

Economics of Sustainable Development as a Trend in Modern Economics: An Overview

Introduction

The economics of sustainable development has been present in the relevant literature for several decades and refers to many areas of human life: socio-economic, public health, ecology, transportation and many others. However, the formula of sustainable development is not a uniform and clearly defined category and its translation and interpretation raise many controversies. F. Piontek mentions more than forty interpretations (Piontek, 2001: 18), whereas G. Zabłocki about sixty developed only after 1989 (Zabłocki, 2002: 7). With no definite equivalent of the English term “sustainable development”, numerous translation problems have occurred. In Polish, they lead to many inaccuracies and translations such as *stabilny* (stable), *trwały* (lasting), *zrównoważony* (sustainable/balanced), *samopodtrzymujący się* (self-sustained) or *trwały i zrównoważony* (balanced and sustainable). Nevertheless, the equivalent of “sustainable development” prevails since this form is used in the Constitution of the Republic of Poland in its Article 5, in the Act of 27 April 2001 and in many other documents issued by the national, regional and local governments.

That ambiguity of sustainable development, which changes in time and space, has varying scopes and reflects different value systems, as well as the dynamic evolution of economics of sustainable development inspired the author of this text to look closer at the essence of sustainable development and the assumptions behind its economics.

Progressive degradation of the natural environment aroused the interest of many economists in relationships that can be seen between the exploitation of natural re-

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sources, environmental pollution and economic growth. In the mid-1970s, fairly intensive attempts started in order to find models of sustainable and stable economic development that would take into account protection of ecosystems from overexploitation and conditions of human ecological activity. That coincided with the evolution of the sustainable development concept consisting of three key components: social, economic and ecological orders.

This article aims at providing an insight into economics of sustainable development and presenting its historical roots. The issues herein do not describe its whole range, but only selected elements. The structure of this article is as follows. The first part focuses on the origins, concept and principles, objectives and orders of sustainable development. Further, the concept and assumptions of sustainable development economics and *homo sustinens* as the basic underlying notion are discussed. Finally, major conclusions end this study.

Origins of the sustainable development concept

The term “sustainable development” was first used in 1713 by Saxon thinker Hans Carl von Carlowitz in his book *Sylvicultura economica*, where he described forest devastation in mining towns in Saxony in 1618–1648. H.C. Carlowitz suggested that tree stands should be used in such a way as to ensure their future development. In addition, he argued that the number of trees being cut should not exceed that of trees being planted. That proposal was adopted not only in Germany but also in many European countries. Today, the idea of sustainable forest management is one of the priorities expressed, among others, in the Convention on Biological Diversity (Journal of Laws of 2002, No. 184, item 1532) and the Pan-European Biodiversity Strategy.

Afterwards, the concept of “sustainable development” was used in the second half of the 1960s by Barbara Ward, the founder of the International Institute for Environment and Development, who referred to it in order to express the view that social and economic development and environmental protection do not exclude each other but rather should be pursued jointly (Zabłocki, 2002: 9). This term has since gained great popularity, although this has not contributed to its uniform definition.

Today, sustainable development is seen as a key trend of global environmental policy and economic development policy. The concept of sustainable development has been the subject of numerous theoretical and empirical analyses for more than five decades. It was not coined until the 1960s by the Club of Rome. Nonetheless, it was only at the turn of the 1960s and 1970s that attention was paid to the threats to the environment posed by overexploitation of natural resources, world population growth, rapid growth of industry and agricultural production, and uncontrollable consumption. It should be clearly stressed that the concept of sustainable development now underlies a new planetary phase of human civilisation development. Undoubted-

ly, its origins refer to solving contemporary problems in order to achieve socio-economic development in an unlimited period of time.

As mentioned above, attempts to define the idea of sustainable development were initially made in the late 1960s. The first 1969 report by the Club of Rome was fundamental to starting discussions on how socio-economic development should progress so as not to inhibit economic growth with a consequent economic and environmental crisis. The report on “Our Common Future” drawn up in 1987 in Stockholm, also known as the “Brundtland Report”, first defined sustainable development (Brundtland, 1991). That term was used as a response to the increased environmental and social threats that arose mainly due to the characteristics of the then capitalist system and weakened capacity for positive self-regulation. That document postulated that the economy and nature should be understood as integrated system components.

The general meaning of “sustainable development” (in the context of eco-development)¹ was defined at the Third Session of the Governing Council of the United Nations Environment Programme (UNEP). It was accepted then that a society pursuing the ideas of sustainable development is a society that recognises the primacy of ecological requirements which should not be disturbed by civilisation growth or cultural and economic development. Such a society is able to independently steer its development in order to maintain homeostasis and symbiosis with nature, respects economical production and consumption and re-uses waste, is concerned about the future consequences of actions taken and bears in mind the needs and health of future generations (*Ochrona Środowiska Człowieka*, 1984).

Among the Millennium Development Goals set out in New York in 2000, two years before the Earth Summit in Johannesburg, sustainable development was a goal linked with environmental governance. This is undoubtedly an example of environmental interpretation of international sustainable development. In the resulting document, eight goals were set to be achieved by 2015. These goals include reducing poverty and hunger, promoting gender equality and improving human health.

At the second Earth Summit convened in 1992 in Rio de Janeiro, the idea of sustainable development was implemented. It was then recognised that a new era

¹ The principle of eco-development played a special role in the investigation of the origins of sustainable development. Supporters of this concept presume that the primary task of development should be to meet environmental requirements, with lesser importance attached to its conditions and social consequences. This position is popular among many environments, i.a. representatives of deep ecology, ecological economics and ecological modernisation. More in: Constaza, 1991; Spaargaren, Mol, 1992. It should, however, be borne in mind that the concept of “eco-development” has a narrower meaning than “sustainable development” since only once an integrated environmental, social and spatial order has been achieved, can eco-development take place as a crowning of these processes (Kassenberg, 2001: 25–27). According to J. Kołodziejski, sustainable development is a broader notion than eco-development because the latter means development that takes into account ecological criteria or socio-economic development without devastating natural resources (Kołodziejski, 1997: 39–41). In contrast, J. Gudowski claims that eco-development has been recently named sustainable development (Gudowski, 2009: 18).

of sustainable development meant that the global economy needed to meet human needs and requirements, but its growth should progress within the ecological capacity of the planet. That conference adopted five documents: *Agenda 21*, the *Rio Declaration on Environment and Development*, the *Framework Convention on Climate Change*, the *Convention on Biological Diversity* and the *Statement of Forest Principles*. The most important document is undoubtedly the *Agenda 21*², which is an action plan to be implemented in the 21st century as regards protection and efficient use of natural resources in order to ensure sustainable development. That document shows how to achieve such development in environmental, spatial, economic, social, institutional and political terms.

