

Call for Integral Protection of Biocultural Diversity

Postulat integralnej ochrony różnorodności biokulturowej

Ryszard F. Sadowski

*Cardinal Stefan Wyszyński University in Warsaw, Institute of Ecology and Bioethics,
Wóycickiego 1/3, building 23, 01-938 Warsaw, Poland
E-mail: r.sadowski@uksw.edu.pl*

Abstract

The contemporary ecological crisis compels us to undertake research and adopt measures that will ensure the sustainable development of humanity. The main point here is that while satisfying the needs of current generations, it is necessary to respect the needs of future generations as well as nature's capabilities. Works on a concept of development that would allow this task to be accomplished have been carried out for the last several decades. They resulted in the formulation of the still-evolving idea of sustainable development. With the current state of knowledge, it seems vital that this idea should comprise protection of biocultural diversity since, as clearly evidenced by the research conducted, the interrelated biological, cultural and linguistic diversity affects development. This article aims at highlighting the necessity of incorporating biocultural diversity into the idea of sustainable development and it points out the need for integral concern for the diversity of Earth's heritage. Only integral care of all types of diversity gives hope for the protection of each of them and increases the chances of building a sustainable world.

Key words: biocultural diversity, biodiversity, cultural diversity, linguistic diversity, sustainable development

Streszczenie

Współczesny kryzys ekologiczny skłania do podejmowania badań i działań, które zapewnią trwały rozwój ludzkości. Chodzi o to, by zaspakajając potrzeby aktualnego pokolenia respektować potrzeby przyszłych pokoleń oraz możliwości przyrody. Prace nad koncepcją rozwoju, która pozwoli zrealizować to zadanie trwają od kilku dekad. W ich wyniku powstała idea zrównoważonego rozwoju, która wciąż ewoluuje. Przy obecnym stanie wiedzy ważne wydaje się uwzględnienie w niej ochrony różnorodności biokulturowej. Badania jednoznacznie wskazują bowiem na korelację pomiędzy rozwojem a wzajemnie ze sobą powiązаныmi różnorodnościami: biologiczną, kulturową i językową. Artykuł ten stawia sobie za cel ukazanie potrzeby włączenia różnorodności biokulturowej do idei zrównoważonego rozwoju oraz wskazanie na konieczność łącznej troski o różnorodność ziemskiego dziedzictwa, tylko integralna troska o wszystkie rodzaje różnorodności daje bowiem nadzieję na ochronę każdej z nich i zwiększa szanse na zbudowanie zrównoważonego świata.

Słowa kluczowe: różnorodność biokulturowa, bioróżnorodność, różnorodność kulturowa, różnorodność lingwistyczna, zrównoważony rozwój

Introduction

Recognition of the scale of risks posed by the modern ecological crisis led to a number of studies on the relation of man to the surrounding world. Formulation of the idea of sustainable development, which is meant to define the proper style of human presence in the world, proved to be one of the greatest

achievements in this regard. For several decades, the idea of sustainable development has been a subject of in-depth reflection of scholars, politicians and environmental activists. This reflection allows for a more thorough recognition of the emerging threats and for the development of ever more subtle ways of curbing them. As a result of the research conducted, the idea of sustainable development is constantly

evolving, taking into account the ever-new perspectives of reflection on the ecological crisis. It seems that, at the current stage of research, it is necessary to link the idea of sustainable development with biocultural diversity, since it gives us hope for the possibility of developing a more friendly human relationship with the environment and a more effective way of overcoming the ecological crisis.

The importance of biocultural diversity was first acknowledged in the 1980s. One of the first international initiatives aimed at providing comprehensive protection of endangered species and threatened cultures was undertaken at the First International Congress of Ethnobiology (1988). The assembled scientists, environmentalists and representatives of endangered cultures jointly issued the *Declaration of Belém*, in which they called for concrete and immediate action to protect the cultural and biological heritage of our planet (FICE, 1988).

Since then, interest in the protection of diversity, understood as a comprehensive concern for preserving the richness of species and cultures, has been steadily growing. This is confirmed by studies that point to a link between linguistic, cultural and biological diversity and to similar challenges faced today by all those diversities. A good illustration of the ever-growing interest in and popularization of integral care for the diversity of our planet is a document issued by the United Nations Environment Programme (UNEP) in 2007. The chapter on biodiversity clearly shows the link between biological and cultural diversity. Biodiversity encompasses more than just variation in appearance and composition. It includes diversity in abundance, distribution and in behaviour, including interactions among the components of biodiversity. Biodiversity also incorporates human cultural diversity, which can be affected by the same drivers as biodiversity, and which has impacts on the diversity of genes, other species and ecosystems (Ash, 2007).

