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The Vision of a Global Environmental Disaster and the Extinction of Humankind

Annotation: Based on the data showing an increase in risk levels of environmental disasters in the recent years, the author poses a thesis that if that tendency is not curbed, a radical limit to the humans' range of tolerance will follow. In this article, there are references to reports of catastrophic conclusions advocating that in two to three decades, a process of extinction of the human race will begin. The only way out is a change of attitude towards nature and increased efforts to sustain minimal boundary conditions for our species to survive.

Key words: ecology, economic and demographic reasons for a global environmental disaster, end of human civilisation, environmental risks, range of tolerance.

Perspektywa globalnej katastrofy ekologicznej i ekstynkcji gatunku ludzkiego

Streszczenie: Na podstawie danych obrazujących wzrost zagrożeń ekologicznych w ciągu ostatnich lat w artykule postawiona jest teza, że jeśli owa tendencja nie zostanie powstrzymana, nastąpi radykalne ograniczenie zakresu tolerancji ekologicznej dla człowieka. W tekście przywoływane są raporty o katastroficznym wydzwiewku, które wieszczą, że z tego powodu już za dwie, trzy dekady rozpocznie się proces wymierania gatunku ludzkiego. Jedyną drogą ratunku dla ludzkości w tej sytuacji jest zmiana jej stosunku do przyrody i wzmoczony wysiłek na rzecz zachowania minimalnych choćby warunków brzegowych dla dalszej gatunkowej egzystencji.

Słowa kluczowe: ekologia, gospodarka, demografia, globalna katastrofa ekologiczna, kres cywilizacji ludzkiej, zagrożenia ekologiczne, zakres tolerancji ekologicznej.

Перспектива глобальной экологической катастрофы и вымирания человечества

Аннотация: На основании данных, иллюстрирующих рост экологических угроз в последние годы, в статье предлагается тезис о радикальном сокращении масштабов

экологической толерантности к человеку, если эта тенденция не будет остановлена. В тексте приводятся катастрофические сообщения, которые предсказывают, что по этой причине через два-три десятилетия начнется процесс вымирания человечества. По мнению автора единственный способ спасти человечество в этой ситуации то изменить его отношение к природе и активизировать усилия по поддержанию даже минимальных граничных условий для дальнейшего существования.

Ключевые слова: экология, экономия, демография, глобальная экологическая катастрофа, конец человечества, экологические угрозы, границы экологической толерантности.

1.

Among the most important trends of the modern times, the most disturbing for the nearest future is the super megatrend of an environmental disaster¹. Claims made in the second half of the 20th century, then defined as an environmental crisis, now seem as real as never before as a serious danger to humans and their immediate surroundings². Multiple diagnoses made nowadays, painting a picture of the human civilisation in a devastated environment are unanimously calling it a looming catastrophe rather than simply using labels such as warning or alarming. One of the reports is concluded by a statement „An environmental disaster could hit the Earth and global ecosystem could perish in an instance, not gradually as expected before”³. Another one from January, 2019 clearly states that during the next three decades, humanity will start dying⁴. On the symbolic Doomsday Clock founded and maintained at the University of Chicago, the hands have been set to two minutes before midnight for the last two years (2018-2019). Since the time of its foundation, never has it been closer to apocalypse mainly due to the destructive processes occurring in the environment⁵.

The threat to human habitat intensified in the last decades as the consequences of frivolous human activities concerning the industrial progress, unlimited consumption of non-renewable natural resources, fuels and food finally came to light. These years showed an ever so evident link between the human economic activity and the more

¹ Megatrend signifies a constant and discernible tendency in the development of the human civilisation; por. J. Naisbitt, *Megatrends*, Warner Books, New York 1982; *Megatrends 2000. Ten New Direction for the 1990*, William Morrow, New York 1990. The most important of those are called super megatrends such as: **1.** demographical explosion and global migration flows; **2.** globalisation of communication and economy; **3.** scientific advancement and its influence on the outlook of the modern man; **4.** new industrial revolution based on ICT and automation; **5.** a foreseeable end of the traditional nationalist states and moving from the areas of conflicts to inter-civilisation; and last but not least **6.** – environmental threats. In the modern world, the end of the 2020s it is a well-known fact that these tendencies seem to progress. See P. Kennedy, *Preparing for the Twenty-first Century*, Random House, London; J. Muszyński *Magatrendy a polityka*, Atla 2, Wrocław 2001.

² I will omit here all environmental threats which are results of natural processes and phenomena such as periodical freezes of extensive areas of the globe, volcano eruptions as well as meteorites or earthquakes and subsequent tsunamis. That also includes nuclear risks.

³ See *Eksperci ONZ alarmują: Ziemi grozi katastrofa*, in: <http://wiadomosci.onet.pl>, (accessed on 10-06-2012).

