

PREMISES OF THE SUSTAINABLE DEVELOPMENT IN THE AGRICULTURAL SECTOR

**Marius Catalin Bran PhD Student
University of Craiova
Faculty of Economics and Business Administration
Craiova, Romania**

Abstract: Sustainable development is a very heterogeneous and complex issue requiring a multidisciplinary approach and taking into account the objective of this article we have critically analysed the literature on this issue, the main elements of sustainable development and factors affecting its integration in agriculture. Our analysis proved that not only the elements from the external environment influence the management, but also the management models can actively influence the institutional structures promoting an organizational behaviour that is favourable to sustainable development, especially for agricultural sector.

JEL classification: M21, O10, Q01.

Key words: sustainable development; agricultural sector; social responsibility; quality; climate change

1. INTRODUCTION

Sustainable development is a relatively new concept, very often internationally debated and at the same time, it is a new philosophy necessary for the business environment to achieve a modern and sustainable society. One definition of sustainable development was elaborated by the Brundtland Commission (1987) and consists of ensuring that current needs are satisfied without putting in danger the ability of future generations to satisfy their own needs.

Kates et al. (2005) offer many perspectives for defining sustainable development, both historically and in terms of objectives, measurement indicators, promoted values and methods of practical implementation of sustainable development.

Agricultural sector plays an important role in sustainable development process and the eradication of hunger and poverty, but it also faces many challenges, making it increasingly difficult to achieve its main goal - providing food for the world's population every year.

Population growth and changes in diet associated with rising incomes are leading to an increased demand for food and other agricultural products, while global food systems are increasingly threatened by land degradation, climate change and other stressors. Although there are uncertainties about the regional and local effects of climate change and also it suggests that the stability of the food system will be at greater risk due to the short-term variability of food supply.

Internationally, the overtime failed actions of organizations to meet social needs of communities in which they operate have led to a resizing of the role that human resources play in internal and external actions to promote social responsibility

that finally lead to a harmonious and long-term development of the organization. Establishing appropriate standards with the help of which stakeholder relations are effectively maintained ensures the sustainable success of modern organizations. Ethics becomes the central pillar around which stakeholder relations are strengthened in order to achieve a long-term development (Burlea-Schiopoiu, 2013a; Burlea-Schiopoiu and Rainey, 2013).

International organizations such as the World Bank or the United Nations are increasingly emphasizing the importance to respect human rights and the development of non-discriminatory policies. Therefore, as a result of the pressure and media coverage from NGOs around the world and international organizations, an international standard on social responsibility named ISO 26000 has been developed, which is, in fact, the vision of a modern organization, oriented towards sustainable development, which must comply with existing legislation and international recommendations regarding human rights, developing a good relationship with employees, diversity, health and safety at work (Burlea-Schiopoiu, 2008).

We will start from the premise that implementation of the social responsibility in agricultural sector is a supreme goal and a trend that organizational management must follow, but contextual differences can be important strategic pillars to achieve the ultimate goals (Burlea-Schiopoiu and Remme, 2017). Therefore, it is very important to analyse the social, economic and even organizational environment of each organization that wants to implement a sustainable development policy because there are a number of factors that can facilitate or hinder social and responsible initiatives.

Sustainable development allows to increase the value of shareholders by integrating economic, social and environmental opportunities in business strategies (Burlea-Schiopoiu and Mihai, 2019). Therefore, in our analysis we will start from the specific foundations of a sustainable organization that operates in the field of agriculture.

2. SUSTAINABLE DEVELOPMENT AS A SUBSYSTEM OF THE SOCIAL RESPONSIBILITY

The climate change happening over recent years has led companies and organizations to rethink their role in society and to reflect on the fact that profit is not the only nor the most important performance criterion.

Dernbach and Mintz (2011, p.531) define sustainable development as a necessary framework for people to live and prosper in harmony with nature and the environment and they present the main, topical aspects of sustainable development today. These include the influence of legislative measures for integrated decision-making and the promoting of ecology and sustainable development, climate change and its implications. Thus, the need to build specific institutions and a legislative framework that supports sustainable development is imperative to achieve the proposed objectives, because there are many laws to protect the environment and non-renewable resources nowadays.

