Dalia Vidickiene
Rasa Melnikiene
Zivile Gedminaite-Raudone
Lithuanian Institute of Agrarian Economics, Vilnius, Lithuania

Chapter IV
Development of Lithuanian rural regions towards knowledge society

4.1. Introduction

According to van der Ploeg [1998], rural development consists of a "balance of changing and stable elements" and that continuity and change have always characterized rural development [Van der Ploeg, 1998]. What kinds of changes are common for rural development in developed countries at the beginning of the 21st century? In our opinion the most decisive factor of social, economic, technological and cultural transformation in the 21st century is knowledge, which has influence on all spheres of human life.

Burton-Jones [1999] noted that the gap between rich and poor nations is accelerating under "knowledge capitalism". Knowledge-intensity can also lead to a growing gap within societies [Burton-Jones, 1999]. Knowledge-intensive dynamics of scale and scope induce mechanisms for the retention of wealth that are different from the dynamics of mass production. The increasing role of the service sector, notably, generates another dynamic [Barras, 1990]. Today's most advanced economies are fundamentally knowledge-based [Dunning, 2000] and the knowledge has become by far the most important factor determining standards of living – more important than land, capital or labour [Cooke, Leydesdorff, 2006]. Therefore, knowledge has influence on all spheres of human life.

This paper is devoted to examining main changes in Lithuanian rural regions and determinants of rural development important for creation of knowledge society in the past and in the future. Analysed period starts from the restitution of Lithuania's independence in 1990 and continues until recent days.

4.2. Knowledge – main resource of successful development of the economy and society

The 20th century is often described as a stage of post-industrial or knowledge society, where – compared to the industrial era which had lasted for several centuries – people found themselves in a world of completely different values. This is firstly related to the evolution of economic system, which differs dramatically from the preceding industrial phase. Those differences are rather prominent and they can be on a par with the previous fundamental transformation of economics called the "industrial revolution". In the present stage of the post--industrial society the factors of economic success are essentially different from those in the industrial society, with the difference being as great as that between the factors affecting the economic success of the agrarian and industrial society.

Sociologist Daniel Bell, in his book *The Coming of Post-industrial Society* published in 1973, was the first to use the concept of "post-industrial society", which became common in academic and later in everyday language [Bell, 1973]. Today, we can argue that the theory of post-industrial society has become one of the most widespread sociological theories of modern times. According to the advocates of the theory, the evolution of the human civilisation has three rather distinguished stages: pre-industrial/agrarian, industrial, and post-industrial with different principles of organization in each of them. To understand the concept of the new post-industrial stage, there were attempts to find a different name for this stage, which could best characterise key trends in social development. Various names were suggested, including those that gained the broadest recognition: "information", "organised", "conventional", "programmed", "experience", "dream" or "networking" society. Special theories were developed to justify them. The term "information society" turned out to be the most popular and it was broadly used not only in academic literature but also in public administration and business management. After a while it was, however, noted with criticism that the term "information society" is imprecise and thus it had to be replaced by "knowledge society". In 2004, a communiqué was adopted during the 32nd session of UNESCO's General Conference, where ministers and their authorised representatives welcomed the UNESCO's proposal to promote the concept of "knowledge society" rather than that of "information society": "Knowledge societies are about capabilities to identify, produce, process, transform, disseminate and use information to build and apply knowledge for human development".

Scientific arguments behind the concept of "knowledge society" said that the concept of "information society" tended to rely on the understanding of the industrial society and did not reveal the content of the new stage of human development. Information, just like any other production resource, can be and is used as property. Whereas knowledge differs from other production resources in the sense that it is inseparable from human mind. The management guru of the 20th century, Peter Drucker [1992], made a very clear distinction between information and knowledge when he argued that information can be found in books, whereas knowledge means ability to solve problems: "Knowledge like electricity or money is a form of energy that exists only when doing work". According to such knowledge conception, knowledge in modern society can be possession but it definitely may not be property, since neither the employer nor the society can have full control over knowledge. This characteristic of knowledge is considered to be the most important factor, which renders post-industrial society essentially different from the industrial or agrarian society. In the agrarian society, natural forces were the key restriction to the freedom of the economic activities, in the industrial society the freedom was restricted by social relations, whereas in the post-industrial society the main limiting factor is the subjectivity of the key production resource [Inozemcev, 2000].

The description of the key factor of production in the post-industrial society requires a clear distinction between information and knowledge. Information can be seen as an objective thing as it represents encoded knowledge recorded in material media. However, knowledge as such is a subjective production resource dependant on the achievements and willpower of an individual. This difference is rather effectively revealed by the knowledge classification into two types, which is prevalent in the theory and practice of knowledge management: *explicit* and *tacit* knowledge [Polyani, 1966; Nanoka, Takeuchi, 1995]. Tacit knowledge is knowledge held by a person that cannot be transferred by means of writing it down or verbalizing it. Explicit knowledge is less related to the context of its application, it is easy to document, automate and imitate. Tacit knowledge represents personal knowledge while organisations are trying to turn it to explicit knowledge of an organisation. In such conditions, the economy became human-centric and capable people using knowledge as a raw material are a critical success factors.

