Climate Diplomacy

CLIMATE-FRAGILITY RISK BRIEF

SOUTH ASIA

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CLIMATE SECURITY EXPERT NETWORK

Climate-Fragility Risk Brief: South Asia

CONTENTS

SUMMARY

The South Asian region consists of Afghanistan, Pakistan, India, Nepal, Bhutan, Sri Lanka, the Maldives and Bangladesh. South Asia is one of the most climate-vulnerable regions in the world, and parts of the region are characterised by a high level of political instability and socio-economic backwardness. This convergence implies that climate change not only undermines human security, but could also heighten conflict risks. On the one hand, the region lacks the resources and capacities to cope with worsening first and second order impacts of climate change; on the other, climate change is increasingly interacting with socio-economic, demographic and political factors to compound fragility risks in the region. While some of these challenges are country specific, many of them also affect the region as a whole and, therefore, necessitate regional responses and strategies.

In this context, this briefing paper charts out the ways in which the security implications of climate change manifest themselves in the South Asian region. First, climate change has direct impacts on human security, which are already being experienced in most parts of the region. Second, it has the potential to influence existing socio-economic and political challenges in the region that contribute to insecurity. And third, it could also interact with regional geopolitical fault lines around shared physical (geographical) features, such as the Himalayas, the rivers originating from the Tibetan Plateau, or the atolls in the Indian Ocean.

This briefing paper focuses upon five major climate impacts: water stress, disasters/extreme weather events, increased mobility and rapid urbanisation, challenges to agriculture/food security and impacts on health. Some of these impacts may not have direct linkages with conflict risks as of now, but they impinge on the security of individual countries and the region as a whole, also increasing the likelihood of conflicts and disputes within and among South Asian countries (Nordqvist and Krampe, 2018).

1. SOCIO-ECONOMIC AND POLITICAL CONTEXT

South Asia is home to over 1.8 billion people (World Bank, 2018b) and more than 33% of the world's poor (Schafer, 2019). It consists of low- and middle-income countries. Simultaneously, South Asia is the world's fastest growing region, with the majority of countries recording gross domestic product (GDP) growth rates of above 5% in 2018. Even though South Asia's growth trajectory and Human Development Index (HDI) rankings shows an upward trend, most countries in the region are well behind even in comparison to other developing countries. Furthermore, agriculture continues to be the mainstay of the South Asian economies and almost completely dominates the economies of countries such as Bhutan and Nepal. The following table provides data on population and development indicators for each country.

As of 2018	POPULATION	Gross national income (GNI) per capita (current USD)	Human development index (HDI) rank[1]	Relative size of agricultural sector*
AFGHANISTAN	37,172,386	550	168	59.4%
BANGLADESH	161,356,039	1,750	136	44%
BHUTAN	754,394	3,080	134	92.8%
INDIA	1,352,617,328	2,020	130	54%
MALDIVES	515,696	9,310	101	17.8%
NEPAL	28,087,871	960	149	92.3%
PAKISTAN	212,215,030	1,580	150	38.6%
SRI LANKA	21,670,000	4,060	76	43%

Sources: World Bank, International Monetary Fund (IMF), United Nations Development Programme (UNDP), Climate Action Network South Asia. *percent of employed labour force

South Asia is among the most diverse regions in the world, with all the major religions residing in it – Buddhism, Christianity, Hinduism, Islam, Sikhism, Jainism, and even Judaism and Zoroastrianism (in small numbers). Although communities mostly co-exist peacefully, there have been cases of sporadic communal violence and tensions in all South Asian countries, for example, due to inter-state migration (such as between Bangladesh and Northeast India or between Nepal and Bhutan) (Singh and Kaur, 2019). South Asian countries have some of the most uneven sex ratios in the world, with only Sri Lanka and Nepal having more than 50% female population (World Bank, 2018a). Societies are generally male dominated and follow strictly patriarchal cultures that are associated with social instability and violence against women (Diamond-Smith and Rudolph, 2018).

All South Asian countries are technically democracies, but many have faced severe disruptions over the past few decades in the form of political transitions and violent conflict. For instance, Nepal witnessed years of civil war, waged mainly by the Communist Party of Nepal (Maoist) (CPN-M) against the government of Nepal during 1996-2006. In Sri Lanka, the civil war between the Sri Lankan government and the Liberation Tigers of Tamil Eelam (LTTE) lasted until 2009 (The Commonwealth, n.d.). The Maldives has also been engulfed by political crisis at several points in its history.

Currently, terrorism is a major threat in the region (e.g. Taliban in Afghanistan, Tehrik-i-Taliban in Pakistan). Other destabilising factors are (secessionist) insurgencies (e.g. Kashmir, Chhattisgarh, Balochistan), border disputes (e.g. between India and Pakistan) and sporadic communal conflicts (e.g. clashes between Hindu and Muslim communities in India, tensions between Pashtun, Tajik, Hazara and Uzbek in Afghanistan). Security challenges also arise from rapid urbanisation, including the risks of riots, increased crime and violent conflicts between urban communities.

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[1] Based on life indicators such as life expectancy, standard of living measured by gross national income (per capita) and years of schooling.

2. PROJECTED IMPACTS OF CLIMATE CHANGE

South Asia is replete with environmental challenges, ranging from climate change to increased pressure on resources (including food, land and water), deforestation and pollution, among others. According to the Global Sustainable Development Report 2015, most South Asian countries fall within the top quarter of the most climate-vulnerable countries in the world (The Energy and Resources Institute, 2015).

Projected major impacts of climate change in South Asia range from changing precipitation patterns (decreasing seasonal mean rainfall coupled with increasing heavy precipitation events) and increasing annual mean temperature trends to escalating flooding risks (such as in the Indo-Gangetic Plains), sea level rise, glacial melt (on which most of the region's rivers are dependent) and growing intensity and frequency of extreme weather events (such as cyclonic storms, heatwaves and droughts).

Studies have shown that average temperatures have risen over the past six decades in South Asia and will continue to rise. This will most likely impact resources, livelihoods and economies in the region (Mani et al., 2018).

Many parts of South Asia are already experiencing severe **water stress** due to ecological scarcity, as well as social, economic, managerial and infrastructural problems. For instance, according to a 2018 NITI Aayog report, some "600 million Indians face high to extreme water stress" (Kant, 2018). These problems are worsening with climate change and its effects on the hydrological cycle such as shifting rainfall patterns, droughts, and glacial recession. A recent study published by the International Centre for Integrated Mountain Development (ICIMOD) estimates that "two-thirds" of the Himalayan glaciers could melt by 2100 if greenhouse gas (GHG) emissions are not reduced. It goes on to state that even if the targets of the Paris Agreement are achieved, "one-third" of the glaciers are expected to recede. This will have a dramatic impact on South and Southeast Asia's main rivers and the more than 250 million people that depend on them (Wester et al., 2019).