⁴ European Parliament Bureau: European Strategy and Policy Analysis System (ESPAS): *The Challenge and Choice for Europa*, w: https://www.politico.eu/wp-content/uploads/2019/04/ESPAS_Report2019_V15.pdf. (12.03.2019).

⁵ See „Doomsday Clock” entry in: Wikipedia (accessed on 25-04-2019).

frequent natural disasters such as flooding, hurricanes as well as extreme droughts and toxic smog. We can more and more clearly observe an impoverishment of species, degradation of soil, changes in the Earth atmosphere and climate as well as disrupting both big and small ecosystems and the water balance. We began to use the term of an 'environmental disaster' which is when the elements closest to humans become contaminated such as: air, water and soil⁶. These signs of risks to the natural environment are more frequently expanding to a worldwide scale. Moreover, all indicators for the level of danger to human existence are continuously increasing. This way the range of tolerance for humans as a species is shrinking⁷. Optimal parameters for our ecosystem are worsening on regular basis such as the amount of energy, water and nutrients as well as the climate conditions, atmosphere composition or ultraviolet radiation. Hence, the essential challenge for the next few years for our planet and all its habitants in the face of an environmental super megatrend⁸ will be to survive.

It will not be easy to face this challenge. Almost all recently published scientific articles, reports and alerting related to increasing levels of danger⁹ concerning narrow boundary conditions for human existence clearly state that in the next three or five decades to come, the process of human extinction will begin on a larger scale.

⁶ W In the modern times, the most spectacular environmental disasters are results of installations of nuclear power plants which are a peaceful way of extracting energy and maritime disasters involving tankers. The Cases of nuclear accidents in Chernobyl (1986, then USSR now Ukraine) and in Fukushima (2011, Japan) proved this danger; see: www.Klimatdlaziemi.pl/index.php?id=56&lng=pl. (accessed on 31-12-2015). The most talked about disaster at sea involving a cargo leak, especially oil spills were the crash of „Amoco Cadiz” (1978) near the French shores, „Exxon Valdez” near Alaska and „Tricolor” (2002/2003) in the La Manche. Accidents also happen on drilling platforms and the biggest one was most definitely „Deepwater Horizon” explosion in the Mexican Coast in 2010, see www.ekologia.pl/srodowisko/ochrona-srodowiska-/najgrozniejsze-katastrofy-morskie-w-xx-i-xxi-wieku. (accessed 31-12-2015).

⁷ A range of tolerance are boundary conditions in which a specific species could exist and function. They are very specifically defined for each species including humans. See, *Ekologia i ochrona środowiska. Wybrane zagadnienia*, Z. Wnuk (ed.), University of Rzeszów, Rzeszów 2010, pp. 39-41.

⁸ To clarify, until the first half of the 20th century an „ecological threat” were all phenomena which were posing a direct or indirect danger to the functioning of nature. However, in the last couple of decades of the previous century this definition was extended and replaced by an „environmental threats” since the natural environment was considered not only as nature itself but the whole social layer of human life (the anthroposphere) and so it includes social, cultural and spiritual surroundings for individuals and groups. See, M. Dołęga, *Sozologia systemowa – dyscyplina naukowa XXI wieku*, „Problemy Ekorozwoju” 2006, vol.1, no 2, pp. 17-20; W. Sztumski, *Człowiek wobec środowiska. Propedeutyka socjofizjologii*, University College of Social Sciences in Częstochowa, Częstochowa 2012, pp. 74-75.

⁹ For example (ESPAS): *The Challenge and Choice for Europa*, M. Broniatowski: *Ludzkość wyginie, jeśli nie powstrzymamy wzrostu temperatury*, in: <https://businessinsider.com.pl> (accessed on 08-04-2019); *Environment in multiple crises* – report Institute for Public Policy Research, in: <https://www.bbc.com/news/science-environment-47203344> (accessed on 28-02-2019); Special report of IPCC (Intergovernmental Panel of Climate Change) in: <https://naukaoklimacie.pl/aktualnosci/streszczenie-specjalnego-raportu-ipc-dotyczacego-globalnego-ocieplenia-klimatu-o-1-5c-cz-a-323> (accessed on 25-10-2018); UN climate summit in Katowice regarding the greenhouse effect in December, 2018 in: <https://businessinsider.com.pl/firmy/strategie/szczyt-klimatyczny-onz-w-katowicach-cop24/ldmd80p> (accessed on 01-12-2018); interview with Z. Kundzewicz, ecologist, in: <https://businessinsider.com.pl/technologie/nauka/cop24-klimatolog-z-pan-o-tym-jak-powstrzymac-globalneocieplenie/sp8vpx1> (accessed on 03-12-2018); Patryk Motyka, *Koniec świata jaki znamy. Tak może wyglądać Ziemia za kilka dekad*, in: <https://businessinsider.com.pl>, (onet, accessed on 14.12.2018).

2.

