate Social Responsibility, sustainability, stakeholders, communication, reporting, disclosure, consumer behaviour, and consumption. Another source for references corresponded to that of the literature cited by the articles.

As a part of the descriptive analysis the publications were classified according to the year, in which they were published and the research methodology that was used. The sources were organised by the year of publication. In the case of books, such as Visser et al. (2011), which are compilations of articles/chapters from different authors, each of the articles/chapters was considered separately since they approach CSR from different points of view and theorise on diverse CSR-related themes. The results

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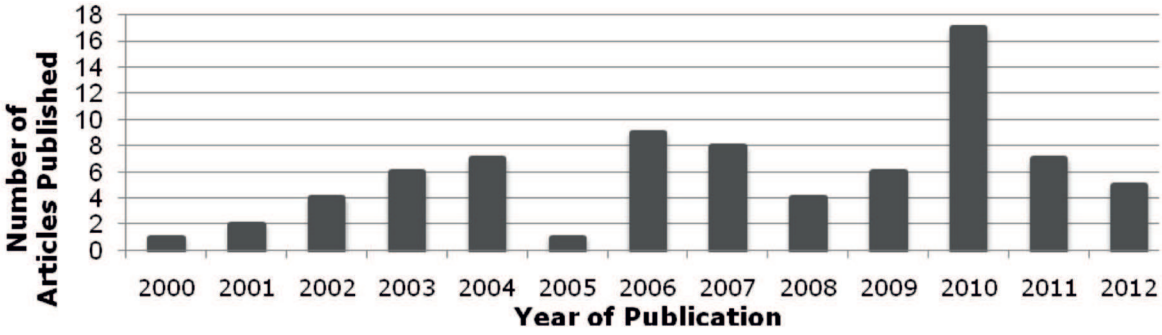
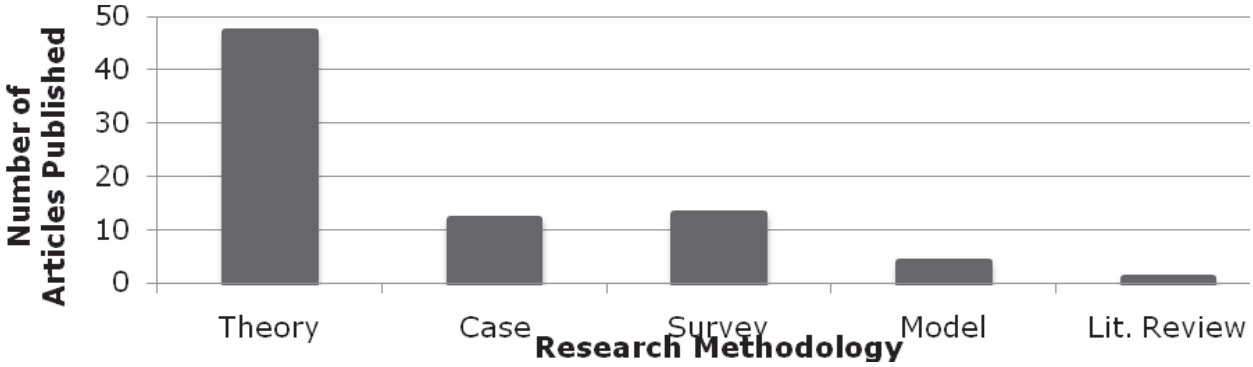


Source: Author's construction based on the literature review

Figure 1: **Distribution of sources across the time period (N=77)**



Source: Author's construction based on the literature review

Figure 2: **Distribution of sources according to the research methodologies used (N=77)**

for the distribution of the publications across the time period defined are shown in the figure 1.

Then the research methodology used was determined and quantified. The Figure 2 shows the results of the aforementure 2. A source considered as 'theory' is one that is theoretical and conceptual. A 'case study' or 'case example' provides illustrative evidence into the topic, and might describe industry practices without aiming at theory development or testing. 'Surveys' encompass the articles that use both quantitative and qualitative research methods (e.g. face-to-face interviews) to collect data. 'Models' are those that propose mathematical models, and 'literature reviews' are critical analyses of groups of literature sources.

CSR has become a trending research topic, which is reflected in the increasing number of publications about it in the areas of consumer studies, marketing, management and related topics, communications and public relations, and accountability and accounting. This trend is expected to continue, considering the importance of environmental issues, the tendency towards more sustainable consumption, and the pressures on the food and beverage industr still is still a very theoretical topic, and empirical research (surveys and case studies/ examples) is less common. Literature reviews are seldom, probably due to the large amount of information available and the implications this has on reliability. The limitations of this revie that related to the authors' inability tad not all existing publications on the read, and Eh that as the only language consEnglishin the studat onlyfinally, there was only one researcher who carried out the analysis.

Definition and related concepts

CSR as a written, recorded, and researched concept is largely a product of the past fifty years (Carroll A. B., 2012). CSR can be defined as "the way in which business consistently creates shared value in society through economic development, good governance, stakeholder responsiveness and environmental improvement" (Visser W., 2011). CSR is a way in which companies interact with their stakeholders on a voluntary basis, it has a multi-stakeholder orientation, it aligns social and economic responsibilities while relying on practices and values, and companies internalise and/or manage externalities through it (Crane A. et al., 2008; European Commission, 2011). In modern usage, a widespread definition of CSR is that of the World Business Council for Sustainable Development (WBCSD) that defines it as "the commitment of business to contribute to sustainable economic development, working with employees, their families, the local community and society at large to improve their quality of life" (WBCSD, 2004).

Nowadays, different concepts related to CSR have appeared, e.g. strategic CSR and strategic philanthropy, the most renowned being sustainability. Sustainability is of special significance to the food and beverage industry, to consumption, and can be considered a synonym of

CSR (European Commission, 2011; Mark-Herbert C. and von Schantz C., 2007). Sustainability integrates society, economy, and ecology seeking to assure the preservation of resources for both the present society and the future generations (WCED, 1987). It has gained force due to profound changes in our ecological systems, caused by consumption habits and business practices. In the realm of food, there exists unmeasured consumerism that does not take into account the impact of purchases and production practices, such as intensive agriculture. These are issues that sustainability addresses and seeks to change through the encouragement of sustainable consumption (Sabapathy J., 2010/2).

Main stakeholders in the development of CSR: Consumers

Stakeholders are "any group or individual who is affected by or can affect the achievement of an organisation's objectives" (Freeman R.E. and McVea J.A., 2001). When developing a CSR strategy, stakeholder engagement must be at the core because companies, who succeed at managing their relationships with their stakeholders successfully, will usually survive longer and outperform those who do not (Morsing M. and Schultz M., 2006; Smith N.C., 2003). Therefore, it comes down to identifying who those stakeholders are and what they represent to the company (Sillanpää M., 2010; Smith N.C., 2003).

The term stakeholder encompasses customers, employees, stockholders, competitors, suppliers, governments, distributors, media, etc. (Johnson-Cramer M.E., 2). ButHowever, for the purpose of this paper consumers have been selected as the main stakeholders since they are the main target of CSR (Kim H.S., 2011). Consumers have become increasingly savvy about environmental issues and their interest on the impact and consequences of their purchases on the environment should be pondered (Darnall N. et al., 2010). In order to incorporate consumers' interests, a close collaboration with them must exist based on proper communication. That is because consumers face information asymmetries when it comes to CSR programmes, so they usually lack knowledge on both social and environmental issues (European Commission, 2011; Pomering A. and Johnson L.W., 2009).

Getting the message through to consumers is fundamental because they hold functional links with the organisation; they perform the ultimate output function of consuming the products and services, which is necessary in order to assure the permanence (at least in economic terms) of the company (Rawlins B.L., 2006). They can reward and punish the company (Pomering A. and Johnson L.W., 2009). They areactive, because consumption itself is an active process, and because they are "in a position to enhance market rewards for socially responsible companies through the consumption and investment decisions they take" (European Commission, 2011). Furthermore, they can be both supportive and non-supportive, which is an issue that the company must identify and address in oroperly develop properly CSR and sustainability strategies (Rawlins B.L., 6). ButNevertheless, most importantly, they are legitimate stakeholders because the company is willingly accepting benefits from them; the most obvious being money, but others like word-of-mouth (good or bad) are also relevant. In order to engage consumers and for companies to enjoy the benefits of being socially responsible, the CSR message needs to be communicated (Pomering A. and Dolnicar S., 2009).

CSR communication

Communicating CSR initiatives and being perceived as socially responsible across key stakeholders is problematic (Morsing M. et al., 2008). Although there are companies that are truly committed to CSR, they often fail to communicate to their stakeholders actively enough and do not get to enjoy the benefits of their engagement (Lewis S., 2003). For CSR communication to be successful, trust in the information source constitutes a critical issue (Pomering A. and Dolnicar S., 2009). Communication is an increasingly important asset for a company's strategy; therefore, the emphasis must be made on its eftively adjing it to the intended target group. In an ideal situation, what companies communicate as their principles should be reflected in their business practices (Mark-Herbert C. and von Schantz C., 2007). It is necessary for companies to communicate their CSR activities and assure the proper use of relationship management in order to satisfy consumers' expectancies, to build or enhance their relationship with them, and reach the anticipated levels of CSR (Hou J. and Reber B.H., 2011).

Companies may choose to disclose information about their CSR engagement through CSR reports, at a corporate level, or through product claims, at a product level (Stø E. et al., 2005). CSR reports are published to address the information needs of various stakeholders, are usually issued by a limited number of companies, and tend to be of low quality, especially when it comes to the scope of reporting (Valor C., 2008). Product claims are voluntary statements released by enterprises, which are not necessarily verified by monitoring parties, and labels are a form of CSR-related information that serve as 'memory aids' for consumers; they can take labels into account when making consumption choices. These can still be considered a signalling srategy, because producers decide voluntarily to engage themselves in the process to link their brands to these labels (Valor C., 2008).

The way, in which companies strategically engage themselves in the communication of CSR policies, is dependent on the way, in which they expect to create a shared understanding with their strategic stakeholders (Johnson-Cramer M.E. et al., 2012). Morsing and Schultz (2006) have proposed three different communication strategies, in which companies engage themselves vis-à-vis their stakeholders: the stakeholder information strategy, the stakeholder response strategy, and the stakeholder involvement strategy.

In the stakeholder information strategy, there is a one-way flow of information: from the company to consumers. This makes the purpose of this type of communication to spread information, not always seeking to persuade consumers, but to inform them about the organisation's CSR practices. The stakeholder response strategy relies on a two-way asymmetric communication model, where the information flows both to and from the stakeholders. The fact that the model is asymmetric means that there

Table 1

Dimensions of CSR disclosure

Economic dimension	Environmental dimension	Social dimension			
		Labour practices and decent work	Human rights	Society	Product responsibility
• Economic performance • Market presence • Indirect economic impacts	• Materials • Energy • Water • Biodiversity • Emissions, effluents, and waste • Products and services • Compliance • Transport	• Employment • Labour/ management relations • Occupational health and safety • Training and education • Diversity and equal opportunity • Equal remuneration for women and men • Employee satisfaction	• Investment and procurement practices • Non-discrimination • Freedom of association and collective bargain • Child labour • Security practices • Indigenous rights • Assessment • Remediation	• Local communities • Corruption • Public policy • Anti-competitive behaviour • Compliance	• Customer health and safety • Product and service labelling • Marketing communications • Customer privacy • Customer satisfaction • Compliance

Source: Global Reporting Initiative, 2011

is an imbalance from the effects of public relations (PR) in favour of the company, who seeks to change public attitudes and behaviour through PR. The stakeholder involvement strategy is based on a dialogue, a two-way symmetric communication, and on a bilateral persuasion: the company tries to convince its stakeholders to change, and the stakeholders try to bring about a change within the company. Stakeholders' expectations and opinions are considered, therefore informing and surveying are considered insufficient. This makes the stakeholder involvement strategy the most appropriate for CSR communication (Morsing M. and Schultz M., 2006).

CSR reporting: Comprehensive reporting and the food industry

Comprehensive reporting, proposed by Robertson and Nicholson (1996), suggests a hierarchical model of disclosure, where companies go f rom general rhetoric to specific endeavours, to implementation and monitoring. Rhetoric relates to the fact that companies recognise the value of social responsibility and reference it in company documents. The specific endeavour level consists of the CSR initiatives that are specifically tied to the company and the environment, within which it operates, with policies and activities specifically designed for this purpose. Finally, in order to implement and monitor, companies normally perform activities such as annual environmental reviews and audits. This phase is consistent with a goal setting approach, with companies setting targets and reporting on their progress (Robertson D.C. and Nicholson N., 1ards toConcerning comprehensive reporting, differences exist between different industrial sectors. In the case of the food and beverage industry, a low emphasis is placed on shareholders, but product quality and the company's image, as a responsible citizen to the community, is stressed. There is also a strong focus on consumer satisfaction, so companies are more likely to emphasise CSR (Robertson D.C. and Nicholson N., 1996). Even though the food and drink industry does disclose on a wide variety of items, the "average level of comprehensive reporting is relatively low" (Bouten L. et al., 2011).

There are two main at are at the core of the food industry's external effects and should be central to reporting: health-related impacts and globalisation-related impact. The Hhealth-related impacts are consumers' main concern, and there is a renewed scrutiny in this area due to widespread media coverage. This is because consumers have become more nutritionally aware, have changed their eating pattern resultbecause of innovative science (e.g. genetically modified organisms (GMOs)) (Sabapathy J., 2010/1). On the other hand, globalisation-related impacts affect not only consumers, but also the people are involved in production processes, or might be affected by their wider effects. This refers to the use of globally extensive supply chains and to the global scale of the sector's production impacts. Complex and influential factors include the use of food for biofuels, desertification, famines, pesticides and fertilisers, fishing fleets, agricultural machinery, 'food miles', and food processing and distribution (Sabapathy J., 2010/1). This reflects the complex nature of achieving more sustainable food and drink produereforetherefore, the economic, social, and environmental aspects of CSR are critical for the sector.

Dimensions of CSR reporting

To satisfy the various interests of stakeholders andble to comprehensively and clearly able to communicate on CSR and sustainability, a framework of globally shared concepts, a consistent language, and a way of measuring is required. The Global Reporting Initiative's (GRI) Sustainability Guidelines (version 3.1) (2011) serve as a starting point to providing a complete and credible framework for sustainability reporting. They offer a series of performance indicators to assess the organisation's CSR activities (2011) and constitute a recognised 'global' standard for sustainability reporting (Iansen-Rogers J. and Molenkamp G., 2010). The dimensions proposed by the GRI are shown in the Table 1.

Companies should set organisation-wide goals concerning relevant economic, environmental, and social aspects, and they should set up the necessary indicators to measure the results of performance against the established goals. Policies should be brief and communicated organisation-wide, in order to clarify what the company is aiming to achieve. There should always be monitoring and follow-up procedures put into place that accompany the training and awareness created within the organisation's stakeholders. Monitoring should always be carried out in order to apply corrective and preventive actions, and follow-up can be done through auditing/ verification (Global Reporting Initiative, 2011). In order to enhance the credibility of their reports, organisations can set up internal control systems and internal audits, and consult external assurance providers and stakeholder panels (Global Reporting Initiative, 2011; Waddock S. et al., 2001).

Tools for disclosure of CSR information

The media channels that a company chooses to disclose its CSR-related information should correspond to those that have the wider reach within their group of strategic stakeholders. The communication options depend on the goals and perspectives, the time frame set for them, the stakeholders, to whom the report is addressed, how the organization plans to update the content, the distribution channels, and reach the aims to be accomplished (Global Reporting Initiative, 2011). Active choices in communication and a long-term perspective assessment of the outcome are necessary to establish 'stable grounds' to build a corporate image (Mark-Herbert C. and von Schantz C., 2007).

Consumers obtain CSR information through the media, usually perceived as ineffective, through both formal (e.g. university courses) and informal (e.g. NGO seminars) sources, or through publications on ethical and sustainable consumption. The latter are more likely to have a greater influence on consumers' perceptions and behaviour, because they are more literate and cognitively empowered (Valor C., 2008).

Companies used to transmit their CSR messages through verbal communication, hard copies, print media, and presentations etc., using mainly a one-way communication, which was limited in reaching a heterogeneous audience, fully engaging stakeholders, and was (and is) costly and time consuming (Isenmann R. , 2006). Due to the way the Internet is used, today's digital world is not just about providing information, but about being 'connected'. Consumers are always 'on-line' and are a part of a human and digital 'power grid'. Social media pages (e.g. blogs, forums, social networks, etc.) show higher levels of activity as compared to corporate websites because they are valuable and easy-to-consult sources of information. They are a space where consumers can and do share links and opinions about the world around them, including companies, and their perceptions (Dellarocas C., 2006); therefore, stakeholder engagement can be fostered through them by monitoring participation and involvement (Fieseler C. et al., 2010). For companies, the use of the Web for communication purposes translates into four main benefits: inexpensive collaboration; real-time and efficient communication; public relations; and online archiving of the information (Schneider A.M. et al., 2007).

The favouring of the Web is also a result of the rejection of traditional 'one-size-fits-all' mass media sources has led to a shift towards different and more modern channels of CSR communication, due to the appearance of new technologies and to shifting consumer preferences. They are increasingly interested in having CSR initiatives communicated through 'minimal release' or 'soft communication' channels that include annual reports and websites, most commonly used, and also through CSR blogs, forums, and wikis, instead of traditional communication channels, such as billboards and publications (Morsing M. and Schultz M., 2006; Pomering A. and Johnson L.W., 2009/1). The Web enables new kinds of interaction between a company and its key, targeted stakeholders. These social media open up possibilities like online availability, the opportunity to download content (e.g. reports), the integration of search engines, hyperlinks, and the possibility to obtain feedback, enhancing the CSR communication task (Isenmann R., 2006; Schneider A.M. et al., 2007).

Conclusions, proposals, recommendations

1. Social, economic, and environmental issues have become increasingly important to the point of being a decisive factor for consumer behaviour. Companies have voluntarily engaged in the creation of corporate social responsibility policies trying to reduce the negative impacts of their business operations and as a response to consumers' expectations and demands.
2. Disclosure of CSR reports is necessary to enable companies to fully appreciate and benefit from their CSR initiatives, with the limitation still being the voluntary character of CSR. Mandatory reporting on CSR constitutes a viable alternative ensuring the disclosure of financial, social and environmental information.
3. It is necessary for policy-makers or organisations to develop and implement a framework that serves as a guide for CSR disclosure. This framework must consider both the views from the industry and communities, it must be comparable across companies, countries, and sectors, must be available and understandable to the interested public, and should include parameters to ensure assurance and/ or independent verification.

4. When communicating their CSR policies, companies should recognise consumers as functional and active stakeholders, thus engaging them in the co-construction of corporate strategies (stakeholder involvement strategy). The use of corporate websites as a tool to disclose CSR information ensures that a wide population can be reached, but the use of social media, blogs, and wikis, accompanied by serious and appropriate online community management, can potentiate the involvement of consumers and constitute a two-way symmetric communication strategy.
5. Further research could focus on prioritising the issues that are central to the reporting for the food and beverage industry such as health and safety, the environment, fair trade etc., based on information collected through marketing research, in order to suggest an industry-specific framework for CSR disclosure. An industry-wide survey could be performed in order to determine the drivers and barriers for the implementation of CSR and sustainability initiatives. Additional investigation could focus on determining the best ways of communicating CSR policies and evaluating, whether the tools used for disclosure have an effect on consumers' perception of the validity of these claims. All the aforementioned could be done using more empirical research or case studies.

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DEVELOPMENT OF HIGHER EDUCATION INSTITUTION BRAND – ASSOCIATION CONTEXT

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Abstract. In a modern organization, a brand determines the strategy of the enterprise operation. The brand mission and vision are on the top of the organization business model. A strong organization brand is currently represented by the value established by a range of criteria, including brand associations that bear an abstract link with the enterprise. The associations comprise the product attributes, customer's gains, lifestyles, events and emotions. Associations represent a force that creates both the first impression about the enterprise, the brand as well as loyalty and competitive advantage. The creation of associations is based on the aim to increase the brand value.
In market terms, the brand of a higher education institution is its image. Currently, the brand of a higher education institution is among the topical competitive conditions, which allow distinguishing the achievements of the higher education institution and its communication ability to the target audience. A higher education institution, like an enterprise, is currently facing the conceptual and practical issues of developing its brand and the brand value, the issues being determined by the understanding of a brand and marketing. The article provides an insight in the aspects of the brand value conditions based on the role of associations in the development of a brand value. The article focuses on the creation and improvement of associations based on the brand value criteria of a higher education institution.
Keywords: brand, value, associations, higher education institution.
JEL code: M31

Introduction

One of the main functions of marketing is to forecast and analyse the future of an organization, based on the set marketing aims and its overall mission. If the aims of an organization involve brand development, the marketing aims can be specifically referred to the need to develop a brand, and respectively the direction can be indicated for the consumer to notice, remember and consume the brand. Consequently, the key directions for the brand development are as follows: identification of a brand in a consumer's awareness, creation of a recognizable and positive brand image; connection of the brand with specific advantages acquired by a consumer; indication of the benefits from using the brand. The development of a higher education institution (HEI) brand value complies with the generally recognized brand development conditions, where a significant role belongs to the creation of associations. The aim of associations is to create a value for consumers – the forthcoming or existing student and the higher education institution itself. The **aim** of the article: to assess the possibilities of the interaction between the brand value and associations for the brand development in the case of a HEI brand.

1. The need for developing the brand of a higher education institution

The development of a brand cannot take place without a definitely set aim and respective actions. The significance of a practical understanding of market is not connected with an abstract "image" of a higher education institution. It is connected with the HEI image that has developed in the preconceptions of the social groups and layers that directly influence the higher education institution. The HEI brand currently represents a topical competition condition and allows for distinguishing HEI achievements and its communication ability to its target audiences. It has to be taken into account at all levels of brand development: HEI, students, graduates, and employers. The HEI brand is mainly created by the students and employees of HEI, HEI graduates and their achievements; secondly, the research and achievements of the university scholars; and, thirdly, the composition of the academic staff as well as the university infrastructure. The university brand has to "earn" its authority. The stability of the brand is essential as it provides for income.

2. Brand value concept and sources

For the purposes of the value added provided by the brand, four elements are distinguished: *authenticity* – origin and quality of the brand, which is later associated with the product origin; *loyalty* – intangible and emotional rather than a functional brand value; *experience* –added value of the brand which is associated with emotions provided by using a product; *character* – meets the emotional needs of the consumer; it is the key difference from the competitive brands. In terms of HEI brand value, these elements in combination with the HEI development, qualitative study programmes, highly qualified staff, unique study environment and process, acquirable qualifications

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Table 1

The diversity of existing definitions and concept of brand equity

Study	Description of the Concept
The Marketing Science Institute (Leuthesser)	The set of associations and behaviours on the part of the brand's consumers, channel members, and parent corporation that permits the brand to earn greater volume or greater margins than it would without the brand name, and that gives the brand a strong, sustainable, and differentiated advantage over competitors.
Aaker	The value consumers associate with a brand, as reflected in the dimensions of brand awareness, brand associations, perceived quality, brand loyalty and other proprietary brand asset.
Swait et al.	The consumer's implicit valuation of the brand in a market with differentiated brands relative to a market with no brand differentiation. Brands act as a signal or cue regarding the nature of product and service quality and reliability and image/status.
Kamakura,Russell; Lassar et al.	Customer-based brand equity occurs when the consumer is familiar with the brand and holds some favourable, strong, and unique brand associations in the memory.
Keller	The differential effect of brand knowledge on consumer response to the marketing of the brand. Brand knowledge is the full set of brand associations linked to the brand in long-term consumer memory.
Lassar et al.	The consumers' perception of the overall superiority of a product carrying that brand name when compared to other brands. Five perceptual dimensions of brand equity include performance, social image, value, trustworthiness and attachment.
Aaker	Brand equity is: (1)Loyalty (brand's real or potential price premium), (2)loyalty (customer satisfaction based), (3)perceived comparative quality, (4)perceived brand leadership, (5) perceived brand value (brand's functional benefits), (6)brand personality, (7)consumers perception of organization (trusted, admired or credible), (8)perceived differentiation to competing brands, (9)brand awareness (recognition & recall), (10)market position (market share), prices and distribution coverage.

Source: Fayrene C.Y.L., Lee G.C., 2011

etc. provide for a guarantee. Consequently, the brand determines the customer's choice in favour of a specific product, thus creating an added value for the product which the customer is ready to pay for. The brand has three levels of influence on its consumer: 1) *functional* – useful information that guarantees the fulfilment of certain consumer's wishes (study environment, programmes, qualification); 2) *emotional and psychologically* stable, sustainable and positive relations with consumers (environment, memories, co-operation and further education); 3) *ethical* – the brand value determined for the consumer (perception and application of values) (Averjuskina T., Popov E. 2001). The added value of a brand affects the consumer's feelings, in the case of a higher education institution: for the students, employees, graduates; when for a customer not only the functional features of the product are important, such as good educational environment, knowledge, etc., but also its emotional influence – expression of loyalty. The parameters characterizing a brand are considered to be as follows: *brand strength, brand compliance, brand loyalty, and the level of brand awareness*. The brand is a guarantee of the product/service quality and security, and thanks to the reputation, it creates a positive response and makes a person choose the product/service among other competing offers, therefore, the value of the brand cannot be questioned.

The concept of brand value has lately gained utmost topicality in the area of brand management. The enterprise, including a higher education institution, has to be aware of the essence of the brand value concept and develop its components. The definition of the enterprise brand as its added value is a new one and it is connected with its increasingly bigger involvement in marketing; consequently, the added value of the brand is its emotional contribution and the associated additional roles which are important within the value systems of both the enterprise and its consumer (Riezebos R., 2003). The concept of the brand value developed in 1980s. Among the key supporters of the theory are Aaker, Keller, Srivastava, Shocker, Kapferer etc. Along with the development of the brand value concept, split reactions from the branch experts appeared regarding the brand value term. The key reasons for the reaction were connected with the many aspects of the brand value and the purposes of using the concept definition. In the concept definition, the following aspects were pointed out: "the added value with which the brand endows a product" (Farquar, 1989), "enhancement in the perception of the product benefits and benefits from the desirable acquisition of the product" (Lassar, Mittal and Sharma, 1995), "a set of definite assets: competence, loyalty, pleasant associations, perceived quality of the branded product which strengthens the brand and enhances its potential" (Aaker, 1993; Keller, 2003), "brand value is its financial indicators and represents a significant competitive advantage which is connected with the price aspect." (Kapferer, 1997; Doyle, 2001). As shown before, brand value demonstrates a diverse and differentiated influence as well as provides for a large competence about the brand and creates a more active response from the consumers. As Keller (2003) has indicated it, the large value range of the brand value leads to increased effectiveness of the brand. We must note that according to Feldwick (2005), the main value

aspects attributable to the brand value are as follows: 1) overall brand value as a value of a permanent asset; 2) degree of the consumer's involvement with the brand; 3) a combination of the consumer perception and associations with the brand accounting for the brand image.

However, a generally recognized essence and meaning of the brand value and its measurements have not yet been determined. Almost all brand value concepts are currently unanimous that the phenomenon implies that consumer associations and ideas about the name of the particular brand award added value to the product (Fayrene C. Y.L., Lee G. C. , 2011) (Table 1).

It must be concluded that we can speak about customer-based brand equity only if the consumer recognizes the brand and his memory contains powerful and unique associations with it. No brand value can develop if the consumer is not aware of the brand. According to David Aaker, brand value consists of five components: brand loyalty, brand awareness, perceived quality, brand associations and other brand values. Brand value is created by the overall assessment of the set by the consumers comprising the consumers' ideas, feelings, positions, associations and values regarding the brand (Adjouri N., 2002). Consequently, the main tasks within the HEI brand development should involve facilitating positive popularity of the brand essence and contents both during the study process as well as in the further communication with the target audience.

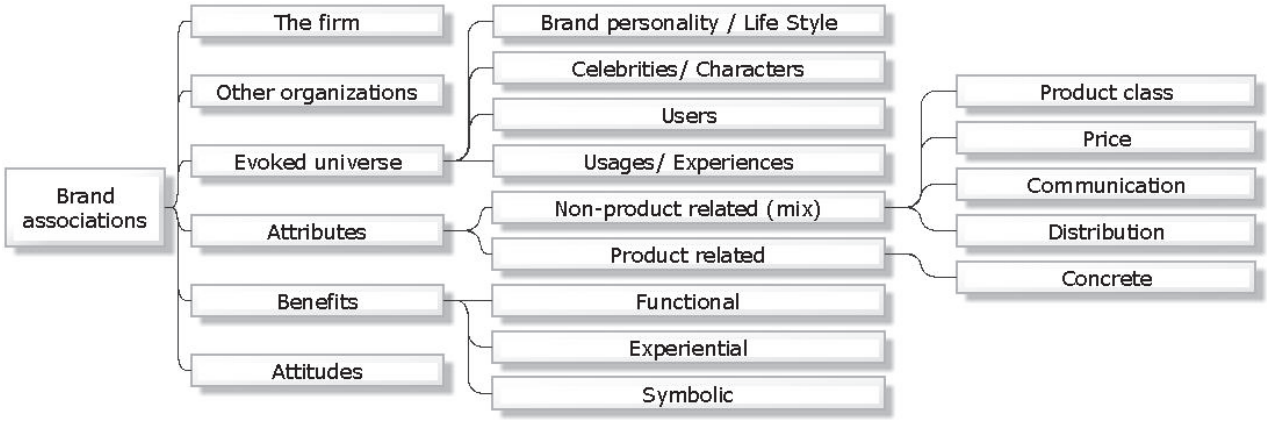
When emphasizing a customer-based brand equity as a set of impressions offered by the brand we must point out that it implies the set of the brand feature perceptions that appear thanks to developing the consumer knowledge about the brand. The interrelation between the sources of the brand value and consumer positions is important for the understanding of brand value (Keller K.L., 2005). Moreover, the depth of brand awareness describes how possible and easy it is to remember the brand elements (the name, symbol etc. of the HEI brand). The breadth of brand awareness is a set of the purchase and use elements, where some of the brand elements are remembered (choice of the HEI/ programme, knowledge about etc.). Brand image, however, develops based on the set of associations connected with the brand (its rating, quality, guarantees etc.). The authors believe that the above-mentioned criteria lie in the foundation of the brand strength and directly influence the perception of the brand value. The brand value of an enterprise is created by all its integral parts: the product/service itself, its brand name and visual identity, advertisements and sales promotion activities, public existence and self-presentation of the enterprise brand as well as the legends associated with it. Therefore, the added value of a product or service is the total amount of perceived information in the consumer's mind. Consequently, the development of the value requires information, as the deeper a person considers the new information about the brand, the more he compares it with the already existing knowledge. This makes the associations with the brand stronger. Brand value basically arises from the information acquired and stored by consumers about the products and brands; it is essential as it can affect the consumer's confidence about the purchase decision (based on the past experience or awareness about the brand and its characterization) (Aaker D., 1991). Moreover, the enterprise gains a significant benefit from developing its brand. The authors believe that in the case of the HEI brand, which develops over a longer time period, the information on the brand must ensure the synergy to provide for the development of the necessary value and awareness about it in the target audience. Although the existence of a brand is to be basically associated with the consumer's perception and thoughts about the brand, all elements accounting for the enterprise brand value reflect the consumer opinion, link the consumers to the brand, thus providing for the feedback (Aaker D., 2003). The enterprise must understand that its brand value is created by a set of elements, for example, its popularity, loyal consumers, quality and associations that are connected with the brand, its name and symbols and they add value to the enterprise product or service (Aaker D., 1991). The authors conclude that first concept to follow when developing a brand is the concept of a brand value, which is its assets, and, secondly, for a successful brand value management it is necessary to take into account the peculiarities of using each particular kind of assets. The article concentrates more specifically on the associative context of the brand because it is most directly connected with the consumer perception.

3. Creation of brand associations

Brand associations represent a generally recognized aspect of the brand value; a mental link with the enterprise forms the basis for choosing a purchase and for the loyalty to the brand. Brand associations comprise the brand attributes, customer's attributes, customer's gains, lifestyles and many other events which account for certain feelings and emotions in the customers. This is proved by the research made by Aaker (2008) and Starov (2010). Associations also determine the level of strength that creates the first impression about the enterprise, its brand, loyalty and competitive advantages. The peculiarities of creating brand associations are mainly determined by the goal to increase the brand value.

The following features have to be considered in brand development: 1) the kind of brand associations: what associations arise for the consumer regarding the brand; 2) the availability of associations: the qualities must be easily attributable to the brand, and the brand must be easily attributable to the qualities; 3) essence of the verbal/non-verbal brand associations: strong brands possess non-verbal associations, which in the consumers' perception are represented by a precise depiction of the brand; 4) intensity of associations: the closer the association, the more stable the brand image; 5) the number of associations: the more associations with the brand there are, the stronger is the brand. It is important that the associations are not contradictory, but rather develop harmoniously (and are not negative); 6) uniqueness of associations: uniqueness, difference from the associations with competitive brands, which makes associations a means of differentiation (Esch F.-R., 2005).

