

INDICATION OF PRODUCTION AND NON-PRODUCTION FUNCTIONS IN RURAL LANDSCAPE

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Abstract: Abstract: Stable landscape is a goal of every human civilization, however, at the current stage of development this task is becoming ever more urgent with regard to intense development of technological structures and their negative impact on cultural landscape. This involves a relevant definition of the scope of the non-production function. At the same time, it is desirable to have a quality production background for small and medium enterprises that represent 90 % of businesses in rural areas. This paper deals with those issues and some of the applied methods are original. This paper proposes one of the potential approaches that can ensure harmonization of the production a non-production functions. We assume that this approach will lead to an increase of the volume of the overall production generated by the given territory while minimizing the costs.

Keywords: Production function, non-production function, rural area, harmonization of functions.

Introduction

Rural areas rank among priorities of the Territorial Agenda of the European Union 2020, particularly within the second and the fifth priorities that stress connectivity of city development and rural development and the sixth priority in the context of links of the rural areas to ecological and cultural values. Rural areas account for 91 % of the territory of 27 EU member states and over 56% of the population live in them. Based on this fact the rural development policy is of primary importance. Conceptual materials of the Czech Republic describe rural development as a summary policy that includes elements of agricultural policy, landscape planning, settlement and state administration. The European Union supports rural development with subsidies provided within the pillar II of the State Agricultural Policy and implemented through national Programs of Rural Development. The National Strategic Plan of Rural Development of the Czech Republic (hereinafter NSPRV) stresses improvement of economic growth, creation of new job opportunities and sustainable economic development. Based on the draft Regulation of the European Parliament and of the Council on support for rural development, one of the priorities is “Renewal, preservation and strengthening of ecosystems”, i.e. issues that are both strongly production-oriented and environmental.

Stable landscape is a goal of every human civilization, however, at the current stage of development this task is becoming ever more urgent with regard to intense development of technological structures and their negative impact on cultural landscape. This involves a relevant definition of the scope of the non-production function. At the same time, it is desirable to have a quality production background for small and medium enterprises that represent 90 % of businesses in rural areas. This paper deals with those issues and some of the applied methods are original.

Literature research

The method of anthropoecological approach to definition of rural areas can be seen as a theoretical basis for indication of production and non-production functions. The approach has been studied and used by many authors, e.g. Naveh, Lieberman (1994), Demo, Bielik (2000), Váchal (2000), Váchal et al. (2002). The production function includes:

- provision of basic food supplies for the population (assurance of food security),
- handicrafts, industrial production and services sector,
- production of necessary non-food raw materials, including biomass for energy generation and phytomass generated as a secondary product.

The non-production function which contributes to protection of components of the environment, such as soil, water, atmosphere and to maintaining of populated cultural landscape, includes:

- activities performed with the main purpose to support ecological qualities of landscape (e.g. establishment and maintenance of biocorridors and biocenters in landscape, implementation of anti-erosion measures, special protection of locations with a high natural value),
- ecological services which represent an accompanying product of production activities (e.g. keeping the agricultural land in a cultured condition, protection of water quality from products of unremoved decomposing biomass).

Rural areas are characterized by dynamic and continual development that can be demonstrated by quantitative changes of selected structural characteristics (Ihse, 1995; Fjellstad, Dramstad, 1999; Cousins, 2001). The size and speed of the changes fluctuate with fluctuating parameters of natural conditions and anthropogenic influences. The end of the last century and, particularly, the beginning of the 21st century are periods in which SME have more focused on effectiveness,

stability and their relation to the external environment. Czech authors dealing with this topic include particularly Havlíček, Kašík (2005), Šebestová (2007), Vojík (2009), Hribík (2010), Hamplová, Provazníková (2015). Foreign authors interested in the same issues are Learned (1965), Helfat (2007), Miles, Snow, Meyer (2008). Dynamics of corporate sources supports business growth and business sustainability and, last but not least, it helps to create competitive advantages in the business environment (Augier, Teece, 2006; Ambrosini, Bowman, 2009; Kuuluvainen, 2011; Teece, 2012). The importance of key factors, including the external environment, have been analyzed by Storey (1994) and Arriba (2009).

