

BIODYNAMIC AGRICULTURE – A TOOL FOR REGENERATIVE DEVELOPMENT

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ABSTRACT

Regenerative development represents a new trend which is responding to current economic, social and technical but in particular also environmental challenges. This concerns a qualitatively higher level of social development which goes beyond the dimensions of sustainable development. One of the modern tools of regenerative development is biodynamic agriculture. Biodynamic agriculture is an alternative method of farming where no inorganic fertilisers or other chemicals are used. A special product made from grapes grown with the use of biodynamic agriculture is then constituted by orange wines. The aim of the authors of the article is to specify alternative practices of biodynamic agriculture applied in the production of orange wine, using the example of the Vinné sklepy Kutná Hora s.r.o. winery in the Czech Republic. Elaboration of the study presented here is based on a literature search followed by qualitative research conducted in the form of guided interviews with managers of the selected company. The article presents an example of good practice in biodynamic agriculture in the form of a case study and subsequently discusses the cross-cutting role of regenerative development, sustainable development and responsible activities in the economic, environmental, social, ethical and philanthropic dimensions. The article is a source of knowledge for theory, corporate practice and also for policy makers.

KEYWORDS: *biodynamic agriculture, regenerative development, sustainable development, skin-contact wines.*

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1. INTRODUCTION

Current environmental, social and economic challenges, such as the growing impacts of climate change, the Covid-19 pandemic and the war in Ukraine, are leading to a need to find new ways to ensure balance and prosperity. Agriculture plays a key role in this process, as it must provide enough crops for consumption by the population and the manufacturing requirements of companies. Studies conducted to date show that sustainability is no longer a sufficient solution and that new evolutionary approaches must be sought (Ibrahim & Ahmed, 2022). An approach which goes beyond sustainable development is regenerative development (Mang & Reed, 2012). According to Gibbons (2020, p. 6), regenerative development is “*a place-based development and design methodology that grows the capabilities necessary for living systems to increase in complexity, diversity, capacity to support all life, and the potential to change to provide future options (i.e., health and wellbeing)*”. One of the tools of regenerative development is biodynamic agriculture (Ibrahim & Ahmed, 2022). The benefit of biodynamic agriculture is that it protects people from the health damage of long-term pesticide exposure, enhances soil fertility and stability, conserves the ecosystem’s biodiversity, and produces healthy products (Hatem & Sekem 2007; Ibrahim &

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Ahmed, 2022). The field of regenerative development is considered to be an emerging field which has not as yet been sufficiently explored (Gibbons et al., 2020; Hes at al., 2018). The aim of the authors of this article is to specify alternative practices of biodynamic agriculture applied during the production of orange wine, using the example of the Vinné sklepy Kutná Hora s.r.o. winery in the Czech Republic.

The fact is that orange wines (skin-contact wines or skin contact white wines, amber wines, orange wines or qvevri wines) have recently enjoyed increasing attention, not only among winemakers, importers and sommeliers themselves but also in particular among consumers. Although it may seem that this is a new type of wine, quite the opposite is true. Orange wines are the oldest type of wine ever produced (Berishvili & Djakeli, 2019). Archaeological findings from the Georgia region point to the production of this type of wine as far back as 8,000 years ago (Glonti, 2010). This new trend in production and consumption is therefore part of the current trend among consumers seeking out the traditions of ancient cultures, but also in particular part of the trend towards an organic and healthy way of farming (Bene & Kállay, 2019).

Production of orange wines is not currently regulated by law in most countries. There are only four countries in the world with wine laws regulating production of orange wines. These are Georgia, where these wines have the longest tradition, then the United States of America (only the term “amber wine” is used), South Africa and the Canadian province of Ontario (Lorteau, 2018). However, despite this fact, production processes should follow certain rules. According to Bene and Kállay (2019) typical features of orange wines are that: (1) the raw grapes come from an organic (biodynamic) vineyard; (2) emphasis is placed on naturalness; the use of sulphur is kept to a minimum throughout the entire winemaking process and use of other physical and chemical stabilising agents is kept to a minimum or eliminated altogether.

