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## The Idea of Sustainable and Permanent Development in the Context of Science and Business Practice

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Submitted 02/02/21, 1st revision 23/02/21, 2nd revision 09/03/21, accepted 30/03/21

Borowiecki Ryszard<sup>1</sup>, Siuta-Tokarska Barbara<sup>2</sup>, Hys Katarzyna<sup>3</sup>,  
Thier Agnieszka<sup>4</sup>, Żmija Katarzyna<sup>5</sup>

**Abstract:**

**Purpose:** The objective of the paper is to present relationships between science and business practice in the process of achieving sustainable and permanent development. It identifies relationships between a concept, as presented in Plato's thoughts, and Khun's paradigm, which shapes the contemporary reflections on science.

**Design/Methodology/Approach:** The adopted methodological concept aims to research the problem in its theoretical and practical context, i.e., the context of business practice. The publication employs research methods used in social sciences in the area of the analysis and criticism of written works, as well as logical analysis and construction along with logical inference based on the synthesis method. The empirical part of the work presents data and information covering the years 1970-2016, 2017 and 2019, as well as forecasts for 2021.

**Findings:** The results of the conducted research indicate that the hitherto model of doing business on a global scale narrows down the impact of natural and social capital. The authors assume that the model of doing business in the period of transformation, aimed to achieve sustainable and permanent development, is very likely to be completely reevaluated in terms of the functions performed by particular capital components.

**Practical Implications:** The study of sustainable and permanent development in the context of business practice points to the disequilibrium between natural, social and economic capital reflected in the dominance of economic capital.

**Originality/value:** The work makes a successful attempt at presenting a model approach to the development of global economy, giving consideration to natural, social and economic components of capital. This approach is presented in three time-bound frameworks: up to the present time, the period of transformation, and the target period – the balancing of capital components in compliance with the concept of sustainable and permanent development.

**Keywords:** Sustainable development, permanent development, science, business practice.

**JEL classification:** Q01, F40, I30, O10, Y50.

**Paper Type:** Research study.

**Acknowledgement:** This publication is co-financed by a subsidy granted to the Cracow University of Economics.

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<sup>1</sup>WSB University in Dąbrowa Górnicza, Poland, ORCID 0000-0002-2513-9450,  
e-mail: [borowier@uek.krakow.pl](mailto:borowier@uek.krakow.pl)

<sup>2</sup>Cracow University of Economics, Poland, ORCID 0000-0001-9078-6243,  
e-mail: [siutab@uek.krakow.pl](mailto:siutab@uek.krakow.pl)

<sup>3</sup>Opole University of Technology, Poland, ORCID 0000-0003-0800-2804, e-mail: [k.hys@po.edu.pl](mailto:k.hys@po.edu.pl)

<sup>4</sup>The same as in 2, ORCID 0000-0002-5915-2071, e-mail: [thiera@uek.krakow.pl](mailto:thiera@uek.krakow.pl)

<sup>5</sup>The same as in 2, ORCID 0000-0002-4119-8012, e-mail: [zmijak@uek.krakow.pl](mailto:zmijak@uek.krakow.pl)

## 1. Introduction

The functioning of all organisms indicates the natural need for their development. It relates to typical living organisms in the natural world as well as the “living entities” of the economy including enterprises, countries, and, in a broad sense, the entire world economy in which humans act as a “binding material”. In an economic approach, development is frequently understood as economic growth (GDP), which should be regarded as an inadequate research approach.

However, this approach has implications for understanding the objectives of people’s activities and the setting of such objectives, which still favours a classical profit maximization approach as the basis of economic activities. The increasing consumerism, preceded by a mass-scale production of goods and services (independently of production customization) encourages the “liquid modernity” of the contemporary world (Baumann, 1997). Changes in economic, social and natural capital are reflected, to varying degrees, in disequilibria, leading to the atomization of the particular types of capital. Therefore, in the context of negative natural, social and economic processes in the world, the authors undertake to present the concept of sustainable and permanent development, contributing to the debates on the scientific context and business practice related to this concept.

The paper consists of several parts including the introduction, conceptual and methodological assumptions, three main parts related to the theory and practice of sustainable and permanent development, and the discussion and conclusions.

