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STRENGTHENING RESPONSES TO CLIMATE VARIABILITY IN SOUTH ASIA

Executive summary

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Contents

Introduction 4

Bangladesh 6

India 8

Nepal 10

Pakistan 12

Conclusion 15

Introduction

This executive summary is based on the findings from desk and field research conducted by International Alert and the South Asia Network for Security and Climate Change (SANSaC) in nine sub-national locations across Bangladesh, India, Nepal and Pakistan. The research looks at the root causes of vulnerability and non-adaptation in fragile contexts and at the opportunities for strengthening resilience to combined risks of climate change and conflict.

National governments, donor agencies, development organisations and the private sector are increasingly concerned with the impacts of climate change in fragile contexts. However, the academic literature on climate change and security is still characterised by the drive to establish or refute direct causality between climate change and conflict as two independent variables. Little attention is given to the complex reasons why climate change makes it harder for states to deal with the various drivers which underlie conflict, or to forms of insecurity other than the incidence of armed conflict.

The research takes "local resilience" as the starting point to understand the linkages between climate change impacts and insecurity, and the interaction of environmental risks with pre-existing stresses faced at the household and village level.[1] Climate change impacts will inevitably be experienced at the local level and, as a result, responses which address these local impacts will be the most effective. However, a large majority of policies on adaptation are made at the capital city or headquarters level. Furthermore, there is little empirical evidence of local-level experiences of climate change, taking into account existing peace and security challenges faced in fragile contexts, available to inform top-down approaches.

Findings from the case study research in nine sub-national locations across Bangladesh, India, Nepal and Pakistan lead to the following observations:

1. Resilience already exists within communities. However, it needs to be understood in context and built upon in a conflict-sensitive way – this means understanding the politics and power around access to natural resources, credit and jobs.

1 In order to understand local resilience, the first question which the research addresses is: what are the root causes of vulnerability (to climate and conflict risks)? For this, we first looked at the nature of the environmental risks faced at the household and village level and their interaction with pre-existing social, economic and political stresses. The second central question of the study is: how can external adaptation interventions (by the state or international institutions) address these root causes of vulnerability?

2. Any risk to stability in contexts vulnerable to climate change involves multiple drivers beyond the direct environmental hazards; many of these drivers are pre-existing social, economic and political stresses, with which climate and environmental change may interact and amplify. It is therefore erroneous for donors, international institutions, international non-governmental organisations (NGOs) and national governments to promote climate change as a discrete risk and to address this through standalone strategies.
3. All four cases found that communities were struggling to cope with the variability and uncertainty posed by climate and environmental change. On the ground, communities were experiencing weather patterns and events which differed from past experiences. According to one respondent in Nepal: 'all that is certain [about the climate] is that we have to face the uncertainty.' Research and subsequent policy responses therefore need to look beyond the general environmental impacts to not only address the root causes of vulnerability to climate and conflict but also failures of governance and livelihood/income insecurity. They need to strengthen people's capacity to adapt to a range of possible climate futures. In addition, given that resilience grows first and foremost at the local level, the analysis focus needs to be at the sub-national level.
4. Environmental change related risks play a key role in migration. The significant majority of this movement is rural to urban, within the same country. For some, migration is viewed positively, as it generates valuable remittances (in the case of Nepal). For others, however, the psychological impact on families and societies can sometimes outweigh the financial benefits (in the case of Bangladesh). The movements of people are already contributing to conflicts between host communities and settlers. People are already moving and are going to move in greater numbers and for longer durations of time in the near future. With migration increasingly seen as a "significant adaptive strategy", these migration flows need to be managed peacefully and given due consideration in climate change and development plans.

The implications of these observations therefore suggest that:

1. Supporting adaptation cannot be targeted on specific actions responding to specific threats;
2. Supporting adaptation means supporting resilience, which is part of how communities develop; and
3. Supporting the capacity to adapt properly will go far beyond supporting technical adaptation activities and will become part of the fabric of development aid.

Bangladesh

This case study aims to understand the dimensions of community resilience to climate change and insecurity among coastal communities in Satkhira and their knock-on effects in terms of migration to urban centres such as Dhaka.