2. THEORETICAL BACKGROUND – BIODYNAMIC AGRICULTURE

Biodynamic agriculture is the oldest form of alternative or organic farming. No inorganic fertilisers or other chemicals are used in biodynamic farming (Demeter, 2022a). The assumption is that if the soil is healthy, full of beneficial micro-organisms and organic matter, there is no need to use chemical fertilisers and biodynamic preparations can be used instead.

The method of biodynamic agriculture was introduced in the 1920s by the Austrian philosopher Rudolf Steiner, the founder of anthroposophy. According to Cravero (2019) there are three basic principles of biodynamic agriculture:

- keeping the soil fertile and enriching the soil with nutrients;
- growing healthy plants which are resistant to diseases and pests;
- producing food of the highest possible quality.

According to Bene and Kállay (2019) orange wines are most often the product of grapes grown within the framework of biodynamic agriculture. In the context of these principles, grapes should only be grown using preparations prepared according to Steiner’s indications. These preparations are divided according to their method of application into preparations for spraying fields, compost and cultivation (Demeter, 2022b), see Tab. 1.

The first type of preparations are those biodynamic preparations which are applied by spraying. These preparations are referred to as P500 and P501. P500 – Horn manure is a cow’s horn filled with the dung of pregnant cows. These filled horns are placed in a hole dug in the soil in the autumn. The horns are then removed from the ground in spring, when the contents of the horns are mixed in water and applied to the soil by spraying. P501 – Horn silica is a preparation similar to horn manure. This concerns cow’s horns filled with a slurry made from finely ground quartz or crystal. This preparation also differs from the Horn manure in terms of the time at which it is placed into the ground. Horn silica is buried in the ground in a sunny spot after Easter and removed in the

autumn. The contents of the horn are then mixed in water and again applied in the form of a fine spray, but this time onto the plants.

A total of six other biodynamic preparations (P502 to P507) are used as compost additives. These are extracts from various plants, wrapped either in the skulls or organs of dead animals (e.g. the bladder of a deer or a cow’s peritoneum and intestines), which are again buried in the ground, or alternatively only the plants themselves are buried in the ground.

The ninth preparation, labelled P508, is an infusion of horsetail. This preparation for cultivation is used to spray plants and soil infected with fungal diseases.

Table 1. Biodynamic preparations

Biodynamic preparation	Components ¹
P500 – Horn manure	The dung of pregnant cows stuffed into a cow’s horn and buried in the ground.
P501 – Horn silica	Finely ground (crushed) quartz or crystal, mixed with rainwater, stuffed into a cow’s horn and buried in the ground.
P502 – Yarrow	Yarrow (<i>Achillea millefolium</i>) flowers stuffed into a deer’s bladder and buried in the ground.
P503 – Camomile	Chamomile flowers (<i>Matricaria sp.</i>) fermented in the soil.
P504 – Nettle	Mowed nettle (<i>Urtica sp.</i>) in full bloom, smothered in a pit, fermented under a layer of soil.
P505 – Oak bark	Oak (<i>Quercus sp.</i>) bark buried in the skull of a domesticated animal (cattle) and buried in the ground.
P506 – Dandelion	Dried closed dandelion (<i>Taraxacum officinale</i>) flowers wrapped in a cow’s peritoneum and buried in the ground.
P507 – Valerian	Extract of valerian flowers (<i>Valeriana officinalis</i>).
P508 – Horsetail	Extract of horsetail (<i>Equisetum arvense</i>).

¹ Plant species may vary depending on the geographical locations of the farms.

Source: Own work with use made of (Chalker-Scott, 2013)

In general, it holds true that biodynamically grown crops, in this case grapes, must also be processed in a correspondingly biodynamic manner. The rules followed, particularly during the “cellar” processing phase, exclude the use of selective (artificial) yeasts, additives, enzymes and bacteria or the addition of sugars, as well as excluding acidification or clarification (Cravero, 2019).

3. METHODOLOGY

The point of departure for the article was a multidisciplinary literature search (Booth et al., 2021). The subject of this search was both specialist articles focused on the issue of regenerative and sustainable development, and also articles, books and websites dealing with biodynamic agriculture and production of skin-contact wines. The selection of literary resources was influenced by their relevance and how up to date they were. The backward snowballing method was applied (Mourão et al., 2020).