Luisa Maffi seems to have been the first to provide a clear definition of biocultural diversity, describing it as *the diversity of life in all its manifestations: biological, cultural, and linguistic – which are interrelated (and possibly coevolved) within a complex socio-ecological adaptive system* (Maffi, 2007). Maffi pointed to three important characteristics of biocultural diversity: (Maffi, Woodley, 2010).

- ✓ The diversity of life is made up not only of the diversity of plant and animal species, habitats and ecosystems found on the planet, but also of the diversity of human cultures and languages.
- ✓ The diversities do not exist in separate and parallel realms, but rather are different manifestations of a single, complex whole.
- ✓ The links among these diversities have developed over time through the cumulative global effects of mutual adaptations, proba-

bly of a co-evolutionary nature, between humans and the environment at the local level.

Thus understood, biocultural diversity constitutes a set of values motivating us to take initiatives to protect both endangered species of flora and fauna and endangered cultures.

The present study aims at highlighting the necessity of integral concern for preserving biological, cultural and linguistic diversity and including it in the concept of sustainable development. There is ample evidence that biological, cultural and linguistic diversity directly, or at least indirectly, interact with one another, condition one another and, together, provide the basis for the development of our civilization. The building of a truly sustainable world must, therefore, take into account all those components, since it is only by protecting the widely understood heritage of our planet, that we can cherish hopes for optimistic forecasts for the various forms of earthly life, in all its manifestations.

1. Diversity of Earth's heritage

The heritage of our planet manifests itself in an extraordinary diversity of both animate and inanimate nature. A special place in this nature is taken by man who stands out in his unique character, revealing itself, among other things, in the ability to create culture. While undertaking an analysis of the diversity of Earth's heritage, one can, therefore, identify three main categories: biological diversity, cultural diversity and linguistic diversity.

1.1. Biological diversity

The term biodiversity (biological diversity) was first used in scientific literature in the early 1980s. Usually, biodiversity is defined as a *variety of life on Earth, ... [which] includes all organisms, species, and populations; the genetic variation among these; and their complex assemblages of communities and ecosystems* (UNEP, 2015; UN, 2016d).

The definition of biodiversity presented in UNEP documents points to three important elements (UNEP, 2015):

- ✓ Species diversity – describes the wide variety of plants, animals and microorganisms that exist on the planet.
- ✓ Ecosystem diversity – ecosystems represent a dynamic complex of plant, animal and microorganism communities and their non-living environment interacting as a functional unit.
- ✓ Genetic diversity – genetic material represents any material of plant, animal, microbial or other origin containing functional units of heredity. Genetic diversity improves the ability of each species to adapt to disease, pests or habitat variation. The

lower the level of genetic diversity, the more vulnerable a population is to changing environments or disease.

Until recently, it was assumed that 5 000–50 000 million species lived on Earth throughout all its history while, nowadays, there are approximately only 50 million species. These figures indicate that more than 99% of flora and fauna species had become extinct long before the advent of man (McKinney, 1997). In light of research from May 2016, the statistics prove to be far worse. In fact, it is estimated that Earth could have been home to as many as 1 billion species (NSF, 2016).

Analyses of paleontological data show that in the history of our planet there were *big five* mass extinctions and many minor events that led to the disappearance of such a large number of species (Hallam, Wignall, 1997). With the advent of man, an accelerated loss of biodiversity referred to as the Holocene extinction took place and it was mainly induced by the destructive style of human presence in the environment (Kolbert, 2014).

In its publications, UNEP highlights both the dangers associated with loss of biodiversity and the benefits issuing from its protection. UNEP reports stress that short-term economic and social benefits resulting from irresponsible use of the environment leading to loss of biodiversity are not commensurate with the long-term costs associated with that loss (UNEP 2010; UNEP 2015).

1.2. Cultural diversity

Reflection on cultural diversity was undertaken with the realization of the challenges faced by today's culture. Technological development, liberalization of trade and of the cultural goods market and, especially, development of new communication technologies created conditions for both deepening of diversity and cultural unification. It is difficult to tell clearly what the final result of this process will be. However, there are indications that the tendency towards unification will prevail, since the direction of changes seems to be in fact supported by globalization processes (Voiskounsky, 1998). In order to highlight the importance of cultural diversity, the UN General Assembly proclaimed the years 1988–1997 the World Decade of Cultural Development (UN, 2016e).

