

Environmental responsibility in sustainable agriculture

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Abstract

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Environmental responsibility is presented as an important prerequisite for the transition to sustainable agriculture. For its definition, we consider inspiring the theory of H. Jonas and consequently, we draw attention to the importance of environmental responsibility for the development of sustainable agriculture. It is one of the pillars of the concepts of sustainable development as well as corporate social responsibility, on which this new economic model is based, while it is assumed that the entities in sustainable agriculture are able to increase productivity in the long term thanks to environmental responsibility, while respecting the biological principle as well as the principle of sustainability. Based on the research carried out in today's agriculture, we point to the degree of environmental responsibility, or rather irresponsibility, in deciding on issues related to the environment.

Keyword: environmental responsibility; sustainable agriculture; sustainable development; corporate social responsibility

Introduction

Nowadays, there are more and more concerns about how we can ensure the quality of the environment, which is the basis for a healthy life of current and future population. Global climate change, biodiversity loss, growing waste amount, risks arising from the unsustainable use of natural resources (renewable and non-renewable), as well as other environmental risks are linked to economic development, including the development of agriculture. At the same time, these changes point to the unsustainability of the conventional industrial model of economy, which considers nature mainly as a source of raw materials eventually as a waste storage? The transition to a new alternative model of economy – sustainable economic model – is proving as necessary. Representatives of new economic theories and schools are convinced of the need to develop individual areas of the economy in sustainable ways.

The paper focuses on environmental responsibility in sustainable agriculture, which is considered as one of the import-

ant prerequisites for the transition to this sustainable economic model as well as to others. In sustainable agriculture, it mainly concerns the nutrition of the population and other roles of this economic sector in society, while natural resources shall be managed in the ways that ensure their availability also in the future. This role has not been satisfactorily fulfilled by traditional agriculture. Thanks to environmental responsibility, for example, the burden on the environment should be reduced, the ecological balance of the landscape should be ensured, biological diversity, natural land management methods and regional development should be supported, etc.

Some expectations have already been partially met, while we point out that the transition to the sustainable economic model in agriculture requires doing business in this sector also in line with the concepts of corporate social responsibility (CSR) and sustainable development. Environmental responsibility is one of the pillars not only of the mentioned concepts but also of sustainable agriculture, while the article outlines that in practice it has not been applied in the required way up to now.

Material and Methods

Relying on theoretical research, qualitative analysis of texts and documents, but also referring to some data and information obtained through previous empirical research, it is first explicated that environmental responsibility is an important factor in the transition to the new model of economy – sustainable agriculture. The paper thus responds to the fact that among the proposals concerning the ways and tools to adjust the current economic system, but especially the transition to the new sustainable economic model, this requirement has been emphasized only to a small extent up to now.

Environmental responsibility is first clarified as one of the important preconditions for the transition from industrial model of the economy to sustainable model, specifically to sustainable agriculture. Consequently, it should be reflected in the patterns of behavior on which the new sustainable model in agriculture is based, in order to provide nutrition for the world's population so that natural resources are used in ways that will ensure their availability in the future.

Relying on a brief definition of traditional and sustainable agriculture, also through international documents, the importance of environmental responsibility for the development and functioning of sustainable agriculture is clarified. At the same time, it is pointed out that environmental responsibility should be based on environmental awareness.

Given that H. Jonas in his theory emphasizes especially the responsibility as a duty to humanity and nature, so the values that are key to sustainable agriculture, we draw attention to his theory, as we consider it inspiring for the determination of environmental responsibility in sustainable agriculture.

In the effort to emphasize the need for environmental responsibility not only in sustainable agriculture but in general in the development of new sustainable model of the economy, we point out that this type of responsibility is an important component and common idea of the concepts of corporate social responsibility and sustainable development. At the same time, this reinforces its importance and may indirectly encourage the subjects to take this requirement into account.

In order to point out the state of environmental responsibility of business entities in agriculture, we outline the results of research of the implementation of soil protecting agri-environmental measures on agricultural land in Slovakia during the second programming period of the Rural Development Program (RDP) 2007-2013 at the level of Slovak regions for individual regions, and we also rely on the evaluated empirical data of research related to the costs of environmental protection in Slovakia by economic activ-

ities in the years 2009-2018. Although the results of these researches cannot be considered sufficiently representative to formulate general statements about environmental responsibility in contemporary agriculture in Slovakia, the given data indicate the degree of environmental responsibility, or rather irresponsibility, in the decision-making of subjects in agriculture on environmental issues.