At the next, third Earth Summit held in 2002 in Johannesburg, sometimes called Rio+10, the *Johannesburg Plan of Implementation* was adopted with three pillars defined: ecological, social and economic³ to support further socio-economic development and the environment (Zalega, 2015: 4). That great political event restored the seriousness of the discussions on ecosystem homeostasis and control of interference with ecosystems to maintain the potential for ecosystem sustainability. Importantly, these issues were approached more holistically under five themes: 1. Protection of water, access to sanitation and drinking water of good quality; 2. Ensuring energy supplies while respecting the environment; 3. Health care; 4. Agriculture and its role in the economic and social development; 5. Protection of biodiversity and ecosystem management (Sobolewski, 2002: 6). It should be emphasised that the Johannesburg Conference did not actually entail any new international commitments as the acts adopted duplicated formerly identified global sustainable development issues.

Numerous initiatives and innovative projects for diversified development are implemented not only at the global but also at the European level. In *Europe 2020: A strategy for smart, sustainable and inclusive growth* adopted by the European Commission on 3 March 2010, it was highlighted that the strategy aimed to build a sustainable future (*Commission Communication, Europe 2020...*, 2010). To meet these requirements, it covers three interrelated priorities:

- smart growth: developing an economy based on knowledge and innovation;
- sustainable growth: promoting a sustainable economy, i.e. a more resource efficient, greener and more competitive economy, in particular in relation to energy, efficiency and consumption;
- inclusive growth: fostering a high-employment economy delivering social, economic and territorial cohesion.

² The document consists of four sections. The first one discusses economic and social issues. The second, most comprehensive section includes the problems of protection and management of natural resources from the perspective of eco-development. The third one addresses the role of major social groups and the need to strengthen their role in the implementation of Agenda 21. The last section discusses the feasibility of individual tasks and recommendations.

³ These three pillars also form the basis of the *Sustainable Development Strategy for Poland by 2025*.

These priorities should be implemented based on headline targets to be achieved by the Community in taking actions outlined in the *Europe 2020* strategy. These are (Europe 2020: 5):

- 75% of the population aged 20–64 should be employed,
- 3% of the EU's GDP should be invested in R&D,
- the “20/20/20” climate/energy targets should be met (including an increase to 30% of CO₂ emissions reduction if the conditions are right),
- the share of early school leavers should be under 10% and at least 40% of the younger generation should have a tertiary degree,
- 20 million less people should be at risk of poverty.

The *Europe 2020* provisions suggest that the main source of economic growth is a knowledge-based economy that is environment friendly, resource efficient, largely takes into account social needs, and more importantly, stimulates local communities to take actions.

The issue of sustainable development was also addressed by the European Council of Spatial Planners in the 2003 *New Charter of Athens*, which described the vision of twenty-first century cities (as a challenge to town planners) in the context of sustainable urban environment planning. It highlights that urban infrastructure planning must be adjusted to the needs of an ageing population.

The interest in the sustainable development concept was aroused in Poland the 1990s. In 1991, the Polish Parliament (Sejm) adopted the National Environmental Policy which set goals and actions to improve the environment. The obligation to follow its requirements was endorsed in Article 5 of the Polish Constitution of 1997 and in many government documents including the Sustainable Development Strategy by 2025. The rules for the protection of resources and the conditions for their use, with account being taken of sustainable development requirements, were set out in the Act of 27 January 2001 – Environmental Protection Law (Article 3). Today's Polish sustainability policy follows a guideline adopted in the “National Development Strategy for 2007–2015”. It indicates six development priorities such as (*National Development Strategy for 2007–2015*, 2006: 24):

- to boost competitiveness and innovativeness of the economy;
- to improve technical and social infrastructure;
- to increase employment and improve its quality;
- to build an integrated social community and ensure its safety;
- to deliver rural development;
- to ensure regional development and improved territorial cohesion.

The issues of sustainable development can also be found in many national programmes such as the National Cohesion Strategy as well as in regional and targeted operational programmes.

In turn, the authors of the *Vision of sustainable development for the Polish business 2050 (Vision 2050)*, taking into account economic, geographical, historical and international conditions, identified six basic thematic areas indicating priority re-

search orientations as stable conditions for development. These comprise: development of human capital, development of social capital, natural resources, sustainable development of infrastructure, sustainable energy and the quality of state and public institutions (www.wbcsd.org/vision2050.aspx, accessed on: 2.03.2015). That project refers to the international initiative undertaken by the World Business Council for Sustainable Development. It should be clearly emphasised that the *Vision 2050* pays special attention to economical, efficient use, recovery and reuse of resources. The document was drawn up as a result of consultation led by Deloitte consulting firm (*Deloitte Sustainability Consulting Central Europe*) in cooperation among the Ministry of Economy, the Responsible Business Forum and 99 representatives of companies and business organisations.

The concept and essence of sustainable development

Economics of sustainable development is a new trend of economic theory that mainly builds on the achievements of heterodox economics, i.a. new institutional economics, ecological economics, social economics and industrial ecology, post-Keynesian economics, behavioural economics and evolutionary economics. This trend may be said to remain at the stage of conceptualisation of fundamental categories and notions. The key problem in determining this theoretical framework chiefly arises out of the multidimensionality of sustainable development.