From a global point of view, the biggest ecological threats to sustaining of human existence are: 1. climate changes; 2. the ozone hole; 3. deforestation; 4. acid rains; 5. depleting natural resources; 6. disrupting the potable water balance; 7. decrease of the cultivable soil; 8. growing contamination of waste and refuse; and last but not least 9 contaminating soil and water through fertilizers¹⁰.

The most spectacular sign of the **climate change** occurring on Earth is the greenhouse effect. It is a phenomenon of a reduced (comparing to natural) emission to the outer space of the collected heat due to the contamination of gasses to the Earth atmosphere, especially carbon dioxide (60% of the greenhouse effect) which is a result of the combustion of energy resources – mainly coal, wood, fuels, natural gasses and methane (20%) which is caused by rice cultivation, large breeding farms of pigs and cattle, human population and emissions from sewers and wastelands; as well as CFC gasses – from the used home and industrial appliances (like cooling systems); and ozone and nitrous oxide used by factories. During the last 100 years, due to the greenhouse effect, the average temperature on Earth increased by 0.7 degrees Celsius and is constantly increasing¹¹ which allows us at the this point to talk about disrupting Earth's energy balance, a global warming. Further increase for that average poses a risk to melting of glaciers in the Arctic and the Antarctica, sea level rises, change of the climate zones, disturbing air circulation to enlist just the direct consequences which already reached first stages. Indirect consequences are, among others, increase in saltiness of ground waters, droughts and deforestation which are changes in the functioning for many natural ecosystems or their complete eradication. The human population will bear the consequences of the global warming: climate changes cause changes in the cultivation structures, droughts will result in famines and people's migration; flooding areas located low and near the shore (such as the Netherlands or Bangladesh)¹² and the resulting demographic, economic and political difficulties¹³. As predicted by Stephen Hawking, the most prominent modern physicist, a global warming of as much as 1.5 degree Celsius, in a 100 years could realistically lead to the end of human race¹⁴.

The ozone hole is a phenomenon discovered in the 1970s which concerns a seasonal (spring time) radical drop in ozone content in the atmospheric air of the Antarctica. The scale of this process is systematically increasing. Ozone in the earthly atmosphere plays a significant role; it's a gas protecting us from the highly dangerous ultraviolet radiation which leads to eyesight damage and skin cancer. What causes the ozone hole are the CFC gasses, used by people in aerosols, coolers (fridges), cooling systems and production of polystyrene foams which reacts with the ozone and destroys it. If the

¹⁰ The passage below uses the content included in: L. Gawor, *Ekoszkice*, University of Rzeszów, Rzeszów 2017, pp. 16-24. Data has been updated.

¹¹ See „greenhouse effect”, Wikipedia, (accessed 08-02-2019).

¹² T. Ulanowski, *Potop czeka nas już w tym stuleciu*, in „Gazeta Wyborcza”, issue of 1st April, 2016; see also: *Ekologia i ochrona środowiska*, pp. 92-95.

¹³ See: G.J. Abel, M. Brottrager, J.C. Cuaresma, R. Muttarak, *Climate, conflict and forced migration*, in: „Global Environmental Change” 54 (2019), pp. 239-249; also: <https://pure.iiasa.ac.at/id/eprint/15684/1/1-s2.0-S0959378018301596-main.pdf> (accessed on 22-03-2019).

¹⁴ See S. Hawking, *W ciągu 100 lat ludzkość może przestać istnieć*, in: www.komputerswiat.pl, (accessed on 22-01-2016).

ozone hole increases in size, the rise of ultraviolet radiation will largely contribute to the annihilation of life on Earth¹⁵.

Deforestation is a process taking thousands of years since the moment when man began to transform nature. Even today, forests are a source of wood for fuel (mainly in developing countries in Africa and Asia), construction and industrial (e.g. furniture). Forests are also cleared to make way for crops and breeding farms (Brazil, Asia and Africa) as well as the construction of roads, railroads or buildings. Man also contributed to deforestation indirectly. Contamination of the atmosphere (acid rains) and exotoxins (lead, strontium, cadmium and arsenic) not only poison the forests (this is so-called peculiar dying out of forests) but also modify the chemical content of the soil preventing the restoration of the forests' stretches while the greenhouse effect results in the climate change are collectively a proven source of diseases and forest areas dying out. In sum, it all allows us to speak of deforestation as a modern ecological disaster.

Forests on a global scale are mostly Earth's lungs. During photosynthesis they produce oxygen indispensable to sustain life. Forests play the role of a 'filter' for the atmospheric and industrial pollution as they have the ability purify the air we breathe (they transform carbon dioxide into oxygen). They regulate the water balance and they constitute large ecosystems rich in flora and fauna.

Deforestations occurring in the last 100 years¹⁶ lead to an irreparable damage to habitats of many birds and other animals which leads to the decrease in their population and extinction of many species; lowering the level of ground waters which causes drying of lands and desertification; accelerated process of soil erosion; and the decreased amount of oxygen in the atmosphere while at the same time the amount of carbon dioxide increases. All of the afore-mentioned degrading the standards for the optimal conditions to sustain life.