The UN established UNESCO, whose task is to protect the cultural heritage of humanity. One of the most important initiatives of UNESCO in this regard was the World Conference on Education for All (1990). Conference participants pointed out that culture determines effective education and confirmed the importance of caring for the diversity of cultures and cultural identity (Power, 2014, 108). In 1993, in turn, the World Commission on Culture and Development (Cuéllar Commission) was established. Its main task was to prepare a World Report on Culture and Development and to *prepare proposals both for*

urgent and long-term action to meet cultural needs in the context of development (UNESCO, 1993). The report pointed out that *many development failures and disasters stem from an inadequate recognition of cultural and ethnic complexities* (WCCD, 1996). Another important initiative for the protection of cultural diversity was the Intergovernmental Conference on Cultural Policies for Development, whose participants pointed to a close relationship between respect for culture and development (Stockholm, 1998). The UN commitment to protect cultural diversity resulted in the adoption of the *Universal Declaration on Cultural Diversity* in 2001, which also drew attention to the links between cultural diversity and development. The purpose of this declaration was to prepare a discussion on development during the World Summit on Sustainable Development in Johannesburg. Another important document on cultural diversity is that from the *Convention on the Protection and Promotion of the Diversity of Cultural Expressions* adopted in 2005 (UNESCO, 2005).

The UN activities for the protection of cultural diversity were summed up in the report *UNESCO and the Question of Cultural Diversity 1946-2007. Review and Strategies* (UNESCO, 2007). One of UNESCO's last important achievements in the field of cultural diversity protection is the report *Investing in Cultural Diversity and Intercultural Dialogue*. This report takes into account the recent global economic crisis and in its perspective shows both the temptation to reduce spending on culture and emphasizes the importance of culture in sustaining development (UNESCO, 2009).

1.3. Linguistic diversity

Just as in the case of biological and cultural diversity, the disappearance of linguistic diversity was also generally acknowledged with time. In order to describe this phenomenon, the Index of Linguistic Diversity (ILD), which allows for measurable evaluation of the disappearance of linguistic diversity, was developed. This index refers to the concept of biodiversity. Language richness can be thought of as being analogous to species richness, the number of species found in a given area. In addition to richness, a second component in species diversity is evenness, or the distribution of individual organisms among species. In the case of linguistic diversity, evenness is the distribution of individual speakers among languages. For example, two regions in both of which ten languages are spoken each have the same richness, but the region in which each language is spoken by 10% of the population has greater evenness, and therefore higher linguistic diversity, than one in which 91% of the population speaks one language and only 1% of the population speaks each of the other nine (Harmon, Loh, 2010).

According to the data from 2016, the diversity of living languages in particular regions of the world pre-

sents itself as follows: Europe – 287; both Americas – 1062; the Pacific region – 1313; Africa – 2139 and Asia – 2296 (Lewis et al., 2016). It is estimated that in 2005 there were 7299 living languages in the world. However, as in the case of biological and cultural diversity, linguistic diversity is systematically decreasing. In the years 1970–2005 the number of living languages in the world decreased by 20%. It is also worrying that the disappearance of languages is proceeding at a growing pace. In the 1970s, the decrease of linguistic diversity was noted to reach 0.3% per year, now this decrease exceeds 1% (Harmon, Loh, 2010).

2. Integral character of Earth's heritage diversity

The existence of interrelationships between culture and nature has long been acknowledged, and contributed to the formulation of a number of concepts showing the nature of those links. Today, there is a broad consensus that culture and the natural environment mutually interact, although the nature of those interactions is still the subject of ongoing debates. Current research on biocultural diversity leads to the conclusion that biological, cultural and linguistic diversity are interrelated, they mutually condition one another and constitute an integral whole, in which the diversity of our planet is manifested. This is confirmed by a recent study cited in UNEP documents – *cultural diversity and biodiversity are intimately related to each other. If we lose one, we risk losing the other. The diversity of societies, cultures and languages that has developed throughout human history is intimately related to biodiversity and its use* (UNEP, 2010).

Today, we are more and more aware of the fact that life's diversity manifests itself in both biological diversity through many forms of living organisms and in cultural diversity through numerous concepts of human beliefs, systems of values and worldviews. Culture and nature are interrelated due to a number of co-dependencies. There are many indications that the natural environment provides conditions for the occurrence of cultural processes and formation of human systems of beliefs. As a result, the environment is a kind of cultural archive documenting human activity throughout history (Pretty et al., 2009). A strong link between culture and nature is also reflected in the similarity of threats that both those realities face nowadays. Also, the effects of the threats that can be observed both on the natural and cultural plane have a similar character (Pretty et al., 2009). Relationships between cultural and biological diversity can also be seen in different worldviews of various human communities, since the concept of the world is largely dependent on the dominant culture, the language and the level of civilization of a given community. It seems that man's culturally conditioned perception of himself as an interdependent element of nature or as a being separate from nature or

even dominant over nature significantly affects the shape of the human relationship to the environment (Harmon, 2002).