Accordingly, the brand is a powerful visual, emotional, rational and behaviour model, which a consumer associates with a specific enterprise or product. Associations can be both positive and negative;



Source: Korchia M., 1999

Fig. 1. **A typology of brand image**

however, in any case they make the consumer's choice easier. Enterprises aim at creating positive associations with their brand, which would make the consumers choose in favour of the given enterprise rather than its competitors' brands. Brand associations can be classified into 6 broad dimensions, or 15 dimensions in total. (*Figure 1*) (Korchia M., 1999)

Product associations comprise the functional quality and non-functional associations. The functional qualities are the material features of the product. If a brand does not meet the functions it is designed for, the brand will have a low brand value. Accordingly, the brand performance can be defined as the consumers' judgement about impeccable and lasting tangible activity and absence of faults in the tangible construction of the product. The non-functional qualities, however, imply symbolic attributes that represent the intangible features, which correspond to the consumer needs and provide them with public recognition, personal growth or self-confidence. Consumers associate the brand with its social image, loyalty and perceived quality as well as differentiation and country of origin. Both functional and non-functional associations are equally important. The enterprise associations comprise the enterprise potential – the associations that are connected with the enterprise experience as well as the corporate social responsibility associations, which comprise the enterprise activities regarding the duties towards the society. Consumers may develop different associations (Fayrene C.Y.L., Lee G. C., 2011). As it was shown above, the brand associations represent a powerful tool. The enterprise may facilitate the development of favourable and beneficial associations toward itself by committing various measures aimed at the consumers.

Research results and discussion

In the association context of the brand development, the practical focus of the authors' research was the brand of the University of Latvia (UL). UL positions itself as a higher education institution with long-lasting traditions, strong academic environment and advanced research process. The vision of UL envisages that in 2020 UL will be one of the leading research universities in the Baltic region and will be well recognized among the European universities. The research potential of the University of Latvia will be contributing to the national economy of Latvia as well as sustainable development of the society (University of Latvia…, 2012). The brand is developing along with the organization and according to the vision; UL should become an internationally recognizable brand, which is built on the study quality and scientific research. In compliance with the model of brand value dimensions (Aaker D., 1991), it comprises the brand loyalty, knowledge about the brand, perception of the brand quality, brand associations as well as other features characterizing the brand.

UL is striving to integrate these features in its brand. As it was stressed in the theoretical substantiation, a practical understanding of the market regarding HEI, in particular, UL, is connected with the image of the HEI, in this case UL, which has developed in the perception of the social groups and layers which directly affect the development of the HEI. The UL brand has to offer differentiated gains, which would allow for distinguishing the UL achievements and communication ability to its target audiences. It must be taken into account at all levels of the brand development: HEI, students, graduates, employers that account for the target groups of the UL brand. Each of the above-mentioned groups was involved in the brand assessment according to its role and status regarding the HEI (UL). All the target groups comprise the general set for the authors' research.

During September – December 2012, a research of the target audiences of the UL brand was conducted under the authors' guidance in order to evaluate the UL brand associations and their networks for further development of the UL brand as well as the problems related to this process. The data for the research were collected with the participation of the 2nd year students of marketing management master programme (2012).

To make a selection, the quota method was used. The quotation was carried out based on the structure of each target group. A set of 405 representatives of the target audiences were interrogated in scope of the research. Based on the methodology of Elizabeth Noel, with probability 0.954 we can affirm that the selection was representative. The dependence of the selection

scope on the general multitude was based on Noel's methodology. If we have an endless general multitude then the selection scope of 400 respondents would be sufficient, therefore, we can conclude that after the volume of general multitude achieves a certain level, its further increase does not have any significant impact on the increase of the selection scope.

Simultaneously a study was conducted in the employer group (expert interviews) to confirm the content accounting for the HEI brand because employers see the topicality of the HEI and its brand in the process of adopting the decision about the suitability of the potential employee. The experts were asked to provide their opinion about the HEI they have graduated from, the role of the HEI brand in adopting the decision about the suitability of a specialist (new employee) and development of cooperation with him. After the study, the authors concluded that even if education is not the primary criterion but is included in the set of the assessment criteria, the HEI the person has graduated from serves as the decisive influencing factor. The employers have certain established preconceptions about the knowledge and programme contents provided by specific HEIs as well as their graduates, their skills, capabilities and their compliance with the requirements and responsibilities; thus, additionally demonstrating the rank of HEIs regarding the needs and requirements towards the potential employee.

Research object: associations with the University of Latvia brand.

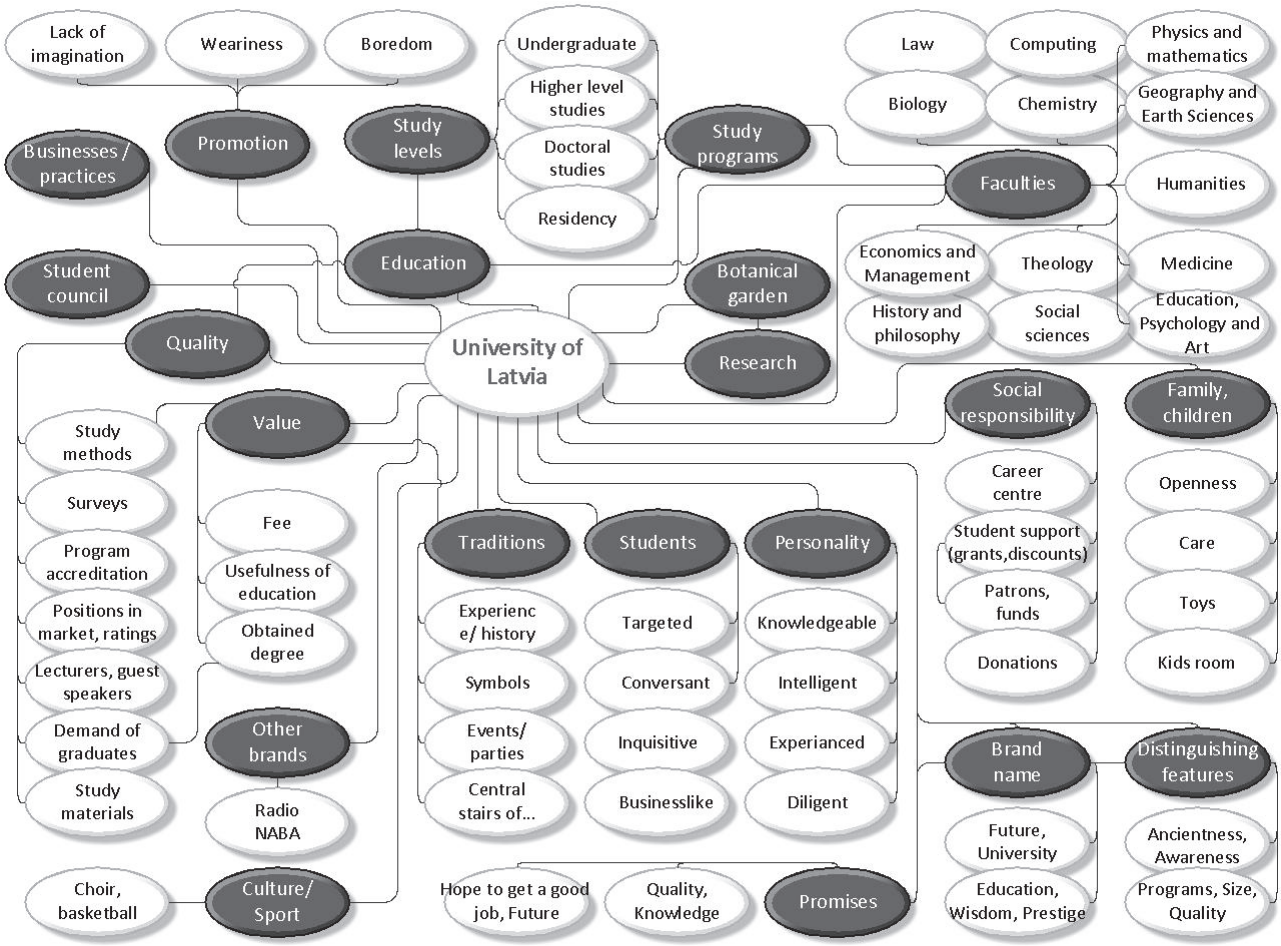
Aim of the research: associative influence of the University of Latvia brand on its target audience and its assessment.

When interpreting the research results for the purposes of the article, the authors focused on the HEI brand associations, interaction between the HEI selection criteria and associations as well as on the interaction between the promotional communication and associations. In the presentation of the research results, the brand element associations have been summarized in an integral network of associations without distinguishing typologically.

The brand of the University of Latvia is recognizable and causes various associations, mostly characterizing the system of education, the stereotypes pertaining to it, HEI as a whole, its symbols, logotype, main building etc. Various age and interest groups hold the opinions, which have been influenced by their personal experience, studies by their relatives, friends and acquaintances, their assessment. According to the results of the survey, generally the elements of the UL brand were assessed positively by pointing out such features as strength, knowledge and wisdom, which unanimously reflect a positive attitude and strong associations. Regarding the personal qualities to be highlighted in marketing communication, the majority or 90% of the respondents chose the human qualities, which become topical along with the acquisition of higher education and gaining success professionally. The range of the UL brand associations is meaningful for the analysis necessary for the brand development. When summarizing the survey results, the task of the authors was to create an integral UL association network, which would demonstrate the associative attitude, which dominates in the society and indicates the topical direction for the UL brand development (*Figure 2*). When creating the UL association network, the authors used the data, opinions and feelings reflected in the survey results, which have been caused and facilitated by the publicly available information and subjective emotions that arise in the minds of the potential or existing consumers.

In scope of the of the survey, it was found that almost all representatives of the UL target audience recognize the role of the brand associations in the brand selection decision. Based on the brand value dimensions as a whole as well as on the brand values and qualities stressed by UL in its vision and mission and as on some contrasting qualities, in the course of the study, the authors established the associative qualities. The summary of the survey data according to a 10-point scale resulted in the rating of the UL associative qualities for the perception of the UL brand in its target audiences, e.g. traditions – 7.62; quality – 6.77; developed research work; pleasant study environment – 6.68; maintenance of Latvia culture values – 6.60; emphasis on quantity rather than quality - 6.57; responsive, modern and knowledgeable academic staff – 6.52; stagnating academic environment – 6.43; modern equipment – 6.28; obsolete methods of instruction – 6.18; international competitiveness - 6.17; the best HEI in Latvia – 6.3; high entrance requirements – 5.7. The average assessment of the acquired results shows how strong the particular association is. It can be concluded that the range of the average assessment is not large (max - 7.62, min - 5.07), consequently, none of these associations is stronger than others or less expressed than others. There is a small number of extreme assessments (max and min values), the respondents do not confirm that any of the qualities is certainly pertinent to the UL or is absolutely absent in it. Overall, the comparison of the assessments suggests that the qualities are more likely to be present than absent, and this is valid both regarding the positive and negative associations. Therefore, the associative opinions vary among the respondents and the perception of the UL brand varies.

Consequently, it is evident that the UL target audiences rather highly evaluate the general descriptive aspects of HEIs (quality; developed research area), which is positive and complies with the guidelines of the UL long-term vision, however, the authors of the article believe in a similar importance of the general view of the overall target audience perception, which is influenced by other associations. The summarized description created as a result of the associative assessment is the ground for the adoption of the decision in the target audiences which develop/plan their future in connection with the studies at a HEI. In the research, the criteria have been confirmed according to which the target audiences choose the HEI where to study or which to recommend to others. Overall, the HEI selection criteria, in value terms, form the associative link toward the specific HEI. In some questions, the acquired result differs from the UL association assessment, which in the authors' opinion has resulted from the insufficient development of the associations based on the UL brand values. The criteria important for all audiences are the range of offered programmes and acquired skills (70-75%), accreditation and status of HEI (76-85%) and the study fee (55-65%). Of minor importance for all target groups, except



Source: author's construction based on research of the target audiences of the UL brand

Fig. 2. **University of Latvia association network**

the employers (72-90%), are the following: modern equipment, new study aids, premises (35-47%), opinion of friends, acquaintances and family (35-58%) as well as the location (33%). In the authors' opinion, the less topical criteria have to be assessed with caution because they directly and indirectly affect the formation of the important HEI criteria. As in terms of the UL development all of the suggested criteria are important, the authors believe that in the brand development process the provision for the link between the value and association will gain more topicality.

Any enterprise, including a HEI, promotes its product by using the corresponding information in accordance with the desirable effect of the communication. During the research, the authors evaluated the UL slogan of the public advertising campaign for operational period of 2011/2012 "You have just one head! Respect your head!" as the advertising activity of any higher education institution in the respective time period affects the final indicators, e.g. the attraction of students. In the research, the authors tried to find out the opinion of various audiences about the visual format of the campaign which, in association terms, provides for a strong influence in the target audiences. The authors would like to stress that the results have to be assessed in two respects – from the point of view of contents and visualization. All together, the results showed that the associations that dominate in terms of the contents are as follows: wisdom, idea, resourcefulness, insight, light, and thinking. However, the assessment in the visual respect is the following: dull advertising, annoying, difficulties, dislike, judgement, and knowledge. The authors conclude that, when developing the contents of the brand association formation and respective communicative solutions, it is important to pay serious attention to the solutions of the contents and visualization and their interaction because otherwise they tend to work more negatively than positively. Moreover, if the target audience, as it was mentioned above, comprises not only the potential and existing students, but also employers, parents and society as a whole, then the acquired results create concern about the influence of the visual advertising associations in the nearest future. For example, in the youth group a positive assessment was received from 35% respondents in average, however, in other target groups this indicator was from 0-10% (employers, parents). The situation is opposite regarding the negative influence, where 90% of the employers and 60% of parents rejected the advertisement contents in relation to their choice, i.e. UL as their potential HEI. The authors conclude that for the purposes of developing positive associations UL has to reconsider its visual communication strategy in order not to enhance the detachment of the associative links from the desirable UL brand values. Regarding the assessment of the UL brand associations, where according to the survey none of the associations is stronger or less expressive, it must be

noted that the brand developers should take particular care of the desirable communication as the HEI brand has to "deserve" its reputation. The brand should develop its stability in order to provide for income (rising of funding, number of students).

The authors have made **the following conclusions and proposals:**

The brand development of any enterprise, including UL, is its main strategic aim because it provides for the formation of the desirable target audience reaction in the long term by taking into account that the brand value orientation is based on the wishes and needs of the potential customer. The creation of associations, i.e. the provision for positive emotional contact in a long term, lies in the foundations of developing the desirable brand and its value.

The study proves that all suggested associative qualities (both the good and bad ones) are more likely to belong than not to belong to the UL brand. Consequently, the associative opinions differ considerably, and the perception of the UL brand in the target audiences is diversified. Therefore, in order to facilitate the prevalence of positive associations, it is necessary to assess with more care the approaches that require analysis that is more complex.

Strong brands possess verbal and non-verbal associations, which in the consumers' perception are represented with a precise depiction of the brand. For the purposes of forming positive associations, UL should reconsider its visual communication strategy in order not to enhance the detachment of the associative links from the desirable UL brand values. It is important that the associations do not contradict each other, but rather develop harmoniously.

The brand association analysis and the acquired results allow for further elaboration of the communication with each of the target groups for the promotion of the UL brand development in terms of associations. At present, when assessing the existing communication as a whole, it focuses more on the group of the potential students, which is essential, however, does not fully comprise the audience that is considerably larger and under positive conditions would provide a more effective feedback in the future. In order to achieve higher motivation of the target audience to consume the UL brand, more attention should be paid to the development of communication based on the target audience requirements.

In the future, in order to specify the brand communication strategies, it would be necessary to assess in detail how the brand-creating associations and brand selection associations differ by the student's affiliation with a HEI, or, in the case of UL, by the affiliation with a faculty.

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RELATIONS BETWEEN COUNTRY BRAND AND PRODUCT BRAND

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Abstract. The aim of this article is to identify links between the product brand and the brand of a territorial unit, which is the country. The authors point out that building the brand of the product and the brand of the country should be treated with the same seriousness and that the same tools can be used in both cases.
The authors have analysed the essence of understanding the brand of the product as well as links between the product brand and the country brand in the present paper. The method used in the paper is the literature analysis. The paper describes the scheme, according to which one should work in creating a national brand as well as the process of building a national brand. The idea of national marketing has also been characterised in the study. Country of origin effect has been described as the impact that opinion and the image of the country has on a product originating from a particular country.
The idea of links existing between the product brand and the country brand is topical because nowadays not only brands are fighting for the attention of consumers but also cities and countries. Country branding is another level inscribing in the process of grabbing new areas by brands and the knowledge on the use of techniques appropriate for brand management can help countries win competition and be more visible in the global market.
Key words: country brand, product brand, national marketing, country-of-origin effect.
JEL code: M3

Introduction

Buying goods and services consumers want to satisfy their needs and desires. At the same time, they pay not for the product itself but for the benefits that the product brings. The basis of commercial success is the ability of the product to meet specific needs. Bunch of benefits offered by the brand creates its identity and distinguishes it from other brands.

Analysing consumer's approach to the selection of products, one should pay attention to the factors that influence these behaviours. They include both external factors (economic, social, cultural) and internal ones (personal, psychological). It should also be noted that the customer experience associated with previous purchases can play an important role in making purchase decisions. However, if the client does not have such experience, product brand or brand of the country from which the product comes can be helpful in making decision.

The country of origin of the product is now known to be the factor that may affect the perception of the product. Information about the origin of the product is always placed on the package but it can be more or less exposed. This exposure has been linked with the fact that the country of origin can help promote the product itself as well as lead to a purchase. Therefore, it is important to analyse the nature of the product brand as well as to understand the links between national brand and product brand.

The research tasks were to identify the similarities between competition techniques among brands and among countries. The contribution of the study is to show that the knowledge on the use of techniques appropriate for brand management can help countries win competition and be more visible on the global market.

Product brand

According to the definition formulated by the American Marketing Association (AMA), the brand identifies the goods and services of the manufacturer or the seller (or their group) - distinguishing them in this way from the competition. The brand reported to the patent office is subject to legal protection. In a holistic frame, the brand is defined as a combination of the physical product, the name, packaging, advertising, and accompanying activities of distribution and pricing that provides the consumer with distinctive functional and symbolic benefits (Sojka B., 2003).

The brand has to fulfil several important functions such as:
— to identify (to inform);
— to guarantee;
— to promote (Altkorn J., 1999).

The primary function is to **distinguish the product** from the goods and services offered by the competition. This is a brand identification feature which Ph. Kotler assigned several meanings:
— identification of the product characteristics;
— pointing the functional and emotional benefits;
— emphasising the values sought by of a certain group of buyers;
— technical representation of a particular culture (Kotler Ph., 2001).

Direct information occurs when simple, easily readable message about the product, its use, purpose, or owner is included in the brand. The indirect information focuses on evoking by the brand associations or suggestions regarding the benefits and attributes. Brands more fully realise the function of the designation of origin, when they use the name of the owner of the

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company, which is identified as the direct information (Altkorn J., 1999).

The **guarantee** function means that the owner of the brand is committed to maintain the quality of the product on a certain level. Buyer repeating purchase of the product expects that the product have at least the same characteristics as in the past. The producer will want to avoid a situation, which could result breaching of a positive opinion about the brand. This feature is important if the product is a service. The specificity of the services as intangible, invisible, difficult to present in the ad, creates the situation where image about the service provider and the product becomes the primary factor in the buyer selection process (Witek-Hajduk M., 2001).

The **promotional** function means that trademark owners should use the brand to promote the company and products sold. The brand as a promotional tool should attract attention and encourage purchases. An important feature of the brand is also the possibility to use it in the promotion of various forms, in particular, in a variety of media advertising.

The most important **benefits** of brands are the ease of identification of the product on the market and creating consumer attitudes to brand loyalty. This allows maintaining a sufficiently high level of prices. Brand provides psychological satisfaction to the consumer, guaranteeing his preferred status and quality of life. This satisfaction is presented as one of the results of the process aimed to produce products desired by customers or other interested parties. This approach shows that contentment equated with satisfaction is in practice often treated as a measure of the product produced.

An important **disadvantage** of the brand, especially for the seller (manufacturer), is the high cost of its promotion. The development and promotion of the brand on the market is expensive, so the company has to decide whether to give brand to the product. This is particularly important for giving brands to individual products.

The image of the brand is its picture in the mind of the customer (buyer). It is created as a synthesis of all the signals emitted by the brand (e.g. name, logos, products, advertising). The image is the result of decoding, extracting by the consumer the importance of these signals, their interpretation. It describes the way in which the specific target group imagines the brand. Brand image can be positive, negative or neuter, it may be good, widespread, and thus, helpful to the company but it may be also little known, damaging the reputation. Sometimes, it is created randomly and cannot guarantee prestige to the company. It can be assumed that, for example, in the case of some basic consumer goods, this procedure is not needed. Yet, in the modern world, the tendency to give brands to the products is very strong, despite the high costs and falling consumer loyalty to the brand.

The country brand

The country brand is the essence of the country's history and its contemporary culture, products, people, and events. It is a reflection of the fundamental values of the country that make up the identity and uniqueness. Strong national brand can create out of ordinary, or unknown, average country, a country that is perceived as popular, attractive, and desirable. It can make that the social morale rises, the citizens are proud of their country and that external customers (tourists, consumers, policy makers, and investors) put the country and its products high on the list of interesting destinations to visit and goods to be purchased. In addition, they are willing to pay more and recommend it to their friends.

Brands – of the product, institution, region, country - build trust by keeping promises. A brand is a reflection of the trust. In the mind of the recipient some abstract entity is created that includes and combines the functionality of a particular product (quality, utility) with the values that the product represents. Trust is identified with the name of the brand - a product, a company, or a country.

When creating a national brand one should act according to the scheme based on four pillars. The first one is the product - one that the place is known from. Products in this sense may be people or institutions. Surely, such products are goods produced in the country, having a certain quality and the reputation. Another area is the market communication - the message that carries the brand. This sphere includes also advertising. It should be remembered that when creating the image, good communication, promotion may substitute product shortages. Sometimes it happens that a good advertising creates a hit from the average product. Another component is the environment. It is good to know the market environment and then supplying the correct product should be successful. The last pillar is behaviour. These are nations that actually live from the fact that they behave in a certain way - they are nice, happy, or hardworking (for example, "German solidity", "Italian joy of life").

The process of building a brand, based on these four pillars, should be divided into four stages:

— to stand out;
— to be needed;
— to deserve respect;
— to create intimacy.

It can be concluded that the brand is the most valuable cultural phenomenon in the 21st century. Countries need it, as it is best to sell and in all areas of the country functioning. It should also be noted that in the process of building a brand, everybody should participate - an alliance of power, business, and citizens is needed, and the wider circles are involved, the better.

National marketing

The concept of national marketing has emerged in the late 20th century. This phenomenon is associated with the search for methods to assess countries' own strengths and opportunities and effective ways to improve competitiveness and boost the economy, which becomes particularly important in an era of globalisation and integration.

Each country is now trying to promote its own individual personality, culture, history, and values by emphasising what can be idealised but immediately recognisable as its image, which serves economic, commercial, and political purposes. However, the image of the country has to be current, clear and attractive, so it is impossible to use symbols and ideas from the past. The share of past and present should be properly balanced.

National marketing in a broader context can be defined as a strategic approach to build country image, authority, wealth, and well-being of citizens on the global market. It is a system methodology, which can be defined as the strategic management of the market. Accordingly, the world is a global market, and the country is mega-company, competing on a global market with other mega-companies. This simplified analogy allows applying strategic marketing management tools to design development strategies of countries.

Therefore, the national economy promotion is a set of long-term, consistent, and professionally planned communication activities, which results in a systematic increase in the country's economy - its products, services, companies, capital, regions, cities, events, people, and ultimately a permanent increase of the promotional capacity and capital of national brand. Country branding is the process by which the country is actively looking for ways to create a unique and competitive identity, aiming to create an image among citizens and other countries of a good business partner and an attractive place for investors and tourists.

To identify factors affecting the image of the country, it seems reasonable to refer to areas of national competence separated in the ranking of "The Anholt Nation Brand Index" (www.simonanholt.com). These areas include tourism, branded exports, foreign and internal policy, investment and immigration, culture and heritage, and people.

The most prominent and widely promoted area is **tourism**. Governments support the promotion of the regions and countries fighting for the tourists' money. Tourist attractiveness of the country is also desirable because of the fact that the country begins to exist in the minds of other nations, increasing its visibility, positive associations are created to form the image of the country.

Exported branded goods play a very important role in the dissemination of national culture. On their basis people form their opinions about the identity of the country. Consumers usually have formed opinion on what to expect from products made in the country. Even if they do not admit this, a slogan "Made in ..." plays a very important role in their purchasing decisions. Commercial brands are present in everyday life; they affect people's lives, and contribute to their habits. The country of origin is perceived through the prism of specific brands used in everyday life.

To build a positive image of the country, its **political stability** is also important - whether people have confidence in the country government, believe in the competences of its members; whether they believe that the government is able to ensure the safety of its own citizens, tourists and investors; whether the authorities care about environment. That members of the government officially represent the country to the outside, which is why it is very important how other ations perceive them. It seems that nowadays the choice of brand of wine or a beverage is more than just a consumer choice – it becomes a kind of political demonstration.

Another area is **investment and immigration**. It is important that the country is able to attract foreign capital and skilled labour. A strong brand has the country, which is an ideal place to live, where people are willing to settle permanently. It expresses their appreciation for the social conditions, education, quality of life, and work style in the country.

The country image to a great extent depends on the **culture and heritage** of the nation. The fascination with the culture of a country influences the positive attitude towards its companies, products, or tourist values. In addition, sporting successes contribute to creating a positive image of the country. Soft values are becoming increasingly important and their impact on human associations is increasingly palpable. Music, books, movies and even the actors have an impact on the collective subconscious – they are the model, the point of reference.

Of course, the assessment of the country **citizens** is also important. People are the greatest wealth of a country. Nice people attract tourists; educated workers provide a greater influx of investment. In this issue, one is dealing with the existing stereotypes, which should be changed just by using national marketing.

Attractive and consistently communicated national brand, supported by branded products, is an important opportunity for developing countries to enter a group of highly developed countries. They are the intangible resources (particularly brand) that are now the main source of value added for national economies generating the highest profits. The essence of progress and building a competitive advantage is, in the light of these assumptions, the movement from a group of countries-suppliers of intermediates and non-branded products toward a group of brand owners, for which consumers are willing to pay more (Herezniak M., Morawska J., 2005).

Country-of-origin effect

Nowadays, countries are increasingly aware that their good reputation and attractive image in the international arena has a fundamental impact on the perception and evaluation of their products by foreign consumers. The effect of the country of origin (COO) is defined as an impact of the reputation and image of the country on a product that comes from that country. It addresses the idea that consumers and business people have about the country and how they carry it on the product image.

Researchers from the 1970s were interested in relationship between the perception of the country and the perception of the product, and they saw a positive impact on the image of the COO on the demand for the product. Analysis of the effect of the COO in terms of purchasing goods confirms that consumers use information about the origin of the product in order to identify its quality. The adequate policy of the use of a positive image of the country and its products influences the attitudes of consumers, even when they are in contact with a very similar product but of different origin (Kotler Ph., 2002).

The less information a consumer has on a product, the greater is the COO effect. The effect significantly weakens after the influx of the first wave of information about the product. In subsequent phases of the interaction, the COO effect is becoming more and more limited. For consumers, this effect is important when they do not have much information about the product and have a limited

and incomplete knowledge. In creating their opinion, they are driven by factors such as the level of economic development of the country, the political, social, cultural conditions, traditions etc.

Sometimes strong reference to the country or region of origin can have negative effects. Historical events, geographic location may be the factors that, by combining with the country, will further shape the beliefs of consumers and will not influence positively their purchasing decisions. However, analysing the positive effects, it is clear that it should be used to associate the product with the relevant characteristics of the country from which it comes.

Consumers use the COO effect to obtain information on not only one but many products that they are potentially going to buy. The effect of origin consists of such items as:

— innovation (the use of new technologies and advanced techniques);
— design (look, style, colour, diversity);
— prestige (exclusivity, status, reputation of the brand);
— performance (reliability, durability, quality of the production) (Kotler Ph., Gertner D., 2002).

Understanding the relationships and characteristics of the COO effect is important not only because of macroeconomic conditions but also because of the companies operating on the market. This allows entrepreneurs have an appropriate adjustment of product to the conditions that prevail on the market.

The COO effect is multi-dimensional due to the fact that sometimes it is unavoidable to associate the product country of origin with the country of origin of the invention or license, place of assembly, country financing it. Only the aspect, which is most preferred, should be exhibited from a marketing perspective.

Conclusions

1. In the "global supermarket", which became the world, not only brands are fighting for the attention of consumers but also cities and countries. Country branding is another level inscribing in the process of grabbing new areas by brands.
2. On the contrary, countries have always been brands but they were not so consciously considered - until global competition and pervasive excess of possibilities options changed it.
3. Many countries have created national marketing ideas, since they noticed that on the global market, countries and nations operate and are rated as the corporate brand. "Wise" states and nations culturally and economically win with the others, when they consistently build their own brands - care about their reputation as companies. This reputation moves then everything that comes from these countries - companies, products, regions, people, capital, and ideas.
4. Successful brand names, in turn, enhance the image of the country. The country-of-origin effect is very well used by countries that have discovered national marketing the earliest such as Germany, Japan, and Italy.
5. The basis of national marketing is the belief that the state is a player on the global market, where it competes with other states. To be among the few who win in the 21st century, one needs a professional to take care of the competitiveness and to build and strengthen the attributes. Therefore, countries use methods and marketing techniques modelled on large corporations in creating brands.

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ROLE OF SOCIAL MARKETING IN MAINTAINING THE BALANCE BETWEEN SATISFACTION OF IMMEDIATE AND LONG-TERM NEEDS IN THE CONTEXT OF FOOD CONSUMPTION

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Abstract. Alongside with the progress of civilization, the daily life complexity increasingly becomes a burden, which makes it difficult and costly for routine events, one of which is shopping for food. During the economic growth period until 2007, the state significantly supported Latvia food market incentives in the form of subsidies for locally grown product promotion. Today, it is important to find out, if currently, when economic growth has slowed and stabilized, Latvian consumers have become more farsighted and in circumstances of limited budget and abundant range of food products purposefully choose locally grown and produced food, or on the contrary – the national budget austerity has forced the population to behave more short-sighted and satisfy immediate needs instead of thinking about long-term needs of Latvia food production and consumption sustainability.
The study is based on the review of literature and publications on food consumption and production sustainability problems; secondary data analysis, and authors' performed public survey data analysis applying chi square method.
Key words: food, consumption, social marketing.
JEL codes: M14; M31; M37

Introduction

The fact that nowadays convenience is the value is vividly demonstrated by the growing number of one-stop-shopping places, which typically alongside with all sorts of goods, e.g. building materials or stationery items, offer their customers to buy food products (most often chocolate, chips, cookies, and different fast-foods). Despite practical considerations and time economy, which is an important argument for yuppies (i.e. young urban professionals), at the same time it causes a serious social and psychological problem – the satisfaction of immediate needs buying pre-fabricated goods makes consumers start losing their connection with natural and traditional food sources. This problem is more common among young people as they, due to globalization effects resulting in taste unification, have become less resistant to tempting commercials spread by powerful franchise coffee shops and restaurants to become one of them – modern, careless, and dynamically living enjoyers of life who have nothing to do with such time consuming and boring activities like regular food shopping and cooking (peeling, washing, crushing etc.).

However, positive is the fact that young people dragged into the busy rhythm of life (especially those who live in cities), despite losing their connection with food origin, tend to take up the fashion of alternative life style. Most often, the key words of such life style are sustainability (harmony with ecosystems) and "wise choice", which find their expression also in appropriate food consumption. Such lifestyle puts pressure on "wise shopping", which provides elimination of products containing preservatives from the menu both while shopping and eating out. This alternative behaviour has found expression in different forms, e.g. "fresh eating"; participation in "buy local" community, in which its members themselves, but not supermarket assortment policy managers, are decision-makers on the shop's assortment; "buy together" – a community supporting local small scale food producers (usually farmers), thus providing them with larger sales volume; or "buy direct" communities. Although such ideas of sustainable consumption can be regarded positively, yet not always visually appealing and fresh food products in shops, market pavilions, and farmer's cart can be regarded as "green" from nutritional aspect, which reflects the complexity of our consumer choice today. Simplifying this problem, one could suggest that overall organic farming and industrial food production can be regarded as two polarities of the same continuity (G. Grinberga-Zalite, 2012).

In nowadays, high budget corporate food manufacturers' posters seriously affect consumers' behaviour in any public place (e.g. bus stop, public gym etc.). As a result, looking at this issue marginally, food can be bought almost everywhere (e.g. in the building materials store, car service), and if it is sold everywhere, then in the modern age it can be effectively produced from everything. Therefore, the problem with our next generation is losing a link between food and its producer, weak understanding of modern farming and of what it means to be a farmer, and what the farming conditions are.

During the economic growth period until 2007, the state significantly supported Latvian food market incentives in the form of subsidies. Today, it is important to find out if currently, when economic growth has slowed and stabilized, Latvian consumers have become more farsighted and in circumstances of limited budget and abundant range of food products purposefully choose

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locally grown and produced food, or on the contrary – national budget austerity has forced the population to behave more short-sighted and satisfy immediate needs instead of thinking about long-term needs of Latvia food production and consumption sustainability.

The hypothesis of the research is: those consumers who daily use locally grown and healthy food do not buy meat in supermarkets, choose not the cheapest but the healthiest vegetables, and do not consume meat prefabricated products.

