„Ante Portas – Studia nad Bezpieczeństwem”
2018, No 1(10)
DOI: 10.33674/120188

Tomasz Gajewski[1]
Poland

CLIMATE CHANGE - A THREAT MULTIPLIER IN THE FUTURE CONFLICTS

***Abstract*:**
Climate change generates great controversies in public opinion. Political debacles, scientific feuds and NGOs activities sometimes overshadow objectively defined challenges created by global ecosystem transformation. Nevertheless, discussion about the genesis of climate change is increasingly concentrated on security issues. The author of the presented articles explores the notion of climate change being a threat multiplier in the conflicts of the future. The purpose of the article is to outline a rudimentary prognose of climate change impact on existing and potential conflicts. Several case studies are used in the analysis.

***Keywords*:**
Climate change, security environment, conflicts, threat multiplier

Introduction

Climate change[2] is an indisputable fact. It is one of the most controversial global problems. As an object of scientific and political feuds,

[1] Tomasz Gajewski, PhD, Jan Kochanowski University in Kielce, Poland; political scientist, Associate Professor in Division of National Security, Institute of International Policy and Security, email: tomasz.gajewski@ujk.edu.pl

[2] *Climate change 2014. Synthesis Report*, Intergovernmental Panel on Climate Change, Geneva 2014, p. 120. “Climate change refers to a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcings such as modulations of the solar cycles, volcanic eruptions and persistent anthropogenic changes in the composition of the atmosphere or in land use. Note that the Framework Convention on Climate Change (UNFCCC), in its Article 1, defines climate change as: ‘a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability

it is surrounded by emotions. The core question is focused around the responsibility for changes. In general, parties involved in the discussion are divided between those, who argue that climate change is man-made, anthropogenic and those who understand them as a natural element of climate super cycles.

NGOs, politicians, environmentalists, and industrial circles are trying to invent the universal formula to stop or even reverse this process. Large parts of international community aim, under the auspices of the United Nations, to reduce carbon dioxide emission. In 2015, during the so-called COP21 conference in Paris (United Nations Framework Convention on Climate Change, 21st Conference of the Parties), the agreement on CO2 reduction was reached. Measured, long-term aim of the COP21 treaty is to cut greenhouse gas emission and stabilize global warming below 2 degrees Celsius[3]. Temperatures have risen globally by approximately 1 degree since the Industrial Revolution. The COP21 strategic target constitutes a compromise between scientific necessity and achievability, perceived by signatory countries. However, the accord is not equipped with enforcement mechanisms.

Slowing the pace of the temperature rise, apart from an ecologic dimension, has political meaning. Consequently, it is an object of political struggle – both on state and international level. Probably the most meaningful recent example of politically driven decision on climate change is United States president, Donald Trump move to withdraw from the Paris Agreement and cease its implementation[4]. His decision was met with harsh critic in European capitals, NGOs and many others[5].

Climate change becomes an element of ideological disputes. There are voices decrying a new "religion of climate change" or "climate change industry". Rational arguments collide with emotionally loaded discourse and extreme world views. This grave issue and perspective of devastating effects of sea level rise, ice cap melting is, in some way, a hostage of the political balance of power and functions only as a dependent variable in this complicated equation. Political pushing and shoving with the energetic sector and traditional industry in the background is not the only field, in which the climate change is the "centre of gravity".

---

observed over comparable time periods'. The UNFCCC thus makes a distinction between climate change attributable to human activities altering the atmospheric composition and climate variability attributable to natural causes".

[3] *Framework Convention on Climate Change*. *FCCC/CP/2015/L.9/Rev.1*, UN Climate Change, 12.12.2015, <https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf> (25.05.2018).

[4] P. Barker, *Rejecting Popular Deal, The President Bets Big On His Core Supporters*, "*The New York Times"* 02.06.2017, Vol. 166 Issue 57616, p. A13.

[5] M. D. Shaer, A. Smale, M. Rich, J. Kanter, C. Buckley, *Foreign Leaders Lament U.S. Withdrawal, but Say It Won't Stop Climate Effort*, "The New York Times" 03.06.2017, Vol. 166 Issue 57617, p. A9.

Securitization of climate change

According to proponents of the constructivist Copenhagen School of International Relations Theory, security is a social construction, an act of speech. This act moves a certain question or process away from the sphere of "ordinary" politics and places it in "special", security-related realm. Thus, it requires a special type of activities. This process is called *securitization*[6].

The abovementioned discussions and controversies, especially political, are blocking broad international consensus about security threats originating in changing the climate. Anthropogenic climate change *versus* natural climate change discussion beclouds the level of security impact of this complex process. However, there is an institution, for which the climate change is not about saving whales but prepare for the wars of the future.