The notion of sustainable development is perceived differently in the literature. Numerous complementary definitions and interpretations of sustainable development exist starting from those focusing on socio-economic development and minimising the importance of environmental problems to definitions concentrating on environmental problems and ignoring social and economic development.

H. Rogall defines sustainable development as an attempt to ensure that all contemporary and future generations can enjoy sufficiently high environmental, economic and socio-cultural standards within the limits of natural capacity of the Earth, applying the principle of intra- and inter-generational justice (Rogall, 2010: 44). According to D. Pearce and R.K. Turner (1990: 10–11), on the other hand, sustainable development involves maximising net benefits of economic development while protecting and ensuring restorability of the utility and quality of natural resources in the long term. Economic development is not limited solely to GDP per capita but also includes necessary structural changes in an economy. Generally, sustainable development is defined as an economic doctrine implying that the needs of the current generation may be satisfied in such a way that is permitted by available civilisation development without reducing the chances to meet them for future generations. This definition refers to the report by the UN World Commission on Environment and Development headed by G.H. Brundtland (UN Secretary General), where the main emphasis is on inter-generational justice (Brundtland, 1991). The 1987 Brundt-

land Report “Our Common Future” defines sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs, where “sustainability” as a process should be seen as simultaneous integration and harmonisation of actions in three areas: economic, political and social, and environmental (*Our Common future*, 1991; Gawor, 2006: 60). Coherence of these three areas is the basis of sustainable development. The need to treat them jointly was noticed following the failure of the earlier sectoral approach to these areas, also in view of the fact that a simultaneous analysis of economic, environmental and social processes allows covering more phenomena when evaluating present and planning future actions, consequently modifying the overall assessment and making it broader and more precise. To do so and in order to achieve sustainable development goals as specified in the Brundtland Commission report, the following recommendations should be considered (Kośmicki, 2007: 194):

- population growth should be stopped and previously untapped human resources should be developed;
- strategies should be planned to meet basic needs;
- sustainable food supply should be secured;
- destruction of species diversity and natural ecosystems should be stopped;
- consumption of energy, especially non-renewable, should be reduced;
- industrial production should be increased, using technologies that protect resources and the environment;
- further growth of big cities should be discontinued and the development of smaller towns linked with their neighbourhoods should be promoted.

As argued by R. Estes, sustainable development as defined in G. Brundtland’s Report is an example of normative approach that attempts to reconcile the interests of the present generation with those of future generations, also with a view to social development. Such an approach is, however, devoid of specific and useful guidelines on how to shape environmental policy objectives in relation to social and economic policies (Estes, 1993: 39–43). It should be kept in mind, however, that the Brundtland definition still raises many doubts. An extremely broad material (economic, political, environmental aspects) and personal (present and future generations) scope of this concept stems from its very nature. The definition of sustainable development agreed at the second Earth Summit in Rio de Janeiro in 1992 is much more precise. It says that sustainable development is a strategy for environmental, social, technical and technological and organisational transformations aimed at achieving reasonable and sustainable social well-being, enabling its transfer to future generations without risking destruction of natural resources and ecosystems (*Dokumenty końcowe Konferencji...*, 1993).

For J.M. van den Berg and P. Nijkamp, sustainable development denotes civilisation development where forms and dynamics of economic activity, institutions, lifestyles and population size are such that every person of present and future generations will be ensured adequate quality of life and all aspects of this development are

secured by the availability of natural resources, ecosystems and life support systems (van den Berg, Nijkamp, 1987: 11, as cited in: Kielczewski, 2008: 8).

The origins of sustainable development allow for distinguishing its narrow (derived from eco-development) and broad (associated with integrated order) interpretation. In its narrower interpretation, it is development that ensures sustainable management of environmental resources. Understood more broadly, it pursues objectives sought by the public when the environment is managed in a sustainable manner (Borys, 2010: 45–46). Examples of the “narrow” interpretation of sustainable development are reflected in the Lisbon Strategy. Its main objectives such as knowledge-based economy, liberalisation and integration of markets, entrepreneurship and social cohesion also include self-sustained development. It involves environmental protection and comprises such objectives as climate, natural resources, public health and the pressure of transport. On the other hand, the “broad” interpretation of sustainable development is founded on ethical choices: fight against poverty, principles of ethics policy, ensuring such conditions for the development of future generations that are analogous to the present ones, and preserving cultural diversity. The broad approach may be said to assume that sustainable development meets the objectives sought by the public when capital management is difficult. Its essence lies in durability of the natural, human and physical capital.

In Poland, the concept of sustainable development was defined by the Act on Environmental Protection and Development of 31 January 1980. Its Article 3.3a states that sustainable development is socio-economic development whereby political, economic and social actions are integrated in order to balance the opportunities of access to the environment for individual societies or their citizens – both present and future generations – while maintaining environmental balance and sustainability of basic natural processes. Also the Constitution of the Republic of Poland contains a number of provisions that directly relate to sustainable development (e.g. articles 31(3), 68(4), 78(232)). Yet, Article 5 of the Constitution is the most important, stating that “The Republic of Poland shall (...) safeguard the national heritage and shall ensure the protection of the natural environment pursuant to the principles of sustainable development”. The preamble of the said Act provides that “The Republic of Poland, following the principle of sustainable development meaning the pursuit of the following objectives (Paczuski, 1998):

- maintaining restorability of natural resources,
- rational use of non-renewable resources and replacing them with substitutes,
- reducing environmental burden and avoiding exceeding the limits determined by environmental capacity,
- conserving biodiversity,
- ensuring environmental safety for citizens,
- creating conditions for economic operators to compete fairly for access to limited resources and possibilities of discharging pollutants,

- shall provide protection and rational management of the environment constituting a common national good and shall create favourable conditions for realising citizens' right to benefit equally from environmental assets”.

According to B. Poskrobko (1997: 10–11), there are three ways of understanding sustainable development as:

- a *socio-philosophical idea* emphasising the need to harmonise the overall relationships between the human civilisation activity and the natural environment;
- a *direction of economic development* (economic approach) emphasising the need for a comprehensive approach to today's economic, social and environmental problems (the so-called intra-generational justice), a long-term perception of development processes (inter-generational justice) and a reasonable allocation of renewable resources so as to allow their regeneration (justice for non-human beings) (Pearce, 1987: 9–17);
- a *research direction*⁴ that understands sustainable development in an interdisciplinary way, thus considering economic, spatial, political, demographic and ethical orders jointly (Kielczewski, 2008: 32).