The aim of the paper is to evaluate the role of social marketing activities implemented in 2007-2012 in influencing Latvia customers' food consumption habits. In scope of the research, the authors have set the following tasks:

1) to analyse food promotion and consumption trends in Latvia;
2) to elicit the values of locally grown food;
3) to perform a public survey and find out, if the recent consumption habits maintain the balance between short term and long-term needs in the context of food consumption in Latvia.

The study is based on the review of literature and publications on food consumption and production sustainability problems; secondary data analysis of SKDS research centre organized national surveys on food consumption habits, and authors' performed survey analysis applying chi square method.

Discussion and research results

The insights into the history of organic farming give evidence that organic farming has occurred in the northern part the Europe in the beginning of the 20th century as the combination of theory and practice integrating a wide range of alternative agricultural production methods. Yet, despite expression of various trends and vitality, organic farming in Europe remained underdeveloped for many years. In order to satisfy European society urgent needs for food and self-sufficiency, in the 50s of the 20th century, the main task of agriculture was a rapid increase of productivity. Under such conditions, organic farming was considered as unprofitable and disadvantageous. However, in the 60-70s, and especially in the context of environment protection problems, organic farming at last came in the forefront. The newly established associations attracted more and more producers, consumers, and other society groups interested in ecology and environmentally friendly style. These organizations gradually created their product specifications and regulations for production methods (Melece L., 2003).

Organic products differ from conventional products with the fact that the first ones are exposed to significant restrictions in use of pesticides and artificial fertilizers in crop production, use of antibiotics in cattle breeding, food additives, processing aids, and other inputs as well as prohibition to use genetically modified organisms. Every year food and veterinary services control all the accredited and certified institutions and farms, and in case of a positive accreditation, they are awarded a compliance certificate for one year. Therefore, consumers can be sure that the proper organic product label, which is "Latvijas Ekoprodukts", ensures the compliance of the product origin with organically grown conditions.

Yet, despite the transparent organic products' production cycle, consumers are not sure if the prices of organic products in the shelves of supermarket eco product department or eco shops really correspond to the value of these products. The reason for such scepticism roots in society perceptions that have once been distorted by two false beliefs – one of them assumes that organic products are exclusive commodities, which always cost high prices, and the other one – everything that is grown or processed in Latvia is anyway natural, and it makes no sense to pay more for some products only because they are labelled with "Latvijas Ekoprodukts" label.

Recently, in Latvia food industry several kinds of labels are used. Each of them confirms the particular product's belonging to a products' group with certain properties. Apart from the previously mentioned label "Latvijas Ekoprodukts", shops offer a wide range of other labels – "Latvijas produkts" (Latvian product), "Zala karotite" (Green spoon), "Dabigs produkts" (Natural product), and many other. Among the mentioned labels, "Zala karotite" attracts special attention. The beginning of this label can be found in 2002, when Marketing Council (institution subordinated to the Ministry of Agriculture of the Republic of Latvia) was assigned 63 000 EUR for Latvian food industry support activities in international exhibitions. The envisaged support activities included collective Latvian food stands' creation in international food exhibitions unifying food producers and processors under reliable label – "Zala karotite", which would carry the message for consumers: the product contains at least 75% of inputs of the particular region and meets strict quality requirements, which are confirmed by appropriate certificates. Although "Zala kartotite" label does not mean that the product is organically grown and processed like "Latvijas Ekoprodukts", it still carries a very positive message – confirms both product quality and the fact that the product and its inputs' origin is Latvia (Alta S., 2010). At the same time, it is commonly known that "Zala karotite" labelling procedure in Latvia is expensive and bureaucratic, which significantly raises the final price of the product, thus for the most sceptical consumers causing an impression that product labelling is a kind of extortion from sentimental buyers. As a result, of the establishment of organic-certification programmes in Latvia, like in dozens of countries, food packages are covered with labels. Along with these label initiatives, however, comes the inevitable misappropriation of language by large corporate companies, which have adopted the word "organic" for marketing leverage and customer manipulation. This is the fact of green washing in the food industry. Large corporate food manufacturers have created organic lines that have illusory appearance of products from small family-operated farms; these include, e.g. Seeds of Change (M&M/Mars), Boca Foods (Philip Morris/Kraft), and Sunrise Organic (Kellog). The label designs, the names, even the websites give no indication of an affiliation with the umbrella company that manufactures the products. It is a deceptive and worrisome situation for conscientious consumers who want to support organics and not corporations (World Changing: A User's Guide…, 2008). Another problem is the complexity of product information –

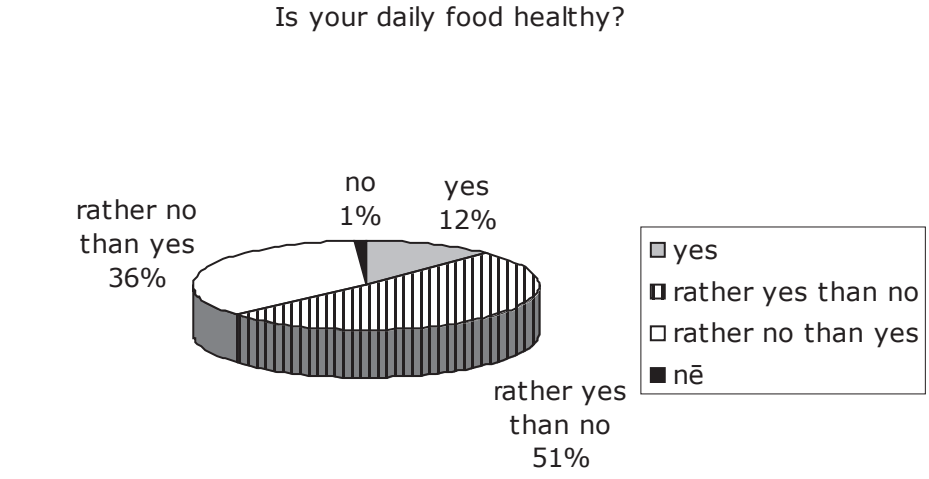
it is difficult to understand for an average shopper. Alongside with the progress of civilization, the daily life complexity increasingly becomes a burden, which makes it difficult and costly for routine events one of which is shopping (Leeb S., 2009). For the illustration of nowadays increasing life complexity, S. Leeb mentions the comparison: "The Pythagorean Theorem contains 24 words, the Lord's Prayer – 66 words but, e.g. the USA Government regulation on cabbage sales – 26 911 words." Consequently, shoppers today have to spend much longer time to detect the differences among products often using a loupe taken with them to be able to read microscopic letters of the products' content and distinguish many different patriotically sounding slogans on the product packaging. In the context of the European Union single market policy and its negative side effects, Latvian consumers' feelings are most often affected by patriotic slogans, such as "*Let's support our local producers!*" The problem is that consumers' motivation and awareness, why they should support directly local producers, often are primitive and based on false stereotypes. One of the most successful social campaigns of this kind was called "*Do not buy foreign!*" It was initiated in 2012 with the budget of 20 thousand EUR. The initial organizers of this campaign were 17 Latvia local food producers. The objective set by this campaign was that in 2014 "*do not buy foreign"* must become a way of life. Besides, an important supplementing motivator of this campaign was attempt to prevent officials from buying imported food products for public needs (e.g. kindergartens, old people's homes, representative needs at state organizations etc.), if there is a possibility to replace imported food with locally grown.

The professor L.Melece, Head of Department of Quality and Environment Protection, Latvian State Institute of Agrarian Economics, considers that nowadays there can be distinguished two directions of food production. The first is food production in middle and large-scale enterprises (industrialization and efficient production) mainly for international and regional (the EU, the former USSR countries etc.) markets. To ensure this type of production, companies need to implement the following measures: industrialization, consolidation, and modernization; increase of competitiveness and innovation; focus on regional and global markets; quality (ISO 9000, ISO 22 000) and environmental (ISO 14001, EMAS) control systems; use of food quality brands. The second direction for further development of the food sector is food production on farms, small and micro-scale enterprises that comply with principles of sustainable and environmentally friendly food chain and produce value-added food products mainly for the local market.

The main conditions for such food production are local and artisan (individually) produced food, including organic; organic food and market development; local food markets and distribution; culinary tourism; "*Slow Food*" movement; voluntary quality schemes. This description brings the justification – food that is both grown and sold locally skips many steps of processing, packaging, and transporting, sparing the environment and eliminating the dependency on suppliers far removed from the region. Consequently, locally grown produce is fresher, which makes it taste better and ensures that the consumer is getting maximum nutrition for his/her buck, and after all the link between the producer and consumer is not lost. Another aspect is strengthening of local economy, providing work for small farmers, creating or saving workplaces, preserving small shops, and securing food. G. W. Schenk has emphasized the importance of "regional value adding". If someone spends 10 EUR in the supermarket, about 2 EUR remain in the regional community and 8 leave the area. If someone spends 10 EUR to buy from a regional producer, 8 EUR remain in the regional community and 2 leave the area. Buying regional products can generate 4 times more the regional community than buying supra regional. Even, if regional products would cost twice as much – comparing the supra-regional products, the regional people would gain more.

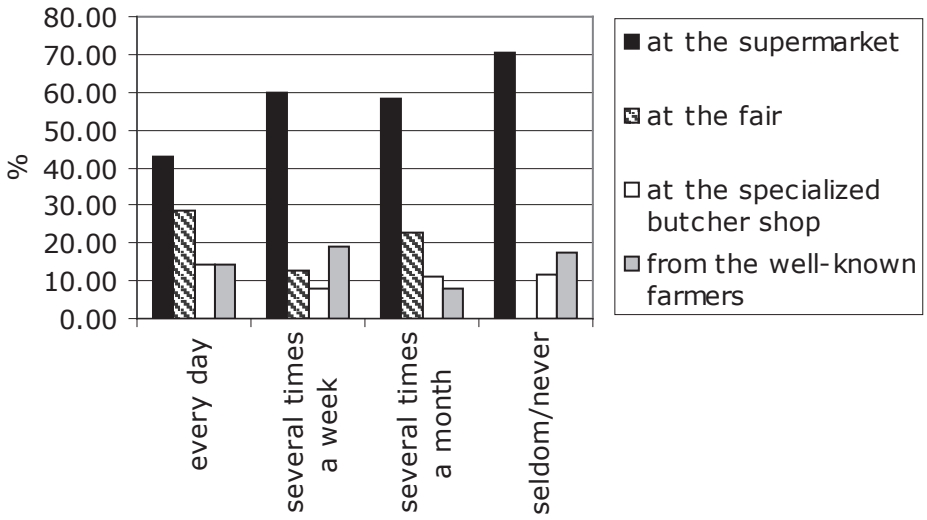
In Latvia, to educate consumers about healthy and sustainable food systems and their principles, pupils already in the primary education establishments are taught the basics of healthy and sustainable lifestyle both in biology and sport lessons. In addition, informative social marketing campaigns on products necessary for human health have been widely carried out in mass media during 2009-2012. Social marketing could be defined as the application of marketing principles and tools to the achievement of socially desirable ends. Social marketing in contrast to commercial marketing not only targets individual behaviour change, but also attempts to "go upstream" and target groups of individuals, legislative bodies, government departments, and non-profit organizations who have the power to enhance such attitude that helps to protect people's health, sustainable wellbeing and quality of life. These advertising campaigns were implemented on the EU money with the co-financing of the Ministry of Agriculture of the Republic of Latvia. The total costs of these advertising projects were approximately 750 thousand EUR. The main activities envisaged by this project were advertising campaigns on TV informing TV viewers about necessity to consume fresh vegetables, fruit, milk products, and honey.

As the response to public dissatisfaction with the product prices and assortment in Latvia, the largest food retail stores lately often activate healthy eating issues. In the beginning of 2012, the results of public survey conducted by Rimi Latvia and SKDS research centre revealed that consumers' food choice in 92% of cases is affected by its price. Only 29% of respondents have admitted that it is important for them that the products are organic, and for 42% of respondents it is important that the products are of Latvia origin. The research also revealed a surprising fact – nowadays, citizens of Riga in general consume healthier food than rural residents of Latvia do. Citizens of Riga have more opportunities to buy diverse and seasonal products, such as fruit, berries, vegetables and cereals, whereas rural population consumes more bread, flour products, and meat products. In rural areas, the product supply is less diverse and the motivation to cultivate the greens even only for non-commercial purposes is often low. (Rozenbaha L., 2012). A similar pattern was found in the period of economic crisis escalation in 2008-2009, when one of the ways, how some local municipalities helped the local needy and unemployed population was garden patch assignment for vegetable cultivation. Unfortunately, needy population



Source: authors' survey, 2012

Fig. 1. **Customers' evaluation of their food health degree**



Source: authors' survey, 2012

Fig. 2. **Fresh meat purchasing frequency**

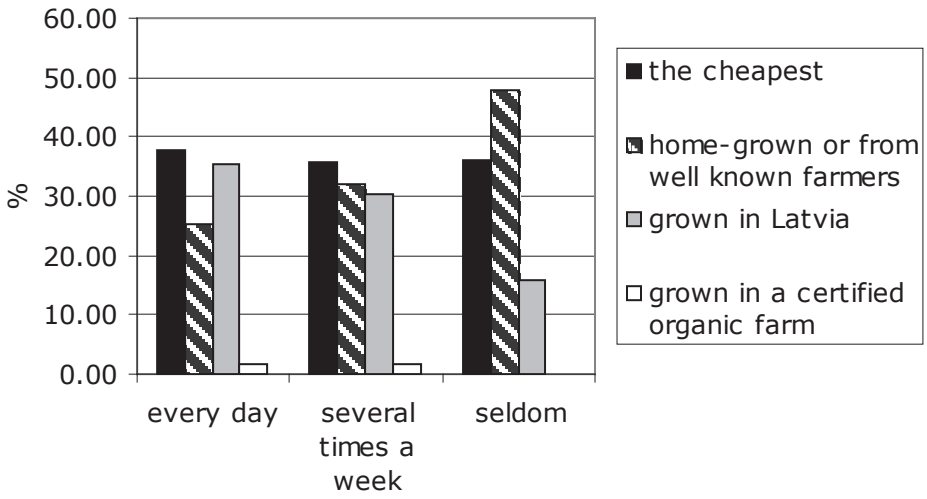
perceived this initiative as an insult, wishing to receive humanitarian aid food packages instead. Such attitude suggests that, due to worsening of economic situation, the population sacrifice food consumption long-term needs to satisfaction of immediate needs.

In order to find out the recent food consumption habits, the authors conducted an internet-based survey, in which 259 respondents were questioned electronically. The respondents' age distribution was as follows: 35 year old and older respondents accounted for 8.5%, the respondents in the age group 18-35 constituted 13.5%, and 19-34 year old respondents accordingly represented 78% of the sample. The gender breakdown was as follows: 64% were female, while 36% - men. The survey contained 10 questions about respondents' shopping habits for meat and vegetables and their consumption.

On the question, whether respondents evaluate their daily consumed food as healthy, Figure 1 reveals that 32 respondents answered affirmatively, and 132 respondents chose the answer „rather yes than no", whereas 92 respondents chose the answer „rather no than yes" and three persons answered in the negative. In general, this leads to the conclusion that 63% of the respondents are inclined to think that their daily food is healthy, whereas 37% of the respondents consider that the food they consume is not healthy. The obtained data were aggregated for further use in chi square calculations.

The data aggregated in Figure 2 indicate that all groups of consumers most often buy fresh meat from supermarkets, also those consumers who try not to use prefabricated meat products still choose the easiest method of shopping, not especially considering what producers' meat they buy.

The vegetable consumption habits, revealed in Figure 3, show that from those consumers who try to follow a healthy lifestyle almost as many



Source: authors' survey, 2012

Fig. 3. **Choice of vegetables for daily consumption**

Table 1

Aggregated respondents' answers on the survey questions

Healthy eating habits	Choose the cheapest vegetables	Very often consume prefabricated meat products	Buy meat at the supermarket	Total
yes	49	103	86	**164**
no	46	89	59	**95**
	95	192	145	**259**

Source: authors' survey data, 2012

respondents buy the cheapest vegetables as those who try to buy not the cheapest but locally grown vegetables.

Basing on the survey results, the authors applied χ^2 method to either approve or deny the previously formulated hypothesis – those consumers who daily use locally grown and healthy food do not buy meat in supermarkets, choose not the cheapest but the healthiest vegetables and do not consume meat prefabricated products (sausages, pates, smoked products etc.).

The authors aggregated respondents' answers on the survey questions and displayed them in Table 1.

Unfortunately, the calculations obtained using the chi square method indicated that the empirical χ^2 is 1.679093, whereas theoretical χ^2 is 5.991465, which suggests that there are no differences in eating habits among those consumers who consider that their consumed food is healthy and that they support local food producers and those consumers to whom these issues are not essential.

Conclusions, proposals, recommendations

1. In nowadays, in the rich range of food labelling, consumers often get confused, because similar label logo colours and symbols are misleading. Consequently, in the social marketing campaigns the buyers should be consistently educated not only about the basics of healthy eating, but also should be given practical information about food products' labels used in the food industry.
2. Despite costly advertisements and sales promotions, the link between local food producers and consumers is poor. The participants of local food system should develop more solid relationships with their consumers focusing on long-term social programmes (e.g. offering practice placement for students, organizing on field tours to farms for families with children, cooperating with schools in organization of thematic workshops etc.).
3. In future, social campaigns should concentrate on the overall long-term needs of the society, which are strengthening of local economy, providing survival for small farmers, creating or saving workplaces, preserving small shops, and securing food. Small farmers are those who still maintain Latvia rural landscape diversity with its uniqueness. Therefore, in the long-term, it is not only small farmers' concern to maintain Latvia regional diversity, but also all Latvia consumers' concern, as more and more often people are looking for possibilities how to spend their weekends thoughtfully and eat healthy.
4. The value added tax on food products should be reduced to allow not only the wealthier, but also all social backgrounds people to purchase such food products that are healthy and enable them to

support local food producers, which overall would strengthen remote regional communities, which lately are in worse social and economic situation than urban population.

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PRODUCT AND MARKETING INNOVATION ON THE YOGHURT MARKET IN POLAND

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Abstract. The paper attempts to identify activities undertaken with respect to the introduction of product and marketing innovations by companies operating in the milk processing (dairy) sector in Poland. Dynamic changes on the dairy product market necessitate innovative actions aimed to ensure competitive advantage of companies operating in the milk processing industry. The results presented in the paper are a part of the research devoted to the innovative nature of the Polish economy with special emphasis on food companies (dairy sector). The author has observed changes in the dairy product production and consumption structure in the period 2000-2011. The importance of the dairy products (yoghurts, milk beverages, and cheeses) grows in parallel with the declining popularity of the base product (milk, cream, and spreads). In response to the market needs, producers offer innovative product lines and marketing activities. Innovative activities in the yoghurt segment are aimed to introduce changes in the product composition, use of additives, consistency, and expansion of offer by using varied base weights, modification of the packaging patterns, and concentration on distinguishing the products in advertising campaigns by emphasising health aspects and targeting them at specific customer/recipient groups. The results of the analysis provide a synthetic overview of the product and marketing innovations in the yoghurt segment in Poland and may be used by the companies operating in the milk processing sector to foster further development and innovation in the discussed segment of the dairy product market.
Key words: product innovation, marketing innovation, milk processing, yoghurt market.
JEL code: O31, Q13

Introduction

Poland is regarded as one of the major milk producers in the European Union, while the milk processing industry is one of the key sectors of Polish agriculture. The value of milk produced in Poland is estimated at ca. PLN 3.5 billion EUR annually (Information Bulletin of the Ministry of Agriculture and Rural Development No. 1-2/2010). This sector encompasses both milk producers and processors. The raw material base of the dairy industry in Poland rests on individual suppliers producing over 12 million tons of milk annually (Jablonska – Urbaniak T., 2010). Despite concentration process, milk production sector is still considerably dispersed. Suppliers provide low quantities of raw material and are dispersed, which has a disadvantageous effect on the raw material such as milk. The supplier scale of operation is also important, while undertaking investment activities – producers supplying small quantities are less inclined to make investments. This has influence on the decisions involving high investment expenditures to improve milk quality. Since the introduction of the milk quota system in Poland the number of suppliers has been decreasing, which proves concentration and specialisation of milk production. Between 2005 and 2010, the number of suppliers was reduced by nearly 37%, which was accompanied by the simultaneous growth of milk supplies to dairy plants by 13% (Dairy Market, 2012). It has to be noted that milk production potential is larger than its purchasing potential, which in the years 2010 and 2011 was ca. 9000 million l p.a. (Purchase and Prices...., 2012). The dairy sector structure is chiefly based on dairy cooperatives. Dairy plants focus their activity on the domestic market (nearly 90% of sales volume). In 2010, milk was purchased by 288 dairy cooperatives 200 of which also processed the purchased raw material. (Jablonska – Urbaniak T., 2010). In 2011, 196 dairy plants were operated (Milk Market, 2012). Furthermore, a reduction of the number of entities buying and processing milk is noticeable. On the dairy product market, beside the milk processing plants operating as cooperatives, entities conducting activity under the Commercial Companies Code play an important role. The largest include such brands as DANONE, Zot, and Bakoma. These companies play an important role in the product range referred to as dairy products.

The main objective of the paper was to identify and present a synthetic approach to activities undertaken with respect to the introduction of product and marketing innovations by the companies operating in the milk processing sector in Poland. The detailed objectives focus on:

1) presenting fluctuations in the production and consumption volumes of selected dairy products in Poland in the period 2000 – 2011;
2) identifying product and marketing innovations in the selected yoghurt categories;
3) providing synthetic information with regard to the product and marketing innovations in the yoghurt segment in Poland implemented by 2011;
4) identifying entities introducing product and marketing innovations in the yoghurt segment in Poland.

In the paper, an attempt was made at identifying activities undertaken with respect to the introduction

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Table 1

Dynamics of changes in the production of the selected dairy products (%)

No.	Goods	2005	Previous year = 100						2011	
		2000 = 100	2006	2007	2008	2009	2010	2011	2000 = 100	2005 = 100
1	Margarine and low fat spreads with the exclusion of liquid margarine	90.6	99.3	99.9	98.9	106.4	107.4	101.9	103.5	114.2
2.	Processed liquid milk	128.4	100.0	105.0	97.9	114.6	101.5	100.2	153.7	119.8
2.1.	including: standardised consumption milk	124.4	94.8	103.0	101.2	114.4	103.5	96.0	139.7	112.3
2.2.	low fat consumption milk	70.3	77.9	176.0	251.7	119.0	102.5	92.8	274.3	390.3
3.	Standardised cream	136.8	110.6	105.6	100.5	79.4	95.7	94.5	115.2	84.2
4.	Solid milk and cream	114.3	84.6	104.1	98.6	86.3	85.5	119.7	87.6	76.7
5.	Butter	129.0	96.6	105.0	100.4	98.4	97.6	97.7	123.2	95.5
6.	Cheeses and quark cheeses	127.5	106.6	103.8	104.3	102.7	101.9	103.2	158.7	124.5
6.1.	including aging rennet cheeses	161.5	107.7	98.2	110.8	100.7	94.7	106.7	192.4	119.2
6.2.	fresh cheese (not aging and without preservatives), including rennet cheese and curd cheese	112.6	102.4	109.0	99.8	103.6	108.9	103.6	146.6	130.2
6.3.	processed cheeses (cheese spreads) other than grated or powder cheeses	137.6	120.4	103.6	96.3	105.8	96.2	94.1	158.4	115.2
7.	Yoghurt	136.8	133.2	114.7	101.7	117.4	110.6	99.7	275.3	201.3
8.	Casein	13.1	104.7	38.1	176.5	51.1	78.3	63.9	2.4	18.0
9.	Ice cream	.	91.7	125.9	87.2	110.6	98.6	100.4	.	110.2

Source: author's calculations based on "Production of Industrial Goods in 2011", GUS

of product and marketing innovation by the companies operating in the dairy processing sector on the basis of the analysis of materials and data from available publications concerning public statistics: GUS (*Main Statistical Office*), ARR (*Agricultural Market Agency*), MRiRW (*Ministry of Agriculture and Rural Development*), IERiGZ – PIB (*Institute of Agricultural and Food Economics - National Research Institute*), PIM (*Polish Milk Chamber*), and other publicly available secondary sources. The research tools included an analysis of the status of explorations with respect to the particular topic and descriptive analysis. The paper provides a theoretical, empirical, and general overview.

Changes in the production volume and consumption of selected dairy products

An analysis of the dynamics of changes in the production of selected dairy products in the period 2000 - 2011 shows changes which, on the one hand, are a result of transformations occurring in the structure of dairy products and, on the other, are related to the construction of the competitive advantage of processing companies on the basis of a change of the offered product range. The influence of the same companies on the moulding of the dairy product consumption structure in the analysed period cannot be neglected.

During the analysis of the production changes occurring in 2005 in comparison with 2000, it is noticeable that the highest production growth dynamics was noted in the aging rennet cheeses followed by the processed cheese, standardised cream, butter, and processed liquid milk groups. The highest dynamics was observed in the case of low fat consumption milk, margarine, and spreads. This group of dairy products noted a drop in the production level.

The analysis of production changes occurring in 2011 in comparison with 2005 shows that the highest production growth dynamics was noted in the following product categories: low fat consumption milk, yoghurts, fresh cheese, cheese and quarks in general, and liquid processed milk. Reduced production of products like milk and cream in solid form, standardised cream, and butter can also be observed in this period.

A comparison of changes in the production volume in 2011 and 2000 indicates an increase in the production volume of such products as yoghurts, low fat consumption milk, cheeses, and white cheeses. At the same time, production of solid milk and cream was reduced. A slight increase of margarine and spreads production was also noted.

Observation of the production dynamics of the main dairy products allows stating that the growth in production of such products as yoghurts, liquid milk,

cheeses, and white cheeses is a dynamic process. Reduction, or an atomic increase, was noted in the cream, margarine and low fat spreads and butter production. The conducted analyses confirm opinions of a number of experts dealing with the exploration of changes in the dairy product consumption and production structure and opinions of dairy sector practitioners saying that the reduced consumption trend in the margarine, spreads, butter, and cream sector is accompanied by the increase in the milk, milk beverages, yoghurt and cheese consumption[2]. However, taking into account consumption of the dairy products in Poland, despite its annual increase, its level is still different from the EU Member State average. As regards milk, its consumption in Poland constitutes a little above 50% of the EU average, while the consumption of cheeses is lower by 1/3 in comparison with the EU average (Bugala A., 2012).

The analysis of the dynamics and changes in the milk and dairy product consumption in Poland shows a gradual increase in the consumption of these goods since 2006. It is, among other things, a result of a "relative" price reduction of dairy products in comparison with other food products and of growing consumers' interest in high nutritive value and healthy food. According to the estimates of IERiGZ-PIB (*Institute of Agricultural and Food Economics - National Research Institute*), in 2011, the per capita balance sheet milk consumption in Poland, excluding the milk used for butter production, was ca. 195 l. It shows a 2% increase in comparison with the preceding year and over 12% growth in comparison with 2005[3]. It is anticipated that in the following years, the growth trends in the dairy product consumption will be sustained. It has to do with the anticipated intensified development of the functional goods production and increased demand for these product types deriving from the growing "wealth" of the society. In the analysis of butter consumption, one thing has to be emphasised, namely, that its declining consumption in the EU is linked with the decrease in the consumption of bread as a complementary good. In Poland, bread consumption has also decreased; it appears, however, that butter consumption is strongly dependent on the price level. In 2010, in consequence of a considerable growth of butter prices also in relation to other edible fats being its substitutes, its per capita consumption dropped to 4.4 kg (i.e. a decrease of over 6% in comparison with 2009). It is estimated that in 2011, as a result of a relatively high level of retail prices of butter, its per capita consumption was reduced to 4.1 kg. It is anticipated that in 2012, as the butter prices continue their atomic growth, the decreasing trend in butter consumption will prevail (Milk Consumption…, 2012; Milk Market, 2012).

Product and marketing innovation in the selected yoghurt product categories

A general definition of innovation refers to a phenomenon that is intrinsically related to the notion of change, novelty, reform, or an idea perceived anew. Various facts, processes, or phenomena of technical, organisational, social, and psychological nature are regarded as innovative. Until the present moment, the notion of innovation introduced into economic sciences by J. A. Schumpeter in the early 20th century, has been evolving in response to changes occurring in various fields of business activity. As regards terminology related to this phenomenon, definitions provided in the "Oslo Manual" laying down the rules for collecting and interpreting data concerning innovation developed by a group of experts from the Organization for Economic Cooperation and Development (OECD) and the European Statistical Office (Eurostat) are used in the paper. In the manual, innovation is understood as an implementation of a new materially improved product (a good or service), process, new marketing methodology, or a new method of organisation with respect to business practices, organisation of the place of work or relations with the external environment. Additionally, "narrower" and "broader" definitions are distinguished, and a complete range of novelties is introduced - from the global scale novelties to the novelties only from the point of view of a particular company/plant (Matusiak K. B., 2011).

In the "Oslo Manual 2005", product innovation was defined as an implementation of a product or service which is completely new or whose functional characteristics or intended uses, which they are to serve, have been considerably improved. This encompasses in particular improvements in technical characteristics, applied components and materials, software constituting product integral part, and also improvements facilitating product use, i.e. the so-called user-friendliness (Matusiak K. B., 2011).

Marketing innovation as described in the "Oslo Manual 2005" was defined as an implementation of a new marketing method including significant changes with respect to:

- patterns and packaging – e.g. changes in the form and appearance of the product which do not affect its technical and functional parameters or such changes of packaging of products like food, beverages, cleaning agents, cosmetics where packaging becomes the key element of their "appearance"; the aim of these changes is to make the product more attractive to the potential buyers;
- product and service sale methodology – these changes include most importantly new sale channels, with the exclusion of logistical methods such as first-time introduction of the franchising system, direct sale or granting product licence, and application of new concepts of product presentation (e.g. sale of furniture in the specially arranged according to topics rooms);
- product and services' promotion and advertisements, e.g. the so-called product placement, i.e. showing the company products as props in films or TV programmes; the so-called branding or introducing an entirely new symbol, or brand, to win a new market or giving a new image to the product; obtaining a "face" used in advertising campaigns and opinions of celebrities (mainly film stars), or introducing a personalised information system, e.g. through the use of loyalty cards to harmonise product presentation with the individual customer needs;

[2] Opinions of experts and practitioners obtained during personal interviews, literature studies, analysis of articles, announcements, and press releases.

[3] In 2005, the historically lowest milk consumption level was noted in Poland.

- methods (strategies) for determining product and service prices - e.g. first-time introduction of a method of differentiating product and service prices depending on the demand (if the demand is low, the price is also low).

Marketing innovation may concern both new and old (previously implemented) products of a particular company. It may be developed by the surveyed company or just adapted by it to its actual needs, or invented by another company or institution. The purpose of marketing innovation is to better satisfy customer needs, open new markets, or change the position of the products of a particular company on the current market in an attempt to increase the value of the sold production. For a change of the marketing methods to be regarded as a marketing innovation, it must be a part of a new marketing strategy of a particular company - a strategy that is materially different from the marketing concept and strategies applied by the company so far. It is a characteristic feature of marketing innovation distinguishing it from other changes in marketing instruments applied by a particular company (Matusiak K. B., 2011).

Taking into account changes in the production structure and consumption of dairy products, an emphasis needs to be put on the fact that the innovative activity is focused on these groups of products that achieve the highest production and consumption growth indicators. The greatest number of innovative activities can be observed in such dairy categories as liquid milk, milk beverages, white cheeses, and most importantly yoghurts.

Producers of dairy products have introduced completely new groups and product lines deriving from changes in product composition and various types of improvements from the point of view of their usefulness as well as intended use and functional characteristics of the products. These changes also concerned packaging - both patterns/shapes and offer of the product in varied base weights and capacities. Additionally, various advertising and promotional campaigns concerning individual product groups intended for the specific, selected market segments such as children and youth, active people who are concerned with their health, active men, and weight-watching women were launched. There were also major changes concerning the use of sales channels, e.g. expanded cooperation with large-format stores. Furthermore, it has to be pointed out that certain products are specially dedicated to the needs of specific chain stores such as Biedronka, where special basic weight of the Jogobella products is applied, or cream by Okregowa Spoldzielnia Mleczarska (OSM) in Piatnica *(Piatnica Regional Dairy Plant)*, or a range of Biedronka brand products produced by Spoldzielnia Mleczarska (SM) Mlekovita *(Mlekovita Dairy Plant)*.

The largest number of innovative activities was undertaken in the yoghurt product and liquid consumption milk groups. Unquestionably, it had to do with the adaptation of the product structure to the changing needs of the consumers. In the yoghurt group, other categories can be distinguished such as drinking yoghurts, natural yoghurts, fruit yoghurts, creamy and breakfast yoghurts, and hybrids of the main categories. The yoghurt market in Poland has been dominated by two international producers, i.e. Danone with 40% market share and Zott, the owner of the Jogobella brand, whose share is estimated at 20%. The third major yoghurt producer is a Polish capital company - Bakoma. Despite domination of the previously mentioned three producers, the number of companies interested in participation in this attractive yoghurt market is growing. It has to be mentioned that in 2010, Polmlek noted a 10% growth of yoghurt and milk deserts sale. This company has introduced the so-called functional yoghurts[4], which were quite popular with consumers. Furthermore, the supply of yoghurts without sugar and 0% fat content is also increasing. The Mlekovita Capital Group has introduced low fat (weight control) products. Their sale in 2010 (as it is the case with Polmlek) has increased by ca. 10% (Radziewicz J., 2012).