Climate projections: South Asia

Increasing annual mean temperature	Increased intensity and frequency of extreme weather events	Sea level rise	Increasing flooding risks and glacial melt
	Increased severity of drought and heatwaves	Increased unpredictability of precipitation patterns	

Key climate impacts:

Agriculture
- Reduced yields and crop failure
- Degradation and loss of arable lands & damage to livestock
- Increased food insecurity
- Salt water inundation and intrusion
- Reduced water sources for irrigation

Fisheries
- Reduced fishery productivity
- Loss of mangrove habitat for shrimp
- Habitat loss from reduced river flows

Water
- Reduced water quality and quantity
- Reduced hydropower potential
- Increased glacial melt, altered river flows
- Increased flood risk
- Increased salinization of groundwater

Human health
- Injury and death from cyclones and floods
- Reduced food security & malnutrition
- Increased risk of waterborne and vector-borne diseases
- Increased risk of heat stroke

Ecosystems
- Loss of biodiversity
- Increased coastal and forest degradation
- Reduced wetlands
- Reduced natural flood protection
- Loss of livelihoods
- Groundwater salinization

Infrastructure and industry
- Damages to key infrastructure (energy & water, roads & bridges)
- Decreased economic output
- Reduced energy production potential (e.g. hydropower capability)

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Climate change is increasingly becoming a major driver of **livelihood and economic insecurity** in South Asia. The agricultural sector, which continues to be the mainstay of regional economies (Vinke et al., 2017), is particularly affected. Heat waves, water stress, disasters, salinisation and other such changes are already contributing to declining food production in most South Asian countries. Currently, there are around 300 million undernourished people in the region, and this trend is expected to be exacerbated by climate change impacts on agricultural productivity, food prices and incomes of the poorest (Climate and Development Knowledge Network, 2014). The IPCC warns that "in the Indo-Gangetic Plains of South Asia there could be a decrease of about 50% in the most favourable and high-yielding wheat area as a result of heat stress" while "sea level rise will inundate low-lying areas and will especially affect rice growing regions" (Hijioka et al., 2014).

Extreme weather events such as cyclones and floods, and the resultant landslides and other disasters are linked to burgeoning **human and economic losses** in the region. As per the Global Climate Risk Index, Sri Lanka, Nepal, Bangladesh and India stood among the countries most affected by extreme weather related events in 2017 (Eckstein, Hutfils and Winges, 2018). Islands such as the Maldives and low-lying coastal cities such as Mumbai, Chennai and Kolkata are particularly exposed to cyclones, storm surges and sea level rise (a slow onset disaster) (Leutz, 2017). In Bangladesh, during 2000-2003, sudden-onset disasters (including tropical cyclones, severe storms, floods and earthquakes) resulted in the death of 8,351 people and economic losses to the tune of $10.8 billion (Ozaki, 2016). These numbers are particularly concerning as extreme weather events are on the rise in South Asia, in part due to important changes in the climate system in the Indian Ocean Region (Alam et al., 2019).

Furthermore, climate impacts on lives and livelihoods have the potential to **disrupt patterns of human mobility** in South Asia, creating new challenges for populations on the move and in receiving areas. Across South Asia, disasters are direct or indirect drivers of displacement and migration. For example, cyclones and salinity intrusion in water and soil have been identified as major and, at times, direct drivers for migration in Bangladesh (both internally and between Bangladesh and India). Similarly, droughts, floods and landslides have been linked to livelihood insecurity and potentially subsequent migration in Nepal (Wester et al., 2019). Sea level rise, a slo- onset disaster, has already contributed to the disappearance of islands in the Sundarban region (shared by India and Bangladesh), portending significant displacement risks in the coming decades.

These challenges are further compounded by the **effects of climate change on health**. According to a World Health Organisation (WHO) report, the direct damage costs to health are estimated to be between USD 2-4 billion/year by 2030 (Philip, 2015). One alarming trend is the increasing number of deaths due to heat stroke (Ministry of Earth Sciences, Government of India, 2018). Other concerns arise from indirect impacts on health, including increased risk of diarrhoea, cholera, typhoid and dysentery from flood-related water contamination; declining nutritional health caused by drought-induced crop failure; and post-disaster mental illnesses such as trauma, to name just a few (Ministry of Health & Family Welfare, Government of India, 2016).

Notably, recent climate change is also associated with the spread of vector-borne diseases to previously disease-free areas (Caminade, McIntyre and Jones, 2019), which increases the risk of humanitarian crises. In Nepal, the spread of vector-borne diseases such as malaria, lymphatic filariasis, Japanese encephalitis, visceral leishmaniasis and dengue fever is now advancing to non-endemic areas, with the warming of tropical highlands and temperate regions partially to blame. Bhutan, too, has started to grapple with diseases that it had never seen before, such as malaria and dengue (Paliwal, 2013). Frequent cholera outbreaks in Bangladesh, which some scientists have linked to progressively more intense El Nino events in the Bay of Bengal and warmer sea surface temperatures, are currently the most discussed climate-induced health issue in the region (Shah, 2011).

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3. CLIMATE-FRAGILITY RISKS IN SOUTH ASIA

In view of the above challenges and the specific vulnerabilities of countries in South Asia, one can identify four main pathways that link climate change to future conflict and fragility risks in the region. These pathways are identified based on a survey of the existing policy, scientific/academic and grey literature on climate security (including official documents, think tank reports, expert views published in newspapers/magazines) as well as interviews with experts in the policy and scientific/academic communities:

➲ **Regional tensions due to competition over scarce resources, in particular shared rivers, could escalate.**

➲ **Deteriorating livelihoods and threats to health, food and energy security risk aggravating existing anti-state grievances and could spur violent protests as well as conflict between resource users.**

➲ **Increasing and increasingly irregular migration, caused by gradual- and/or rapid-onset disasters, enhances fragility, particularly in rapidly growing urban areas.**

➲ **Increases in poverty, inequality and grievances play into the hands of criminal organisations and armed opposition groups.**

3.1 Escalation of regional tensions due to competition over shared water resources

Water is among the most contested resources in South Asia. Climate impacts on the hydrological cycle (e.g. shifting rainfall patterns, droughts, and glacial recession) will put additional pressure on already strained water resources in the region. Against the backdrop

of existing political tensions, water scarcity could heighten the risk of water conflicts between and within South Asian countries.

A case in point is the contentious relationship between India and Pakistan regarding the water resources of the Indus River. Per capita water availability in both countries is declining fast – having dropped below the 1000 cubic meter per capita per year threshold in Pakistan – and risks dwindling even more as a result of the rapid melting of the Kolahoi Glacier that feeds River Jhelum, a tributary of the Indus River. According to estimates, flow levels in the Indus River system will fall below 2000 levels between 2030 and 2050 and attain 20% below 2000 levels by 2060 (The Energy and Resources Institute, 2019). This threatens to further strain diplomatic relations between India and Pakistan.

Dwindling water resources are likely to exacerbate tensions between different national regions too. For instance, India has witnessed violence over river water sharing between federal states, notably a dispute over the Cauvery basin between the states of Karnataka and Tamil Nadu (ET Online and Agencies, 2016). Similarly, water allocation has fuelled tensions between provinces of Pakistan, e.g. between Punjab, Sindh, Balochistan and Khyber Pakhtunkhwa (Gizewski and Homer-Dixon, 1996; Mustafa, Akhter and Nasrallah, 2013). Such conflicts are likely to intensify due to climate change impacts on the Southwest Monsoon and increasing drought pressure (Stolbova et al., 2016).

3.2. Political risks due to worsening livelihood and economic insecurity

The impacts of climate change on economic and food security in South Asia, both in the form of slow-onset deterioration and intensifying disasters, also risk aggravating existing anti-state grievances and thus spurring protests and riots.