The United Nations Development Programme (UNDP) has identified Bangladesh as the most vulnerable country in the world to tropical cyclones and the sixth most vulnerable to floods. All respondents in Satkhira raised concerns about increased flood risks, salinity of the land and drinking water, and the devastation of Cyclone Aila in 2009. Respondents in Satkhira stressed the increase in salinity as one of the most significant challenges they face. Shrimp farming is often seen as a positive adaptive strategy; however, it is exacerbating the problem of salinity. Years of shrimp farming have rendered acres of land unfit for cultivation through the operation of sluice gates and illegally constructed water pipes under embankments that allow saline water to enter into shrimp farms. This is causing tensions between shrimp farmers and non-shrimp farming communities, as well as between shrimp farmers and local government officials. The coastal embankments around settlements have been weakened through the operation of sluice gates by shrimp farmers, further exposing communities to environmental risks.

People living in the coastal areas of Bangladesh and close to the Sunderbans have been dependent on the mangrove forests for their livelihood for many years. One fisherman said, 'river means Sunderban, Sunderban means river', thereby according the Sunderbans his greatest livelihood lifeline. Yet livelihood dependency on the Sunderbans is threatened by tiger attacks and armed brigands. Respondents saw a clear difference between the security risks posed by tigers versus those from the brigands, expecting government protection in the case of the latter. However, local government officials are unanimous in admitting to their lack of capacity in formulating a strategy for or response to the challenge. They explained that dealing with the brigands and the security risks they pose to communities requires the full support of the national government and the strength of the border guard, coast guard and army.

All respondents strongly communicated their income insecurity and linked it very closely to climate and environmental impacts, such as Cyclone Aila. With livelihoods under threat in coastal areas, there is an increasing trend of migration in search of employment. Migration is not new in Bangladesh. However, more people are being forced to migrate as they face increasing income insecurity and environmental risks in the coastal areas. Respondents in Satkhira said that most of

the seasonal migrants from their communities move to cities like Dhaka to work in the brick factories during the lean season to earn an additional income. As the numbers of migrants steadily increase, the already weak urban infrastructure in Dhaka will face severe strains. The city will have to cope with an increasing number of squatter settlements and slums, along with increasing pressure on services such as the provision of water, electricity and sanitation.

Important dimensions of resilience include a relatively ethnic and religiously homogenous population, the provision of alternative livelihoods and access to credit through various NGO schemes. Resilience can also be strengthened through the following measures:

1. **Continued support to livelihood diversification:** As the primary livelihoods of people in Satkhira are directly being affected by changes in climate, an important area for continued investment to help them better cope includes livelihood diversification into climate resilient areas such as tailoring, poultry farming, duck rearing, mat weaving and basket making. However, these are not seen as sufficient to build resilience in and of themselves.
2. **Ensuring safe access to the Sunderbans combined with reduced livelihood dependence on the forests:** Respondents expressed frustration at the local government's inability to protect them and ensure their physical safety in the Sunderbans. Alongside ensuring safe access to the Sunderbans, people's dependence on the forest needs to be reduced. The livelihood diversification activities currently underway, although important, will not achieve this. This is because, although current diversified livelihood options serve to boost and supplement a household's income and thus provide short-term economic benefits, they are not sufficient to be the primary source of income.
3. **Ensuring safe migration for seasonal migrants:** Despite the increase in the number of seasonal migrants, migration is not addressed in the climate change policy responses. In the absence of a comprehensive policy framework and strategy, seasonal migration is a significant cost to human development through poor labour arrangements and working conditions of migrants. Safe migration therefore needs to be prioritised to maximise its benefits and be given due consideration in climate change and development plans.
4. **Ensuring the climate sensitivity of other areas of sectoral programming:** Respondents in Satkhira strongly communicated that physical insecurity was a contributory factor to their vulnerability. Interventions around other sectoral strands – such as security and democratic governance – could therefore contribute to building community resilience if they are both climate and conflict sensitive.

India

This case study looks at the dimensions of community resilience and the implications of climate and environmental change in two communities in Odisha living around Chilika Lake, the biggest brackish water lake in India. Both communities are entirely dependent on the lake for their livelihoods. The first community, living on the stretch of the lake shore closest to the sea mouth, is a fishing community; the second, villagers living on the northern, inland lake shore, carry out salt farming.

Different authorities are responsible for managing different aspects of the lake and its resources. For example, the ownership of the lake lies with the Revenue Department, while the responsibility for implementing lake-related regulations lies with the Water Resources Department; enforcing the laws lies with the local police force, while the Chilika Development Authority (CDA) is the technical body responsible for the upkeep and maintenance of the lake. As there is no single agency responsible for the lake as a whole, there are no clear decision-making structures for the lake. This is leading to significant governance deficits in the management of the lake and its resources.