Following up from this, qualitative research was then conducted in the form of semi-structured interviews. A total of four semi-structured interviews were conducted with the general manager and cellar master of the Vinné Sklepy Kutná Hora s.r.o. winery in the Czech Republic, this being in the period from August 2021 until September 2022. Semi-structured interviews are a frequently applied qualitative research method (DeJonckheere & Vaughn, 2019). This method consists of a dialogue between the interviewer and the interviewee, guided by a flexible interview protocol with open-ended questions, supplemented by follow-up questions and comments resulting from the interview

(DiCicco-Bloom & Crabtree, 2006; Kallio et al., 2016). The interview protocol (guide) covers the main topic of the study (Turner, 2010). However, this protocol should not be followed strictly, as in this way, we can gain much more information relating to the topic in question (Holloway & Wheeler, 2010)

The aim of the semi-structured interviews is to obtain information from experts who have personal practical experience with the issue under investigation (DeJonckheere & Vaughn, 2019). Use of semi-structured interviews requires a certain level of knowledge in the field of the research topic as the interview protocol is based on the previous knowledge of the interviewer (Kallio et al., 2016).

The Vinné sklepy Kutná Hora s.r.o. winery in the Czech Republic was chosen for this qualitative research because it is the only winery in the Czech Republic which holds Demeter biodynamic certification for farmers. This winery was founded in 2002 and has engaged in biodynamic farming since 2005.

4. RESULTS – TECHNOLOGY FOR PRODUCTION OF ORANGE WINE

In the case of commonly known white wines, only the pressed must from the grapes (most often white and rosé varieties) is left to ferment. Other parts of the grapes, such as the skins, seeds and stalks, are considered waste material and are separated from the must (Boulton et al., 2013). However, the principle of technology for the production of orange wines is for the most part different. Orange wines are produced from must obtained from white or rosé grape varieties (e.g. Gewürztraminer or Pinot Gris) which remains in long contact with the skins, seeds and stalks during the maceration and fermentation process, similar to the technology used during production of red wines.

In the Vinné sklepy Kutná Hora s.r.o. winery, the whole process of wine production is strictly monitored from the stage of cultivation of the grapes all the way through to bottling. Supervision is carried out not only by the winery itself, but also by external supervisors from the Demeter association, which is a national association of biodynamic farmers. This is to say that Vinné sklepy Kutná Hora s.r.o. is the only winery in the Czech Republic and Slovakia to have been awarded the prestigious Demeter biodynamic certification mark for biodynamic farmers. This certificate was awarded to the winery by the Biodynamic Federation - Demeter International (Vinné Sklepy Kutná Hora s.r.o., 2022).

At Vinné sklepy Kutná Hora, they use the original Kakhetian method for the production of orange wines using containers known as qvevri. The essence of this method is use of a clay, fired qvevri vessel/amphora, with a conical bottom and a narrow neck, which is sunk into the ground and in which maceration and alcoholic fermentation as well as further ageing of the wine takes place (Bene & Kállay, 2019).

The qvevri for Vinné sklepy Kutná Hora are made from local clay to preserve the terroir of the place of origin as much as possible. The qvevri used in this winery have a volume of 500 and 700 litres. In general, however, the volume of qvevri can range from 2-3 litres to 6-8 thousand litres. Qvevri with a volume of 10-15 thousand litres are no exception to the rule (Bene & Kállay, 2019).

The inner walls of the qvevri are carefully washed and treated with beeswax every year before being filled. The beeswax makes it easier to wash and clean the qvevri afterwards, but also makes it difficult for bacteria to adhere to the waxed surface (Reblova, 2018). Apart from that, the qvevri becomes impermeable to water from the outside, although tiny pores remain open and allow the wine to breathe (Reblova, 2018). Nowadays, however, we can come across modern alternatives to qvevri made of stainless steel. However, the conical-bottomed, narrow-necked shape remains an important characteristic of these alternatives to conventional clay qvevri.

Vinné sklepy Kutná Hora use their own biodynamically cultivated grapes for production of their orange wines. Their orange wines are made from resistant varieties of white and rosé grapes such as Gewürztraminer, Savagnin Blanc, Pinot Gris and Riesling. All of the grapes for production of

orange wine are harvested by hand. Only harvesting by hand allows for thorough inspection of the quality of the grapes and is also gentle on the vine. A prerequisite for the production of quality orange wine is the excellent physiological ripeness of the grapes, but also of the bunches, as green, immature bunches would subsequently lead to extraction of bitter and astringent substances.