Small and medium enterprises in the Czech Republic have their potential base in the rural areas that represent over 80 % of the country's territory. An analysis made by the Association of Small and Medium Enterprises and Tradesmen of the Czech Republic (AMSP ČR, 2017) has indicated a highly negative trend in business development in the countryside where more than 45 % businesses are in a less developed category. A number of scientific outputs show a causal relation between development of a rural region and development of small and medium businesses. The decisive factor for development opportunities in a region is availability and condition of human, natural, social, technical and financial capital (Bridge et al., 1998; Arriba, 2009). According to Kuuluvainen (2011), it is good for development of the production function in a region to keep or to reproduce the maximum of income in SME as they are closer to the endogenic direction of development. Key factors important for development of the region are interconnection of all functions into one harmonious complex, synergies and coordination of individual activities and participants in the development at local and regional levels in agreement with specific features of the given area (Van der Ploeg et al., 2000; Muilu et al., 2004; Marsden and Sonnino, 2008).

Analyses of trends of functions supporting development of territories in various regions inside various states were performed e.g. by García-Ruiz et al. (1996), Fjellstad, Dramstad (1999), Moreira, Rego, Ferreira (2001), Olsson, Austrheim, Grenne (2000). Therefore it is obvious that addressing issues of production function by means of SME at the current stage of economic development requires a particular focus on stability and development of rural area while protecting environmental functions of the landscape. Synergic and lasting effects can be achieved only in harmony of both the approaches (Váchal, 2000, 2002; Straková, 2017).

The structure of European rural areas varies depending on their natural and cultural conditions in time and space (Ihse, 1995; Jongman et al., 1995; Mander et al., 2004). The Czech countryside has gone through a dynamic development, full of dramatic twists and changes (Lipský, 1995) that have until now involved several specific stages. Their classification is similar to that in the proposal of Landscape units (Váchal et al., 2002). An important milestone was the industrial revolution that meant the first important impact on the rural area because before that human activities were in balance with natural processes. Another significant event that affected the character of settlement in the rural border areas of the Czech Republic was the expulsion of Germans after the Second World War. The expulsion resulted in a sudden outflow of population from the border area. Other phenomena included founding of farming cooperatives and state farms (larger than cooperatives), coal mining, development of military training areas etc. (Sýkora, 1998). Those processes fundamentally influenced quality, incidence and harmonization of production and non-production functions in the rural area. There has been a significant increase of scattered forest and bush greenery in the landscape, however, it is typical with poor quality of variety structure and often in a non-functional condition. Particularly in the last twenty years more and more emphasis has been placed on harmonization of production functions in the rural area with concurrent stabilization and strengthening of the non-production (environmental) function. Those issues are addressed in this paper.

Material and Methods

Material

The concerned territory includes the districts of Český Krumlov and Prachatice which with its geographic location, natural, historical and cultural values rank among strategically important parts of the territory of south and south-western Bohemia. The rural landscape in that part of Šumava includes cadastral districts of mountainous Šumava and less attractive areas under the Šumava mountains (Podšumaví), in the mountainous categories HA, HB or OA and OB. Most municipalities have less than 500 people and there is no town with a population of 20 thousand residents in the concerned territory. The outlined territory features diverse natural conditions that determine the methods of farming. For this reasons the Šumava region has been divided into three parts: upland Šumava (over 800 m above the sea level), Šumava (550-800 m above the sea level) and Podšumaví (less than 550 m above the sea level). The territory addressed herein is a part of the upland Šumava.

The upland Šumava consists of cadastral districts above 800 m above the sea level where arable land has been (or later will be) transformed into meadows and pastures. The priority in this 1st zone of the region is an increased protection of natural environment where the use of agricultural land will mainly consist in maintenance of the landscape.