## 2. Conceptual and Methodological Assumptions

This work is a scientific and research study. It is a concise theoretical and model study, preceded by the authors’ analysis of universally available macroeconomic data. The paper refers to selected socioeconomic data (without an in-depth analysis), which results from an attempt to present the empirical content of theory and the authors’ focus on the problem of *the lack of balancing* in a number of areas, ranges and aspects of the functioning of the contemporary world. The adopted research process also points to the lack of balance in 20<sup>th</sup> and 21<sup>st</sup> century empirical work, stressing the need to create its constructive version.

The main objective of the paper is to present relationships between science and business practice in the context of achieving sustainable and permanent development goals, understood not only as one of many economic theories but a specific idea supported by those who are concerned about meeting the needs of future generations at least at the current level.

The study aims to develop a time-bound model construct of sustainable and permanent development, taking into account two sub-periods: the period of transformation and the period of achieving the balancing of capital components

related to sustainable and permanent development. These capital components are as follows:

- *natural capital*<sup>6</sup>, understood here as natural resources (soil, water, air, flora, fauna, minerals), natural forces and environment values affecting the quality of human life (geographical space, the beauty of landscape, micro climate etc.),
- *social capital*<sup>7</sup>, understood as the foundation of a society and a prerequisite for people's prosperity and well-being – two crucial factors affecting the achievement of sustainable and permanent development goals, and
- *economic capital*, generated and used by man, comprising economic infrastructure, machines and buildings. This term represents a general category and various economic phenomena (strictly tangible capital, i.e. real and money (financial) capital)<sup>8</sup>. In an ontological sense, this capital is not an independent being, it is also a historical category but not universal.

Limitations of the undertaken research relate to a multi-aspect and multi-criteria approach to the analysed problem. However, the conducted research is based on a possibly broad holistic approach to the concept of sustainable and permanent development. The work presents a literature review – both Polish and foreign publications in the area of social sciences, a review of written works, logical analyses and construction along with logical inference supported by the synthesis method. The analysis is based on WoS and Scopus data bases.

The research study poses the following research questions and offers answers resulting from the research process:

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<sup>6</sup>*This type of capital can be analysed on the basis of streams (classical and neoclassical economics), resources (economics of resources, related to optimising long-term decisions), or the functions of the natural environment (ecological economics). This capital, as an ecosystem, provides goods and various services to satisfy man's production and consumption needs but mainly to maintain life on earth. The analyses of natural capital identify basic capital, critical capital, which is indispensable for the reproduction of life (e.g. the ozone layer, biodiversity, ecosystems etc.), irreplaceable capital (e.g. agricultural crops, forests, landscapes), non-renewable capital (e.g. minerals, rives complexes, primary forests), and remaining capital.*

<sup>7</sup>*Social capital is defined by:*

- P. Bourdieu (1986) *as a set of actual and potential resources, related to the possession of a permanent network of more or less institutionalised relations which rely on mutual knowledge and recognition, or, in other words, on membership in a group which supports members with collectively owned capital and with reliability which ensures access to credit in the broadest sense of this word;*
- J. Coleman (1994), *who views social capital as a set of resources embedded in family relations, or which result from a specific organization of social relations in any community. These resources support man's cognitive and social development;*
- F. Fukuyama (1997, 2001), *who identifies it with a cultural resource based on trust and the ability to disseminate trust in society;*
- R. Putnam (2008), *who treats this capital as a public good and stresses the necessity to differentiate between binding and excluding social capital and bridging and integrating social capital;*
- A. Matysiak (2008), *who treats this capital as a process – not as a resource.*

<sup>8</sup>*This capital can also be divided into physical and intangible capital. See: K. Janasz (2008).*

Q1: How is the concept of sustainable and permanent development reflected in the context of science?

P2: How is the concept of sustainable and permanent development reflected in the context of business practice?

P3: What is the current model of achieving global sustainable and permanent development goals, and what model can be adopted in the future?