It is anticipated that fermented beverages, especially drinking yoghurts, are the most promising areas where innovation should be implemented. One of the inventions is introduction of probiotics as one of the ingredients. Unquestionable leaders in this area are Danone and Zott with such brands as Actimel and Activia. The native dairy sector also offers innovative products in this category. Spoldzielnia Mleczarska (SM) Mlekpol *(Mlekpol Dairy Plant)* has the following brands in its offer: Milko, GK Mlekovita – Jogurty Polskie; Lodzka Spoldzielnia Mleczarska (LSM) *(Jogo Lodz Dairy Plant)* Jogo – the Jo Go! product line; Okregowa Spoldzielnia Mleczarska (OSM) Krasnystaw *(Krasnystaw Regional Dairy Plant)* – Calpro yoghurts; OSM Koscian *(Koscian Regional Dairy Plant)* – the Frez brand and OSM Wart *(Wart Regional Dairy Plant)* – Milk – probiotic yoghurts. Additionally, Mlekovita and Bakoma developed innovative products enriched with B and D group vitamins and calcium for young consumers (children). In addition, anti-cholesterol products have appeared on the market such as Benecol or Danacol (Radziewicz J., 2012).

As far as the innovative activities in the natural yoghurt segment are concerned, the producers have focused on the changes in the composition of the base product. On a marketing level, emphasis was put on the message intended for a potential consumer focusing on health properties of the product (probiotic bacteria restoring the intestine flora, beneficial digestive effect, increased immunity) and application of varied modern packaging. It is worth noting that natural yoghurts have substituted fatty gravies and cream.

The product range in this segment is continually enriched with new solutions. This concerns functioning of the natural yoghurt with or without sugar on the market, which can be eaten with a spoon, or in a drinkable form, with an addition of crop grains or in the so-called light version. Products marked with the "Bio" symbol are products from ecological farms. The leaders in this area are Danone and Zott. Among the Polish producers, worth mentioning are such companies as Bakoma, Bacha, SM Mlekpol *(Mlekpol Dairy Plant)* and LSM Jogo *(Jogo Lodz Dairy Plant)*, OSM Krasnystaw *(Krasnystaw Regional Dairy Plant)*, OSM Nowy Dwor Gdanski *(Nowy Dwor*

[4] Functional products are products which due to application of food additives have additional effect on human organism in comparison with their traditional counterparts (Gorski J., 2012). Functional food meaning such food products that in addition to their basic task, i.e. nutrition, have other psychological or physiological effect on human organism (Socha J., Stolarczyk A., 2002).

Gdanski Dairy Plant) and SSM Jana *(Jana Dairy Plant)*. The innovative activities in this product group focus on such elements as being made of natural ingredients and application of modern packaging, health features and convenience of use and consumption (Radziewicz J., 2012).

Yoghurts with fruits are one of the leading dairy categories. Zott's Jogobella line has a considerable share in this segment due to its varied flavours. Zott is closely followed by Danone, Bakoma, and Mlekovita Capital Group.

Changes concerning introduction of pieces of fruit into the basic composition of the product were initiated already in 1990s. Additionally, marketing activities concerning introduction of new packaging were initiated with respect to both shapes (pots, buckets, bottles), base product weight and advertising spots informing of the flavour and health benefits related to the product. Through the introduction of yoghurts with extra large fruit pieces, Zott built a strong market position. Danone is also placed among market leaders with its offer of yoghurts with fruits at the bottom of the pot and the Ale Owoc! *(What Fruit!)* brand as well as Bakoma offering the Polskie Smaki *(Polish Flavours)* product line.

Yoghurts with fruits are but one of the leading dairy categories. In the period from February 2009 to January 2010, the quantitative share of products that can be eaten with a spoon was 72.5%, while the value share was at the level of 72.7 million (Gorska J., 2011).

A novelty introduced to the market by the producers is a range of the so-called bio products, which are made of the milk of cows from ecological farms; these products contain pieces of fruit also produced by ecological farms. Olma, EkoLukta, and Granarolo offer such products.

In addition to the bio products, novelties gaining in popularity are fruit yoghurts from goat milk supplied by Agro Danmis. The LSM Jogo *(Jogo Lodz Dairy Plant)* offers Jogo Max 0% fat products to its consumers. Undeniably, in the probiotic product range, Danone with its Activia occupies the leading position. The new trends in this segment include yoghurts with the fruit mousse - a mixture of flakes and dried fruit supplied in a separate container and the first yoghurt for men 7 Zboz Men *(7 Crops Men)* offered by Bakoma (Radziewicz J., 2012).

In the group of creamy yoghurts, the innovative activities are aimed at changing the composition of the basic product (flavours and additives) and its packaging.

Danone has the largest product range in this segment; it supplies, among other things, such products as Kremowy Biszkoptowy *(Creamy Sponge Finger)* and Kremowy Wafelkowy *(Creamy Wafer)* yoghurts and a broad range of Fantasia yoghurts available in the main flavour lines, i.e. fruity and chocolate and in season lines "Letnie Smaki" (Summer Flavours) and „Zimowe Smaki" (Winter Flavours). Danone also offers yoghurts with fruits at the bottom of the pot in various flavours.

Another important producer on the creamy yoghurt market is Müller - a German company offering Jogurty Mix *(Yoghurt Mix)*. Bakoma offers a wide range of the Kremowy (Creamy) brand products, while Zott supplies Cremesse yoghurt desserts in Cappuccino and Tiramisu flavours. OSM Sanok (Sanok Regional Dairy Plant) supplies creamy yoghurts from Arabella line, while Mlekpol offers Augustowski yoghurt in coffee flavour.

A new category in this segment are spicy yoghurts, which can be used as additions to meat and vegetable dishes. Dr. Oetker offers Zaziki - creamy yoghurt with fresh cucumber and garlic, while Zott and Mevgal have introduced Tzatziki (Radziewicz J., 2012).

Among product categories referred to as breakfast yoghurts, innovative activities have been focused on a change of the base product, i.e. mainly additions, base weight and package shape.

The market for these products can be divided into three categories: fruit yoghurts; natural yoghurts with grains; yoghurts in packaging with an additional container for cornflakes, crunchies or musli.

Danone, which is perceived as the largest producer in this segment, offers novelty natural yoghurts with grain, yoghurts with a topper, i.e. wheat bran flakes and cornflakes, or corn balls (in 191 g 195 g containers), and Fantasia line yoghurts with an addition of chocolate flakes, milk chocolate, or chocolate balls. Zakrecony Mix *(Twisted Mix)* in vanilla flavour is intended for children with number figures made from corn covered with chocolate. The health products offered by the company include Activia with musli and Activia Mix with an addition of flakes, dried strawberry, plum, and cranberry. Additionally, the Activia product line is distinguished on the market with a special packaging - the shape and style of the bottles attracts attention of consumers.

Bakoma has introduced a wide range of fruit yoghurts to market such as 7 Zboz *(7 Crops)* in varied weights of 150 g, 170 g, and 270 g. This category includes a composition of various crops such as wheat, barley, rye, oat, rice, buckwheat, millet in different flavours. A novelty is introduction of the 7 crops yoghurts in drinking version.

Zott offers Jogobella 8 zboz *(Jogobella 8 Crops).* Müller and Mlekovita Capital Group offer drinkable yoghurts with fruits and in various musli combinations. The Polmlek Group delivers drinking yoghurts with crop grains and an addition of collagen while Okregowa Spoldzielnia Mleczarska Lowicz *(Lowicz Regional Dairy Plant)* offers yoghurt with honey and crop grains (Radziewicz J., 2012).

Taking into account all the materials of which the packaging is made, plastics dominates the market. A novelty in this area is the so-called biodegradable plastic developed by the researchers from Malaysia during the International Invention, Innovation and Technology Exhibition (ITEX) organised in Kuala Lumpur in 2009. A biodegradable variety of plastic is made of fruit waste (banana skin, rambutan, or cempedak). The fruit plastic is 10% cheaper in comparison with traditional plastics, it degrades faster in natural environment, and its durability is estimated at up to do 2 years in the optimum conditions, if it is not in contact with soil or water (Bioplastic…, 2012). Another innovation is the solution of the Norwegian company - Time Tempa testing innovative labels that identify durability (shelf life) of the products. The label is stuck to the packaging and accompanies the product from storehouse up to the point of distribution. Due to chemical reactions, it provides information on product shelf life (Norway…, 2012).

Conclusion

Furthermore, the purpose of the paper was to identify and present in a synthetic manner actions undertaken with respect to introduction of product and marketing innovations by the dairy sector companies in Poland. The conducted analyses allow formulating the following conclusions.

1. Changes in the dairy product production and consumption volumes have significant mutual effect.
2. Large international groups together with big dairy plants with Polish capital dominate the innovative dairy product offer. This fact, among other things is a result of high capital consumption of innovative activities, which is not only linked with the product as such but also with marketing. It is generally acknowledged that the innovative nature of the entire dairy industry in Poland is on a low level. In discussions, experts point out that the main barrier is lack of financial resources and mentality of directors of the dairy plants - this particularly concerns small and medium sized companies. It is often emphasised that innovative activity should focus on the question of cost lowering, improved quality of health aspects of the products.
3. Innovative activities concerning innovative dairy products such as yoghurts focus mainly on the changes of composition of the basic product and use of additives. It can be said that the dairy products' enhancement is one of the best developed areas of innovation in the food industry. American researchers who observed this phenomenon in the 1930s of the last century, jointly declared that milk and its products are perfect media for this purpose. The changes also concern the form in which the product is marketed. There are distinguished yoghurts eaten with a spoon and drinking yoghurts. Additions include pieces of fruits, musli, crop grains, cornflakes, and chocolate. Innovation also concerns introduction of health components such as: probiotics, vitamins, antioxidants, sterols, and omega - 3 acids. There is a wide range of products including additions stimulating immunity, digestive and weight-watching processes, or having an anti-cholesterol effect (e.g. Benecol yoghurts).
4. The innovative activities also consist in the development of new product categories, which are hybrids of its own kind. A good example of it can be a line of drinking yoghurts with an addition of fruits, priobiotic bacteria, and omega – 3 acids marketed by the Mlekovita Capital Group. They include products with an addition of aloes, cranberry, and pomegranate and lychee with limette. Mlekpol offers the Milko drinking yoghurt lines with an addition of probiotic bacteria and C vitamin (Gorski J., 2009).
5. Development of an innovative product without informing consumers of its existence does not bring the desired effect in the form of measurable sales revenues. It seems necessary to inform potential buyers of the existence of the product, its unique features in all aspects with special emphasis of the health aspects. Beside information, communication with the consumer is also required, as it provides companies with product feedback on the functional aspect of their products. Marketing innovation concerns organisation of advertising campaigns, market segmentation (e.g. drinking yoghurts are intended for active consumers from large agglomerations, women), container patters and shapes (the style of Activia or Jo Go! Slim). Changes that occur at the intersection of a product and a marketing innovation concern the base weight of the marketed products. The companies also offer large packages (the so-called family size) and smaller functional sizes taking into account the mobility aspect (possibility to consume them during a trip, excursion, or at work). It can be observed that availability of varied packaging results into increased demand for the product.
6. In pursuit of obtaining the largest possible income, companies combine the exposition of unique product features with considerable resources allocated to marketing. This obviously concerns activities of large companies and groups of companies (Mlekovita, Mlekpol, Polmlek Group, Krasnystaw Dairy Plant, and others). Smaller market participants have to target regional and local markets.
7. Based on the performed analyses and market observations, it can be concluded that companies operating in the milk processing sector will continue to introduce innovative products focusing on the changes of the base product ingredients and application of additives in one of the products. Particular attention will be focused on health aspects and effects. It is evident that communication with customers, observing their new needs, and responding to them by developing products satisfying these needs gain in importance.
8. Market observations allow to conclude that companies should direct their innovative activities towards products with the lowest amount of preservatives and additives possible, such additives being perceived by the consumers as unhealthy. With regard to packaging, companies should focus on the application of environment-friendly packaging, especially the one made from biodegradable materials.
9. The scale of company's operation is a limitation to the individualised consumer approach. Large companies tend to focus on increasing the production volume and to be less flexible in quick adaptation to the changing market as the process involves high costs of technological lines, personnel, etc. Therefore, more flexible entities capable of quick reaction to the changing market needs are more likely to emerge in this market segment.

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CONSUMER PERCEPTION AND WILLINGNESS TO PAY FOR THE WELFARE OF LIVESTOCK DURING LONG-DISTANCE TRANSPORTATION

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Abstract. The aim of this paper was to determine the level of awareness of consumers in terms of welfare of farm animals during long-distance transportation, and to examine the expectations of consumers in this regard. The research includes a survey. The sample consisted of 280 randomly selected consumers from Mazowieckie province. The research results indicate that the price was one of the main criteria determining the selection of meat and meat products. It was found that Polish consumers did not pay attention to the conditions or level of welfare of farm animals during long-term transportation when making decisions with regard to the purchase of meat.
Key words: consumer, willingness to pay, animal welfare, transport, campaign.
JEL code: Q110

Introduction

Decisions of consumers when purchasing products of animal origin depend on many factors. The significant aspects include the price, origin, brand, trademarks and, of course, the quality attributes such as taste, colour, smell etc. Numerous research projects also indicate that the interest of consumers – particularly those of the Western Europe – in safety of food, including the production technology, is growing. Therefore, the ethical aspect of use of animals for production of food is becoming significant. Consumers declare their interest in welfare of animals, that is, the conditions of breeding, feeding, and taking care of animals on farms, during transportation and slaughter. The results of research conducted by The European Food Safety Authority in 2010 show that 64% of European consumers are concerned with farm animal welfare. According to a 10-point scale, the respondents assigned to it the average score of 7.8 (Special Eurobarometer 354, 2010). In 2005, interest in animal welfare in the context of its impact on food safety was reported by only 60% consumers. Differences in the level of consumer interest in the issue have been presented in Figure 1 (Special Eurobarometer, 2010).

Most consumers having concerned with the issue of welfare were recorded in Luxemburg (81%), Portugal, Denmark (76%) and Italy (75%), and the least – in Romania (49%), Bulgaria (48%), and Hungary (44%). The data indicate that in countries, which became Member States of the European Union after 2004, a lesser number of consumers perceived this problem as significant. In eleven Member States of the "old" European Union, the level of concern has increased since 2005, particularly, in Finland (66%; +18), Lithuania (58%; +16), and Luxembourg (81%; +15) (Special Eurobarometer 354, 2010).

According to the research results, the increasing number of consumers is taking into account the aspect of animal welfare in their purchase decisions. In Great Britain, 70% of consumers declare they "always" or "often" purchase eggs from hens subjected to rearing on free range. In France, in the year 2006, more than 62% broilers on the market were bred in accordance with the improved welfare system, known as "Label Rouge" (BBFAW, 2012).

Nevertheless, demand for products obtained from animals bred on the improved welfare conditions is still limited. In many countries of the Eastern Europe, consumers have no access to such products or this access is very limited. Another barrier is caused by the lack of knowledge on the breeding methods and the resulting level of welfare of animals. The situation is worsened by the lack of information concerning the maintenance system on the product labels. An exception in this regard is the case of consumer eggs, marked with a numerical code from 0 to 3, specifying the system of breeding of laying hens[2]. In addition, consumers are facing a financial barrier, since the prices of animal products obtained from animals bred on these improved conditions are much higher in comparison with the prices of products obtained from animals bred in the conventional systems (Gebska M., 2012; Gebska M., Malak-Rawlikowska A., 2012; Majewski E. et al., 2012). Raising of welfare standards results in additional costs throughout the entire food chain, and the chain participants should be able to regain these from the market. In order for this to be possible, the consumers must be aware of this fact and ready to bear the additional costs.

However, many data indicate that consumers are rather unwilling to cover the additional costs, resulting from the improvement of animal welfare, although they declare such readiness (Napolitano et al., 2008; Schröder, McEachern, 2004; Tawse, 2010). Their willingness to pay a higher price depends on the economic situation and level of awareness of the consumers (Nadal B., Cameron T., 2011). The higher is consumer income and awareness of animal welfare, the higher is their willingness to pay for products coming from animals bred on improved welfare conditions. As a result, most consumers purchase such products very rarely or they do not purchase them at all (Webster A., 2001), and only 10% (Schröder M.,

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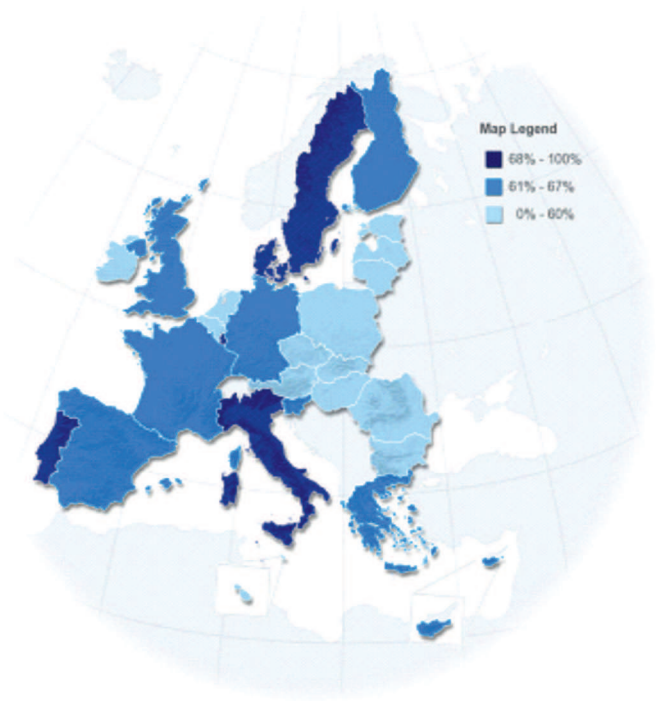
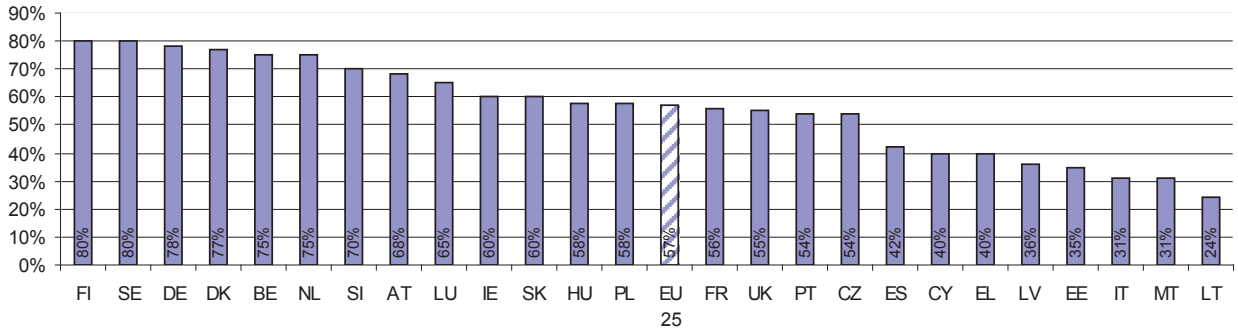
[2] Eggs bearing number 0 – organic, 1 – free range, 2 – barn , 3 – caged

LU	81%	ES	63%
PT	76%	PL	59%
DK	76%	NL	59%
IT	75%	BE	58%
SE	74%	LT	58%
UK	67%	CZ	57%
DE	66%	MT	57%
CY	66%	AT	56%
FI	66%	EE	56%
SI	65%	IE	55%
FR	65%	SK	52%
EL	64%	LV	52%
		RO	49%
EU	**64%**	BG	48%
		HU	44%



Source: Special Eurobarometer 354, 2010

Fig. 1. **The share of European consumers "concerned" with the welfare of farm animals**



Source: Special Eurobarometer 229, 2005

Fig. 2. **Share of consumers convinced of the existence of legislation regulating the welfare of farm animals during transportation**

McEachern M., 2004) are actively searching for information in this regard prior to the purchase.

Consumer awareness is built by institutions and organisations thanks to various initiatives and campaigns. Examples of such initiatives include any activities aimed at increasing of legal requirements with regard to animal welfare, introduction of private raised standards, marking of products or information, or education campaigns. Their range and effectiveness determine the pace of increase of knowledge and awareness of consumers. A review of available literature on the subject, however, indicates that no research has been conducted in this regard. Another issue, rarely undertaken in research, is consumer awareness on welfare of animals outside the farm, that is, during transportation and slaughter. The only available data in this regard come from the research project, ordered by the Directorate General for Health and Consumer Protection in 2005. The results indicated that, on average, every second respondent was convinced of the existence of legal provisions regulating the rules and conditions of transport of farm animals. The highest level of knowledge in this regard was presented by consumers from the Scandinavian countries – Finland (86%), Sweden (80%), Denmark (77%) and Germany (78%), and the lowest – among those from Lithuania (24%), Italy (31%) and Estonia (35%) (Figure 2) (Special Eurobarometer 229, 2005).

Among the respondents, belief in the existence of such law was expressed more often by men (60%),

Table 1

Characteristics of respondents (N=280)

Specification	Total		Women		Men	
	N	%	N	%	N	%
AGE						
19-29	152	54	107	38	45	16
30-39	42	15	26	9	16	6
40-49	32	11	28	10	4	1
50-59	30	11	21	8	9	3
More than 59	24	9	18	6	6	2
EDUCATION						
Elementary	4	1	2	1	2	1
Vocational	28	10	19	7	9	3
Secondary	71	25	54	19	17	6
University	177	63	123	44	54	19
NUMBER OF HOUSEHOLD MEMBERS						
One	11	4	7	3	4	1
Two	47	17	39	14	9	3
Three	63	23	50	18	13	5
Four	74	26	54	19	20	7
Five or more	85	30	51	18	34	12

Source: author's research

with university education (67%), and purchasers consuming meat at least 4 times a week (61%).

As a result of literature review, it was found to be necessary to get familiar with the level of knowledge and views of consumers concerning the level of welfare of the animals transported, and to examine the effectiveness of one of the campaigns organised by supporters of animal rights.

The aim of the study was to determine the level of awareness of the Polish consumers on welfare of farm animals for slaughter. The campaign selected was entitled "8 hours" and it was aimed at shortening of the long-distance transport of animals[3] to 8 hours. The "8 hours" initiative was initiated by Dan Jørgensen, a Danish member of the European Parliament, in 2010.

Research results and discussion

Research among the Polish consumers of meat was conducted from May to July in 2012. The research was conducted using a questionnaire, partly prepared and sent in electronic version using Google docs (Swiecka, 2012) and partly as electronic questionnaire during a conventional survey. The respondents had to have Internet access in order to be reached. In total, the questionnaire was filled in by 280 respondents from Mazowsze. The sample selection was based on stratificated random sampling. To assess the level of consumer awareness, questions were asked concerning familiarity with the terminology of welfare, with rules of animal transportation, and knowledge of the campaign aimed at shortening of animal transport time to 8 hours. The respondents were also asked to relate with the maximum transport time for individual species of animals, specified in the EC Directive 1/2005.

1. Characteristics of respondents

The project was conducted on a sample of 280 respondents. Characteristics of the sample have been presented in Tables 1 and 2. Almost three fourths of the respondents (70%) were women. According to the research project, ordered by the Office for Protection of Competition and Consumers, women were most often the decision-makers during everyday shopping, and more than a half of them (53%) took care of shopping on their own. In the group of men, one in five respondents took care of everyday shopping – most of those were respondents living alone. Members of one in three households declared shopping together (33%) (Office for Protection of Competition and Consumers, 2007). Among the respondents, 24% lived in the rural areas, while the remaining respondents lived in cities. Most of them or 41% lived in cities of more than 500 thousand inhabitants, while 8 – 14% questionnaires were gathered in smaller agglomerations.

Most respondents were young people, i.e. 54% were 29 years old or younger. One in seven respondents was aged 30-39 years, and one in nine - 40-49 years (Table 1). The project was focused on young respondents due to the fact that they were the largest group with Internet access, they were the most active users of the Internet, and a substantial part of the animal right supporting campaigns was conducted on the Internet, including the initiative "8 hours" (Swiecka, 2012).

[3] Long-distance animal transport is defined as car transport above 24 hours (for horses – 14 hours)

Table 2

Characteristics of respondents (N=280)

Specification	Total		Women		Men	
	N	%	N	%	N	%
MONTHLY INCOME PER HOUSEHOLD						
Up to PLN 1000	42	15	31	11	11	4
PLN 1001-2000	58	21	39	14	19	7
PLN 2001-3000	81	29	58	21	23	8
PLN 3001-5000	62	22	43	15	19	7
> PLN 5000	37	13	8	3	29	10
PLACE OF RESIDENCE						
City above 500 thousand inhabitants	115	41	82	29	33	12
City of 100-500 thousand inhabitants	23	8	13	5	10	4
City of 10-100 thousand inhabitants	38	14	26	9	12	4
City up to 10 thousand inhabitants	38	14	33	12	5	2
Rural areas	66	24	46	16	20	7

1 euro = 4 PLN

Source: author's research

A decisive majority of the respondents (63%) had a university education, 25% - had a secondary education and 10% - vocational education. Only 1% of the respondents had elementary education. Among those with vocational education, most declared income per household at the level of PLN 2001-3000 (38%). The structure was similar among those with secondary education – this group was also dominated by income per household of PLN 2001-3000; these persons constituted 30% of the respondents (Table 2). The financial condition of respondents with university education was different. In this group as many as 42% of the respondents exceeded the level of income per household of PLN 5 000. Most respondents came from large families – households with 5 members constituted 30%, and those with 4 members – 26% of all the respondents. The average number of household members was 3.62.

2. Research results and discussion

The data obtained show that most respondents (98%) ate poultry and pork (78%). The popularity of poultry was due to the fact that it could be easily and quickly prepared. According to consumers, poultry was better than pork and beef also due to its nutritional value and the fact of being healthy. It was noticed that consumption of individual types of meat depended on income per household and the place of residence. Pork was most popular among inhabitants of rural areas (39%) and persons with income below PLN 1000 (38%). Beef was most often consumed by persons in households of income exceeding PLN 5000. This is understandable as beef is the most expensive type of meat, purchased the least often.

The respondents included persons declaring very frequent consumption of meat, up to 5 times a week (39%) as well as those, who, due to various reasons, eat meat sporadically (0.5%). The data indicate that a very significant criterion, taken into account during purchase, was the price of meat. Similar results were obtained by Bartosik – Purgat who found that the criterion of price was the most significant one from the perspective of the Polish consumers. Knowledge of the country of origin of meat was declared by 49% of women and 37% men. In particular, the inhabitants of the rural areas emphasised the importance of the fact that Poland was the country of origin of meat, which was proven by the fact that 41% declared that it was "very significant". Many consumers from cities also stated they preferred meat produced in Poland and that they took this aspect into account "always" (20%) or "often" (28%) when shopping. At the same time, 20% of the respondents were never concerned with the country of origin of meat.

The aspect, which had the least impact on consumer decisions on purchase of meat, was the breeding conditions or animal welfare. Possibly, this was due to the lack of knowledge on welfare of farm animals. The data gathered indicate that only 17% of the respondents have ever encountered the concept of welfare, including 5% of inhabitants of the rural areas. It can be noted that as the level of education increased, so did familiarity with issues associated with animal welfare.

The survey results show that the Polish consumers did not consider the time of transport of animals for slaughter when making buying decisions (91%). When purchasing fresh meat, they assumed it was produced in Poland and they did not consider the possibility of import of living animals for slaughter. The highest sensitivity and

Table 3

Consumer willingness to pay for meat at a price increased due to the shortening of animal transport time to 8 hours depending on gender and education

No.	Specification	Total		Gender		Education			
		N	%	Female	Male	Elementary	Voca-tional	Secon-dary	University
1.	No, meat is already expensive	119	43	72	47	4	18	34	63
2.	Yes, by no more than 10%	97	35	79	18	0	5	19	73
3.	Yes, by no more than 20%	24	9	14	10	0	2	2	20
4.	Yes, by no more than 30%	9	3	9	0	0	0	3	6
5.	Yes, the price is of no significance to me	31	11	26	5	0	3	13	15

Source: author's research

awareness of transport times was shown by persons aged 40-49 years. The elder population – aged 59 or more – did not consider this at all.

According to the research results published by RSCPA or Special Eurobarometer, awareness of the problem of welfare of animals in the Polish society is relatively high. The research results, quoted above, did not confirm this hypothesis. Perhaps the knowledge of the food supply chain among the consumers is very low; in particular, they may not be aware of what is going on with the animals, before the meat is consumed. Sometimes this fact is explained by a sense of guilt – when purchasing meat, they do not want to remember where the meat comes from. To stimulate changes in consumer behaviour, it is necessary to remind them how food is being produced (RSPCA, 2012). A higher level of awareness is presented by consumers who often visit farms or have their own animals (Special Eurobarometer 229, 2005).

The level of familiarity with the "8 hours" campaign was found to be very low – only 8% of the respondents had heard of it. The data obtained show a correlation between familiarity with the campaign and the age of respondents.

Women displayed a more emotional attitude towards ethical issues associated with the time of transport of animals – 104 of them considered the activities aimed at shortening of the animal transport times to be "very much needed". Among men, only 21 respondents expressed the same opinion. The data obtained are sufficient to conclude that as the level of education grows, the consumers are increasingly sensitive to the need for activities aimed at shortening the animal transport time to 8 hours.

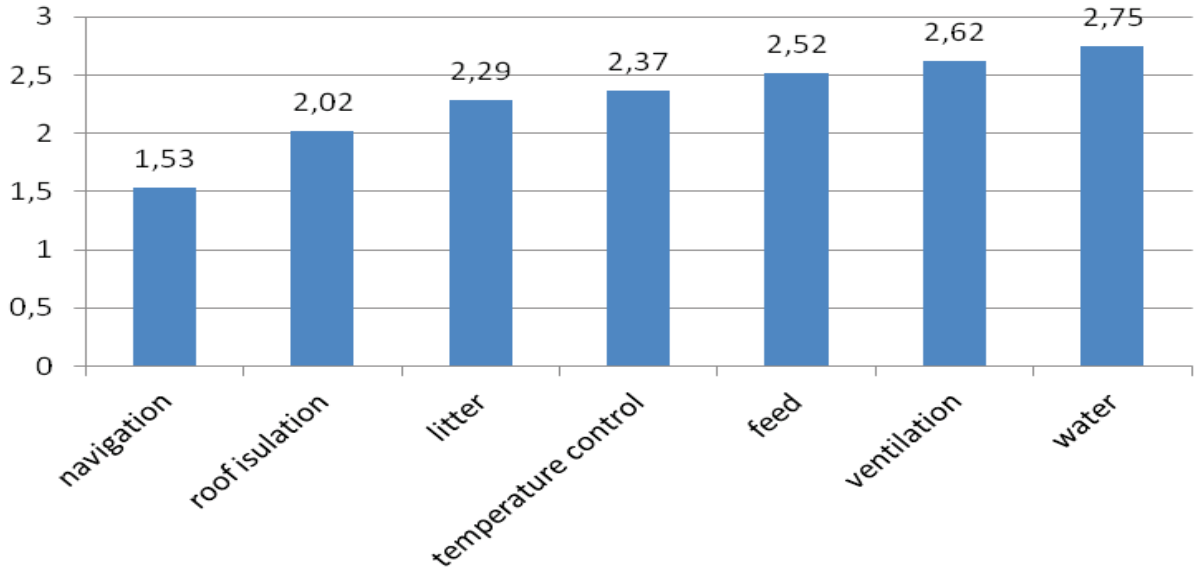
A decisive majority of respondents, after getting familiar with the rules of the Regulation 1/2005[4] regulating the maximum time of transport of animals, considered them inhumane (Swiecka, 2012). The consumers showed similar attitudes towards the time of transport of pigs, cattle, and horses, declaring that amendment to the existing law were necessary, as at present, the legal provisions allow the transport times to be too long. Shortening of the animal transport time to 8 hours would result in limiting of import of animals due to the limitations introduced in the maximum time of transport of animals for slaughter. As a result of these limitations, most livestock would be probably transported only within the domestic territory. Inhabitants of the rural areas should be particularly concerned with supporting of domestic production, which gives them workplaces and – in many cases – the only source of income; in fact, only 51% of them supported the concept of shortening of the transport time. On the one hand, the respondents declared the need to shorten the animal transport time, considering the existing regulations to be inhumane; on the other hand, they showed little willingness to bear the costs of such activity (Table 3).

The data presented in Table 3 indicate that 43% of the respondents expressed no willingness to pay a higher price for meat, considering that the prices of this product are already very high. The household income of these respondents was at the lowest level of up to 2000 PLN/month (27%) and up to 3000 PLN/month (27%), while the average income per person was about 1400 PLN/month. These data clearly confirm that the price is the most significant criterion for the purchase of meat. Persons with secondary education were willing to accept a price increase by 10%, and those with university education – even by 20-30%; income per person amounted to 1640 PLN/month and 2400 PLN/month, respectively.

The respondents were asked to assess the factors providing animals with favourable conditions during transport by assigning to them scores from 0 to 3. They considered the most significant factors - access to water and feed, and ventilation and temperature control (Figure 3).

In order to ensure animal welfare, 6% of the respondents suggested intensifying road inspections during transport to make sure that the legislation is followed, while 2% of them pointed to the necessity of

[4] The acceptable transport time according to the Regulation 1/2005 is: for pigs - 24 h, for cattle - 29 h, for horses - 14 h. After this time, it is necessary to provide a 24-hour rest, before the animals can be transported further to the destination.



