

THE NOTION OF STABILITY IN A CHANGING CLIMATE & ENVIRONMENT OF THE MENA REGION

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It has been only roughly four decades since the environmental securities in the Middle Eastern and North African (MENA) region has increasingly gained prominence. On one hand, water scarcity and on the other hand climate change, are threatening fragile social, ecological resilience and economic stability in a region already stricken by turmoil and violence.

One could object that these new environmental realities are just external factors, something which can just hardly be influential. But beyond these trends, we can see a plethora of various anthropogenic pressures coinciding with climate change impacts decreasing a resilience of socio ecological systems similarly as the greenhouse gasses in the atmosphere. Weakened socio ecological systems with low adaptive capacity became an advantage for proliferating violence in the region. Water is in this respect instrumental, because upon their availability depend existence of inhabitants and their food security. Marginalized and indigenous groups are the most vulnerable to these threats, as severe current developments of extremism confirmed.

Climate change and its impacts inject completely new realities into the notions of stability and security, alleviating to the higher ranking in multiple security risks threatening the region. Given the fact that the MENA region is one of the most vulnerable regions to impacts of climate change, missing two degree objective could have far reaching consequences. Prolonged droughts reduce water availability of already limited water resources. Droughts, via compromising food security are typically followed by magnificent humanitarian crises and mass migration as happened in Syria in 2006 and the subsequent five years, or territorial disputes among farmers and herders. These sudden shocks of extreme weather events trigger responses in a society, for which economies and institutions are not ready to coordinate for various reasons. Weak environment provokes strong protests as the current speed of exploitation is not sustainable and any possible attempt for reforms requires even costly compromises. Management of multiple risks associated to climate change impacts is necessary but increasingly closely connected to other resilience or developmental objectives. Prioritization is therefore complicated – something that confirms the uncoordinated position of MENA countries on climate change negotiations. At the same time, there is a need to address climate or energy crisis, water crisis, food scarcity just to mention a few, which requires more integrated and innovative approach and considerable degree of financing with an objective to promote stability. These objectives under the contemporary security threats remain increasingly challenging. But one thing

is certain, ecological stability has at least equal importance as the level of risks increase; be it either in financial terms or physical aspects.

The correlation among climate change impacts and security concerns leads through a sequence of feedbacks and interactions, which could be alleviated through concise risk management and implementation of innovative and resilient development solutions.

It is difficult to consider which from various aspects related to pressures is a determinant for the deteriorating status of water resources. Although climate change is a major player, it would be naïve to omit institutional scarcity of water resources, having roots in mismanagement, inefficient ill-fated policies or unresponsive institutions.

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There are projections that the demand in MENA countries will increase fivefold by 2050 exceeding supply by 50%. The need to move from supply management to demand management is driven by several factors, but climate change translated into water scarcity is one of them. The way how countries manage this transition is paved by increased efficiency, not only in water used for agricultural production, but in most cases requires more systematic approach, including reduction of fossil fuels subsidies – the theme is very wide and therefore is not covered in more detail in this paper.

It is a matter of fact that water supply alternatives are hardly implemented in most of the MENA countries, such as rain fed agriculture or other

adaptation measures, which can be helpful in offsetting water deficiency and prolonged conflicts hardly pave the way for their implementation. Foreign investments in rain fed agriculture have been directed mostly to the sub-Saharan countries with significantly lower water consumption. MENA's water consumption for irrigation purposes is one of the highest in the world, 80 % in average, which disincentives any similar investments. Despite some countries such as Saudi Arabia introduced “contemporary” water conservation techniques by phasing out their wheat production by 2016 and resorted to investments in agricultural production overseas, or some countries to the import of virtual water in a form of food, still the success of these solutions highly depends to certain extent upon prices of food commodities on international markets. This remains rather a fragile ice core under the unstable political situation. The same nexus is among climate change impacts and increased food prices on international markets, how this theme can easily become politicized as we again witnessed on Syria's example after a period of extreme droughts.

VULNERABILITY ASPECTS OF WATER RESOURCES

Natural climate variability, translated into arid, semi and hyper arid climate conditions determines the distribution of water resources. Although abundant but limited groundwater aquifers represent a major source of drinking water in the MENA region. These extensive groundwater bodies, formed during a long geological history are characterized by high water productivity, which makes them attractive for large-scale irrigation, to such an extent that they have been gradually depleted in several MENA countries.

Not in better terms are renewable groundwater aquifers, typically interlinked with other surface water bodies receiving water from precipitation. In several countries of the region, usually in most densely populated human settlements in alluvial and coastal areas, notably Yemen, Egypt and parts of the Palestinian Territories, more water has been withdrawn per year than it has been renewed (Stratfor , Global Intelligence, 2014)

As a secondary concern of over- abstraction, increasing salinity has been documented in groundwater. For instance, Tunisia, Egypt and Israel, were lately exacerbated by sea water intrusion in coastal areas as a result of climate change. Water quality has been further deteriorated by insufficiently treated wastewater due to lack of sanitation services, agricultural or industrial pollution.