Tovey (2009, pp.14-18) offers an alternative vision to the usual way of understanding sustainable development, as an important objective that establishes a powerful relationship between economic and also environmental activities or an ideal balance between the following pillars: economic, social and environmental. Also Toney explains the term sustainable development starting from the definition offered by the report "Our Common Future - World Commission on Environment and

Development”, as a process of change through which resource exploitation, accomplished investments, technology development and institutional change meet not only current needs, but also those of the future. Sustainable development is defined as a process consisting of two elements:

1. A process of social training in respect for nature and proper appreciation of resources, and
2. A conflicting process between awareness of the need for social and environmental economic harmony and the barriers to doing so, such as the struggle for power, collateral interests or oblivion (Tovey, 2009, pp. 14-18).

The development of internal social responsibility has been achieved differently worldwide, depending on the specific needs of the region and the pressures addressed by the media. In Asia, China, research has shown an increase in the interest of organizations in implementing internal and external social policies to meet the needs of employees and shareholders (Liu and Liu, 2009, p. 79).

Various international organizations such as the World Bank or the United Nations are increasingly emphasizing respect for human rights and the development of non-discriminatory policies (Idowu et al., 2017).

As a result of the pressures and media coverage of NGOs around the world and organizations such as those mentioned, a new international standard on social responsibility (ISO 26000) has been developed. It states that the vision of a modern organization, oriented towards sustainable development must respect the legislation in force and the recommendations at international level on human rights, the development of a good relationship with employees, diversity, and health and safety at work.

The main concept of sustainable development is to focus on ISO international standards. Ensuring quality management automatically involves ensuring sustainable development in all aspects specific to the business, from human resources to business strategies. The international standards ISO 14001 on the environment and ISO 26000 on social responsibility are starting points in ensuring the sustainable development of society. The ISO 14001 standard is the foundation of sustainable development and refers to reducing the negative impact of business on the environment, respecting and raising environmental awareness or ensuring accountability to the community (Burlea-Schiopoiu, 2019).

The ISO 26000 standard on social responsibility covers many variables that are pillars of sustainable development. The guidance provided by the ISO 26000 standard has as its ultimate goal the maximization of an organization's contribution to sustainable development. We conclude that a synonymous relationship between social responsibility and sustainable development is excluded, as social responsibility can be considered the main tool used by public or private sector organizations towards sustainable development (Burlea-Schiopoiu, 2013b).

3. THE SYSTEMIC RELATIONSHIP BETWEEN SUSTAINABLE DEVELOPMENT AND THE SUSTAINABILITY OF THE AGRICULTURAL SECTOR

Through our research we want to provide a comprehensive perspective on how management studies analyse issues related to sustainable development in agriculture. Agriculture faces many challenges, making it increasingly difficult to achieve its main goal - providing food for the entire world's population - every year. Population growth

and changes in diet associated with rising incomes are leading to an increased demand for food and other agricultural products, while global food systems are increasingly threatened by land degradation, climate change and other stressors. Although there are uncertainties about the regional and local effects of climate change, the global model suggests that the stability of the food system will be at greater risk due to the short-term variability of the food supply.

Agriculture must be organized on the principles of sustainable development in order to respond to growing demand, contribute more effectively to reducing poverty and malnutrition, and become more environmentally sustainable. This transformation will be crucial to achieving many of the sustainable development goals. Poverty and hunger must be eradicated and become a distinct goal of organizations and governments. Most of the world's poor population live in rural areas, and growing agriculture has proven to be effective in raising the living standards of rural families. Managing the links between agriculture, poverty and nutrition is essential as we are in search to provide an opportunity for children to reach their full potential. The new agenda should also have an objective that explicitly aims to improve agricultural systems and address rural development in an integrated manner.

Agriculture plays a crucial role in sustainable development and in eradicating hunger and poverty. The challenges facing agriculture in the process of sustainable development are related to the development of ways in which society is socially equitable and ecologically sustainable and not only obsessed with growth, but motivated by meeting human needs and equity in the allocation of not only natural, but also other types of resources. Sustainable agriculture must respond to economic, social and environmental challenges and be aware that all these challenges are closely linked. These characteristics of sustainable agriculture should be considered as a whole and no single characteristic should be predominant to the detriment of the other characteristics.

Based on literature review, the Sustainable Agriculture must have the following objectives:

- Protecting the natural base of resources; Prevention of soil and water degradation; Biodiversity conservation; A consistent contribution to increasing economic and social well-being; Ensuring a secure and high quality supply of agricultural products; Protecting livelihoods and the well-being of agricultural workers.