Methods

Innovated procedure for specification of the scope of production and non-production (environmental) functions

An innovative method for calculation of the overall production potential of agricultural land CPPzp

A newly proposed formula for calculation of the overall production potential of agricultural land consists of two parts:

- determination of the production potential of agricultural land PPzp,
- determination of the environmental (non-production) potential of agricultural land EPzp.

$$CPP_{ZP} = PP_{ZP} + EP_{ZP}$$

The dependence between the production and non-production (environmental) components is expressed by means of a zoning formula of environmental functions in the landscape.

Calculation of the production potential of soils using a point-based method (VÚEZ Praha, VÚMOP Praha)

For this purpose a synthetic-parametric method of uniform point rating of all Soil-quality Ecological Units (BPEJ) in the Czech Republic has been used, with the following formula:

$$BH_{BPEJ} = (B_{HPJ} + B_Z + B_{SE} + B_{KH}) \cdot K_{KR}$$

where:

B_{HPJ} points for the main unit in the range 1 – 50 points,

B_Z points for grain size in the range 1 – 25 points,

B_{SE} points for sloping ground (S) and exposure (E) in the range 0 – 10 points,

B_{KH} points for rocky soil (K) and depth (H) in the range 0 – 15 points,

K_{KR} coefficient of a climatic region in the range 0.60 – 1.00.

A newly proposed – innovative method for calculation of the overall production potential of agricultural land CPPzp

A newly proposed formula for calculation of the overall production potential of agricultural land consists of the following 4 steps:

- specification of a production potential of agricultural land PPZP,
- specification of an environmental (non-production) potential of agricultural land EPZP,
- specification of a reduced production potential of agricultural land RPPZP,
- calculation of an overall production potential of agricultural land CPPZP.

Specification of PPZP

The newly proposed formula for calculation of the production potential of agricultural land PPzp is based on the existing formula for evaluation of soil-climatic properties with a point-based method – BHBPEJ (Němec, 2001). It provides the so-called initial production potential VPPZP which is subsequently adjusted with the newly proposed deficit parameters with respective point values (Tab 1). **Tab 1** Corrective deficit parameters (example)

Formula for calculation of PPZP

$$VPP_{ZP} = BH_{BPEJ} = (B_{HPJ} + B_Z + B_{SE} + B_{KH}) \cdot K_{KR}$$

$$PP_{ZP} = VPP_{ZP} \cdot (1 - \sum O_{DP})$$

where:

BH_{BPEJ} is a point value of Soil-quality Ecological Units (BPEJ)

PP_{ZP} production potential of agricultural land,

VPP_{ZP} initial production potential,

O_{DP} corrective deficit parameter,

B_{HPJ} points for the main unit in the range 1 – 50 points,

B_Z points for grain size in the range 1 – 25 points,

B_{SE} points for sloping ground (S) and exposure (E) in the range 0 – 10 points,

B_{KH} points for rocky soil (K) and depth (H) in the range 0 – 15 points,

K_{KR} coefficient of a climatic region in the range 0.60 – 1.00,

The calculation of the environmental potential of agricultural land EPZP requires determination of the initial environmental potential (VEPZP). Determination of VEPZP is based on the assumption that $PPZP + VEPZP = 100$. VEPZP is further adjusted with an corrective environmental parameter. The parameter is calculated using the following formula:

$$OE_P = VEP_{ZP} \cdot \sum OE_K$$

Tab 1 Corrective deficit parameters (example)

No.	Corrective coefficient	Point value
1	soil without a developed soil profile	0.062
2	shallow soils	0.062
3	shallow soils in the infiltration area	0.062
4	permeable and slightly permeable soils in the infiltration area	0.062
5	medium skeletal soils (25 – 50%) in the infiltration area	0.063
6	soil on a slope >17°	0.062
7	ravines	0.062
8	soil on a slope >12°	0.062
9	soil on a slope 7 – 12, soil erosion factor >0,48	0.063
10	catena Glr	0.063
11	alluvial light and alluvial gley soils in the cold and mild cold climatic region	0.062

Tab 2 Corrective environmental coefficients (CEC)

