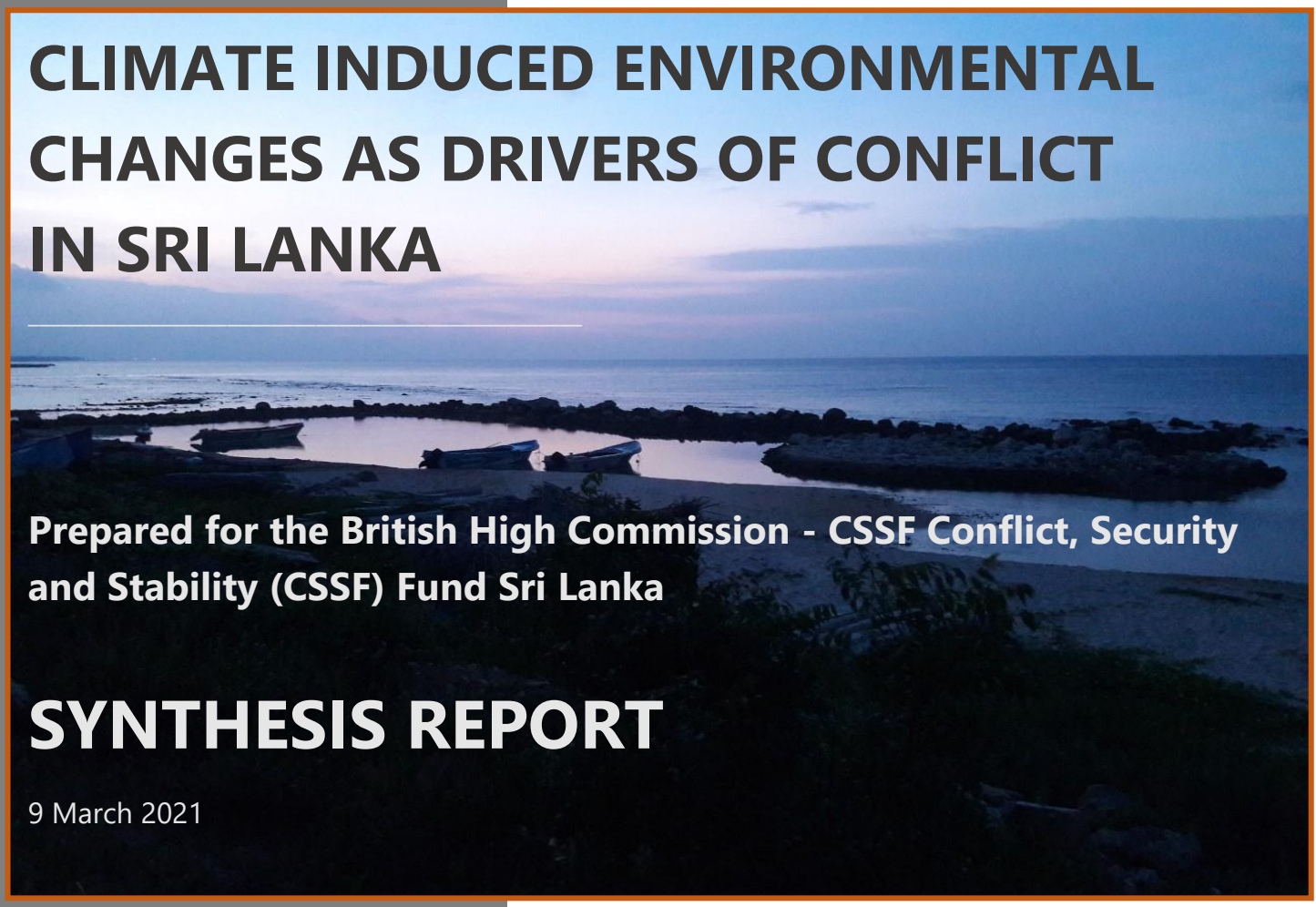
CLIMATE INDUCED ENVIRONMENTAL CHANGES AS DRIVERS OF CONFLICT IN SRI LANKA



Prepared for the British High Commission - CSSF Conflict, Security and Stability (CSSF) Fund Sri Lanka

SYNTHESIS REPORT

9 March 2021

Acknowledgements

This report has been prepared by the Centre for Poverty Analysis. The report has been compiled by Karin Fernando, Nuwanthika Dharmaratne, Navam Niles, K. Romeshun, Minuri Perera and Sheran Munasinghe. Support for field work, interviews and transcribing was provided by Amila Balasuriya, Imam Adhnan, Basith Inadeen, Sujanthy Sureshkumar and Dilshani Ranawaka. The team also had the valuable support of Jehan Perera, Vishaka Hidellege and Gayathri Lokuge for review and advice.

The team wish to acknowledge and thank all those stakeholders who met with us and who provided valuable inputs for the case studies and the synthesis paper. Without them this report with not be possible. We also thank the team at the British High Commission, Charlotte Smart, Andrew Price and Thusandra Vijayanathan for their valuable support and patience.

Introduction

The objective of the study is to identify climate induced environmental drivers (not all forms of environmental impacts) that can cause or aggravate conflict. It is useful to first define some parameters within which this study took place.

There are a broad set of environmental impacts with spatial and temporal variation, which may or may not lead to climate change. Therefore, for the purposes of this study **climate change impacts** are defined as shocks that are internationally recognized as having changed the global climate. Thus, based on Sri Lanka's context, four such shocks – rising sea-levels, increasing weather variability that results in droughts, floods and flood induced landslides are identified as the main climate shocks. These shocks result in impacts (such as soil erosion, salinization, depletion of ground water) that damage human and natural systems. These are considered **climate induced environmental impacts**. The study recognises that at the local level, other environmental threats or human activities aggravate these climatic shocks and they cannot be easily separated.