The main tools for achieving a sustainable agricultural sector are the following:

- Political and agrarian reform; Income diversification; Land conservation and improved entry management.

This is being done in order to clarify the research agricultural agenda and its priorities, as also to suggest some practical measures that might be useful to achieve a sustainable agriculture.

Taking into account this pandemic period we observed that an exclusive focus on agricultural exports involves hidden costs and it is important to underline that the agricultural production involves certain risks for Romanian farmers that remain without a domestic market, especially in the case of which the main source of employment for the rural population is agriculture. Trends towards specialization and mechanization may increase the measured efficiency to a limited extent, but decrease employment in villages. Unemployment expenditure must be taken into account in the development of national agricultural support programs because the promotion of sustainable agriculture,

with an emphasis on the performance of agricultural work, contributes to overcoming these problems.

Sustainable social development through the implementation of agricultural techniques is linked to data of social acceptability and justice (Mihai et al., 2018). Development can only be sustainable if it reduces poverty, and the government should find ways to enable people in rural areas to benefit from the development of agriculture. Many of the new technologies fail to be applied in the agricultural sector due to the lack of acceptability of the local society. Sustainable agricultural practices are useful because they are based on local customs, traditions and social norms. However, given the multifunctional role covered by agriculture, areas of study include several topics, such as food and consumer economics, production economics and agricultural management, and last but not least, development economics.

The basic idea is to show how agro-food specialists have increasingly included a broader assessment of the impact of production and consumption choices among their objectives by accepting the challenge of this pandemic period.

While countries around the world set economic growth as their main goal, this often contrasts with a real improvement in the other two pillars of sustainable development. From this perspective, the contribution of several agricultural economics studies in recent years has been aimed at reconciling economic development with environmental development and social development. Therefore, economic studies in the field of agriculture, which touch, directly or indirectly, on several topics related to sustainable development, can make a significant contribution in the coming years to the achievement of the Sustainable Development Goals.

From this perspective, we have to underline that agricultural sector needs to lead to development of health conditions in Romania and to economic growth.

Agriculture is in relationship with environment (e.g. the case of greenhouse gas emissions). For the agricultural sector is important to realise a significant reduction in carbon emissions as a major source of emissions, especially in terms of use of chemicals (Smith et al., 2014).

It is important to analyse the role played by agricultural policies in promoting sustainable development in the case of the common agricultural policy of the European Union (CAP), and this analysis is important to be continued with the role of innovation as driver to improved sustainability of agricultural practices.

Consumers must not be neglected either, and the importance that consumers attach to the issues of sustainable development for the environment when making food choices must be considered (Burlea-Schiopoiu and Balan, 2018). Moreover, we need to consider the effects of climate change in inducing population migration flows, as a possible variation in socio-economic outcomes, especially in terms of the role played by agriculture in affecting such a relationship.

Through our research we want to explore how sector-specific policies such as the common agricultural policy (CAP) and agriculture-related renewable energy policies (e.g. biogas) have evolved over time and how concepts have been informed and adapted, that refer to environmental sustainability and that highlight how research has contributed to assessing the impact of agricultural and agro-energy policies on agricultural systems.

The concept of sustainable development has been organized into three main areas (or dimensions) of sustainability: economic, social and environmental. Since

1987, such a concept has gradually established public policies in various sectors, including agriculture and agro-energy. The European Union's common agricultural policy, which was introduced in the early 1960s, has evolved in line with societal changes and requirements, in particular in terms of objectives and implementation tools. In particular, the objective of increasing agricultural productivity (to ensure food self-sufficiency) has been gradually replaced by measures aimed at promoting agricultural sustainability and ecological practices in agriculture.

The first stage of such a process took place along the establishment of the second pillar of the CAP, aimed at recognizing and rewarding various multifunctional and ecological practices in agriculture. In the second pillar, the most relevant actions to encourage sustainable agricultural practices are agro-environment measures. As the implementation of the agro-environment measures, as well as other second pillar measures, is voluntary for farmers. It is essential to understand what factors encourage their adoption and to compare the characteristics of farmers, people working in agriculture and the territory of all participating and non-participating subjects to the agro-environment measures.