According to the Kakhetian method, the hand-picked grapes may be poured whole into the qvevri, or they may first be trodden down barefoot. By treading the grapes, the grapes are broken apart and the must is better released from the grapes. The resulting must can be drained directly into the qvevri and the resulting pomace can be added to the qvevri the following day (oxidation of the pomace can then significantly affect the release of aromatic substances, particularly from the skins of the grapes). However, at Vinné sklepy Kutná Hora, they choose to fill the qvevri with must and pomace at the same time. Nothing other than the whole grapes themselves is added to the qvevri.

Qvevri are never filled to the brim with must because of possible overflow during the most turbulent phase of fermentation. To protect against contaminants, the opening is covered with canvas after the qvevri have been filled. The entire volume of the qvevri - the must including all other parts of the grapes - is then spontaneously fermented in the qvevri amphora. Spontaneous fermentation is the name given to that type of fermentation in which only those species of yeast naturally occurring on the fruit are involved in the fermentation process (Hradil et al., 2018). The most abundant yeasts in the must are *Hanseniaspora*, *Metschnikowia*, *Candida*, *Pichia* and *Hansenula*. The wine yeasts *Saccharomyces cerevisiae* and *Saccharomyces bayanus* are represented to a lesser extent (Hradil et al., 2018). Fermentation of orange wines in qvevri takes about two to three weeks. During the fermentation process it is necessary to stir the qvevri several times a day, as the chemical processes in the qvevri increase the temperature and could cause overheating of the mash and therefore death of the yeast. The qvevri remains open during rapid fermentation.

After two to three weeks, i.e. after the alcoholic fermentation has finished, the qvevri are closed, leaving only a small opening for the carbon dioxide to escape. By burying the qvevri in the ground, temperature fluctuations and also any unwanted processes are minimised. The phenolic substances found in the grape seeds, skin and stalks are natural antioxidants and ensure microbial stability. This makes it possible to minimise or even completely eliminate the use of sulphur dioxide in this winemaking technology (Hradil et al., 2018).

In these closed qvevri, spontaneous malolactic fermentation also takes place, when the strong malic acid is converted into the more flavourful lactic acid (Balík & Stávek, 2017). This malolactic fermentation also causes a reduction in the acidity of the wine and ensures a certain bacterial stability of the product (Franta, 2015).

With the onset of cold weather and winter, all fermentation processes are then stopped and the qvevri can be sealed tightly. This phase occurs during the course of December. Once alcoholic fermentation has finished, most of the seeds are also separated from the skins and, thanks to the conical base, sink to the bottom of the qvevri, where they are covered with fine sediment. This separates the seeds from contact with the wine meaning that they cannot then adversely affect the quality of the wine. On the contrary, the skins are carried to the surface by the carbon dioxide which is produced and all the desirable substances for the production and health of orange wine can be extracted from them (Reblova, 2018). The qvevri are then stored sealed in this manner at almost constant low temperatures for a period of about six months.

After eight months have passed, i.e. at the end of May and the beginning of June, the qvevri can be opened. Since the Vinné Sklepy Kutná Hora winery places great emphasis on doing things by hand in the production of qvevri wines, the entire process is carried out without the use of any auxiliary machinery. Using a paddle and other tools, the top layer of grape skin and stalks is first removed into buckets, and then the entire contents of the qvevri. The contents are then transferred to a hand press, where the entire contents of the qvevri are carefully pressed.

Almost immediately after pressing (and after the lees have settled), the orange wines produced in this way can be bottled. Clarification, filtration and aging processes commonly used in the

production of white and red wines do not apply here. Wines produced using the traditional Kakhetian method are natural but very stable and clear wines with a high phenolic content (Hradil et al., 2018). The high content of phenolic compounds, especially flavonoids, which are extracted from the grape skins and stalks into orange wine, have antioxidant and antiseptic effects on mould and bacteria. Naturally, they also act as clarifiers and counteract protein turbidity (Hradil et al., 2018).

As mentioned earlier, wines produced in this way are no longer sulphurised in any way and contain only sulphur dioxide produced by wild yeasts. Despite the omission of clarification, filtration and aging processes, these wines retain their longevity, richness and distinctive flavour and aroma and are therefore suitable for archiving.