Climate-related livelihood and economic insecurity can aggravate tensions around issues such as food prices and subsidies, service provision and corruption. Pakistan, for example, has seen several protests and riots due to food insecurity, especially in politically volatile provinces threatened by separatist movements, terrorism and other forms of violence, such as Balochistan, Sindh, and Khyber Pakhtunkhwa (Newman, 2018). Internal instability due to volatile food prices could potentially spill over and affect neighbouring countries and the South Asia region as a whole (Hooper, 2010). While economic pressures and food insecurity have the potential to lead to conflicts, political tensions and conflict in turn undermine capacities to compensate for economic losses, respond to increasingly volatile food prices, and withstand adverse climatic conditions, thus perpetuating instability and violence.

3.3. Fragility risks in the wake of increased mobility and rapid urbanisation

Increased and increasingly irregular migration driven by extreme weather events and sea level rise risks further exacerbating social cleavages, anti-migrant sentiment and distributional conflicts in receiving areas, especially in rapidly growing urban centres.

Increasing mobility, if not managed in a safe and orderly fashion, threatens to create or exacerbate tensions between migrants and receiving communities. These tensions can in turn be exploited to stir anti-migrant sentiment (Pisharoty, 2018). For instance, in the Indian state of Assam, there have been communal tensions between locals and Bangladeshi immigrants over the shifting religious and demographic landscape of the region, sharing of common resources, and granting of constitutional rights to the immigrants such as voting rights (Goswami, 2014). These are so far not being directly linked to climate change in the policy discourse, but it is plausible that climate change will make them worse. It has also been alleged that some of the illegal immigrants are involved in "gun running, fake currency rackets and drug running" (Kumar, 2010); and that illegal immigration may fall into the hands of radical and terrorist organisations based in Bangladesh that want to infiltrate India (Gupta, 2017).

Yet it is internal migration from rural to urban areas that poses perhaps the greatest challenge: it has the potential to exacerbate urban inequalities, competition for urban resources and services, and tensions between local authorities and urban slum dwellers. South Asia is one of the world's fastest growing regions in terms of population and urbanisation. Many South Asian megacities, including New Delhi, Mumbai, Dhaka, Karachi, Kathmandu, Chittagong, Chennai, Colombo and Kolkata, are facing environmental and resource stress due to increasing population pressure. The most densely populated city in the world (World Bank, 2007), Dhaka, with over 18,000,000 people and a population density of 41,000 people per km², receives up to 400,000 low-income migrants every year (Szczepanski, Sedlar and Shalant, 2018).

At the same time the challenges that often accompany rapid urbanisation - poor planning, infrastructural deficits, encroachments, massive construction drives and indiscriminate solid waste disposal - are stressing urban ecosystems and resources and undermining cities' capacities to withstand adverse environmental change. Moreover, urbanisation in South Asian cities has come at the expense of many critical ecosystems that act as catchment areas during flooding incidents, thereby reducing their resilience. The immense stress that rapid urbanisation is putting on existing resources in urban areas may eventually put the region's security in peril. As a case in point, immigrants in Dhaka (who are mostly slum dwellers) are known to be highly vulnerable to sex and human trafficking, rape and other forms of physical violence, crime, disease outbreaks and labour abuse among others (LeBeau and Tuckfield, 2017). Such circumstances could have socio-economic and political consequences such as radicalisation and violent extremism (Hasan, 2017). Urbanisation in Pakistan has been linked to the rise in sectarian attacks (in Karachi), as well as the surge in popularity of conservative and radical groups such as Difa-e-Pakistan Council and even the recruitment of urban residents (especially from college campuses) by banned Islamist organisations such as Hizb-ut-Tahrir (HuT), which could have potential regional repercussions too (Kugelman, 2013).

3.4. Compounding risks of crime, extremism and terrorism

Increased poverty, inequality and marginalisation, especially in densely populated urban centres where state authorities are weak, can be a breeding ground for organised crime and terrorist groups – in turn threatening regional and global stability. Climate fragility risks faced by cities in the South Asian region are compounded by poverty, inequality and other structural failings, with immense implications for human security. The large scale of rural-to-urban migration has left many migrants living in urban slums in distressing conditions. According to a World Bank report, more than 130 million South Asians "live in informal urban settlements characterized by poor construction, insecure tenure and underserviced plots" (Ellis and Roberts, 2016).

These conditions can be a breeding ground for criminal organisations and terrorist groups that capitalise on the absence of economic opportunities and widespread distrust in public authorities. They also create particular risks for marginalised groups, such as women and children, including different forms of exploitation and sexual and gender-based violence. Studies show that these risks escalate in the wake of disasters, making these groups particularly vulnerable to the combined effects of climate change and insecurity (UN Women Fiji, 2014).

The linkages between disasters and violent conflict are not well explored in the South Asian context, especially taking climate change into consideration. However, there is evidence of terrorist groups leveraging environmental disasters to gain popular support. In the aftermath of the 2010 floods in Pakistan, for example, when the government failed to provide enough relief supplies to the affected people, terrorist groups such as Lashkar-e-Taiba seized the opportunity to secure legitimacy by carrying out rescue and relief activities (Berrebi and Ostwald, 2013). In fact, the same group is known to have expanded its presence in the region by sending a "humanitarian" team to the Maldives after the 2004 Indian Ocean Tsunami (Berrebi and Ostwald, 2013). Hence, it cannot be ruled out that terrorist outfits might capitalise on rapid and slow onset disasters to augment their recruitment efforts, particularly in regions that are already politically volatile.

4. POLICY AND INSTITUTIONAL CONTEXT

Existing policies relevant to the climate-security nexus in South Asia mostly focus on adaptation and socio-economic resilience because climate change is primarily seen as a challenge for economic growth, development and livelihoods. Thus in one way or another, national plans on climate change do address how a changing climate affects food, health, livelihood and energy risks.

However, in general, these countries have not sufficiently engaged with other climate fragility risks, i.e. those related to migration and urban stress (except in terms of disaster management and preparedness), the sharing of resources and violence by criminal and armed organisations. While the high vulnerability of South Asian countries to the impacts of climate change is evident and widely recognised, the security dimension of the issues is rather underrepresented in the policy discourse, strategies and initiatives. Regional cooperation has the potential to tackle the risks described above, but it is impeded by diverging perceptions, fragmented responses and a lack of coordination.

One major barrier for addressing climate-security risks is the fact that, whereas Bangladesh and the Maldives have been very outspoken in their calls for addressing climate security risks at the international level, India has been very hesitant. When the impact of climate-related disasters on international peace and security was discussed at the United Nations Security Council (UNSC) in January 2019, India argued that "thinking in security terms usually engenders overly militarised solutions to problems, which inherently require non-military responses to resolve. It brings the wrong actors to the table" (Goswami, 2019). However, at the domestic level, climate and environmental change are part of the policy discourse on 'national security', albeit only in a minor way. Although warning against militarisation is certainly valid, it is debatable whether recognising the security aspect of climate change-related risks will encourage policy-makers to choose an overly militarised response. It is possible that such recognition might just help make available the necessary resources for non-military responses.

4.1. Regional cooperation

Regional cooperation in South Asia has been hampered by "the differing approach each country adopts on environmental matters, which they basically consider from a unique local/national rather than broader geographical perspective" (Zafarullah and Huque, 2018). South Asian countries cooperate in various regional groupings, the main one being the South Asian Association for Regional Cooperation (SAARC), which was established in 1985 in Dhaka.[2] None of the regional frameworks addresses climate-fragility risks or the security implications of climate change directly, although SAARC, among other organisations, has emphasised the importance of building climate-resilient societies. Despite the existence of conflict risks and areas, there is little acknowledgement of the need for conflict sensitivity in building resilience.