4.3. Main changes of rural development in Lithuania important for creation of knowledge society

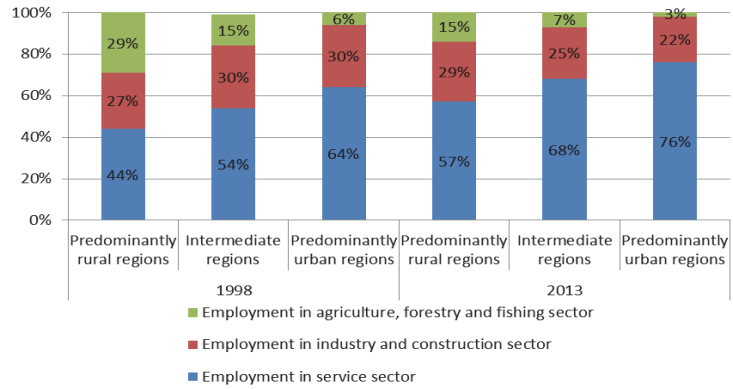
After the restitution of Lithuania's independence economic structure of Lithuania increasingly has gained more features of knowledge economy. This trend is characterized by changes in the employment structure. Increasingly important role in the economic structure of the employment was taken by the services sector. According to the data of the Lithuanian Department of Statistics, the number of employed in the services sector in 1998 amounted to 775.7 thousand people, and in 2013 it reached 854.1 thousand people, i.e. increased by 10.1 percent. At the same time, employment in other sectors during the analysed period significantly declined. In 1998, 427.9 thousand people were employed in the industry and construction sector, and by 2013 this number decreased by 15.2 percent – this year there were 362.7 thousand employed persons in this sector. Even more rapid decline in employment trends have been observed in the agrarian sector; the number of employed in the agriculture, forestry and fishing sector in 1998 accounted to 285.9 thousand people. From 1998 to 2013, it decreased by more than 2.6 times and 108.9 thousand people in 2013 were employed in agriculture, forestry and fishing sector.

It is important to highlight that impact of the service sector for the employment trends increased not only in the predominantly urban but also in predominantly rural regions. In 2013, employment in service sector in predominantly rural regions accounted for 56.9%, and from 1998 to 2013 it increased by 12.9%. Changes in employment structure were similar as in intermediate and predominantly urban regions, where employment in the service sector in this period increased by 13.8% and 11.7%. While role of agriculture for income of rural people in predominantly rural regions over the analysed period remained high – employment in agriculture sector in 2013 accounted for 14.6% but from 1998 to 2013 the share of agriculture in employment structure in predominantly rural regions decreased even 2 times (Figure 4.1). So the employment growth in the service sector absorbed the loss of jobs in the agricultural sector and reduced the risk of unemployment in Lithuanian rural regions.

Growing employment levels in the service sector increased its contribution to creating the gross value added. In 2012, the share of the service sector in the gross value added created by Lithuanian economy amounted to 65.0 percent. However, the situation in different regions was different. Analysis of the regional economic structure reveals that vigorous changes related to the knowledge economy were more apparent in Lithuanian predominantly urban regions: from

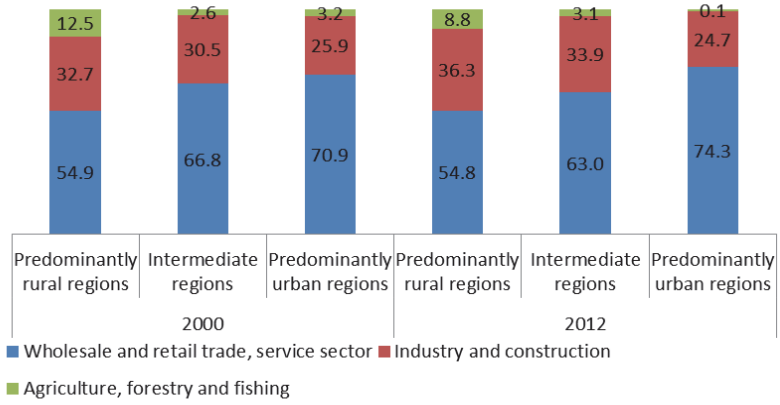
2000 to 2012, the share of GVA created by the service industry in those regions increased from 70.9 to 74.3 percent. Since 2000, the share of gross value added created by the service industry in predominantly rural regions remained rather stable and in 2012 it amounted to 54.8 percent, i.e. it was 0.1 percentage point lower than in 2000 (Figure 4.2).

Figure 4.1. Employment in service, industry and construction, agriculture, forestry and fishing sectors in the regions of Lithuania in 1998 and 2013, in percent



Source: calculations based on the Lithuanian Department of Statistics.