As wine produced in this manner does not undergo a clarification and filtration phase, it is possible to notice a certain amount of sediment lying at the bottom of the bottles after bottling. This is in part made up of small amounts of grape residue and, in particular, yeast. This sediment is responsible for the autolysis of the yeast, which again makes it possible to eliminate sulphurisation. This is to say that the yeasts digest the oxygen contained in the wine and therefore protect it from oxidation (Hradil et al., 2018).

The production of biodynamic wines has than a positive effect not only from the environmental point of view of the producer, but also from the economic point of view, as consumers are not only more willing to purchase biodynamic wines (Richter & Hanf, 2021) but also willing to pay higher price for sustainable/biodynamic wines (Schaufele & Hamm, 2018). However, an effective CSR communication is needed (Kopriva et al., 2022).

However, the environmental and economic aspects of the production of biodynamic wines are not the only contributions of the Vinné Sklepy Kutná Hora s.r.o. to regenerative development. With their approach to agriculture and whole company management, Vinné Sklepy Kutná Hora s.r.o. participates in regenerative development in all its areas – economical, environmental, ethical, social and philanthropic, see chapter 5.

5. DISCUSSION AND CONCLUSION

The article discusses the new trend of biodynamic agriculture, which represents one of the possible tools for regenerative development. According to Gabel (2015) and Angelakis et al. (2022), “what sustainable development is to traditional economic development, regenerative development is to sustainable development”. An example of good practice of biodynamic agriculture in the form of orange wine production is presented in the form of a case study, using the example of the Vinné sklepy Kutná Hora s.r.o. winery in the Czech Republic.

It is clear from the presented study that regenerative development goes beyond the borders of sustainable development (Jelinkova et al., 2021). It can be stated that, as in the case of the concept of sustainable corporate development and its tools in the form of the concept of corporate social responsibility, (Tetrejova, 2017) regenerative development is based on activities in several areas. In its basic concept, this concerns the economic, social and environmental dimensions (Elkington, 1994, 1998), In the modified, comprehensive concept, this concerns the economic, environmental, ethical, social and philanthropic dimensions (Tetrejova & Patak, 2019).

A fundamental role in the analysed case of orange wine production is the environmental role, where the aim is not only to ensure the balance of the ecosystem in terms of sustainable development and compliance with sustainable design (Munzarova et al., 2017), but also to promote its positive development in terms of regenerative development and its benefits for future generations. Of course, economic responsibility also plays an important role, both in terms of ensuring adequate profitability, and therefore the expected level of profitability for the owners and the investors (Zatrochova et al., 2018), as well as in terms of ensuring the safety and quality of production, the creation and implementation of innovations (Prokop et al., 2022; Sujova & Simanova, 2022),

partnerships within the supply and demand chain (Patak et al., 2020; Vavra & Munzarova, 2010), partnerships with public administration, e.g. in providing public support for these socially beneficial activities (Kostalova et al., 2015) or partnerships with educational institutions with regard to the process of transfer of know-how (Tetrevova & Vlckova, 2018; Tetrevova et al., 2021). Given the importance of human labour in the given field, social responsibility, which consists in developing positive relationships with employees, also plays a key role. Particular attention should be paid to ensuring health and safety at work, employee training, a high-quality working environment, gender balance (Vavra et al., 2021; Bednarikova et al., 2018) and work life balance (Cincalova, 2020). In view of the absence of legislation in this field, the ethical role, in particular the application of ethical principles, cannot be overlooked (Munzarova et al., 2016). It is also necessary to mention the philanthropic role, consisting not only in corporate donations and volunteering, but also in cooperation with non-profit organisations, e.g. ecological associations, and encouraging activities within the framework of biodynamic farming (Tetrevova, 2017), which is subsequently associated with positive impacts on the company's reputation (Jelinkova & Vancova, 2020; Jelinkova & Lostakova, 2016; Roy & Quazi, 2021).

The presented study develops the theoretical background of the context of biodynamic agriculture, regenerative and sustainable development. Thanks to its multidisciplinary nature, this study is a source of valuable knowledge for theory, this being in the field of both social and technical sciences. The case study, presenting an example of good practice - the technology of orange wine production in the context of biodynamic agriculture, represents interesting know-how for company managers. Given the societal benefits of the topic, the study also has the ambition of contributing towards stimulating a broader debate on the topic, among others, also from the perspective of policy makers.