Risks to livelihood were consistently ranked as the biggest problem faced by fishermen and salt farming communities. Over 78 percent of community respondents identified the mounting issue of shrimp cultivation by private companies and wealthy individuals as a major threat to traditional fishing and other livelihoods. Linked to this problem, respondents identified issues around ownership of land and water leasing rights, the lack of clear and transparent management of Chilika's water resources, and the lack of political voice and influence of the poorest members of society. According to respondents, a lack of clearly defined boundaries and overlaps in fishing territory has also resulted in instances of encroachment and conflict.

The livelihoods of salt farmers have also been threatened by an intervention by the CDA. In 2004, the CDA engineered a new opening and a new canal to counter the salt water intrusion and increased siltation which were observed to be affecting the biodiversity of the lake. The new canal was deeper than the pre-existing Saheb canal, which allowed saline water from the Bay of Bengal. According to respondents from the salt farming community and three expert key informants, this intervention drastically reduced the flow of saline water feeding into the salt farms, thus affecting the livelihood of the salt farmers.

There is a significant trend of labour out-migration amongst men in order to cope with the loss of livelihood; many salt farmers and some from the fishing community have migrated to work as labourers and domestic help in Mumbai, Delhi and Surat. A large number of respondents identified the absence of a credit system to safeguard their livelihood interest as a major challenge. The fishers' cooperatives and the Salt Farmers' Association, both once strong collectives constituted for the social and economic wellbeing of the communities, are now mostly defunct. As a result, fishing communities have turned to middlemen to take loans to continue fishing.

Findings from this study therefore point to the following as key priority areas to build resilience:

1. **Effective governance:** For effective governance of the lake's resources, decisions, policies and interventions with respect to the lake should include all stakeholders, especially local communities, whose socio-economic situation is directly linked to the natural resource. A comprehensive lake management policy that supports regulations and enforcement is also necessary for effective management and equitable distribution of the lake's resources.
2. **Availability of credit:** The availability of formal credit mechanisms that make loans available to the fishing communities on soft terms for their basic capital requirements – namely, the purchase of boats, nets and other fishing equipment – would reduce their dependency on middlemen and the mafia.
3. **Alternative livelihoods:** Alternative livelihoods need to be climate resilient. This means that jobs should not depend on climate-sensitive natural resources such as water. According to the head of the CDA: 'in the face of climate change, there is a serious need to diversify livelihood options to ones that are not directly dependent on the lake.' Salt farmers raised the issue of needing to change jobs, although fishing communities felt tied to fishing for reasons of tradition and caste.

Nepal

The field research for this case study was conducted at the Village District Committee (VDC) level in Banke, Dang and Rolpa districts. All of these districts fall into the Mid-Western administrative region and span the Terai and Hill areas in terms of ecological zones. The case study compares Rolpa, a district which is characterised by high vulnerability to drought and landslides, with Dang and Banke, which face low to moderate exposure to climate change. The aim is to identify the different dimensions of resilience in these varying districts.

The environmental risks in Banke, Dang and Rolpa include increased forest fires during the dry season, winter drought, landslides and excessive monsoon rainfall. Respondents in all three districts identified unpredictable and fluctuating rainfall as the most prominent climate and environment related risk. However, households were not experiencing or coping with a single environmental risk in isolation, but referred to at least two of the following: political instability, lack of jobs, weak local governance, corruption, poor infrastructure, lack of access to credit, and debt. Many community members expressed apathy towards the government. Respondents said that they had yet to feel the government's presence at the village level. Livelihood security was the most pressing concern raised by over 90 percent of respondents across all three study locations. The predominant source of livelihood in all VDCs visited was agriculture, although environmental changes in Banke, Dang and Rolpa were already affecting the agricultural viability of land and livelihoods. Migration was cited as the main strategy for coping with the decreasing income from agriculture and to escape the existing restrictive power dynamics in the community. Prospective migrants described an interest in capitalising on increased opportunities in urban hubs, India and the Gulf states, as well as pointing to a tendency to follow friends and family members who are migrating.

Diversifying livelihoods constitutes another but reportedly limited dimension of resilience. Small and medium businesses are providing some opportunities for farmers to diversify their livelihoods. However, both the growing brick and furniture industries are negatively impacting on deforestation and therefore are not climate sensitive or sustainable in the long run. In Dang, a move to high-value crops that are more resilient to rain fluctuations (e.g. camomile, mint, citronella and lemongrass) was trialled in 100 households last year, with positive results in just four months. However, poor farmers noted that these strategies are only open to wealthier/higher caste farmers who own the land and can thus make decisions over cropping. Some also noted that shifts to cash crops have a negative knock-on effect on the poor, who are left unemployed since orchards are less labour-intensive

than paddy or cereals and provide less work for agricultural labourers. As such, these long-term investments can reinforce existing power dynamics.