A. Kalinowska distinguishes four groups of sustainable development definitions (Zyśk, 2001):

- *ethical and idealistic*, associating sustainable development with a commitment to future generations;
- *scientific and economic* – integrating the environment into all elements of economic calculation,
- *environmental* – the laws of nature are respected,
- *ethical* – fair management of the world, taking into account the needs and rights of all creatures and growth opportunities in the future.

H. Zabel defines sustainable development as a permanent form of management, relatively humane coexistence, by means of a balanced approach to economic, environmental and social stabilisation and development criteria in order to secure further meaningful life for a sufficient number of generations on the basis of intra- and inter-generational justice, through employing techniques compatible with environmental and social requirements (Kośmicki, 2010). In turn, D. Pieńkowski argues that the concept of sustainable development encompasses two dimensions that characterise the specific nature of developmental problems (Pieńkowski, 2011):

⁴ In Polish research, sustainable development is presented from the perspectives of general economic sciences and economic education (T. Borys, B. Fiedor, E. Kośmicki, B. Poskrobko), finance and banking (J. Famielec, M. Rutkowska), management sciences (L. Preisner, A. Witek-Crabb), spatial planning (K. Dubiel, S. Koernik, T. Łaguna, J. Ślodzić), law, philosophy and ethics (D. Kielczewski, A. Kieras, F. Piontek), technical sciences (R. Bogoczek, E. Cibis, R. Janikowski, A. Wasiak, L. Woźniak), natural sciences (E. Lonc, A. Mizgalski, L. Ryszkowski), sustainable development indicators (J. Śleszyński, T. Żylicz), international relations (A. Budnikowski, J. Gierczycka), and the concept itself, its sources and implementation possibilities (S. Czaja, B. Fiedor, T. Winnicki, L. Woźniak, T. Żylicz).

- the need to undertake inter-generational and long-term analysis of the consequences of socio-economic development, while respecting its biological foundations (evolutionary perspective),
- identification of social development priorities to establish the rules of justice in line with human needs.

I believe that two elementary approaches to sustainable development can be distinguished. The first one is an economic approach that could be equated with the paradigm of environmental protection and environment development. This means that sustainable development can be perceived as covering traditional economic growth and environmental considerations. The second approach is ideological and historiosophical, focusing on search of new social behaviours and objectives and new forms of civilisation development in this context. As claimed by B. Piontek (2002), sustainable development comprises holistically all individual elements of civilisation such as management of natural, economic and human resources, space management, institutional arrangements, moral sphere, development of awareness and a choice of a particular model of life. Consequently, it involves exploring and formulating a new, environmentally optimal and socially satisfactory vision of civilisation.

Most generally, sustainable development should be understood as socio-economic development whereby social, economic and political actions are integrated, and natural balance and sustainability of key natural processes are maintained in order to ensure that the basic needs of individual communities or citizens of both present and future generations can be satisfied. According to F. Piontek, sustainable development essentially entails ensuring an improved quality of life for the present and future generations by maintaining the right balance among economic, human and natural capital (Piontek, 2002: 18–19). It might be stated that coherence of these three factors is a *sine qua non* for sustainable development.

An analysis of the sustainable development concept should also take into account demographic and institutional determinants. According to the new institutional economics, it is the institutions that are key drivers of economic growth. In addition to social coherence and environmental conditions of development, traditionally interpreted economic growth underlies the notion of sustainable development. Six common features included in its many definitions can be identified (Florczak, 2008):

- rejection of the zero-growth concept which would reconcile environmental and socio-economic concerns,
- interactions between economic, environmental, demographic and social factors of development,
- involvement of the whole society in the implementation of sustainable development principles,
- the need to anticipate and analyse the impact of current decisions on the well-being of future generations,

- distributive justice,
- emphasis on the impact of intangible aspects of quality of life on well-being.

P. Jeżowski argues that sustainable development requires the application of the prevention principle and, above all, the precautionary principle. On the other hand, it is important to remember that sustainable development is not social development focused on humans or health, education and employment. Neither is it concentrated on production, income or consumption. Importantly, sustainable development may not mean only green growth. Selecting one of these options would violate social, economic or environmental justice (Jeżowski, 2012: 103).

It may be argued that sustainable development is multidimensional because it covers a large number of different components (orders), not only production and logistics or technological changes but also sustainable consumption and social processes. As claimed by P. Mulder and J. van der Bergh (2001), sustainable development should be consistent with:

- the use of renewable natural resources to ensure sustainability,
- protection of properties and functions of ecosystems,
- biodiversity preservation,
- keeping harmful emissions below the critical threshold, i.e. maintaining assimilative capacity,
- avoidance of irreversible damage to the environment and nature.

Principles, objectives and orders of sustainable development

Economics of sustainable development is not solely focused on reducing excessive exploitation of natural resources but includes three dimensions of sustainability: environmental, economic and socio-cultural, each covering five areas of life (Table 1).

In the above-mentioned *Agenda 21 – Global Programme of Action*, sustainable development goals are classified under four main categories (Keating, 1993):

- *economic goals*: changing patterns of consumption, development of clean production, international cooperation for sustainable development, balance between tangible and intangible elements of well-being;
- *social goals*: combating poverty, protecting cultural diversity, development of self-government and democracy, access to health care, access to education, sustainability of demographic processes;
- *environmental goals*: protecting water resources, seas and oceans, protection of mountain areas, combating desertification and drought, combating deforestation, protecting biodiversity, protecting the atmosphere, sustainability of agriculture and waste management;
- *institutional goals*: integration of environmental policy with economic and social policies, development of international law, development and faster flow

of information, advancing research for sustainable development, strengthening the role of major social groups in decision-making processes.