Acid rains occur when compounds like sulphur dioxide and nitrous oxides (which are results from burning of coal, crude oil, fertilisers or by-products of refineries and chemical industries) react with water particles. They create many different acids (among others sulphurous, sulphuric, nitrous and nitric) which when combined with water particles become mainly clouds and rains with acid reactions. Precipitations with such contents are fatal especially to the coniferous forests, they acidify the soil depriving the surrounding flora from the much needed nutrients¹⁷. At the same time they curb the pace in which the air could be purified from CO₂. And last but not least, they bear negative influence on human health.

Depleting natural non-renewable fossil fuels without limits is a phenomenon linked to modern industries which base on natural, mostly energy resources and others, along with an imperative of the constant economic growth, the indicators of which are, among others, an increase in the output and processing of fossil fuels. A certain justification for such an activity is a continuous increase in needs due to human population growth. Based on the deposit locations known up until today, the estimations concer-

¹⁵ *Ekologia i ochrona środowiska*, p. 378. Actual increase in size for the ozone hole was curbed due to the joint effort of countries radically forbidding the CFC gasses' emissions by law.

¹⁶ „Until today the world lost 50% of its forests. Every year 15 million hectares of forests are cut down” as per: www.eko.uj.edu.pl/laskowski/Globalne/W03_Deforestacja, (accessed 29-12-2015).

¹⁷ See „Acid rains”, entry in: Wikipedia, (accessed on 24. 04. 2019); *Ekologia i ochrona środowiska*, pp. 76-77.

ning how much non-renewable fossil fuels we have left are brutal. They state that in a global scale, if keeping up with the current consumption growth rate, there will be only enough crude oil for the next 50 years, natural gas for 70 years and coal for the next 150 years. Whereas regarding heavy metals which are so important for the industry: there will be enough copper for the next 66 years, zinc for another 23, lead 60, mercury for 50 and cadmium for 30 years¹⁸. Based on those facts, it is fairly easily to estimate the remaining time for the current model of human civilisation or rather its annihilation.

As a result of the industrial and utility companies' pollution and deforestation causing soil erosion, climate changes leading to desertification of significant, previously well-irrigated areas, on Earth we are already experiencing a deficit in potable water¹⁹. This occurrence becomes more frequent due to the contamination of fresh waters by sewage and fertilisers (mostly nitrous) being rinsed from the soils. Even if we took into account major savings comparing to the current fresh water consumption, it will not be enough to meet the needs of the growing population. An upsetting of balance of Earth's fresh waters is a global threat to humankind.

The process of soil erosion is occurring with such an accelerated rate. „Soil is, apart from water, the most important resource we have and we are wasting it carelessly and irreversibly”²⁰. It is mainly due to more and more invasive cultivation techniques which in turn lead to draining of the soil. Adding to that a factor such as an incorrect irrigation, degradation of its fertility due to an overexploitation²¹, depleting soil of nutrients due to chemical fertilisers or a complete devastation leading to an eventual expansion of barren soils' areas. The result is a catastrophic decrease in arable lands²². Even though a certain percentage of farming lands are created thanks to cutting down forests, they are not significant globally in terms of size. This is one of the reasons for ominous projections for the nearest future: „with the current population growth rate, the Earth will not be able to feed us” or „very soon, the human population will be faced with a global famine”. And even though it is indicated that a high percentage of food production is wasted²³, and the food is clearly poorly distributed (as could be observed considering periodical famines in Africa or Asia²⁴), due to the current population growth rate and continuous decrease in the availability of arable lands – the spectre of famine becomes very real.

¹⁸ Data as per A. Pawłowski, L. Pawłowski, *Zrównoważony rozwój we współczesnej cywilizacji. Cz. I, Środowisko a zrównoważony rozwój*, „Problemy Ekorozwoju”, vol. 3, no 1, 2008, pp. 56-57; L. Pawłowski, *Sustainability and Global Role Of Heavy Metals*, „Problemy Ekorozwoju”, vo. 6, no 1, 2011, p. 60.

¹⁹ „About 1/3 of the Earth's population is suffering from lack of drinking water during the next 10 years this will rise to 2/3” – S. Jedynek, *Demografia i etyka w perspektywie ekorozwoju – nadzieje i niebezpieczeństwa*, „Problemy Ekorozwoju”, vol. 2, no. 1, 2007, p. 76.

²⁰ M. Broniatowski, *Ziemia usuwa się nam spod nóg*, in: <https://wiadomosci.onet.pl/politico/erozja-gleby-ziemia-usuwa-nam-sie-spod-nog-i-ekolodzy-twierdza-ze-tak-doslownie-jest/e5m4k97> (accessed 21.04.2019).

