SECURITY & DEFENCE QUARTERLY
https://securityandefence.pl/

Ecological threats to security and state resilience in Afghanistan

Markus Gauster

markus.gauster@bmlv.gv.at

https://orcid.org/0000-0002-6969-0930

Institute for Peace Support and Conflict Management (IFK), National Defence Academy, Stiftgasse 2a, 1070, Vienna, Austria

Abstract

This work explores ecological and climate-related threats to Afghanistan and discusses support approaches from a European Crisis Management (ECM) perspective. It goes beyond the much-debated troop withdrawal, COVID-19 crisis and peace negotiations and opens an underestimated topic: 'Climate Change Assistance'. The article aims to advance knowledge on the effects of climate change on human security in Afghanistan and advocates a conflict-sensitive approach. To this end, a climate-related assessment of the human security situation was undertaken and several threat scenarios, options and solutions for enhancing state resilience were developed. The bases for this research were several field trips undertaken by the author since 2004, workshops and an extensive literature review. As a result, it can be stated that the negative impacts of climate change and pollution on Afghanistan's security and development architecture are massive and make ECM efforts very complex. However, several capacity-building initiatives for military, diplomatic, humanitarian and local stakeholders were identified. On the regional level, this includes the support for early warning systems and hydro-diplomacy with Pakistan, Iran and India. On the local level, the support for community water management and environmental protection matters, while building upon traditional Afghan mechanisms for handling water crises or disasters. Another outcome is the need for more in-depth research in this field as some findings are also useful for other fragile states. The paper argues that there is an urgent need for ECM to respond to the devastating effects of climate change in Afghanistan and identifies several smart opportunities to tackle some root causes of the conflict.

Keywords:

climate change, Afghanistan, crisis management, water stress, human security

Article info
Received: 4 December 2020
Revised: 29 December 2020
Accepted: 29 December 2020
Available online: 10 March 2021
DOI: http://doi.org/10.35467/sdq/132023

Introduction

Rising global environmental risks such as climate change, water shortages and natural disasters have contributed to a significant rise in violent conflicts since 2010 along with the three main conflict motives, namely the quest for power, resources and reputation (Elwert, 2004, p. 33). The Heidelberg Conflict Barometer 2019 recorded 196 violent conflicts (HIIK, 2020, p.13), compared to 154 in 2010. In general, non-military threats to the security and resilience of states and human security have increased massively with ecological threats, pandemics and disinformation dominating the agenda. Ecological threats include resource risks such as water stress, food insecurity, and population growth and natural disasters like floods, cyclones, droughts, and extreme temperatures (Institute for Economics and Peace, 2020, p. 8). In this context, climate change represents a megatrend that is widely perceived as a "threat multiplier" (Froese and Schilling, 2019, p. 24). The probability that climate change will manifest itself, especially in fragile states, is high and its negative consequences are even higher. Climate change has a substantial disruptive impact and the potential to reinforce conflicts over natural resources. However, the ecological threat exposure of fragile states is not only linked to climate change, but also to political and socio-economic structures – with Afghanistan, Iraq and Yemen as examples. The capacity of such states to provide basic services and to cope with multiple threats is very limited (Bressan, 2020). As a consequence, ecological threats may add to destabilisation and increase the risk of armed conflicts (Ryan, 2019). The nexus of insecurity, violent conflicts and climate change appears to be substantial, but is not uncontested (Bochsler, 2020).

Climate change and armed conflicts in Afghanistan

Afghanistan is the country most exposed to ecological threats in the world (Institute for Economics and Peace, 2020, p. 8). Therefore, it serves as a test case in point for looking deeper into non-military threats for its security, development and prosperity. After 40 years of protracted armed conflict and 20 years of western crisis management efforts, Afghanistan still remains the most violent place in the world (Palik *et al.*, 2020, p. 8). For decades, Afghanistan has been widely perceived as a failing and collapsing state with the government-in-charge failing to provide effective security, social welfare and the rule of law (Schneckener, 2007, p. 12). It is advisable to look into Afghanistan from alternative angles and perceptions to support state resilience and good governance.