There is no doubt, that the armed forces and intelligence agencies are not expected to be concerned about the natural environment. But there is a clear need for strategic thinking about the security of the future and factors, which will define the security environment, within which these institutions will perform their work. The example of the American security establishment can be taken as a frame of reference.

Climate anomalies were placed in the *National Security Strategy in 2006*: "Environmental destruction, whether caused by human behaviour or cataclysmic mega-disasters such as floods, hurricanes, earthquakes, or tsunamis. Problems of this scope may overwhelm the capacity of local authorities to respond, and may even overtax national militaries, requiring a larger international response"[7]

It was a harbinger of gradual *securitization* of the climate change. The discussions about the possible impact of climate change on American national security and armed forces readiness were broadly present in the security debate. The Department of Defense, National Intelligence Council, and think-tanks presented arguments supporting the strong push for investment in an adaptation of infrastructure and the whole security apparatus to forthcoming global changes. Several branches of US military directly enunciated the need of taking climate into considerations, when it comes to creating future operations profile (especially with respect to the opening of Arctic sea routes)[8].

The 2014 edition of *Quadrennial Defense Review* has been a turning point. Climate change was described as a *threat multiplier*: "Climate change poses another significant challenge for the United States and the world at large. As

---

[6] B. Buzan, O. Wæver, J. de Wilde, *Security. A New Framework for Analysis*, Boulder, CO 1998, p. 23.

[7] *The National Security Strategy of the United States of America*, Washington D.C. 2006, p. 47.

[8] C. E. Werrel, F. Femia, *A Responsibility to Prepare: Why the U.S. National Security Community Takes Climate Risks Seriously*, "The Center for Climate and Security Briefer" 2017, no. 35, p. 1.

greenhouse gas emissions increase, sea levels are rising, average global temperatures are increasing, and severe weather patterns are accelerating. These changes, coupled with other global dynamics, including growing, urbanizing, more affluent populations, and substantial economic growth in India, China, Brazil, and other nations, will devastate homes, land, and infrastructure. Climate change may exacerbate water scarcity and lead to sharp increases in food costs. The pressures caused by climate change will influence resource competition while placing additional burdens on economies, societies, and governance institutions around the world. These effects are threat multipliers that will aggravate stressors abroad such as poverty, environmental degradation, political instability, and social tensions – conditions that can enable terrorist activity and other forms of violence"[9].

Despite the President Donald Trump decision to withdraw from COP21, the US security establishment retained its views on the relation of climate change and security. The most important example of this consistency can be identified in general James Mattis', the then Secretary of Defense nominee in Trump Administration testimony before Senate Armed Forces Committee, during which he stressed: "Climate change is impacting stability in areas of the world where our troops are operating today. It is appropriate for the Combatant Commands to incorporate drivers of instability that impact the security environment in their areas into their planning"[10]. US House of Representatives went further. Republican-controlled House maintained an amendment to military expenditures project, where climate change was defined as a *direct threat* to US national security[11]. The authorization act was later signed by president Trump[12]. However, the National Security Strategy does not contain reference to climate change as a threat, but rather assumptions that the US will pursue energetic policy (a section of the document dealing with the climate change), that is "expanding economy"[13]. Soon after, the Department of Defense followed suite – the climate was omitted in its strategic document[14]. This ambivalence in doctrinal documents does not represent the stance of the whole

[9] *Quadrennial Defense Review*, Washington, D.C. 2014, p. 8.
[10] D. Henry, *Trump's Defense secretary calls climate change a national security risk*, The Hill, 14.03.2017, <http://thehill.com/policy/energy-environment/323959-trumps-defense-secretary-calls-climate-change-a-national-security>, (26.05.2018).
[11] G. Price, *Climate Change A 'National Security Threat', Republican-Led House Declares in Defense Bill Vote*, Newsweek.com, 14.07.2017, <http://www.newsweek.com/climate-change-national-security-republicans-637174> (25.05.2018).
[12] *Trump Signs Fiscal Year 2018 Defense Authorization*, U.S. Department of Defense, 12.12.2017, <https://www.defense.gov/News/Article/Article/1394990/trump-signs-fiscal-year-2018-defense-authorization/> (26.05.2018).
[13] *National Security Strategy of the United States*, Washington D.C. 2017, p. 22.
[14] S. Pereira, *Pentagon Scraps Climate Change as Security Risk in New Strategy – Even Though Defense Secretary Has Said It's a Clear Threat,* Newsweek.com, 19.01.2018, <http://www.newsweek.com/pentagon-scraps-climate-change-security-risk-new-strategy-even-though-defense-785615> (26.05.2018).

security establishment. There is, at least, one clear example of the climate change-related threat – a security of the US installations across the world. According to report presented by the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, nearly 50% of US military facilities face increased risk[15]. This is evidence of the overall US security apparatus approach to climate change. The language of doctrinal documents, strategies can be recognized as political. As reality and *securitization* theory suggests, this question can be a function of current political moods. The society is an object of political communication, while the security is an object of militaries and intelligence services activity. As it can be seen, climate change is put on the American security agenda, despite and against the line of incumbent US president. The security establishment must remain focused on projecting and preparing forces to the security environment of the future, and there should be no doubt, that climate change, which effects are visible in increasing level, will be taken into consideration.