Table 1. Basic objectives of sustainable development

Environmental objectives	Economic objectives	Socio-cultural objectives
Protection of the Earth's atmosphere	Stability of the national economy	Democracy and the rule of law in all areas of life
Avoiding harmful influence on nature	Satisfaction of basic needs through sustainable products	Poverty eradication, social security and overcoming demographic problems
Sustainable use of renewable resources	Price stability, de-concentration of power, internalisation of external costs	Equal opportunities and social integration
Sustainable use of non-renewable resources	Reduction of imports of raw materials	Internal and external security
Healthy living conditions	Efficient state budget while ensuring adequate standards of supply of public and substantive goods, fair distribution of income	Health care and protection of the quality of human life

Source: Rogall, 2010: 47.

Obviously, the key goal of sustainable development is to better cater for physical and mental human needs through correct relationships between humans and the natural environment. Thus, an objective of sustainable development is to ensure a good quality of life for all people of present and future generations. The civilisation growth is constrained by the limited capacities of nature. Due to overexploitation of natural resources and environmental pollution, in particular developed countries already live at the expense of the most vulnerable people and future generations. As rightly observed by M. Czyż (2000: 49), the concept of sustainable development defines as its primary objective the attainment of intended and expected social goals that ensure an increased educational level of the society, in addition to bigger real income, improved health and equitable access to natural resources.

The principles of sustainable development are usually the following (Ślódowa-Hępa, 2013: 42–43):

- an integrated approach – equal and comprehensive treatment of environmental, economic and social considerations;
- inter-generational justice – satisfaction of material and civilisation needs of the present generation, while creating conditions for future generations to meet these needs;
- inter-regional and inter-group justice – fair access to limited environmental resources for societies, social groups and individuals;
- balanced local and supra-local opportunities – equally meeting the needs of entire societies, regions and local areas;

- social participation – social participation in planning and decision-making by public authorities;
- environmental precaution and prevention – assessment of each planned activity for its environmental impact;
- focus on demand management – appropriate adjustment of local and global consumption models to limited environmental capacities.

In Poland, the *Second National Environmental Policy* drawn up in 1999–2000 recognises the principle of sustainable development as the most important of numerous principles. Its key assumptions include equal treatment of social, economic and environmental considerations, meaning that environmental issues must be integrated with the policies in the various economic areas. It should be noted that the Second National Environmental Policy was accompanied by the 2002 Implementation Programme for 2002–2010 setting out the dates and performers of specific tasks to be implemented in accordance with the national policy for 2002–2010. Specific objectives relating to three time periods were set up:

- short-term (2002–2003) – focused on the preparation of the Polish membership of the European Union,
- medium-term (2010–2012) – full implementation of the EU's environmental legislation,
- long-term (by about 2025) – prerequisites for a forward-looking strategy for sustainable development.

Sustainable development should be characterised by an integrated order. In its broadest dimension, such an order means a consistent and simultaneous social, economic, environmental, spatial, and institutional and political order. In other words, an integrated order is a positive target situation resulting from developmental changes combining (just like the objective) all component orders in a coherent, consistent way. As rightly pointed out by T. Borys (2011a: 141), the integrity of orders is achieved through a balanced protection of social, natural and anthropological capital (environment), subsidiarity and social participation. According to him, an integrated order can help overcome barriers to specifying the concept of sustainable development, and in particular remove barriers stemming from its ambiguous interpretations and the remainders of its narrow interpretation that highlights primarily environmental protection. In identifying an integrated order, it is important to find an integrator of component orders as well as similarities and differences in academic approaches to defining sustainable development. Sustainable development as an integrated order has been recognised and deciphered to different degrees in various scientific fields and disciplines (Borys, 2011b: 77–78). In economic sciences, especially in macroeconomics, it is considered as a paradigm imposed from the outside rather than one produced by economics itself. At the macro level, more empathetic and altruistic approaches are visible that are broadly consistent with the essence of the sustainable development concept. This kind of approach is undoubtedly exemplified by ecological economics based on the principles of vulnerable and partly strong durability,

with a clear emphasis on an integrated order and a distinguished environmental order. According to A. Skowrońska (2010), economists are more interested in an integrated order than in the related category of sustainable development.

On the basis of the above-mentioned interpretations, characteristics, principles and orders of sustainable development, its three key aspects may be indicated (Leśniewski, 2013: 48):

- integrity of orders – this principle assumes integrating (ethical, social, economic and environmental) orders by eliminating conflicts between development goals of certain orders and formulating the main integrating goal that, when achieved, will consolidate the individual orders so as to ensure social well-being;
- subsidiarity – this principle of sustainable development suggests decentralising decisions on environmental protection that should be taken at the lowest levels of society (residents, local communities, etc.).
- balanced participation – this principle also calls for active participation of communities in planning, decision-making and implementation of sustainable development. Institutional and legal conditions to be created should allow for achieving sustainability of the society (development of social ties, unity and social integration) and promoting respect for resources that ensure social rights and benefits.

The concept and assumptions of economics of sustainable development

Economics of sustainable development builds on the experience of mainstream economics, especially as regards managing natural resources, identifying and reducing negative impacts, ensuring sustainability of development, and on experience in implementing sustainable development strategies as well as heterodox economics, the fact that is not always adequately highlighted. Economics of sustainable development is a science studying the essence of phenomena and processes of production, exchange and consumption from the perspective of macrosystems. It involves investigating causal mechanisms in the economy-society-environment macrosystem and feedbacks and relations within individual processes. It develops on the philosophical foundation of sustainable development, resorting to achievements of environmental, ecological, institutional, social, behavioural and evolutionary economics (Poskrobko, 2011: 15). As argued by H. Rogall (2010), economics of sustainable development has its sources in the basics of ecological economics and some theses of neoclassical and environmental economics, forming a platform for various economic schools that make up the sustainability science.