The following are some mechanisms to address obstacles to resilience based on the case study findings:

1. **Strengthened connections between the capital and the districts:** Stronger communication between capital and local leaders can ensure greater awareness and effective implementation of national plans and policies at the local level. For example, the perception that Nepal's National Adaptation Programme of Action (NAPA) failed to address local realities of climate risk led to the government developing a Local Adaptation Plan for Action (LAPA). The LAPA aims to make adaptation planning inclusive and responsive to local priorities. However, having two plans does not promote connections between the two levels. Moreover, there is a risk of the two processes happening in parallel and failing to capitalise on the gains of the other.
2. **Strengthening local governments' financial management capacity:** Mechanisms for local fund management for service delivery will be crucial if resilience-building initiatives such as the NAPA and LAPA are to be effective.
3. **Support for key climate-sensitive services can help build the social contract:** Infrastructure and livelihood related training were cited as two key dimensions of resilience. The provision of infrastructure services and jobs can build climate resilience, whilst also building trust and confidence in local governance structures if they are seen to be effectively delivering key community priorities.
4. **Positive responses to migration:** Contrary to general perceptions of migration as a problem, rural to urban and trans-boundary migration appears to build resilience of the migrant's family back home. Remittances received outweigh the social challenges of female-headed households. Policymakers must therefore consider planned migration as a valid resilience option and plan how best to manage future migration in a peaceful way.
5. **Promoting an enabling environment for climate-sensitive business:** The private sector can play a key role in building resilience by promoting alternative climate-resilient livelihoods.

Pakistan

This case study looks at the dimensions of community resilience and the reasons for vulnerability and non-adaptation in two districts, Badin and Thatta, in Sindh province. Thatta is a coastal area exposed to environmental risks such as coastal intrusion and floods. The environmental risks in Badin are predominantly linked to extreme and unpredictable rainfall patterns, storm surges and cyclones. As well as the different environmental risks, Badin provides a more urban study site in contrast to the more rural Thatta to give a balance of peri-urban and rural perspectives.

Sindh faces multiple internal security risks linked to social, economic and political factors that determine how power is distributed. Governance in Pakistan is stratified both along different formal tiers such as federal and provincial, and also along informal structures such as landlords and religious leaders. Informal governance structures and processes play a dominant role in most of the decision making processes at the local level in Pakistan. In Sindh, historical and cultural traditions, complemented by the absence of solid state institutions, has meant that access to and control of power at the local level is in the hands of a few landlords or feudal lords. In Badin and Thatta, the feudal lords or the local landowning elites are also the provincial government representatives. Thus, households living and/or working on a landlord's land are disinclined to vote against their landlord's political party at election time, as their lives and livelihoods are also in the hands of this individual. Marginalised communities do not wish to speak out against their provincial government representatives over resource allocation for fear of losing their homes and their source of livelihood, thereby undermining their resilience.

Among the many negative consequences of this system of power is its impact on education, which is a core component of resilience in the research sites visited. Literacy is less than 10 percent in Sindh. In interviews, young people expressed little interest in education, as there are limited jobs available. Outside of agriculture, there is a quota system in Sindh which is designed to allocate 60 percent of jobs to rural populations and 40 percent to urban populations. In reality, however, these allocations are made mostly on the basis of political and tribal affiliation and influence rather than on merit. This has created situations where parents are not interested in educating their children, as they know there are no jobs for them to move into.

Community respondents identified inadequate drainage infrastructure as a significant cause of vulnerability to environmental change. For instance, the Left Bank Outfall Drain (LBOD), designed to collect saline water from the ground and

drain it into the sea, is doing the reverse. Breaches in the LBOD during the 1999 cyclone resulted in degradation of arable land, contamination of groundwater and massive damage to livelihoods. A respondent from the Irrigation Department felt that had the LBOD not existed, cyclone-related losses could have been minimised. During the 2003, 2008 and 2011 floods, the drains swelled beyond capacity and resulted in overflows.

Due to abrupt environmental changes and water scarcity, as well as over-intensive farming and water pollution, fertile agricultural land is decreasing, thereby forcing agricultural communities to shift to fishing. This has led to tensions between the Jatt community, who are traditionally involved in agriculture, and the local fishermen, whose livelihoods are being threatened due to the over-harvesting of fish. In addition, low discharge in the Indus River, which recharges the deltaic region and which serves as a breeding ground for fish and other marine life, is causing a decrease in the fish stock.