No.	Environmental function of soils – corrective coefficient	Point value
1	biomass production	0.01
2	filtration	0.02
3	accumulation	0.045
4	transformation	0.045
5	buffering	0.02
6	transport	0.01
7	biological basis, genetic pool, reclamation function	0.02
8	soil as historic medium	0.01
9	raw material resource	0.01
10	space for human activities	0.02

Further:

$$EP_{ZP} = VEP_{ZP} + OE_P$$

Determination of RPPZP

The reduced production potential is determined by correction of the production potential with the corrective environmental parameter.

$$RPP_{ZP} = PP_{ZP} - OE_P$$

Determination of CPPZP

$$CPP_{ZP} = RPP_{ZP} + EP_{ZP}$$

Results and Discussion

Calculation of the production and environmental potential of agricultural land for the concerned area

Tab 3 Calculation of the production and environmental potential of agricultural land for the Vimperk area

BPEJ	area (m ²)	SP _{PAS} (%)	C _{DP}	PP _{PAS} (%)	SEP _{PAS} (%)	CE _{LP}	EP _{PAS} (%)	RPP _{PAS} (%)
936040	115 402	49	0.159	41	59	0.090	64.3	35.7
936210	180 116	53	0.167	44	56	0.090	61.0	39.0
936240	1 924 667	46	0.159	39	61	0.090	66.5	33.5
936310	22 073	52	0.167	43	57	0.090	62.1	37.9
936340	569 809	46	0.159	39	61	0.090	66.5	33.5
936410	43 900	47	0.167	39	61	0.090	66.5	33.5
936440	518 521	41	0.142	35	65	0.090	70.9	29.2
936540	162 941	39	0.159	33	67	0.090	73.0	27.0
937160	132 555	37	0.137	32	68	0.090	74.1	25.9
937460	161 407	31	0.137	27	73	0.045	76.3	23.7
937560	93 270	29	0.137	25	75	0.045	78.4	21.6
939190	6 093	13	0.094	12	88	0.000	88.0	12.0
939290	3 279	13	0.094	12	88	0.000	88.0	12.0
939390	8 468	13	0.089	12	88	0.000	88.0	12.0
940670	50 509	36	0.122	32	68	0.090	74.1	25.9
940680	384 566	27	0.109	24	76	0.045	79.4	20.6
950110	1 072 003	45	0.198	36	64	0.090	69.8	30.2
950140	1 025 605	39	0.188	32	68	0.090	74.1	25.9
950410	90 178	40	0.198	32	68	0.090	74.1	25.9
950440	200 363	37	0.188	30	70	0.090	76.3	23.7
950540	272 603	32	0.188	26	74	0.045	77.3	22.7
968110	280 167	17	0.152	14	86	0.000	86.0	14.0
972010	1 127 554	19	0.152	16	84	0.045	87.8	12.2
973110	455 971	19	0.152	16	84	0.045	87.8	12.2
973130	84 494	14	0.144	12	88	0.000	88.0	12.0
974110	338 943	13	0.171	11	89	0.000	89.0	11.0
Total	9 325 456	30,0		25.0	75.0		78.5	21.5

Calculation example for BPEJ 95011

95011 – belongs to the infiltration and accumulation area depending on the deficit parameter No. 5, 12, 16.

$$VPP_{ZP} = [BH_{BPEJ} = (B_{HPJ} + B_Z + B_{SE} + B_{KH}) \cdot K_{KR}]$$

$$= 45\%$$

PP_{ZP} = reduction of the production potential by 3 deficit parameters

$$= 45 \cdot (1 - 3 \cdot 0,063) = 36\%$$

Soil-quality Ecological Units (BPEJ) assigned infiltration category 4 – low weight (tab 7) → proposal of an agricultural measure - rotation of crops and keeping the minimum vegetation cover.