As the leader of the Western world, the United States sets the tone of important security enterprises. It is worth to mention, that NATO, the most powerful military alliance in the world, also declares climate change as an important factor, defining security environment now and in the future. The Alliance gave a clear view of its stance in 2014 Wales Summit Declaration[16]. NATO is engaging in actions, described as "revolutionary" by Amar Causevic from Royal Swedish Science Academy, to "integrate climate change to the organization's *modus operandi*"[17].

The second powerful arm of security institutions around the world – the intelligence services - also directs their sights to climate threats. Once again, the vast US constellation of them can be taken as a frame of reference. One of the most reliable strategic prognoses, the US National Intelligence Council *Global Trends*, explicitly puts climate change in a broad security context, stressing that: "Changes in the climate will produce more extreme weather events and put greater stress on humans and critical systems, including oceans, freshwater, and biodiversity. These changes, in turn, will have direct and indirect social, economic, political, and security effects. Extreme weather can trigger crop failures, wildfires, energy blackouts, infrastructure breakdown, supply chain breakdowns, migration, and infectious disease outbreaks. Such events will be

---

[15] *Climate-Related Risk to DoD Infrastructure Initial Vulnerability Assessment Survey (SLVAS) Report*, Washington D.C. 2018, pp. 1-11.

[16] *Wales Summit Declaration. Issued by the Heads of State and Government participating in the meeting of the North Atlantic Council in Wales*, North Atlantic Treaty Organization, 05.09.2014, <https://www.nato.int/cps/ic/natohq/official_texts_112964.htm> (26.05.2018).

[17] A. Causevic, *Facing an Unpredictable Threat: Is NATO Ideally Placed to Manage Climate Change as a Non-Traditional Threat Multiplier?*, "Connections" 2017, Vol. 16 Issue 2, pp. 73-74.

more pronounced as people concentrate in climate vulnerable locations, such as cities, coastal areas, and water-stressed regions"[18].

UN and NATO are not the only international institution, which takes climate change into consideration. World Economic Forum *Global Risk Assessment* put climate change in several interlocking contexts: "Structural economic changes in affected countries and regions could also stoke societal and geopolitical risks. There is no scope for complacency about the sufficiency of global efforts to deal with climate change and the continued degradation of the global environmental commons"[19].

Climate change is securitized as a threat (or risk) multiplier. It is not a complete process, but the security establishments are responsible for putting this problem in strategic prognoses and expenditures plans. There is an understanding, that climate events will define, at least in part, the situation in the world and will affect the threat structure, escalation processes and the situation in the conflict zones (or even create new ones). The complexity of this process makes virtually impossible to measure the exact scope of this impact, but as professor Ulrich Beck suggested, there is a need to unlock the "dangers fantasy" and try to "take control" over future threats and risks, by modelling, description, and preparation[20].

Climate change is most often projected as a future threat to international security. Nevertheless, certain manifestations of the climate-conflict link, although highly contested, can be observed today.

Multiplying today's threats

Climate events had an influence on conflicts in history. It is enough to mention the famous *kamikaze*, the *divine wind*, how Japanese named two typhoons, that destroyed Mongolian invasion fleets in the 13th century or severe winters in Russia, which had turned the faith of two wars.

Climate change has the potential to generate or multiply threats, fuel conflicts directly or indirectly. Today, scientific circles debate the linkage between drought in Fertile Crescent and the prolonged civil war in Syria. The drought was the worst in recorded history[21]. Some think that human-induced climate change contributed to catastrophic drought and produced masses of internally displaced families (some estimates reach 1,5 million people)[22]. The drought was met by poor infrastructure, lack of funds and bad overall policy of

---

[18] *Global Trends. Paradox of Progress*, Washington, D.C. 2017, p. 21.
[19] *The Global Risks Report 2018*, Geneva 2018, p. 14.
[20] U. Beck, *Społeczeństwo światowego ryzyka. W poszukiwaniu utraconego bezpieczeństwa*, Warszawa 2012, s. 23.
[21] R. F. Worth, H. Saad, *Parched Earth Where Syrian Farms Thrived*, "The New York Times", 14.10.2010, Vol. 160, Issue 55193, p. 1.
[22] P. H. Gleick, *Water, Drought, Climate Change, and Conflict in Syria*, "Water, Climate, and Society" 2014, Vol. 6, No. 3, pp. 334-337.

Bashar al-Assad government. Displaced families sought refuge in the outskirts of Damascus, Aleppo, Homs or Hama - pockets of radicalization expanded.