Source: author's construction

Fig. 3. **Range of welfare components during animal transportation according to consumers**

educating persons transporting animals. The highest number (24%) of respondents suggested shortening of the transport time. Other respondents did not provide their opinion on the subject.

Summary and conclusions

The research has shown that the price of meat was one of the three main criteria determining selection of meat products to the Polish consumers. The importance of price was differentiated according to the place of residence, education, and income of respondents. The price was particularly significant from the perspective of inhabitants of rural areas, having vocational education, and low income per household.

It can be assumed that the Polish consumers paid no attention to the conditions of breeding and transport, and to welfare of slaughter animals. As many as 90% of the respondents replied in this manner. The same percentage of respondents did not take into consideration the length of time of transport to the place of slaughter.

Willingness of consumers to pay for meat, which is to become more expensive as a result of shortening of animal transport time to 8 hours, varied depending on the place of residence and income. Persons living in cities were more eager to declare their willingness to pay more for the meat. Inhabitants of the rural areas were of opinion that meat was already expensive and they would not be willing to pay more for it for the reasons quoted above.

The research project conducted proves a low level of awareness of welfare of farm animals transported, which is proven by the lack of familiarity with the campaign aimed at shortening the time of transport of animals to eight hours. The range of the campaign was limited to persons interested in animal welfare. In order for such initiatives to become more effective, it would be necessary to use other media as well apart from the Internet. It seems to be necessary to educate the entire society in this regard.

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CONSUMPTION OF FOODSTUFF – BETTER INDICATOR OF THE SUSTAINABILITY (CASE STUDY ABOUT SLOVAKIA)

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Abstract. The debate on sustainable consumption has highlighted a variety of tensions between the pursuit of wellbeing and the need to remain within ecological limits. The aim of the paper is to analyse situation in Slovakia and highlight the aspects of consumer decisions.
We would like to state that the sustainability of the country is much easier to measure than counting footprint or other indicators focusing on different aspects of sustainability. Consumption of the households is a better indicator for identifying sustainability and environmental performance. In the view of the economic situation in Slovakia, it could be said that the population tends to sustainable consumption as expenses keep growing. Analysis shows that the increase in prices for food and other items of daily life affect population with lower income level. They buy less food products; and from the economics viewpoint of the sustainability, it seems like a positive effect.
The aim of the paper is to analyse consumption of foodstuff in Slovakia and highlight the aspects of consumer decisions.
Key words: consumption, expenditure, sustainability.
JEL code: A11, E21

Introduction

The debate on sustainable consumption has highlighted a variety of tensions between the pursuit of wellbeing and the need to remain within ecological limits (Reisch, Ropke, 2004; Defra, 2005; EEA, 2005; Jackson, 2006; NCC/SDC, 2006).

The idea of sustainable consumption is the possibility that we might ”live better by consuming less” (Jackson, 2005; Jackson, 2008). This hypothesis has informed both conceptual and empirical responses to consumerism over several decades and underpins popular movements for voluntary simplicity and downshifting to this day (Etzioni, 1998; Hamilton, 2003; Hamilton, 2003; Hamilton, Mail, 2003; Schor, 1998). The underlying suggestion is that less resource intensive lives might, in fact, be equally or perhaps even more fulfilling in psychological or social terms (Kasser, 2002). However, this hypothesis raises a number of fundamental questions.

People in rich countries have consumption patterns that require more land, water, and fuel - fresh tropical fruit all year round, exotic coffee, large quantities of meat and fish. It is also common to eat in restaurants serving over-large portions, and there is more food wastage. The growing middle class emerging in countries such as China and India can already be placed in line with the residents of rich countries. In China, for example, annual meat consumption per capita from 1985 has risen up to 150% (“A New Era of World Hunger?” FES Briefing Paper, 2008).

What is the main reason for less level of consumption? Is our consumption unsustainable?

The aim of the paper is to analyse consumption of the foodstuff in Slovakia and highlight the aspects of consumer decisions. We would like to show that if people have lower income level, they consume less foodstuff. If they consume less foodstuff, then we do not need to produce huge agriculture production.

Research results and discussion

Consumption is a major concept in economics and is studied by many other social sciences. Economists are particularly interested in the relationship between consumption and income, and therefore, in economics, the consumption function plays a major role (Paluchova, 2010).

Consumer spending, according to the Statistical Office of the Slovak Republic, is divided into basic departments.

Food and soft drinks are all the costs associated with the purchase of food and non-alcoholic beverages in the business network.

Alcoholic beverages and tobacco expenditures on alcoholic beverages, tobacco, and tobacco products.

Clothing and footwear are buying textile goods, footwear, and textile haberdashery (hard haberdashery included expenses for personal items), including their construction and repair. Housing, water, electricity, gas, and other fuels include expenditures for gross rent flats in general, payments for the use of cooperative apartment; expenditures for purchases of goods and services for the construction and maintenance of housing; payments for electricity, gas, hot water and heat, other fuel, water, sewerage, and other expenses for services related to housing.

Furnishings, household equipment and routine household maintenance expenses include the purchase of furniture; furnishings and accessories; floor coverings, household textiles and tableware; household utensils and cutlery; household investment nature; various kitchen

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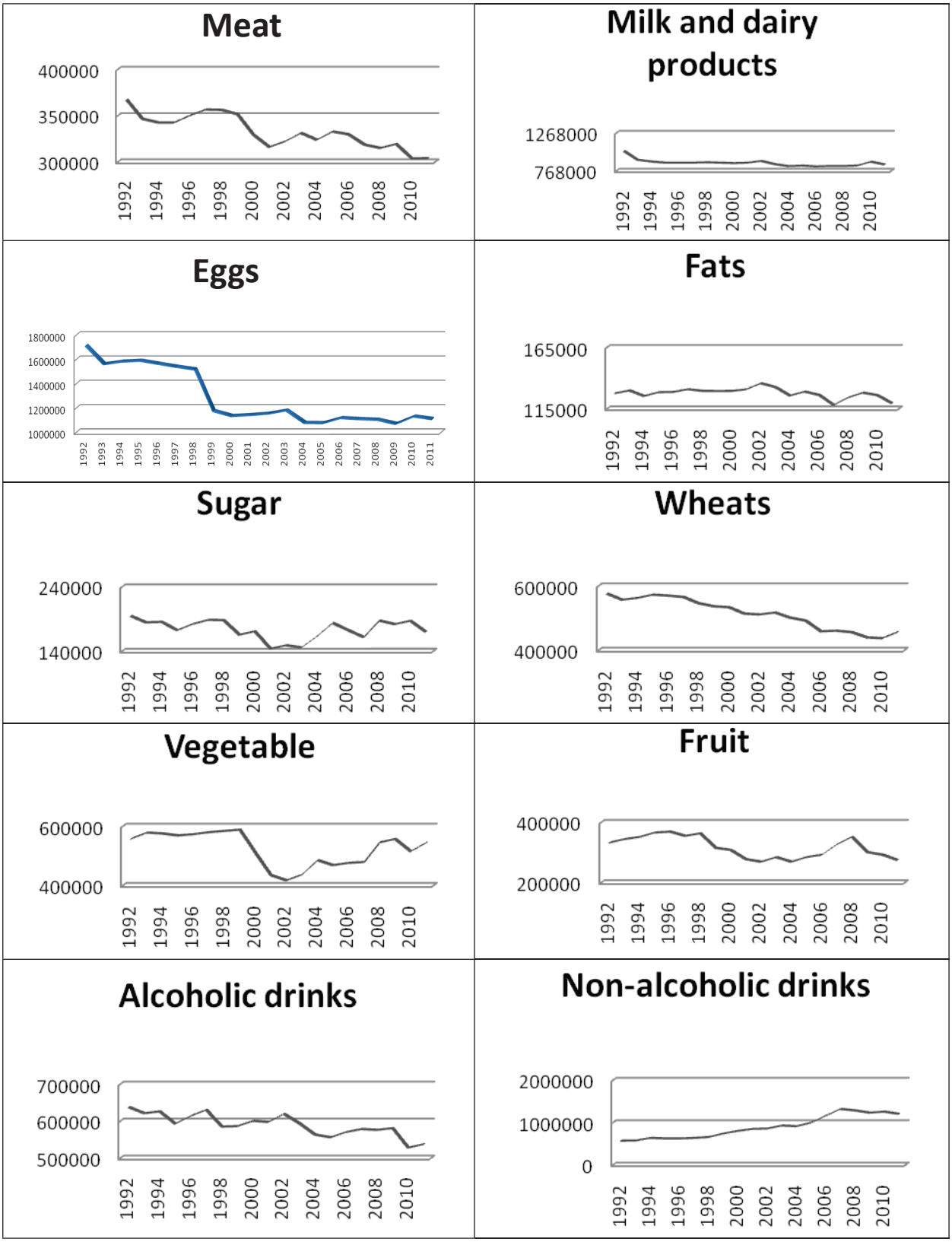

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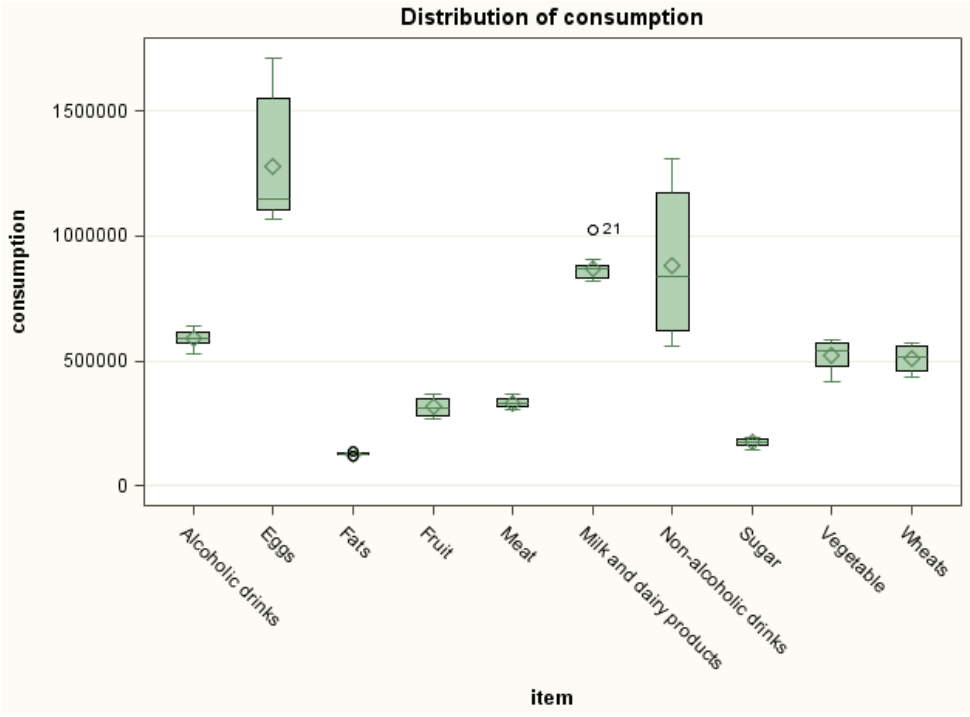
Fig. 1. **Total consumption in Slovakia in 1992-2011**

utensils and equipment; costs for producing those goods and their repair, including expenses for marketing; gardening, craft equipment; goods and services for cleaning etc.

Health expenditure for pharmaceutical preparations and products, medical goods; for services provided by medical staff in hospitals and beyond, including those of different therapists. Set up **transportation expenses**



Source: authors' calculation

Fig. 2. **Output of ANOVA**

for purchase of transport equipment, fuels and lubricants, costs associated with their operation and maintenance services, including driving schools; expenditure on transport services (trains, buses, airplanes, boats). Connections include expenses for postal services; the purchase of telephone and fax machines and telephone and fax services.

Education consists of expenditures for pre-school, primary, secondary, higher, and other education, including different courses. The costs for public catering (including a school canteen) include expenses for hotels, cafes, restaurants, and accommodation expenses for services (non-recreational).

Miscellaneous goods and services are expenditures on goods and services for personal care (including durum haberdashery); expenditures for social care; insurance of persons and things; and spending for other goods and services related to household consumption. "Insurance of persons and goods" includes motor insurance, home and apartment insurance, etc.

Thus, we focused on the basic structure of expenditures of the Slovak population for the period 1992-2011. Time series is reduced compared to the analysis. The reason was the limited availability of data in the database of the Statistical Office.

From the methodology viewpoint, we applied ANOVA. Due to limit of the paper length, the authors have provided just short information about this method. When you are analysing a numerical variable and certain assumptions are met, you use the analysis of variance (ANOVA) to compare the means of the groups. The ANOVA procedure used for the completely randomized design is referred to as the one-way ANOVA, and it is an extension of the pooled variance t test for the difference between two means. Although ANOVA is an acronym for "analysis of variance", the term is misleading because the objective in ANOVA is to analyse differences among the group means, but not the variances. However, by analysing the variation among and within the groups, you can reach conclusions about possible differences in group means. In ANOVA, the total variation is sub-divided into variation that is due to differences among the groups and variation that is due to differences within the groups. Within-group variation measures random variation. Among-group variation is due to differences from group to group. The symbol c is used to indicate the number of groups. (Berenson et al., 2012)

In this paper, we focus on the consumption of food, because food is considered a major factor for the sustainability of the country. Activities in agriculture directly affect the ecosystem of the country. The population's consumption depends on ability of farmers to produce the crop and livestock production.

Wackernagel and Rees have claimed in their publications that that consumption has long been higher than the possibility of producing on the planet. Footprint course comprises many indicators that are very difficult to quantify such as emissions and CO2. If we simplify the idea of ecological footprint, we could really only focus on foodstuff and expenditure of households that are essential to survival.

In our articles, we have repeatedly analysed the ecological footprint of Slovakia. The result of the analysis was the fact that Slovakia is characterized by the most sustainable agricultural production. Therefore, we were particularly interested in the consumption of the Slovak population. Analysis and comparison of the results are presented in this paper.

Table 1

Output of the test for multiple comparisons

Means with the same letter are not significantly different.			
Tukey Grouping	**Mean**	**N**	**item**
A	1280282	20	Eggs
B	881271	20	Non-alcoholic drinks
B			
B	868171	20	Milk and dairy products
C	588598	20	Alcoholic drinks
C			
C	522238	20	Vegetable
C			
C	511567	20	Wheat
D	332396	20	Meat
D			
D	315051	20	Fruit
E	173248	20	Sugar
E			
E	127410	20	Fats

Source: authors' calculation

Statistical Office provides an overview of basic foodstuffs that are observed in terms of consumption. As one single graph for the period 1992-2011 would be most illustrative, we decided to present consumption of foods.

After looking at all the graphs, we can say that the total annual per capita consumption of basic food is decreasing. Even the consumption of alcoholic beverages is declining, however, on the other hand, the consumption of soft drinks has increased.

In terms of sustainability theory, we could conclude that it is a positive phenomenon. Furthermore, we can conclude that if we consume less food, farmers do not have so much pressure on agricultural production by using fertilizers and pesticides.

Historical data seem to indicate that in 1992, there was recorded a surplus food given that the population was 5 306 539 in 1992. In 2011, no consumption of food has decreased, while the population has increased slightly to 5 398 384.

Consequently, we were interested in comparison of consumption of selected foods for this period. From a methodological point of view, we used ANOVA. Test confirmed our hypothesis that there is a significant difference in the consumption of selected foods. That finding can also be observed on the Box Plot chart and in the table of descriptive characteristics. The major changes have been recorded for eggs and non-alcoholic beverages.

If ANOVA confirms rejection of the null hypothesis, then we should apply the test for multiple comparisons. In the test, we confirmed significant differences between paired comparisons. Nevertheless, the group was created on the basis of similarity values.

Basically, these groups correspond to the Box Plot chart. Eggs are a separate group. Subsequently, we see a group Milk and Non-alcoholic beverages. The outcomes suggest that, relatively the same amount has been purchased.

Another group consists of alcoholic beverages, vegetables, and wheat. Meat is bought in the same quantity as fruit. The last group consists of sugar and fats.

One can question how it is possible to ascertain the state of consumption. We assume that all residents are environmentally conscious and do not follow their food consumption. Thus, we focused on the basic structure of expenditures of the Slovak population for the period 1998-2011. Time series is reduced compared to the analysis. The reason was the limited availability of data in the database of the Statistical Office.

The basic structure consists of expenses: food and non-alcoholic beverages; alcoholic beverages; tobacco and narcotics; clothing and footwear; housing, water, electricity, gas and other fuels; furnishings, household equipment and routine maintenance of the house; health; transport; communications; culture and recreation; education; restaurants and hotels; miscellaneous goods and services.

In the chart, we can follow the development of costs by usage. It is clear that spending has increased in some

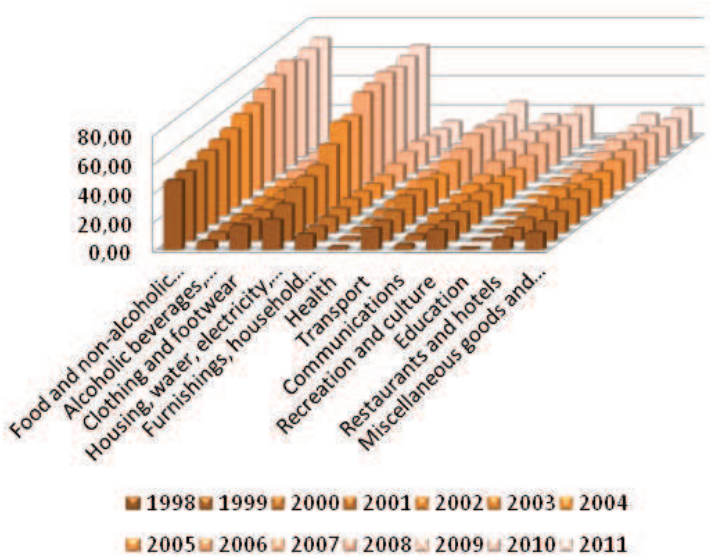


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Fig. 3. **Total expenditure per inhabitant during the period 1998-2011**

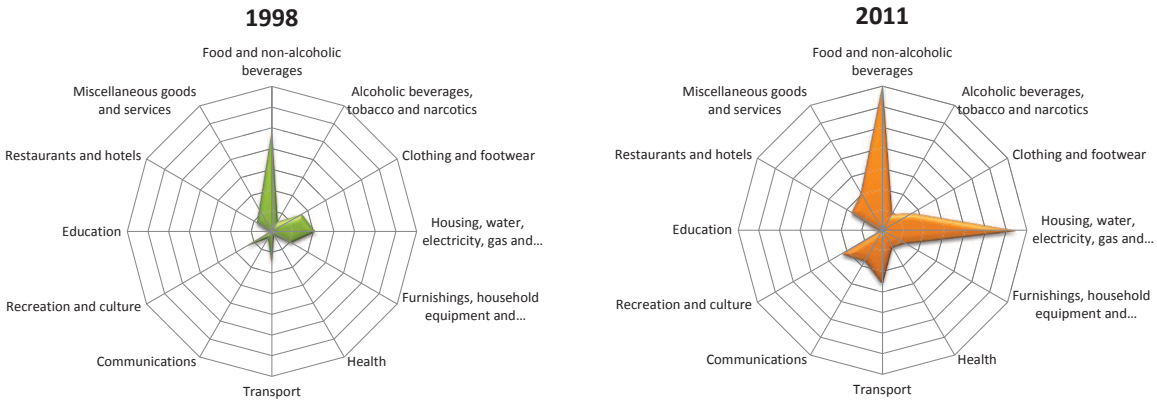

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Fig. 4a. **Comparison of the total expenditure in 1998 and 2011 in absolute figures**

areas by more than 100%. In particular, the food and non-alcoholic beverages and housing, water, electricity, gas and other fuels. Household consumption also changes due to the changes in prices.

We can see several long-term trends manifested in the consumer behaviour. One of the theorists, who had first attempted to characterize the extensive empirical material, was the Prussian statistician Ernst Engel (1821-1896). In his research, Engel concluded that if household income increases, the general tendency is manifested by the decline in the share of expenditure on food in the total household expenditure (Engel's law).

Engel later expanded his investigation to include other groups of household expenditures (e.g. rent, clothing) and examined their development in relation to increasing household income. The current economic theory explores these questions in detail by each household consumption item.

Keynes assumed the operation of the basic psychological law that income increases as consumption increases absolutely, but its share of the income decreases. The situation in Slovakia does not correlate with either theory. The situation in Slovakia describes a condition that could be called a crisis. Yet, it is not caused by the financial crisis of 2008, it is the social crisis caused by political decisions and economic transformation of the 90s. The effects of transformation of the Slovak economy are only now beginning to appear.

The second possible variant of behaviour may be such that people buy more expensive products, which could be tuned to higher spending and smaller quantities of food. This behaviour cannot be generalized because almost 60% of people have less than the average salary

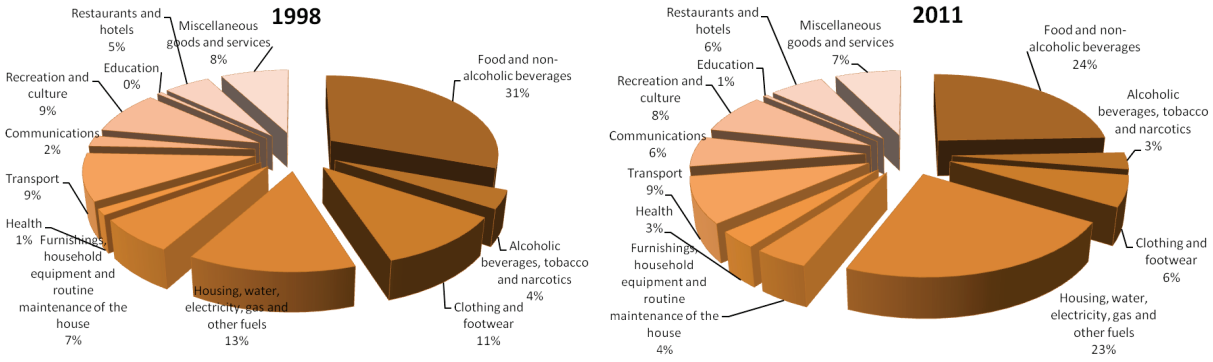

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Fig. 4b. **Comparison of the total expenditure in 1998 and 2011, in %**

in Slovakia, and just few percent of people earning well could distort the amount of the average salary. The question of the future is: what is the actual price for sustainable consumption?

Residents of each country are sensitive to prices and costs, especially for food and housing, which are essential to life. In detail, we focused on the comparison between 1998 and 2011. Applying sun-ray charts and pie charts, we concluded that the spending has increased in almost all areas.

Conclusions

Finally, we would like to state that the sustainability of the country could be easier to measure than counting footprint or other indicators focusing on different aspects of sustainability. Consumption of the population is an indicator that is more significant for measuring sustainability and environmental performance.

From the view of the economic situation in Slovakia, it could be concluded that the population tends to sustainable consumption as expenses are growing. The present analysis shows that the increase in prices for food and other items of daily life alongside with low growth of population income have a positive effect on "sustainable consumption".

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CHANGES IN COMPETITION TRENDS AND LABOUR PRODUCTIVITY IN THE MARKETING CHAIN OF FOODSTUFFS

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Abstract. The study presents the issue of changes in labour productivity in the food sector in Poland. Its increase in 2002-2011 has been assessed as well as diversity within the cross-section of individual links of the food chain. Labour productivity is one of the key measures of farm effectiveness, directly influencing the economic prosperity level. The aim of the research was to define the correlation between changes in competition on the market of foodstuffs and productivity of labour in the main sectors of the food chain in Poland. Assessment of productivity was conducted using the gross value added measure per worker, which is a generally used measure of productivity for the purpose of sector and international comparisons.
It was found that productivity of labour in Polish farming was much lower in comparison with other countries as well as other links of the food sector and the national economy. A higher increase in labour productivity was observed among the large agricultural production enterprises, which have attained the level comparable with the highly developed EU Member States or even the USA. The marketing link chains indicate great diversification of labour productivity. It is manifested mainly by a much lower level of gross value added per one employee of the sector of retail trade and catering in comparison with food processing and wholesale trade.
Key words: labour productivity, food sector, competition.
JEL code: P42

Introduction

The study is focused on the issue of changes in labour productivity in the food sector in Poland. The increase of its level during 2002-2011 was assessed as well as diversity of links of the food chain. Labour productivity is one of the basic measures of effective management, that directly influences the level of economic prosperity. GDP per capita, generally considered to be the most accurate measure of prosperity, is the product of labour productivity and economic activity index. The broadest definition of labour productivity states that this measure expresses the number of product units per labour unit. Productivity is measured both at the level of the entire economy and in its individual sections and trades, or even at the level of individual enterprises. The simplest way to illustrate labour productivity is to present the correlation between product and labour unit. The product is usually considered as the gross value added, while the expenditure unit is a single employee (OECD, 2001). This method allows measuring of productivity at a low level of aggregation, even at the level of individual enterprises (where the product is referred to data, e.g. on production sold) as well as for comparisons between countries, sectors of economy, or enterprises.

The issues of adaptation of the Polish economy in terms of labour productivity (particularly agriculture) have been examined in the context of various systems of analysis and subjected to many empirical research projects (Wiatrak A. P., 1980; Czyzewski A., Henisz-Matuszczak A., 2004; Golas Z., Kozera M., 2008; Golebiewski J., 2010). In the presented study, an attempt was made to assess the dynamic-comprehensive effectiveness of management not only in agriculture, but also in the entire marketing food chain, including processing and distribution links apart from agriculture. Labour productivity is one of the basic factors of increase in the food sector and the basic determinant of its competitiveness. Effective use of production resources in the food sector links leads to reduction of costs, increasing of supply of cheaper food.

In the literature on the subject, there is a view that the key reason for differences in results achieved by individual economies are disproportions in competition on the markets of products (Lewis W.W., 2004). The intensity of competition in a given economy is conditioned, on the one hand, by the sector structure, and thus the number and size of enterprises, and, on the other hand, by institutional solutions, which result in emergence of various input and output barriers in a given sector (Porter M. E., 2006). Competition is a mechanism, which warrants success of more productive enterprises. The average productivity level in a given country increases as the more productive companies increase their market share at the expense of the less productive ones. Competition is a mechanism, which triggers the increase of productivity. If the institutional conditions on a given market prevent entry of the potential competitors, competition is weaker, and the increase in productivity takes place more slowly. If the conditions are favourable for less productive enterprises, this blocks expansion of innovative firms, slowing down increase in productivity. In this context, conditions for direct foreign investment are of particular significance. According to theory, the impact of companies with foreign capital on productivity of companies operating on the local market is horizontal and based on interactions between entities of

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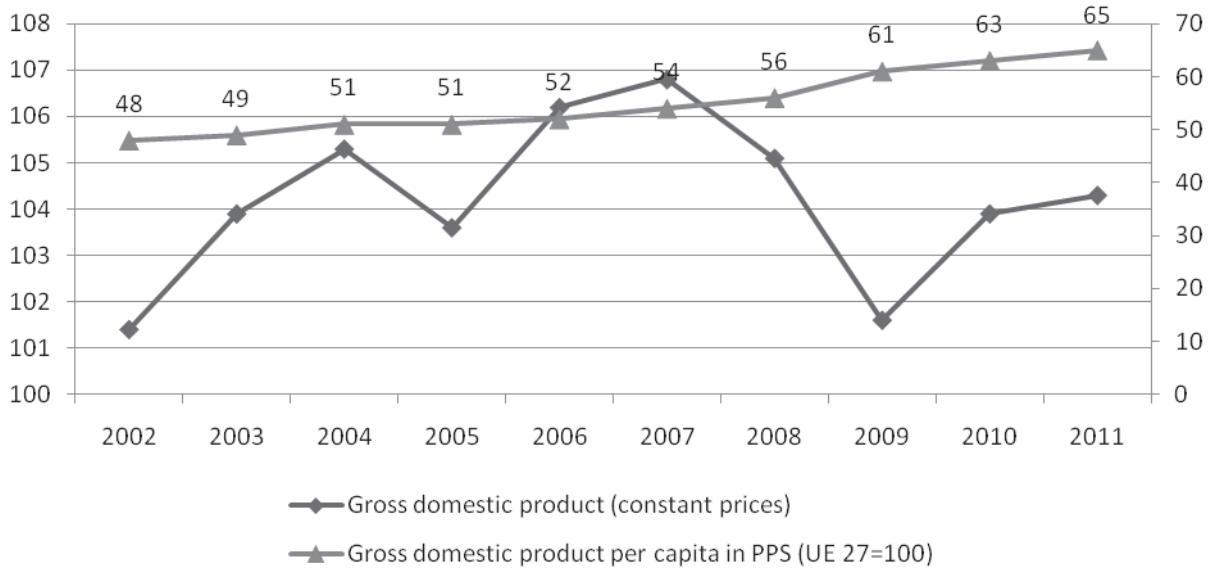


Source: author's calculations based on Roczne wskazniki makroekonomiczne, http://www.stat.gov.pl/gus/wskazniki_makroekon_PLK_HTML.htm

Fig. 1. **The dynamics of GDP in Poland in 2002-2011**

a given trade and vertical – in form of relations between suppliers, manufacturers, and end customers. The market mechanism, through increased competition enforced by the foreign investor, forces the local enterprises to increase the effectiveness of their actions (Wojtyna A., 2010). On the other hand, some writers argue that the main role in labour productivity improvement is played by factors associated with capital and employment (Chechelski P., Morkis G., 2002). Technical infrastructure of work, qualifications, and education are decisive for success of individual enterprises as well as the economy of the entire country.

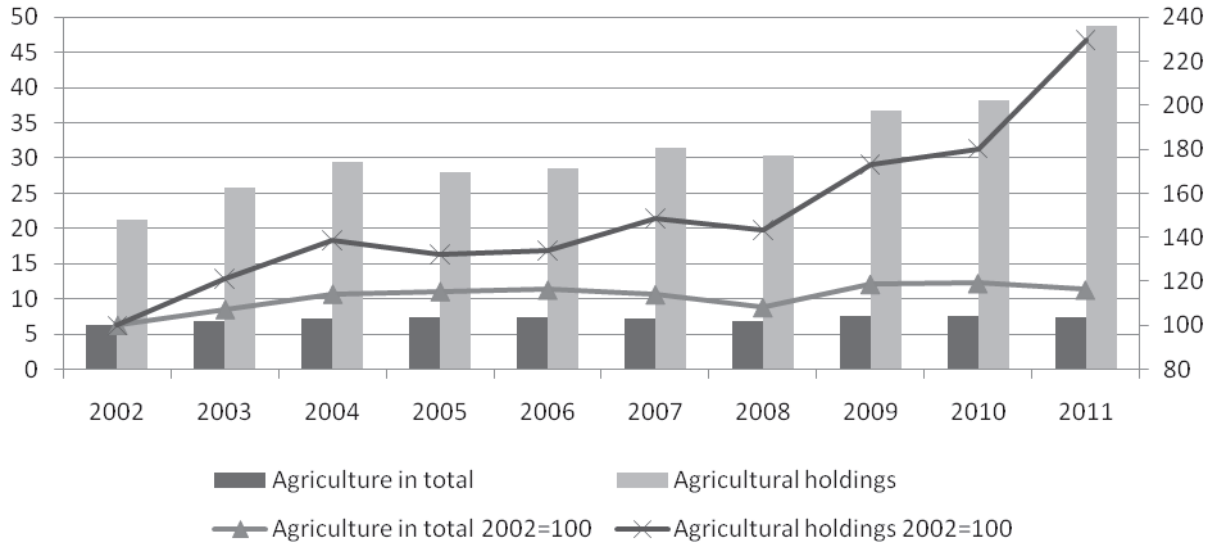
The aim of the research was to define the correlation between changes in competition on the market of foodstuffs and productivity of labour in the main sectors of the food chain in Poland. Two main research tasks have been undertaken:

1) to determine how the change in competition and management conditions, associated with the European integration process, has influenced labour productivity in the food sector;
2) to determine how the diversified competitive situation in various links of the food chain and in different trades influence the level and dynamics of labour productivity.

Assessment of productivity was conducted using the measure of gross value added per employee, which is a generally used measure of productivity in cross-sector and international comparisons. The value of labour productivity was expressed in PPS (Purchasing Power Standard). This is an artificial currency, which reflects the difference in the domestic price levels, not taken into account by the currency exchange rates. This unit allows comparing economic indicators of various countries. Economic values expressed in domestic currencies have been converted to PPS using the Purchasing Power Parities (PPPs), available in the Eurostat data. Economic values are expressed in fixed prices of the year 2005. The study was based on the data of AMECO (The annual macro-economic database of the European Commission's, Directorate General for Economic and Financial Affairs - DG ECFIN) and statistical data from the Central Statistical Office. The research results are presented in descriptive and graphic format.