CHANGES IN HYDROLOGICAL REGIME, CLIMATE CHANGE AND RESILIENCE

The notion of stability has long been interpreted in a relatively easily predictable environment. All pressures exerted over water resources combined with climate change impacts, decrease the resilience of socio-ecological systems and it might take longer periods of time to return to viable and stable state. Overwhelmingly, changes might have an irreversible character with significant financial losses, in other words have destabilizing effect. The limitation of resources has a potential to increase the competition over them, which can easily transform into conflict, when other aspects of the socio-ecological systems are weakened or destabilized. In a context of new trends, even relatively stable states can experience sudden instability (@Adelphi, International Alert, Woodrow Wilson International Center for Scholars, European Union Institute for Security Studies, 2015), if the pressures are too high. The shift in the perception of stability can lead through

a sequence of the security threats. Implications are most evident within the past four decades, with significant changes on hydrological regime as a result of climate change, exacerbated by mismanagement of natural resources. During this period of time, negative trends in precipitation have been observed in most of MENA countries and according to the SRES A1B emission scenario, further decrease in precipitation by 10-20% in most of the countries and significant warming between 2-4°C is predicted for the Mediterranean region (Climate Dynamics, 2013). A decrease in river runoff by at least 50% is projected in North Africa and the Eastern Mediterranean, including the Euphrates and Tigris rivers. Evaporation exceeds largely precipitation and river runoff in this region (Climate Dynamics, 2013). More frequent impacts are related to changes in water distribution patterns, resulting in prolonged droughts or violent storms and floods, intensive downpours and snow storms (originating from Siberia).

Changes in temperatures and dry conditions during the winter season have been attributed to the positive anomalies in the North Atlantic Oscillation (NAO), since 1970s (National Center for Atmospheric Research, 1997). Most climate models indicate that this trend is associated with warming in the Mediterranean, is a response to increasing concentrations of greenhouse gasses in the atmosphere.

THE ROLE OF FEEDBACK FOR ENVIRONMENTAL & SECURITY RISKS

Historically, the region has been profiting from fertile land and traditionally and ideologically entrenched.

Increase of wellbeing since the middle 1960s has been to major extent function of an increase agricultural production, which represented

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vital contribution to national GDP followed by respective policies. Water has had a strategic importance, groundwater aquifers have been the major strategic resource in this respect. Weak regulatory and legal frameworks, missing water efficiency and conservation techniques and subsidized abstraction via fossil fuels subsidies with an objective to drill “sufficient” volumes of water for expanding agriculture, have shortly resulted in a mismanagement of these resources as they became easily depleted, as happened for instance in Jordan. Lack of quantity controls such as quotas, permits, standards or bans has contributed to a significant decrease of water in most of the aquifers.

Only marginal attention has been given to rational use and management of water resources as a tool instrumental in fragility reduction and prevention against climate change impacts and escalating into violence (@Adelphi, International Alert, Woodrow Wilson International Center for Scholars, European Union Institute for Security Studies, 2015). The clashes of interests among ideological objectives, need greater water efficiency but the lack of enforcement mechanisms and policies in place, and economic and environmental undervaluation of water and raising security concerns have been followed by protests and water allocation imbalances.

RISK MANAGEMENT & ADAPTATION OF MECHANISMS OFFSETTING THE IMPLICATIONS

Climate change interacts with other social, economic and environmental pressures and

creates climate fragility risks, leading in some places to local resource competition, livelihood insecurity and migration, or volatile food prices just to mention a few (@Adelphi, International Alert, Woodrow Wilson International Center for Scholars, European Union Institute for Security Studies, 2015).

The importance of climate change and adaptation has gained more importance, but has not been among respective countries’ national priorities. Returns of investments into adaptation is hardly predictable and thus is not a very attractive solution, and increasing security concerns undermine interest of an investors.

Only few countries embraced the whole concept of resilience in their long-term, socio-economic or medium and short- term or political factors. In Israel for instance, the low carbon pathway has led through diversification of the economy, substantial increase of water and energy efficiency combined with elaboration of water management into sub sectorial level, which contributed to an increase of adaptive capacity.

On the other hand, for most of the countries it has been rather typical the persistence in its current state of water management and development and transformation or reforms have been accompanied by increasing tensions and unrests. Particularly in a countries with poor water governance increasing scarcity and pressing needs for change has created tensions resulting in unrests and violence as has been demonstrated in Syria, after period of prolonged droughts between 2006 and 2011 (@Adelphi, International Alert, Woodrow Wilson International Center for Scholars, European Union Institute for Security Studies, 2015). Uprisings which followed these droughts have revealed sequence of various factors, including resource mismanagement, lack of political freedom or impacts of climate

change on water and crop production, which has become gradually humanitarian crisis and grievances to such an extent that government could not respond to multiple pressures.