On the other hand, there are claims, that linking anthropogenic climate change with drought and civil war in Syria is far-reaching simplification[23]. Gathered evidence, research, and modeling do not give clear-cut evidence of the direct link. Internally displaced Syrians might have not tip the point of fragile balance and in fact, not ignited a civil war. It is just to stress, that causes of the Syrian conflict are extremely complicated. The drought was not the gravest among them, but it can be assumed, that it was one of them.

Authors of the paper published in the "Proceedings of National Academy of Sciences" quote a displaced Syrian farmer, talking about the drought: "Of course, the drought and unemployment were important in pushing people toward revolution. When the drought happened, we could handle it for two years, and then we said, it's enough"[24].

Climate change, regardless of being human-induced or natural, is one of the factors defining spaces of ongoing conflicts and should be counted among the causes of potential internal and interstate strife.

Security establishments are well aware of this threat and its rank is increasing. Prognoses containing reflections of possible trajectories of future conflicts under pressure of transforming global ecosystem are common, especially in the United States.

Abrupt climate change

All these prognoses are concurrent in one important feature: they assume, that the process of climate change is gradual. This assumption is rarely challenged. All the more, that 2 degrees Celsius increase will probably cause the collapse of the Earth's ecosystem. Notwithstanding, the history knows cases when climate had dramatically turned - an abrupt climate change. Such a climate event, which lasted a century, occurred 8,200 years ago (Younger Dryas). After an extended period of warming, the sudden cooling arrived. The average temperature in Greenland (records from ice core there were a basis of the research) dropped by ferocious 15 degrees Celsius. During this century-long event, a decrease of temperature in the North Atlantic region caused severe winters in Europe. In many places glaciers advanced, rivers frost, and agriculture lands suffered turmoil. One of the hypotheses states, that it was

[23] J. Selby, O. S. Dahi, C. Frohlich, M. Hulme, *Climate change and the Syrian civil war revisited*, "Political Geography" 2017, Vol. 50, p. 241.

[24] C. P. Kelley, S. Mohtadi, M. A. Cane, R. Seager, Y. Kushnir, *Climate change in the Fertile Crescent and implications of the recent Syrian drought*, "Proceedings of the National Academy of Science of the United States of America" 2015, Vol. 112, No. 11, p. 3245.

caused by a collapse of the ocean's conveyor, the Gulf Stream, after the period of gradual warming[25].

US Department of Defense analytical unit, Office of Net Assessment, has commissioned a holistic analysis of this question. The work has been performed by the Global Business Network. The result – report titled "An Abrupt Climate Change Scenario and Its Implications for United States National Security", where Peter Shwartz and Doug Randall outlined a *low probability – high impact scenario*, astonished public opinion in US and Europe. As a prognosis placed on the edge of threat horizon, the report has not been marked as an official document of Pentagon.

Nonetheless, the question of an abrupt climate change influence on security environment and the character of conflicts in the future remained the part of the debate. P. Shwartz and D. Randall modelled a scenario, where changes in the north hemisphere generate cascading effects in the entire world. The report contains a catastrophic vision of severe winters in Europe, droughts in agriculture regions, intensified monsoon periods in South Asia, causing a dramatic reduction in carrying capacity with broad security consequences.

Tab. 1.

	Europe	Asia	United States
2020 – 2030	2020: Increasing: skirmishes over water and immigration 2022: Skirmish between France and Germany over commercial access to Rhine 2025: EU nears Collapse 2027: Increasing migration to Mediterranean countries such as	2020: Persistent conflict in South East Asia; Burma, Laos, Vietnam, India, China 2025: Internal conditions in China deteriorate dramatically leading to civil war and border wars 2030: Tension growing between China and Japan over Russian	2020: Oil prices increase as the security of supply is threatened by conflicts in Persian Gulf and Caspian 2025: Internal struggle in Saudi Arabia brings Chinese and US naval forces to Gulf, in direct confrontation

[25] W. Dansgaard, J. W. C. White, S. J. Johansen, *The abrupt termination of the Younger Dryas climate event*, "Nature" 1989, no. 339, pp. 532-534.

	Algeria, Morocco, Egypt, and Israel 2030: Nearly 10% of European population moves to a different country	energy	

Source: P. Shwartz, D. Randall, *An Abrupt Climate Change Scenario and Its Implications for United States National Security*, Washington, D.C. 2003, p. 17.