A significant majority of respondents cited water supply as a future risk to their lives and livelihoods. Since both Badin and Thatta are at the tail-end of the Indus river system, these districts receive the poorest quality of fresh water due to inadequate discharge of water into the river barrage upstream. This issue is already a source of inter-provincial and intra-provincial conflict between the upper-riparian communities (both within Sindh and across the provincial border in Punjab) and downstream Sindhis. Local district government has provided water supply lines to many villages, but these schemes are largely non-functional. Unregulated over-exploitation of groundwater has rendered water levels low and highly saline due to sea water intrusion.

Priority areas for engagement to address the root causes of vulnerability and non-adaptation are as follows:

1. **Incentivising education:** A common sentiment was summed up by one respondent who stated that: 'There are no benefits from education and no space to move forwards.' However, without an education, young people will be trapped in the cycle of unskilled (and highly climate-sensitive) livelihoods. Changed attitudes towards education, along with improved quality and quantity of education provision are essential for long-term resilience.
2. **Implementing resilience policies and interventions in ways that strengthen governance:** Community responses to standalone disaster risk reduction activities and technical climate fixes were predominantly negative. However, responses were positive in relation to strengthening coping mechanisms to climate change impacts through alternative livelihoods, saving schemes and

social protection programmes. Prioritising activities that build resilience while also reinforcing the social contract could provide a cost-effective way to improve fractious relationships between citizens and local government in fragile contexts.

3. **Addressing governance challenges:** Donor-financed climate change projects were not being effectively implemented in post-flood Sindh as a result of corruption, confusion over roles and jurisdiction between different governance systems, and lack of or limited understanding of local governance systems consisting of formal and informal actors and mechanisms. Better understanding of these governance challenges and awareness of power and political dynamics in programme design and implementation is vital in order to ensure projects are conflict-sensitive.

Conclusion

The case studies provide snapshots of current instances of vulnerability and resilience to climate and environmental risks in fragile contexts in four South Asian countries. Whilst illustrating the specific nuances and unique local dynamics which underlie vulnerability in each case, they also highlight a number of commonalities across the cases. The common responses to removing the barriers to resilience in all four cases can be clustered around the following:

1. The importance of strong, accountable, participatory and effective local governance;
2. Equitable management of and access to natural resources;
3. Climate-sensitive alternative livelihoods;
4. Fair access to credit; and
5. Peaceful and safe management of migration.

It is therefore erroneous for donors, international institutions, international NGOs and national governments to promote climate change as a discrete risk and to address this through standalone strategies. However, current policy and practice has created a false dichotomy between supporting adaptation and development aid, whereby adaptation money can only be spent on adaptation activities while development aid is protected from climate-related calls. As a result, funding to support resilience risks falling between the two policy pillars, which are misleadingly treated as separate. This acts as an obstacle to promoting any real sustainable resilience at the community level.

In addition, interventions aimed at building resilience should not only help to address the root causes of vulnerability, but should also create increased capacity to be able to adapt to a range of possible climate futures. This is because resilience-building initiatives often have to be implemented in contexts marked by key climate uncertainties. If adaptation efforts are too narrowly focused on "specific climate impacts" that do not play out, they could potentially be destabilising in a fragile context and considered a wasted opportunity.

All the cases illustrate the limitations of national government responses to climate issues, with the nature of the limitations varying from inflexibility through under-resourcing to actions being poorly thought through. National and district level government can be (or be seen to be) out of touch with the concerns, interests and wellbeing of ordinary people, even when policies look good on paper. Thus, questions of adaptation and peacebuilding are linked not only to each other, but also to fundamental issues of governance – to the extent that peaceful adaptation to

the effects of climate change is dependent on a reasonable standard of governance, good enough, at the very least, so that the state authorities are not an obstacle.

While this might suggest a preference for local solutions, it is misleading to think that all local solutions will work, or that they will work without national-level reforms. Local solutions may be inadequate and if externally resourced may suffer through inadequate follow-up. They are a necessary ingredient, but local adaptation cannot be sustainable or effective without a national policy framework to provide adequate resources, regulation and technical support. Furthermore, in a fragile state, building the capacity of local communities to take on key governance roles around resource management and service delivery themselves can effectively absolve the government of responsibility. This, in turn, may undermine the already fragile state-society relationship, which needs to be rebuilt and fostered as part of a peacebuilding and statebuilding process.

A two-pronged strategy for peace-positive approaches to climate risks emerges: to build resilience in local communities in the broadest sense, taking the local context as the starting point; at the same time, to work at the national and international levels to address top-down governance obstacles to resilience, in order to ensure that local responses are backed up by an enabling national and international policy environment.

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