Climate Change Implications on Military Activities

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Abstract This article provides a baseline understanding of security environment and military approach to environmental security concepts with a particular focus on understanding the security threats posed by climate change. In this regard, climate change, changing security environment and NATO Strategic Foresight Analysis (SFA) are described briefly. The NATO SFA as a baseline to NATO Long-Term Military Transformation (LTMT), Framework for Future Alliance Operations (FFAO) and NATO Defence Planning Process (NDPP) along with political, human, science and technology and economics/resources poses environment theme in regard to climate change and the Alliance findings related to all of those fields not separately but in their complex interaction.

Keywords NATO • Climate change • Strategic analysis • Future operations

Introduction

In this article, three different topics will be addressed and an overview of the complex interaction between contemporary and future security environmental elements and subsequent NATO military activities to be made. These three topics are as follows: *climate change*, its connection to *security environment* and how it will affect the *Alliance operations* as a part of overall NATO crisis management.

Recently, the world is becoming increasingly more complex, more challenging and less secure, even though globalization and developments in technology are expected to provide ample opportunities for positive developments in health, welfare and security. Increasing interdependency amongst countries has the potential to create stability in the long term.[1] This transition will test the human beings' ability to *adapt* to the challenges of a rapidly changing global security environment.

[1] NATO Strategic Foresight Analysis (Update Report), 2015.

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Climate Change/Global Warming

In July 2016, CO_2 level was at 404 ppm (it exceeded 400 ppm in March 2015), and, respectively, this particular month was *the warmest in 136 years* of modern record-keeping, according to a monthly analysis of global temperatures by scientists at NASA's Goddard Institute for Space Studies (GISS) in New York. Because the seasonal temperature cycle peaks in July, it means July 2016 also was warmer than any other month on record (Fig. 1). July 2016s temperature was a statistically small 0.1 °C warmer than previous warm Julys in 2015, 2011 and 2009.

The record warm July continued a line of ten consecutive months dating back to October 2015 that have set new monthly high-temperature records. Compared to previous years, the warmer global temperatures last month were most pronounced in the Northern Hemisphere, particularly near the Arctic region. The monthly analysis is assembled from by about 6300 meteorological stations around the world, and the modern temperature record begins around 1880.[2]

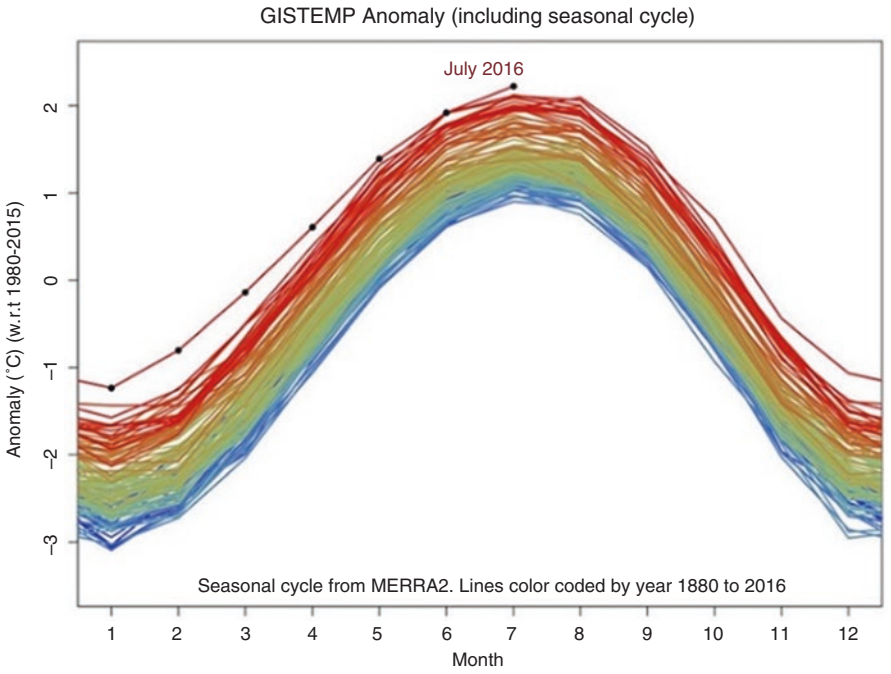

Fig. 1 Recorded monthly temperatures to 2016

[2] http://climate.nasa.gov/news/2479/nasa-analysis-finds-july-2016-is-warmest-on-record/

Ever-Changing Security Environment

Contemporary security environment is a complex alloy of factors, and it is highly influenced by *political governance/regimes, climate change, population growth, globalization and industrialization*. The predicted effects of climate change over the coming decades include *extreme weather events, drought, flooding, sea level rise, retreating glaciers, Arctic sea ice declining, habitat shifts, and the increased spread of life-threatening diseases.* These conditions have the potential to disrupt our way of life and to force changes in the way we keep ourselves safe and secure. The consequences will likely foster political instability where societal demands exceed the capacity of governments to cope. It is worth to be mentioned that if climate change is not the main reason for security disturbances it acts as a *threat multiplier* for instability in some regions of the world. Climate change already amplifies marginal living standards in many countries in Asia, Africa and Middle East. Furthermore, climate change has the potential to result in multiple chronic conditions – complex crises, occurring globally within the same time frame. Economic and environmental conditions in already fragile areas will further erode as food production declines, diseases increase, clean water becomes increasingly scarce and large populations move in search of *resources – food, water, raw materials and energy*. Weakened and failing governments, with an already thin margin for survival, foster the conditions for internal conflicts, extremism and movement towards increased authoritarianism and radical ideologies. Moreover, climate change will add to tensions even in stable regions of the world. In this regard, the Euro-Atlantic Area will continue to experience pressure to accept large numbers of immigrant and refugee populations as drought increases and food production declines in Middle East, Latin America and Africa. When climate change significantly or environmental conditions deteriorate to the point that necessary resources are not available, societies can become stressed, sometimes to the point of collapse.[3]

[3] National Security and the Threat of Climate Change, 2007.