### **3. The Idea of Sustainable and Permanent Development – Literature Analysis**

Sustainable and permanent development is a relatively new concept, but the idea itself of development characterised by sustainability and permanence is much older<sup>9</sup>. It is assumed in literatures on the subject that the idea of sustainability in dealing with natural resources was used for the first time in connection with commentaries on a crisis in the mining industry<sup>10</sup>. Another, and more significant event in creating the concept of sustainability goes back to the year 1975 when the United Nations Environment Programme Executive Board proposed to define sustainable development as development complying with the unavoidable economic growth which does not have a considerable and irrevocable impact on man's environment, and does not degrade the biosphere and does not violate the laws of nature, economics and culture".

However, it was as late as in 1987 that sustainability was accepted as a permanent principle, and its then definition was included in the report of the World Commission on Environment and Development entitled "Our Common Future" (valid until now) (Dasgupta, 2007; Elliott, 2012). It recommends taking action aimed to balance three types of capital: natural, social and economic (Borowiecki and Siuta-Tokarska, 2016; Siuta-Tokarska and Thier, 2019). It indicates that a given type of capital should not dominate over the other types. In practice, however, in the 21<sup>st</sup> century (Borowiecki, Olesiński, Rzepka, and Hys, 2021; Hys and Wolniak, 2018) it is economic capital that dominates over social and natural capital, which is reflected in the world's social disequilibrium (according to 2019 data, merely 1% of the world's richest people control twice as much wealth as that possessed by 6.9bn world inhabitants, and nearly half of the world population lives on less than 5.50 USD a day (Time to care, 2020, p. 8)). Also, the exploitation of planet resources, degrading life on earth (Living Planet Index - LPI<sup>11</sup>, showing the biodiversity of

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<sup>9</sup>K. Kluk's document was a basis for the publication of "Uniwersal", published in 1787 by August Poniatowski, concerning the protection and management of forests. (Siemiński, 2008, p. 14).

<sup>10</sup>In 1713, Hans Carl von Carlowitz implemented sustainable forest management in Germany, which faced severe shortages of wood at the beginning of the 18<sup>th</sup> century due to deforestation. H.C. von Carlowitz ordered that the forests under his control be recovered and introduced regulation concerning managing future natural resources. The implemented model of forest management was adopted in forestry in the entire territory of Germany.

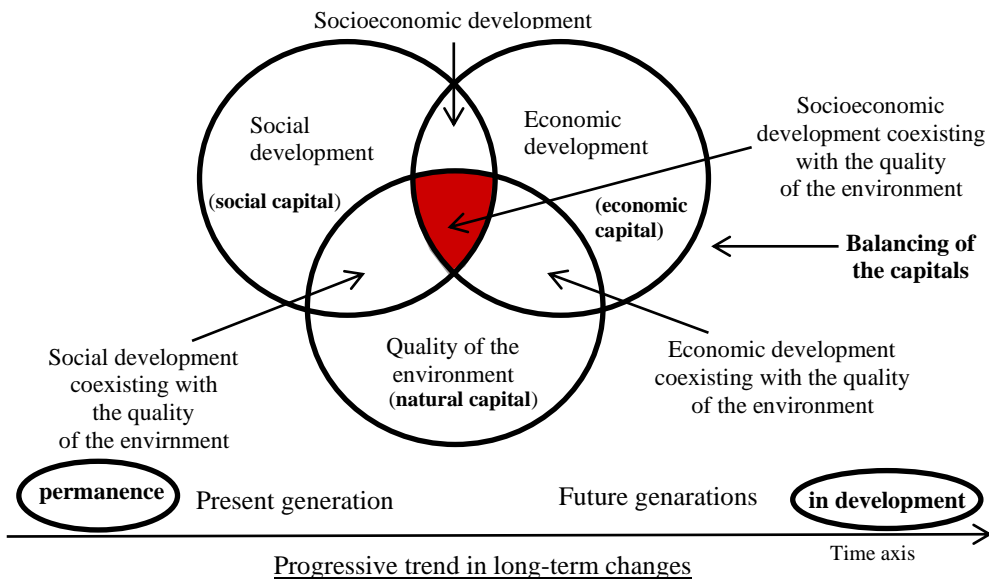
<sup>11</sup>LPI- Living Planet Index. An LPI is calculated in multiple steps:

1) First, each population's size is modelled over time and the population size in any year compared to the population size in the previous year.

earth resources), has decreased by nearly 60% since the 1970s<sup>12</sup> (Living Planet Report, 2020)).