²¹ According to UN experts, 1/4 of arable lands is in a state of degradation, in: www.sfora.pl/swiat/Ludzkosci-grozi-glod..., (accessed 30.12.2015).

²² According to calculations, from 1975, we have 33% less lands suitable for farming. See: *Coraz mniej ziemi do uprawy*, „Gazeta Wyborcza” („Nauka dla każdego”), issue 8th April, 2015.

²³ According to FAO, in 2011 a massive 1/3 of food was wasted. Since a couple of years, it has become a norm, as per : www.niemarnuje.pl, (accessed 30.12.2015).

²⁴ In 2014, over 800 million people starved, about 2 billions were malnourished, as per: www.onet.pl/swiat/globalny-raport-glodu-2014, (accessed 30.12.2015).

The contamination of waste and refuse is a growing problem due to industrialisation and urbanisation processes so typical for the human development. „Littering the world with waste” is considered by many as the most important current ecological issue²⁵. Industrial waste, due to economic reasons, is not disposed very far from the place of its creation forming a specific type of scenery with wastelands and slag heaps which are deteriorating the surroundings. Industrial waste disposal lands are usually a source of toxins which are rinsed from heavy metals such as mercury, lead, cadmium, zinc, copper or nickel used in the production process and make their way to ground waters and soil. Such pollution of lands is very dangerous for all life forms in these areas. This type of waste has a lasting longevity and since those areas are not susceptible to re-cultivating, they become permanent parts of today’s human civilisation. Liquid industrial waste and utility companies’ sewage which end up in rivers, lakes or seas are very dangerous to environments while they radically deteriorate the conditions of living or directly eradicate the ecosystems nearby. Another topic is an increase in the amounts of methane that is linked to the population growth (it is a waste produced in the process of digesting) which eventually leads to „insulating” of the atmosphere by contributing to the greenhouse effect.

A serious challenge for the today’s world is disposing of the household waste. All countries struggle to find spaces for waste disposal which adhere to the safety regulations. Municipal waste disposals as well as municipal bins are a breeding ground for germs, disease-ridden fungi of toxic nature (mycotoxins). Organic waste (mostly food) becomes a reason for an uncontrollable growth in population for some of the animals (e.g. rats, cockroaches or houseflies) which could carry many viral diseases which are dangerous to all living creatures. Rotting organic waste is an excellent starting point for typhoid fever bacteria or dysentery. The attempts made today in order to recycle waste and refuse through its composting, utilisation or simply burning are not sufficient while the mass of rubbish still increases.

Using chemical fertilisers is a well-known threat to the natural and human environment. Due to overexploitation, barren lands are fertilised with chemicals such as nitric, potassium, calcific or phosphorous which make the crops more efficient. It is often that during the process of fertilisation, the amount of chemicals used is too high which damages the chemical structure of the soil or the excess is rinsed to nearby waters and even both at the same time. In both those cases, a degradation of the natural environment occurs. When fertilisers reach a body of water, they cause the aquatic flora such as algae and plankton to thrive. The algal bloom in turn brings an oxygen imbalance in the water and leads to the eradication of the fauna, mostly fish. The excess of fertilisers in the soil causes the loss of nutrients and subsequently for the roots to die. The afore-mentioned excess also translates to a saturation of certain chemical compounds which is dangerous to human health. As an example, vegetable plants treated with nitric chemicals after being eaten by humans could lead to nitrates transforming into nitrites within the human body. Nitrites are toxic substances responsible for the increase of cases in blood diseases such as anaemia. Whereas water „enriched” by the fertiliser is toxic and should not be consumed²⁶.

²⁵ See *Główne zagrożenia ekologiczne dla zdrowia współczesnego człowieka*, in: <http://sciaga.pl/tekst/57754-58-glowne...>, (accessed 29.12.2015).

²⁶ See www.eioba.pl/a/1old/jak-grozny-wplyw-na-nasze-zdrowie-moga-miec-nawozy-sztuczne, (accessed 31.12.2015).

3.

Distinctive features for the afore-mentioned global ecological threats are their interconnection and self-drive. As an example, the greenhouse effect causes a natural deforestation. This leads to a lower level of the air purity due to the process of photosynthesis and a lower amount of oxygen is produced. This directly translates to a high count of carbon dioxide which is a main gas preventing proper distribution of heat from the Earth which intensifies the greenhouse effect. These environmental threats highlight the role of humans as the undeniable root cause. The creation process for the insulation layer which prevents the distribution of the heat excess is connected to burning of the fossil fuels to acquire energy indispensable to human life while still causing the emission of gasses to the atmosphere. It is also linked to a wasteful exploitation of forests caused by humans which furthers the greenhouse effect.

Two intertwined phenomena are responsible for the tragic situation of the modern human civilisation and its ecosystem. They are factual reasons for the afore-mentioned threats to humankind.