The climate and water resource base in and around Afghanistan is shaped by the catchment areas of the Indus River, the glacier regions of the Himalayas and the Hindu Kush mountains. The Helmand and Kabul river basins, which are fed by these rivers, provide large parts of the Afghan population with water. One third of these glaciers will have melted away by the year 2100, causing river levels to drop dramatically (Wester, Mishra, Mukherji, and Shrestha, 2019, pp. 219, 231). This forecast is a clear indication of the severe consequences of climate change that could diminish arable land, intensify armed conflict and further aggravate the socio-economic situation and human security in the region. The country is linked with the Indus region and has experienced longer periods of drought, sharply declining groundwater and increasing conflicts over water and farmland. Climate change has therefore affected Afghanistan and its neighbours for a long time. Since 1960, the mean annual temperature has increased by 0.6 % (Din Ikram, 2020). This is considerably more than the rise of the average global temperature since then. In general, Afghanistan is rich in freshwater resources and could cope with the effects of climate change in peaceful times.

However, the armed conflict in Afghanistan has been ongoing since 1979 and has experienced several stages (including Soviet intervention, Mujahedin-Regime, Taliban-Regime,

US-led intervention, insurgencies, and peace talks). This has created an aid-dependent civil war economy that has caused serious environmental damages and rendered agricultural land uncultivable. Decades of internationalised armed conflict, corruption and mismanagement of governments and stakeholders have destroyed irrigation and water infrastructure. In addition, 80% of the population depends on natural resources, arable land or livestock for their subsistence (UN News, 2012).

Together with the effects of climate change, this has led to new conflict lines, often depriving the population of their livelihoods and resulting in rising civilian casualties, displacement and forced migration. The water supply for the fast-growing population in Afghanistan is completely insufficient and the access to clean water is, in general, very limited. Water stress is a challenge that is hardly likely to be resolved, mainly because of a combination of armed conflict, corruption and the ignorance of the stakeholders. In 2018, 2.3 million Afghans were affected by severe drought (UNICEF, 2018, p. 1). 90% of the water consumption is being absorbed by agriculture and livestock breeding, which represents a major imbalance compared to appropriate water management systems. In this context, it was even debated whether water scarcity might pose a bigger threat to peace and stability than the Taliban (Parwani, 2018).

Regardless of the ongoing international military withdrawal, the negative impact of the COVID-19 pandemic or the outcome of peace negotiations with the Taliban, four conflict scenarios can be identified in the context of climate change and water stress.

Water-related conflicts in Kabul

Water and food safety in both urban and rural areas depends heavily on favourable climatic conditions, which have deteriorated significantly. In addition, the groundwater reserves in Afghanistan are decreasing drastically, especially in the capital Kabul, with its rapidly growing population. According to a long-term study by the U.S. Geological Survey (Taher, Chornack, and Mack, 2013, p. 1), the groundwater level decline in Kabul was speeding up by 1.5 metres per year on average between 2008 and 2012 (in comparison to 2004-2008). To get access to fresh water, new wells have to be deeper than ever before, which is cost-intensive. Only 10% of the population in Kabul has access to pure drinking water. Most of the residents cannot afford to dig and construct well on their soil as the costs are more than 5,000 USD (Ritter, 2018). Local elites and companies are able to monopolise clean water resources. This has led to a deterioration of social cohesion. Non-state actors, such as militias, could benefit from the urban water scarcity. In a worst case scenario, a civil war between factions in combination with organised crime activities to obtain water superiority (and military power) in Kabul could be a consequence in the near future.

Struggle for arable land

As fertile farmland is diminishing, conflicts over resources in Afghanistan take place at various levels: between provinces, districts, and militias; between opium cultivators, drug producers or upstream and downstream villages. The nomadic population (e.g. over two million Kuchi nomads) is under particular pressure to constantly find new pastures and water sources for their livestock.