Conflict in relation to natural resources is also not only about armed conflict. It is understood as governance issues concerning who manages the resource, who uses the resource and who is consulted when decisions are made. Thus, there are competing interest at play and can result in conflict. These conflicts vary in scale and actors involved. It can be local, national or transboundary and can include two or several stakeholders like businesses, national governments, civil society organizations, local authorities or different types of communities and livelihood groups. The reasons for these conflicts to arise are socio-economic and political. The United Nations Development Programme (UNDP) defines these conflicts as those that arise from a lack of **human security** based on 7 aspects of security: economic, food, health, environment, personal, community and political[1]. Thus, in this study, conflicts are expected to arise where there is a lack of any aspect of human security.

Another important aspect to note is that in many instances conflicts arise when the resources in question are **common pool resources** – which are limited, and shared (non-exclusive) resources used by a range of users – both human and non-human. These include water (for households and agriculture), land (for housing, paddy, grazing, etc.), fisheries, air, and certain types of natural and physical capital. Managing and sharing these resources can lead to exploitation by some groups as well as depletion of the resource[2]. Climate change can increase the stress on common pool resources, causing more human insecurity if governance systems are strained or fail altogether[3].

[1]UNDP (1994) Human development report. 1994. New York; Oxford England: Oxford University Press for UNDP.
[2]Hardin, G. (1994). The tragedy of the unmanaged commons. Trends in ecology & evolution, 9(5), pp. 199.
[3] Mann, M. E. (2017) 'Climate Catastrophe Is a Choice: Downplaying the Risk Is the Real Danger', Foreign Affairs, Foreign Affairs, Available: Council on Foreign Relations. Available at: https://www.foreignaffairs.com/articles/2017-04-21/climate-catastrophe-choice (Accessed 04/02/2020).

In that same vein, while climate change on its own is not seen as a source for conflict, in situations where there is scarcity, lack of management or poverty, or political instability, it can aggravate stressors and act as a **threat multiplier** (Lewis and Lenton, 2015)[4].

Under this backdrop, the conceptual framework used by this study is as follows: The frame examines what takes place when **non-climatic factors**, such as pre-existing social, political and economic conditions, interact with **climate shocks**, such as droughts, floods, sea level rise that in turn acts as threat multipliers. The threat multipliers are not linear and can be multi-directional. They can arise from issues of scarcity, governance and resource management as well as through issues due to the global commons and transboundary nature of shared resources. When these two aspects interact – they **expose** communities to insecurities that they will face based on their **internal capabilities** (their own capacity to cope with the changes that depend on aspects such as income, gender, education, geography). Thus, just at **exposure level** they experience human insecurities that can lead to conflicts. Also, conflicts or insecurities can arise at the **response/or adaptation** level when the State and other actors offer some sort of intervention (Physical - infrastructure, technology; Institutional – laws/ regulations, capacity; or transformational – relocation, alternative jobs). These responses can be positive or negative differentiated outcomes among groups – even causing conflict or even new social or environmental threats.

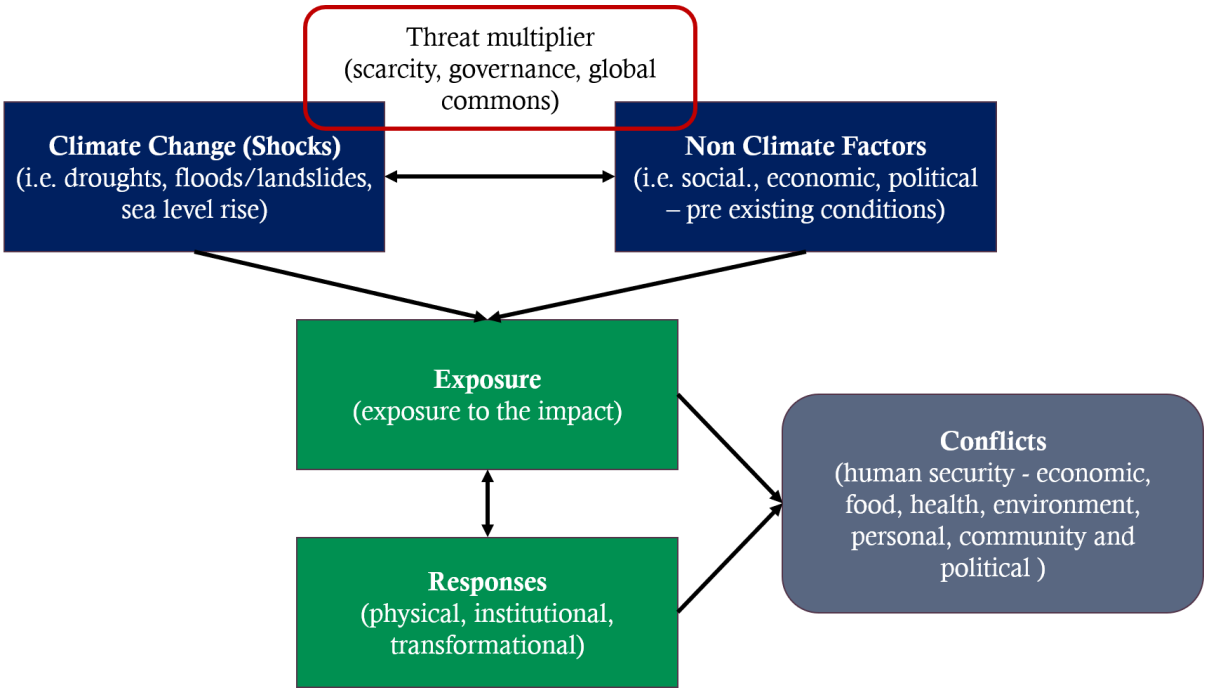


Figure 1: Conceptual framework developed for the study

[4] Lewis, K. H., and Lenton, T. M. (2015). Knowledge problems in climate change and security research. WIREs Clim Change, 6. 383–399. https://doi.org/10.1002/wcc.346.