A close connection between the natural world and the world of culture is also reflected in the fact that any interference in one of these worlds often causes changes in the other one. The relationship between cultural and biological diversity can also be clearly seen in the convergence of areas that are crucial for both types of diversity. Many regions which are rich in the wealth of biological species also abound in different ethnic groups, characterized by enormous cultural and linguistic diversity (Sutherland, 2003; Gorenflo et al., 2012). Knowledge of nature gathered by various communities also constitutes a confirmation of the link between culture and nature. This knowledge is present in customs, religious rituals, stories, traditions and language of communities which in this way work out answers to questions about the functioning of the world and man's relationship to it. Fikret Berkes defined this phenomenon as a *knowledge–belief–practice* complex and pointed to its essential role in indicating the link between nature and culture (Pretty et al., 2009; Berkes, 2012).

An important role in this phenomenon is played by linguistic diversity. The multiplicity of human languages exerts its impact not only on the various ways of shaping culture but also on biodiversity. Scientists generally agree that degradation of the natural environment has a direct influence on the loss of cultural and linguistic diversity. Recent studies indicate that there is also an inverse relationship, i.e. loss of linguistic diversity has a negative impact on biodiversity. This phenomenon results from strong links between language and traditional knowledge on biodiversity, since local communities often developed a complex system of describing the natural world based on a thorough knowledge of their local environment. This knowledge is embedded in indigenous names, oral traditions and taxonomies. With the disappearance of a given language, this knowledge will be irretrievably lost (UNESCO, 2016). The importance of traditional knowledge for the preservation of biological diversity is confirmed by numerous projects aimed at protecting or restoring endangered species of flora and fauna. Acquaintance with that knowledge or taking it into account often decides the success or failure of environmental projects (Nabhan, 2001).

Research into linguistic diversity clearly points to its significance both in the context of environmental concerns as well as in the development of civilization. The role of linguistic diversity in the conservation of biodiversity is now better recognized and appreciated. Tove Skutnabb-Kangas, in a report for the Council of Europe addressing the issue, states that linguistic and cultural diversities are the storehouse of historically developed knowledge. He also claims that linguistic and cultural diversity is connected to biodiversity (Skutnabb-Kangas, 2002). This report

indicates that linguistic diversity is now even more threatened than biodiversity. Experts estimating the state of biological and linguistic diversity for 2100 show its significant impoverishment. Depending on the adopted methods, it is estimated that at the beginning of the 22nd century, the diversity of Earth's species of flora and fauna will constitute 80–98% of the species living at the beginning of the 21st century. The estimates for linguistic diversity are much worse. In 2100 people will use only 10-50% of the currently used languages (Skutnabb-Kangas, 2002). The links between linguistic diversity and cultural diversity are stronger than those with biodiversity. The impact of language on the shape of culture is in fact more direct (Kim, 2003). The language used by man affects the way in which he expresses his ideas and beliefs which shape culture (Elmes, 2013). Each language has its limitations, which results in the fact that a person who speaks a given language perceives the world differently than a person using a different language. This, in turn, has an impact on the diversity of cultures shaped in different linguistic traditions. Each language has its own mentality, which accentuates certain ways of viewing the reality. In some languages, for example, it is important who, where, how many times and when an activity is performed, while other languages do not pay so much attention to numbers and time, but put more emphasis on communicating how the speaker acquired information on a specific activity, i.e. whether he witnessed it personally, formulated his own conjectures on the basis of various facts or heard about it from a third party (Bloom, 2002).

A good illustration of the ways in which specific languages affect different worldviews is provided by research conducted by Lera Boroditsky. As the scientist notices, some indigenous tribes say north, south, east and west, rather than left and right, and as a consequence have great spatial orientation. The Pirahã, whose language eschews number words in favour of terms like few and many, are not able to keep track of exact quantities. In one study, Spanish and Japanese speakers couldn't remember the agents of accidental events as adeptly as English speakers could. Why? In Spanish and Japanese, the agent of causality is dropped: *the vase broke itself*, rather than *John broke the vase* (Boroditsky, 2009).

Current knowledge shows that Earth is one big and integrated system of interrelated and mutually conditioning elements, where biocultural diversity plays an important role. Loss of any diversity affects others and brings dramatic consequences both to humanity and to Earth (Maffi, 2005).

3. Diversity of Earth's heritage for sustainable development

Recent studies clearly highlight the importance of biological, cultural and linguistic diversity in building a sustainable world. It has long been attempted to

work out a concept of development which would enable realization of this project. However, only in recent years, can we perceive that different types of diversity are being included in the concept of development.