The dependence on subsistence agriculture and its products (e.g. rice, corn, watermelons, pomegranate or saffron) is another threat to the population during long periods of drought. Climate change and environmental degradation have given rise to land disputes and poverty. The deprivation of livelihoods, food insecurity and famine are nega-

tive consequences for more than one third of the Afghan population (UNICEF, 2020, p. 2). This contributes to instability, crime and massive internal displacement as well. Dried-out soils can hardly absorb any water and intensify the effects of flooding. Therefore, militias and other stakeholders do not hesitate to use force in order to gain control over rural areas with beneficial water supply and arable land for the cultivation of poppy fields, as well as other products.

However, there is a traditional Afghan institution at the local level that helps to manage conflicts concerning water or arable land and to promote local water management at grassroots level: the "Mirab" (Thomas and Mujeeb, 2009, p. 2). A Mirab is a community leader or elder elected by local landlords to manage irrigation systems and water distribution. He can also be called upon as a mediator in water disputes. The role of the Mirab as a water manager is likely to become more relevant as a result of the increasing water shortage. This local Afghan phenomenon has considerable potential for countering the effects of climate change and therefore demands in-depth research by international stakeholders. It is important for international crisis management to build on already existing Afghan mechanisms for water distribution and disaster prevention.

Conflict escalation in the opium economy linked with water scarcity

Afghanistan is still the largest opium producer in the world. Poppy cultivation is a crucial component for keeping the civil war economy flourishing and provides livelihoods for tens of thousands of farmers and their families. Suitable areas for cultivation are increasingly contested due to water scarcity and high profits. The revenues also benefit Afghan stakeholders such as militias, the Taliban and government circles. According to UNODC, the area of opium fields reached a new peak in 2017 with 3,280 km². Since then, opium fields have shrunk modestly, but drug production has remained relatively stable (Bjelica, 2020). The opium trade shows continued growth and accounts for at least 10% (approx. 2 billion USD) of Afghanistan's gross domestic product. In 2018 – a year plagued by severe drought – a decrease of 20% in drug cultivation was recorded. Climate change is thus becoming a strategic factor for the opium industry and has contributed to an increase in local armed conflicts. As 43% of local conflicts on the community level are over water (HydrateLife, 2012), a correlation between conflicts, climate change and insecurity (Smith and Vivenkananda, 2007, p. 44) can also be identified in context with the flourishing opium industry and its struggle for arable land.

Transnational water conflicts between Afghanistan and its neighbours

The demand for effective and efficient water distribution and exploitation in Afghanistan is being reinforced by climate change and rural exodus. Afghanistan's water resources are quite high with 75 billion m³ of available water annually (Rassul, 2011, p. 5). However, only one third remains in Afghanistan, while most of the water is flowing into the neighbouring countries Iran and Pakistan (Mehrdad, 2018) and is therefore lost. Examples are the Kabul River, which flows into the Indus River in Pakistan, and the Helmand River, which flows into Iran. Frozen conflicts between Afghanistan, Iran and Pakistan over the rights to exploit these rivers have definitely the potential to escalate.

International hydroelectric projects started in Afghanistan as early as in the 1930s and continued until 1979. Since 2001, new dam construction projects have been discussed despite the ongoing armed conflict. For the Afghan government, the expansion of hydroprojects on trans-boundary rivers, especially with the generous support of India, is the

favourite option for resolving the growing water stress (Mustafa, 2016) and to generate revenue. However, this constantly creates disputes with the neighbours, especially with Pakistan. The geostrategic approach of India is to weaken the water supply of its long-term rival Pakistan through facilitating dam construction and hydropower projects on rivers that flow from Afghanistan into Pakistan. For instance, India is constructing the Shahtoot Dam on the Maidan River, in cooperation with the World Bank Group, to ensure and increase the water supply of Kabul and beyond. This could further fuel the rivalry between India and Pakistan as this dam will substantially reduce water flows to Pakistan when fully operational in 2021 (Majidyar, 2018; Atef *et al.*, 2019).