The authors of the abovementioned report forecast: "As famine, disease, and weather-related disasters strike due to the abrupt climate change, many countries' needs will exceed their carrying capacity. This will create a sense of desperation, which is likely to lead to offensive aggression in order to reclaim balance. Imagine eastern European countries, struggling to feed their populations with a falling supply of food, water, and energy, eyeing Russia, whose population is already in decline, for access to its grain, minerals, and energy supply. Or, picture Japan, suffering from flooding along its coastal cities and contamination of its fresh water supply, eying Russia's Sakhalin Island oil and gas reserves as an energy source to power desalination plants and energy-intensive agricultural processes. Envision Pakistan, India, and China – all armed with nuclear weapons – skirmishing at their borders over refugees, access to shared rivers, and arable land. Spanish and Portuguese fishermen might fight over fishing rights – leading to conflicts at sea. And, countries including the United States would be likely to better secure their borders. With over 200 river basins touching multiple nations, we can expect conflict over access to water for drinking, irrigation, and transportation. The Danube touches twelve nations, the Nile runs through nine, and the Amazon runs through seven"[26].

As it was stated, this is a low probability scenario. However, the debate over a possibility of an abrupt climate change event is not pointless. The Gulf Stream is slowing. "Scientific American" cites results of the research of the National Oceanic and Atmospheric Administration (NOAA), ascertaining: "That northward flow is a key part of the larger circulation of water, heat, and nutrients around the world's oceans. Climate scientists have been concerned since the 1980s that rising global temperatures could throw a wrench in the conveyor belt-like system, with possibly stark climatic consequences. Sea

[26] P. Shwartz, D. Randall, *An Abrupt Climate Change Scenario and Its Implications for United States National Security*, Washington D.C. 2003, p. 18.

levels could ratchet upward along the US east coast, key fisheries could be devastated by spiking water temperatures and weather patterns over Europe could be altered"[27].

Of course, there is no sense of urgency on this matter, but there is evidence preoccupation. For example, the European Commission funded a research project INTERCLIMA (Inter-hemispheric coupling of abrupt climate change project), where, as the brief results communiqué stated: "Abrupt changes to the Earth's climate in the past have been studied by EU-funded scientists to gain a better understanding of possible future risks due to global warming"[28].

If such a scenario will find fulfilment, there will be significant changes in the security environment. Climate change will evolve form *threat multiplier* to a grave threat, generating complex crises. Such a climate event would be surely translated to geopolitical tremors. Abrupt climate change would have push humane and physical domain of life to the critical point[29]. This point, if reached would have ignited cascading crises around the world.

Harbingers of this relatively slow but consistent process can be identified already. Even if the indications are not clearly visible, the security institutions must undertake steps to be prepared.

Black swan

Climate change is extremely complex, multidimensional, in some part not properly understood phenomenon, with many intercurrent streams. In some of them, *weak signals*, which can influence conflicts of the future, can be identified. There should also be aware, that there are *black swans* among them, waiting to materialize.

Weak signals are "the first important indications of a change. These may be understood as advanced, somewhat noisy and generally socially situated indicators of change in trends and systems that constitute raw informational material for enabling anticipatory action. The benefits of weak signals can be seen when assessing their significance in an organization or a field concerned and analyzing how the phenomena reflected by the weak signals should be reacted on. (…) They represent the first signs of paradigm shifts, or future trends, drivers or discontinuities"[30]. Some visible processes, events and

---

[27] A. Thompson, *Slow-Motion Ocean: Atlantic's Circulation Is Weakest in 1,600 Years*, Scientific American, 11.04.2018, <https://www.scientificamerican.com/article/slow-motion-ocean-atlantics-circulation-is-weakest-in-1-600-years/>, (27.05.20018).

[28] *Abrupt climate change reveals future risks. INTERCLIMA – result in brief*, European Commission, 21.12.2016, <https://cordis.europa.eu/result/rcn/190777_en.html>, (27.05.2018).

[29] N. Arnell, E. Tompkins, N. Adger, K. Delaney, *Vulnerability to abrupt climate change in Europe*, Tyndall Centre for Climate Research, Technical Report 34, November 2004, p. 50.

[30] O. Saritas, J. E. Smith, *The Big Picture – trends, drivers, wild cards, discontinuities, and weak signals*, "Futures" 2011, vol. 43, issue 3, p. 297.

accessible scientific evidence, clearly state, that acceleration of climate change, which allegedly is on the horizon, is the *weak signal* of future fundamental transformations of the security environment, threat structure and battle-spaces of conflicts parameters.

Severe weather events, such as hurricane season in Atlantic, according to some research are stronger due to climate change. Higher water temperature contributes to the increased destructive power of hurricanes[31]. Their overall strength has raised since early 80's[32]. Highly exposed and unstable Central America is one of the most important region, where climate events can define asymmetric conflicts of the future. Unstable monsoon seasons in South Asia[33], are extremely dangerous from political, social and economic stability. Like the Middle East drought, dramatic weather event, possibly tied to climate change can aggravate these issues.

Climate change effects can be described as *a black swan*, unexpected, dramatic event, which in common knowledge is marked as "unthinkable". Nassim Nicholas Taleb, who developed this notion, states that "what we do not know becomes more important than what we know"[34].