Numerous UN conferences have devoted a lot of attention to the issue of development. Their goal was to work out a concept of development which would meet the needs of the present generation in such a way as not to endanger the needs of future generations. The principle of sustainable development formulated by the UN is aimed at improving the life quality of all people, taking into account the needs of the environment. Realization of this task will only be possible provided that the following questions are integrally taken into consideration:

- 1) economic growth and equitable distribution of benefits;
- 2) protection of natural resources and of the environment and
- 3) social development.

In order to accomplish this task, the UN prepared documents that specify the way of building a sustainable world. An important step in this direction is *Agenda 21*, a comprehensive plan of action for the 21st century, and the *Millennium Development Goals* (MDGs). To emphasize the importance of this issue the UN announced the years 2005-2014 a Decade of Education for Sustainable Development, later referred to as the Decade of Change, aimed at promoting sustainable behaviour and at inspiring critical and creative thinking which would allow a solution to be found to the problems preventing sustainable development (UNESCO, 2016c). Another important UN document is the *2030 Agenda for Sustainable Development*, which sets itself the task of continuing the MDGs by identifying 17 Sustainable Development Goals. The new objectives are to help in the further fight against poverty and to lead to sustainable development before 2030 (UN, 2016).

An outline of the UN initiatives presented above shows the determination of international structures to build a sustainable world. Despite an apparent lack of connection between the principle of sustainable development and biocultural diversity, the existence of such a link must be taken for granted. If we understand sustainable development as a type of development that takes into account the balance of three planes: economic, social and natural, a link between biological, cultural and linguistic diversity and all these planes becomes evident.

Most evident is the relationship of biodiversity with nature. This link is clearly present in the document *Agenda 21*, Chapter 15 of which is entitled *Conservation of Biological Diversity* (UNCED, 1992). The link of biodiversity with the seventh MDG, *Ensure Environmental Sustainability* also seems obvious. To achieve this objective, the UN sought to achieve by 2010 a significant reduction in the rate of biodiversity loss by protecting ecosystems covering

15.2% of land and 8.4% of coastal marine areas worldwide (UN, 2016c). A direct connection between biological diversity and the principle of sustainable development is also evidenced by the 15th sustainable development goal of the 2030 *Agenda for Sustainable Development*. This objective bids us to: sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss (UN, 2016b).

The link between cultural diversity and the social component of sustainable development also seems quite obvious. A world UNESCO report on cultural diversity states that this diversity is a key dimension of sustainable development. An important role in grasping the importance of cultural diversity for sustainable development can be ascribed to the World Summit on Sustainable Development in Johannesburg. It was indicated, though, that cultural diversity should not be considered as the fourth pillar of sustainable development, but rather as a significant cross-cutting factor, since it plays a substantial role beginning with poverty eradication and the safeguarding of biodiversity to resource management and climate change (UNESCO, 2009).

The report worked out in Johannesburg points to the fact that the importance of cultural diversity for such issues as loss of biodiversity and climate change is underestimated. It also highlights the fact that the initial focus on technical measures which were meant to resolve the above issues was insufficient. Today, the need to include cultural diversity in the creation of a sustainable world is more and more often emphasized (UNESCO, 2009). Cultural diversity is now recognized as one of the roots of development, understood not simply in terms of economic growth, but also as a means to achieve a more satisfactory intellectual, emotional, moral and spiritual existence (UNESCO, 2002). In order to fully grasp the impact of culture on the development of modern civilization it is necessary to think of culture as the values, beliefs, and norms that a group of people share. In this sense, culture conditions individuals' perceptions of the world, influences what they consider important and suggests courses of action that are appropriate and inappropriate. Cultural factors can, for example, influence consumption behaviour and may be a particularly important driver of environmental change (Nelson, 2005). Moreover, the *Universal Declaration on Cultural Diversity* points to the importance of cultural diversity for human creativity and fostering of international solidarity and stresses the indivisibility of culture and development. This document simply states that cultural diversity must also be seen as a motor of development (UNESCO, 2002).

The link of linguistic diversity with development is less evident. The most frequently highlighted effects of the loss of linguistic diversity refer only to its negative impact on the acquisition of scientific, traditional and ecological knowledge and loss of cultural heritage encoded in the language. The association of

linguistic diversity with human rights and social justice is also mentioned here. Although all of these have an important role to play, the economic significance and consequences of the global loss of linguistic diversity have not yet been seriously studied or appreciated (Romaine, 2016).