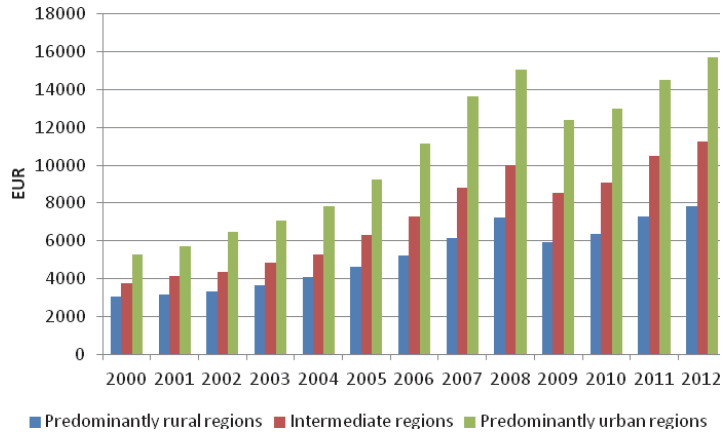
Figure 4.2. Share of GVA in the regions of Lithuania in and 2012, in percent



Source: calculations based on the Lithuanian Department of Statistics.

Despite the fact that economic structure of Lithuanian predominantly rural regions changed substantially, their contribution to the GDP declined. In 1995, 43.9% of GDP was created in predominantly rural regions, and in 2011 this number reached 30.2% only. The gap between predominantly rural and predominantly urban regions in the GDP per capita remained high. GDP per capita in predominantly urban and intermediate regions has been growing much faster than in predominantly rural regions. From 2000 to 2013 this indicator increased 3 times in predominantly urban and intermediate regions and in predominantly rural regions – only 2.6 times. GDP per capita of predominantly rural regions in 2000 accounted for 81% of intermediate regions and 57.9% of predominantly urban regions. In 2012, this ratio reached 69.3% and 49.7% only (Figure 4.3).

Figure 4.3. GDP per capita at current prices in the regions of Lithuania from 2000 to 2012, EUR



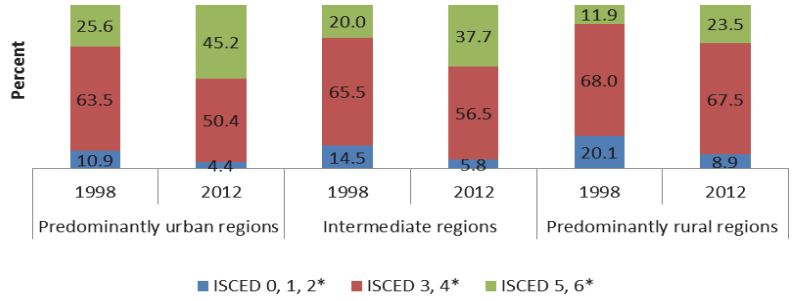
Source: calculations based on the Lithuanian Department of Statistics.

The above-mentioned differences are caused by the nature of the services being developed in predominantly rural regions. Further analysis of the economic structure in predominantly rural regions reveals that here a major part of services sector represent services with low requirements for staff qualification (retail, transport, accommodation and catering services). In 2000, wholesale, retail, transport, accommodation and catering services in predominantly rural regions came up to 37.3 percent of the service sector, while in 2012 the share of services in this group shot up to 50.9 percent. In predominantly urban regions it was lower

and stood at 44.6 percent. Public administration, defence, education, health care, and social work services were in the second place in the service industry. In 2012, as compared to 2000, the contribution of this group to the GVA created by the service industry in predominantly rural regions fell from 32.2 percent to 25.4 percent, while in 2012 this indicator in predominantly urban regions was 20.5 percent.

Mostly the types of services provided in predominantly rural regions depend on lower education levels of the rural population. Although the education level of rural citizens was growing faster, the education-related advantage of the citizens of predominantly urban and intermediate regions over rural population remained significant. In 2012, only 4.4 percent of the population in predominantly urban regions and 5.8 percent of the citizens of intermediate regions had lower education. In predominantly rural regions population with such education accounted for 8.9 percent. Citizens with the highest level of education came up to 45.2, 37.7, and 23.5 percent, respectively (Figure 4.4).

Figure 4.4. Educational attainment of the population (aged from 25 to 64) in the regions of Lithuania in 1998 and 2012, in percent



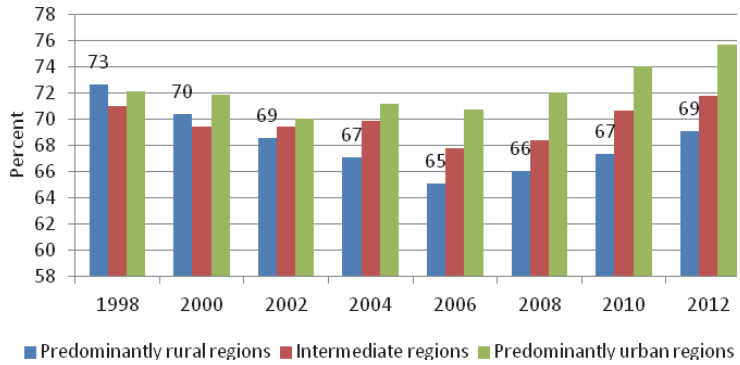
* ISCED 0 – pre-primary education, ISCED 1 – primary education or first stage of basic education, ISCED 2 – ISCED 3 – upper secondary education, ISCED 4 – post-secondary non-tertiary education, ISCED 5 – first stage of tertiary education, ISCED 6 – second stage of tertiary education.