The same applies to the "Afghanistan-India Friendship Dam", which India completed in 2016 in the province of Herat and which is enlarging the Helmand River. The dam has reduced Afghanistan's dependency on electricity, but has caused political disputes with Iran. Most hydro-projects in Afghanistan are therefore inextricably linked to Pakistan and Iran in their effects and make comprehensive bilateral water agreements urgently necessary. However, Afghanistan's record of bilateral water agreements is limited. The most notable is an agreement with Iran on the exploitation of the Helmand River (1973). There is no agreement with Pakistan in this context. Afghanistan stubbornly refuses to sign an agreement with Pakistan on the use of the Kabul River because it would make it more difficult to build reservoir dams supported by India. As a consequence, the demand for preventive water diplomacy and facilitating transnational mutual agreements on water usage is rising.

Implications of climate change for International Crisis management in Afghanistan

In the military domain, NATO's Resolute Support Mission (RSM) has been training and advising the Afghan National Army and the MoD since 2015. However, conflict-related consequences of climate change are not on the everyday-agenda of RSM, but the mission has introduced a staff officer for "Theatre Environmental Protection" to deal mainly with effective waste management for the mission. For RSM and prospective follow-up missions, NATO and other organisations should make increased use of already existing capacities (e.g. the NATO Support Agency) to provide environmental and hydrological assessments in the context of climate change and disaster relief (Curcija, 2015, p. 153). Training, mentoring and advising in the context of efficient water, food and waste management is definitely no military core task, but is becoming more relevant than ever before – in fragile settings as well as in the homeland.

On the civilian side, the UN is engaged with the UN Environment Programme (UNEP), operational in Afghanistan since 2012, to tackle direct and indirect effects of climate change (UN News, 2012). Other actors include UNAMA, UNICEF, UNHCR, USAID, and many other international agencies and independent humanitarian organisations like the Norwegian Refugee Council (NRC). Their tasks include actively increasing awareness of and responses to natural hazards, to facilitate dialogue as well as to build capacities to make Afghan structures and the population more resilient to coping with water stress and food insecurity.

There is no doubt that international military presence as well as diplomatic, financial and technical assistance is still required more than ever in 2021, with regard to the worsening security situation, the rising number of civilian casualties and the need to reduce violence (UNAMA, 2020). Man-made ecosystem destruction contributes to the deterioration of human security. Environmental pollution (water, air and poor waste management) is killing more people in Afghanistan than armed violence (Weir, 2018). However, inter-

national and local crisis management stakeholders, stabilisation and capacity-building operations, as well as the Afghan stakeholders themselves, have not taken into account the security implications of climate change for their policies yet. It appears that many actors are not fully aware of the negative consequences of ecological degradation that are contributing to protracted conflicts.

To strengthen the resilience of Afghanistan, it would make sense to focus on training Afghan high potentials (and there are many of them!) on how to establish and operate early warning centres and provide technical hardware, software and expertise. This is also useful for conflict prevention and strategic foresight at various levels. In this context, capacity building is about identifying mechanisms, links and responses to how climate change leads to disputes and how the consequences of natural disasters can be anticipated and managed. Local adaptation to climate change matters and should come with a conflict-sensitive approach that includes all relevant groups and beneficiaries (Froese and Schilling, 2019, pp. 26, 32). International support for conflict transformation should address, in particular, local Afghan communities, where a considerable amount of resilience and expertise to deal with disasters and water scarcity is often already established (e.g. the Mirab as an Afghan expert in water management). By making use of these principles, the climate change megatrend is not preventable in Afghanistan, but many of the socio-economic consequences are manageable (Mustasilta, 2020). In fact, there is room for manoeuvre for European engagement in Afghanistan to increase efforts to improve urban and rural water, food and waste management and to train local personnel how to preserve Afghanistan's valuable resources, use them more efficiently and, in a best case scenario, transform the country from aid and opium dependency to a trade and transit economic hub in the future (Islamic Republic of Afghanistan, 2016, p. 5).

Conclusions – Possible approaches for international engagement and ways forward

Climate change can increase the likelihood and/or intensity of armed conflict (Mach *et al.*, 2019). Afghanistan represents a test case, where climate change has already negatively affected its resilience, conflicts and water reserves in particular. Water disputes start at the sources of the Hindu Kush Mountains and have erupted at the interstate, provincial, city and municipal levels. They aggravate neighbourly relations and harm the Afghan population as do the ongoing ideological clashes and systemic rivalries. Solutions for overcoming conflicts over resources are not easy to find, as officials often ignore or are not aware of water-related crises in Afghanistan.