$$VEP_{ZP} = 100 - PP_{ZP} = 100 - 36 = 64\%$$

$$OE_P = VEP_{ZP} + (0.045+0.045) = 5.8\% \text{ (tab 4 } \rightarrow \text{ coefficient 3. 4)}$$

$$EP_{ZP} = VEP_{ZP} + OE_P = 64 + 5.8 = 69.8\%$$

$$RPP_{ZP} = PP_{AS} - OE_P = 36 - 5.8 = 30.2\%$$

$$CPP_{ZP} = RPP_{ZP} + EP_{ZP} = 30.2 + 69.8 = 100\%$$

Tab 4 Allocation of Soil-quality Ecological Units (BPEJ) into geomorphological areas depending on the deficit parameters

Geomorphological area	Number of deficit parameters	Soil-quality Ecological Units (BPEJ)
Infiltration area	1	93919 93929 93929
	2	93716 93746 92756
	3	93716 93746 92756
	4	93604 93621 93624 93631 93634 93641 93544 93654
	5	93604 93621 93624 93631 93634 93641 93544 93654 95004 95014 95044
Transformation area	6	94067 94068
	7	
	8	94067 94068
	9	
Accumulation area	10	97411 97643
	11	
	12	95004 95014 95044
	13	96811 97201 97311 97313 97411 97201
	14	97643
	15	
	16	95004 95014 95044

Tab 5 General overview of calculation of the farming land production potential (example)

Soil-quality Ecological Units (BPEJ)	Production potential initial	Production potential corrected	Infiltration category	Proposed measure
93604	47	41	2 – high	C
93621	50	44	3 – medium	C
93624	45	39	2 – high	C
93631	49	43	3 – medium	C
93634	44	39	2 – high	C
93641	45	39	2 – high	C
93644	40	35	3 – medium	C
93654	38	33	3 – medium	C

Proposed zoning formulas

The newly proposed so-called Basic zoning formulas can be developed as inputs for practical specification of a ratio of the production and non-production functions in a specific part of a rural area. They express:

- a) permissible limits of production and non-production functions, with specification of the overall production potential of the agricultural land CPP_{zp} ,

- b) a permissible range of the production potential of agricultural land PP_{zp},
- c) a scope and structure of the environmental function of agricultural land EP_{zp}.

Tab 6 Permissible limits of basic structures with specification of the overall production potential of agricultural land CPP_{zp}

No.	Basic genetic types AEKC	Model	Landscape structures – area share in %		
			Natural /P/	Anthropogenic /AG/	Anthropic /AP/
1	natural with insignificant application of anthropogenic and anthropic structures	P	90 - 95	0 - 10	0 - 10
2	natural with application of anthropogenic structures	P/AG/	70	0 - 30	
3	natural with application of entropic structures	P/AP/	70		0 – 30
4	natural with application of anthropogenic and anthropic structures	P/AG-AP/	50	0 - 40	0 – 40
5	natural with application of anthropic and anthropogenic structures	P/AP-AG/	50	0 - 40	0 – 40

Tab 7 Permissible range of the production potential of agricultural land PP_{zp}

	CPP _{zp(territory)}	PP _{zp}	EP _{zp}	RP
Point value	14%	28%	86%	15%

Commentary:

- The results shown in the tables 6 and 7 indicate that the overall production potential of the rural area (territory) is 14 % which can be classified as a territory with a prevailing environmental function. According to the newly proposed classification of anthropogenic landscape units (AEKC) proposed by the authors, it is a natural territorial unit with application of anthropogenic structures.
- The production of potential of agricultural land, which is a basis for the production activity of the territory is 28%, including related or separately provided handicrafts and services.
- The scope of environmental functions on the given territory (AEKC) is 86 % which predetermines the natural potential of the territory particularly for non-production utilization through development of environmental functions, e.g. taking care of public goods, cultural and recreational activities, ecological-securitative activities and social functions.

Conclusion

Modern planning and management of rural areas sees landscape as a system the existence of which depends on natural, social and economic conditions. The paramount requirements for designing of a rural area and its management are to ensure its sustainability and to preserve its environmental value. This paper proposes one of the potential approaches that can ensure harmonization of the production a non-production functions. We assume that this approach will lead to an increase of the volume of the overall production generated by the given territory

while minimizing the costs. At the same time, the principle of protection and development of the environment will be observed wherever the threat is close to the permissible limit from the viewpoint of needs of the human society.