However, as it was mentioned, history knows cases of weather events generating turmoil. It can be assumed, that cyclone Bhola, which struck East Pakistan in 1970, is a relevant example. The storm has killed approximately 500.000 people and contributed to the Indo-Pakistani war and secession of the province, now an independent country, Bangladesh[35]. This disaster was a catalyst, but security communities should consider similar events in the future. South Asia is particularly vulnerable. If to unlock, just how U. Beck suggested, the "dangers fantasy" - geopolitical clinch between India and Pakistan, with Kashmir and Afghanistan as variables in the strategic equation and "long shadow" of China, generates tensions. If sudden, unexpected natural disaster would overlap with these problems, a "perfect storm" will occur. Suffice it to say, the massive flood in Pakistan or another disastrous cyclone in the region could contribute to the mass movement of refugees. This threat is distinctively serious, due to the high level of exposure and vulnerability (high population

---

[31] A. Sneed, *Was the Extreme 2017 Hurricane Season Driven by Climate Change?*, Scientific American, 26.10.2017,<https://www.scientificamerican.com/article/was-the-extreme-2017-hurricane-season-driven-by-climate-change/>, (28.05.2018).

[32] J. B. Elsner, J. P. Kossin, T. H. Jagger, *The increasing intensity of the strongest tropical cyclones*, "Nature" 2008, vol. 454, p. 92.

[33] S. P. Ogburn, *Indian Monsoons Are Becoming More Extreme*, Scientific American, 29.04.2014, <https://www.scientificamerican.com/article/indian-monsoons-are-becoming-more-extreme/>, (28.05.2018).

[34] N. N. Taleb, *Czarny Łabędź. O skutkach nieprzewidywalnych zdarzeń*, Kurhaus Publishing, Warszawa 2017, s. 20.

[35] N. Hossain, *The 1970 Bhola cyclone, nationalist politics, and the subsistence crisis contract in Bangladesh*, "Disasters" 2018, vol. 42, no. 1, p. 187.

density, neglected infrastructure) of states and societies of the region[36]. Sudden disaster, an effect of climate change, can add another layer of conflict between nuclear-armed powers. Such an event will tip the fragile balance in the region and could lead to an uncontrolled escalation of the multidimensional conflict.

As it was signalled, more frequent droughts in volatile regions will influence the security environment. Presented, while controversial, Syrian example, can be treated as one, but not only, the pattern of climate change impact. Middle East region is a distinctive example of water scarcity and possible wars over this crucial resource (e.g. Israel and Lebanon[37]). More than forty percent of the world's population, according to some prognoses, will suffer from leaving under climate change driven severe water stress by 2050[38].

Large parts of Africa will have to challenge similar threat. In 2012 study, Ole Magnus Theisen, Helge Holtermann and Halvard Buhaug stated: "Although a drought is unlikely to directly cause civil war, climate change will affect human security in a broader sense. Drought and other climatic shocks frequently cause dismay and poverty, and more extreme weather in the years to come suggests more human suffering"[39]. This assumption fits the broad definition of *threat multiplier*. Existing problems will become bigger if environmental parameters change – through the sudden event or gradual process. The case of Darfur, which suffered more than a 40-year long period of rainfall drop and one of the most violent conflicts in recorded history, does not need explanation. Potential manifestations of climate change effects in African conflict zones are prolific. Questions of, *inter alia* food supply and agricultural production, the risks of inundation in low-lying settled areas risks to human health from vector-borne diseases are likely[40].

Of course, Asia and Africa are not the only continents where climate change impact on threats structure will be visible. Europe, even if the "nightmare scenario" of Abrupt Climate Change will not materialize, will be hit. The Arctic is the region, where climate change is downright tangible. The debate over the next "Great Game"[41] is now a permanent element of global security debate. Ice melting opens new opportunities and, at the same time, creates new dangers. Broader latitude of movement for conflicted state and

---

[36] C. Webersik, *Climate Change, and Security. A Gathering Storm of Global Challenges*, Oxford 2010, pp. 84-85.

[37] H. A. Amery, *Water Wars in the Middle East: A Looming Threat*, "The Geographic Journal" 2002, vol. 168, no. 4, pp. 321-322.

[38] V. Ramanathan, J. Seddon, D. G. Victor, *The Next Front on Climate Change. How to Avoid a Dimmer, Drier World*, "Foreign Affairs" March/April 2016, vol. 92, no. 2, p. 139.

[39] O. M. Theisen, H. Holtermann, H. Buhaug, *Climate Wars? Assessing the Claim That Drought Breeds Conflict*, "International Security" Winter 2011/12, vol. 36, no. 3, p. 106.

[40] O. Brown, A. Hammill, R. Mcleman, *Climate change as the 'new' security threat: implications for Africa*, „International Affairs" 2007, vol 83, no. 5, p. 1145.