We observed that the younger farmers are more inclined to sustainable agricultural practices and, in addition, the adverse selection effect, according to which the lower the cost of adaptation for agro-environment measures, the more likely it is to participate in the project funding scheme. This, in turn, leads to a lack of practicability in the results of these policies, as farmers who are the real target of these policies are less likely to get involved in sustainable agriculture development projects. The location of the farm in sensitive areas, from an ecological point of view does not seem to affect the absorption of agro-environment measures, and this finding highlights a lack of territorial targeting of this type of intervention.

Beyond participating in organic farming practices, it is essential to assess whether and to what extent the adoption of such actions actually translates into the expected results. In this regard, economic research in agriculture has focused on the development of farm-level tools and analyses based on survey simulations (De Olde et al., 2016) and ex-post estimates on the effects of agricultural practices and agricultural policies on sustainable development (Bertoni et al., 2018).

As the concept of sustainable development also takes into account the social and economic dimensions (along with the environmental ones), the effects of agricultural policy have also been examined in terms of job creation (aimed at reducing off-farm migration).

A study conducted by Olper et al. (2014), between 1990 and 2009, based on data from European regions, showed that agricultural payments have contributed to reducing labour migration in agriculture, even if they have a moderate effect. However, it should be noted that, during an economic downturn, off-farm employment can be a useful strategy for integrating family farm incomes. Therefore, payments under the first pillar are more efficient than those under the second pillar, and speaking of the first one, coupled payments are more efficient than decoupled payments, even though decoupled payments have emerged as the most effective payment instrument. As a policy for maintaining employment in the agricultural sector, the current CAP reform has limited them to the implementation of so-called *greening measures* by farmers who have benefited from them.

Such measures consist of crop diversification, the allocation of a minimum part (5-7%) of agricultural land in areas of ecological interest and the maintenance of pastures and permanent pastures. Although the debate around the CAP reform has sometimes defined the current greening measures as a small compromise, their impact assessment has shown that they have had a fairly strong effect on agricultural and harvest mixes in high-intensity agricultural systems, while others areas were not affected by the policy instrument (Louhichi et al., 2017).

Cavicchioli and Bertoni (2015), measured the ex-ante impact of greening measures in the plain area of the Lombardy region, which is one of the more intensive agricultural contexts in Europe and saw a decline in cereal crops in favour of nitrogen-fixing crops. According to the same analysis, the greening measures included in the European Union's proposal would have a stronger impact on agriculture in Lombardy compared to the approved measures (Solazzo et al., 2016).

Gaudino et al. (2018), comparing the effect of greening measures on three different structures of dairy farms (extended, organic and intensive), they found an intense effect, in terms of reducing incomes, for intensive farms compared to the other two categories. Bertoni et al. (2018) observed a significant discontinuity in the transition of agricultural land use in Lombardy before - during 2011-2014 - and after the adoption of greening - in the period 2015-2016.

Policies to stimulate bioenergy and biofuels can also have an impact on the sustainable development of agricultural systems, sometimes not in the desired direction. The case of biogas in high-intensity agricultural areas is an example of how poorly designed policies can lead to distortive effects on the agricultural system. As a first step, incentives for biogas were targeted at large plants, while after noticing side effects, the policy shifted to smaller plants. Thus, payments for large biogas plants lead to a distortion of the feed market, with an increase in costs for animal farms, and such an effect could be reduced if incentives were granted for smaller biogas factories.

We arrived to the conclusion that interventions to support the sustainable development of the environment may generate some unintended results. On the one hand, the lack of response and territorial targeting of voluntary measures can reduce the effectiveness of projects aimed at sustainable agriculture and environmental protection. On the other hand, limiting direct payments to beneficiaries (such as greening the first pillar) can weaken sustainable social and economic development of high-intensity farming systems.

The lack of a territorial strategy for the implementation of environmental projects (both voluntary and direct) may be due to the farm-level design of such instruments.

Incentives for renewable energy can have different results on the three pillars of sustainable development in agriculture, improving the environmental component, but distorting certain product markets (feed) and factors (land). Such issues can be addressed by establishing monitoring of the sustainability indicators of the agricultural system in order to anticipate (ex-ante) and measure (ex-post) their territorial response to different policies.