The first of which is linked to the environmental risks due to the modern economic model which has been dominating the last two centuries and is called neo-capitalism or the liberal market economy, the main goal of which is profit. Its mission is permanent development considered as progress, the key performance indicator of which is economic growth. The majority of the afore-mentioned global and local environmental risks are the effect of these economy principles. „The main cause of such environmental degradation and the climate change is modern economy – unfair, profit-maximisation-driven, rather than a sustainable and long term progress. Yet the interest of humans is so much more important than the profit margins. Modern capitalism is more like a global casino. It’s a system which completely got out of control.” – says Kumi Naidoo, former head of the most opinion-forming environmental organisation - Greenpeace²⁷. This type of economy does not seem to see the environment perspective, especially the interconnectedness of it all²⁸ and it treats flora and fauna as well as geological features as something limitless or that could not be possibly influenced by humans.

Our population constantly on the rise is a similarly negative tendency for the existence of humankind which has been and will remain in the future. The world’s population is currently expanding geometrically. According to statistics, in 2015, there were 7 billion people and every 13 years, this number will increase by about 1 billion²⁹. While ignoring all other economic or political consequences, from the perspective of the environment that growth is in itself a serious peril³⁰ because it reinforces that economic model since there are no other alternatives to satisfy those needs.

²⁷ Reprint of an interview with the head of Greenpeace *Szef Greenpeace’u ostrzega: system całkowicie wymknął się spod kontroli*, www.onet.wiadomości, (accessed 26.12.20015).

²⁸ See the analysis of the interconnectedness rule in ecology in: P. Skubała, *Wokół tajemnicy życia na Ziemi*, in: „Eastern Annals of Humanities” vol. 11, 2015, special issue *Ekologiczne postrzeganie świata*, L. Gawor, A. Górak, & J. Lejman (eds.), p. 53..

²⁹ See „Ludność świata” (eng. World population) entry in Wikipedia, (accessed 30.03. 2019); and *Ekologia i ochrona środowiska*, p. 106.

³⁰ It is a demographical super megatrend which impacts the environment considerably leading to an ecological disaster; See, *Ekologia i ochrona środowiska*, pp. 106-112.

The afore-mentioned gloomy demographic perspective leads to considerations of the Malthus' concept who already in 18th century had predicted an unstoppable population growth with the limited amount of supplies, and so he believed that wars, epidemics and famine are factors helping to reduce the number of Earth's habitants. All in all, in the context of the environment, the projection of a constant demographic growth leaves us with no hope to add the right to be living in a healthy, liveable environment to the list of human rights in the nearest future³¹. In a more radical approach – this growth leads to an explosion, a 'population bomb' of sorts, the effect of which will be the annihilation of human civilisation³².

Both of those major elements of the modern social world form a mechanism, careless human endeavours *hinc et nunc*, may contribute to the extinction of even the next future generations. It is a drastic moment is highlighted by Paul Crutzen³³ who coined the term the Anthropocene believing that due to intrusions made by people in the last 200 years, it constitutes a new geological era for our planet. Since the nature of those intrusions is largely destructive, it may accelerate the extinction of the humankind more quickly, analogically as it was with dinosaurs³⁴. Naturally, the grim conclusion is that this is the first crisis of that magnitude regarding humans as a species whereas the super megatrend of the environmental disaster undoubtedly indicates that the era of Anthropocene is coming to a permanent end.

One of the signs for an imminent disaster is a gradual degradation of the, so rich until today, biodiversity on Earth. What we understand through the term of biodiversity is the entirety of biosphere dynamics which give way to plethora of species of flora and fauna, many of which currently die irreversibly³⁵. The mention of the negative influence of men on the environment resulting in a degradation of biodiversity were first described in 1980s. There is a claim that between 1970 and 2007, the number of vertebrates' species declined by 30%³⁶. This progressive impoverishment of the planet's biodiversity is one of the most spectacular proofs of human's destructive patterns towards the environment³⁷. Ironically, what we seem to forget is that humankind is a part of that biodiversity and we are also at risk of extinction³⁸.

³¹ See W. Blackstone, *The right to a liveable environment as human right*, in: *Ethical issues in Business*, T. Donaldson & P.H. Werhane (Eds., Englewood Cliffs 1983, pp. 369-375.

³² P. R. Ehrlich, *The Population Bomb*, Ballantine Books, 1968; See *Zmniejszyć populację świata i redystrybuować zasoby*, in: http://www.prisonplanet.pl/polityka/zmniejszyc_populacje,p1077445259, (11.05. 2012).

³³ P. Crutzen, is a 1995's Nobel Prize Laureate in chemistry, atmospheric chemist and meteorologist who proved that the ozone hole is manmade.

³⁴ See *Nowa epoka w historii, człowiek może zniknąć*, as per: www.onet.pl/wiadomosci, (16.05.2011); see also: T. Ulanowski, *Żegnaj holocen, żyjemy w antropocenie*, in: „Gazeta Wyborcza”, issue 08.01.2016.