Source: calculations based on the Lithuanian Department of Statistics.

Furthermore, insufficient educational background of the rural population was conductive to unemployment and low levels of labour force activity. Over the whole period of independence, the unemployment levels among rural citizens have been a pressing problem, which further increased during the Russian crisis in 1999 and when the global financial crisis unfolded in 2009. In 2010, the unemployment

level in predominantly rural, predominantly urban, and intermediate regions was 19.4, 12.8, and 10.1 percent, respectively. High unemployment levels in predominantly rural regions had a reducing effect on the motivation of inactive rural citizens to look for employment opportunities. It is worth mentioning that in the first year after the restitution of Lithuania's independence the level of labour force activity in predominantly rural regions was higher than in predominantly urban and intermediate areas. However, since 1998 it has been gradually decreasing, although the trends in other regional groups were contrary. A slight growth in the activity of the labour force in predominantly rural regions started only in 2006; however, the gap between predominantly rural regions and predominantly urban and intermediate regions further increased to the disadvantage of rural areas (Figure 4.5).

Figure 4.5. Activity rate of labour force (aged from 15 to 64) in the regions of Lithuania from 1998 to 2012, in percent



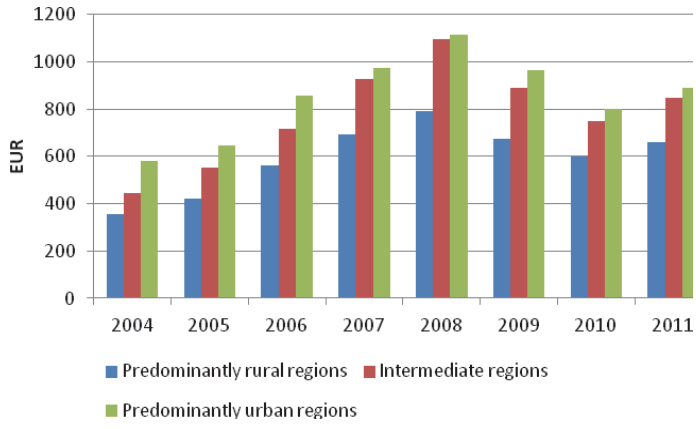
Source: calculations based on the Lithuanian Department of Statistics.

Furthermore, the lower levels of education among rural citizens resulted in lower levels of innovation in enterprises of predominantly rural regions. Companies in predominantly urban areas demonstrated higher levels of innovation. According to the data of the Lithuanian Department of Statistics, from 2008 to 2010, 40.6% of all enterprises operating in predominantly urban regions affirmed that they were involved in innovation, while innovative companies in intermediate regions accounted for 30.9%. In predominantly rural regions such companies amounted to 24.8 percent of all enterprises.

In predominantly rural regions, economic activities that were focused on businesses requiring lower qualifications led to lower incomes of the citizens of those regions. In 2004, the household revenue in predominantly rural areas stood

at only 61.2 percent of the household revenue in predominantly urban areas and in 2011 this indicator swelled to 74.1 percent. Moreover, it is worth mentioning that the gap between the household revenue in predominantly rural and predominantly urban areas was significantly reduced by subsidies, i.e. direct payments received by rural citizens engaged in agricultural activities. In the analysed period the amounts of money allocated to direct payments kept increasing and, accordingly, the support received by farmers resulted in a faster increase in household revenues in predominantly rural regions. The data of economic accounts for agriculture reveal that in 2004 the total amount of direct payments from the EU and Lithuanian budget accounted for EUR 174.3 million, as compared to EUR 355.4 million in 2011, i.e. it was 2.1 times higher. Thanks to this support, the growth rate of household revenue in predominantly rural areas was higher than in predominantly urban regions due to the bigger numbers of people engaged in agricultural activities. In 2004-2011, the revenue in predominantly rural regions increased 1.9 times, compared to 1.5 times in predominantly urban regions. According to the data of the Lithuanian Department of Statistics, in 2004 the average household revenue in predominantly rural, intermediate and predominantly urban regions was EUR 354.6, EUR 444.0, and EUR 579.0, respectively. In 2011, the average household revenue in predominantly rural, intermediate and predominantly urban regions was EUR 660.4, EUR 850.0, and EUR 891.7, respectively (Figure 4.6).

Figure 4.6. Household income per month in the regions of Lithuania from 2004 to 2011, EUR



Source: calculations based on the Lithuanian Department of Statistics.

In forecasting the future revenue level among rural population it is important to take into account that the support-based growth of household revenue is risky source of revenue due to potential policy changes. The data of economic accounts for agriculture show that even in a productive year, e.g. 2012, direct payments measured up to 50 percent of business revenue. In other years, from 2004 to 2013, they ranged from 60 to 80 percent, except the loss-making years of 2006, 2008 and 2009, when the share of subsidies in the revenue exceeded 100 percent. Therefore, to achieve the highest possible level of farm self-sufficiency, the agricultural activities in small and medium farms in particular should be gradually reorganised with a focus on the success factors of the knowledge society.