The study combines a literature review[5] (Phase 1) that collected broader information on the topic and a set of case studies drawn from stakeholder interviews and location specific data[6] (Phase 2) to provide more nuanced information. Data from these two phases have been used to synthesize this report. Accordingly, the synthesis is done to guide the selection of appropriate adaptation response to reduce conflict caused by climate induced environmental impacts. The findings of this study are expected to provide insights and recommendations to the British High Commission (BHC) for their future programming and will be shared with other development donors.

Defining the exposure levels and field visits

Through the literature review, the study attempted to get a broad overview of the climate change impacts on human insecurity. One of the main objectives was to get a sense of how these impacts and arising insecurities may be different in different parts of the country. In order to do that, the Government of Sri Lanka's (GoSL) 2011 Climate Data Vulnerability Mapping source book[7] was used. It ranks locations (by divisional secretariats, districts, and provinces) by exposure to climate induced environmental impacts, general vulnerability indicators (including the levels of poverty, education, and the size of the rural population in each area), and vulnerability indicators specific to environmental impacts (e.g., the quality of housing when examining the vulnerability to floods or rising sea-levels). Once highly vulnerable locations were identified, the government's National Adaptation Plan and a range of other literature were used to evaluate the levels of human insecurity and access to adaptation. The GoSL's Climate Vulnerability Data and Maps are being updated but this resource is still not accessible to the public. An interview with a resource person involved in this process confirmed the locations highlighted as vulnerable in the 2011 report still stand. However, the 2011 version did not fully incorporate data from the North and the East, and the new mapping indicates there are Divisions in these Provinces that are highly vulnerable. Based on the literature review and follow up interviews a crosscut of vulnerable districts was selected for field visits. The selected locations were aimed at providing ecological and demographic variation to understand the formal and informal institutions, and the stakeholder's interests and power relationships. The locations selected for primary data collection were Mannar and Jaffna in the Northern Province, Anuradhapura in the North Central Province, and Kalpitiya in the North Western Province. Two case studies were also developed from secondary and existing primary information on urban issues centred mainly around Colombo in Western Province and on rural drinking water that used information from different parts of the country and some specific examples from work carried out in Ratnapura in the Sabaragamuwa Province.

[5] The Centre for Poverty Analysis (2021). Climate change as drivers of conflict in Sri Lanka. Desk Review. Prepared for the British High Commission.
[6] The Centre for Poverty Analysis (2021). Climate induced environmental changes as drivers of conflict in Sri Lanka. Case Studies (Final Draft). Prepared for the British High Commission.
[7] Climate Change Secretariat (2011). Climate Change Vulnerability Data Book. Colombo: Ministry of Environment.

Findings

There were three main issues in relation to natural resources:

1. **Water scarcity is a main concern in relation to rising conflicts that impacts different aspects of human security**: There are multiple and linked impacts of sharing water for agriculture and drinking. The literature review and the case studies show that the severity of water scarcity increases for communities in the dry zone who are reliant on agriculture as a primary livelihood. It is also severe for locations where households rely on groundwater for agriculture and for drinking water and other uses. Drought conditions are more serious than floods and both conditions are increasing due to a mix of climate change and anthropogenic activities. The scarcity is seasonal and temporary, but incidences are increasing and spreading over longer periods with increased impacts on human security and costs to the State. As these issues continue to increase, dealing with water sharing and scarcity will require recognizing that conflicts can emerge, and impact communities and individuals based on: *the type of use, who is managing it, where people live, their assets and jobs, their gender, ethnicity, and caste*. For example:

    Conflicts over water sharing based on type of use and location: In Jaffna, a dispute arose over a project aimed at increasing both agriculture water in Killinochchi (Iranamadu Tank) and drinking water in the Jaffna town area. Given the increased incidences of droughts and water scarcity the farmers were not convinced that there was enough water to share during the dry periods. It caused a design change with a reverse osmosis plant included for drinking water that increased the cost of scheme. It also resulted in delays in the project.

    Perceived fear of marginalisation based on control of water over district boundaries: Although the project is aimed at building a tank (in Tantirimale in the Anuradapura district) and channelling water to both Anuradapura and Mannar, there is some doubt and fear that during times of water shortages or during floods or periods of excess rain, there will be negative impacts on Mannar. Thus faced with a water crisis, the past context brings out the fear of ethnic bias.

    Caste-based discrimination on accessing resources within groups: In cascade tank systems, especially during *yala* in a situation with limited water, when decisions are made in the community water committees caste-based discrimination has been noted. This was seen in the case in Anuradhapura. Having better links with officials to get support or having more control or decision-making power in water sharing decisions are privileged options that low caste members do not have.

    Lack of women's participation in decision making: Given the current membership of farmer organisations there are few women who are part of these groups. Even in situations where their husbands who are the farmers have migrated out of the village in search for work, and women manage the farms back in the village, they are not part of the groups that make decisions over water sharing. They do not hold key positions in farmer organisations. This limits their ability to access not just water but also other services. Thus, in the face of greater climate threats, their vulnerability will also increase.