[41] R. Tamnes, K. Offerdal, *Introduction, Geopolitics and Security in the Arctic: Regional dynamics in a global world*, ed. R. Tamnes, K. Offerdal, New York 2014, pp. 2-3.

non-state actors will generate geopolitical tremors or even military confrontations. The Arctic is on the path to becoming covered by fault lines of global powers tensions in emerging multi-polar world (even China, while geographically distant, establishes her own position in the disputed region). Climate change process has the potential to aggravate threats in the region. This overlapping can be translated to open, hard to contain conflict.

Conclusion

The ongoing discussion about climate change is increasingly loaded with security, references. There is no doubt, that climate change is a factor, that will determine large sectors of the security environment. Visible, gradual transformations of the global ecosystem will be accompanied by sudden, dramatic events like hurricanes, cyclones or massive floods, which will modify or multiply existing threats, create new lines of conflicts. They will drive to a fast escalation of grievances, "living" just beneath the social tissue in poorly developed states.

According to chaos theory, the *strange attractor* has the capacity to modify the "course of situation" from one trajectory to another[42]. Climate change effects should be treated as the potential attractor of this type. It can suddenly generate new parameters of a situation in areas struck by natural disaster. Climate change will play a broadening role in defining conflict situation in the increasingly dense populated world, vulnerable, overpopulated cities (especially in coastal areas) with obsolete infrastructure and helpless governments. What is more, lack of resilience of growing infrastructure will generate more risks to security. This very complex perspective can be encapsulated in one sentence: a disaster waiting to happen.

BIBLIOGRAPHY:

Source materials:
Serial publications:

- ✓ “Connections”
- ✓ “Disasters”
- ✓ “Foreign Affairs”
- ✓ “Futures”
- ✓ “International Security”
- ✓ „International Affairs”
- ✓ “Nature”
- ✓ “Political Geography”

[42] *Encyclopedia of Crisis Management*, ed. K. B. Penuel, M. Statler, R. Hagen, London 2013, pp. 105-108.

- ✓ "Proceedings of the National Academy of Science of the United States of America"
- ✓ "The Center for Climate and Security Briefer"
- ✓ "The Geographic Journal"
- ✓ "The New York Times"
- ✓ "Water, Climate, and Society"

Internet portals:

- ✓ Henry D., *Trump's Defense secretary calls climate change a national security risk*, The Hill, 14.03.2017, <http://thehill.com/policy/energy-environment/323959-trumps-defense-secretary-calls-climate-change-a-national-security>,
- ✓ Pereira S., *Pentagon Scraps Climate Change as Security Risk in New Strategy – Even Though Defense Secretary Has Said It's a Clear Threat*, Newsweek.com, 19.01.2018, <http://www.newsweek.com/pentagon-scraps-climate-change-security-risk-new-strategy-even-though-defense-785615> (26.05.2018)
- ✓ Price G., *Climate Change A 'National Security Threat', Republican-Led House Declares in Defense Bill Vote,* Newsweek.com, 14.07.2017, <http://www.newsweek.com/climate-change-national-security-republicans-637174>
- ✓ Ogburn S. P., *Indian Monsoons Are Becoming More Extreme*, Scientific American, 29.04.2014, <https://www.scientificamerican.com/article/indian-monsoons-are-becoming-more-extreme/>,
- ✓ Sneed A., *Was the Extreme 2017 Hurricane Season Driven by Climate Change?*, Scientific American, 26.10.2017, <https://www.scientificamerican.com/article/was-the-extreme-2017-hurricane-season-driven-by-climate-change/>,
- ✓ Thompson A., *Slow-Motion Ocean: Atlantic's Circulation Is Weakest in 1,600 Years*, Scientific American, 11.04.2018, < https://www.scientificamerican.com/article/slow-motion-ocean-atlantics-circulation-is-weakest-in-1-600-years/>,
- ✓ *Trump Signs Fiscal Year 2018 Defense Authorization*, U.S. Department of Defense, 12.12.2017, <https://www.defense.gov/News/Article/Article/1394990/trump-signs-fiscal-year-2018-defense-authorization/>

Documents:

- ✓ *Abrupt climate change reveals future risks. INTERCLIMA – result in brief*, European Commission, 21.12.2016, <https://cordis.europa.eu/result/rcn/190777_en.html>,
- ✓ Arnell N., Tompkins E., Adger N., Delaney K., *Vulnerability to abrupt climate change in Europe*, Tyndall Centre for Climate Research, Technical Report 34, November 2004