In the discussion, we outline a utilitarian argumentation in favor of environmental responsibility. We point out its benefits for doing business in sustainable agriculture. As it increases population's confidence in agricultural production, it also helps to ensure sales, profits and a good reputation in this sector. The conclusion represents a generalization of the results of theoretical research as well as realized and published empirical research, to which we refer in the paper.

Results and Discussion

The transition to sustainable agriculture and environmental responsibility

Industrial model of the economy is a linear model, which is characterized by a one-way process of “sources – products – waste”. It is supported by neoclassical economic theory, which allows explaining the effective ways of using limited resources only in terms of the present, while it deals only partially with the consequences of economic activities of individual entities on nature. Thus, traditional agriculture¹ fulfills its role in society mainly by focusing on achieving economic growth and profit, while paying minimal attention to environmental values and others that are compatible with a sustainable way of life.

The industrial system gradually began to disintegrate. This is associated with growing instability in the world, disruption of social ties, and disintegration of the moral foundations of society and so on. Gradually, theoretical streams of new economic thinking began to develop (see more, for example Henderson (2001), Schumacher (1973) and other that propose new economic model. This model is based on the understanding of economy as a subsystem of nature and it should operate in accordance with the preservation of the environment on Earth. The new economic model – sustainable model² – should become the basis for formulating and implementing sustainable development policies. It is an open interacting subsystem that respects nature, while the other

¹ Traditional agriculture as the dominant agricultural model is also referred to as industrial.

² The main characteristics that distinguish this new sustainable economic model from the conventional industrial model see, for example, in Klinec, 2010.

characteristics are: cyclicality, i. e. the effort to imitate nature, the effort to minimize waste, the consumption of raw materials and energy, the elimination of artificial support for the growth of consumption, the diversification of production and services, the acceptance of long-term horizons, etc. (Klinec, 2005; 2010; Paulík & Valach, 2006; Hanousek, Shamshur & Trešl, 2019 and other). Its main criterion is human satisfaction and his coexistence with nature (Henderson, 2001; Schumacher, 1973 and other).

Sustainable agriculture has also the characters of the new economic model. FAO defines them as “the management and conservation of the natural resource base, and the orientation of technological change in such a manner as to ensure the attainment of continued satisfaction of human needs for present and future generations. Sustainable agriculture conserves land, water, and plant and animal genetic resources, and is environmentally non-degrading, technically appropriate, economically viable and socially acceptable” (FAO, 1988)³. “To be sustainable, agriculture must meet the needs of present and future generations for its products and services, while ensuring profitability, environmental health, and social and economic equity. Sustainable agriculture would contribute to all four pillars of food security – availability, access, utilization and stability – in a manner that is environmentally, economically and socially responsible over time” (FAO, 2014).

As stated: “The aim of environmental policies should be targeted to stabilize and sustain all sectors that care about the environment, the landscape, and natural resources for future generations” (Maitah et al., 2020). Thus also the sustainable agriculture. These principles are gradually being reflected in the official line and political documents in the Slovak Republic as well⁴.

As in the core of every responsibility⁵ there is a relationship to the commitment, in environmental responsibility it is the commitment to preserve and protect the environment, which presupposes the prevention and remediation of environmental damages. The Environmental Liability

Directive, which has created responsibility regime valid in the whole EU⁶, and it is based on the principle “the polluter pays”⁷, regulates activities throughout the whole economy. We are of the opinion that in sustainable agriculture the principle of environmental responsibility should be accepted, both by individuals and organizations, on a voluntary basis, recognizing the possible negative consequences on the environment. We appear from the assumption that the decision of entities to realize themselves in this area of the economy presupposes the positive attitude towards nature, more specifically to the soil, living organisms, interest in developing them, protecting them, and overall, approaching them responsibly. Environmental responsibility should be based on environmental awareness, awareness of the value of the environment. However, we agree with the statement that the environment does not have yet such a value that would correspond to its factual significance so, the existential value. The existence of environmental legal norms is not and cannot be considered as sufficient to determine the level of environmental awareness (Smolková, 2004). And it is environmental awareness that we consider as an important precondition for the choice of responsible practices and goals in agriculture but also in other sectors of the economy.