There has also been little movement in a practical sense (White, 2015). SAARC's action plan on climate change, adopted in 2008, has not produced tangible results. Geopolitical rivalries and fractious regional politics have impeded meaningful cooperation. India, specifically, has been attempting to side-track SAARC (and consequently Pakistan) by focusing on other sub-regional organisations such as BIMSTEC and bilateral cooperation (Krampe, Scassa and Mitortta, 2018). Since no SAARC summit has been held since 2014, there is little hope for an unequivocal regional approach to addressing climate-related security risks.

4.2. Transboundary river basin cooperation

Transboundary river basin cooperation is another area of focus in South Asia, since most of the Himalayan rivers are shared by two or more countries. Time and again India has been accused of being a hydro-hegemon, and there are ongoing disputes with several neighbours.

India and Bangladesh signed the Ganges Treaty in 1996 to divide surface waters of the River Ganges at the Farakka Barrage near the border (built by India in 1975), but this agreement does not take into account Nepal as the uppermost riparian or the effects of upstream water use. Nor does it account for climate impacts on water availability at the Farakka Barrage (Rahman et al., 2019). Bangladesh continuously criticises the Farraka Barrage for causing both floods and drought-like situations (Malhotra, 2010).

Similarly, India has also signed the Mahakali Treaty with Nepal, but it has run into several implementation roadblocks, with discontent in Nepal over its provisions (Lama, 2019).

In recent times, the stability of the Indus Waters Treaty (IWT), signed between India and Pakistan in 1960 (brokered by the World Bank), has also come under scrutiny and strain. Both sides have raised claims of deprivation of water rights. Furthermore, attacks on Indian soil carried out by terrorists harboured and/or supported by Pakistan have led more Indians to call for the abrogation of the treaty. The IWT only allocates three rivers to each party without taking climate change into consideration or providing incentives for cooperation (Ghazi, Muniruzzaman and Singh, 2016). Climate change and lower water availability could therefore alter the equations dramatically.

4.3. Adaptation, disaster risk reduction and securing livelihoods

South Asian countries have made some progress on regional cooperation in the area of **disaster risk reduction (DRR)**. SAARC has been working towards a more concerted DRR approach in the region in the aftermath of the 2004 Indian Ocean Tsunami. A Comprehensive Framework on Disaster Management and Disaster Prevention was developed in 2005. The SAARC Centre for Disaster Management and Preparedness (SDMC), the SAARC Coastal Zone Management Centre and the SAARC Meteorological Research Centre were established under this framework. The SDMC has been successful in producing regional guidelines, conducting technical trainings, and developing a mechanism for collective emergency response.

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[2] Among others are the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), and the Bangladesh, Bhutan, India, Nepal (BBIN) Initiative, that are primarily targeted at economic cooperation and connectivity.

Nevertheless, as SAARC itself has become side-lined in the past few years due to geopolitical tensions, these initiatives have not been able to meet expectations.

Most countries in the region have national **adaptation** plans and/or related national strategies, but these policies are not conflict-sensitive and thus do not adequately reflect the regional context. So far, there are only a few examples of attempts to try to link the adaptation and peacebuilding or development agendas.[3] Furthermore, the focus is often entirely on the physical vulnerabilities, whereas capacity and resource needs to tackle socio-economic and political deficiencies are not addressed. Yet if these needs are not met, it is more difficult to implement and sustain adaptation and related programmes, both at the national and regional levels.

4.4. Human mobility and urbanisation

Human mobility is a highly contentious topic in the region, especially regarding migratory flows between India and Bangladesh. In fact, if there is any form of cooperation between India and Bangladesh on the issue of migration in general, it is the agreement to deal with illegal immigration "within the larger framework of human trafficking" (Pattanaik, 2014). There are few efforts to find joint solutions, and preparedness for the potential effects of climate change on human mobility patterns is low, which increases vulnerabilities.

Urban policies on disaster risk reduction, human development and climate change as well as the respective institutions, infrastructure and planning do not account sufficiently for different forms of disaster risks arising from climate change. The perception of risk is mainly restricted to physical vulnerability. Policies and government actions often disregard the socio-economic context, particularly the plight of the marginalised groups that are most affected by climate change. Policies generally fail to reflect the fact that uncontrolled urbanisation compounded by climate risks harbours a potential for unrest and violence, especially in societies that are already characterised by high inequality and deep divisions.

There are, however, exceptions:

The Surat City Resilience Strategy provides an overview of short-, medium- and long-term strategies to make the city climate resilient. It looks at vulnerability, based on hazard risks and penetration of loans and insurance, and assesses the capacity of the people in the city, based on social capacity, educational and income stability. The strategy specifically refers to the need to strengthen the social capacities of migrants.[4]

Similarly, in Bangladesh, several NGOs are working to improve urban slum dwellers' lives through climate resilience initiatives. Yet, in the absence of long-term strategies by the government and a lack of financial and infrastructural capacity, these initiatives merely end up as temporary projects and cannot be sustained after resources are exhausted (Alam, Alam and Rahman, 2015).[5]

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[3] An initiative of the Central Government of Sri Lanka with UNDP builds resilience of post-conflict recovery and development to climate change risks in the country's Eastern and Northern provinces (UNDP, n. d.). In Bangladesh the UK-supported Climate Change Programme works to make communities to climate shocks, particularly disasters, by contributing to Bangladesh Climate Change Resilience Fund (Independent Commission for Aid Impact, 2011). In Nepal, steps have been undertaken to make the country's Local Adaptation Plan of Action (LAPA) conflict sensitive (Campbell, 2011).

[4] The Surat City Resilience Strategy has been developed under the Asian Cities Climate Change Resilience Network (ACCCRN) initiative of the Rockefeller Foundation. It can be found at: http://www.asiapacificadapt.net/sites/default/files/resource/attach/Surat_City%20Resilience%20Strategy_TARU-SMC.pdf

[5] Nari Maitree is one such NGO that has worked towards building the capacity of women from slum communities to deal with climate-related risks and play a crucial role in undertaking climate action on the ground, with the help of international collaborations. More information about the Community-based Urban Climate Change Adaptation and Resilience is available at: http://www.icccad.net/programmes/urban-climate-change/urban-change-adaptation-resilience.

4.5. Violence, extremism and terrorism

Crime, extremism and terrorism are major issues in the region, and governments make addressing them a priority. However, various actors often instrumentalise these issues for their political agenda, which hinders regional cooperation efforts. Moreover, the connections to climate change and environmental degradation are rarely drawn. The geopolitics of the region, especially the tense relations between India and Pakistan over the issue of cross-border terrorism, complicates any form of cooperation on such issues. Yet even existing counter-terrorism policies at the national levels or anti-terrorism cooperation mechanisms in the region, such as between India and Bangladesh, do not include climate- and resource-related aspects.

Climate change and environmental degradation are not considered among the root causes for extremism, crime and terrorism in the region, even in cases when there is ample evidence to prove the linkages, such as between natural resource management and the rise of left-wing/Maoist extremism in India (Kennedy, 2013). In essence, the South Asian countries are not doing enough to address the conditions that are conducive to the spread of violence; and most approaches are reactionary and militarised in nature.

5. CURRENT ACTIVITIES AND EXPERIENCES

Individually, countries have taken first steps to **integrate climate change with security policies** and strategies.

Bangladesh has a number of policies and initiatives (frequently supported by foreign agencies) that aim to deal with climate-related risks such as physical, food, water and livelihood security. The focus is primarily on disaster risk reduction and adaptation to both slow- and rapid-onset disasters, such as floods, cyclones, storm surges and sea level rise. This is underscored in the Bangladesh Climate Change Strategy and Action Plan (BCCSAP), adopted in 2009 (Ministry of Environment and Forests, 2009). However, due to a lack of resources, the country has not been able to implement many of its policies and strategies on climate change.