Of course, the concept of sustainable and permanent development does not postulate a mathematical equality between the particular types of capital but a harmonised development (Figure 1), allowing for eliminating the ever widening gaps (Sachs, 2012; 2015; Jabareen, 2008).

**Figure 1.** The essence of sustainable and permanent development



**Source:** Siuta-Tokarska, Thier, Źmija, 2019, s. 25.

Figure 1 shows that sustainable and permanent development is expressed in three dimensions: natural, social and economic capital which seek to achieve the quality of the environment, and social and economic development. Their common denominator is socioeconomic development coexisting with environmental quality goals.

- 2) In each year, these interannual change values are averaged across all populations of a species to give an overall trend for that species.
- 3) The species trends are then averaged to obtain an overall trend. The LPI method then takes into account how much of the world's vertebrate biodiversity the species in the LPI represent by giving most weight within a biogeographic realm to the most species-rich group.
- 4) The averaging and weighting is done separately for populations occurring in the three systems (terrestrial, freshwater and marine), which are then equally weighted to obtain one set of interannual change values.
- 5) These values are then turned into the global index by setting the value to 1 in 1970 and relating each change to this baseline.

(Living Planet Report 2020... Living Planet Index, 2020, pp. 32-33).

<sup>12</sup> Measurements taken in 1970-2016.

However, the achievement of these goals is conditioned by a progressive trend in long-term changes, which – in the context of present and future generations – should be characterised by its permanent character. It is a prerequisite for achieving the goals of the analysed process.

Sustainable and permanent development can be considered from the perspective of a social and philosophical idea (Sustainability..., 2005; Hys, 2015), a development trend in business practice, or as a scientific discipline. Independently of the adopted approach, it represents a concept (a theoretical concept with practical applications) which focuses on the qualitative aspects of human life referred to natural and economic factors in the context of balancing capital components and ensuring the permanent character of the adopted trends in developing the world (Siuta-Tokarska, 2020).

If sustainable and permanent development is viewed as a social idea, it can be referred to the statement made by S. Czarnowski – a pioneer in the research of the history of ideas – who defines it as “*a life pattern for individuals – members of the human community, and a pattern for a society - a community of individuals. The implementation of this pattern is a necessity – the necessity which is an order to take action*” (1982, p. 79).

#### **4. The Basic Contexts of Sustainable and Permanent Development**

##### **4.1 Sustainable and Permanent Development in the Context of Science**

The theory of ideas belongs to one of the fundamental branches of philosophy – ontology. In Book VII of *Politeia* Plato states that the explanation of change requires adoption of a specific principle (Czarnawska, 1984a; 1984b) – an idea. It can be observed that any value can be related to a different idea characterised by unity, understood as being one among multitudes (Kmieciak, 1999). Simultaneously, an idea is a principle of things and knowledge<sup>13</sup> (Blewitt, 2008), and as Plato stresses, a multitude of ideas can be referred to one idea – a fuller idea. An idea which unites others is a foundation for Being – Truth and – Beauty, and it represents its full essence.

Figure 2 presents *idea* in Platonic thought as a pyramid based on *being* and *truth*, which lead to the top of cognition and a sense of *beauty*.

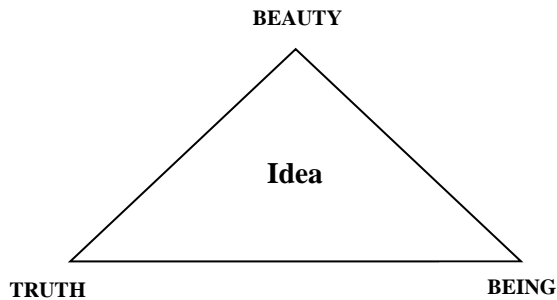
The concept of idea has a special significance in the development of philosophical thought, but in the course of developing sciences it is also present in other areas including the disciplines and sub-disciplines of science. An important contribution to science, in the context of exploring the concept of idea, was made by T. Kuhn’s publication entitled *The Structure of Scientific Revolutions* (Kuhn, 1968), concerning

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<sup>13</sup> *Plato treats idea also as being.*

the concept of paradigm (Borowiecki and Siuta-Tokarska, 2018; Borowiecki, Siuta-Tokarska, and Kusio, 2018).