The development of a framework for effective indicators for quantifying sustainable development in agriculture is the key to integrating the concept of sustainable development into agricultural and environmental policy planning. In this regard, some attempts have already been proposed to measure the sustainable social,

ecological and economic development of agriculture both at farm level (Van Passel et al., 2007; Thomassen et al., 2009) and at territorial level (Paracchini et al., 2016). These efforts should be stepped up and empowered through better exploitation and integration of all available geo-referential databases on the three pillars of sustainable development in agriculture.

4. CONCLUSIONS

Strengthening the global attention to better protection and conservation of the environment has made sustainable development a focus on studying how sustainable development is linked to the environment, agriculture and food consumption. Our research shows that sustainable development is a key factor in agricultural policies, which are increasingly geared to creating incentives for better protection and management of the environment.

The concept of sustainable development is the focus of ISO international standards. Ensuring quality management automatically involves ensuring sustainable development in all aspects specific to the business, from human resources to business strategies. The international standards ISO 14001 on the environment and ISO 26000 on social responsibility are starting points in ensuring the sustainable development of society.

Strategies for implementing sustainable development within agricultural organizations can be achieved through a good relationship with stakeholders on the principle of mutual gain through which conflict situations of any kind are implicitly avoided. In conclusion, we believe that there can be no synonymous bond between social responsibility and sustainable development, as social responsibility can be considered the main tool used by public or private sector organizations towards sustainable development. Agriculture must be organized on the principles of sustainable development in order to respond to growing demand, contribute more effectively to reducing poverty and malnutrition, and become more environmentally sustainable. This transformation will be crucial to achieving many of the goals of sustainable development, and the challenges facing agriculture in the process of sustainable development are related to developing ways to make society socially equitable and environmentally sustainable. A society not only obsessed with growth, but motivated by meeting human needs and equity in the allocation of natural and other resources.

Sustainable agriculture must respond to economic, social and environmental challenges and be aware that all these challenges are closely linked. These characteristics of sustainable agriculture should be considered as a whole and no single characteristic should be predominant to the detriment of the other characteristics.

The challenges of sustainable development shift the paradigm of management and a set of principles have been explored in the literature with the potential to promote the agricultural organizationa to implement a sustainable development.

The development of a sustainable value proposition is fundamental to the existence, survival and prosperity of the organization, and the three-dimensional approach to economic, environmental and social objectives only makes sense when considering not only short-term, but also medium-term and long strategies. However, the long-term strategy for sustainable management systems tends to exceed the time frame for planning the strategy, and rather involves taking into account future generations.

These initiatives need to be integrated into the organization's systems, and organizations are invited to integrate the principles of sustainability into their business processes and capabilities (Burlea-Schiopoiu, 2007). Thus, organizations can implement sustainable development initiatives to develop sustainability reporting, sustainable work, design and ergonomics. This shows that organizations can use different mechanisms to implement their own value creation systems to make a profit.

5. AKNOWLEDGEMENT

This work was supported by the grant POCU/380/6/13/123990, co-financed by the European Social Fund within the Sectorial Operational Program Human Capital 2014 – 2020.

REFERENCES

1. Bertoni, D., Farmland Use Transitions After the CAP Greening: A Preliminary Aletti, G., Analysis Using Markov Chains Approach. *Land Use Policy*, 79, Ferrandi, G., 789–800, 2018
Micheletti, A.,
Cavicchioli, D.,
Pretolani, R.
2. Burlea-Schiopoiu, A. The Impact of Triple Bottom Dispersal of Actions on Integrated Reporting: A Critical perspectives, in Samuel O. Idowu and Mara delBaldo (eds.), *Integrated Reporting: Antecedents and Perspectives for Organizations and Stakeholders*, pp. 141-152, Springer Nature Switzerland, DOI: 10.1007/978-3-030-01719-4_7, 2019
3. Burlea-Schiopoiu, A. An Aristotelian approach to sustainable management, in *Encyclopedia of Corporate Social Responsibility*, Idowu, Capaldi, Zu, das Gupta (eds.), Springer-Verlag Berlin Heidelberg, pp. 92-100. Doi: 10.1007/978-3-642-28036-8_657, 2013a
4. Burlea-Schiopoiu, A. Global Environmental Management Initiative, in *Encyclopedia of Corporate Social Responsibility*, Idowu, Capaldi, Zu, das Gupta (eds.), Springer-Verlag Berlin Heidelberg, pp. 1241-1248. Doi: 10.1007/978-3-642-28036-8_390, 2013b
5. Burlea-Schiopoiu, A. *Managementul Resurselor Umane*, Editura Universitaria, 2008
6. Burlea-Schiopoiu, A. An Approach of the Knowledge Management for the Development of the Organisational Commitment, *Advances in Information Systems Development*, Springer US, pp. 313-323, 2007
7. Burlea-Schiopoiu, A., Balan, D.A. The short memory life span of consumer: a premise for corporate socially irresponsible behavior? *Innovation Management and Education Excellence through Vision 2020*, Vols. I-XI, pp. 1274-1286, Milan, Italy, 2018
8. Burlea-Schiopoiu, A., Mihai, L.S. An Integrated Framework on the Sustainability of SMEs. *Sustainability*, 11(21), 6026; <https://doi.org/10.3390/su11216026>, 2019
9. Burlea-Schiopoiu, A., Rainey, S. Servant lider-Servant leadership, in *Encyclopedia of Corporate Social Responsibility*, Idowu, Capaldi, Zu, das Gupta (eds.), Springer-Verlag Berlin Heidelberg, pp. 2120-2126. DOI: 10.1007/978-3-642-28036-8_203, 2013
10. Burlea-Schiopoiu, A., The Dangers of Dispersal of Responsibilities. *Amfiteatru Economic*, 19(45), pp. 464-476, 2017