The Maldivian government has asserted that "climate change is a national security issue", as reiterated by former President Mohamed Nasheed in 2018 (Chestney, 2018). The Maldives Climate Change Policy Framework has labelled climate change the "greatest challenge to development and security" and lists sectors such as agriculture and food security, human health, water, fisheries, tourism, critical infrastructure and coastal zone management as vulnerable to climate risks (Abdulla, 2015).

Nepal, Bhutan, Pakistan and Afghanistan also acknowledge the security implications of climate change, and have attempted to address them through National Adaptation Programmes of Action (NAPAs).

In India, the agenda of the National Security Advisory Board (NSAB) listed "Resource, Water and Food Security" (Bolton, 2017) as a key issue. However, it mostly looked at climate change through the lens of resource availability. And even these discussions could not be sustained because of a lack of knowledge production and expertise on the topic, and the prioritisation of other issues such as territorial integrity (including border disputes with Pakistan and China, and cross-border terrorism).[6] India's National Security: Annual Review 2015–16, published by the Foundation for National Security Research (FNSR), an entity closely linked to India's national security elites, lists climate change as a "threat multiplier" and calls it an indispensable part of the changing global imperatives, stressing the need for long-term planning (Dasgupta, 2016). The annual reviews (edited by Satish Kumar) published in 2017 specify the domestic and regional dimensions of water security as well as food security, especially distress in the agricultural sector.

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[6] Based on interview with a former member of NSAB.

6. ENTRY POINTS FOR ADDRESSING CLIMATE-FRAGILITY RISKS

South Asia has traditionally been a geopolitically volatile region due to intra-regional rivalries and extra-regional interventions. Large parts of the region are conflict-ridden or post-conflict societies in which peace and stability are fragile and sometimes completely absent. The war in Afghanistan, for instance, has left the society extremely vulnerable to various insecurities, and the lack of governance has resulted in further deterioration of the state of the environment. The civil wars in Sri Lanka and Nepal have similarly weakened their governance systems to a significant extent. South Asian countries are, therefore, in dire need of resources and capacities to build resilience to climate change as well as to resolve conflicts that arise from both physical vulnerabilities and structural shortcomings in governance.

The first and foremost task in support of comprehensive resilience-building is to create more systematic, credible, evidence-based and actionable information on climate fragility risks in South Asia. The information currently available is negligible. Governments should review their **existing climate policies and make them conflict sensitive**, based on knowledge and information that is produced nationally and regionally. Furthermore, it is important to **build durable governance mechanisms** and infrastructure that can plan and implement climate change policies that also take security risks into account. In order to foster resilience effectively, policies need to also build capacity and mobilise resources to **tackle socio-economic and political deficiencies**.

6.1 Facilitate and strengthen regional cooperation

In response to climate-fragility risk number one – regional tensions due to competition over scarce resources – regional cooperation needs to be strengthened. The existing frameworks on climate change and disaster risk reduction (such as that of SAARC, BIMSTEC[7] and the Indian Ocean Rim Association) need to be revitalised and operationalised in a meaningful way. This would help bolster preparedness and reduce risks by building local capacities, early warning systems and other such mechanisms at both national and regional levels. There is also a need for **greater cohesion on the understanding of the climate security risks** and identification of areas of regional cooperation. It is important to formulate a regional framework that integrates various perceptions of these issues for a holistic implementation of regional climate change policies. However, given the difficult current geopolitical circumstances, it might be difficult to build such a holistical regional framework Therefore, reaching bilateral and pluri-lateral engagements at the regional level could be a good start and facilitate regional processes at a later stage.

6.2 Enable and bolster transboundary river basin cooperation

The protection and sustainable management of the **Himalayan ecosystems** is essential to the countries of the region that depend on the Himalayan rivers for water, food (agriculture) and energy (hydropower) security. Measures to bolster coordination mechanisms between upper and lower riparian countries in terms of **sustainable joint river basin management** need to be backed up by policies at the national level that, for example, promote efficient use of water and energy. Since there are currently almost no mechanisms in the region that facilitate benefit sharing around such resources, this could be an important area for enhancing cooperation and building trust between the countries.

Climate-proofing river water sharing agreements is an important entry point because these agreements need to provide for the projected increase of water scarcity in a changing climate. Strong diplomatic support and political commitment is necessary to make this process work. Critical steps in this direction could include:

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[7] India hosted the first Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation, Disaster Management Exercise (BIMSTEC DMEx-2017) in 2017, in which countries including India, Bangladesh, Sri Lanka, Bhutan and Nepal participated.

- ➲ **making allocation mechanisms more adaptive/flexible, taking into consideration the flow variability that climate change entails;**

- ➲ **designing mechanisms (special provisions) to deal with extreme weather events and disasters such as droughts;**

- ➲ **including aspects such as water quality and variability in water demand;**

- ➲ **reviewing dispute resolution mechanisms to include climate variability as a factor in order to avoid conflicts; and**

- ➲ **establishing institutions for knowledge creation and joint scientific assessments, and ultimately for joint river basin management and climate change adaptation strategies (not just at the bilateral, but also at the regional level since many rivers are shared by more than two countries).**

6.3 Support adaptation and disaster risk reduction efforts to secure livelihoods

There are also a number of promising opportunities to respond to and cooperate on climate-fragility risk number two – deteriorating livelihoods aggravating existing anti-state grievances. Thematically, regional cooperation could target the **food-water-energy nexus**, a critical problem in a region that faces a growing energy deficit, water stress and increasing population. Energy will remain a priority area for the largely energy-poor South Asian countries. Cooperation on access to affordable energy is therefore an entry point that could both help the population become more resilient through the **expansion of clean energy** as well as build trust and goodwill between countries and societies. Some efforts are already underway:

India has proposed to invest in the development and deployment of solar plants in Sri Lanka and Bangladesh under the International Solar Alliance (ISA), which was launched in 2015 at the UNFCCC international climate conference in Paris (Kumaraswami, 2018).

Cross-border energy trade is already taking place between India, Nepal, Bhutan and Bangladesh (mostly thermal and hydro).

Lately, Bangladesh has expressed its intent to buy 2,000MW of solar power from India to meet the burgeoning energy demand in the country (Salim, 2018).

Sri Lanka has also welcomed the formation of the ISA, through which it aspires to energise its "Soorya Bala Sangramaya" programme (translated as battle for solar power).[8]

Another topic of shared interest could be strengthening the response to the growing **risk of (economic) losses** in wake of climate change. All countries have a common position on the "loss and damage" mechanism at the international level. This could be used as a tool for charting out national and regional plans to identify key areas in loss and damage, which could then be highlighted at the level of the United Nations Framework Convention on Climate Change (UNFCCC) and other relevant international forums. At the regional and national levels, building up the insurance sector, which currently has only minimal penetration in South Asia, could be another focus point. Faced with a growing number of fatalities and losses due to disasters and extreme weather events, governments need to work out insurance-based solutions that prevent affected people from slipping into poverty or other dire situations.

Finally, the need to strengthen disaster risk reduction efforts could also benefit from closer **military-to-military cooperation** in the Indian Ocean Region, i.e. incorporating a strong component of climate change in the mandate of the militaries of the region within their

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[8] More information about the programme can be found at: http://www.energy.gov.lk/en/soorya-bala-sangramaya.

domain of operations, tactics and strategies. An example of such an effort is the Indian Ocean Naval Symposium, which has a working group on Humanitarian Assistance and Disaster Relief (HADR) and similar other arrangements (mainly exercises).