Knowledge economy is often associated with a part of the service sector that deals with research, particularly in scientific fields, and activities providing information services, such as computing, ICT, and consultancy offering advice to businesses. As a rule, the numbers of such businesses in predominantly rural regions are lower than in predominantly urban regions. In Lithuania most of the research potential – universities, scientific research institutes, and parks of scientific technologies that precondition innovation and application of scientific knowledge in practice – is located in predominantly urban and intermediate regions, just like most of the companies rendering information and consultancy services. To promote knowledge economy in predominantly rural regions, it is appropriate to boost the efficiency of knowledge use in traditional sectors [Snitka et al., 2007], and, in particular, in agriculture. In Lithuania agriculture continues to represent an important source of revenue for a large number of people living in predominantly rural areas. However, reckless industrialisation of agriculture leads to unemployment and emigration. With all rural policy efforts being previously focused on the promotion of industrialisation of agriculture, currently it is important to shift the emphasis towards as many as possible service elements being acquired by the agricultural sector. The service sector in predominantly rural regions can also be successfully developed by using local natural resources in rural tourism services.

Research conducted in Lithuania revealed that there are growing numbers of farms that are engaged in non-industrial agriculture, process their products on the farm to secure product exclusivity, create direct sales channels or render services. Such activities tend to be pursued by farmers with higher level of education and business experience. Compared to farmers who use the industrial farming model, they are more active in the field of product and organisational innovation on their farms [Vidickienė, Melnikienė, Gedminaitė-Raudonė, 2013].

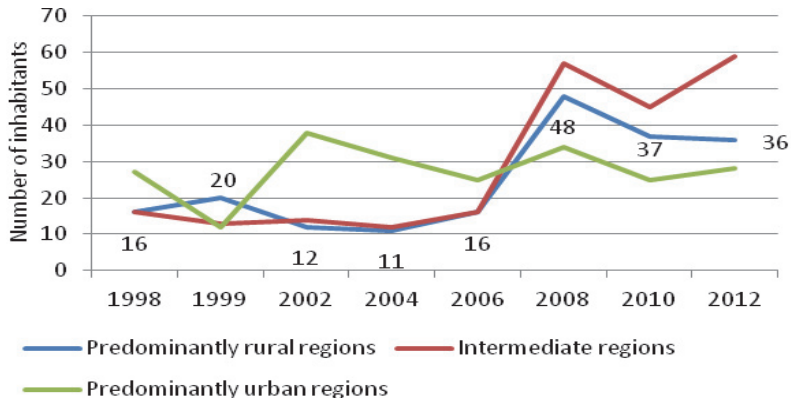
The sector of rural tourism services also showed a significant growth. In 2003, there were 355 homesteads providing rural tourism services in Lithuania, and in 2013 this number reached 620, i.e. the number of rural tourism homesteads during this period increased by 1.7 times. Nevertheless, the Lithuanian Department of Statistics is not collecting data on homesteads impact on employment and incomes of rural people, some findings on the positive impact for these indicators can be highlighted based on the results of increased variety of services provided at the homesteads and volume of assortment. From 2003 to 2013 the number of visitors of rural tourism homesteads increased 3.6 times from 76.9 to 275.8 thousand people. And gradually expanded the range of services offered. In addition to accommodation services, hosts of farmsteads are increasingly offering fishing, mushroom and berry picking, hunting, boating and water cycling, horse riding. Homesteads are equipped with baths, swimming pools, outdoor fireplaces, gazebos, greenhouses, sports courts, billiard rooms, libraries for tourist relaxation. Rural tourism homesteads also organize conferences, seminars and children's entertainment. Visitors have the opportunity to participate in community events taking place nearby the homestead site: ethnographic festivals, concerts and sport events. Some hosts also offer to taste local organic products, organize events to promote special activities, such as shows on how to batter butter, press cheese, make sausages, bake bread, etc. In this way, rural tourism homesteads benefit from tacit knowledge of local people and help to develop other local businesses.

New agribusiness management and marketing models and rural tourism services were fostered by significantly improved possibilities of the rural population to use information and communication technologies (ICT). The broadband Internet implementation in rural areas project RAIN and measures designed to increase the computer literacy of rural people resulted in a rapid increase in the use of information technologies among the population of predominantly rural regions. From 2005 to 2013 the share of rural people using the Internet increased 2.3 times and the growth rate was higher than in intermediate or predominantly urban regions. According to the data of the Department of Statistics, in 2013 rural people who had been using the Internet in the last three months accounted for 68.5 percent (of all persons aged 16-74) and this share was higher than in intermediate regions.