Changes in the conditions of development of the food sector in Poland in 2002-2011

In Poland, the years 2002-2011 were a period of change in the management conditions, determined by the process of integration with the European Union, which formally took place in 2004. The process of accession to the EU structures was followed by a period of economic transformation, which encompassed the series of complicated reforms, aimed at introduction of market economy. The accession to the EU was the final stage of the entire economic transformation process, and it established new opportunities for the development of Poland economy, including the food sector. The process of integration of Poland with the EU was parallel to phenomena occurring in the global economy such as the good economic conditions after the year 2004 and the subsequent global financial and economic crisis, which was revealed in the mid-2008. Therefore, changes in the competition conditions in the Polish economy after the year 2004 resulted not only due to the accession to the European Union, but also from many various economic factors. The impact of integration with the EU on the competitive conditions on the food market took the form of changes in institutional conditions. Competition is influenced by barriers in terms of regulations. These specify the freedom of economic activity and may limit the development of new enterprises. The basic effects of integration with the EU in this regard include changes in legislation on safety and quality of food, the changing environmental standards, legislation concerning foreign



Source: author's calculations based on DG ECFIN, baza AMECO http://ec.europa.eu/economy_finance /db_ indicators/ameco/index_en.htm oraz niepublikowane dane GUS

Fig 2. **Gross value added per one employee in agriculture in total and in agricultural production holdings in Poland in 2002-2011**

investments and international trade. Poland's accession to the European Union resulted in substantial changes in foreign trade. European integration made it possible to take advantage of the phenomenon of globalisation, allowing the Polish entrepreneurs to enter the internal market of the Community. As a result, foreign trade increased, and the Polish economy became more open. The accession also resulted in increased inflow of capital in form of direct foreign investments (DFI). The process improved the image of Poland as a reliable country and an attractive investment location, and it brought some innovative changes in production and marketing of foodstuffs. The conditions of foreign trade, increased inflow of foreign investment, overcoming of barriers blocking the flow of capital – these factors contributed to economic growth in Poland during 2004-2007 (Figure 1). This also allowed for a certain reduction of the developmental gap of Poland economy, measured by GDP per capita, to the average level of the 27 EU Member States, amounting to 65%.

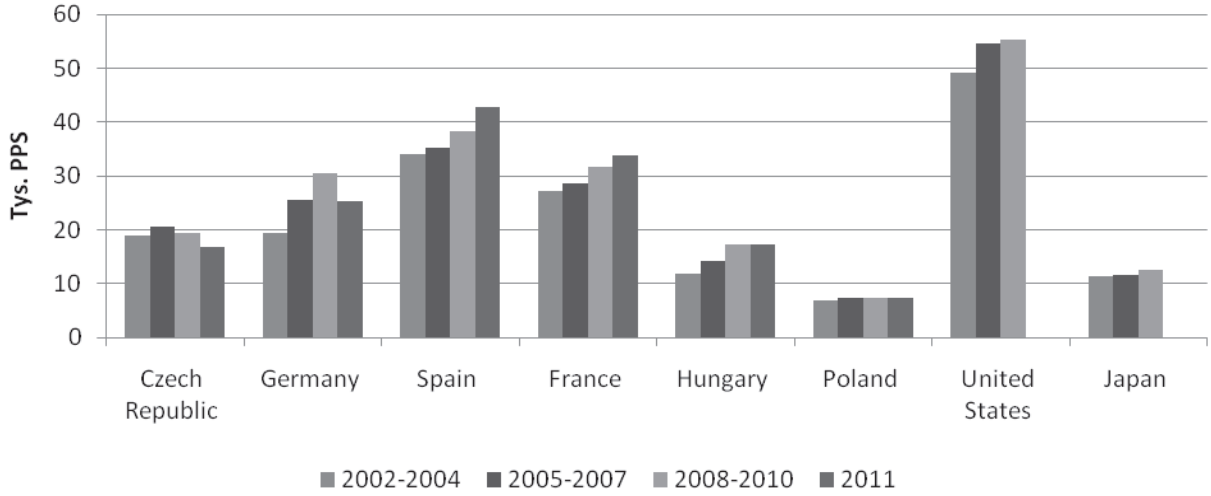
Since 2008, the conditions of competition have been increasingly influenced by business conditions. The global economic crisis, which was initiated in 2007 on the real estate market in the USA, also started to influence the real economy of Poland. The increase in investment risk, the growing prices of energy and food materials, and new rules of mortgaging and financing of investments reduced the scale of investment in many sectors of economy.

Labour productivity in farming in Poland

The productivity of labour in economy in general is influenced by productivity of various areas of activity. A special role in the national economy is played by the food sector. It encompasses various types of activity included in production and distribution of foodstuffs. Their main function is to provide the end consumers with the appropriate quantity and quality of food. The food sector consists of agriculture, processing of raw materials, production of foodstuffs, wholesale trade of foodstuffs, and retail trade and catering. The first link in the food chain is agriculture. In a modern economy, it is based mainly on raw materials. This means that agriculture generates products that require processing before reaching consumers. Polish agriculture is a significant component of the food marketing chain; at the same time, however, it is a significant component of the agricultural production sector in the EU Member States in terms of both the area of agricultural land and employment as well as the level of agricultural production. Significant labour resources, involved in the Polish agriculture, are decisive for the correlation between the gross value added and employment, indicating labour productivity.

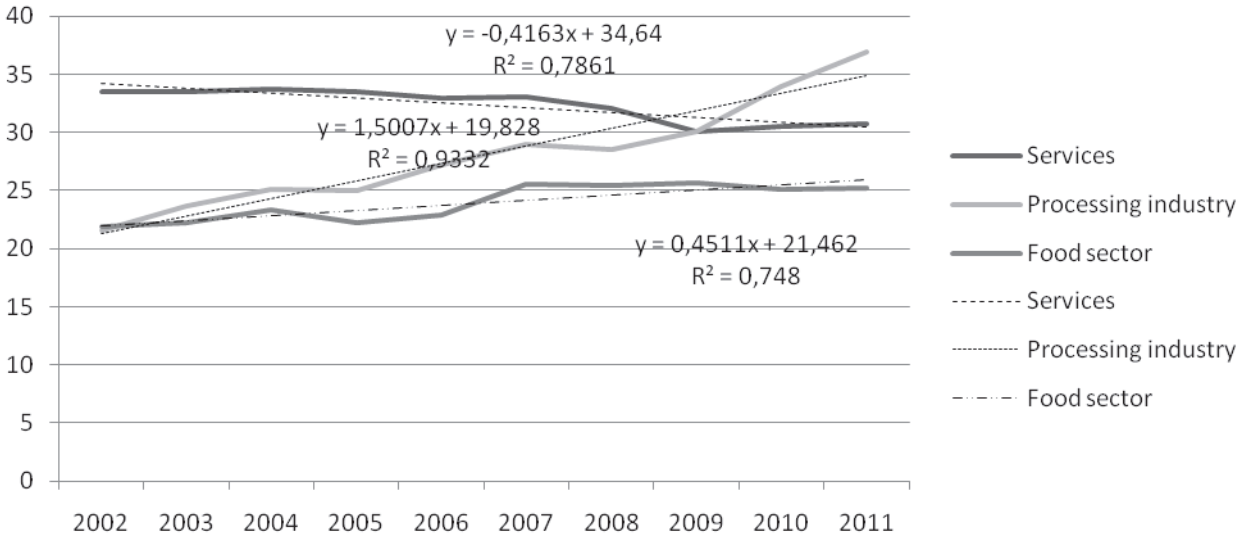
Figure 2 presents labour productivity in the Polish agriculture in 2002-2011. Low level of labour productivity is a specific feature of Polish agriculture. In the examined period, it ranged from 6.4 thousand PPS in 2002 to 7.6 in years 2008 and 2009. In 2011, the labour productivity level decreased to 7.4 thousand PPS per one employee. The average annual pace of increase of productivity of labour amounted to 1.7%. The level of labour productivity in Polish agriculture is influenced by the dispersed farm structure (more than 1.5 million of individual farms and more than 2 million employees).

In Poland, apart from the dominant sector of individual farms, there is a group of agricultural holdings – both private and those belonging to the public sector. In 2010, there were about 4.3 thousand of them, using about 1.8 million hectares of agricultural land, i.e. about 12% of agricultural land in the country. According to the data presented in Figure 2, the level of labour productivity in this group of enterprises is much higher than in agriculture in general. In 2002, the labour productivity index in large enterprises was 3.3 times higher than the average for the sector, and in 2011, it was 6.5 times



Source: author's calculations based on DG ECFIN, baza AMECO http://ec.europa.eu/economy_finance/ db_ indicators/ameco/index_en.htm

Fig 3. **Gross value added per one employee in agriculture in Poland and in selected countries in 2002-2011**



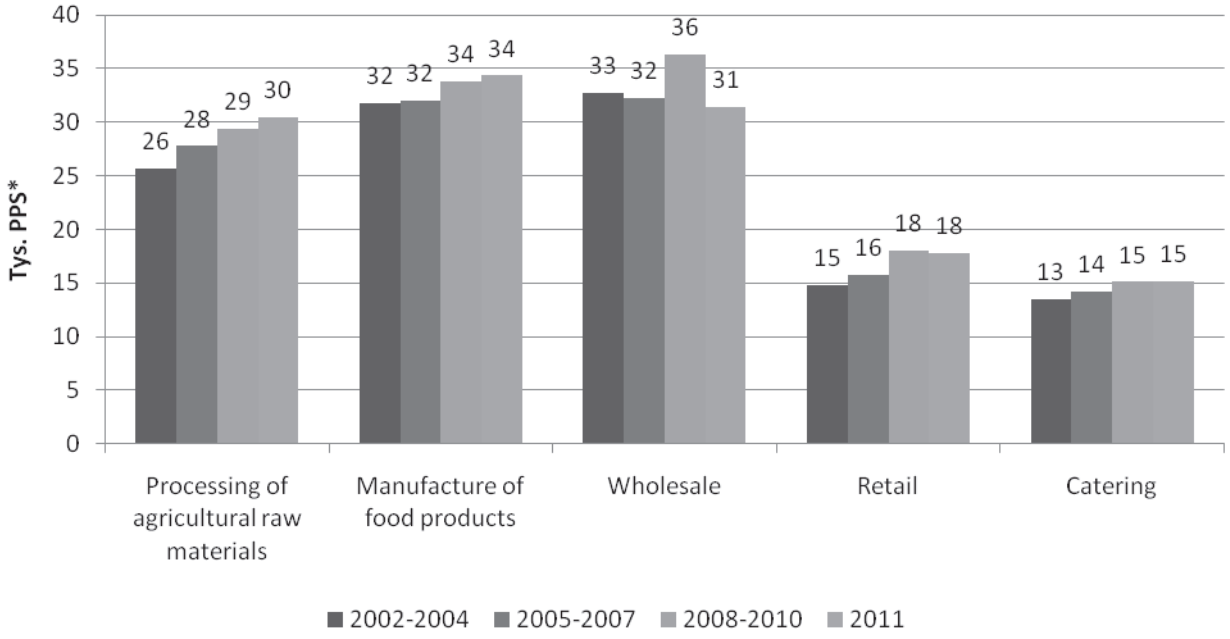
Source: unpublished data of the Central Statistical Office

Fig. 4. **Changes in labour productivity in the non-agricultural links of the food chain in comparison with changes in labour productivity in the entire processing industry and in the sector of services**

higher. The average annual rate of increase of labour productivity in this group of enterprises amounted to 9.7% in 2002-2011.

Cross-country comparisons show that labour productivity, measured by gross value added per one employee in PPS in Poland is lower both in comparison with the Member States of the "old" EU (Germany, Spain, France – 3.5 to 2.5 times) and with countries that acceded to the EU in 2004 (the Czech Republic and Hungary – 2.1-2.6 times). The greatest differences have been observed between the agriculture of Poland and the USA. In the examined period, labour productivity in the American agriculture was more than 7 times higher. The difference between Poland and Japan, on the other hand, is the lowest (1.7 times) (Figure 3). Low productivity of agriculture in Japan as well as low productivity of other links of the food chain, including food processing and retail trade, is due to great dispersing of these sectors. As it has been emphasised in literature, small retail shops in Japan can be supplied only by small, ineffective food processing plants. Apart from such sectors as the motor industry, steel, electronics, in which Japan is a market leader, its results in the sector of food processing are much less impressive (Lewis W. W., 2005).

The analysis of labour productivity in agriculture in a dynamic perspective indicates a varying pace of changes. In the countries that acceded to the European Union in 2004, it ranges from 1.7% in Poland to 7.4% in Hungary.



Source: author's calculations based on unpublished data of the Central Statistical Office

Fig 5. **Labour productivity in the sectors of retail trade, catering, food processing, and wholesale trade**

In the Czech Republic, labour productivity in agriculture has decreased slightly. In the "old" EU Member States, the dynamics ranged between 1.8% in France, 2.3% in Spain, and 4.9% in Germany. In the USA, the average annual rate of increase in labour productivity amounted to 2.9%, while in Japan it was as low as 0.1%. The changes presented thus cannot lead to the conclusion that a change in the institutional conditions on the food market and liquidation of barriers that limit competition, including international competition after the new countries' accession to the EU in 2004, significantly improved labour productivity in such countries as Poland, the Czech Republic, or Hungary. Only in the case of Hungary, may we refer to a significant growth impulse. In the case of Poland and the Czech Republic, the changes were comparable or lower than in the "old" EU Member States (France, Spain, and Germany).

Labour productivity in non-agricultural links of the food chain

Apart from agriculture, the marketing chain of foodstuffs consists of many sectors of food processing and distribution of foodstuffs. Figure 4 presents changes in labour productivity in non-agricultural links of the food chain (food sector) in comparison with changes of labour productivity in the entire processing industry and sector of services. The data presented indicate that the labour productivity is lower in the food sector in comparison with industrial processing in general. Moreover, in the examined period, these sectors were characterised by varying dynamics of changes in labour effectiveness. Changes took place more slowly in the links of the food chain. The average annual increase of labour productivity in these sectors amounted to 0.49 thousand PPS, while in the entire industry, the increase reached 1.5 thousand PPS per employee. In 2002-2007, labour productivity in the sector of services decreased by approximately 0.42 thousand PPS each year. As a result, the difference between labour productivity in the services industry and processing industry decreased systematically. In 2009, the productivity levels became equal, while in 2010 and 2011, labour productivity in the processing industry was already higher in comparison with the sector of services.

The processing and distribution links in the marketing chain of foodstuffs encompass the industry of processing of agricultural raw materials, production of highly processed foodstuffs, wholesale of foodstuffs, retail trade and catering. The diversity among various links in terms of labour productivity is very high. It is indicated mainly by a much lower level of gross value added per one employee in the sectors of retail trade and catering in comparison with food processing and wholesale trade (Figure 5).

The reasons for such situations are associated with the structure of individual trades. The sector of foodstuff retail trade and the sector of catering are more dispersed (income per enterprise are 0.8 times higher), lower unit costs of labour per one employee (0.5 times), which indicates employment of less qualified workers and lower level of technical infrastructure of work. The value of assets per one employee in the sectors of food industry and wholesale trade is more than 2.3 times higher in comparison with retail trade and catering. This shows that the structural conditions result in significant differentiation of labour productivity in the food chain links. Like in the case of agriculture, it is difficult to specify visible differences in the dynamics of labour productivity in association with the process of integration with the Europe between individual links of food processing and distribution of foodstuffs.

Conclusions

Analysis of labour productivity has led to the following general conclusions with regard to the marketing chain of food.

1. Labour productivity in the Polish agriculture is much lower in comparison with other countries as well as other links of the food sector and the national economy. In 2002 – 2011, the average annual pace of increase in labour productivity in the Polish agriculture amounted to 1.7%. The level of labour productivity in agriculture in Poland is influenced by the dispersed farm structure. A higher increase in labour productivity was recorded among large agricultural holdings, which attained a productivity level comparable to highly developed EU Member States and even the USA.
2. Links of the marketing chain are characterised by great diversity of labour productivity. This is mainly indicated by a lower level of gross value added per one employee in the sectors of retail trade and catering in comparison with food processing and wholesale trade.
3. The changes presented do not provide the sufficient basis to conclude that a change of institutional conditions on the food market and liquidation of barriers limiting competition, including international competition after the accession of the new Member States to the EU in 2004, resulted in a significant improvement of labour productivity in such countries as Poland, the Czech Republic, or Hungary. Only in the case of Hungary, can we speak of a significant growth impulse. In the case of Poland and the Czech Republic, changes in agricultural labour productivity were either comparable with those of the "old" EU Member States (France, Spain, Germany) or lower.
4. Institutional conditions of activity of competitive business entities are the basic prerequisite for development and growth of the food sector. The level of labour productivity is influenced rather by factors associated with the structure of the competitive sector, mainly its size. Research has confirmed a positive correlation between labour productivity and factors associated with human capital and technical infrastructure of work.

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REPRODUCTION PROCESSES IN AGRICULTURE IN POLAND CONSIDERING PRODUCTION TYPES OF FARMS (IN THE LIGHT OF THE DATA FROM AGRICULTURAL ACCOUNTING SYSTEM FADN)*

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Abstract. The main aim of the article is to evaluate the dynamics of reproduction processes taking place in Polish agriculture considering different production types in farms following the integration with the EU. It was observed that in the period of economic revival in Poland (2004-2007), farms were more active in modernising their production potentials. In the analysed period (2004-2010), farms covered by the FADN system were showing mostly narrowed reproduction, with the exception of 2004 when extended reproduction was recorded. It was observed that, in the case of farms specialising in milk production, the modernisation processes ensured extended reproduction throughout the entire analysed period. Also farms specialising in horticultural production and animal breeding in grazing system stood out positively. On the contrary, farms lacking specialisation showed assets decapitalisation. The phenomena resulted from limited ability of these farms to generate surpluses for financing development as well as the fact that they were less prone to invest. It should be noted, however, that these farms play an important role in creating welfare in rural areas understood in broader terms as well as in maintaining settlement network, stability and viability in rural areas.
Key words: reproduction, farm, investment, production profile.
JEL code: Q12

1. Introduction

The integration of the Polish economy with the EU Member States and the fact that the agricultural sector was covered by the CAP tools exerted a significant impact on the shaping of growth processes of farms and rural areas. The growth processes might be determined through reproduction of production assets, which in this article is defined as replacement of farms' production assets worn and torn during production. This approach results from the need to limit the analytical scope due to the complexity of reproduction issues as well as direct connections of the capital to other factors. One could conclude that recently (i.e. from the 1990s onwards) studies on reproduction processes in agriculture in Poland have been significantly limited (if not neglected). The studies follow the classic theories of economics concerning the analysis of growth processes from the point of view of production factors, including especially the capital and relevant investments. The article attempts to present a wider approach including the macroeconomic context of the analysed processes characteristics. The presented issue is important also in terms of different directions of adaptation processes of Polish farms, which in fact is reflected in the development of rural areas.

The main aim of the article is to evaluate the dynamics of reproduction processes taking place in Polish agriculture considering different production types of farms following the integration with the EU. The analysis was based on the data from FADN (Farm Accountancy Data Network) which takes into consideration commercial farms, i.e. main beneficiaries of the Common Agricultural Policy generating at least 90% of the standard gross margin (SGM)[2] in a particular region or country. The analysis covers the period of 2004-2010 due to the data availability. The article attempts to reply the following research questions: Are there differences between reproduction processes of farms with different production types in Poland? What is the context of general economic trends in shaping reproduction processes? What are the development perspectives for farms considering their production type? The first part of the study focused on issues related with the economy in general, making it possible to determine the conditions for reproduction in agriculture. At the next stage, reproduction processes were evaluated from the point of view of changes in investments and the reproduction ratio (relation of gross investments (excluding land purchases) to production assets depreciation).

2. Economic backdrop of agricultural situation following integration with the EU

After integration of Poland with the EU until 2008 the general economic situation was positive (Table 1). This translated itself into the GDP dynamics, reduced unemployment and increased investment rate. The economic downturn was recorded only in 2009, mainly as a result of phenomena concerning the global crisis, while the situation improved again in 2010. The effects of the crisis phenomena affected the Polish economy to

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[2] As of 2010, the calculation is based on standard outputs (SO)

Table 1

Economic backdrop of agricultural situation in Poland in 2004-2010

Specification	2004	2005	2006	2007	2008	2009	2010
Changes of the GDP (%)	5.3	3.5	6.2	6.8	5.1	1.7	3.8
Rate of unemployment (%)	19.1	17.6	13.9	11.2	9.5	11.9	12.3
Investments*	106.5	107.7	116.8	120.4	110.7	99.2	99.8
Share of expenses on agricultural sector in state budget (in %)	3.87	3.83	3.74	6.67	6.32	6.02	4.48**
Parity of income (a)	72.7	78.7	83.2	91.8	84.5	78.7	85.4
Index of price scissors in agriculture	102.2	96.0	102.0	107.2	90.1	96.0	107.0

** previous year=100;*
*** change of the reference basis due to the separation of the European funds budget from the state budget*
(a) The parity was estimated as a relation of disposable income per person in a household of farmers and disposable income of households of employees.

Source: Czyzewski A., Grzelak A., 2011

a relatively limited extent. The fact that foreign trade in Poland is less important for the economy than in other EU countries served as a kind of buffer against global crisis phenomena. This also explains why the economy grew faster (in terms of changes in GDP) than in other countries, which can translate itself into increased demand for food products. This relates namely to positive changes in the real GDP, both prior to and during the economic crisis (Czyzewski A., Grzelak A., 2011). Regardless of the above-mentioned economic parameters, agricultural development depends on the value of budgetary support. It stands for an important source of funds in the Sector; thus, the integration with the EU and the fact that the agricultural sector was covered with the EU CAP tools was a crucial change in this area. Interestingly enough, still in 2002 the share of agriculture, rural development, and agricultural markets development accounted for 1.98% of budgetary expenditure, while in the years 1997-2003, i.e. before the Polish accession to the EU, it stood at 2.23% on average. From this perspective one can conclude that in comparison with those years, the share in the years 2007-2009 nearly tripled, which means that the importance of agriculture in budgetary policy increased and that operating conditions for this sector improved significantly. On the contrary, the reference base changed in 2010 due to the fact that Bank Gospodarstwa Krajowego took over the management of the European funds budget which was created in the same year. As a consequence, the share of expenditure on the agricultural sector was reduced from the accounting point of view. If the previous methodology was applied, the expenditure would be higher in real terms by 29% in comparison with the previous year (Czyzewski A., Matuszczak A., 2012). This might suggest that the operating conditions for agriculture in 2010 were favourable.

In the years 2004-2010, an increase in the real aggregated gross disposable income was observed in the case of individual farms. This resulted from the implementation of the CAP mechanisms in Polish agriculture and the subsequent increase in support offered to this sector (Czyzewski A., Stepien S., 2009). It should be emphasised that there was no drastic income drop following 2007, while the years 2008-2009 outlined a decrease in the parity of disposable agricultural income. This resulted mainly from worse market conditions for agricultural production which was reflected in the opening of price scissors[3]. The parity went on to improve in 2010 as a consequence of positive economic trends in agriculture.

The years 2004-2010 showed an overall growth in the average disposable income per person in a household of farmers (according to the studies of household budgets conducted by the Central Statistical Office – GUS). It should be stressed that the income dynamics was higher than the total for households of employees from the studied perspective. As a consequence, the disparity in disposable income for households of farmers and households of employees improved from 72.7% in 2004 to 91.8% in 2007, followed by a decrease in the years 2008-2009 to 78.7% in 2009[4] (Czyzewski A., Grzelak A., 2011), and another increase to 85.4% in 2010. It should be noted that in terms of the dynamics, the changes in the farmers income parity were similar to the changes in the price scissors ratio. The income parity improved in the years when the price relations were favourable for farmers (price scissors ratio above 100).

3. Differentiation of reproduction processes in agriculture considering different production types of farms

Considering the above-mentioned general economic tendencies which constitute the backdrop of further consideration, one should try to evaluate the reproduction

[3] The significant increase in prices of agricultural products worldwide in 2006-2007 was accompanied (especially at the turn of 2008) by a food crisis (Urban R., 2010)

[4] It should be emphasised that the situation is not homogenous. Larger farms (above 16 ESU) typically reached income overparity in comparison with families of employees. There are ca. 100k farms like these in Poland. Similarly, specialised farms, e.g., specialising in field crops, grain fed animal breeding, horticulture, or dairy cows, would typically reach overparity

Table 2

Changes (%) in selected economic and production categories in Polish farms (covered with the FADN system) 2010 vs. 2004

Type of production	Gross investment	Value of total production	Family agriculture income	Utilised agricultural area -1 farm	Total labour input	Total fixed assets (with excluded value of land)	Value of intermediate consumption
1	1.55	2.35	3.03	2.20	1.08	1.76	2.42
2	1.13	0.99	1.17	2.48	0.76	1.09	0.83
4	1.19	1.21	1.98	1.29	0.89	1.11	1.11
5	1.26	1.91	2.28	1.36	1.00	1.24	1.73
6	0.86	0.83	1.07	1.08	0.86	1.07	0.84
7	1.18	0.87	1.17	1.43	0.96	1.05	0.89
8	0.91	1.11	1.80	1.22	1.01	0.91	1.13
Total	1.12	1.26	1.91	1.27	0.97	1.02	1.11

**1 - field crops; 2 – horticultural crops; 4 – permanent crops; 5 - dairy cows; 6 - grass fed animals; 7 – grain fed animals; 8 - mixed*

Source: author's study based on the data from the FADN system for the years 2004-2010

processes on farms. At the first stage, the evaluation focused on a comparative analysis of changes in selected economic and production categories of farms considering their production types in the years 2004-2010 (Table 2). Varying changes in the analysed parameters indicate that the nature of adaptations to market conditions conducted by farms changed following the integration with the EU. They consisted mainly in increasing agricultural land areas.

A decrease was recorded in the farms' average FTEs. On the contrary, a slight growth was noticed in both gross investments and fixed assets value. The biggest growth was noted in the case of agricultural income and agricultural land areas per 1 farm as well as agricultural output value and intermediate consumption. This might suggest that increasing agricultural land areas and a consequent increase in land-use intensity make up the main strategy applied as regards adaptations of farms following the integration with the EU. It also results from the concentration processes taking place in agricultural production (Siekierski J., Poplawski. L., 2006) and a capital-saving development path followed by farms. Improved income situation resulted from the fact that agriculture was covered with the EU CAP tools and from the consequent modernisation processes of the sector. The increase in the intermediate consumption might, on the contrary, result from the increased market activity of farms.

There is a strong differentiation in the values of the analysed parameters between farms considering their production profile (Czternasty W., Smedzik K., 2009). Farms specialising in crop production focused mainly on land and machinery purchases, while farms specialising in animal breeding concentrated on investments in buildings and relevant equipment (Sass R., 2012). One can notice a relative division into three groups. The first one includes farms specialising in field crops, permanent crops (orchards), and milk production. This group recorded significant increase in income, investments, production output value, intermediate consumption, and fixed assets. Also the modernisation processes were most advanced in this group. The next group, i.e. specialising in breeding animals in the grazing system and horticulture, was characterised by intensive investment activity in the first years of the EU membership which slowed down later on. In the farms with other production types, the dynamics of evaluated phenomena cannot be viewed so positively, although the income during the analysed period grew across the board.

Decreased investments in the case of farms specialising in breeding animals in the grazing system resulted from the fact that the modernisation process within this group had been very intense both prior to the integration with the EU and shortly afterwards. Interestingly, it was noticed that the increase in agricultural land area among farms specialising in animal breeding (mainly cattle and pigs) was not accompanied by adequate changes in the output. It might result from the fact that the number of animals in average farms covered by the FADN system stood, for example, in 2010 at 11 for cattle in farms specialising in grass fed animals and 33 for pigs for farms with grain fed animals. When comparing the figures with the fact that in the years 2004-2010 the number of animals in farms with herds was bigger than 20 (for cattle) and 50 (for pigs), one can notice deconcentration and gradual resignation from animal breeding in average farms included in the specialised groups. As a consequence, a part of these farms is likely to be classified as farms with mixed production. Some researchers (Michna W., 2012) refer to the fact that the animal output decreases as farms drop this type of activity as "animal output crisis". Despite the fact that the farms with mixed production recorded increased income, its level was relatively low when compared with specialised farms and was mainly related to direct payments[5].

The comparison of gross investments with depreciation (reproduction ratio) provides an interesting insight from the point of view of assessing the reproduction

[5] Share of direct payments in income in this group of farms in 2010 amounted to 73%, while the average for all farms stood at 62%

Table 3

Developments in the reproduction ratio (gross investments / depreciation) in Polish farms (included in the FADN system) in the years 2004-2010

Years	Farms production types							
	1	2	4	5	6	7	8	Total
2004	91.3	117.1	92.0	113.0	107.2	101.9	88.5	105.2
2005	56.8	97.1	79.9	126.5	136.0	84.9	77.8	82.8
2006	58.0	102.1	89.0	176.8	141.0	102.0	78.8	84.8
2007	68.2	128.3	78.0	145.4	139.6	89.0	83.0	89.8
2008	85.4	78.0	74.0	120.1	88.4	73.2	65.5	69.4
2009	63.7	84.0	79.0	100.3	66.9	100.1	67.4	72.4
2010	101.1	81.0	83.0	109.0	73.6	89.6	72.1	77.5

1 - field crops; 2 – horticultural crops; 4 – permanent crops; 5 - dairy cows; 6 - grass fed animals; 7 – grain fed animals; 8 - mixed

Source: author's study based on the data from the FADN system for the years 2004-2010

process (Table 3). Trends noticeable in this comparison show moderate volatility of the ratio (18%) in the analysed period in the group of farms covered by the FADN. This means that developmental conditions in Poland following the integration with the EU facilitated stable development of agriculture, which resulted from the fact that the sector was covered by the EU CAP tools and from a consequent increase in support, although a large number[6] of farms is not capable of replacing their production potential anyway. The highest reproduction ratio (107%) was recorded in the first year following the integration with the EU. It was a consequence of intensive investment activity of farms shortly after the integration and a resulting significant investment needs following the period of unfavourable economic situation for agriculture in the years 1998-2003 as well as of a relatively low value of production assets due to high wear and tear levels. In the following years, the level of the ratio failed to ensure extended reproduction for an average farm included in the FADN system, although the situation varied depending on the production profile and resulting profitability as well as the farms' size[7]. It is noticeable that the reproduction ratio improved with increasing agricultural income and improving price relations for the sector which also led to the phenomenon of economic rent in agriculture (Czyzewski B., 2010). Therefore, the ratio improved in the years 2006-2007 and 2010.

Considering the production types there are clear differences in reproduction ratios between farms. Interestingly, farms specialising in dairy production recorded extended reproduction nearly in all analysed years. This suggests intensive investment activity of the members of the group and shows that modernisation processes were well advanced. The investments were mainly related to purchases of equipment to milk, cool and store milk, introduction of new technologies for preserving rapidly growing grass, and adapting buildings to higher phytosanitary standards. In total, milk production remained at the same level during the analysed period, while the cows average milk yield grew and the number of cows decreased (Rynek mleka..., 2010). Farms specialising in animal breeding in the grazing system as well as those specialising in horticulture recorded extended reproduction in the first sub-period (2004-2007) and narrowed reproduction in the following years (2008-2010). Those farms also used the modernisation possibilities of their output potential by taking part, among others, in measures like "mlody rolnik" (young farmer), "inwestycje w gospodarstwie rolnym" (investments in farms; SPO 2004-2006), or "modernizacja gospodarstw rolnych" ("modernisation of farms"; PROW 2007-2013). In the first period, horticultural farms invested intensively in crops grown under covers or purchases of fruit harvesting combines and of cool stores. In total, about 37% of funds (from the PROW 2007-2013 funds – "modernisation of farms") was provided to farms specialising in milk production, while 50% of funds from this measure related with constructing or modernising farm buildings was used for glasshouses.

In case of farms specialising in field crops reproduction of assets started improving gradually from 2005 and it reached the stage of simple reproduction in 2010. Those farms at first increased their land resources and later invested in production assets, i.e. purchases of combine harvesters, tractors, and sprinklers (Kagan A., 2011). The lowest level of the ratio was recorded in the case of farms with mixed production type. This might suggest assets decapitalisation in those farms.

Those farms normally operate on a small area, their production scale fails to generate sufficient funds to be used for investments and their repayment capacity is typically low (Augustynska-Grzymek I., Skarzynska A., 2011). These phenomena are a consequence (as well as later on a cause) of relatively low income in the case of smaller farms. This might also be related with higher preference of smaller farms towards consumption at the cost of pro-investment activities due to lower production scale and consequently an absolute lack of income. Their future should not be seen solely in the performance of production functions. It is difficult to evaluate the developments in the analysed ratio unanimously in the case of farms specialising in breeding grain fed animals. It can be noticed that assets reproduction undergoes changes which is related with the so-called hog cycle.

[6] W. Michna estimates that there are ca. 90% of farms like these in Poland (Michna W., 2011)

[7] Studies show that extended reproduction occurs in farms with the size exceeding 16 ESU (Grzelak A., 2012)

This means that investment processes are activated in the case of increasing profitability on the market. It should be expected that in the case of farms with this production profile, the reproduction process will intensify in the years 2011-2012 owing to the fact that the farms are forced to adapt to new requirements concerning environmental protection and animal welfare until the end of 2012[8]. It concerns limiting ammonia emission from animal breeding and extending farm houses for piglets and pigs. This might encourage small farms with small production scale to resign from this type of production further deepening polarisation processes.

4. Conclusions

The conducted study leads to the following conclusions.