**Figure 2.** Idea in Platonic thought



**Source:** Own study.

It contributed to current discussions on the role of science. T. Khun claims that in any “mature” discipline of science there is a set of views shared by researchers, referred to as a paradigm<sup>14</sup>, which can be understood as (Bieszcza, 2013):

- constituting *consensus omnium*<sup>15</sup>, presenting an overall vision of the world and the related context of research – a broad approach,
- but also as a certain pattern of problem solving in a given speciality – a narrow approach.

The combination of idea and paradigm can be considered from two perspectives:

*A simplified approach: a paradigm can be understood as being one among a multitude, and a multitude of paradigms can be referred to one paradigm – a fuller paradigm. In this approach the terms “idea” and “paradigm” can be treated as interchangeable<sup>16</sup>.*

*A complex approach: a given idea leads to a paradigm, or, inversely, a given paradigm or paradigms lead to creating a new idea.*

As already mentioned in this work, because the idea of sustainable and permanent development was a response to the problems of the contemporary world and, in practice, to the life of societies on earth, in the context of science it can be viewed as indispensable to the very existence of life on earth – as a metaparadigm of science as such (sustainable and permanent development is a *sine qua non* for the existence of

<sup>14</sup>It should be noted that a scientific paradigm should meet several formal criteria (Gospodarek, 2009, p. 28): it should be logically consistent, use simple terminology (without unnecessary information and terms), inspiring (inspire to create new partial theories), and transformable (open to improvements).

<sup>15</sup>“Consensus omnium” – in philosophy it is understood as the acceptance of a consensus of opinions as a criterion of their correctness.

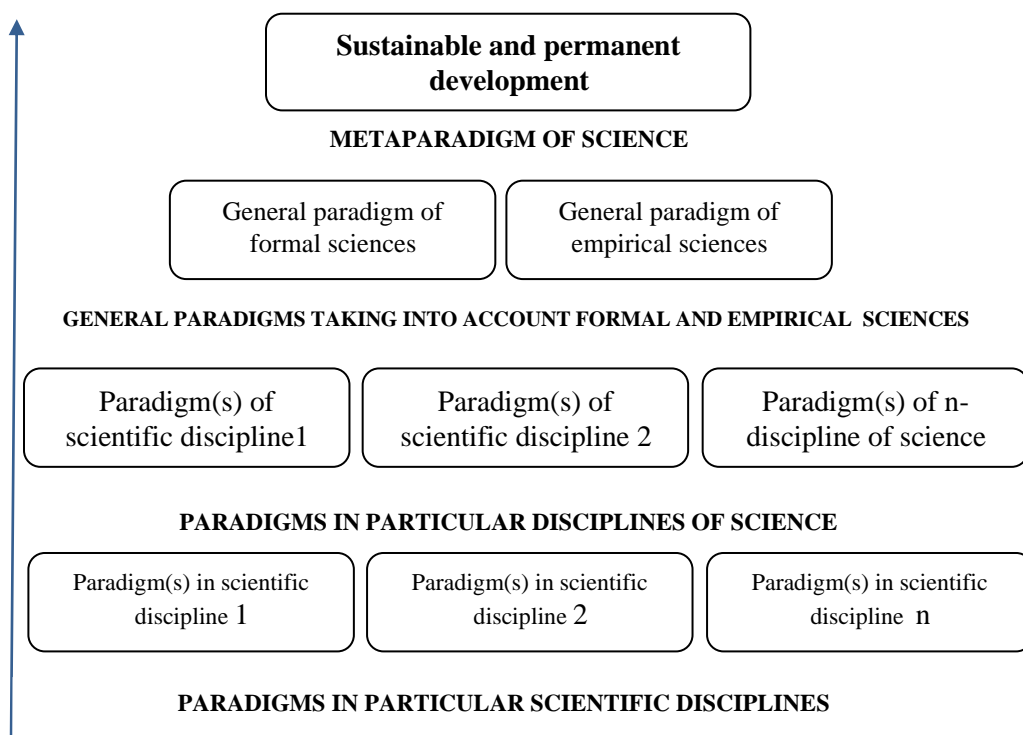
<sup>16</sup>The Authors believe that it is not a fully correct assumption.

life and, consequently, science itself<sup>17</sup>). This postulate approach recommending the recognition of the idea of sustainable and permanent development as a metaparadigm of science as such should, in the opinion of the authors, rely on the following foundations:

- truth (in seeking it),
- goodness<sup>18</sup> (as a criterion of the essence of humanity and human life in a society),
- wisdom (seeking it as an indication of the ability to seek truth in science with a dimension of goodness in discovering truth).