References

- Arriba, B. R. 2009. Globalization, economic policy and rural development in Europe. *Romanian journal of political science*, Vol. 9, No. 1, pp. 3-13. <http://www.sar.org.ro/polsci/?p=156>
- Ambronini, V., Bowman, C. 2009. What are Dynamic Capabilities and are They a Useful Construct in Strategic Management? *International Journal of Management Review*, Vol. 11, No. 1, pp. 29-49. ISSN 1460 8545. DOI <https://doi.org/10.1111/j.1468-2370.2008.00251.x>
- Augier, M., Teece, D.J. 2006. Understanding complex organization: the role of know-how, internal structure, and human behavior in the evolution of capabilities. *Industrial and Corporate Change*, Vol. 15, No. 2, pp. 395-416. DOI: doi:10.1093/icc/dtl005
- Bridge, S., O'Bridge, S., O'Neill, K., Cromie, S. 1998. *Understanding Enterprise, Entrepreneurship & Small Business*. London: Macmillan, 1998, 320 p. ISBN 0-3336 8348-X.
- Cousins, S. A. O. 2001. Analysis of land-cover transitions based on 17th and 18th century cadastral maps and aerial photographs. *Landscape Ecology*, Vol. 16, pp. 41–54.
- Demo, M., Bielek, P. 2000. *Regulačné technológie v produkčnom procese poľnohospodárskych plodín*. Nitra: Slovenská poľnohospodárska univerzita v Nitre, 2000, 647 p. ISBN 8071377325, 9788071377320
- Fjellstad, W. J., Dramstad, W. E. 1999. Patterns of change in two contrasting Norwegian agricultural landscape. *Landscape and Urban Planning*, Vol. 45, pp. 177–191.
- García-Ruiz, J. M., Lansata, T., Ruiz-Flano, P., Ortigosa, L., White, S., Gonzáles, C., Martí, C. 1996. Land use changes and sustainable development in mountain areas: a case study in the Spanish Pyrenees. *Landscape Ecology*, Vol. 11, No. 5, pp. 267-277. ISSN 0921 2973.
- Hamplová, E., Provazníková, K. 2015. Opinion and Attitudes of Entrepreneurs of Small and Medium-Sized Business in the Czech Republic Conditions. *Procedia Economics and Finance*. Vol. 23, pp. 942-947. ISSN 2212-8271. DOI: [https://doi.org/10.1016/S2212-5671\(15\)00438-4](https://doi.org/10.1016/S2212-5671(15)00438-4)
- Havlíček, K., Kašík, M. 2005. *Marketingové řízení malých a středních podniků*. Praha: Management Press. 172 p. ISBN 80-7261-120-8.
- Helfat, C.F. 2007. *Dynamic capabilities: understanding strategic change in organizations*. Malden: Blackwell. 160 p. ISBN 978-1-4051-3575-7.
- Hribík, J. 2010. Vývoj malého a středního podnikání v České republice a Evropské unii. In *National and Regional Economics VIII*. Herlany, Slovak Republic: Technical University of Košice, pp. 362-371. ISBN 978-80-553-0517-2.
- Ihse, M. 1995. Swedish agricultural landscapes– patterns and changes during the last 50 years, studied by aerial photos. *Landscape and Urban Planning*, Vol. 41, No. 1–3, pp 21–37. ISSN 0169-2046.
- Jongman, R. H. G. (ed.) et al. 1995. Ecological and landscape consequences of land cover change in Europe. *Proceedings of the first ECNC on land cover change and its ecological consequences*, 16-18 February, Tilburg.
- Kuuluvainen, A. 2011. *Dynamic capabilities in the International Growth of Small and Medium-Sized Firms* (PhD-Thesis, Turku School of Economics), 262 p. ISBN 978-952-249-175-9. Available in: https://www.utupub.fi/bitstream/handle/10024/113653/Ae4_2011.pdf?sequence=1&isAllowed=y
- Learned, E.P. 1965. Business policy: text and cases. In R D Irwin, R. D., Lundstrom, A., Stevenson, L.S.A (ed.): *Entrepreneurship Policy. Theory and Practice*. New York: Springer, 2005, 310 p.
- Lipský, Z. 1995. The changing face of the Czech rural landscape. *Landscape and Urban Planning*, Vol. 31, No. 1, pp. 39-45. DOI: [https://doi.org/10.1016/0169-2046\(94\)01034-6](https://doi.org/10.1016/0169-2046(94)01034-6)
- Mander, U., Palang, H., Ihse, M. 2004. Development of European landscapes. *Landscape and Urban Planning*, Vol. 67, No. 1–8. Editorial. ISBN 0-387-24140-X
- Marsden, T., Sonnino, R., 2008. Rural development and the regional state: Denying multifunctional agriculture in the UK. *Journal of Rural Studies*, Vol. 24, No. 4, pp. 422-431. ISSN 0743 0167. DOI 10.1016/j.jrurstud.2008.04.001.
- Miles, R.E., Snow, C.C., Meyer, A.D. 2008. *Organizational strategy, structure, and process*. Stanford, Calif: Stanford University Press. 304 p. ISBN 978-0804748407.