It can be stated that on the local level, supporting effective water management and enabling local expertise may represent a relatively cheap and viable solution to counter the root cause of local conflicts, amongst many others. One option for the European Union is to support the UN Environment Programme (UNEP) in Afghanistan. In addition, European countries with water know-how could contribute to strengthening Afghanistan's resilience regarding drought and water crises. UNEP supports water management schemes, food security, agroforestry systems and climate-related early warning systems. To this end, Afghan farmers should be able to cultivate resilient crops with less water demand (e.g. carrots and onions), in addition to water-intensive crops such as rice and corn. Alternatives to poppies, such as saffron and pistachios, should be promoted. Another option for international development cooperation is to promote local water management at grassroots level by supporting the "Mirab". The EU should also support this traditional institution, especially in regions with water shortages or water conflicts, paying particular attention to local tribal laws and the local needs of the population.

Furthermore, European countries should support Afghanistan to create a nationwide database on natural resources and risks. A starting point would be the creation of a scientific forum on climate change and its consequences in order to be able to make evidence-based decisions. A comprehensive mapping and assessment of Afghanistan's water resources may contribute to more efficient water usage. Afghan experts should be trained with the aim of establishing a stable water infrastructure for the benefit of the local population. The consultation of the Intergovernmental Panel on Climate Change (IPCC) of the UN would be beneficial for all stakeholders and crisis management actors in this context.

On the international level, Afghanistan depends to a very high extent on India's extensive assistance in the domains of water management, impounding water reservoirs and hydropower projects. This is very positive, but should be more diversified with the inclusion of other donors and investors. Therefore, it makes sense to promote intergovernmental agreements on trans-boundary water management (Hydro-Diplomacy). This instrument is important for conflict prevention in Afghanistan and beyond. It has the potential to ease the consequences of climate change and environmental degradation. In addition, European hydropower expertise should be transferred into the region.

For international civilian and military missions, it would be important to establish and promote an Environmental Security Adviser. Since climate-relevant security risks are clearly on the rise, peace and stabilisation operations should act quickly in this regard and consider ecological threats of military-strategic importance. The example of the United Nations Assistance Mission in Somalia (UNSOM) could serve as a model for the inclusion of environmental advisors in missions and programmes that are not directly linked to the ecological domain (e.g. UNAMA, UNDP, NATO and the EU Delegation to Afghanistan).

Furthermore, the international support for governmental competence centres in Afghanistan would be important to develop resilience with regard to climate shocks. Drought Operations Coordination Centres can set up early warning systems for the pre-emptive provision of support for those affected in drought regions, in the event of floods or avalanche disasters. International troops and advisors in geosciences could provide valuable support in this domain.

To conclude, this article has highlighted several options for European countries and the EU to help Afghanistan to cope with the massive consequences of climate change: Promotion of regional hydro-diplomacy (EU Delegation to Afghanistan), environmental protection programmes (UNEP), strategic water infrastructure (mapping of resources), or local water management (e.g. Mirab). In these very complex fields, it is absolutely necessary to increase research activities to provide adequate decision-making basics. Supporting the efficient use of water is the lowest common denominator for security, peace and standard of living in the region, but takes time, resources and commitment. However, including ecological risks in complementary military and civilian crisis management strategies can make a difference for strengthening stabilisation efforts and resilience towards natural and man-made disasters, insurgencies and armed conflict. In any case, it is better to act early on conflict and climate threats.

Funding

This research received no external funding.

Data Availability Statement

Not applicable.

Disclosure statement

No potential conflict of interest was reported by the authors.

References

Atef, S. S., Sadeqinazhad, F., Farjaad, F. and Amatya, D. M. (2019) 'Water conflict management and co-operation between Afghanistan and Pakistan', *Journal of Hydrology*, 570, pp. 875–892. doi: 10.1016/j.jhydrol.2018.12.075.