Multiple shocks reducing the efficacy of some initiatives to deliver: In coastal areas where droughts are increasing, there is also a high chance of another climate impact – salt-water intrusion. As is the case

for many communities in the North and North western coasts. These areas are then having to deal with shortages of water for agriculture and drinking. As pipe borne water supply services are limited, community managed rural water supply schemes are promoted as a best way forward. In the face of water scarcity, these schemes face greater challenges. There are insecurities when people misuse the community water supply systems (using it for other purposes other than for drinking), or when there are technical issues arising due to the source, the quantity and quality of the water. Doubts are also raised on if communities can continue to manage these systems if there are greater technical issues in the face of greater scarcity of water. Another weak point highlighted in these schemes is the lack of technical support and coordination from the responsible authority.

Water scarcity that leads to prolonged droughts can also result in disruptions to the social fabric: One such consequence is related to migration. Migration is used as a last resort coping mechanism – where it is usually the male farmers (as in the case of Anuradhapura), who migrate seasonally to urban centres in search of alternative jobs. As their skill levels and networks are often limited, they resort to jobs in construction, as labourers, security guards etc. Extended periods of separation from their families and the exposure to drugs and alcohol within an unfamiliar environment leads to severe impacts on family stability, mental health and overall wellbeing. It also takes a toll on the women who stay behind - increasing their workload with less access to livelihood services. While migration may result in helping the family financially, it leads to other problems.

On a positive note, there are community-based water management models that allow communities to have management and user rights to this resource: These models are in operations for both irrigation and drinking water – for cascade systems and for rural community water supply. These mechanisms have rules and regulations that are formally recognised. In Kalpitiya in a coastal village, where potable drinking water was extremely limited due to salinization, a slightly different model was in operation. Here a community society was set up to provide water for their own community as well as to sell water to the nearby hotels. The community has generated extra revenue and created a service to the hotel industry through service provision**.** However, the **root cause for some of the conflicts around water sharing arise due to gaps in coordination and manipulation of the water management systems** – both in formal and informal systems in place (discussed under adaptation).

2. **The fisheries sector shows many dimensions of conflicts:** Coastal regions are more vulnerable - facing shocks from rising sea levels as well as exposure to droughts or floods. Ocean acidification (due to El Niño) along with damaging fishing practices (unregulated nets, illegal methods, overfishing) have contributed to the destruction of the coral beds and marine resources, which in turn has reduced the availability of fish stocks and the productivity of fishing efforts. The climate impacts combine with issues of politics, ethnic and caste identity, skills and loopholes in management to undermine the industry and natural resource base especially in the **Northern Province** (but not limited to it):

    Politics of the sea: In the Northern waters there is the constant battle between Indian trawlers and local fisherman. This has escalated since the end of the war. The main bone of contention here is the lack of political commitment to solve a problem both of international relations and at the national level of a minority group. Politics based on ethnicity within the fisher community also leads to the imbalance of access to resources for development. The Southern Fishers, for example, are said to have the support of the forces and get access to the Northern harbours. While in Mannar there have also been protests over the construction of a harbour by various

groups with vested interests, including Pesalai's Catholic community, fishermen engaged in trawling, politicians and others said to be involved in illegal sand mining and drug smuggling. There also was a fear that Sinhalese community will come and settle in the area and lead to conflict. These ideas have then stalled development projects in the area – even after consultations and feasibility studies have been done.

Caste-based difference on access to resources within groups: Non-traditional groups have started to fish in both previously occupied and newly released areas in the Northern province. Belonging to a different caste than of the traditional fishers, they are not allowed to use the same harbours. The harbours built for them are also not of the same quality as those used by their northern and southern counterparts. In addition, even though they have different funders for access to boats and technology, some of the newer fishers are also not skilled sufficiently to exploit the waters. There are conflicts between these resettled communities and traditional fishers on fishing rights. As there is now more competition for the same resources and more stressors on the resource these conflicts can become more severe.

Unequal fishing fleet/lack of capacity: This too creates insecurities as years of war and isolation have left the northern fishing fleet under-developed. This means they cannot capitalize on the fishing and are undermined by migrant fishers as well as by the Indian fleet.

Licensing and regulating fishing are not properly enforced: While there are rules and regulations in place, lack of capacity to enforce them, elite capture and politics mar the proper implementation and therefore the equitable access to fishing grounds. The operating license legalises the type of fishing including the methods and nets that are used. However, it is open to interpretation, and the enforcement and monitoring is not adequate. This leads to clashes between traditional and modern fishers on how fishing is done. When such an issue occurs, various formal and informal methods – going through the fisheries societies, the local fisheries authorities, the police, politicians, filing a case – are used to try and solve the problem. The process is not transparent and applied in the same manner. It creates ways in which the groups jostle to get ahead. This is the case all over the country and was specifically seen in Kalpitiya where both formal and informal structures failed in enforcing regulations.

Management of marine resources is sparse and open to destruction: Given the spread and limited capacity of the State institutions involved in the sector, there are few protected areas around the country. Bar reef in Kalpitiya shows the challenges of protecting such a sanctuary. It suffers from climatic threats (bleaching due to El Niño) but also destructive fishing and damage from tourism. Despite better control mechanisms being in place, with better support from the community, the illegal practices continue. This too leads to conflicts between the State and the fishers, and among community groups. The end result is reduced health of the marine ecosystem and the fisheries stock.

3. **Rising conflicts and uncertainties around the management of protected areas.** The ability to protect common property as protected areas is becoming increasingly challenging in the country. This leads to future consequences of a depleting carbon sink and destabilization of ecosystem services which in turn hinders the ecosystem's resilience against the impacts of climate change. How these decisions are arrived at and who benefits from these common goods are also key concerns. The implications are far-reaching in the sense of how national processes are used to enact such

measures and if there are effective modalities available for groups/communities to input into the process, to negotiate, to mediate or to take action against it.

Protected land being encroached by different communities with diverse interests: for settlements, farming, tourism etc. This leads to conflict on different level, i.e. between communities and State institutions, businesses and environmental interest groups etc.