- Moreira, F., Rego, F.C., Ferreira, P.G. 2001. Temporal (1958-1995) patterns of changes in a cultural landscape of northwestern Portugal: implications for fire occurrence. *Landscape Ecology*, Vol. 16, pp. 557-567.
- Naveh, Z., Liebermann, A.S. 1994. *Landscape ecology: Theory and Application*. New York: Springer – Verlag, 1994. s. 360.
- Němec, J. 2001. *Bonitace a oceňování zemědělské půdy České republiky*. Praha: Výzkumný ústav zemědělské ekonomiky. ISBN 80-85898-90-X.
- Olsson, E.G.A., Austrheim, G., Grenne, N. 2000. Landscape pattern in mountains, land use and environmental diversity, Mid-Norway 1960-1993. *Landscape Ecology*, Vol. 15, pp. 155-170.
- Straková, J. 2017. *Analýza vybraných faktorů vnějšího prostředí na stabilitu malých a středních podniků v ČR*. Mladá věda, Vol. 5, No. 9, pp. 124-133. ISSN 1339-3189.
- Storey, D.J. 1994. *Understanding the small business sector*. International Thomson Business Press, pp. 355. ISBN 9781861523815.
- Sýkora, J. 1998. *Venkovský prostor I*. Praha: Vydavatelství ČVUT. 62 p.
- Šebestová, J., Wagnerová, E. 2007. Analysis of endogenous factors influencing small and medium sized enterprises: The case of the Moravian-Silesian region. *Ekonomický časopis*, Vol. 55, No. 4, pp. 411-424.
- Teece, D.J. 2012. *Strategy, Innovation and the Theory of the Firm*. Edward Elgar Publishing, 492 p. ISBN 978 1 84980 864 4.
- Váchal, J. 2000. *Metoda postupné projekce ekologických systémů hospodaření (JU ZF Czech Budějovice, Habilitační práce)*, 152 p.
- Váchal, J. et al. 2002. Methodology of the anthropoecological stabilization of landscape. In BTU Cottbus, Germany, pp. 143-150.
- Van der Ploeg, J.D., Renting, H., Brunory, G., Knickel, K., Mannion, J., Marsden, T., De Rost, K., Sevilla-Guzmán, E., Ventura, F. 2000. Rural Development: from Practices and Policies towards Theory. *Sociologia Ruralis*, Vol. 40, No. 4, pp. 391-408. ISSN 0038-0199. DOI: <https://doi.org/10.1111/1467-9523.00156>
- Vojík, V. 2009. *Podnikání malých a středních podniků na jednotném trhu EU*. Praha: Wolters Kluwer. ISBN 978-80-7357-467-3.