Within the context of the understanding of environmental responsibility in sustainable agriculture, we consider inspiring the theory of Jonas, according to who it is irresponsible to perceive the nature in terms of purposes for human, and also as a mean or instrument of human well-being. He points out that technical interventions in nature are not ethically neutral and that the existing crisis in the environment can be averted through new responsible action that will reflect the threat to human civilization. He formulates new imperatives for human action in the context of environmental responsibility: “Act so that the effects of your actions are compatible with the permanence of genuine human life“. Or: „Do not compromise the conditions for an indefinite continuation of humanity on earth!“ (Jonas, 1997). With these imperatives, he emphasizes responsibility as a duty to humanity and to nature. Mankind has a responsibility to the future generations to maintain the conditions for their lives. It is a duty of self-repression for all people in the world, including those who have not yet been born.

³ See also, for example, Macák & Smatana, 2019, and other.

⁴ The goals related to ensuring sustainable agriculture, which should be resilient to climate change and extreme weather fluctuations, and will ensure food security in the Slovak Republic, are embodied in the National Investment Plan of the Slovak Republic for the years 2018-2030 (see more the Office of the Deputy Prime Minister for Informatization and Investments, n. d.). Important prerequisite for the fulfillment of this plan is environmental responsibility.

⁵ The term responsibility (from the Latin *respondeo*) is put by many people in connection with the term – *spondeo*, from the word promise, guarantee. The use of term responsibility is linked to the multicontextuality.

⁶ See more in Európska Komisia (n. d.).

⁷ The principle „the polluter pays“ is introduced by the Article 130, paragraph 2 of the Treaty on the Functioning of the European Union (EU, 2012) and it serves as a basis for the Environmental Safety Directive. Its essence is that all environmental costs need to be passed to producers and consumers and not to other parts of society, other countries, or future generations.

According to the interpretation of responsibility of H. Jonas' as a causal attribution of performed acts, the entities in sustainable agriculture should be responsible for the performed acts, which means, be responsible for production processes and be responsible for their consequences (for example, the polluter pays principle) and also for environmental damages (waters, soil, air, etc.) In addition, they are also responsible for what needs to be done to maintain a healthy environment, for elimination of environmental problems, risks, etc. More specifically, businesses in the sustainable economy have responsibility for environmental quality, protection, and safety. "An environmental quality standard is a limit for environmental disturbances; in particular, from ambient concentration of pollutants and wastes, that determines the maximum allowable degradation of environmental media" (OECD, 2003). On behalf of environmental safety and protection, responsible fertilizer management should be applied in sustainable economy, in order to protect the soil and prevent contamination of water-courses, use the energy-saving technologies, improve climate control, etc. The systematic application of similar practices in agriculture, in order to preserve healthy environment, including the cost of environmental protection, represents a manifestation of environmental responsibility and an important step towards sustainable agriculture.

Environmental responsibility – the common pillar of corporate social responsibility, sustainable development, and sustainable economic model in agriculture

From the above mentioned vision, it is clear that FAO requires entrepreneurship in sustainable agriculture to comply with all three principles on which the concept of CSR is based. As this agriculture is committed to meeting the needs of present and future generations, it is also committed to take into account the concept of sustainable development⁸.

Generally, there are three main pillars of CSR – economic, social, and environmental. The actions of economic subjects are considered to be responsible if they contribute to economic prosperity, social capital, and maintain environmental quality⁹. In accordance with environmental pillar, effective management of physical resources is required so that they are preserved for the future. Taking into account that all bio-systems have a finite capacity, human activities must be managed in such a way that they do not endanger the health of these systems.

⁸ The most common definition of sustainable development offers the Brundtland Report – Our Common Future (World Commission on Environment and Development, 1987).

⁹ See more in, for example Commission of the European Communities, 2001; Bowen, 2013; Crane & Matten, 2007; etc.