³⁵ One of the most important publications regarding the biodiversity extinction is the work of P. Ehrlich and E.O. Wilson, *Biodiversity Studies: Science and Policy*, „Science” vol. 253, No 5021, 1991, pp. 728-762.

³⁶ See D. Liszewski, *Ekologiczna wizja świata*, „Eastern Annals of Humanities”, vol. 11, 2015, special edition *Ekologiczne postrzeganie świata*, L. Gawor, A. Górak, & J. Lejman (Eds.), p. 44.

³⁷ A publication considered a biodiversity manifest is E. O. Wilson's, *Biodiversity*, National Academy Press, Washington 1988. As an interesting fact, a suggestion made by Wilson (*nota bene* founder of socio-biology) to split the planet into two areas, one to strictly preserve the nature and the other leave to humans (for extinction) is included in *HalfEarth: Our Planet's Fight for Live*, Liveright Publishing Corporation, New York – London, 2016. See also T. Ulanowski, M. Skubik, *Pozdzielmy Ziemię na pół* „Gazeta Wyborcza (Nauka) issue 11.03.2016, p. 18.

³⁸ „Climate changes will not lead to end of life on Earth but for bigger mammals like humans, the new conditions will be unbearable”, in: *Człowiek, gatunek zagrożony* in: „Angora-Peryskop” no. 16, (issue

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Perspective on the future of humans as a species conveys a clear message. Most of all, it mandates the focus on whatever we could do to ensure ourselves better chances of survival³⁹. We speak here not only of strategic actions such as a change in social mentality from anthropocentric to ecocentric, altering our economic and political systems along with the social policies or an effective protection of our ecosystem but also on a smaller scale. We should rethink a consumerist approach⁴⁰ by a collection, selection and recycling of waste, saving energy and water as well as simply caring about our environment. All other pursuits, compared to those, seem irrelevant and meaningless as the ancient saying goes - *primum vivere, deinde philosophari*. A modern man should not be blinded by consumerist mirages, chase comfort or spin tales of poetic visions. A contemporary man should not climb metaphysical peaks, seek theological paradise, construing elaborate political utopias or monologue with the transcendence. A modern man should embark upon an endeavour, the main goal of which is to ensure the range of tolerance for the humankind allowing us to survive. Without it, this species along with its civilisation built over the centuries will be annihilated forever.

REFERENCES - BIBLIOGRAFIA

- Abel G.J., Brottrager M., Cuaresma J. C., & Muttarak R., *Climate, conflict and forced migration*, in: „Global Environmental Change” 54 (2019).
- Broniatowski M., *Ziemia usuwa się nam spod nóg*, in: . <https://wiadomosci.onet.pl/politico/erozja-gleby-ziemia-usuwa-nam-sie-spod-nog-i-ekolodzy-twierdza-ze-tak-doslownie-jest/e5m4k97> (21.04.2019); *Ludzkość wyginie, jeśli nie powstrzymamy wzrostu temperatury*, w: <https://businessinsider.com.pl> (onet, 08.04. 2019).
- Coraz mniej ziemi do uprawy, „Gazeta Wyborcza” (Nauka), 08.12.2015, p. 17.
- Człowiek, gatunek zagrożony w: „Angora-Peryskop” no. 16, (21.04.2019), p. 78.
- Deforestacja, w: www.eko.uj.edu.pl/laskowski/Globalne/W03_Deforestacja, (29. 12. 2015).
- Dołęga M., *Sozologia systemowa - dyscyplina naukowa XXI wieku*, „Problemy Ekorozwoju” 2006, vol.1, no 2, pp. 17-20.
- Ekologia i ochrona środowiska. Wybrane zagadnienia*, Z. Wnuk (ed.), Wyd. URZ, Rzeszów 2010.
- Eksperti ONZ alarmują: Ziemi grozi katastrofa, w: <https://wiadomosci.onet.pl/nauka/eksperti-onz-alarmuja-ziemi-grozi-katastrofa/5hpgd> (10.06. 10.2012).
- Environment in multiple crises* - report Institute for Public Policy Research, in: <https://www.bbc.com/news/science-environment-47203344> (28.02.2019).
- Gawor L., *Ekoszkice*, Rzeszów 2017.
- Hawking S., *W ciągu 100 lat ludzkość może przestać istnieć*, w: www.koputerswiat.pl, (22.01.2016).
- Jak groźny wpływ na nasze zdrowie mają nawozy sztuczne*, w: www.eioba.pl/a/1old/jak-grozn-ywpływ-na-nasze-zdrowie-moga-miec-nawozy-sztuczne, (31.12.2015).

21.04.2019), p. 78.

³⁹ See, A. Pawłowski, *Sustainable Development as a Civilizational Revolution*, Taylor & Francis Group, London 2011, pp. 123-137, 179-194.