Protected land being degazetted for other land use purposes: Most recently, protected land has been degazetted for other purposes. In 2017, the first prominent case was taken to court regarding the degazetting of three forest reserves (Vilaththimulam, Maraichukkaddi/Karadikkuli (Kallaru), and Periyamurippu) surrounding Wilpattu National Park for the resettlement of a group of Internally Displaced Persons in Mannar. In the past year several more cases have surfaced: the Vidathalthivu wetland also in Mannar as well as the most recent degazetting of the 700,000 hectares of Other State Forests (OSF) across the country (circular 5/2001). This land is being released for *chena* farming and other economic purposes. The daily media coverage and environmental groups are reporting degradation, encroachment and acquiring of land throughout the country – not just for chena but also for larger enterprises. They also raise alarm bells that this will lead to greater human elephant conflict in addition to environmental degradation. This further enables encroachment and the destruction of protected areas.

Conflicts at all levels: The conflict that arise from these circumstances have also increased and are taking place between many parties: between the State and environmental interest groups; between State institutions; between State and local communities; between Local communities and business interests; and between different local communities.

There are also other issues arising in relation to competing demand and use of these resources:

Conflict in tourism show difficulties in reconciling competing claims for common-pool resources by different communities. These conflicts are clear in coastal areas, which account for the bulk of tourist activity. These areas also face multiple climatic threats – erosion, salinization, floods. The tourism establishments usually want to maintain exclusive or privileged access to common-pool resources such as beaches, reef systems, and other natural capital. Fishers often view the tourism industry with suspicion, arguing that the gains of tourism flow exclusively to the hotels, while the costs - including pollution or new rules on movement or access to landing sites - are borne by local communities. However, local authorities and local communities that are not involved in fisheries are keen to welcome a diversified local economy that often pays better wages and opportunities – although women still find it hard to capitalise on these opportunities due to societal biases about this industry as a suitable career for women. When climate shocks continue to damage the commonly used natural capital, the conditions for conflict increase as insecurity for the various parties' increase. These insecurities can often be borne disproportionately by separate groups or individuals within these groups.

A positive negotiation between the community and tourism operators can be achieved when both parties benefit: In Kalpitya currently there is a common understanding between the community and the tourism operators on how tourism can be done to benefit both parties. This was decided on by the two parties. It ensures the involvement of the community in tourism activities and they are decision-makers on what happens in the area. It incentivises the involvement and reduces the conflict. It is not a formalised agreement but one that is followed – for the moment.

Urban poor resettlement in high rises as a response to floods can cause some wins and some losses: While rural communities are directly dependent on natural resources and are generally more affected by climate change, people who live in urban areas who may not depend directly on natural resources are also affected by climate change. A group that is generally more badly affected are urban poor who live in underserved settlements. Often these settlements are on encroached freehold land in low lying areas or floodplains. Often, they are heavily degraded lands where the exposure to environmental and other hazards/impacts are higher and infrastructure to manage those impacts are often absent or poorly distributed. Even if the shocks they face (like floods) are temporary, it can be significant for particular groups like wage earners. The solution or response offered to them is resettlement to high rises to reduce the disaster risks of floods. While it does offer safety from flooding it can have disruptions to livelihoods, issues of safety and security for women, while children lose safe playing areas and can be more directly exposed to drugs. In addition, the recent COVID-19 outbreak highlighted the plight of physical and mental trauma of constricted living spaces. As resettlement is offered as a solution for those facing displacement from natural disasters and conflicts – it is necessary to think about the multi-dimensional aspects of resettlement and rehabilitation and offer a holistic approach considering the multiple needs, space for dialogue and involvement in decision making.

Connecting national level processes to local level implementation is minimal: Sri Lanka has developed a set of Nationally Determined Contributions (NDCs) through a collaborative process. These NDCs have recently been revised. Sectoral targets were developed with key responsibilities assigned to various State bodies at National level. The recent revisions also included loss and damages as well as gender into the NDCs. These NDCs have also been aligned to the Sustainable Development Goals. Sectoral agencies are responsible to ensure that the NDCs are incorporated into their plans, while the monitoring of the plan is the responsibility of the Ministry of Environment. This participatory agenda setting is a positive step that provides collective responsibility. However, the NDCs also need to then be filtered down to the ground level where they should be implemented in an integrated manner.

Adaptation Responses

Adaptation responses to resource management as identified in the study (and discussed briefly in previous sections) can be broadly categorised into three types: physical/infrastructure or technical, institutional (laws/regulations/resources management structures and social protection/capacity development), and transformational (behavioural/reskilling/resettlement).

The most common targeted response was physical infrastructure development – carried out as technical solutions. This included putting in place infrastructure such as rehabilitating irrigation infrastructure to address agricultural water scarcity, establishing desalination schemes that cater to drinking water needs, and rehabilitating harbours for displaced fisher communities. These types of adaptations are common, direct and tangible and directed at augmenting the natural resource for use by more people. They however largely concentrate on the technical responses. These types of projects and initiatives typically do not pay as much attention to address other aspects – such as soft skills or management or regulations. While some systems are in place they do not adequately put in measures for managing climate related conflicts, at the implementation stage or after outcome of the projects. In the end, it has resulted in delays or work being cancelled, or greater marginalisation or more conflicts/insecurities.

For example, in the case of providing drinking water to Jaffna, the Iranamadu tank project - which is still considered to be the most financially viable response, was contested by the farmers in Kilinochchi. They feared that sharing their main source of agricultural water to fulfil drinking water needs in a different district would increase their vulnerability to climatic pressures.