- ✓ *Climate change 2014. Synthesis Report*, Intergovernmental Panel on Climate Change, Geneva 2014
- ✓ *Climate-Related Risk to DoD Infrastructure Initial Vulnerability Assessment Survey (SLVAS) Report*, Washington D.C. 2018
- ✓ *Framework Convention on Climate Change*. *FCCC/CP/2015/L.9/Rev.1*, UN Climate Change, 12.12.2015, <https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf>
- ✓ *Global Trends. Paradox of Progress*, Washington, D.C 2017
- ✓ *National Security Strategy of the United States*, Washington, D.C. 2017
- ✓ Q*uadrennial Defense Review*, Washington, D.C. 2014
- ✓ Shwartz P., Randall D., *An Abrupt Climate Change Scenario and Its Implications for United States National Security*, Washington D.C. 2003
- ✓ *The Global Risks Report 2018*, Geneva 2018
- ✓ *The National Security Strategy of the United States of America*, Washington D.C. 2006
- ✓ *Wales Summit Declaration. Issued by the Heads of State and Government participating in the meeting of the North Atlantic Council in Wales*, North Atlantic Treaty Organization, 05.09.2014, <https://www.nato.int/cps/ic/natohq/official_texts_112964.htm>
- ✓ Werrel C. E., Femia F., *A Responsibility to Prepare: Why the U.S. National Security Community Takes Climate Risks Seriously*, "The Center for Climate and Security Briefer" 2017, no. 35

Studies:

Books :

- ✓ *Encyclopedia of Crisis Management*, ed. K. B. Penuel, M. Statler, R. Hagen, London 2013
- ✓ Beck U., *Społeczeństwo światowego ryzyka. W poszukiwaniu utraconego bezpieczeństwa*, Warszawa 2012
- ✓ Buzan B., Wæver O., de Wilde J., *Security. A New Framework for Analysis*, Boulder, CO 1998
- ✓ Taleb N. N., *Czarny Łabędź. O skutkach nieprzewidywalnych zdarzeń*, Warszawa 2017
- ✓ Webersik C., *Climate Change and Security. A Gathering Storm of Global Challenges*, Oxford 2010

Chapters in joint publications :

- ✓ Tamnes R., Offerdal K., *Introduction, Geopolitics and Security in the Arctic: Regional dynamics in a global world*, ed. R. Tamnes, K. Offerdal, New York 2014

Articles:

- ✓ Amery H. A., *Water Wars in the Middle East: A Looming Threat*, "The Geographic Journal" 2002, vol. 168, no. 4
- ✓ Barker P., *Rejecting Popular Deal, The President Bets Big On His Core Supporters* "The *New York Times"* 02.06.2017, Vol. 166 Issue 57616
- ✓ Brown O., Hammill A., Mcleman R., *Climate change as the 'new' security threat: implications for Africa*, „International Affairs" 2007, vol 83, no. 5
- ✓ Causevic A., *Facing an Unpredictable Threat: Is NATO Ideally Placed to Manage Climate Change as a Non-Traditional Threat Multiplier?*, "Connections" 2017, Vol. 16 Issue 2
- ✓ Dansgaard W., White J. W. C., Johansen S. J., *The abrupt termination of the Younger Dryas climate event*, "Nature" 1989, no. 339
- ✓ Elsner J. B., Kossin J. P., Jagger T. H., *The increasing intensity of the strongest tropical cyclones*, "Nature" 2008, vol. 454
- ✓ Gleick P. H., *Water, Drought, Climate Change, and Conflict in Syria*, "Water, Climate, and Society" 2014, Vol. 6, No. 3
- ✓ Hossain N., *The 1970 Bhola cyclone, nationalist politics, and the subsistence crisis contract in Bangladesh*, "Disasters" 2018, vol. 42, no. 1
- ✓ Kelley C. P., Mohtadi S., Cane M. A., Seager R., Kushnir Y., *Climate change in the Fertile Crescent and implications of the recent Syrian drought*, "Proceedings of the National Academy of Science of the United States of America" 2015, Vol. 112, No. 11
- ✓ Ramanathan V., Seddon J., Victor D. G., *The Next Front on Climate Change. How to Avoid a Dimmer, Drier World*, "Foreign Affairs" March/April 2016, vol. 92, no. 2
- ✓ Saritas O., Smith J. E., *The Big Picture – trends, drivers, wild cards, discontinuities and weak signals*, "Futures" 2011, vol. 43, issue 3
- ✓ Selby J., Dahi O. S., Frohlich C., Hulme M., *Climate change and the Syrian civil war revisited*, "Political Geography" 2017, Vol. 50
- ✓ Shaer M. D., Smale A., Rich M., Kanter J., Buckley C., *Foreign Leaders Lament U.S. Withdrawal, but Say It Won't Stop Climate Effort*, "The New York Times" 03.06.2017, Vol. 166 Issue 57617
- ✓ Theisen O. M., Holtermann H., Buhaug H., *Climate Wars? Assessing the Claim That Drought Breeds Conflict*, "International Security" Winter 2011/12, vol. 36, no. 3
- ✓ Worth R. F., Saad h., *Parched Earth Where Syrian Farms Thrived*, "The New York Times", 14.10.2010, Vol. 160, Issue 55193