Bjelica, J. (2020) 'New World Drug Report: Opium production in Afghanistan remained the same in 2019', *Afghanistan Analysts Network*, 25 June. Available at: https://www.afghanistan-analysts.org/en/reports/economy-development-environment/new-world-drug-report-opium-production-in-afghanistan-remained-the-same-in-2019/ (Accessed: 28 November 2020).

Bochsler, K. (2018) 'Der Klimawandel führt zu Konflikten: eine steile These', *SRF*. Available at: https://www.srf.ch/kultur/wissen/klimawandel-der-klimawandel-fuehrt-zu-konflikten-eine-steile-these (Accessed: 10 November 2020).

Bressan, S. (2020) 'What's left of the failed states debate? Putting five hypotheses to the test', *GPPI Commentary*. Available at: https://www.gppi.net/2020/05/13/whats-left-of-the-failed-states-debate (Accessed: 24 November 2020).

Curcija, S. (2015) 'Logistic support to Resolute Support Mission', *Security and Defence Quarterly*, 6(1), pp. 139–155. doi: 10.5604/23008741.1152471.

Din Ikram, Q. (2018): 'Climate Change is happening in Afghanistan', *Afghanistan Online*. Available at: https://www.afghan-web.com/environment/climate-change-is-happening-in-afghanistan/ (Accessed: 5 November 2020).

Elwert, G. (2004) 'Anthropologische Perspektiven auf Konflikt', in Eckert, J. (ed.), *Anthropologie der Konflikte. Georg Elwerts konflikttheoretische Thesen in der Diskussion.* Bielefeld: Transcript, pp. 26–38.

Froese, R. and Schilling, J. (2019) 'The nexus of climate change, land use, and conflicts', *Current Climate Change Reports*, 5, pp. 24–35. doi: 10.1007/s40641-019-00122-1.

Heidelberg Institute for International Conflict Research (2020) *Heidelberg Conflict Barometer 2019*. Heidelberg: HIIK. Available at: https://hiik.de/wpcontent/uploads/2020/08/ConflictBarometer_2019_4.pdf (Accessed: 2 November 2020).

HydrateLife (2012) *Afghanistan's water crisis*. Available at: https://www.hydratelife.org/afghanistans-water-crisis/ (Accessed: 8 November 2020).

Institute for Economics and Peace (2020) *Ecological Threat Register 2020. Understanding ecological threats, resilience and peace*. Sydney: IEP.

Islamic Republic of Afghanistan (2016) 'Afghanistan and Regional Trade Arrangements', *Ministry of Commerce and Industries*. Available at: https://www.wto.org/english/thewto_e/acc_e/3_afganrta_e.pdf (Accessed: 20 November 2020).

Mach, K. J. *et al.* (2019) 'Climate as a risk factor for armed conflict', *Nature*, 571, pp. 193–197. doi: 10.1038/s41586-019-1300-6.

Majidyar, W. (2018) 'Afghanistan and Pakistan`s looming water conflict', *The Diplomat*, 15 December. Available at: https://thediplomat.com/2018/12/afghanistan-and-pakistans-looming-water-conflict (Accessed: 7 November 2020).

Mehrdad, E. (2018) 'Water shortages weigh heavy on Afghanistan', *GlobalVoices*, 22 August. Available at: https://globalvoices.org/2018/08/22/water-shortages-weigh-heavy-on-afghanistan/ (Accessed: 8 November 2020).

Mustafa, K. (2016) 'India out to damage Pakistan's water interests on Kabul river', *The News*, 5 June. Available at: https://www.thenews.com.pk/print/125490-India-out-to-damage-Pakistans-water-interests-on-Kabul-rive (Accessed: 2 November 2020)

Mustasilta, K. (2020) 'Ecological Threats, Conflict, and Geopolitics: a view from Europe', Webinar, 29 September. *Institute for Economics and Peace*. Available at: https://www.economicsandpeace.org/events/ (Accessed: 29 September 2020)

Palik, J., Rustad, S., and Methi, F. (2020) 'Conflict Trends in Asia, 1989–2019', *PRIO Paper*. Available at: https://reliefweb.int/report/afghanistan/conflict-trends-asia-1989-2019 (Accessed: 10 October 2020).