Furthermore, successful broadband Internet projects created possibilities for Lithuanian people living in predominantly rural areas to enjoy the advantages of a permanent job. In this regard, business activities in predominantly

rural regions could be diversified as the broadband Internet offered job opportunities no matter where the working place is located. On the other hand, it served as a stimulus for highly educated urban people to move to the rural areas. However, insufficient information about those processes prevents from making a quantitative assessment of the impact of this measure. Statistical data reflecting the extent of work from home could be an indirect evidence of the measure impact. In Lithuania there is a growing trend towards working from home. In 1998, 27.6 thousand of the employed in Lithuania were working from home and by 2012 this number jumped almost twofold and reached 52.7 thousand. Likewise, the number of persons working from home in predominantly rural regions increased 1.7 times: from 10.4 thousand to 17.5 thousand. A comparison of different regions in terms of the number of persons working from home per 1,000 employed shows that predominantly rural regions are pretty much ahead of predominantly urban regions. In 2012, there were 36 persons working from home per 1,000 jobs in predominantly rural regions and 28 persons in predominantly urban regions. However, this form of work organisation gained the greatest popularity among the people of intermediate regions, where the said indicator came up to 59 persons (Figure 4.7). Even though the numbers of persons who opt for the new forms of work are growing, it has to be admitted that such nature of work is preferred by only a small part of people.

Figure 4.7. Inhabitants working at home per 1,000 employed inhabitants in the regions of Lithuania from 1998 to 2012



Source: calculations based on the Lithuanian Department of Statistics.

In the future, business development in predominantly rural regions, to draw the maximum benefits from the factors of knowledge economy, should, firstly, rely on the platform for innovation, which emerged in the 21st century and can be described as a search for innovative methods to contribute to food security. "Food markets are becoming more differentiated on the basis of a range of socially constructed food quality criteria" [Marsden, 1998, p. 107], resulting in the emergence of new quality-food markets in addition to (and superimposed on) the existing anonymous mass food markets [Renting, Marsden, 2003, p. 393]. The factors of the knowledge society have a significant effect on their development. "A key characteristic of new supply chains is their capacity to resocialise or respatialise food, thereby allowing the consumer to make new value judgments about the relative desirability of foods on the basis of their own knowledge, experience, or perceived imagery" [Renting, Marsden, 2003, p. 398].

The new food markets should constitute segments of larger markets. For instance, direct sales can result in creating new small markets in the farm shops, farmers' farms, and farmers' cooperatives engaged in retail business, product preorder systems, etc. Such newly created markets take into account the specific features of the location, the characteristics of the needs of the consumers and producers and their interrelation. That allows to use different price levels, to reduce the costs of transaction, and to change the split-up of value added in the parts of the value chain, etc. [Bernstein, 2010, Van der Ploeg, 2010]. The shortest possible food supply chain leads to enhanced consumer confidence when the consumer has direct relationship with the farmer and buys products bypassing intermediaries. In developing direct sales, a great potential lies in a wide range of tourism measures: various fairs, exhibitions, product sales during cultural events or tours dedicated to the introduction of a special product, e.g. wine, beer, lavender routes.

Development of local food markets and implementation of innovative patterns of trade are particularly relevant in relation with Lithuania due to its farm structure with dominating small farms, which emerged after the restitution of Lithuania's independence. At the beginning of 1996 there were 147.6 thousand farmers in Lithuania. According to the size of land owned by the farmers, farms under 5 ha accounted for 27.7 percent, 19.9 percent of farms owned 5.1-10 ha of land, farms with 10.1-20 ha came up to 14.4 percent, 3.8 percent of farms held 20.1-30 ha of land, and only 2.0 percent of farms were larger than 30 ha. In 1996, the average farm size was 8.7 ha [Aleknavičius, 2008]. Small landownership has prevailed during the whole period of independence. Before Lithuania's accession to the EU, the agricultural census of 2003 counted 272 thousand farms

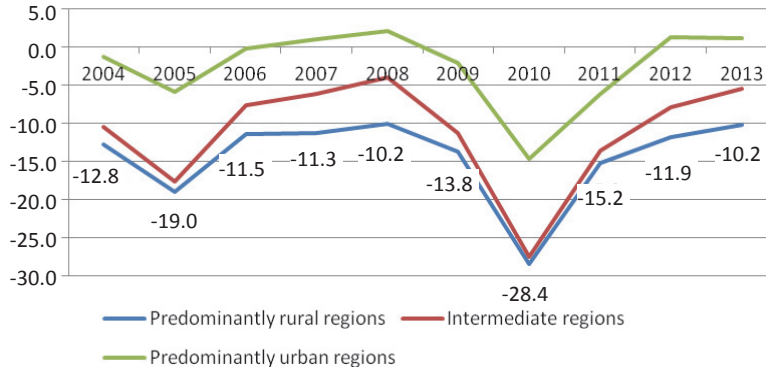
(farmers' farms, companies, and family farms). In point of fact, 62.0 percent of all the farms owned less than 5 ha and the average farm size in Lithuania was only 9.3 ha of agricultural land. The agricultural census of 2010 revealed that the number of farms had increased and reached 364.4 thousand of farms engaged in agricultural production. Changes in the structure resulted in an increase in the average farm size to 13.8 ha and 199.9 thousand farms (i.e., 54.9 percent) owned over 1 ha of agricultural land. However since the census in 2003, the number of farms with under 1 ha shrank by more than 26 percent. As compared to 2003, the biggest drop in numbers was among farms with 2-5 hectares and 5-10 hectares of utilized agricultural land (37% or 49.8 thousand farms and 30% or 17.3 thousand farms, respectively).