Institutional development or providing guidelines, laws, regulations and support for local institutional structures is also seen as a common response for conflict resolution in resource use and management. These are not specifically adapted to deal with climate change induced conflicts but are used widely to manage the resources and in doing so addresses conflicts related to resource scarcity, access and quality. However, different approaches to institutional development exists as they are facilitated through different projects and to meet different objectives. This leads to a difficulty in standardizing the principles, procedures and elements of the institutional structures.

The literature recognises three different conflict resolution modalities: (a) formal approaches, (b) informal/customary approaches, and (c) alternative approaches (hybrid). Alternative approaches involve third party negotiations whereby Non-Government Organisations (NGO) and Community Based Organisations (CBO) attempt to reach settlements through negotiations. All types of approaches have been used in conflict resolution. Global Environmental Facility identifies alternative approaches to have had a better degree of success as opposed to its counterparts for managing common pool resources.

Formal approaches mainly take the form of laws and regulations. For example, regulations and a permit system for the use of specific gear and methods were seen in the fisheries industry, while there are also some formal processes in place for water sharing. However, in both instances, the regulations were not enforced adequately or equitably and there were misperceptions on how to access permits, which state entity to liaise with or how to submit grievances regarding the abuse of the system. Additionally, gaps in coordination between different state institutions that manage a common resource also undermined the role of formal systems in conflict resolution.

Informal options/ customary approaches were seen in Imbulgodayagama, by the Farmers' Organisation who were able to create consensus and enforce rules on the maintenance and management of the rehabilitated tank. A successful informal approach was also seen in Kalpitiya where the tourism operators the local fisheries community have integrated their operations through informal agreements.

According to the case studies as well as the literature, informal institutions work best when the groups are homogenous, conflicts are localised and when they are equipped with widely accepted and clear rules. When insecurity threatens to bring different heterogeneous groups into conflict over a common-pool resource, informal institutions may be insufficient.

Formal institutions are better suited for resolving conflicts between groups with different identities and between groups that are physically distanced from each other who depend on common pool resources. For example, in the case of fisheries, there is an urgent need for a formal solution to the conflicts between Sri Lankan and Indian fishers. In such a situation, physical adaptation and informal systems are inadequate. But formal institutions can take a very long-time develop and can be biased towards more dominant parties – requiring national and even international agreements and the involvement of civil society organizations to address issues of equity. However even with these systems in place, political will, monitoring and accountability are needed. Community voice and civil society action and if required international intervention/pressure are also needed to ensure that laws and regulations are followed. These levels of the safeguards are necessary.

A combination of a formal and informal approach is seen in the model for participatory water management in small tank cascade systems where local Farmers' Organizations play the central role in decision making but are backed by state officials and institutions at the higher levels of the model. Evidence from Jaffna however indicates that interventions by the State have sometimes undermined the ability of local institutions to act effectively. For instance, the establishment of Rural Fisheries Organizations (RFOs) parallel to existing fisheries cooperatives has increasingly politicized local structures and limited the institutional capacity of traditional groups to work to resolve conflicts.

NGOs and CBOs play an important role within these structures as actors that specifically address issues of marginalization and equity. For example, in Anuradhapura, their mediatory role in empowering women and groups belonging to lower castes was seen. In Jaffna, their involvement in facilitating dialogue between Indian and Sri Lanka fisher groups was evident.

Some projects take on a more integrated approach including both physical and institutional responses. The community rural water supply schemes for example had a more integrated approach with an infrastructure component, a management component and a training component. It had a clear objective that was beneficial to the community and as well as the service provider, and a set of rules and regulations to guide them after the "project" phase was over. There has been good coverage with these schemes but some shortcomings in terms of coordination and commitment from the community are noted. Furthermore, in areas where there are droughts and water scarcity, these systems will require more attention to provide technical support from the service provider.

A more recent initiative is in place for integrated water management that attempts to take a more holistic approach to resource management. The effectiveness of its infrastructure development element that includes rehabilitation of cascade systems, the establishment of rainwater harvesting mechanisms etc. has been reinforced by initiatives that address gaps in local capacity building, marginalization and coordination among stakeholders. Additionally, the project desegregates the multiple uses of water (agriculture, drinking, domestic) while also addressing vulnerabilities caused due to extreme weather conditions (droughts, floods). This project has taken steps to work directly to strengthen the village level groups consisting of farmers, women, those with disabilities etc. to mobilize the activities of this project.

In addition, in Kalpitiya, the tourism operators and the community successfully integrated the needs of the fisher community, tourism industry and environmental limitations when carrying out developmental activities and changes to livelihoods. However, there is fear that the State's future tourism agendas may overlook community interest and contextual factors which will ultimately impede the success of these joint ecotourism ventures in the area. Some mechanisms that address climate change induced resource management issues also take an integrated approach. For example, development of institutional capacity to provide more timely and locally relevant weather advisories brings together tools and technologies that are required for forecasting while also increasing the capacity of farmers and local institutions to use and benefit from them. In another example, encouraging climate sensitive cropping patterns include the provision of physical material such as climate resilient seeds and tools while also increasing the knowledge of farmers on how to best manage water and weather patterns to optimize the harvest from such seeds.

The most comprehensive and therefore the most costly and time-consuming response is transformational adaptation. This means complete changes such as relocation of exposed communities, changing livelihoods or creating behavioural changes. Transformational interventions

combine physical and institutional responses and takes context specific needs into consideration. It may also involve social and political change.

Examples from the North show that natural resource conflicts are driven by more than just resource scarcity and climate impacts. Instead, the community's ethnic and caste identities, power struggles between districts and sectors, limitations in technical capacity due to long-term isolation and gaps in the rehabilitation process, all contribute to the vulnerability of different groups. Therefore, transformational adaptations are necessary to capture the interplay between these drivers.