⁴⁰ Adding to that a change in eating habits in accordance to the following motto „we do not live to eat, we eat to live”.

- Ile może wytrzymać ludzkie ciało, w: <https://m.onet.pl/wiedza-swiat/nauka,bmvne> (15.04.2014).
- Jedynak S., *Demografia i etyka w perspektywie ekorozwoju – nadzieje i niebezpieczeństwa*, „Problemy Ekorozwoju”, vol. 2, nr 1, 2007.
- Kennedy P., *U progu XXI wieku*, Puls, Koszalin 1993.
- Liszewski D., *Ekologiczna wizja świata*, „Eastern Annals of Humanities”, vol. XI, 2015, special edition *Ekologiczne postrzeżenie świata*, L. Gawor, A. Górak, & J. Lejman (Eds.).
- Ludzkości grozi głód*, w: www.sfora.pl/swiat/Ludzkosci-grozi-glod... (30.12.2015).
- Motyka P., *Koniec świata jaki znamy. Tak może wyglądać Ziemia za kilka dekad*, w: <https://businessinsider.com.pl>, (onet, 14.12.2018).
- Muszyński J., *Magatrendy a polityka*, Atla 2, Wrocław 2001.
- Naisbitt J., . *Megatrendy. Dziesięć nowych kierunków zmieniających nasze życie*, Zysk-ska, Poznań 1997.
- Nowa epoka w historii, człowiek może zniknąć*, za: <https://wiadomosci.onet.pl/nauka/bezprecedensowe-zmiany-na-ziemi-nowy-okres-w-historii/x9st7> (24.05.2019).
- Pawłowski A., *Sustainable Development as a Civilizational Revolution*, Taylor & Francis Group, London 2011.
- Pawłowski A. i Pawłowski L., *Zrównoważony rozwój we współczesnej cywilizacji. Cz. I, Środowisko a zrównoważony rozwój*, „Problemy Ekorozwoju”, vol. 3, no 1, 2008.
- Pawłowski L., *Sustainability and Global Role of Heavy Metals*, „Problemy Ekorozwoju”, vol. 6, no 1, 2011.
- Potop czeka nas już w tym stuleciu*, in: „Gazeta Wyborcza”, 01.04. 2016, p. 18.
- IPCC special report (Intergovernmental Panel of Climate Change) w: <https://naukaoklimacie.pl/aktualnosci/streszczenie-specjalnego-raportu-ipc-d dotyczacego-globalnego-ocieplenia-klimatu-o-1-5c-cz-a-323> (25.10.2018). : <https://naukaoklimacie.pl/aktualnosci/ocieplenie-o-1-5-stopnia-specjalny-raport-ipcc-308> (23.05.2019).
- Rozmowa z klimatologiem Z. Kundzewiczem o kryzysie klimatycznym, w: <https://businessinsider.com.pl/technologie/nauka/cop24-klimatolog-z-pan-o-tym-jak-powstrzymac-globalneocieplenie/sp8vpx1> (03.12.2018).
- Skubała P., *Wokół tajemnicy życia na Ziemi*, in: „Eastern Annals of Humanities”, vol. XI, 2015, special edition *Ekologiczne postrzeżenie świata*, L. Gawor, A. Górak, & J. Lejman (Eds.).
- Szef Greenpeace’u ostrzega: system całkowicie wymknął się spod kontroli*, www.onet.wiadomosci, (26.12.20015).
- Sztumski W., *Człowiek wobec środowiska. Propedeutyka sozofizologii*, Wyższa Szkoła Lingwistyczna w Częstochowie, Częstochowa 2012, pp. 74-75.
- Szczyt klimatyczny ONZ w Katowicach oceniający porozumienie z 2016 roku w sprawie emisji gazów cieplarnianych (1-14.12.2018), w: <https://businessinsider.com.pl/firmy/strategie/szczyt-klimatyczny-onz-w-katowicach-cop24/ldmd80p> (1.12.2018).
- The Challenge and Choice for Europa*, Biuro Parlamentu Europejskiego: Europejski System Analizy Strategicznej i Politycznej (ESPAS), w: https://www.politico.eu/wp-content/uploads/2019/04/ESPAS_Report2019_V15.pdf. (12.03.2019).
- Ulanowski T., *Żegnaj holocen, żyjemy w antropocenie*, in: „Gazeta Wyborcza”, 08.01.2016, p. 19.
- Ulanowski T., Skubik M., *Podzielmy Ziemię na pół*, „Gazeta Wyborcza” (Nauka) 11.03.2016, p. 18.
- „Entry „Zegar zagłady”, in: *Wikipedia* (25.04.2019).
- Zmniejszyć populację świata i redystrybuować zasoby*, in: http://www.prisonplanet.pl/polityka/zmniejszyc_populacje,p1077445259, (11.05. 2012).