6.4 Manage human mobility and urbanisation

This risk brief identifies increased fragility from human mobility and rapid urbanisation overwhelming institutional capacity as the third prominent climate-fragility risk. As of now, there are no legal instruments to deal with cross-border migration in South Asia except for the Declaration of the 18th SAARC Summit that formally recognised the need to collaborate and cooperate on safe, orderly and responsible management of labour migration from South Asia to destination countries outside the region. Therefore, **mutual bilateral and regional agreements** are necessary to address climate-related cross-border migration, especially in terms of improving data collection and building information sharing mechanisms (cf. The Nansen Initiative, 2015). As migration is often a form of positive adaptation strategy, it is also important that countries link their policies on human mobility to their Sustainable Development Agenda and Nationally Determined Contributions (NDCs), particularly targeted at the most vulnerable populations; and call for recognition of these issues within the global processes. A regional strategy would have to take into account South Asia's political and ethnic diversity in order to ensure migrants and displaced populations are resettled in a humane and just manner. In this context, South Asia might benefit from the experiences of other regions such as the Pacific or the Caribbean. Though still in an early stage of devising strategies on the nexus between climate change and migration, they already have experiences to share with respect to regional frameworks, specific projects of relocation, and attending to migrants in post-disaster situations.

Creating, supporting and expanding **city networks** in South Asia could also help deal with the security implications of urban stress and climate change. Cities such as Chennai, Jaipur, Pune and Surat in India are already member cities of the 100 Resilient Cities network. As the Indian Government works towards the goal of developing 100 cities across the country under Smart Cities Mission (launched in 2015)[9], urban resilience strategies need to be based on climate change adaptation, effective disaster risk reduction mechanisms (such as early warning systems), socio-economic inclusiveness, universal access to basic services, social protection schemes for the marginalised and vulnerable populations right from the beginning. This mission could also expand to have a regional scale, involving other South Asian cities such as Dhaka, Colombo and Karachi, and build collaborations with city networks in other parts of the world (on exchange of knowledge, ideas and best practices).

6.5 Understand and prevent violence, extremism and terrorism

With respect to the final climate-fragility risk, developing **a better understanding** of how socio-economic grievances, resource degradation and climate change interact to potentially fuel recruitment and violence by non-state armed groups would enable decision-makers to develop more effective policies to counteract them. For this, governments in South Asia still need more awareness and expertise. Regional cooperation on this issue may be difficult to achieve due to high levels of political hostility, mainly between India and Pakistan. However, bilateral and pluri-lateral cooperation between some countries could be a possible start, with a view to achieving a common understanding on the root causes for violence and armed opposition and how these causes intermingle with climate change (even if they stem largely from socio-economic and/or political ideologies).

Moreover, diplomatic efforts could help develop different **preventative mechanisms** including community-based initiatives aimed at natural resource management, multiple hazard mapping and preparation of indices on different types of vulnerabilities, as well as counter-terrorism partnerships that include climate and environmental aspects. Furthermore, **transnational women's networks** to address specific issues concerning women in the context of climate change could help create knowledge and awareness on this issue, avert violence against women in situations that are linked to climate change, and

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[9] More information about the mission can be found at: http://smartcities.gov.in/content/.

bring women to the table when decisions are made. Women are not only victims of violence, terrorism and extremism, they are also recruited by extremist and terrorist groups. Hence, it is important that the preventative mechanisms are more gender sensitive and gender responsive, so that the special needs, rights and roles of women in the society are taken into consideration.

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7. REFERENCES

Abdulla, Amjad. (2015, August). Maldives Climate Change Policy Framework. Ministry of Environment and Energy. Retrieved from: http://extwprlegs1.fao.org/docs/pdf/mdv172920.pdf.

Alam, Edris et al. (2019). Climate Change Impacts on the Coastal Zones of Bangladesh: Perspectives on Tropical Cyclones, Sea Level Rise, and Social Vulnerability. In: Islam M., van Amstel A. (eds.) Bangladesh I: Climate Change Impacts, Mitigation and Adaptation in Developing Countries. Springer Climate. Cham: Springer. Retrieved from: https://link.springer.com/chapter/10.1007/978-3-319-26357-1_6.

Alam, Sarder Shafiqul, Alam, ATM Jahangir and Rahman, Sowmen. (2015). Urban climate resilience, water and sanitation; Improving multi-stakeholder collaboration in Dhaka, Bangladesh. Asian Cities Climate Resilience. Retrieved from: http://icccad.net/wp-content/uploads/2016/08/Urban-climate-resilience-WATSAN.pdf.

Berrebi, Claude and Ostwald, Jordan. (2013, April). Exploiting the Chaos: Terrorist Target Choice Following Natural Disasters. Southern Economic Journal 79(4): 793-811.

Bolton, Laura. (2017, February 27). National Security Office responsibilities and functions. K4D Helpdesk. Retrieved from: https://assets.publishing.service.gov.uk/media/5980885ded915d022b000040/K4D_HDR__National_Security_Advisor_Office.pdf.

Caminade, Cyril, McIntyre, K. Marie and Jones, Anne E.. (2019). Impact of recent and future climate change on vector-borne diseases. Annals of the New York Academy of Sciences 1436(1):157–173. Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6378404/.

Campbell, Ivan. (2011, August 16). Towards conflict-sensitive adaptation in Nepal. Safer World. Retrieved from: https://www.saferworld.org.uk/resources/news-and-analysis/post/34-towards-conflict-sensitive-adaptation-in-nepal.

Climate and Development Knowledge Network. (2014). The IPCC's Fifth Assessment Report: What's in it for South Asia?. Retrieved from: https://cdkn.org/wp-content/uploads/2014/04/CDKN-IPCC-Whats-in-it-for-South-Asia-AR5.pdf.

Chestney, Nina. (2018, December 13). Maldives tells U.N. climate talks: 'We are not prepared to die'. Reuters. Retrieved from: https://www.reuters.com/article/us-climate-change-accord-maldives/maldives-tells-u-n-climate-talks-we-are-not-prepared-to-die-idUSKBN1OC1QG.

Dasgupta, Chandrashekhar. (2016). Climate Change and India's Security Environment. In: Kumar, Satish (ed.) India's National Security: Annual Review 2015–16. New Delhi: Routledge.

Diamond-Smith, Nadia and Rudolph, Kara. (2018, June 1). The association between uneven sex ratios and violence: Evidence from 6 Asian countries. Plos One 13(6). Retrieved from: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0197516.

Eckstein, David, Hutfils, Marie-Lena and Winges, Maik. (2018, December). Global Climate Risk Index 2019: Who Suffers Most From Extreme Weather Events? Weather-related Loss Events in 2017 and 1998 to 2017. German Watch. Retrieved from: https://www.germanwatch.org/sites/germanwatch.org/files/Global%20Climate%20Risk%20Index%202019_2.pdf.

Ellis, Peter and Roberts, Mark. (2016). Leveraging Urbanization in South Asia: Managing Spatial Transformation for Prosperity and Livability. Washington, DC: World Bank. Retrieved from: https://openknowledge.worldbank.org/bitstream/handle/10986/22549/9781464806629.pdf?sequence=17&isAllowed=y.