Projects aimed at social innovations, which are particularly important in less dense predominantly rural regions, could also contribute to the development of the knowledge society in Lithuanian predominantly rural regions, as the main problem incidental to the process of providing services is related to the shrinking numbers of consumers resultant from population decline.

After the restitution of the independence, Lithuania has lost its population. In 1996, the population of Lithuania stood at 3.6 million, while in 2012 this number dropped by 17.1 percent and was under 3 million. Predominantly rural regions lost this important resource in terms of knowledge economy faster than predominantly urban and intermediate regions. From 1996 to 2012, there was a 22.4% reduction in the population of predominantly rural regions compared to 7.8% in predominantly urban regions and 18.6% in intermediate areas. A faster population decline in predominantly rural regions happened for two principle reasons: the policy of industrialisation of agriculture and farm consolidation intended to help farmers in acquisition of modern machinery, pursued after the restitution of independence in Lithuania, and the possibilities to enjoy the benefits of free movement of workers within the EU, which emerged after the EU accession. During the whole period from 2004 to 2013, net migration per 1,000 inhabitants in predominantly rural regions was negative and ranged from 10 (in 2008 and 2013) to 28 (in the recession year of 2009).

The values of net migration in intermediate regions were also negative, but in terms of population decline they approached predominantly rural regions only in 2009. By comparison, predominantly urban regions managed to preserve a positive value of net migration in some of the years (Figure 4.8).

Figure 4.8. Net internal and international migration per 1,000 inhabitants in the regions of Lithuania from 2004 to 2013

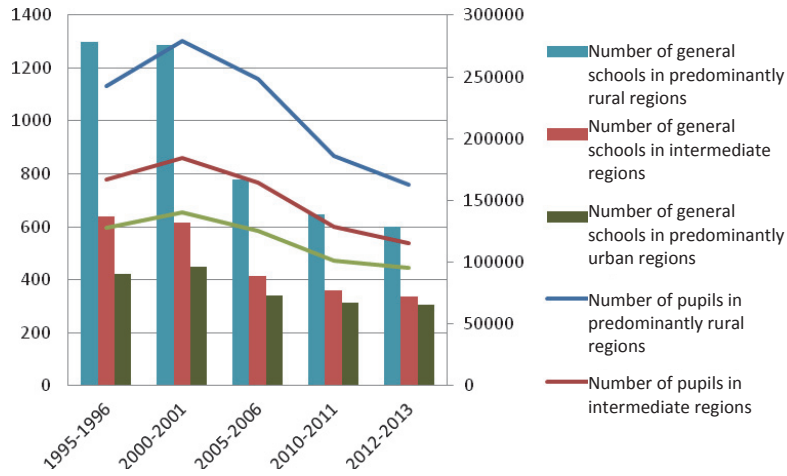


Source: calculations based on the Lithuanian Department of Statistics.

Population decline represents a highly unfavourable factor under the circumstances of knowledge society as it results in growing cost of service. To reduce the costs of providing services, local authorities tend to concentrate the provision of services in several institutions of the region and abandon small loss-making service access points. Small outermost towns are affected by such developments in the first instance. The said processes were illustrated by the data on service provision locations after of the restitution of Lithuania's independence held by the Lithuanian Department of Statistics. In small towns, the numbers of pre-school institutions drastically reduced. In 2012, their number stood at only 18 percent of that in 1991, i.e. it shrank more than fivefold. Furthermore, due to a significant decrease in the numbers of students, local authorities failed to keep some of the secondary schools. In 2000, the numbers of students, which were growing during the first years of independence, started to decline in all regions. In predominantly rural regions the decline rates were particularly rapid. In 2012, the number of general education students in predominantly rural, intermediate and predominantly urban regions stood at only 58.3%, 62.8% and 67.9% of the student number in 2000. That consequently meant that small schools were closed and the total number of schools decreased. In 2012, the numbers of schools in predominantly rural, intermediate and predominantly urban regions accounted for 46.6%, 54.6%, and 67.7% of the total number of schools in 2000, respectively (Figure 4.9).

The number of libraries under the authority of the Ministry of Culture, which were located in towns with less than 3,000 inhabitants, gradually reduced: from 1990 to 2012 it shrank by 25 percent. The numbers of municipal libraries were also declining: in towns with population under 3,000 they decreased by 5 percent.

Figure 4.9. Number of general schools and number of pupils in the regions of Lithuania from 1995 to 2013



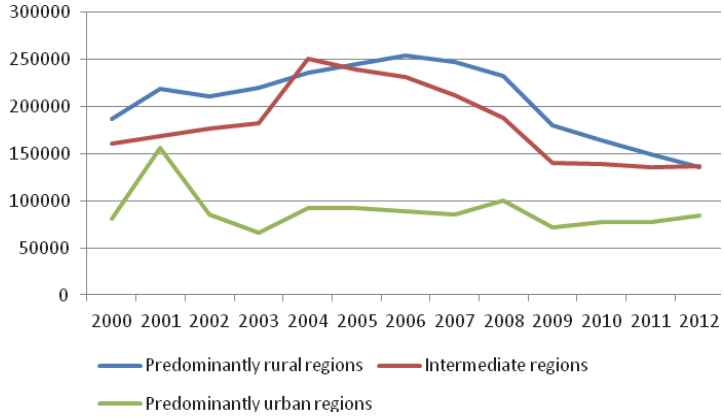
Source: calculations based on the Lithuanian Department of Statistics.