1. During the period of the most favourable economic trends (2004-2007) in Poland farms were more eager to modernise their production potentials which was reflected in the improved reproduction ratio. It might initially suggest that macroeconomic conditions are important from the point of view of the reproduction processes. Especially the first year of membership was most important as the dynamics of those processes was clearly most intense. It was related with significant underinvestment resulting from a slowdown in agriculture in the years 1998-2003. The situation did improve significantly only in 2004 as a consequence of increased share of budgetary expenditure on agriculture, as the sector was included in the EU CAP tools, especially as regards direct payments (Czyzewski A., Poczta A., 2009). Another influential element consisted in the need for animal breeding farms to adapt to stricter phytosanitary standards. On the contrary, investments like these, while supporting more pro-ecological activities, do not result directly in increased income. If the same labour and land resources are maintained, positive income developments depend not only on investments but also on profitability of agricultural production in a particular year. Therefore, the development of agricultural farms in the economic sense expressed with increased income is, in many instances, the easiest to achieve by means of purchasing land.
2. During the analysed period (2004-2010) one could mainly notice on average narrowed reproduction in farms covered by the FADN system. Extended reproduction was recorded only in 2004. Despite the above, the scope of investment processes in agriculture during the period should be viewed positively. It led to improvements in terms of production techniques, efficiency and quality of agricultural production, environment protection and OHS. There are many differences in this respect considering farms' production profile as well as their size. It was noticed that in the case of farms specialising in milk production, the modernisation processes resulted in extended reproduction during the analysed period which was accompanied by increased investments suggesting a positive growth potential.
3. Also farms specialising in horticulture and animal breeding in the grazing system stood out positively in the first period of the membership (2004-2007). In the following years, the level of investments no longer facilitated renewal of production assets. In the case of horticultural farms as well as permanent crops farms volatile profitability combined with high capital intensity of production hindered their development. It was noticed that the reproduction trends among the group of farms specialising in grass fed animals were related with the so-called hog cycle. On the contrary, one could notice a clear decapitalisation of assets in the case of farms lacking specialisation. The phenomena resulted from limited ability of these farms to generate a surplus which would be used for financing development due to limited production scale as well as low propensity to investments.
4. Based on the remarks, one should not conclude unanimously that future development of agriculture and rural areas will be limited only to farms with clear output specialisation, although they surely play an important role on the food market (Sapa A., 2009). Farms are operating under higher market risk and higher exposure to market trends. Owing to a different operating philosophy, farms with mixed production limit the risk, while they can also specialise in food production with increased quality standards, try to operate in the form of groups gathering other farmers, or perform functions related with the so-called countryside welfare (Brelik A., 2003), maintaining settlement network, stability and viability in rural areas. In contrast, maintaining narrowed reproduction in those units leads to accelerated polarisation processes in agriculture and may result in increased rate of unused production resources. It is less likely that capital and land resources should move automatically from those farms to farms with clear output specialisation. In many cases, the status of farm lands is changed into residential areas[9]. Additionally, purchasing small plots from smaller farms is not really attractive due to relatively high cultivation unit costs. Therefore, the problem has also a social dimension and it concerns issues such as non-agricultural development of rural areas or quantification of public goods generated by agriculture.

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[8] Council Directive 2008/1/EC and 2001/88/EC

[9] This might suggest a decrease in the total UR area by ca. 5% in the years 2004-2010

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CONSUMER OPINIONS AND EXPECTATIONS OF CORNFLAKES WITH THE ADDITIVE STEVIOL GLYCOSIDES

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Abstract. In the autumn of 2012, a survey was conducted to examine how steviol glycosides, a sweetener extracted from the plant Stevia rebaudiana, are perceived by consumers and what expectations consumers have towards food made with this sweetener. Steviol glycosides, characterised by a high level of sweetness and no caloric content, were approved as a food additive in the European Union in December 2011. The survey data were gathered from 180 consumers between the age of 20 and 80 years. The data were collected in Fulda using a standardised questionnaire. The questionnaire included a concept test using a fictitious cornflake product sweetened with steviol glycosides. The results show, that there are significant correlations between the possession of general knowledge about stevia and the gender, age and health awareness of the respondents, since only 16.5% of the respondents know that this sweetener is a food additive (significant result). The majority of consumers (80.0%) expects a product labelled with the claim "With steviol glycosides from Stevia" to solely contain steviol glycosides (significant result). Consumers perceive steviol glycosides as a natural sweetener (significant result); yet, not as a healthy sweetener. Approximately half of the consumers prefer food sweetened with steviol glycosides compared with food sweetened with sugar or other sweeteners. Consumers further expect such a product to generally taste good and not different from the products sweetened with sugar.
Key words: additive, steviol glycosides, consumer expectation.
JEL code: D 19

Introduction

Steviol glycosides are extracted from Stevia Rebaudiana Bertoni, a plant that is originally native to Paraguay. The sweetener is primarily characterised by high sweetness as well as practically no caloric content. Based on this, it has been used as a low calorie sweetener in food in Japan since 1975 as well as in the USA since 1994 (Kienle, 2010). Steviol glycosides were approved in December 2011 for use in the European Union (EU) and can now be used as food additive E960 in foods from several product categories (European Commission, 2011). The European Commission, however, rejected an application regarding the approval of the plant Stevia rebaudiana (European Commission, 2000). Until now, the EU law does not approve the plant, which is classified as a novel food.

So far only the general labelling requirements apply to steviol glycosides, while the labelling for promotion purposes has yet to be regulated by law. Institutions in Switzerland, Belgium and Austria have developed initial guidelines regarding this matter (BAG, 2010; BMG, 2012; FPS, 2012). Establishing appropriate regulations is particularly important considering that the food industry plans to emphasise the natural origin of this food additive in claims. Extracting steviol glycosides from the plant, however, involves several processing steps to reach the required degree of purity of 95% (Kienle U., 2010; JECFA, 2010). Because of the complex manufacturing process, it is, thus, debateable whether steviol glycosides can justifiably be called "natural sweeteners".

The general aim of this research is to analyse consumers' opinions and expectations of food sweetened with steviol glycosides. The following hypotheses have been established on this basis:

— "Consumers perceive steviol glycosides as natural sweeteners";
— "Consumers perceive steviol glycosides as healthy sweeteners";
— "Consumers who know that steviol glycosides are additives do not perceive them as natural sweeteners";
— "Health-conscious consumers prefer products with steviol glycosides to cornflakes with other sweeteners".

The aim of the research in detail is the examination of how consumers perceive the sweetener and whether this is influenced by the knowledge that steviol glycosides are a food additive. Moreover, general expectations for food sweetened in this manner and the possible expectations raised among consumers by a "natural sweetener" label were analysed in the research. Furthermore, the research was conducted to detect whether consumers preferred a product such as that to a similar one sweetened with sugar or other sweeteners. For this purpose, a standardised questionnaire was developed to answer the research questions and hypotheses by way of a concept test. For the concept test, the front of a package for a fictitious cornflake product has been designed to display the claims "light" and "with steviol glycosides from stevia" and the image of a stevia plant. The questionnaire was three pages long and included 11 closed- and 2 open-

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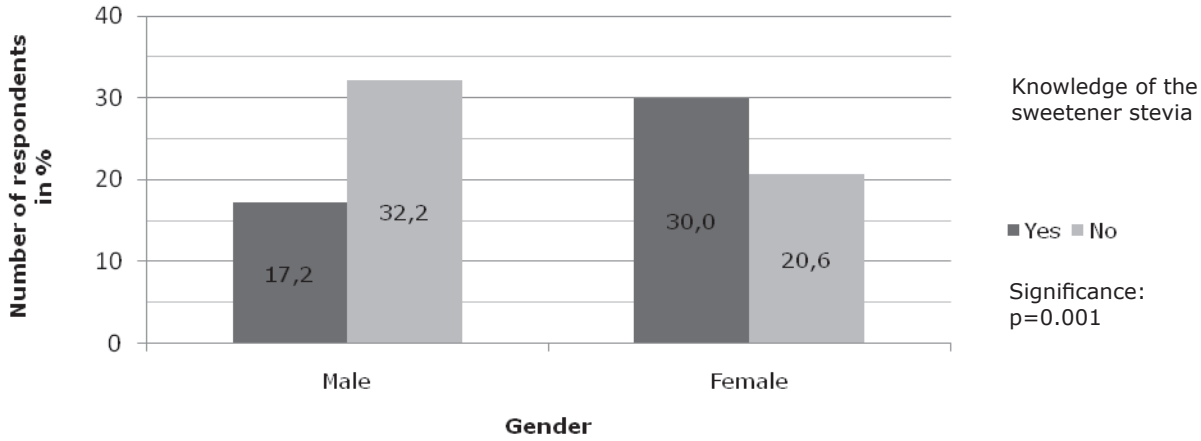
Table 1

Personal information of people conducting the survey (n=180)

Questions	Answers					
Age (in years)	20-29 20.6%	30-39 20.6%	40-49 18.3%	50-59 16.7%	60-69 16.7%	>70 7.3%
I am health conscious	Strongly agree 12.2%	Agree 32.8%	Neither agree nor disagree 40.0%	Disagree 15.0%	Strongly disagree 0	

Source: authors' construction



Source: authors' construction

Fig. 1. **Correlation between the knowledge on the sweetener stevia and gender (n=180)**

ended questions. Multiple answers were possible in the case of one question. Starting with a short introduction describing the purpose of the interview, the first question functions as a screening question to determine which people have some general knowledge about stevia. Those people continued to answer questions from the concept test referring to the cornflake packaging. In addition, questions about personal information such as age, gender, and consumers' behaviour and level of health awareness were included in the questionnaire. Participants who were not familiar with stevia turned directly to the questions about personal information at the end of the questionnaire leaving out the questions from the concept test. The questionnaire was tested in a pre-test to determine if there were difficulties in understanding the questions as well as the right structure of the questionnaire and length of time that the interview might take. The final questionnaire was revised accordingly. The survey was carried out in the autumn of 2012 in front of six grocery stores in Fulda belonging to the categories of supermarket, organic supermarket, and discounter. In total, 180 persons participated in the survey. The questionnaires were analysed using SPSS Version 19.0.

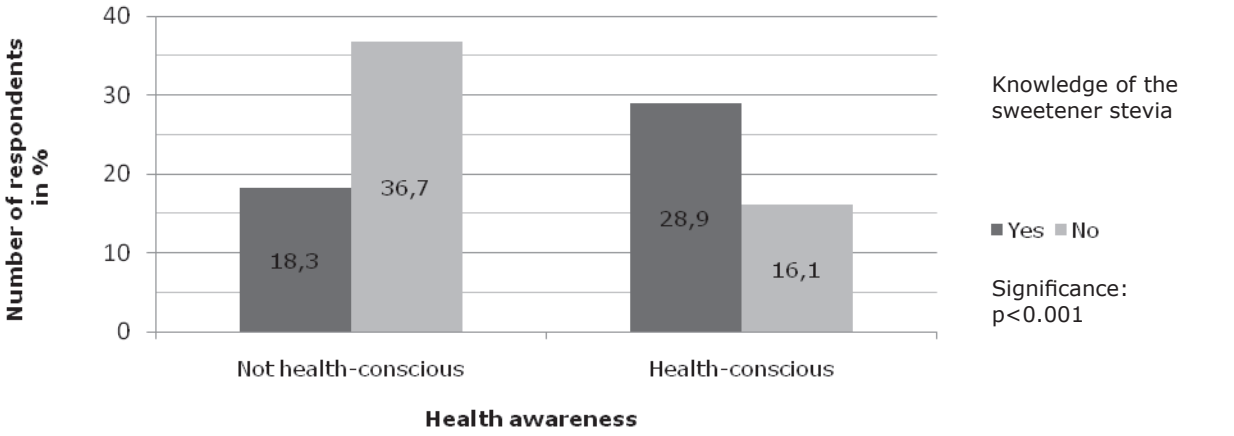
Research results and discussion

In total, 180 people participated in the study, of which 91 persons (50.6%) were female and 89 persons (49.4%) male. The ages of the people questioned ranged from 20 to 80 years (Table 1). A majority of the respondents or 40.0% described themselves as undecided regarding whether they were health-conscious, while 45.0% of the respondents (12.2% plus 32.8%) agreed and strongly agreed that they were conscious of their health (Table 1).

Results show that 85 (47.2%) out of the 180 participants possess general knowledge about stevia; whereas, 95 participants (52.8%) do not know the sweetener. It could be shown that there is a highly significant correlation between the knowledge on stevia and gender (Figure 1) as well as health awareness (Figure 2). It can be assumed that, in particular, female consumers and consumers that indicated having high health awareness know the sweetener. A high significance ($p<0.001$) can also be shown regarding the age of the people, yet, the definition of a specific age is not possible because the age is stated in groups.

Among the 85 people who know the sweetener stevia, the majority or 80.0% expects that cornflakes with the claim "With steviol glycosides from stevia" solely contain steviol glycosides (Figure 3). Only 11.8% expect the product to contain other sweeteners as well and only 8.2% believe the cornflakes contain sugar in addition when reading this claim. This result is very highly significant.

The results show further that 69.4% of the respondents perceive the cornflakes as a natural product, while approximately half of those questioned think that the cornflakes are healthy (50.6%) and contain a low amount of additives (47.1%) (Figure 4).



Source: authors' construction

Fig. 2. **Correlation between the knowledge on the sweetener stevia and health awareness (n=180)**

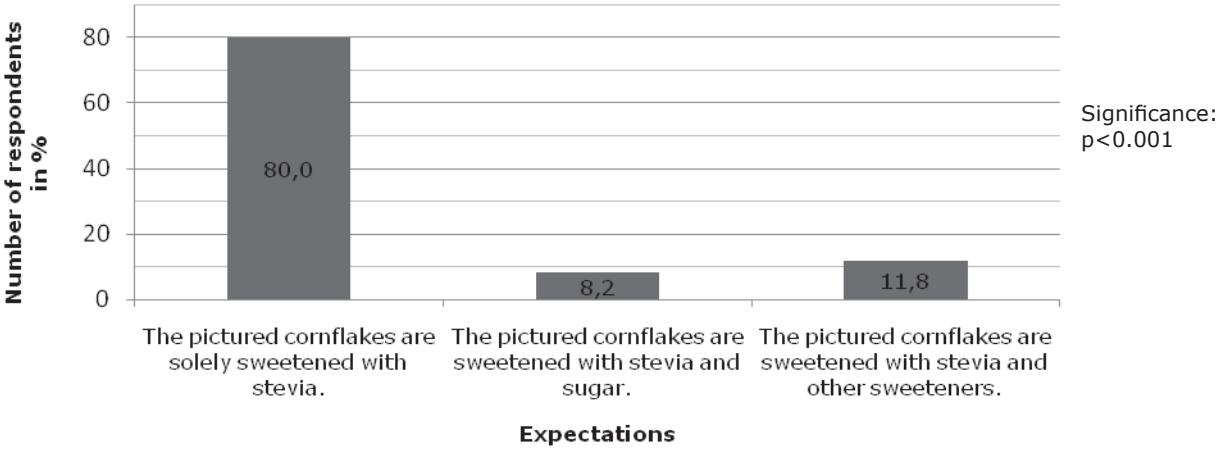


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Fig. 3. **Respondents' expectations regarding the claim "With steviol glycosides from stevia" (n=85)**

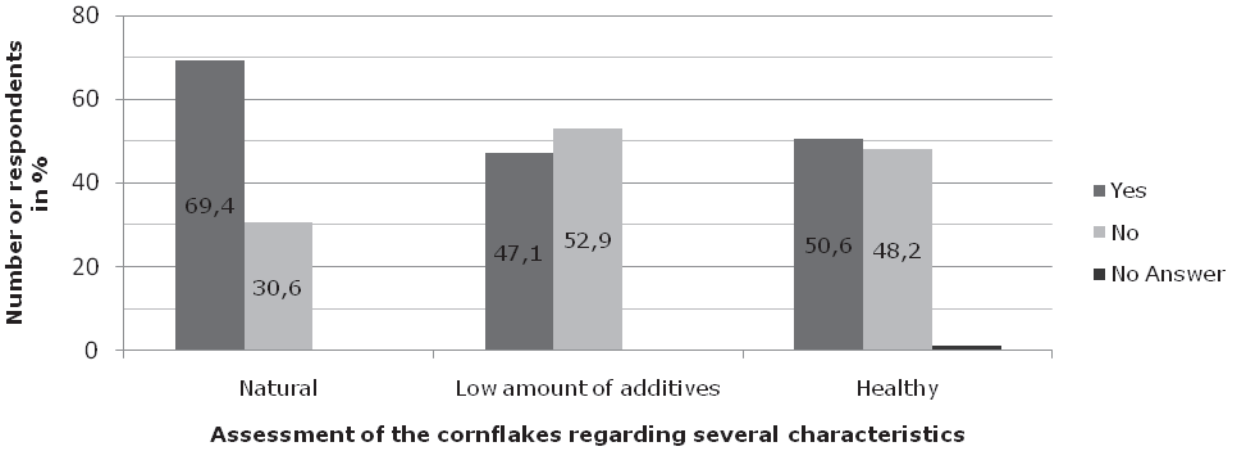

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Fig. 4. **Respondents' assessment of the cornflakes regarding naturalness, amount of additives and health value (n=85)**

Source: authors' construction

Fig. 5. **Respondents' assessment of the statement "Steviol glycosides are additives" (n=85)**

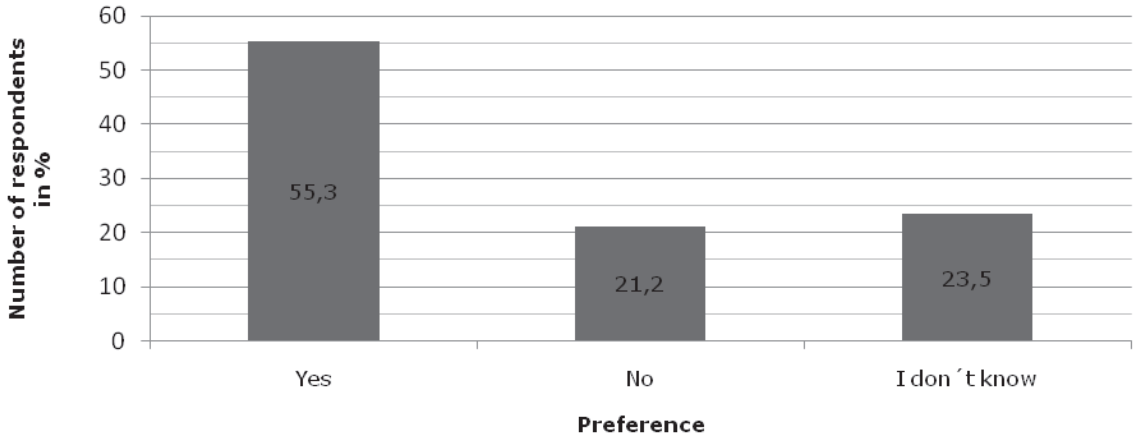

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Fig. 6. **Preference of the cornflakes to cornflakes sweetened with sugar (n=85)**

Regarding this topic, the following hypothesis was proposed: Consumers perceive steviol glycosides as natural sweeteners. The test shows with high significance ($p<0.001$) that the people questioned state that the cornflakes are a natural product. In contrast, the test result of the hypothesis "Consumers perceive steviol glycosides as a healthy sweetener" show no significance ($p=0.827$). Based on the graphic chart and the corresponding significance tests, it can thus be assumed that consumers perceive steviol glycosides as natural but not as healthy sweeteners.

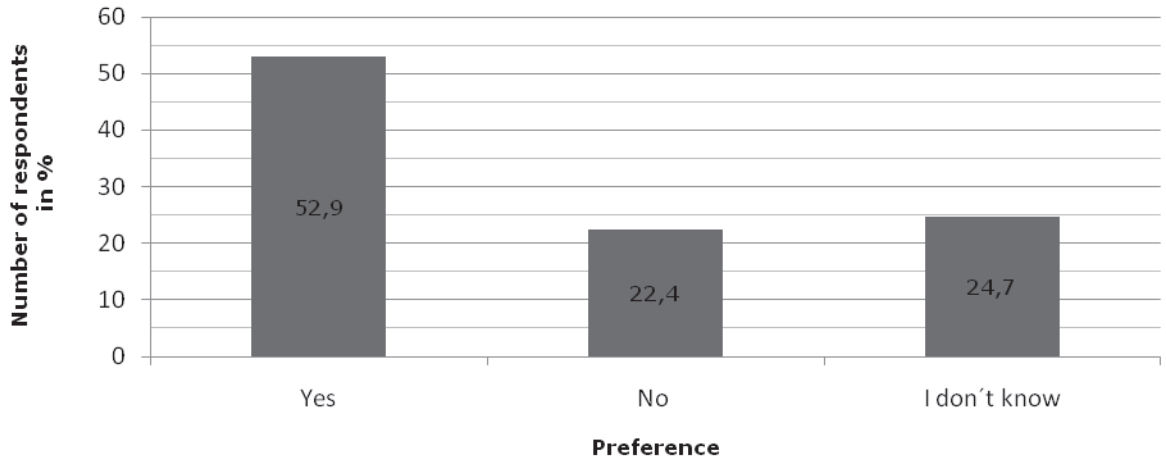
The study also shows that 45.9% of the participants are not sure if steviol glycosides are additives or not, whereas, 37.6% of the participants do not think that steviol glycosides are additives, only 16.5% know that this sweetener is an additive (Figure 5). This result is highly significant.

It has been hypothesised that consumers who know that steviol glycosides are additives do not perceive them as natural sweeteners. No statement can be given as to whether the hypothesis is right or wrong, since this hypothesis only applies to eight (9.4%) respondents.

Moreover, it has been determined whether cornflakes sweetened with stevia are preferred to cornflakes that contain different sweeteners. The results show that 55.3% of the questioned people prefer cornflakes sweetened with stevia to cornflakes sweetened with sugar, while 21.2% do not prefer it and 23.5% do not know if they prefer it or not (Figure 6). The products are preferred mainly because of the lower caloric content (15.0%) or because the respondents want to avoid sugar (13.0%).

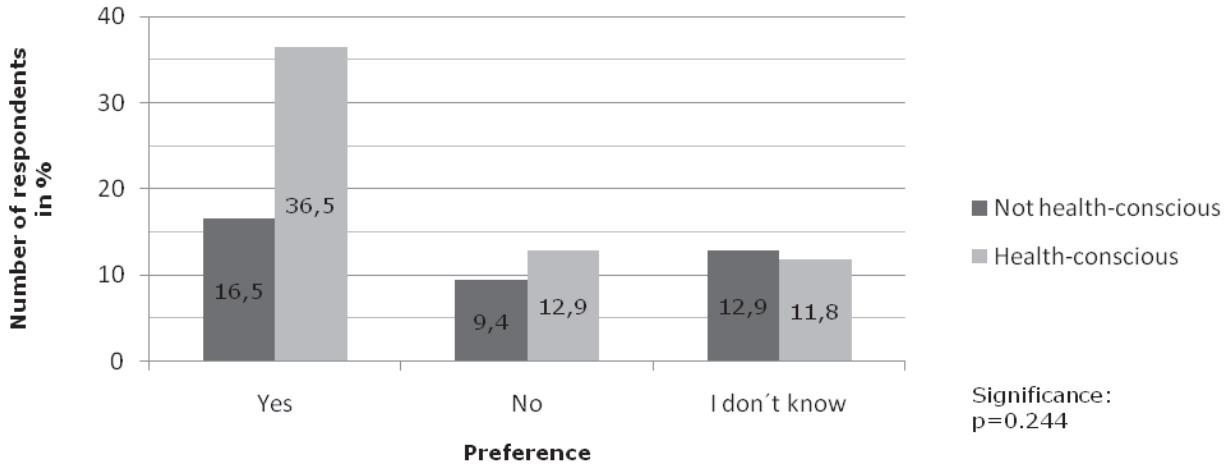
Similar results can be shown regarding preference to cornflakes sweetened with other sweeteners (Figure 7). The reasons for this preference are that the respondents think cornflakes with steviol glycosides are healthier (15.0%) and more natural (11.0%) or because they want to avoid other sweeteners (7.0%).

In this context, it has been hypothesised that health-conscious consumers prefer products with steviol glycosides to cornflakes with other sweeteners. Significance cannot be shown (Figure 8) for this hypothesis.



Source: authors' construction

Fig. 7. **Preference of cornflakes to cornflakes sweetened with other sweeteners (n=85)**



Source: authors' construction

Fig. 8. **Correlation between the health awareness and the preference of cornflakes to cornflakes sweetened with other sweeteners (n=85)**

Among the 85 people who know the sweetener stevia, the majority or 67.7% stated that they expected the cornflakes to taste good in general. In addition, 42.0% of the respondents expect the cornflakes sweetened with steviol glycosides not to taste different from cornflakes sweetened with sugar.

The introduced hypotheses are evaluated in the following section. Only the first hypothesis: *It can be assumed that consumers perceive steviol glycosides as natural sweeteners* can be corroborated out of the four proposed hypotheses. In contrast, the hypotheses "Consumers perceive steviol glycosides as healthy sweeteners" and "Health-conscious consumers prefer products with steviol glycosides to cornflakes with other sweeteners" show no significant test results. Therefore, both hypotheses cannot be confirmed. The third hypothesis "Consumers who know that steviol glycosides are additives do not perceive them as natural sweeteners" can neither be corroborated nor rejected, since it applies to only eight of the respondents.

In conclusion, the study shows that steviol glycosides are perceived as a natural sweetener. However, it could not be proved whether this assessment is influenced by the knowledge that steviol glycosides are food additives. The perception of steviol glycosides as natural sweeteners is also a reason why the respondents prefer a product sweetened with stevia to a product sweetened with other sweeteners. The perceived "naturalness", thus, represents a buying motive for consumers that can be amplified by corresponding product characteristics. Claiming the natural origin of steviol glycosides can in fact prove to be an effective method for the food industry to set their products apart from competitive products sweetened with other sweeteners, which are often assessed negatively.

However, products with the label "With steviol glycosides from stevia" could be considered deceptive because the majority (80.0%) of the consumers expect such a product solely to contain steviol glycosides and no other sweetener. The emphasis on the natural origin

of the sweetener or the image of a stevia plant without the indication that the products contain the additive steviol glycosides can be seen as false declaration of the characteristics of the product. A guideline aimed at preventing consumer deception by defining the correct way to claim a product such as this has yet to be established in the EU. The guidelines in Switzerland, Belgium and Austria offer a good basis to formulate such regulations (BAG, 2010; BMG, 2012; FPS, 2012).

Conclusions, proposals, recommendations

1. This thesis provides initial findings concerning the question of consumer perception and expectations regarding steviol glycosides.
2. The study shows that steviol glycosides are perceived as a natural sweetener.
3. The hypothesis that consumers perceive steviol glycosides as healthy sweeteners could not be confirmed.
4. It is of interest to determine the effect of different claims and packaging designs for further studies.
5. The consumers' expectations regarding the sensory attributes of a product sweetened with steviol glycosides could be evaluated in further studies.

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LONG-TERM UNEMPLOYMENT PROBLEMS IN LATVIA BETWEEN FORTY AND PRERETIREMENT AGE

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Abstract. Long-term unemployment in Latvia and other countries of Europe has recently increased due to the world's global economic instability. Long-term unemployment is a topical problem in all regions of Latvia that are affected by various economic and social aspects. Therefore, it is substantial to explore and analyse factors, tendencies, and dynamics of economic activities of the unemployed in order to get an idea on options for unemployment risk reduction. Currently, the situation of unemployment in some regions of Latvia has slightly improved and various experts predict that at the beginning of 2013 the level of unemployment will decline to 8.6%, which is close to the average level of unemployment in the developed European countries such as Austria, Germany, Belgium, and others. However, this forecast is not reliable due to high long-term unemployment rate in Latgale region as well as in other rural regions of Latvia forcing inhabitants to leave the state for searching work elsewhere.
This article investigates the relationship between people within the group between 40 and pre-retirement age and differences of regional economic factors by analysing theoretical assumptions of various authors. The aim of the paper is to identify long-term unemployment and to determine solutions for this age group.
Key words: long-term unemployment, age structure, regional economic differences, time-series analysis.
JEL code: J64

Introduction

Differences in theoretical and empirical long-term unemployment definitions have been studied since the 1980s by such researchers as O. M. Levin-Waldman, Machin, Manning, K. Doogan, B. Decreuse, P. N. Junankar, L. F. Katz, K. Kozovska, and C. Garrouste. However, only few of them analyse the influence of long-term unemployment on individuals in the age group between 40 and preretirement age and their influencing factors. The main indicators of long-term unemployment in that age group are education and health.

The hypothesis of the research: effective integration in the labour market and reduction of long-term unemployment in the age group between 40 and preretirement age will increase competitiveness of Latvia's national economy within the context of the Baltic States.

The aim of the research is to show the necessity of finding optimal employment solutions for people aged between 40 and preretirement.

The following research tasks were set in order to achieve the aim:

1) to summarise theoretical viewpoints and the findings of other researchers on long-term unemployment by monographic method;
2) to characterise and analyse factors that affect long-term unemployment;
3) to determine the main problems of long-term unemployment;
4) to calculate the growth rate of the unemployment level at preretirement age;
5) to work out recommendations for solving this problem.

Calculations and analysis of statistical data from 2001 to 2011 will be applied for different age groups of pre-retirement age to describe the long-term unemployment situation in Latvia.

Longer unemployment periods leave serious impact on the individual as well as on the overall economy. A large number of scientific publications and scientific literature are available focusing on the unemployment's impact on individual's well-being with such effects as low self-esteem, health problems, and higher suicide numbers.

Some authors stress destructive impacts on the economy caused by the high rate of long-term unemployment. Many of these studies focus on unemployment's influence on wage-setting behaviour, as the upward pressure on wages from the supply side is likely to be higher in the presence of a high proportion of long-term unemployment within total unemployment (Machin and Manning, 1999).

Research results and discussion

According to Garrouste, Kozovska and Perez, long-term unemployment indicates that a substantial section of the labour force is in surplus to the requirements of local employers. This surplus may nevertheless coexist alongside relatively high rates of hiring and firing for other more employable parts of the labour force (Garrouste C., Kozovska K., Perez E. A., 2010).

According to Junankar, the long-term unemployed usually have lower exit probability compared with other job seekers for two reasons. Firstly, employers often treat unemployment duration as a negative signal. Employers consider that the unemployed shall be hopeless, thus, they are jobless for a longer time. Secondly, the long-term unemployed lose their skills, become dejected, and drop out of the labour market (Junankar P. N., 2011).

The researcher Junankar defines long-term unemployment as a 12 months period or longer when a person is unemployed, the unemployed not only lose their skills, they lose motivation, they fall ill. In crude economic terms, human capital is being depreciated. There is also

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a mass of misery and suffering. These people often live in poverty, they have lost their self-respect and dignity; they accept the verdict of the labour market with mixture of resentment and resignation (Junankar P. N., 2011).

In scientific literature, the definition of long-term unemployment varies across countries and across international statistical agencies, ranging between 6 months and more than 12 months. Commonly, the average minimum duration, namely 9 months, are used in the scientific literature to characterise the entrance into a long-term unemployment spell. One of the reasons for such a threshold is that it also corresponds to the point after which the probability to find a job declines due to the fact that employers tend to be more reluctant to hire someone unemployed for more than 9 months (Garrouste C., Korovska K., Perez E. A., 2010).

It is necessary to solve the problem of long-term unemployment, influencing:

— the demand for labour;
— the supply of labour;
— the functioning of the labour market.

In a pure neoclassical economics, the demand for labour is independent of aggregate demand (Junankar P. N., 2011).

The global economic crisis is the most serious reason that made important changes on the labour market in 2009 when many job seekers became long-term unemployed. In 2008, the long-term unemployment rate increased in several Member States of the European Union like Ireland, Spain; the Baltic States had the same trend. The economic crisis has had a greater impact on the population groups such as ethnic minorities, promoting the risk of increased long-term unemployment.

According to Marksoo and Tammaru, the labour markets function regionally, while education, age and ethnicity are the key individual variables that shape labour market outcomes. Long-term unemployment explains much of the continuing problem of social exclusion in some rural areas. The long-term unemployed have difficulties entering the labour market due to the lack of skills or local job opportunities. It is defined as regional job mismatch, which is made by geographical differences and plays a significant role in employment opportunities (Marksoo U., Tammaru T., 2011).

Likewise, if there is a high degree of urbanisation, there are higher chances of getting trapped in a long-term unemployment spell (Garrouste C., Korovska K., Perez E. A., 2010).

Gender also has an important role. Women have less favourable prospects in the labour market as they often combine work with family duties and childcare. The unemployment rate for females in many European countries is higher than the one for men. Females would find it more difficult to exit from unemployment than males because of long periods that are led at home (Garrouste C., Korovska K., Perez E. A., 2010).

The relationships between education and unemployment are explained partly by the signalling and screening theories. These studies suggest that employers hire workers on the basis of imperfect information about their real productivity levels transmitted through their educational data, used as a filtering mechanism and proxy for performance. In addition to education level, other relevant factors for determining the probability of entering or exiting unemployment are related with the individual's labour market biography. Individuals with more and best experience are more attractive to employers as they can potentially invest less in their training (Garrouste C., Korovska K., Perez E. A., 2010).

The most important factor behind the increase of long-term unemployment relates with the increase of unemployment duration among low-educated people and people without diverse and big work experience. The unemployment rate is generally higher among individuals with lower education level. Less skilled workers have fewer chances of finding work and accordingly face longer unemployment spells. As a result, they are disproportionately represented among the long-term unemployed (Marksoo U., Tammaru T., 2011).