Similarly, in Colombo, while the relocation of urban dwellers in low lying flood reserves is an important response to climate risks, a more inclusive, versatile and people-centric approach to the process of relocation may have minimized the conflicts that currently exist in terms of livelihood security and social stability that have arisen regarding relocation to high rise buildings.

In the case of water sharing in the dry zone, a transformational approach is necessary to attain more long-term resilience. For instance, strengthening the role migration and diversification can play in reducing the dependence of the community on natural resources will be as important as integrating climate conscious thinking and indigenous knowledge for improved water management.

Development Partner/Donor Profile

Many of the adaptation responses have been aided by Development partner and donor support. In terms of development partner and donor led interventions this analysis identified 136 recent projects (active since 2018[8]) that address human development but also directly or indirectly address natural resource management and /or climate change adaptation[9]: 67% had principal objectives that targeted environmental concerns while 33% had significant objectives with other prime objectives that were adjusted to meet environmental related concerns. Amongst these projects the Asian Development Bank (ADB) accounted for 13% of the total projects. The World Bank (WB) was the second most prominent multilateral donor. Japan and Korea were the two biggest bilateral donors identified. The larger donor landscape includes, but is not limited to, the donor such as Asian Infrastructure Investment Bank (AIIB), and development partners such as Global Environment Facility (GEF), Special Climate Change Fund, Green Climate Fund (GCF), Agence Française de Development, the German Embassy and the governments of Australia and Austria. Out of the projects screened, 50% were funded through grants, 46% through loan schemes while 3% only received technical assistance (non-financial assistance, i.e. specialist training, technical support). In terms of focus areas, water and sanitation, specifically infrastructure improvement to ensure better access to water was prominent. Some of the projects addressed strengthening existing structures and regulations to address better management of common pool resources or extended out to link to actions on livelihoods or health.

[8] Projects stated as active in 2018 and beyond were identified through the OECD database (2018) as well as through donor/development partner websites referred in May / June 2020. This search captured what was publicly available and is not a comprehensive list.

[9] This categorization was done by the OECD database.

Conclusion of findings

In conclusion, achieving human security in all its dimensions is coloured by past experiences, elite capture and ethnic dimensions and more importantly institutional processes. In addition, climate change can contribute to the reduction of a natural resource base and reduce the predictability of its availability that in turn exacerbates many aspects of human insecurity. Thus, it does act as a threat multiplier. This can then have adverse impacts on particular groups of people, especially in terms of how they are exposed to the threat and how they respond to it. The two most common points at which these issues emerge in relation to climate change is when there is a scarcity of resources and when there is a governance failure over the management of that resource. There is a gap in using strategies that improve social cohesion and inclusivity to enable better resource management. This was evident in both water management and fisheries management. Therefore, an opportunity exists to meet these two objectives harmoniously by making climate change adaptation strategies conflict-sensitive and social cohesion strategies climate-sensitive.

Recommendations

Whether the approach of the programme or project is through a climate change lens, a governance lens or peace building objective, several components need to be incorporated into its design, implementation and mainstreaming efforts. These components have been suggested based on the drivers of conflict and the gaps in existing response mechanisms that have been implemented by different stakeholders.

As such, we recommend that adaptive strategies take on a three-pronged approach that looks to:

1. Increase or stabilise the natural resource pool (to manage scarcity)

2. Improve benefit sharing modalities (to enhance equity)

3. Improve governance/management (to reduce conflict)

Adaptive strategies are required for both; 1. prevention and 2. mitigation of conflicts that are induced or exacerbated due to climate change. While practically, many programmes or projects may not be able to carry out all aspects as described or cover the project idea for the needed to time span, attempting to design intervention in a way that they contribute to a larger transformational change is important. This will require a combination of physical and institutional responses at best. Coordination and communication between actors (agencies and donors) becomes vital to achieve this objective.

General recommendations:

a. **Mainstreaming aspects of increasing and replenishing natural resource base and efficiency of resource use into projects:** this is an important aspect for all donor programmes and projects which should look for ways to reduce scarcity by ensuring natural resource base is enhanced – essentially taking on an ecological approach i.e. incorporating efforts to replenish groundwater, protect marine breeding grounds, protect water catchment areas and maintaining ecosystem services.

b. **Improving technical knowledge base and tools for climate-sensitive resource management:** as some of the reasons for conflicts are related to uncertainties about the science and predictability, it is important that the knowledge base is improved and used for decision making. Be it among community members, local level managers or state institutions (ex: awareness/skill-building programs, resource mapping, forecasting). Additionally, conflicts could be mitigated by promoting climate-sensitive natural resource management methods. (i.e. tools and knowledge required to implement activities such as climate sensitive cropping patterns, sustainable fish practices, ecotourism). This requires technical/material input and greater spread of knowledge.

c. **It is important to design adaptation incentives with attention to the sustainable use of common-pool resources:** A positive example of when incentives can work is when both sides benefit as in the case of the Kalpitiya tourism example – where both the tourism operators from outside the community and the local community were able to develop an operating modality that had benefits for both parties and also protected the environment. Such win-win options should be sought. On the flip side governments often supply incentives for communities to invest in adaptation technologies and institutions like groundwater pumps to deal with droughts. But such incentives will deplete common pool resources unless there is regulatory pressure and institutional support to also replenish groundwater supplies. If not, it will become a maladaptation. It is also important to think through transformational options that may also provide the incentive to move away from livelihoods that are dependent on natural resources. Albeit this option then also needs to be conscious of the impact on natural resources

d. **Empowering the community to manage resources and mitigate conflict and advocate for their interests (in response to climate and non-climate drivers):** Threats to the management of common pool resources due to their vastness and ambiguities in institutional jurisdictions highlights the increased importance of community governance of such resources. Thus strengthening informal systems and hybrid systems that give communities more control to own and manage resources can increase their vested interest and improve management of natural resources. These should include improving leadership among the community (especially women), strengthening access and use of grievance redressal systems and building conflict resolution structures and skills among the community and institutions. These should be in place as regular features/platforms. In addition, Donor and GoSL projects need to ensure that there are appropriate provisions made to engage those who are likely to be left out of projects or those that are vulnerable, ex: caste-based communities, women, disabled. The need for equitable sharing of resources requires that these marginalised groups are identified and ways to engage them in the consultation and decision making processes are included.