The heterodox trends put special emphasis on behavioural determinants rather than on solely economic and technological factors. Heterodox economics fields such

as new institutionalism or post-Keynesian economics shift from the model of rational choice towards the model of bounded rationality, and both disciplines have undoubtedly contributed to the promotion of sustainable development. In turn, sociological economics stresses the importance of social knowledge that is developed through social participation and practical actions undertaken in teams as well as environmental education. Social knowledge creates the conditions for the correct valuation of the environment and environmental goods, and its lack leads to manifest understatement of the value (Farber, Costanza, Wilson, 2002: 376–377). Behavioural economics, by analysing socio-psychological mechanisms underlying economic behaviours, develops the model of a “real man” rather than “economic man”. It strives to make economic models more realistic, thereby increasing their relevance. It is thus more useful for developing environmental policy and supporting sustainable development through an in-depth explanation of the determinants that affect the valuation of environmental goods (Zalega 2015b: 13). Evolutionary economics focuses on studying development processes that take place in various areas of economic life, assuming that both the operating rules of organisations and societies and the rules governing the behaviours of individuals evolve. In a narrower sense, evolutionary economics refers to the idea of biological evolution developed by C. Darwin and J. Baptiste de Lamarck. Those references may be: *direct* – the evolution of economic systems reflects the actions of people who evolved biologically, *indirect* – by analogy between the principles of biological and economic evolution, or *indirect* – through biological metaphors in economics (such references may resemble the links between classical mechanics and neoclassical economics) (Zalega, 2015c: 162). It may be said that the approaches of new institutionalism, post-Keynesian economics, behavioural economics and evolutionary economics seek to cover social and political considerations through attempts to integrate the elements of economics, management, sociology, political science and ecology, taking into account the dynamics of different organisational structures and their cultures (Jeżowski, 2012: 115).

At the same time, economics of sustainable development is influenced by the ongoing discussion among supporters of ecological and environmental economics about the essence of balanced and sustainable development. Disputes concern not only the ways of managing natural resources, including the assimilative capacity of the natural environment, but also more fundamental issues – for example, perceptions of problems at the society-economy-environment interface or the paradigm of economics (Poskrobko, 2012: 12–17). As rightly stated by S. Czaja, economics of sustainable development is a response to the shortcomings of economic life based on the neoclassical paradigm postulates. Consequently, it touches on the problems that have arisen either due to this paradigm or as a result of the shortcomings of neoclassical economics (Czaja, 2012: 38). Economics of sustainable development analyses these challenges from economic, ecological and socio-cultural perspectives.

Beyond question, the economics of sustainable development largely relies on ecological philosophy and social ecology which argue that it is the man’s duty

to manage the natural environment and act within it to preserve the basics of life and ensure the development of present and future generations. Under this approach, a key objective of economic processes is to maintain the sustainability of civilisation development, not just profit. The latter is only one of many indicators of economic activity (Poskrobko, 2011: 14–15; Piątek, 2010). According to the axiological foundations of economics of sustainable development, its idea is consistent with Christian principles such as (Dołęga, 2011):

- solidarity between groups and generations,
- moderation in pleasure, needs and changes;
- golden mean that we develop for ourselves;
- justice – permanent and durable will to give the man what he or she rightly deserves in view of the common good.

As mentioned previously, economics of sustainable development was based on the experience of mainstream economics focused chiefly on an approach relying on neoclassical economics assumptions. However, some specific theoretical and educational proposals referring directly to the concept of sustainable development can be discerned. The evolution of economics towards sustainable development is evidenced by four processes (Borys, 2011a: 137–139):

1. Growing understanding and stabilisation of relationships among environmental economics, ecological economics and economics of sustainable development.
2. Interdisciplinary and cross-border scientific cooperation on the foundations of economics of sustainable development.
3. Development of theoretical and applicative foundations and teaching practice in the field of business ethics and corporate social responsibility which evolves towards integrated responsibility as a microeconomic equivalent of sustainable development benchmark – an integrated order.
4. Advanced theoretical foundations of sectoral approaches to sustainable development, expressed i.a. in the concepts of sustainable forest management, sustainable energy, sustainable production, sustainable consumption, sustainable transport.

According to H. Rogall, an expert on this subject, economics of sustainable development has ten basic features (Rogall, 2010: 133–151):

1. *Paradigm of strong sustainability.* It is recognised that the paradigm of permanent economic growth should be rejected as economic growth cannot be maintained in the long term and the economy should undergo sustainable reconstruction along different strategic paths. This objective may be attained by going along three strategic paths of sustainable development economics: efficiency (more efficient use of resources), cohesion (development of new, environmentally sustainable products) and sufficiency (a voluntary change in lifestyle in an ethically responsible manner consistent with the principle

of justice). Otherwise, the economy will see its end in a foreseeable future. In the case of a failure of the market and collective or substantive goods, consumer sovereignty should be reduced so as to establish ecological barriers respecting the tolerance limits of nature. Many natural resources are considered to be marketable and non-substitutive. The three dimensions of sustainability, namely environmental, economic and social – the so-called triangle of sustainable development goals – are treated as equivalent only within the tolerance limits of nature. The overarching objective is permanent conservation of natural resources, not just their optimal use. For this reason, a sustainable social system with a high quality of life for the entire population within natural limitations should be sought to preserve the diversity, complexity and functionality of ecosystems.

2. *Steady-state economy or efficient economic growth.* It is recognised that it is impossible to continue economic growth without exceeding the capacity limits of the environment. It should also be stressed that a steady-state economy is focused on a constant supply of material goods at a level sufficient to live in dignity, with possibly unchanging population size. Selective growth (*green growth*) denotes sustainable economic development within ecological barriers that are protected by legal instruments. Certain branches of the economy should grow, while others – those that are a burden for the economy – should disappear. In order to respect the tolerance limits of nature, rules stating that an increase in resource productivity should always be greater than the GDP growth must be followed. This means that absolute resource consumption will be reduced even when economic growth is achieved.
3. *Pluralistic approach.* Economics of sustainable development is considered by many economists as an overarching notion that can be interpreted in a variety of ways. The pluralistic approach does not reject completely the achievements of traditional and environmental economics but uses them adequately to solve a crisis in the most comprehensive manner.
4. *Progress of traditional economics towards economics of sustainable development.* Economics of sustainable development distances itself from various assertions of neoclassical economics on topics such as the belief in absolute consumer sovereignty and calls for putting an end to discounting future costs and benefits of environmental measures, abandoning the belief that all resources, including natural resources, may be substituted and rejecting the weak sustainability view. Furthermore, it stresses that environmental goods are substantive, not public, goods because their availability is inherently limited. In place of purely rational consumer decisions, it introduces a multi-factor model that takes into account social, cultural and psychological determinants.
5. *Ethical principles.* Economics of sustainable development is driven by ethical principles and suggests personal responsibility for actions. In addition,

it advocates principles such as responsibility, justice, forethought, moderation and frugality. The ethical postulate is the pursuit of peace and harmony with the environment and respect for legitimate protection rights of the nature.