In its recent documents, UNESCO stresses, however, the relationship of linguistic diversity to sustainable development. Languages are of strategic importance for people and the planet. There is growing awareness that languages play a vital role in development, not only in ensuring cultural diversity and intercultural dialogue, but also in attaining quality education for all and strengthening cooperation, in building inclusive knowledge societies and preserving cultural heritage and in mobilizing political will for applying the benefits of science and technology to sustainable development (UNESCO, 2016b).

According to Suzanne Romaine, conservation of biodiversity, cultural-linguistic diversity, sustainable development and the welfare of the poor are inextricably linked. Just as biological diversity increases the resilience of natural systems, cultural-linguistic diversity has the capacity to increase the resilience of social systems. Loss of linguistic diversity has, therefore, serious social and economic consequences for the well-being and resilience of individuals and communities (Romaine, 2016). Romaine also indicates that implementation of the MDGs calls for a new approach to the key role of language in human development. In her view, only by placing language at the central point of development will the MDGs and other global agendas such as Education for All and Education for Sustainable Development be achieved (Romaine, 2013).

Documents issued by the European Union also highlight the major importance of linguistic diversity for sustainable development. The Committee of the Regions emphasizes that sustainable development of a region is always based on its cultural heritage and identity, that language is the most important factor supporting the cultural identity of localities and regions and hence support for linguistic diversity is essential for the sustainable development of Europe's regions (Council of Europe, 2002).

It seems that nowadays we begin to realize that biocultural diversity constitutes a key element in building a sustainable world. Recognition of its significance is an important prerequisite for ensuring sustainable development. Development models produced since the 1970s have clearly failed, despite constant revision, to live up to the expectations they raised. The new challenges arising from globalization are making it increasingly important to redefine the relationship between culture and development or, to be more precise, between diversity, dialogue and development: the *three Ds*. Cultural diversity is a site that induces continuously flowing and unifying dialogue open to each and every expression of identity.

Acknowledgement of that daily dialogue as a founding principle is what needs to be asserted and preserved. Diversity and dialogue are mutually interrelated. The causal link that binds them cannot be severed without undermining sustainability. Cultural diversity, far from being divisive, unites individuals, societies and peoples, enabling them to share in a fund made up of the heritage of bygone ages, the experience of the present and the promise of the future. This shared fund, with all parties being both contributors and beneficiaries, is what underpins the sustainability of development for all (UNESCO, 2002).

Conclusion

Building a sustainable world appears to be the greatest challenge faced by man in the contemporary world, since it is not only the survival of humanity but perhaps of all life on Earth that is threatened. Reflection on the styles of human presence in the world becomes, therefore, an extremely urgent and important task. Only by changing man's destructive attitude towards nature and by adopting an approach that would take into account human needs and the capabilities of nature may give us hope for a propitious future for humanity. It is generally acknowledged that adoption of the principle of sustainable development provides a guarantee of such a change. This principle, however, evolves with the ongoing reflection on the ecological crisis. This allows us to shape the model of human attitude to the world and increasingly respect the needs and capabilities of nature.

It seems that at the present stage of this reflection, inclusion of the heritage of our planet in all its manifestations is an important element conditioning the possibility of working out an adequate concept of development. The point is that it is necessary to protect both biodiversity as well as cultural and linguistic diversity. All these types of diversity are in fact interrelated and mutually dependent. Only integral concern for the diversity of all manifestations of life on Earth gives hope for effective protection of this wealth. Contrary to some opinions, biocultural diversity should not, however, constitute a *fourth pillar* of the principle of sustainable development, since biological, cultural and linguistic diversity penetrates all its three traditional pillars: economic efficiency, environmental concerns and social balance (UNESCO, 2009). Acknowledgement of the key role of those diversities points to the complexity of the contemporary ecological crisis and of the global ecosystem as well as to the multiple conditionings and relationships of their individual elements. This, in turn, makes it possible to develop strategies more effective than ever in overcoming the crisis and building a sustainable world.

The call for integral care of all aspects of Earth's heritage precludes antagonizing culture and nature. Culture must respect nature because, otherwise, it degenerates into a sort of anti-nature and, consequently, turns against man. However, it is important to point to the risk of identifying the ways in which nature and culture develop, since their evolution has an analogous, not homologous, character (Łepko, 1991).

A homologous view of nature's and culture's functioning leads to reducing culture to nature. Using the concept of biocultural diversity, one can consequently speak of two dangers resulting from the ways in which we define culture and nature. Putting too much emphasis on the differences between them as well as their antagonization can lead to degeneration of culture, which results in a destructive relationship of man to nature. Overemphasizing similarities, on the other hand, and treating them as homologous concepts may lead to an inadequate conception of culture, which also implies negative consequences for both man himself and nature. Therefore, an adequate definition of culture and nature calls for a balanced definition of the differences and similarities between them. Only their adequate definition will allow for proper use of the concept of biocultural diversity and create conditions for more effective building of a sustainable world, which will protect human needs while respecting the needs and capabilities of nature.