The idea, then, which stemmed from the problems faced by the contemporary world (Aras and Crowther, 2009; Carley and Christie, 2000), leads – in the context of science – to creating not only a specific or partial paradigm but a paradigm for 21<sup>st</sup> century entire science – the postulated recognition of sustainable and permanent development as a metaparadigm (Figure 3).

**Figure 3.** The postulated metaparadigm of sustainable and permanent development in relation to other paradigms in science



**Source:** Own study.

<sup>17</sup>Science is understood as a process and outcome of acquiring knowledge and skills, especially by scientists, which leads to the development of science and the broadening of the knowledge about the world in particular areas and disciplines, and in general science.

<sup>18</sup> It is an abstract concept undertaken by ethics – a branch of philosophy.



## **4.2 Sustainable and Permanent Development in the Context of Business Practice**

Sustainable and permanent development is an idea presenting the overall problem of the contemporary economy's ability to grow on a global scale, with consideration given to an inter-generation criterion of satisfying human needs<sup>19</sup>. The necessity of implementing this idea is confirmed by the following facts and arguments related to environmental, social and economic issues (Living Planet, 2020, pp. 16-24; Human Development Report, 2020, pp. 365-366; Raport z realizacji..., 2015, pp. 1-3; The Sustainable Development Goals Report, 2020, pp. 4-6; Knapieńska, 2017, pp. 42-55, World Trade Statistical Review, 2020, p. 10):

- the Living Planet Index (LPI<sup>20</sup>) decreased in 1970-2016<sup>21</sup> by as much as two thirds (68%), with its value rising by 10 percentage points since 2012;
- according to forecasts for 2021, the share of the earth's population living in extreme poverty (on less than 1.25\$ a day) amounts to 8.7%, the majority of such people living in Sub-Saharan countries and South Asia;
- the global income distribution points to the existence of permanent inequalities reflected in a nearly 75% share of redistribution among merely 1/5 of world population, while 1/10 of the poorest population represents slightly more than 1% of income distribution<sup>22</sup>;
- in 1948, the value of global exports of goods amounted to 59bn USD (current prices), and in 2019 – to more than 19 trillion USD, which was accompanied by an increase in zero-rate exports from developing countries from 49% in 2005 to 65% in 2015. These changes translate to the global material consumption index (human footprint<sup>23</sup>), which increased from 43bn metric tons in 2000 to 92bn tons in 2017 (an increase by 113% since 1990), with the highest values recorded in highly developed countries.

## **5. Summary and Concluding Comments**

The conducted analysis allows the authors to make an attempt to present relationships between science and business practice in the context of sustainable and

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<sup>19</sup>The term "sustainable development" is defined in the World Conservation Strategy of the International Union for Conservation of Nature and Natural Resources. The document states that sustainable development is the modification of the biosphere and the application of human, financial, living and non-living resources to satisfy human needs and improve the quality of human life.

<sup>20</sup>"The LPI database currently contains over 27,000 populations of more than 4,700 species from around the globe. The global LPI is based on 20,811 of these populations, focusing on 4,392 species of mammals, birds, reptiles, amphibians and fish". (Living Planet Report 2020... Living Planet Index, 2020, p. 28).

<sup>21</sup>Assuming the value of LPI for the year 1970 = 1.

<sup>22</sup>According to the 2020 Oxfam International report, the assets controlled by the world's 2,153 richest people are equal to the wealth of 4.6bn inhabitants (60% of the entire population).