- Remme, J.
11. Cavicchioli, D., Effects of Cap Green Payments in Lombardy: A Comparison of Berton, D. Proposed and Approved Measures Based on Census Data. *Universitas Studiorum: Mantova, Italy*, pp. 109–120, 2015
 12. De Olde, E.M., Assessing sustainability at farm-level: Lessons learned from a Oudshoorn, F.W., Sørensen, C.A., Bokkers, E.A., De Boer, I.J. comparison of tools in practice. *Ecol. Indic.* 66, 391–404, 2016
 13. Dernbach J., Environmental Laws and Sustainability: An, Editorial, Mintz, J. Sustainability, <http://www.mdpi.com/2071-1050/3/3/531>, 2011
 14. Gaudino, S., Integrated Assessment of the EU’s Greening Reform and Feed Self-Reidsma, P., Sufficiency Scenarios on Dairy Farms in Piemonte, Italy. Kanellopoulos, Agriculture, 8, 137, 2018
A., Sacco, D., van Ittersum, M.K.
 15. Grosvold, J., Squaring the circle: management, measurement and performance of Hoejmoose, sustainability in supply chains. *Supply Chain Manag. An Int. J.* 19, S.U., Roehrich, 292-305. <http://dx.doi.org/10.1108/SCM-12-2013-0440>, 2014
J.K.
 16. Idowu, S., Corporate Social Responsibility in Times of Crisis, Springer, Vertigas, St., DOI: 10.1007/978-3-319-52839-72017, 2017
Burlea-Schiopoiu, A.
 17. Kates, RW, Sustainability science. *Environ Sci Policy Sustain Dev* 47(3): 8–21, Parris, TM, 2005
Leiserowitz, A.A.
 18. Liu S., Liu L Implementing Corporate External Social Responsibility Strategies trough Organizational Design and Operation, *Journal of International Business Ethics*, Vol.2, No.1, pp.79-83, 2009
 19. Louhichi, K., Economic impacts of CAP greening: Application of an EU-wide Ciaian, et. all individual farm model for CAP analysis (IFM-CAP). *Eur. Rev. Agric. Econ.* 45, 205–238, 2017
 20. Mihai, L.S., The Role of Entrepreneurial Initiative as Motivational Driver, 6th Burlea-Schiopoiu, A., Washington D.C., 5-6 March 2018, pp. 271-279, 2018
Bîrchi, F.A.
 21. Olper, A., . Do CAP payments reduce farm labour migration? A panel data Raimondi, V., analysis across EU regions. *Eur. Rev. Agric. Econ.* 41, 843–873, Cavicchioli, D., 2014
Vigani, M.
 22. Solazzo, R., How effective is greening policy in reducing GHG emissions from Donati et all agriculture? Evidence from Italy. *Sci. Total Environ.* 573, 1115–1124, 2016
 23. Tovey, H. Sustainability: A Platform for Debate, Sustainability, 1, <http://www.mdpi.com/2071-1050/1/1/14>, 2009
 24. * * * <https://www.iso.org/standards.html>