Proper use of the concept of biocultural diversity gives us hope not only for the possibility of changing the destructive relationship of man to nature but also of shaping this relationship in such a way as to ensure that life on Earth can be protected in both its biological and cultural manifestations. Built in this way, a sustainable world will be a place where man will live in a human manner, i.e. he will be surrounded by a healthy natural environment and he will be creatively involved in the world of culture, and this means, in turn, that the humanity of man will be protected (Lorenz, 1973).

References

1. ASH N., FAZEL A., 2007, *Biodiversity*, in: UNEP, *Global Environment Outlook 4: Environment for Development*, UNEP, Nairobi.
2. BERKES F., 2012, *Sacred Ecology*, Routledge, New York.
3. BLOOM P., 2002, Explaining Linguistic Diversity, in: *American Scientist* vol. 90, no 4, p. 374-375.
4. BORODITSKY L., 2009, How Does Our Language Shape the Way We Think?, in: *What's next? Dispatches on the Future of Science: Original Essays from a New Generation of Scientists*, ed. Brockman M., Vintage Books, New York. p. 116-129.

5. COUNCIL OF EUROPE, 2002, *Linguistic Diversity. A Challenge for European Cities and Regions*, Council of Europe Publishing, Strasbourg.
6. ELMES D., 2013, *The Relationship between Language and Culture*, in: *Annals of Fitness and Sports Sciences*, vol. 46, no 3, p. 11-18.
7. FICE (First International Congress of Ethnobiology), 1988, *Declaration of Belém*, www.ethnobiology.net/wp-content/uploads/Decl-Belem-Eng-from-Posey.pdf (3.10.2016).
8. GORENFLO L. J., ROMAINE S., MITTERMEIER R. A., WALKER-PAINEMILLA K., 2012, Co-occurrence of Linguistic and Biological Diversity in Biodiversity Hotspots and High Biodiversity Wilderness Areas, in: *PNAS*, vol. 109, no 21, p. 8032-8037.
9. HALLAM A., WIGNALL P. B., 1997, *Mass Extinctions and Their Aftermath*, Oxford University Press, Oxford, New York, Tokyo.
10. HARMON D., 2002, *In Light of Our Differences: How Diversity in Nature and Culture Makes us Human*, Smithsonian Institution Press, Washington.
11. HARMON D., LOH J., 2010, The Index of Linguistic Diversity: A New Quantitative Measure of Trends in the Status of the World's Languages, in: *Language Documentation & Conservation*, vol. 4, p. 97-151.
12. KIM L. S., 2003, Exploring the Relationship between Language, Culture and Identity, in: *GEMA Online Journal of Language Studies*, vol. 3, no 2, p. 64-76.
13. KOLBERT E., 2014, *The Sixth Extinction: An Unnatural History*, Henry Holt and Company, New York.
14. ŁEPKO Z., 1991, *Antropologia Konrada Lorenza*, in: *Z zagadnień filozofii przyrodznawstwa i filozofii przyrody*, ed. Lubański M., Ślaga Sz., ATK, Warszawa, p. 157-279.
15. LEWIS M. P., SIMONS G. F., FENNIG Ch. D., 2016, *Ethnologue: Languages of the World*, SIL International, Dallas.
16. LORENZ K., 1973, *Civilized Man's Eight Deadly Sins*, Harcourt Brace Jovanovich, New York.
17. MAFFI L., 2005, Linguistic, Cultural, and Biological Diversity, in: *Annual Review of Anthropology*, vol. 29, p. 599-617.
18. MAFFI L., 2007, *Biocultural Diversity and Sustainability*, in: *The SAGE handbook of environment and society*, ed. Pretty J.N. et al., SAGE, Los Angeles, p. 267-277.
19. MAFFI L., WOODLEY E., 2010, *Biocultural diversity conservation: a global sourcebook*, Earthscan, London, Washington.
20. MCKINNEY M. L., 1997, *How do Rare Species Avoid Extinction? A Paleontological View*, in: *Biology of Rarity: Causes and Consequences of Rare-Common Differences*, ed. Kunin W. E., Gaston K. J., Springer, Dordrecht, p. 110-128.
21. NABHAN G. P., 2001, Cultural Perceptions of Ecological Interactions: An 'Endangered People's' Contribution to the Conservation of Biological and Linguistic, in: *On Biocultural Diversity. Linking Language, Knowledge and the Environment*, ed. Maffi L., Smithsonian Institution Press, Washington, London, p. 145-156.
22. NELSON G. C., 2005, Drivers of Ecosystem Change, in: *Ecosystems and Human Well-Being: Current State and Trends*, Vol. 1, ed. Hassan R. M., Scholes R. J., Island Press, Washington, p. 73-76.
23. NSF (National Science Foundation), *Researchers find that Earth may be home to 1 trillion species*, http://www.nsf.gov/news/news_summ.jsp?cntn_id=138446, (8.10.2016).
24. POWER C., 2014, *The Power of Education: Education for All, Development, Globalisation and UNESCO*, Springer, Singapore.
25. PRETTY J., ADAMS B., BERKES F., de ATHAYDE S., DUDLEY N., HUNN E., MAFFI L., MILTON K., RAPPORT D., ROBBINS P., STERLING E., STOLTON S., TSING A., VINTINNERK E., PILGRIM S., 2009, The Intersections of Biological Diversity and Cultural Diversity: Towards Integration, in: *Conservation and Society*, vol. 7, no 2, p. 100-112.
26. ROMAINE S., 2013, Keeping the Promise of the Millennium Development Goals: Why Language Matters, in: *Applied Linguistics Review*, vol. 4, no 1, p. 1-21.
27. ROMAINE S., 2016, *Language and Sustainable Development*, in: *The Economics of Language Policy*, eds. Gazzola M., Wickström B.A., MIT Press, Cambridge, p. 402-431.
28. SKUTNABB-KANGAS T., 2002, *Why Should Linguistic Diversity be Maintained and Supported in Europe? Some Arguments*, Council of Europe, Strasbourg.
29. SUTHERLAND W. J., 2003, Parallel extinction risk and global distribution of languages and species, in: *Nature*, vol. 423, p. 276-279.
30. UN, 2016a, *The Sustainable Development Agenda*, <http://www.un.org/sustainabledevelopment/development-agenda/> (25.10.2016).
31. UN, 2016b, *Goal 15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss*, www.un.org/sustainabledevelopment/biodiversity/ (25.10.2016).
32. UN, 2016c, *Goal 7: Ensure Environmental Sustainability*, www.un.org/millenniumgoals/environment.shtml (25.10.2016).
33. UN, 2016d, *Convention on Biological Diversity*, www.cbd.int/doc/legal/cbd-en.pdf (14.10.2016).