Due to the decreased availability of services in the area where they live, people were forced to go to bigger towns and cities. However, the population decline had a limiting effect on the availability of transport services to local population. From 2000 to 2012, Vilnius region was the only one to retain the passenger turnover in urban/suburban services and in 2012, as compared to 2000, passenger transportation in this predominantly urban region even increased by 3 percent. During the same period passenger turnover in intermediate regions fell by 15 percent and in predominantly rural regions it shrank by 27.1 percent (Figure 4.10).

The decreasing availability of essential services in the area where rural people live and consequently compromised quality of life are also described in the research lately published by Lithuanian scientists. Research reveals that due to the recently prevailing trend of a decrease in the number of all types of schools of general education the students experience difficulties with reaching the school and benefiting from non-formal education [Ratkevičienė, 2008]. Children who live

a longer distance away from school are less active in different sports, art or other out-of-class activities. Students who live closer to their school are in a more favourable position in choosing a preferred project team or an out-of-class activity. This, in turn, reduces the possibilities of the former students to develop their competencies required for social mobility among other things [Juodaitytė et al., 2012]. These days due to the lack of day centre facilities parents of school-age children face a number of difficulties with children care after school.

Figure 4.10. Passengers-kilometres by road of local (suburban) traffic route in the regions of Lithuania from 2000 to 2012, thousand passengers-kilometres



Source: calculations based on the Lithuanian Department of Statistics.

The lack of adequate public transport services becomes an impediment for rural population who want to see a doctor. Most people of predominantly rural regions, especially older persons or people with health problems would hardly reach a health institution, if at all, if they did not receive help from relatives, neighbours or other persons. Impediments to availability of outpatient services for patients arriving from a different area are also caused by the organisational procedures applied at the health care institutions: waiting lists for an appointment with health care specialists, queues at the health centres and doctors' offices, waiting lists for medical exams – all of those are among the main impediments of organisational nature. The said problems are related to working hours, which are often too short and inconvenient for the patients, and a lack of specialists, in predominantly rural regions in particular [Tamutienė, 2011].

Insufficient market size in predominantly rural regions holds back the establishment of private service companies. Low numbers of customers are the principle reason for the lack of main services that can make the life of rural population easier. Research shows that companies providing personal services, such as sewing, hairdressing, etc., are again in demand in rural areas [Jasaitis, Kriaučiūnienė, 2010]. A feasibility study of community business opportunities in Pakruojis region conducted by Aleksandras Stulginskis University (ASU) scientists in 2012 revealed that predominantly rural regions suffer a shortage of different services: landscape maintenance, help with providing fuel for their houses, garden work, transport, etc. [Study of community business opportunities in Pakruojis region, 2013].

The only service group, which enjoyed a growing trend in predominantly rural regions, was social services provided by municipalities at the homes of elderly and disabled persons. However the growth in the numbers of users of such services is related to the increasing numbers of elderly and disabled persons and thus the general level of service provision was not improving.

With the view of all the said problems, it is obvious that it is necessary to look for innovative ways of service provision in predominantly rural regions of Lithuania, which would make the services cheaper and readily available unlike the currently used centralised methods. Innovations are required in many areas: old people, the disabled, children, and health care, education system, personal and transport services, etc. Social and organisational innovation should not lie with public authorities alone: local communities should be encouraged to take an active part in such innovation process. Innovation projects can be initiated by people living in rural areas representing consumers' interests, who are unsatisfied with the existing accessibility and quality of service provision, and by service providers, e.g. rural teachers, librarians or medical staff, who are losing their jobs due to the decrease in numbers of service centres or financing.

4.4. Concluding remarks

To understand, why issues of knowledge society are currently challenging the development of predominantly rural regions and the mission of rural policy, requires the awareness that society is not a static entity, but an ever-changing one. Rural people of Lithuania, today, live in a society different from that of generations past. Despite the fact that over the last two decades economic and social system of Lithuanian rural areas has changed substantially, rural policy and support measures not always reflected the fact that society has entered into a new stage of evolution.

Approaches to Lithuanian rural development policy in the first decade of the 21st century were incomplete to push predominantly rural regions toward knowledge society. A more comprehensive agenda needs to go beyond information dissemination, trainings and discrete initiatives to include additional approaches.

These approaches should involve greater recognition of tacit knowledge and support rural economy and community transformations by new forms of partnership, coordination and participation, dealing with local perceptions, fostering innovations and social capital building. A failure to understand this may result in rural policy decisions that are no longer relevant to today's needs, much less tomorrow's. Moreover there seems to be a general need for ***further*** information and research relevant to rural policy strategies in knowledge society. Policy makers lack information on the best practices and skills to transform current rural development paradigm based on old model of thinking.