Parwani, S. (2018) 'Is Water Scarcity a bigger threat than the Taliban in Afghanistan?' *The Diplomat*, 10 October. Available at: https://thediplomat.com/2018/10/is-water-scarcity-a-bigger-threat-than-the-taliban-in-afghanistan/ (Accessed: 22 November 2020).

Rassul, K. (2011) 'Water scarcity, livelihood and conflict', *CPAU*. Available at: http://www.cpau.org.af/manimages/publications/CPAU-TPWSLC-FINAL.pdf (Accessed: 27 November 2020).

Ritter, K. (2018) 'In Kabul, Residents chase receding groundwater', *WaterNews,* 16 May. Available at: https://www.circleofblue.org/2018/asia/in-kabul-residents-chase-receding-groundwater/ (Accessed: 14 November 2020).

Ryan, D. (2019) 'Stanford-led study investigates how much climate change affects the risk of armed conflict', *Stanford News*. Available at: https://news.stanford.edu/2019/06/12/climate-change-cause-armed-conflict/ (Accessed: 20 November 2020).

Schneckener, U. (2007) 'International Statebuilding', *SWP Research Paper*. Available at: https://www.swp-berlin.org/fileadmin/contents/products/research_papers/2007RP09_skr_ks.pdf (Accessed: 19 September 2020).

Smith, D. and Vivenkananda, J. (2007) 'A Climate of Conflict: The Links between Climate Change, Peace and War', *International Alert*. Available at: https://www.international-alert.org/sites/default/files/ClimateChange_ClimateOfConflict_EN_2007_0.pdf (Accessed: 26 November 2020).

Stanikzai, S. (2018) 'Tackling water shortage in Kabul', *Taand*, 18 December. Available at: http://www.taand.com/en/?p=2370 (Accessed: 22 November 2020).

Taher, M. R., Chornack, M. P., and Mack, T. J. (2013) 'Groundwater-Level Monitoring and Sustainability in the Kabul Basin, Afghanistan, 2004 to 2013', *4th International Hindu Kush Geosciences Conference*, Kabul: Polytechnic University.

Thomas, V. and Mujeeb, A. (2009): 'A Historical Perspective on the Mirab System: A Case Study of the Jangharoq Canal, Baghlan', *AREU Case Study Series*, AREU. Available at: https://reliefweb.int/report/afghanistan/afghanistan-historical-perspective-mirab-system (Accessed: 29 November 2020).

UNAMA (2020) *Briefing by the Secretary-General's Special Representative for Afghanistan, Deborah Lyons at the ARRIA meeting on Afghanistan*. Available at: https://unama.unmissions.org/srsg-deborah-lyons-arria-meeting-afghanistan (Accessed: 22 November 2020).

UNICEF (2018) *Afghanistan Humanitarian Situation Report January – June 2018*. Available at: https://reliefweb.int/report/afghanistan/unicef-afghanistan-humanitarian-situation-report-january-june-2018 (Accessed: 24 November 2020).

UNICEF (2020) *Afghanistan Humanitarian Situation Report No. 1*. Available at: https://www.unicef.org/media/77776/file/Afghanistan-SitRep-June-2020.pdf (Accessed: 29 November 2020).

UN News (2012) *UN environmental agency to help Afghanistan combat effects of climate change*, 11 October. Available at: https://news.un.org/en/story/2012/10/423352-un-environmental-agency-help-afghanistan-combat-effects-climate-change (Accessed: 26 November 2020).

Weir, D. (2018) 'The slow violence of pollution in Afghanistan', *Conflict and Environment Observatory*, 18 June. Available at: https://ceobs.org/the-slow-violence-of-pollution-in-afghanistan/ (Accessed: 14 November 2020).

Wester, P., Mishra, A., Mukherji, A., and Shrestha, A.B. (eds.) (2019) *The Hindu Kush Himalaya Assessment. Mountains, Climate Change, Sustainability and People.* Cham: Springer International Publishing.