NATO Strategic Foresight Analysis

NATO SFA 2015 (SFA 2013 Updated Report) is a product of the Alliance efforts to establish institutional foresight within HQ SACT to provide NATO, national leaders and defence planners with a common perspective of the challenges facing the Alliance in decades to come. The requirement for institutional foresight is affirmed by recent events, including unexpected crises in NATO's immediate vicinity – in the

east, Russia's illegal and illegitimate annexation of Crimea and continuing support to separatists in Eastern Ukraine and, in the south, failed or failing states, deepening civil war in Syria and the emergence of Daesh.[4] These emerging issues and the convergence of trends reinforce the need for continuous future horizon scanning in order to support improved decision making. Furthermore, the ability to handle all spectrum of security challenges is vital for the Alliance and requires individual measures at organizational level as well as vision, long-term strategies, program and plans in order to assist the Alliance to perform its core tasks – collective defence, crisis management and cooperate security in a rapidly changing, complex and multipolar future security environment. In this regard, SFA 2015 is an essential component of ACT's Long-Term Military Transformation (LTMT) efforts as it provides input to the Framework for Future Alliance Operations (FFAO) and the NATO Defence Planning Process (NDPP). The SFA 2015 is intended to aid understanding of how current trends could affect the world. These trends could interact or even counteract each other to produce unanticipated consequences. Trends usually converge to create a compound complexity or an instability situation that produces a different or an unanticipated trend. Additionally, the accelerated rate of change within the complex and uncertain future security environment makes reliable anticipation of the future even more difficult. Therefore, the SFA Report(s) provides a shared vision of relevant trend patterns that inform FFAO and support the development of Military Implications (MI) from which defence planners may then derive the *capability requirements* to cope with the complex future security environment and grouping trends into five broad themes: *political*, *human*, *science and technology*, *economics/resources*, *and environment.* In addition, the capability requirements should be taken into account as a part of capability development process which consists of six phases: strategic environment assessment, identifying capability needed, deriving capability requirements, conducting a gap analysis, finding possible solutions (DOTMLPF-I Approach) and applying of the new capability.

Environment Theme

In accordance with SFA 2015, global environmental change and its impacts are becoming readily deceptive and are projected to increase in the future. The main accelerator for that is climate change/global warming. All indicators (IPCC Reports)

[4] Daesh – al-Dawla al-Islamiya fi al-Iraq wa al-Sham.

suggest that the trend is still valid and increasing in regard to severity of extreme weather events and other impacts such as melting polar and glacial ice. However, it is still uncertain what the environmental effects will be by the end of the twenty-first century. This uncertainty is complicated further by the fact that climate change-related environmental effects may have second- or third-order effects on other domains (e.g. political, economic, resources, urbanization and demographics) and may also be affected by future trends in these domains. The severity of this development will potentially increase the number of conflicts based on a mix of different trends and drivers in combination with environmental and climate change. These conflicts may threaten global stability and security and may therefore impact directly or indirectly the members of the Alliance.

On the other hand, natural disaster impacts (e.g. storms, floods, earthquakes) are becoming more devastating. This trend is still valid and increasing in frequency and intensity. It is primarily driven by the construction of infrastructure in disaster-prone areas magnified by the effects of climate and environmental change. Though natural disasters are not of themselves the sole source of conflict or instability, they could deteriorate complex crises. Hereby, the Alliance could be required not only to provide humanitarian assistance and disaster relief support but to plan and to conduct all spectrum of operations described in NATO AJP 3.4. This trend is weaved with the challenges emerging from different phenomena (e.g. industrialization, population growth, urbanization, technological development, climate change, etc.). The underlying drivers will increase and thereby very likely will magnify the destructive effects of natural events. The increasingly interconnected global security system will deteriorate the effects of natural disaster. Although natural disasters can occur anywhere, they will be especially challenging for the political and security system where the social and infrastructural resilience is already weak. This trend might challenge the stability and security in regions within the area of interest of the Alliance. Natural disasters are expected to intensify in frequency and severity as the impacts of climate change increasingly materialize. The impact of natural disasters will become more severe, driven by the growth of megacities in developing countries as rapid urbanization continues. The complex, compound, cascading effects of large-scale natural disasters will be worsened by an increasingly interconnected global economic system, which may amplify the scope of regional disasters towards global impact. Resilience of infrastructure and resources, such as food, water and energy, is increasingly important to mitigate the effects of natural disasters.

Conclusion

According to all of the above-mentioned, security environment will continue to be complex and partially unpredictable. It will be influenced by various factors such as political governance, population growth, globalization, urbanization, technological

innovations, industrialization, climate change, etc. All interact in compound manner, and it will be extremely difficult what the security environment will look like in the decades to come. On the other hand, precise foresight is vital for organizations like NATO to develop new or to adjust existing capability in order to be able to cope with those new challenges that will likely arise.