34. UN, 2016e, *Proclamation of the World Decade for Cultural Development*, www.un.org/documents/ga/res/41/a41r187.htm (13.10.2016).
35. UNCED, 1992, *Agenda 21*, <https://sustainable-development.un.org/content/documents/Agenda21.pdf> (25.10.2016).
36. UNEP, 2010, *What is Biodiversity?*, UNEP.
37. UNEP, 2015, *YouthXchange Biodiversity and Lifestyles Guidebook*, UNEP.
38. UNESCO, 1993, *World Commission on Culture and Development*, UNESCO, Paris.
39. UNESCO, 2002, *Universal Declaration on Cultural Diversity*, UNESCO, Paris.
40. UNESCO, 2005, *Convention on the Protection and Promotion of the Diversity of Cultural Expressions*, UNESCO, Paris.
41. UNESCO, 2007, *UNESCO and the Question of Cultural Diversity 1946-2007. Review and Strategies*, UNESCO, Paris.
42. UNESCO, 2009, *Investing in Cultural Diversity and Intercultural Dialogue*, UNESCO, Paris.
43. UNESCO, 2016a, *Biodiversity and Linguistic Diversity. Maintaining Indigenous Languages, Conserving Biodiversity*, www.unesco.org/new/en/culture/themes/endangered-languages/biodiversity-and-linguistic-diversity/ (20.10.2016).
44. UNESCO, 2016b, *Cultural and Linguistic Diversity*, <http://www.unesco.org/new/en/indigenous-peoples/cultural-and-linguistic-diversity/> (2.11.2016).
45. UNESCO, 2016c, *UNESCO a Zrównowazony Rozwój*, <http://www.unesco.pl/edukacja/dekada-edukacji-nt-zrownowazonego-rozwoju/unesco-a-zrownowazony-rozwoj/> (25.10.2016).
46. VOISKOUNSKY A. E., 1988, Internet: Culture Diversity and Unification, in: *Cultural Attitudes Towards Communication and Technology*, ed. Ess Ch., Sudweeks F., University of Sydney Press, Sydney, p. 100-115. https://www.it.murdoch.edu.au/catac/catac98/pdf/07_voiskounsky.pdf (13.10.2016).
47. WCCD (World Commission on Culture and Development), 1996, *Our Creative Diversity*, UNESCO, Paris 1996.