A limiting factor of the presented article is its focus on one area of biodynamic agriculture, one economic entity and one country. Nevertheless, we believe that the study provides a high-quality basis for further studies which could develop the outlined avenues of research from the point of view of other sectors, countries or entities.

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REFERENCES

- Angelakis, A. N., Valipour, M., Dietrich, J., Voudouris, K., Kumar, R., Salgot, M., Mahmoudian, S. A., Rontogianni, A. & Tsoutsos, T. (2022). Sustainable and Regenerative Development of Water Mills as an Example of Agricultural Technologies for Small Farms. *Water*, 14(10), 1621. <https://doi.org/10.3390/w14101621>.
- Balík, J. & Stávek, J. (2017). *Vinařská technologie*. Valtice: Národní vinařské centrum.
- Bednarikova, M., Kostalova, J., Vavra, J. & Hamalova, D. (2018). Diversity management in the Context of Corporate Social Responsibility. *Paper presented at The 10th International Scientific Conference "Business and Management 2018"*, Vilnius, Lithuania.
- Bene, Z. & Kállay, M. (2019). Polyphenol contents of skin-contact fermented white wines. *Acta Alimentaria*, 48(4), 515–524. <https://doi.org/10.1556/066.2019.48.4.13>.
- Beriashvili, R. & Djakeli, K. (2019). The role of CSR policy and digital marketing in Georgian qvevri wine brand development. *Quality-Access to Success*, 20(3), 59–64.
- Booth, A., Sutton, A., Clowes, M. & Martyn-St James, M (2021). *Systematic Approaches to a Successful Literature Review*. Sage.

- Boulton, R. B., Singleton, V. L., Bisson, L. F. & Kunkee, R. E. (2013). *Principles and practices of winemaking*. Springer Science & Business Media.
- Chalker-Scott, L. (2013). The science behind biodynamic preparations: A literature review. *Horttechnology*, 23(6), 814-819. <https://doi.org/10.21273/HORTTECH.23.6.814>.
- Cincalova, S. (2020). Inequalities in Social Responsibility across Europe Focused on Work-Life Balance. *Quality-Access to Success*. 21(174), 142-146.
- Cravero, M. C. (2019). Organic and biodynamic wines quality and characteristics: A review. *Food Chemistry*, 295, 334–340. <https://doi.org/10.1016/j.foodchem.2019.05.14>.
- DeJonckheere, M. & Vaughn, L. M. (2019). Semistructured interviewing in primary care research: A balance of relationship and rigour. *Family Medicine and Community Health*, 7(2), e000057. <https://doi.org/10.1136/fmch-2018-000057>.
- Demeter (2022a). *7 Demeter Principles*. Retrieved June 16, 2022, from https://demeter.net/wp-content/uploads/2022/05/220414_DEM_INT_brochure_A5_Web.pdf.
- Demeter (2022b). *Biodynamic preparations: Strengthening and enhancing*. Retrieved June 16, 2022, from <https://demeter.net/biodynamics/biodynamic-preparations/>.
- DiCicco-Bloom, B. & Crabtree, B. F. (2006). The qualitative research interview. *Medical Education*, 40(4), 314–321. <https://doi.org/10.1111/j.1365-2929.2006.02418.x>.
- Elkington, J. (1998). Accounting for the triple bottom line. *Measuring Business Excellence*, 2(3), 18–22. <https://doi.org/10.1108/eb025539>.
- Elkington, J. (1994). Towards the sustainable corporation: Win-win-win business strategies for sustainable development. *California Management Review*, 36(2), 90–100. <https://doi.org/10.2307/41165746>.
- Franta, T. (2015). *Komplementární metody kšření vína* [Bachelor thesis, Mendelova Univerzita, Brno, 2015]. Retrieved from https://theses.cz/id/mwwzxl/zaverecna_prace.pdf?lang=en.
- Gabel, M. (2015). Regenerative Development: Going Beyond Sustainability. *Kosmos Journal*. Retrieved July 26, 2022, from <https://www.kosmosjournal.org/article/regenerative-development-going-beyond-sustainability/>.
- Gibbons, L. V. (2020). Regenerative—The New Sustainable? *Sustainability* 12(13), 5483. <https://doi.org/10.3390/su12135483>.
- Gibbons, L. V., Pearthree, G., Cloutier, S. A., Ehlenz, M. M. (2020). The development, application, and refinement of a Regenerative Development Evaluation Tool and indicators. *Ecological Indicators*, 108, 105698. <https://doi.org/10.1016/j.ecolind.2019.105698>.
- Glonti, T. (2010). Traditional technologies and history of Georgian wine. *Le Bulletin de l'Organisation Internationale de La Vigne et Du Vin*, 83(953), 335-343.
- Hatem, T. & Sekem, A. (2007). *Holistic Egyptian Initiative; The United Nations Development Programme*. Retrieved March 1, 2022, from <https://www.sekem.com/wp-content/uploads/2016/12/undp-2007-sekem-a-holistic-egyptian-initiative.pdf>.
- Hes, D., Stephan, A. & Moosavi, S. (2018). Evaluating the Practice and Outcomes of Applying Regenerative Development to a Large-Scale Project in Victoria, Australia. *Sustainability*, 10(2), 460. <https://doi.org/10.3390/su10020460>.
- Holloway, I. & Wheeler, S. (2010). *Qualitative Research in Nursing and Health Care*. Wiley-Blackwell.
- Hradil, R., Pavloušek, P., Muška, F. & Rudolfský, L. (2018). *Biodynamické vinohradnictví avinařství*. Grada Publishing.
- Ibrahim, I. & Ahmed, N. (2022). Investigating Regenerative Ideation within Sustainable Development Goals. *Sustainability*, 14, 10137. <https://doi.org/10.3390/su141610137>.
- Jelinkova, M., Tetreva, L., Vavra, J. & Munzarova, S. (2021). The Sharing Economy in the Context of Sustainable Development and Social Responsibility: The Example of the Czech Republic. *Sustainability*, 2021, 13(17), 9886. <https://doi.org/10.3390/su13179886>.