e. **Strengthening formal and informal structures for conflict resolution:** The inability to resolve conflict and ensure the sustainability of natural resources because of locally powerful vested interests argues in favour of further empowering formal and informal structures. These require improving regulations, including more climate sensitive details as well as conflict management processes including more independent processes into the regulations and programme management interventions. It also requires building the capacity of the officers and institutions – on conflict resolution, conflict sensitivity, facilitation and dialogue so that they can be more sensitized and prepared to tackled the context specific issues and community dynamics that can lead to tension.

f. **It is also necessary to strengthen both local and national level regulations and laws and court systems:** Thus all three layers are needed. All parties must have access to it.

g. **Building in ways for ongoing consultation, information sharing and buy-in from the community:** Given that from time-to-time situations change (people, regulations, climatic factors). Having a way to keep the community aware of the project and to consult them on a more regular basis, rather than only at the start or end of the of the project. This will increase transparency and accountability and provide a space to give updates about the project. This can happen through a regular existing channel or have a process set up for the project.

h. **Maintenance and ensuring sustainability once the projects are completed.** Mechanisms should be in place to ensure that the infrastructure and management systems can be maintained after the project phase is completed. The ability and willingness for both community and officials to continue must part of the design.

i. **Strengthening institutional coordination and integrated approaches between** sectors and local and national entities as well as donors is important in order to meet the different requirements, but also for the outcome to be holistic and cost effective. It would also need them to work through the different mandates of those involved and have clear responsibilities to avoid ambiguity of jurisdiction. This is not easily accomplished given Sri Lanka's present structure but it is necessary. The possibilities of setting up independent entities with some autonomy to provide some overall management and monitoring - so that there is a neutral party would also be important – albeit difficult to establish. In terms of donor harmonization, consultation between donors to understand their roles and specialization can reduce costs of projects and duplication.

Potential areas for UK intervention:

While the above broad recommendations aim at pushing an integrated approach, here we aim to pull out more specific interventions that are in line with BHC's scope. The interventions have been categorized only to outline broad subject areas that can be further explored. These recommendations are based on our own research of prior interventions by the UK government in similar contexts and feedback from the BHC team on this study. These suggestions are also expected to contribute towards an integrated model of delivery. Some suggestions can be delivered as value adding activities to larger programmes while others can be carried out as stand-alone programmes.

Capacity building activities to manage natural resources (manage scarcity)

1. Working alongside existing donors and government authorities, consider opportunities to add value/enhance existing projects by building technical capacity to enable sustainable livelihoods and management of environmental issues. This can be done at both community and institutional levels – for example, among farmers on climate sensitive agriculture, water management, fisheries management, sustainable fishing techniques and land use planning.
2. Assess opportunities to provide capacity building support for vulnerable communities to enable diversification away from climate-sensitive livelihoods – reskilling to reduce people's dependency on natural resource based livelihoods.
3. Design and develop awareness, training and capacity development programmes for dealing with climate related conflicts for local State officials and other stakeholders.

4. Explore opportunities to strengthen training organisations and build a cadre of trainers to carry out this specialised training.

Conflict management platforms at the community, local and National levels

1. Provide technical and financial support to integrate community-based social cohesion and conflict resolution processes or mechanisms within relevant projects. Mechanisms should address climate change but also related issues, including governance, livelihoods, food security etc. to minimise potential for conflict, and ensure that communities have the space to internalise how climate and conflict affect their project and have a means of dealing with it.
2. Actively provide opportunities and modalities for women and other vulnerable groups to be part of decision making bodies, especially in climate-vulnerable areas.
3. Work with existing relevant projects (e.g. those funded by other donors, or government) to trial /improve existing formal and informal natural resource management structures to improve mediation and management processes. Ensure learnings are fed into future programming.
4. Support for safeguards/regulations and monitoring from communities and civil society groups to reduce conflict by increasing transparency and oversight of natural resource management processes.
5. Support and advocate for integrated approaches which take into account both climate change and conflict-risks in resource management at the national level (i.e through processes to implement the National Adaptation Plan (NAP), the SDGs, Social Cohesion work).

Creating knowledge and technological links to manage resource scarcity and resource management

1. Create knowledge links on technologies and best practices for managing natural resources at local levels (for water management, beach protection, waste management, urban design etc.). The aim is to take the technology, the innovations to the users and increase access to technology and ideas at a more local level.
2. Continue to build evidence base on nexus between climate change and conflict, by supporting information generation and building awareness of the issues. Work with all relevant stakeholders to increase their understanding of relevant issues.
3. Facilitate processes that enable communities to access and be updated about climate risks through environmental assessments, valuations, resource mapping etc., especially in water and forest management.

Improving social security and safety nets to increase resilience

1. Gather more evidence and good practices on the need to invest in risk reduction measures, specifically on aspects such as disaster handouts, debt traps, crop insurance, with greater focus on vulnerable groups such as women, farmers, and fisher groups.
2. Explore more widely issues, trends and protection aspects related to climate induced migration - as there is little evidence on ground.