ET Online and Agencies. (2016, September 12). Cauvery violence: 30 buses set ablaze as protestors run riot in Bengaluru. The Economic Times. Retrieved from: https://economictimes.indiatimes.com/news/politics-and-nation/cauvery-violence-30-buses-set-ablaze-as-protestors-run-riot-in-bengaluru/articleshow/54296011.cms.

Ghazi, Tariq Waseem, Muniruzzaman, A. N. M. and Singh, A. K.. (2016, May). Climate Change & Security in South Asia: Cooperating for Peace. Global Military Advosry Council on Climate Change Paper No. 2. Retrieved from: http://gmaccc.org/wp-content/uploads/2016/05/Climate_Change_and_Security_in_South_Asia.pdf.

Gizewski, Peter and Homer-Dixon, Thomas. (1996, April). Environmental Scarcity and Violent Conflict: The Case of Pakistan. Project on Environment, Population & Security. Retrieved from: https://homerdixon.com/environmental-scarcity-and-violent-conflict-the-case-of-pakistan/.

Goswami, Namrata. (2014, May 9). Bodo Violence: Contest for Power and Territory. Institute for Defence Studies and Analyses. Retrieved from: http://www.idsa.in/idsacomments/Bodoviolence_ngoswami_090514.

Goswami, Urmi. (2019, January 2018). India Urges Caution on 'Actions' to Tackle Climate Change from Security Perspective. The Economic Times. Retrieved from: https://economictimes.indiatimes.com/news/politics-and-nation/india-urges-caution-on-actions-to-tackle-climate-change-from-security-perspective/articleshow/67720559.cms?from=mdr.

Gupta, Saibal. (2017, March 21). Jihadis Entering India, Warns Bangladesh. The Times of India. Retrieved from: http://timesofindia.indiatimes.com/india/jihadis-entering-india-warns-bangladesh/articleshow/57741565.cms.

Hasan, Mubashar. (2017, January 11). Threats of violent extremism in Bangladesh are a symptom of deeper social and political problems. Retrieved from: http://theconversation.com/threats-of-violent-extremism-in-bangladesh-are-a-symptom-of-deeper-social-and-political-problems-70420.

Hijioka, Y. et al. (2014). Asia. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Retrieved from: https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap24_FINAL.pdf.

Hooper, Emma. (2010, December 25). Pakistan's Food Crisis: Water, Energy, Agriculture & Power, The Conflict Ahead. Barcelona Centre for International Affairs. Retrieved from: https://www.files.ethz.ch/isn/126043/notes_internacionals_25.pdf.

Human Development Report. (2017). United Nations Development Programme. Retrieved from: http://hdr.undp.org/en/composite/HDI.

Independent Commission for Aid Impact. (2011). The Department for International Development's Climate Change Programme in Bangladesh. Retrieved from: https://www.oecd.org/countries/bangladesh/49092047.pdf.

Kant, Amitabh. (2018, June 14). Composite Water Management Index (CWMI): A National Tool for Water Measurement, Management & Improvement. NITI Aayog. Retrieved from: https://niti.gov.in/writereaddata/files/new_initiatives/presentation-on-CWMI.pdf.

Kennedy, Jonathan. (2013). The Socioeconomic Determinants of Natural Resource Conflict: Minerals and Maoist Insurgency in India. Society & Natural Resources 28(2): 149-164. Retrieved from: https://www.tandfonline.com/doi/full/10.1080/08941920.2014.941447.

Kugelman, Michael. (2013, January). Urbanisation in Pakistan: causes and consequences. Norwegian Peacebuilding Resource Centre. Retrieved from: https://www.files.ethz.ch/isn/159296/4c5b5fa0ebc5684da2b9f244090593bc.pdf.

Kumar, Anand. (2010, May 7). Illegal Bangladeshi Migration to India: Impact on Internal Security. Institute for Defence Studies and Analyses. Retrieved from: http://www.idsa.in/event/IllegalBangladeshiMigrationtoIndia.

Kumar, Satish. (2017). India's National Security: Annual Review 2016–17. New Delhi: Routledge.

Kumar, Satish. (2018). India's National Security: Annual Review 2017–18. New Delhi: Routledge.

Krampe, Florian, Scassa Roberta and Mitortta, Giovanni. (2018, August). Responses to Climate-Related Security Risks: Regional Organizations in Asia and Africa. Stockholm International Peace Research Institute. Retrieved from: https://www.sipri.org/sites/default/files/2018-08/sipriinsight1808_igos_and_climate_change.pdf.

Kumaraswami, Sridhar. (2018, March 12). India, France launch solar alliance, promise funds. The Asian Age. Retrieved from: https://www.asianage.com/india/all-india/120318/india-france-launch-solar-alliance-promise-funds.html.

Lama, Nabraj. (2019, January). Re-negotiating the Mahakali Treaty in the changing geopolitics of Nepal. International Journal of Scientific and Research Publications 9(1). Retrieved from: http://www.ijsrp.org/research-paper-0119/ijsrp-p8554.pdf.

LeBeau, Nellie and Tuckfield, Hugh. (2017, June). The pavements and slums of Dhaka. Forced Migration Review. Retrieved from: https://www.fmreview.org/shelter/lebeau-tuckfield.

Leutz, Johannes. (2017). Climate Change and Migration in the Maldives: Some Lessons for Policy Makers. In: Leal Filho W. (eds.) Climate Change Adaptation in Pacific Countries. Climate Change Management. Cham: Springer. Retrieved from: https://link.springer.com/chapter/10.1007/978-3-319-50094-2_3.

Malhotra, Pia. (2010, July). Water Issues between Nepal, India & Bangladesh: A Review of Literature. Institute of Peace and Conflict Studies Report. Retrieved from: https://www.files.ethz.ch/isn/118874/SR95.pdf.

Mani, Muthukumara et al. (2018). South Asia's Hotspots: The Impact of Temperature and Precipitation Changes on Living Standards. International Bank for Reconstruction and Development / The World Bank. Retrieved from: https://openknowledge.worldbank.org/bitstream/handle/10986/28723/9781464811555.pdf?sequence=5&isAllowed=y.

Ministry of Earth Sciences, Government of India. (2018). Year-wise Deaths due to Heat Wave from 2010 to 2018. Retrieved from: https://data.gov.in/resources/year-wise-deaths-due-heat-wave-2010-2018-ministry-earth-sciences.

Ministry of Environment and Forests, Government of the People's Republic of Bangladesh. (2009). Bangladesh Climate Change Strategy and Action Plan 2009. Retrieved from: https://www.iucn.org/downloads/bangladesh_climate_change_strategy_and_action_plan_2009.pdf.

Ministry of Health & Family Welfare, Government of India. (2016). National Action Plan for Climate Change & Human Health. Retrieved from: https://www.ncdc.gov.in/linkimages/Draft%20National%20Action%20Plan%20for%20Climate%20Change%20&%20Human%20Health%20(NAPCCHH)4107978007.pdf.

Mustafa, Daanish, Akhter, Majed and Nasrallah, Natalie. (2013). United States Institute of Peace. Retrieved from: https://www.files.ethz.ch/isn/164380/PW88-Understanding%20Pakistan¹s%20Water-Security%20Nexus_0.pdf.

Newman, Edward. (2018). Hungry, or Hungry for Change? Food Riots and Political Conflict, 2005–2015. Studies in Conflict & Terrorism. Retrieved from: https://www.tandfonline.com/doi/full/10.1080/1057610X.2018.1454042.