As it is stated: "The desired relationship between agriculture and the environment reflected in the concept of sustainable agriculture". The aim is to bring agricultural land and natural resources management, oriented towards the obtaining of effects, into the line with social values of environmental protection and natural or cultural heritage" (Svatoš, 2006). Sustainable agriculture should be based on the management of natural resources in the ways that ensure their availability in the future (Macák & Smatana, 2019), through what this type of agriculture is clearly avowed to the concept of sustainable development. Broader understanding of sustainability then relates to land use, more specifically to the protection of biotopes, biodiversity or the protection of the landscape.

Sustainable development forms the basis of the concept of sustainable agriculture and, in line with this, human development should take place while preserving the ability of natural systems to provide the natural resources and ecosystem services on which the economy and society depend. This concept is also based on pillars – economic, social and environmental – which should be equally taken into account. Within the environmental pillar, environmental responsibility covers the conservation of natural resources, planetary living systems, including diversity across the planet. Finally, as the Report of the World Commission on Environment and Development – *Our Common Future* – states, ecosystems do not respect national boundaries (World Commission, 1987). The report contains challenges for individual sectors of the economy including agriculture. They concern Food Security: Sustaining the Potential, but also some of the practices and technologies used in agriculture, especially in the developing world, but also the consumption of agricultural land, the achievement of sustainable production and consumption, in order to protect nature and the environment¹⁰, etc.

Outline of agri-environmental measures in agriculture in the Slovak Republic as one of the manifestations of environmental responsibility

Both, the state and the European Union, strive to promote environmental responsibility, as can be seen in the directives adopted by the European Parliament and the European Council¹¹. Gradually, the tools to support sustainable agri-

¹⁰ Achieving sustainable consumption and production is a sustainable development goal no. 12 (see more in UN Sustainable Development Goals, n. d.).

¹¹ For example, Directive 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage (EUR-Lex, 2004), Environmental liability directive, Protecting Europe's Natural Resources (European Commission, 2013) and others.

Table 1. The share of environmental protection costs according to economic activities in total corporate expenditures, %

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Agriculture (01 – 03)	0.8	0.9	0.9	0.5	0.3	0.4	0.2	0.3	0.29	0.3
Mining of minerals (05 – 09)	0.3	0.3	0.6	0.3	0.3	0.4	0.2	0.5	0.11	0.2
Industrial production (10 – 33)	37.2	41.0	36.1	34.7	37.5	33.7	25.2	26.7	35.1	29.5
Production of electricity, gas and water (35 – 36)	31.4	32.4	29.7	31.6	27.4	36.6	49.6	40.1	29.5	20
Specialized producers (37 – 39)	16.1	17.3	21.4	24.3	25.2	24.7	22.3	29.2	31.2	44.8
Other activities (41 – 99)	14.2	8.2	11.3	8.6	9.2	4.1	2.5	3.2	3.8	5.2
Totally	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Enviroportal, 2019

culture have being developed and implemented. It is mainly about some agri-environmental measures, such as resource management requirements¹², agri-environmental schemes but also, for example, direct payments, several directives, the principle of cross-compliance, adherence to the good agricultural practice, payments in the interests of climate and the environment (the so-called greening) and agri-environmental climate measures (AEKO), etc. (for more details see, for example, Klocoková & Lindbloom, 2006).

Nevertheless, for many subjects in agriculture the maximizing profit-oriented production is probably a higher goal than protecting the environment. As an example, we can mention the statement regarding the results of research on the implementation of soil protection agri-environmental measures on agricultural land in the Slovak Republic during the second programming period of the Rural Development Program (RDP) 2007 – 2013 at the level of regions: “The overall effectiveness of the soil protection measures of the RDP SR was reduced due to the economic “inefficiency” of some compensatory payments” (Zverková & Sviček, 1993). And indirectly, the declining costs of agriculture for environmental protection also point to this (Table 1).

The decrease in agricultural expenditures on the environment seems to be linked to the preference for rentability and profit, and also to the incorrect valuation of the environment not only for business in agriculture, but also for life as such. More specifically, introduced data reveal that agricultural entities are dominated by efforts to report results, regardless of the depletion of natural resources and the costs of repairing environmental damage, which does not bear evidence of their environmental responsibility. At the same time, this confirms the above mentioned idea that the environment does not have such value that would correspond to its actual

significance. Nevertheless, awareness of the real value of the environment is an important precondition for environmental responsibility, which is an important step towards the transition to the sustainable agricultural model, but also to other types of sustainable economy.