- Jelinkova, M. & Lošťáková, H. (2016). The Importance of Building Positive Reputation of Chemical Industry Companies for Development of Relationships Within Supply Chains. *Paper presented at The 9th International Scientific Conference "Business and Management 2016"*. Vilnius, Lithuania.
- Jelinkova, M. & Vancova, A. (2020). Criteria for assessing the reputation of chemical companies in the eyes of customers. *Chemické listy*, 114(8), 559-564.
- Kallio, H., Pietilä, A. M., Johnson, M. & Kangasniemi, M. (2016). Systematic methodological review: developing a framework for a qualitative semi-structured interview guide. *Journal of Advanced Nursing*, 72(12), 2954–2965. <https://doi.org/10.1111/jan.13031>.
- Kopriva, J., Tetrevoval, L. & Zahorska, A. (2022). CSR Web Communication by Controversial Enterprises in the Context of Stakeholder and Legitimacy Theory. *Paper presented at The 20th International Scientific "Conference Hradec Economic Days 2022"*. Hradec Kralove, Czech Republic.
- Kostalova, J., Tetrevoval, L. & Patak, M. (2015). The System of Support for Projects Co-financed by EU Funds in the Czech Republic. *Transylvanian Review of Administrative Sciences*, 45, 97-115.
- Lorteau, S. (2018). A comparative legal analysis of skin-contact wine definitions in Ontario and South Africa. *Journal of Wine Research*, 29. <https://doi.org/10.1080/09571264.2018.1532881>.
- Mang, P. & Reed, B. (2012). Regenerative Development and Design. In: Meyers R. A. (eds.), *Encyclopedia of Sustainability Science and Technology* (Chapter 303). Springer.
- Mourão, E., Pimentel, J. F., Murta, L., Kalinowski, M., Mendes, E. & Wohlin, C. (2020). On the Performance of Hybrid Search Strategies for Systematic Literature Reviews in Software Engineering. *Information and Software Technology*, 106294. <https://doi.org/10.1016/j.infsof.2020.1062>.
- Munzarova, S., Lostakova, H., Vavra, J., Bednarikova, M. & Kurtulikova, N. (2016). Code of Ethics in the Reporting of Corporate Social Responsibility Activities, the Evidence from the Czech Chemical Companies. *Paper presented at The 3rd International Multidisciplinary Scientific Conference on Social Sciences and Arts "SGEM 2016"*, Albena, Bulgaria.
- Munzarova, S., Vavra, J. & Bednarikova, M. (2017). Use of Ecodesign Principles in Chemical Products Innovations. *Paper presented at The 5th International Conference on Chemical Technology „ICCT 2017“*, Mikulov, Czech Republic.
- Patak, M., Branska, L. & Pecinova, Z. (2020). Importance of Reverse Logistics Services as an Antecedent for Building a Green Supply Chain. *Ekonomski vjesnik*, 33(1), 165-174.
- Prokop, V., Gerstlberger, W., Zapletal, D., Kotkova Striteska, M. (2022). The double-edged role of firm environmental behaviour in the creation of product innovation in Central and Eastern European countries. *Journal of Cleaner Production*, 331, 129989, <https://doi.org/10.1016/j.jclepro.2021.129989>.
- Reblova., M. (2018). *Oranžové víno a jeho výroba, kvevri a kachetinská metoda – 2. díl*. Retrieved August 10, 2022, from <https://mojelahve.cz/clanek/oranzove-vino-a-jeho-vyroba-kvevri-a-kachetinska-metoda-2-dil-739>.
- Richter, B. & Hanf, J. N. (2021). Sustainability as "Value of Cooperatives" – Can (Wine) Cooperatives Use Sustainability as a Driver for Brand Concept? *Sustainability*, 13(2), 12344. <https://doi.org/10.3390/su132212344>.
- Roy, T. K. & Quazi, A. (2021). How and why do MNCs communicate their corporate social responsibility in developing countries? Evidence from Bangladesh. *Competition & Change*, 102452942110032. <https://doi.org/10.1177/10245294211003275>.
- Schaufele, I. & Hamm, U. (2018). Organic Wine Purchase Behaviour in Germany: Exploring the Attitude-Behaviour-Gap with Data from a Household Panel. *Food Quality and Preference*, 63. <https://doi.org/10.1016/j.foodqual.2017.07.010>.