<sup>23</sup>Material footprint (MF) is a measure which shows the use of materials in the production of a specific consumer good, proposed by a group of researchers (Wiedman et al., 2013, pp. 1-6).

permanent development. The authors conclude that the idea of sustainable and permanent development in the context of science can be treated as a metaparadigm of science and a *sine qua non* for the existence of life without which science itself cannot exist. In this approach the foundation is created by truth, goodness and wisdom. In turn, from the perspective of business practice this idea can be viewed as the contemporary economy's ability to grow on a global scale, giving consideration to the criterion of the inter-generation satisfaction of human needs.

From this perspective, the authors make an attempt to redefine the existing model of achieving sustainable and permanent development and its adaptation – according to the time criterion and in the light of transformation processes and achievement of the desired condition – taking into account the characteristics of natural, social and economic capital. The results of the conducted research indicate that the research objective of this work, as defined in the Introduction, has been achieved.

Concluding our considerations related to the idea of sustainable and permanent development in the adopted analytical contexts, we should note that the presented empirical data indicates that contemporary people live beyond their means, which is accompanied by welfare inequalities in different parts of the world, having its direct impact on natural and social capital. It confirms the necessity of making breakthrough changes aimed to achieve sustainable and permanent development – "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Our Common Future, the World Commission on Environment and Development). However, the implementation of the idea of sustainable and permanent development in business practice requires replacing the hitherto model of doing business (Sedler and Bawa, 2010) by a sustainable model (Figure 4).

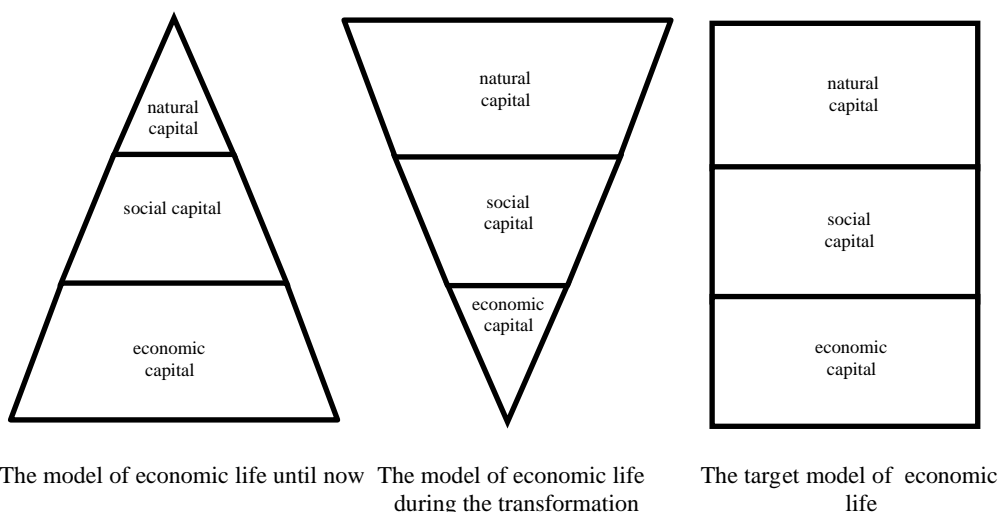
The model of doing global business adopted until now is characterised by the dominance of economic capital over social capital, and – in a very special way – dominance over natural capital, which, in fact, is the most significant factor (the top of the pyramid) – without this capital life on earth is not possible. The period of transition towards sustainable and permanent development can even indicate the necessity to completely reevaluate natural, social and economic capital (Harrison, 2000) and recognize the earth's right to live and the right to live on earth as fundamental rights, and to view economic capital as serving the needs of man and society – not vice versa<sup>24</sup>. The following question arises: is it feasible to implement a target model in which the particular types of capital are balanced?<sup>25</sup> This question must be answered by every single person – it is up to all of us what kind of world will be inherited by future generations.

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<sup>24</sup>*It requires 21<sup>st</sup> century man to change his way of thinking about different values – not from the perspective of economics but the philosophy of life and the ethical foundations of its existence. Otherwise, even economic capital loses its value.*

<sup>25</sup>*Obviously, it is not equality in a mathematical sense but the situation in which one type of capital is not dominated by other types.*

**Figure 4.** Changes in the model of the global economy in the context of natural, social and economic capital in a time-based approach



*Source: Own study.*

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