“Entrepreneurial orientation is nowadays one of more important issues discussed within research into internationalization. The main components of entrepreneurial orientation: risk taking, innovativeness and proactiveness are regarded as significant causative factors of effective internationalization” (Glowska et al., 2019). From our point of view, it is necessary to add another component to those ones – environmental responsibility. In respect to environmental responsibility in sustainable agriculture, in addition to the above mentioned, it is requested to draw attention to another benefit. At present, even the consumers can appreciate products that are produced without compromising soil fertility, the quality of water resources, and overall, when the environmental protection is ensured. Thanks to environmental responsibility, business entities can thus gain a good reputation in economic market and in public, which ultimately brings them economic profit and social appreciation. Especially after the outbreak of some scandals in the food and grocery trade, many today’s consumers are able, among other things, to appreciate healthy and high-quality food, produced thanks to low-waste technologies that are environmentally friendly, although they have higher price. Of course, this presupposes the fulfillment of some other criteria, including socially responsible marketing or sustainable marketing compatible with the ecosystem. More specifically, for example, in Slovakia it must be observed that only the products and services that meet the specified special conditions according to the Notification of the Ministry of the Environment of the Slovak Republic for the relevant product group are really labeled as environmentally suitable products. Just the so-called “green products” will not be offered and sold, but only truly green products that are made from ecological raw mate-

¹² For example, measures aimed at the sustainable use of agricultural land (soil protection measures, protection against erosion on arable land, etc.).

rials, using environmentally friendly ecological technologies and so on. Today's consumers are increasingly demanding which relates to increasing demands on agricultural entities, including the demands on their environmental responsibility.

Conclusions

Sustainable agriculture is the new sustainable economic model that is committed to increase economic growth and market competitiveness, together with the long-term satisfaction of the population's basic needs in ways that do not threaten the biosphere, or non-renewable Resources, but do ensure a functional dynamic equilibrium between human civilization and extraterrestrial nature.

We consider environmental responsibility to be important prerequisite for the transition to this new sustainable model of the economy and for its functioning. In connection with its understanding, the beneficial is the theory of responsibility from Jonas, who highlights this responsibility as a duty to humanity and nature, while we consider his principle of responsibility to be most valid for entities that are implemented in agriculture.

We consider environmental awareness – awareness of the value of the environment – to be important prerequisite for environmental responsibility. The concepts of sustainable development and corporate social responsibility are based on this type of responsibility. In accordance with these concepts the entrepreneurship in sustainable agriculture should be carried out. In both concepts, environmental responsibility should be one of the basic pillars.

The outline of research results concerning the effectiveness of agri-environmental measures in agriculture in the Slovak Republic within the years 2007-2013 at the level of regions, which we obtained thanks to the research carried out, to which we refer in the paper, pointed out that the effectiveness of these measures is decreasing. Entities in agriculture thus carry out activities with minimal consideration for limited natural resources and for the costs of repairing environmental damage, which requires the adoption and application of new effective measures. Those should focus, among other things, on strengthening environmental awareness and, consequently, environmental responsibility. They would contribute to a smoother transition to sustainable agriculture and, last but not least, to better quality meeting the needs of the population.