- Sujova, A. & Simanova, L. (2022). Management Model of Changes – The Empirical Study in Slovak Companies. *Business Management and Economics Engineering*, 20(1), 23-40. <https://doi.org/10.3846/bmee.2022.15397>.
- Tetrevova, L. (2017). Communication of Socially Responsible Activities by Sugar-producing Companies. *Listy cukrovarnické a řepářské*, 133(12), 394-396.
- Tetrevova, L. & Patak, M. (2019). Web-based Communication of Socially Responsible Activities by Gambling Operators. *Journal of Gambling Studies*, 35(4), 1441-1455. <https://doi.org/10.1007/s10899-019-09842-3>.
- Tetrevova, L., Vavra, J. & Munzarova, S. (2021). Communication of Socially-Responsible Activities by Higher Education Institutions. *Sustainability*, 13(2), 483. <https://doi.org/10.3390/su13020483>. ISSN 2071-1050.
- Tetrevova, L. & Vlckova, V. (2018). Benefits, Limitations, and Measures Concerning the Development of Cooperation between Higher Education Institutions and External Entities. *Tertiary Education and Management*, 24(4), 377-394. <https://doi.org/10.1080/13583883.2018.1476579>.
- Turner, D. W. (2010). Qualitative Interview Design: A Practical Guide for Novice Investigators. *The Qualitative Report*, 15(3). <https://doi.org/10.46743/2160-3715/2010.1178>.
- Vavra, J. & Munzarova, S. (2010). Life Cycle Engineering and Relationship with Customers. *Paper presented at The 6th International Scientific Conference "Business and Management 2010"*, Vilnius, Lithuania.
- Vavra, J., Patak, M., Kostalova J. & Bednarikova, M. (2021). S-LCA Indicators as Employee Motivation Factors. *European Journal of Sustainable Development*, 10(2), 167-285, <https://doi.org/10.14207/ejsd.2021.v10n2p267>.
- Vinné Sklepy Kutná Hora (2022). *Filosofie*. Retrieved August 28, 2022, from <https://vinokutnahora.cz/filosofie-vyroby/>.
- Zatrochova, M., Janakova, H., Kuperova, M. & Spirko, D. (2018). *Strategický marketing a manažment a ich inovácie*. Spektrum STU.