Long-term structural labour market problems suggest that substantial mismatches between the skills and aspirations of job losers (especially the long-term unemployed), and the skill requirements and compensation packages of new job openings are likely to emerge as the economy recovers from the global economic crisis. Many job losers from sectors such as construction and manufacturing may face difficulties in making the psychological and financial adjustments as well as gaining the training and education required for the new jobs available in the growing (primarily service) sectors (Katz L. F., 2010).

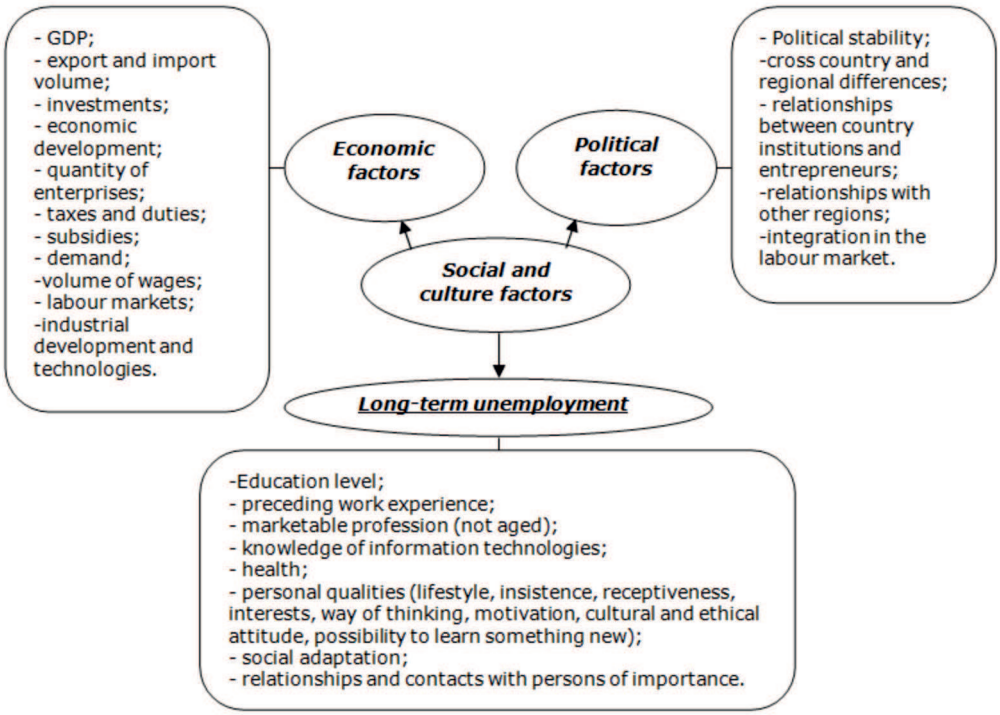
In many European countries, poor health, chronic diseases, and lifestyle factors are associated with being the long-term unemployed or out of the labour market (Garrouste C., Kozovska K., Perez E. A., 2010).

General economic conditions on the regional level also affect substantially the transition rate from and to unemployment. Factors such as regional differences in industry composition, neighbours' effects affecting the equilibrium rate of unemployment and aggregate demand, and institutional settings have an important role in explaining regional unemployment patterns (Garrouste C., Kozovska K., Perez E. A., 2010).

The authors Garrouste, Kozovska and Perez consider that the occurrence of a high proportion of long-term unemployment is an evidence of profound dysfunction in the local labour market area. Studies on unemployment differentials that take into account the regional perspective and use simultaneous modelling are based on the hypothesis that regional unemployment both affects and is affected by regional factors of labour supply, labour demand, and wages (Garrouste C., Kozovska K., Perez E. A., 2010).

According to Marksoo and Tammaru (2011), older people are more likely to remain unemployed after losing their job. Among older workers, those losing their jobs in traditional industrial sectors are particularly vulnerable to long-term unemployment (Marksoo U., Tammaru T., 2011). This kind of situation is widespread in Latvia in the past years a well. There is an insignificant possibility to find a new job at the preretirement age if you lost the previous one because young people with better technological knowledge are more marketable.

Various public policies for solving the unemployment problem have been developed on the basis of Veblen's theory of unemployment. That theory is of excellent quality and better suited than other theories of employment such as the Keynesin theory, the innovation



Source: authors' construction

Fig. 1. **Model of factors influencing long-term unemployment**

theory, and other standard theories of unemployment. Veblen's theory of employment can easily be formulated in the context of the aggregate demand and aggregate supply model. The theory is grounded in expectations, technology, innovations, taxes, globalisation, exports, and government expenditure. If there is an economic situation when profits rise and aggregate demand increases, the economy can grow and prosper in the short run. The Veblen's theory also suggests, for example, that a slowdown in technological progress and productivity growth will reduce the aggregate supply, investment, consumption expenditures, exports, and government expenditure. Lower gross domestic product is determined with a higher price level, or inflation, and a lower level of employment (Mouhammed A. H., 2011). The authors think that this is one of the theories that clearly demonstrates the main indicators that affect economic development and an unemployment level in the state. This theory is relevant to the new and global economic situation as the situation is at present. Other theories could be useful for other academic research and calculations for unemployment research projects. The connection between long-term unemployment and dynamics of influencing factors is seen in Figure 1.

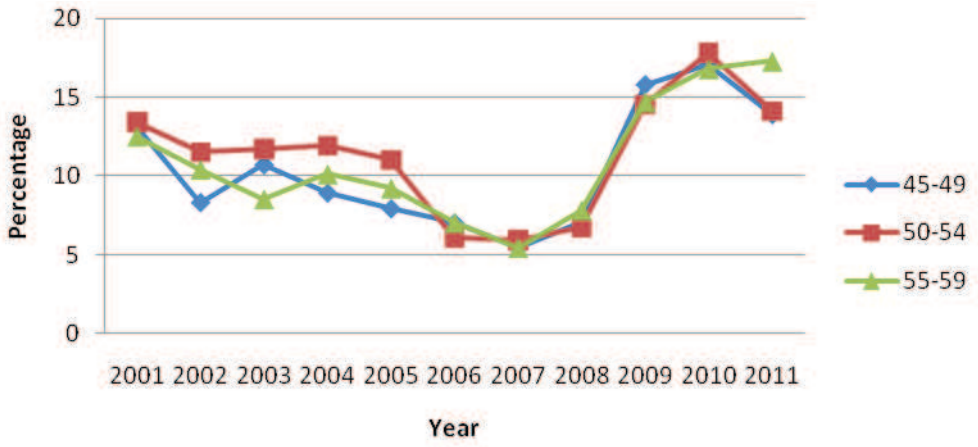
Some researchers consider that there is a high possibility to break the law when people have problems with finding a job for longer time periods. Many authors, writing about long-term unemployment, mention connection between unemployment and the level of crime.

The authors, Chamlin and Cochram, consider that all macro-social theories of crime causation, although they often specify alternative intervening process, contend that temporal fluctuations in the level of unemployment are likely to affect the level of property crime. Drawing on rational choice theory, authors contend that long-term or permanent unemployment, rather than temporary joblessness, is implicated in the production of higher level of property crime (Chamlin M. B., Cochram J.K, 2000).

The authors of the paper consider that the level of crime grows in proportion with the unemployment level. That link is recorded in recent years in Latvia as well.

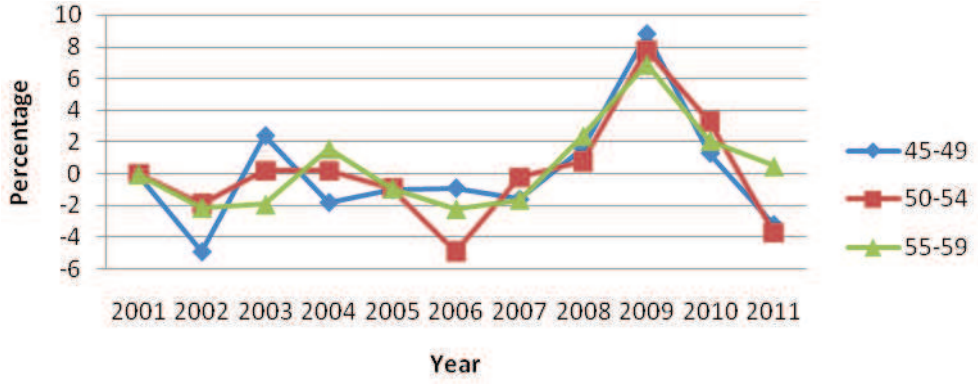
There is another dimension to the problem, which would appear to have implications for the long-term unemployed. Long-term unemployment is, in most cases, the consequence of structural changes in the economy. Levin-Waldman argued that an efficient market economy engaged in creative destruction, whereby, the old and obsolete were replaced by the new and technologically more advanced. The model assumes that those who have knowledge and practical skills in new technologies have an absolute advantage to find a job in shorter time (Levin-Waldman O. M., 2011). This kind of problem is observed on all labour markets of the Baltic States, because young people with very good technological knowledge have a possibility to find a job in other countries like Germany, Switzerland, Denmark, and other developed countries, where it is possible to improve education level in master studies or doctoral studies for free. This factor is very appealing and promising for people who have experience in foreign enterprises.

The theory of Levin-Waldman also holds the labour market to be divided into the primary market, where high premiums are placed on skilled workers, and the



Source: statistical data of the Central Statistical Bureau of Latvia, 2012

Fig. 2. **The unemployed as a proportion of economically active population in Latvia, %**



Source: authors' calculations based on statistical data of the Central Statistical Bureau of Latvia

Fig. 3. **Absolute growth of chain (%) from 2001 to 2011 in Latvia**

secondary market where unskilled workers are trapped in the lowest-wage service sector of the economy. Structural changes in the economy, which have resulted in less skilled workers being laid off, will inevitably result in their being unemployed longer because their skills no longer match the needs of new employers. This no doubt contributes to long-term unemployment as does changing economies. Employers better require workers with new skills because they become more flexible in their wage demands (Levin-Waldman O. M., 2011). This situation is also very popular in the Baltic States because effectiveness of economic sector is not sufficiently developed. The main resources of these countries are wood, peat and rapeseed for oil. These industries must be developed more than they are developed today because then new job opportunities will emerge for people from the countryside.

Long-term unemployment could reveal a mismatch between labour market policy and labour market conditions. Lewin-Waldman notes that in many countries, active labour market programmes focus on particular sets of barriers to employment like lack of motivation, lack of job search skills, and lack of marketable skills. Many of these programmes have been shown to be ineffective in reaching their intended goals.

One reason, why they may be ineffective is that people participating in such programmes may actually be expected to reduce their job search activity while they are in the programme. Better they choose to study than to search a job because it is easier. Also these individuals can get grants for studies.

Secondly, the reason that such programmes might be viewed as ineffective is that participation might be interpreted by employers that participants are less likely to be productive.

Thirdly, the reason for their ineffectiveness may simply be inefficient matches of job seekers to available programmes. Available programmes may not meet the needs of the unemployed (Levin-Waldman O. M., 2011).

The problem of Latvia is that more than a half of the unemployed do not want to find work. They better choose to attend programmes of the State Employment Agency, because there is possibility to receive grants. This kind of problem makes programmes ineffective and it is the main reason why there is a necessity to solve these problems on the government's level. There is a positive experience, for example, in Estonia and other European countries where it is possible to get access to unemployment problems on the government's level.

Table 1

The growth rate of chain in different age groups from 2001 to 2011 in Latvia

Year	Unemployed as proportion of economically active population (%)			Absolute growth of chain (%)			Growth rate of the chain T (%)		
	45-49	50-54	55-59	45-49	50-54	55-59	45-49	50-54	55-59
2001	13.2	13.4	12.5						
2002	8.3	11.5	10.4	-4.90	-1.90	-2.10	0.63	0.86	0.83
2003	10.7	11.7	8.5	2.40	0.20	-1.90	1.29	1.02	0.82
2004	8.9	11.9	10.1	-1.80	0.20	1.60	0.83	1.02	1.19
2005	7.9	11	9.2	-1.00	-0.90	-0.90	0.89	0.92	0.91
2006	7	6.1	7	-0.90	-4.90	-2.20	0.89	0.55	0.76
2007	5.4	5.9	5.4	-1.60	-0.20	-1.60	0.77	0.97	0.77
2008	7	6.7	7.8	1.60	0.80	2.40	1.30	1.14	1.44
2009	15.8	14.5	14.7	8.80	7.80	6.90	2.26	2.16	1.88
2010	17.1	17.8	16.8	1.30	3.30	2.10	1.08	1.23	1.14
2011	13.9	14.1	17.3	-3.20	-3.70	0.50	0.81	0.79	1.03

Source: author's calculations based on statistical data of the Central Statistical Bureau of Latvia

Table 2

The growth rate of base in different age groups from 2001 to 2011 in Latvia

Year	Unemployed as proportion of economically active population (%)			Absolute growth of base (%)			Growth rate of the base T (%)		
	45-49	50-54	55-59	45-49	50-54	55-59	45-49	50-54	55-59
2001	13.2	13.4	12.5						
2002	8.3	11.5	10.4	-4.9	-1.9	-2.1	0.63	0.86	0.83
2003	10.7	11.7	8.5	-2.5	-1.7	-4	0.81	0.87	0.68
2004	8.9	11.9	10.1	-4.3	-1.5	-2.4	0.67	0.89	0.81
2005	7.9	11	9.2	-5.3	-2.4	-3.3	0.6	0.82	0.74
2006	7	6.1	7	-6.2	-7.3	-5.5	0.53	0.46	0.56
2007	5.4	5.9	5.4	-7.8	-7.5	-7.1	0.41	0.44	0.43
2008	7	6.7	7.8	-6.2	-6.7	-4.7	0.53	0.5	0.62
2009	15.8	14.5	14.7	2.6	1.1	2.2	1.2	1.08	1.18
2010	17.1	17.8	16.8	3.9	4.4	4.3	1.3	1.33	1.34
2011	13.9	14.1	17.3	0.7	0.7	4.8	1.05	1.05	1.38

Source: authors' calculations based on statistical data of the Central Statistical Bureau of Latvia

European countries principally exercise four categories of activities:

— Training, which is intended to increase human capital;
— supplemental employment programmes in the public sector;
— private sector schemes;
— sanctions to improve job search efficiency.

To lower the risk of long-term unemployment as well as to lower the rate of unemployment, many OECD countries offer various labour market programmes. And yet, in many cases, evaluations have only shown that at best they only have small positive effects on participating individuals (Levin-Waldman O. M., 2011).

In some European countries, as Estonia, there are unemployment benefits for permanent job losers like wage insurance, which subsidises worker earnings when the wage they receive on their new job is less than that of their old job. Besides, there is possibility to get health insurance if you are registered in the State Employment Agency. Therefore, the formal registration of the unemployed is encouraged and the statistical data of unemployment are more realistic than in Latvia.

The lump statistical data on the proportion of the unemployed and dynamic changes in ten years period will be analysed to get a better view of an unemployment situation in Latvia at the preretirement age.

The analysis of dynamic series of chain and growth of basis are used to review the statistical data on the unemployed as a proportion of economically active population.

The data obtained in the study were statistically processed by the MS Excel program. The chain and basis growth were calculated for three groups of age and years from 2001 to 2011. Formulas of dynamic rows are used in the research.

According to the European Commission statistical data, long-term unemployment in Latvia as a percentage of total unemployment rate in the age group between 50 and 64 were 68.1% for males and 61.6% for females (Long-term Unemployment, 2012). In 2010, the number of the unemployed between the age of 55 and 59 likely to be long-term unemployed was slightly more than in the age group 45 to 54.

In the context of sustained employment growth, the ratio between the long-term unemployed and all unemployed has increased sharply between 2008 and 2011.

There was a lower long-term unemployment level from 2005 to 2008 than it is now, and it was from 2001 to 2004 (Figure 2). It is explainable by the economic development after Latvia's independency when manufacturing was developed. Nowadays, large companies of Latvia have been sold to Danes, Norwegians, Russians, and others.

According to Figure 3, the absolute growth of chain from 2008 to 2010 has increased in all age groups of the preretirement age. There was a drop with positive impact from the end of 2010 when there were better chances to be employed in the age groups of 45 to 49 and 50 to 54. This can be explained by higher proportion of individuals not being registered in the State Employment Agency because they cannot get social benefits.

Table 1 shows that there is an increase of the unemployment level in all age groups from 2009 to 2011. The results of the study indicate that the absolute growth of chain of job seekers proportion in case of economically active population (in the age group from 45 to 49) in 2002 has decreased to -4.9%, while the number has already grown to 8.8% in 2009. In 2011, there is a decrease of absolute growth of chain in the age groups from 45 to 49 and from 50 to 54, thus, proving the previous result.

According to the table, a potential risk to lose work increases at the preretirement age. In addition, the growth rate of chain has increased from 2008 to 2010. In 2011, there was a smaller increase than in the previous years due to the economic stagnation.

According to the statistical data, in 2001, there is a positive trend when the absolute growth of base has decreased in all groups of age compared with the period of 2009-2011. In the past years (from 2008 to 2011), the absolute growth of base grew rapidly from 0.62% to 1.38%. From 2009 to 2011, the growth rate of the base (T) has increased in all groups of age. It could be explained by employers' disinclination to employ older people or people at the preretirement age. They better choose to employ young people with new knowledge and skills than the people with the Soviet Union education. Besides, one of the main conditions, why employers give preference to younger people than older, is that young people demand lower salaries.

Conclusions, proposals, recommendations

1. The growth rate of the base has increased in all groups of age from 2009 to 2011. It could be explained by employers' disinclination to employ older people or people at the preretirement age without competent knowledge of technologies and languages.
2. In other European countries (for example, in Estonia), there are unemployment benefits for permanent job losers like wage insurance which subsidises worker earnings when the wage they receive in their new job is less than that of their old job. That kind of insurance offers a way of assisting with the psychological support to changing labour market conditions and to upgrade job search incentives. It will be useful to take that kind of experience in Latvia as well.
3. Investments are necessary in order to expand the development of high-quality employment programmes to be warranted as a crucial additional tool for improving the labour market prospects of being employed at the preretirement age.
4. It is difficult to be employed in the rural areas because of low education level and it is not possible to find work with a wage exceeding the minimum wage. The government should improve the environment of entrepreneurship.
5. Many individuals between 40 and the preretirement age have large experience and it is challenging to start a new business. There are many possibilities to take a loan from banks for start-up entrepreneurship, including entrepreneurship in the countryside.
6. It is necessary to improve the work of the State Employment Agency, concentrating on the preretirement age group, providing job search assistance and effective job training systems.
7. It is necessary to pay attention to the group of preretirement age, improving the education level of the unemployed and developing possibility of obtaining new professions free, for example, by improving language and technological skills.

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BRIDGING THE KNOWLEDGE GAP OF POSSESSED AND REQUIRED PROFESSIONAL COMPETENCIES OF PAKISTAN'S AGRICULTURE EXTENSION OFFICERS

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Abstract. Professionalism is a matter of attitude and behaviour. It embraces not just knowing how to do your job, but also demonstrating a willingness to learn, cooperate and get well with others, showing respect, and living up to their commitments. To become professional in your task as an extensionist, it is like other life skills, which you learn; you do not just become a "professional" overnight. Professionally competent agriculture extension officers play an important role in the development of agriculture in the country. This study was conducted in Khyber Pakhtunkhwa (Pakistan) and focused on the self-assessment of Agriculture Extension Officers (AEOs) regarding their professionalism. The author mailed a questionnaire to collect the data from all (111) AEOs. The study detected that the use of neat and clean dress and value/like extension work were top rank competencies, while identification of professional agricultural-extension organizations and societies in Pakistan were the lowest competencies. Regarding trainings, the identification of professional organizations and societies were on top, while viewing the extension work as a life long career and the use of clean dress were on the bottom. Both possessed and required levels of competencies were scaled from one to five on Likert scale. One was very low and five was very high. Among the associated factors, only two factors had statistical significance at 95% confidence level, i.e. professional qualification (0.370) and family background (0.212). A positive relationship was found among those AEOs who were highly qualified and had an agricultural background.
Key words: competency, agriculture extension officers, knowledge gap, professionalism.
JEL code: Q16

Introduction

Nearly all of the studies that deal with "professionalism" refer to the key word "profession." Many definitions and criteria have been discussed by sociological investigators (Hall, 1968; Moore, 1970; Goode, 1960; Friedson, 1970). Generally speaking, most would agree with Moore (1970) that "a profession involves a full-time occupation; a sense of calling or commitment or service orientation; a formalized organization; esoteric, useful knowledge and skills based upon specialized training or education of exceptional duration and difficulty and an autonomy restrained by responsibility." There has not been a time in recent years, when there has been so much concern for professionalism within the ranks of education at all levels of the educational system.

In recent years, enhancing professionalism in agricultural and applied communications has been an important topic of discussion. Developing strategies to increase prestige and recognition of this specialized field are of particular interest to those involved in administering academic programmes in agricultural communications and agricultural journalism. However, more information is needed on the overall professionalism process, how it has been used in other disciplines, and what factors should be considered in applying it to agricultural communications.

Despite its declining share in Gross Domestic Product (GDP), agriculture is still the single largest sector of Pakistan economy, contributing 21 percent to GDP and employing 44 percent of the workforce. More than two-thirds of Pakistan population live in rural areas, and their livelihood continues to revolve around agriculture and allied activities directly or indirectly. Empirical evidence suggests that higher growth in agriculture on a sustained basis had a lasting impact on poverty reduction in Asia in the 1970s and the 1980s (GoP, 2008).

Since independence of Pakistan, the Government has taken several significant steps to boost agricultural production over many decades and attempted to achieve self-sufficiency in major agricultural crops, yet this has always proved to be fragile due to communication gap between farmers and agriculture extension agents, despite the fact that we have a well-established extension and research system. The accountability for transferring of agricultural technology and providing technical supervision to farmers for improving agricultural practices to increase agricultural productivity lies on Agricultural Extension Department. So, failing to achieve self-sufficiency in major agricultural products has always been ascribed to inefficiency of our agriculture extension services (Urooba, 2001; Idrees, 1994; Ahmad, 1993; Iqbal, 1990; Hussain, 1983; Hayat, 1982; Naz, 1987 and Muhammad, 1981).

The growth performance of agriculture over the last six years has been of a volatile nature – ranging from

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Table 1

Mean SD and rank of self-perceived professional competency level required and possessed by AOs

Competency	Required level perceived			Level possessed		
The ability to:	**Mean**	**SD**	**Rank**	**Mean**	**SD**	**Rank**
Use neat and clean dress	4.514	0.7244	1	4.045	0.802	1
Value/like extension work	4.505	0.6161	2	3.811	0.919	2
View extension work as a long career	4.369	0.7738	3	3.721	0.936	3
Identify professional agri-extension organizations in Pakistan	4.342	0.6808	4	3.369	0.934	4
Identify professional agri-extension societies in Pakistan	4.243	0.7771	5	3.063	0.984	5
Average	4.395			3.602		

Source: Field survey

Table 2

Mean of self-perceived professional competency level required and possessed by AOs with training need and its rank regarding professionalism

Competency	Required level perceived	Level possessed	Training need	Rank
The ability to:	**Mean**	**Mean**	**Diff = LR-LP**	
Identify professional agri-extension societies in Pakistan	4.243	3.063	1.1802	1
Identify professional agri-extension organizations in Pakistan	4.342	3.369	0.9730	2
Value/like extension work	4.505	3.811	0.6937	3
View the extension work as a life long career	4.369	3.721	0.6486	4
Use neat and clean dress	4.514	4.045	0.4685	5
Average	4.395	3.602	0.793	

Source: Field survey

1.5 percent to 6.5 percent. However, agriculture performed poorly in 2007-2008, growing at 1.5 percent against the target of 4.8 percent. The poor performance of agriculture can be attributed to an poor performance of major crops and forestry, registering negative growth of 3.0 percent and 8.5 percent, respectively. Major crops, accounting for 34 percent of agriculture and 7.1 percent of GDP, suffered because of poor progress of wheat and cotton and less than satisfactory performance of rice crop. Sugarcane and maize being other two major crops performed impressively in 2007-2008. Minor crops accounting for 12 percent in the agriculture value added posted a growth of 4.9 percent against the negative growth of 1.3 percent last year (GoP, 2008).

This gap between the potential yields and the actual yields is attributed to farmers' lack of awareness of the application of scientific research and new knowledge to agricultural practices. Extension workers can now be found throughout the country, yet the results still are not satisfactory. This is due to the presence of less educated, inefficient, and non-motivated extension agents throughout the country. In order to study the professionalism of the agriculture extension officers (extension agents), this study was carried out to examine existing levels of professional 111 No's Agriculture Extension Officers (AEOs) and to assess the required level of professional competencies needed by AEOs for their job performance in professionalism.

Materials and methods

This study was conducted in Khyber Pakhtunkhwa Province in Pakistan and total number of 111 Agriculture Extension Officers were the sample of study. Both primary and secondary data were used in the study area. Primary data were collected through a carefully prepared and pre-tested questionnaire. Secondary data were obtained through published sources. The Questionnaires were provided to Agriculture Extension Officers through mail, and their meetings were conducted at Divisional Level through the management of Agriculture Extension Department, the questionnaire was explained to them and they were guided in filling the questionnaire.

Based on the job description, the author identified selected competencies of AEOs. Several researchers have followed this approach in the past (Ali, 1991; Randavary and Vaughn, 1991; Najjingo et al., 1991 and Easter, 1985). The Likert scale was used to capture the level and intensity of professional competencies. Scaling for possessed and required competencies was done from one to five ranging from very low, low, average, high and very high. The author assessed

professional competencies relating to professionalism. The data were analysed statistically using SPSS and Microsoft Excel (version 2000).

Results and discussion

Level possessed and level required of AEOs regarding professional competencies

AEOs themselves rated the competencies they possessed and the required levels of these competencies for their job performance. The data regarding their perceptions are shown in Table 1.

AEOs rated all five competencies as having a high required level (means scores = 4.243 – 4.514) for their job performance (Table 1). Out of five competencies, the top two were the ability to use neat and clean dress (mean = 4.514, SD = 0.7244) and value/like extension work (mean = 4.505, SD = 0.6161). The competencies which received the lowest rank on the required scale were identifying professional agriculture extension society in Pakistan (mean = 4.243, SD = 0.7771) and identifying professional agriculture extension organization in Pakistan (mean = 4.342, SD = 0.6808).

The perceptions of AEOs regarding the competencies they possessed ranked from the mean score of 3.063 to 4.045 on a five-point scale. The competencies which were possessed by agriculture extension agents at higher level were the ability to use neat and clean dress (mean = 4.045, SD = 0.8021) and the value like extension work (mean 3.811, SD = 0.9196). The two competencies which received the lowest mean rating on the scale were the identification of professional agriculture extension societies in Pakistan (mean = 3.063, SD = 0.9842) and the identification of professional agriculture extension organizations in Pakistan (mean = 3.369, SD = 0.9335). The overall average of the means of the required level was 4.395 as against 3.602 in level possessed.

The author calculated the discrepancy values (Diff.) based on the differences between the required levels of competencies for the job performance of AEOs and the possessed levels of competencies. These differences were considered as training needs in the identified competencies. The data concerning these aspects are presented in Table 2.

Table 3

Means of professional competencies of AOs having different length of experience in farming

Farming experience (Years)	N	CPC professionalism
0	23	3.3217
1 – 5	11	3.691
6 – 10	20	3.690
11 – 15	13	3.677
16 – 20	19	3.642
21 – 25	10	3.820
26 – 30	8	3.275
31 – 35	4	
36 – 40	3	
Average	111	

Source: Field survey

Table 4

Means of professional competencies of AOs in different job experience groups

Job experience (Years)	N	CPC professionalism
1 – 4	20	3.430
5 – 8	2	3.100
9 – 12	10	3.700
13 – 16	10	3.700
17 – 20	32	3.781
21 – 24	15	3.453
25 – 26	9	3.578
27 – 30	10	3.460
31 – 32	3	3.800
Average	111	3.602

CPC = Composite professional competency

Source: Field survey

The discrepancy values (Table 2) between the required levels for the job performance of AEOs and the level of these competencies possessed by them were considered as training needs of AEOs in these competencies. Out of five training needs of AEOs, the most important top two were identification of professional agriculture extension societies in Pakistan (Diff. = 1.1802) and identifying professional agricultural extension organizations (Diff. = 0.9730). The training needs with lowest required levels included: 1) use of neat and clean dress (Diff. = 0.4685); 2) view the extension work as a life long carrier (Diff. = 0.6486). The difference based on the mean perception of Agriculture Extension Officers for all competencies was ranging from the lowest value (0.4685) to the highest value (1.1802). It means that AEOs in Khyber Pakhtunkhwa needed trainings in all five competencies of professionalism category identified in Table 2. Rural and agricultural development is integral to any strategy to alleviate poverty and promote broad-based growth in Khyber Pakhtunkhwa. Therefore, the AEOs need to be competitive and well equipped with the modern trends.

Length of experience in farming versus professional competencies of AEOs

Non-significant differences were found in the professional competencies of AEOs having different length of experience in farming (Table 3). The lowest value (3.275) was observed for the respondents with 26-30 year of farming experience, whereas high value (3.691) was observed for those with 1-5 years of farming experience.

Analysis of job experience versus professional competencies of AEOs

Differences for professional competencies in different job experience groups were non-significant, as revealed in (Table 4). Table 4 shows that the minimum value (3.453) was observed for the respondents' group with 21-24 years of framing experience, while the maximum value (3.800) was observed for those with 31-32 years farming experience. These figures show that professionalism is increasing by having personal experience in farming.

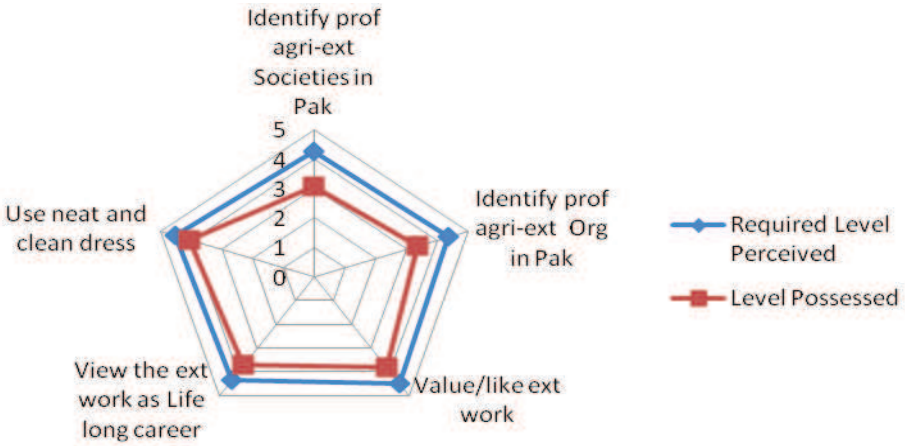
Table 5

Means of professional competencies of AOs in different age groups

Age group (Years)	N	CPC professionalism
25–28	8	3.300
29–32	12	3.450
33–36	4	3.450
37–40	10	3.560
41–44	21	3.886
45–48	18	3.544
49–52	10	3.540
53–56	17	
57–60	11	

CPC = Composite professional competency

Source: Field survey



Source: author's calculations

Fig.1: **Comparison between existing and expected levels of professional competencies of AOs**

Table 6

Factors associated with professional competencies

Factors (independent)	Correlation coefficient value	Significance level
Age	0.171	0.073
Job experience	0.119	0.212
Professional qualifications	0.370**	0.000
Specializations	0.007	0.944
Family background	0.212*	0.026
Domicile	-0.064	0.507
Previous experience in farming	-0.038	0.693
Attendance of irregular training programme	-0.173	0.070

Source: Field survey

Analysis of age versus professional competencies of AEOs

Non-significant differences were observed for professional competencies of AEOs in different age groups (Table 5). The minimum vale (3.300) was observed for the age group of 25-28 years, and the maximum (3.886) was observed for the age group of 41-44 years in the area of professionalism.

Comparison between existing and expected competencies

The existing and expected professional competencies possessed by AEOs are shown by a web-radar in Figure 1. The difference between the required and possessed levels of professional competencies is based on their WAI values, as depicted in Figure 1.

Factors associated with professional competencies

It is clear from the table that, in agricultural field, professional qualification and family background are significant contributions that promote professionalism of agricultural officers (AEOs). On the other hand, demographic factors such as age, job experience, specializations, and trainings have a positive relationship with professionalism, while domicile, previous experience in farming, and attendance of irregular training programmes have negative relationship with professionalism. One of the previous studies also reveals that extension specialists are one of the preliminary sources of awareness and information for the country agents (Shih and Evans, 1991).

Among the associated factors shown in table 6, only two factors have statistical significance at 95% confidence level: professional qualifications (0.370) and family background (0.212)

Conclusions

Based on the present study, the following conclusions were drawn by the author.

— The study found that AEOs lack essential skills of professionalism.
— AEOs are unaware of the latest professional trends and are not conversant with agricultural extension organizations and societies.
— AEOs have high expectations to get better professional skills.
— The professional qualification has increased the competencies of AEOs.
— The demographic characteristics like age, job experience, farming experience, and the place of origin have no effect on technical competency.

Recommendations

This paper has given a broad overview in difference between the expected and existing levels in professional competencies of Agriculture Extension Officers .It is recommended that

Agriculture Extension Officers may be provided need based in-service training in two competencies of professionalism, including professionalism in Agriculture Extension Organization and professionalism in Agriculture Extension Societies in Pakistan.

Agriculture Extension Officers may be provided opportunities to improve their qualification, and update their professional knowledge, so that they could deliver modern technology to the farming communities more effectively.

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