Moreover, impacts of climate change has been formed in an environment of mistrust among countries, characterized by frequent disputes over water allocation and very limited cooperation. These fragilities have been underpinned by legal and regulatory weaknesses or interpretations of water law among countries¹. Water sharing among neighboring countries is a concept which is neither working well in terms of transboundary water management of groundwater aquifers or surface waters nor in terms of integrated approach to water problems.

INTERNATIONAL COOPERATION & FINANCING

The international community recognized climate change as a threat not only to the environment but also to global security and economic prosperity and the scale of the security risks are potentially enormous. The concept of resilience gained importance for the first time ever on international fora such as the G7. It has become clear that fragility and resilience need to be at the center of attention for any peaceful considerations related to the climate change impacts and of the countries' "capabilities" to respond to these trends.

There are significant efforts to mobilize promised financing targeting vulnerable developing countries with high proportion to climate insurance. But as a fragility in a region

¹ Some provisions, particularly those referring to ground waters which are connected to other surface water body such as international river etc., have been opposed by several countries including Turkey.

increases and security threats proliferate, so the financing becomes more challenging. Financing not only for losses related to climate change impacts but also for adaptation. The financing under the United Nations Framework - Convention on Climate Change (UNFCCC) will not suffice to cover adaptation in all vulnerable countries, while countries in a conflict would suffice any capacities to cope with adaptation on climate change and the adaptation may remain a distant prospect. Preparing a ground and strategies with an objective to strengthen respective countries' vulnerabilities requires certain degree of cooperation not only among states but also among sectors. This approach has support under the Sustainable Development Goals, but has a flaws in terms of lack of political process to support adaptation and peacebuilding challenges at the regional level.

There are many challenges in the MENA region, but how to envision climate change resilient; environment respectful and peaceful pathway to development is an overwhelmingly important task ahead.

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Bibliography

Stratfor Global Intelligence (December 1, 2014). Yemen's Looming Water Crisis. Retrieved June 19, 2015 from <https://www.stratfor.com/analysis/yemens-looming-water-crisis>

Rojas M., Li L. Z., M. Kanakidou M., Hatzianastassiou N., Seze G., Le Treut H. (August 2013). Winter weather regimes over the Mediterranean region: their role for the regional climate and projected changes in the twenty-first century. *Climate Dynamics*. Springer-Verlag Berlin Heidelberg 2013. Retrieved June 25, 2015 from http://www.researchgate.net/profile/Maisa_Rojas/publication/257412357_Winter_weather_regimes_over_the_Mediterranean_region_their_role_for_the_regional_climate_and_projected_changes_in_the_twenty-first_century/links/00b7d51df0d9cbb856000000.pdf

Hurrell J.W., H. Van Loon (1997). Decadal variations in climate associated with the North Atlantic oscillation. Copyright 1997 Kluwer Academic Publishers, National Centre for Atmospheric Research. Retrieved June 25, 2015 from <http://www.cgd.ucar.edu/staff/jhurrell/docs/climchange.decvari.pdf>

Ruttinger L., Smith D., Stang G., Täncler D., Vivekananda J. (2015). *New Climate for Peace*. @Adelphi, International Alert, Woodrow Wilson International Center for Scholars, European Union Institute for Security Studies 2015. An independent report commissioned by the G7 members, submitted under the German G7 Presidency. Retrieved June 24, 2015 from <http://www.newclimateforpeace.org/#report-top>

Küresel Siyasal Eğilimler Merkezi (GPO T) 2009 yılında İstanbul Kültür Üniversitesi çatısı altında kurulmuş bağımsız, kar amacı gütmeyen bir araştırma merkezidir. Merkez, Türkiye'nin dış politikasını ilgilendiren konular başta olmak üzere uluslararası gündemde yer alan sorunlar üzerine çalışmalar yürütmektedir. Merkezin çok kültürlü ekibi, geniş bir yelpazede gerçekleştirdiği yenilikçi projelerle diyalog ve müzakere yöntemlerini kullanarak ikili ilişkilerde uzlaşma sağlamayı amaçlar.

GPO T Merkezi, yerel ve uluslararası sorunlara karşı şiddet karşıtı ve uzlaşmayı destekleyen çözümler üretmek amacıyla kurulmuştur. Misyonumuz, çok kanallı diplomasi toplantıları düzenleyerek, yaratıcı ve bağımsız araştırmalar yürüterek, medyada ulusal ve uluslararası sorunlar üzerine müzakerelere yer verilmesini teşvik ederek istikrar, demokratikleşme ve barışa katkıda bulunmaktadır.

Merkez, toplumun pek çok kesimini ilgilendiren politik, sosyal ve ekonomik konular üzerine özgürce fikir ve bilgi alışverişi yürütülmesine olanak sağlayan bir yapı olarak hizmet vermektedir. Bu misyonu gerçekleştirmek amacıyla düzenli olarak kanaat önderleri, devlet yetkilileri, karar alıcılar, analistler, akademisyenler, uzmanlar ve medya temsilcileri bir araya getirilerek ortak çözümler üretilmesi hedeflenmektedir.

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