6. *Transdisciplinarity*. Representatives of economics of sustainable development attempt to include in their analysis major attainments of other disciplines, especially psychology, philosophy, political science, natural sciences, law, and technical and engineering sciences.
7. *A new image of man*. Economics of sustainable development firmly rejects J.S. Mill's concept of *homo economicus* widely recognised in neoclassical economics to adopt a more realistic concept of *homo sustinens* coined by S. Siebenhüner.
8. *Sustainable market economy*. Representatives of economics of sustainable development suggest that an economic system should be introduced that respects the ethical principles of intra- and inter-generational justice and responsibility. Moreover, they believe that thanks to political and legal instruments markets operate in a certain framework that should enable a reconstruction of the industrial society following the rules of management and criteria of economics of sustainable development.
9. *New systems for measuring achieved objectives and indicators*. Economics of sustainable development tries not to equate the quality of life with the level of consumption, well-being measured by per capita GDP indicators, to apply new measurement systems such as target-based systems and indicators. Sustainable economy may be said to call for an industrial revolution that provides sufficient wealth and quality of life, yet within the tolerance limits of nature.
10. *Socio-cultural management rules*. Economics of sustainable development adopts the principles of participatory and solidarity-based democracy, the rule of law, equal opportunities, social security, protection of human life and the quality of life, social integration, eradication of poverty and global avoidance of conflicts (Ganowicz-Bączyk, 2013: 43). It may, therefore, be said that it concentrates on a discourse on key social problems, seeking to determine the economic conditions that satisfactorily ensure high economic and socio-cultural standards for both present and future generations, while maintaining moderation in the use of available natural resources.

***Homo economicus* versus *homo sustinens* and economics of sustainable development**

In economic theory, there is virtually no schools that does not refer to the concept of *homo economicus*, a rational or economic man whose actions are driven solely by economic motives, i.e. who undertakes gainful activity on his or her own account.

As argued by J.S. Mill, the concept of *homo economicus* is a theoretical construct that does not define any actual man, yet is useful in social economics analyses. This concept has the following two components: a formal one which determines how the rational man acts, and a material element which determines the man's motivational structure, i.e. which incentive is the key factor in his or her behaviour. The formal element of *homo economicus* is rationality in the instrumental sense. This implies that, when selecting an action from among actions possible in a given situation, a person considers benefits and losses resulting from each choice and decides to undertake such action that yields the biggest advantage in terms of benefits and losses. In other words, when selecting an action from among those possible in a given situation, the man chooses such action that allows for achieving the goals set to the fullest possible extent and at the lowest possible cost. Rationality in the instrumental sense is a formal element because one can be rational in this meaning regardless of what is sought. The material element of *homo economicus* is selfishness. This means that people seek to increase their wealth. Hence, they do not find any satisfaction with other people possessing a given good, but they find no satisfaction with the misfortune of others either. Depending on the type of goods the rational man wants to have, stronger and weaker versions of *homo economicus* can be distinguished. According to the former one, these are economic goods, whereas the second version assumes that the rational man may also care about intangible goods (Zalega, 2015d: 21–22).

It should be highlighted that the concept of *homo economicus*, despite its simplifications, has proved to be very useful for the development of classical and neo-classical economics. It is precisely this notion that forms the foundation of the theory of economics. Nevertheless, other trends in economics – Keynesian and post-Keynesian economics, new institutional economics, behavioural, evolutionary, ecological economics and economics of complexity – recognise the weaknesses of this model. *Homo economicus* is increasingly criticised for its inadequacy to the current world economic situation and thus the policy pursued by countries and other entities. *Homo economicus* does not work when the economy globally affects the natural environment and society. First and foremost, this construct does not explain why economically rational behaviours of individuals today lead to irrational social and environmental consequences, and hence an increase in well-being of some individuals does not contribute to the overall increase in well-being but quite the contrary. According D. Kielczewski (2011a: 69–70), economics of sustainable development may find the concept of *homo economicus* useful for interpreting the causes of lack of sustainability in the society-economy-natural environment macrosystem and forecasting problems with balancing its systems that ensue from short-sightedness and selfishness of economic men.

Homo sustinens is a concept developed as an alternative to the image of *homo economicus*, based on community and altruistic values, and strongly correlated with the idea of sustainable development. The adjective *sustinens* refers to the concept of sustainable development. The *homo sustinens* concept has its origins not in

economic sciences but in philosophy, ethics, psychological and natural sciences. In a sense, it lends credibility to the idea of sustainable development and gives it a scientific character, also reflecting the overall potential of human beings. It is also a good methodological basis for economics of sustainable development in the normative dimension (Hodgson, 2006). In a positive dimension, it is problematic in view of its many dubious elements resulting from accepted implementation of its principles. It may, therefore, be said that the concept of *homo sustinens* is an attempt to create an anthropological foundation for the theory of sustainable development. *Homo sustinens* is such an economic man who behaves like *homo economicus*, while still being able to undertake economic actions with the needs of future generations in mind. The basic features of *homo sustinens* include (Kośmicki, 2010: 216–217):

- free will and ability to act adequately to individual characteristics;
- responsibility;
- ability to think comprehensively;
- ability to reason in the long term;
- empathy, ability to communicate and cooperate;
- creativity;
- ability to learn;
- emotionality.