References

- Bowen, H.** (2013). Social responsibilities of the businessman. University of Iowa Press, Iowa, 248 p.
- Commission of the European Communities** (2001). Green Paper: Promoting a European Framework for Corporate Social Responsibility. <https://ec.europa.eu/transparency/regdoc/rep/1/2001/EN/1-2001-366-EN-1-0.Pdf> (Retrieved December 16, 2020)
- Crane, A. & Matten, D.** (2007). Business ethics: managing corporate citizenship and sustainability in the age of globalization. 2nd ed. Oxford University Press, New York, 566 p.
- Enviroportal.** (2019). Environmental protection costs. <https://www.enviroportal.sk/indicator/detail?id=381> (Sk) (Retrieved December 16, 2020)
- EU** (2012). Treaty on the Functioning of the European Union. *Official Journal of the European Union*, C326/47, 26.10.2012. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:12012E/TXT&from=EN> (Retrieved December 10, 2020)
- EUR-Lex** (2004). Directive 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on Environmental Liability with Regard to the Prevention and Remedying of Environmental Damage. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32004L0035> (Retrieved December 10, 2020)
- European Commission** (2013). Environmental Liability Directive. Protecting Europe's Natural Resources. Publications Office of the European Union, Luxembourg.
- FAO** (1988). Report of the FAO Council, 94th Session. FAO, Rome.
- FAO** (2014). Building a Common Vision for Sustainable Food and Agriculture. Principles and Approaches. FAO, Rome.
- Glowska, A., Maciejewski, M. & Wach, K.** (2019). How entrepreneurial orientation stimulates different types of knowledge in the internationalization process of firms from Poland? *Entrepreneurial Business and Economics Review*, 7(1), 61-73. <https://doi.org/10.15678/EBER.2019.070104>
- Hanousek, J., Shamshur, A. & Trešl, J.** (2019). Firm efficiency, foreign ownership and CEO gender in corrupt environments. *Journal of Corporate Finance*, 59, 344-360. <https://doi.org/10.1016/j.jcorpfin.2017.06.008>
- Henderson, H.** (2001). Beyond the horizon of globalization. Shaping a sustainable global economy. Dharma Gaia, Praha (Cs).
- Jonas, H.** (1997). The imperative of responsibility. In search of an ethics for the technological age. Oikoyomenh, Praha (Cs).
- Klinec, I.** (2005). Alternative economic theories in the context of sustainable development. In: *Aspects of sustainability and quality of life in managerial and civic decision-making*. Economic Univ., Prague, 46-87 (Sk).
- Klinec, I.** (2010). Relocation, renewal of social capital and creation of a sustainable model of the economy. In: Iveta Pauhofová, Oto Hudec & Tomáš Želinský (eds.) *Social capital, human capital and poverty in the regions of Slovakia: proceedings – Herľany 13.10. 2010*, 85-91 (Sk).
- Klocoková, J. & Lindbloom, J.** (2006). Environmentalism and agricultural practice. *Sociológia*, (2), 165–188 (Sk).
- Macák, M & Smatana, J.** (2019). Basics of sustainable agriculture. SUA, Nitra (Sk).
- Maitah, M., Toth, D., Smutka, L., Maitah, K. & Jarolínová, V.** (2020). Income differentiation as a factor of unsustainability in

- forestry. *Sustainability*, 12(11), 1-14. <https://doi.org/10.3390/su12114749>
- OECD** (2003). Environmental Quality Standard. Glossary of Statistical Terms. <https://stats.oecd.org/glossary/detail.asp?ID=838> (Retrieved December 12, 2020)
- Office of the Deputy Prime Minister for Informatization and Investments** (2018). National Investment Plan of the Slovak Republic for the years 2018 – 2030. Pilot version. <https://www.vicepremier.gov.sk/wp-content/uploads/2018/10/03-NIP-SR-Vlastny-material-2018-04-25.pdf> (Retrieved December 29, 2020) (Sk).
- Paulík, T. & Valach, E.** (2006). Sustainable development from the point of view of economic theory. *Národohospodářský Obzor*, 6(1), 61–72. <https://is.muni.cz/do/1456/soubory/aktivita/obzor/6182612/7667845/08PaulikValach.pdf> (Retrieved November 10, 2020) (Sk).
- Schumacher, E. F.** (1973). Small is beautiful. Economics as if people mattered. Blond & Briggs, London.
- Smolková, E.** (2004). Possible consequences of environmental skepticism. *Filozofia*, 59(4), 641-653 (Sk).
- Svatoš, M.** (2006). Influence of new economy on forming of sustainable agriculture. http://www.agris.cz/Content/files/main_files/59/137142/svatos.pdf (Retrieved November 26, 2020) (Cs).
- United Nations** (2019). Sustainable Development Goals. Goal 12: Ensure Sustainable Consumption and Production Patterns. <https://www.un.org/sustainabledevelopment/sustainable-consumption-production/> (Retrieved December 10, 2020)
- World Commission on Environment and Development** (1987). Our common future. Oxford University Press, Oxford, 383 p.
- Zverková, A & Sviček, M.** (2013). Agri-environmental soil protection measures of the Rural Development Program of the Slovak Republic. In: *Implementation, efficiency and future, Environmental indices, agri-environmental measures and ecosystem services in the country*. Soil Science and Conservation Research Institute and Slovak Academy of Sciences, Bratislava, 87-93 (Sk).

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