Nordqvist, Pernilla and Krame, Florian. (2018, September). Climate Change and Violent Conflict: Sparse Evidence from South Asia and South East Asia. Stockholm International Peace Research Institute. Retrieved from: https://www.sipri.org/sites/default/files/2018-09/sipriinsight1804.pdf.

Ozaki, Mayumi. (2016, September). Disaster Risk Financing in Bangladesh. Asian Development Bank. Retrieved from: https://www.adb.org/sites/default/files/publication/198561/sawp-046.pdf.

Paliwal, Ankur. (2013, February 12). How Bhutan is Grappling with Climate Change. Down to Earth. Retrieved from: http://www.downtoearth.org.in/interviews/how-bhutan-is-grappling-with-climate-change-40310.

Pattanaik, Smruti S. (2014, May 16). Politics of Illegal Immigration and India Bangladesh Relations. Institute for Defence Studies and Analyses. Retrieved from: https://idsa.in/issuebrief/PoliticsofIllegalImmigration_sspattanaik_160514#footnote27_1fd3swj.

Philip, Deepa. (2015, November 13). United Nations Development Programme. Retrieved from: http://www.europe.undp.org/content/geneva/en/home/presscenter/articles/2015/11/13/climate-change-is-as-real-as-it-gets-on-the-ghoramara-island-which-is-slowly-eroding-into-the-depths-of-the-bay-of-bengal-.html.

Pisharoty, Sangeeta Barooah. (2018, August 5). Both the BJP and the Trinamool Congress Are Stirring the Communal Pot in Assam. The Wire. Retrieved from: https://thewire.in/politics/bjp-tmc-nrc-assam-communalism.

Rahman, Kazi Saidur et al. (2019). A critical review of the Ganges Water Sharing arrangement. Water Policy 21(2): 259-276. Retrieved from: https://iwaponline.com/wp/article/21/2/259/66094/A-critical-review-of-the-Ganges-Water-Sharing.

Salim, Imtiaz. (2018, April 18). Bangladesh plans to buy 2,000MW solar power from India. Dhaka Tribune. Retrieved from: https://www.dhakatribune.com/bangladesh/power-energy/2018/04/18/bangladesh-plans-buy-2000mw-solar-power-india.

Schafer, Hartwig. (2019, January 9). World Bank. Retrieved from: https://blogs.worldbank.org/endpovertyinsouthasia/south-asia-bright-spot-darkening-economic-skies.

Shah, Sonia. (2011, February 17). Climate's Strong Fingerprint In Global Cholera Outbreaks. Yale Environment 360. Retrieved from: http://e360.yale.edu/features/climates_strong_fingerprint__in_global_cholera_outbreaks.

Singh, Bawa and Kaur, Jaspal. (2019, July 17). Eurasia Review. Retrieved from: https://www.eurasiareview.com/17072019-a-nation-of-paradoxes-when-bhutan-refugees-re-integrated-into-philosophy-of-gross-national-happiness-oped/.

South Asian Association for Regional Cooperation. (2014). Kathmandu Declaration. Retrieved from: http://mea.gov.in/Uploads/PublicationDocs/24375_EIGHTEENTH_SUMMIT_DECLARATION.pdf.

Stabinsky, Doreen. (2014, March). Defining Role of Agriculture in South Asia. Climate Action Network South Asia. Retrieved from: http://www.cansouthasia.net/pdf_files/Defining%20Role%20of%20Agriculture%20in%20South%20Asia.pdf.

Stolbova, Veronika et al. (2016). Tipping elements of the Indian monsoon: Prediction of onset and withdrawal. Geophysical Research Letters 43: 3982-3990. Retrieved from: https://core.ac.uk/download/pdf/131024399.pdf.

Szczepanski, Marcin, Sedlar, Frank and Shalant, Jenny. (2018, September 13). Bangladesh: A Country Underwater, a Culture on the Move. Natural Resources Defense Council. Retrieved from: https://www.nrdc.org/onearth/bangladesh-country-underwater-culture-move.

The Commonwealth. (n.d). Sri Lanka: Constitution and Politics. Retrieved from: http://thecommonwealth.org/our-member-countries/sri-lanka/constitution-politics.

The Energy and Resources Institute. (2015, August 1). Global Sustainable Development Report 2015: Climate Change and Sustainable Development – Assessing Progress of Regions and Countries. New Delhi: Oxford University Press.

The Energy and Resources Institute. (2019). Kashmir's Crown Kolahoi Glacier is in Deep Water. Retrieved from: https://www.teriin.org/photo-story/kashmir-crown-kolahoi-glacier-deep-water?utm_source=May2019newsltr&utm_medium=May2019newsltr&utm_campaign=May2019newsltr.

The Nansen Initiative. (2015). Climate Change, Disasters and Human Mobility in South Asia and the Indian Ocean. Retrieved from: https://www.nanseninitiative.org/wp-content/uploads/2015/07/150715_FINAL_SUMMARY_OF_CONCLUSIONS_SOUTH_ASIA_REGIONAL_CONSULTATION_screen.pdf.

UN Women Fiji. (2014). Climate change disasters and gender based violence in the Pacific. United Nations Entity for Gender Equality and the Empowerment of Women. Retrieved from: http://www2.unwomen.org/-/media/field%20office%20eseasia/docs/publications/2014/6/sids%20brief%202%20climate%20change%20disasters%20and%20gender%20based%20violence%20in%20the%20pacific.ashx?la=en.

United Nations Development Programme. (n.d). Strengthening the Resilience of Post-conflict Recovery and Development to Climate Change Risks in Sri Lanka. Retrieved from: http://www.lk.undp.org/content/srilanka/en/home/operations/projects/environment_and_energy/Climate-Change-Adaptation.html.

Vinke, Kira et al. (2017). Climatic risks and impacts in South Asia: extremes of water scarcity and excess. Regional Environmental Change 17(6): 1569-1583. Retrieved from: https://hal-amu.archives-ouvertes.fr/hal-01771766/file/TDTH-SpecialIssue-SouthAsia_Review_final_submission.pdf.

Wester, Philippus et al. (2019). The Hindu Kush Himalaya Assessment: Mountains, Climate Change, Sustainability and People. International Centre for Integrated Mountain Development. Retrieved from: https://link.springer.com/content/pdf/10.1007%2F978-3-319-92288-1.pdf.

White, Stacey. (2015, May). A Critical Disconnect: The Role of SAARC in Building the DRM Capacities of South Asian Countries. Brookings. Retrieved from: https://www.brookings.edu/wp-content/uploads/2016/06/Role-of-SAARC-in-DRM-South-Asia-May-5-2015.pdf.

World Bank. (2007, June). Dhaka: Improving Living Conditions for the Urban Poor. Bangladesh Development Series Paper No. 17. Retrieved from: http://siteresources.worldbank.org/BANGLADESHEXTN/Resources/295759-1182963268987/dhakaurbanreport.pdf.

World Bank. (2018a). Population, female (% of total population). Retrieved from: https://data.worldbank.org/indicator/SP.POP.TOTL.FE.ZS.

World Bank. (2018b). Population, total. Retrieved from https://data.worldbank.org/indicator/SP.POP.TOTL?locations=8S&view=chart.

Zafarullah, Habib and Huque, Ahmed Shafiqul. (2018, July 2). Climate change, regulatory policies and regional cooperation in South Asia. Public Administration and Policy: An Asia-Pacific Journal 21(2): 22-35. Retrieved from: https://www.emerald.com/insight/content/doi/10.1108/PAP-06-2018-001/full/html.