An individual develops such complex features by going through the personality development phase (Kośmicki, 2010: 219):

- instinctive phase of experiencing genetic determinants in infancy;
- language development in early childhood;
- development of self in later childhood;
- orientation to learning and moral standards;
- development of self-reflection and self-identification;
- development of a sense of responsibility;
- *homo sustinens*.

Homo sustinens is a man living in a sustainable way, in social harmony, and using limited natural resources efficiently. This notion is founded on the assumption that human behaviour is affected simultaneously by three factors: natural environment, social environment and the subjectivity of an individual. Man as a biological creature is highly sensitive to issues of ecology, although this is not always accompanied by consistent pro-environmental behaviours. Taking into account cultural determinants of human behaviour, what should be highlighted is the desire to achieve social order understood as the need for such an organisation of personal identity, social groups and societies that will ensure their permanent existence. In the concept of *homo sustinens*, social sustainability should be ensured by adequate social communication, mutual control of social relations and the existence of various social groups with their traditions and cultural characteristics.

The originator of the *homo sustinens* concept, B. Siebenhüner, understands *homo sustinens* as a man whose behaviour is driven by emotions as an expression of his or

her emotional attitude to nature and whose motivation is intrinsic, not coming only from extrinsic stimuli. According to B. Siebenhüner, the concept of *homo sustinens* contrasts the utility maximisation hypothesis (*homo economicus*) and the hypothesis of *homo sapiens* survival. He distinguishes four reasons for the nature of *homo sustinens* (Siebenhüner, 2000: 16–19):

- emotionality of human behaviour, which reinforces the need for respect for nature and concern for its proper functioning;
- development of interpersonal communication skills needed for cooperation and coexistence;
- capability of creative problem solving and emotional intelligence, which are the key elements of development with respect for the natural foundations of social coexistence;
- intrinsic motivation and morality, which cause individuals to make their choices and define their development according to their own development plans and related systems of values.

As understood by B. Siebenhüner, *homo sustinens* is an individual who has a number of genetic predispositions to strive for sustainable development during daily individual activities in every sphere of the socio-economic functioning (Pieńkowski, 2011: 27).

Conclusion

The concept of sustainable development gives an innovative and optimistic view of the challenges facing the modern world. It can be said that good will is undoubtedly the *sine qua non* for sustainable development. Once the need to take appropriate action in order to improve the existing situation has been rooted in social consciousness, a real opportunity will open up to build a better and more people-friendly reality.

The concept of sustainable development is obviously a very broad term; therefore, it is used in different contexts. As this study attempted to demonstrate, this is a common notion whose interpretation is, however, ambiguous. Beyond question, sustainable development is a holistic, dynamic concept showing correlations among and determinants of social, economic and environmental aspects of societies. It defines actions aimed at economic and social development without destroying the ecosystems in which humans live. In the relevant literature, the concept of sustainable development is addressed both by economic and natural sciences, yet it has actually been developed on the basis of politics when social and economic development objectives were being defined. It should also be noted that this concept suggests that economic growth results in increased social cohesion and environmental quality. This is because sustainable development implies a lasting improvement in the quality of life for present and future generations by defining the proportions among three capitals: human, economic and natural. As sustainable development is a process rath-

er than a state, it is so important to develop a strategy for its implementation as well as the ways of steering and controlling it.

Therefore, when realising the idea of sustainable development, considerable attention is given to (Górka et al. 2001: 83): quality and durability of products, with the least possible consumption of resources and energy and the best possible environmental protection, sustainable socio-economic development, improvement of living conditions of the society and its satisfaction with the growth processes.

Economics of sustainable development as a trend of modern economics is an elaboration of ecological economics. It made an attempt to organise the 20th/21st century economy in an alternative way, opting for a comprehensive reconstruction of the traditional economic theory, with account being taken of a new paradigm of sustainable and integrated economic, socio-cultural and environmental order. Furthermore, it builds on ecological philosophy and social ecology, meaning that the primary objective of economic processes is to maintain sustainable civilisation development rather than to solely focus on maximising profit by economic men.

The concept of *homo sustinens* is closely linked with economics of sustainable development. Its evolution was significantly affected by ecological research that initiated the development of human ecology. It should be stressed that the concept of *homo sustinens* is based on a maximalist approach – it is designed to identify all determinants of human existence and potential. In addition, this concept presupposes that individual behaviour is shaped by an individual's subjectivity and natural and social environments. As claimed by H. Rogall (2010: 45–46), *homo sustinens* is not treated as an abstract idea but rather as an anticipated physical state that can be developed chiefly through proper education. Undoubtedly, this concept informs about the target awareness of every economic man. As rightly observed by D. Kielczeniński (2011b: 80), *homo sustinens* is the methodological foundation for economics of sustainable development only in the normative dimension, and thus only as regards the definition of the sustainable economy model.

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Summary

Economics of Sustainable Development as a Trend in Modern Economics: An Overview

The concept of sustainable development, and thus the evolution of the economics of sustainable development, became a subject of increased interest for researchers and businesses after the first UN Conference in Stockholm in 1972, and then after the second Earth Summit in Rio de Janeiro two decades later. It is at the second Earth Summit with its “Environment and Development” motto, which was attended officially by 172 countries and approximately 2400 representatives of non-governmental organisations, where unsustainable consumption and production were recognised as the most important causes of growing global development problems. Attempts were made to find models of sustainable and stable economic development that took into account the protection of ecosystems from overexploitation and determinants of ecological human activity. It was no accident that this process coincided with the progress of economics of sustainable development.

This article aims at providing an insight into economics of sustainable development and presenting its historical roots. The issues herein do not describe its whole range, but only selected elements. The structure of this article is as follows. The first part focuses on the origins, concept and principles, objectives and orders of sustainable development. Further, the concept and assumptions of sustainable development economics and homo sustinens as the basic underlying notion are discussed.

Keywords: sustainable development, economics of sustainable development, eco-development, homo sustinens, environment

Słowa kluczowe: rozwój zrównoważony, ekonomia zrównoważonego rozwoju, ekorozwój, homo sustinens, środowisko

JEL Codes: H23, Q01.