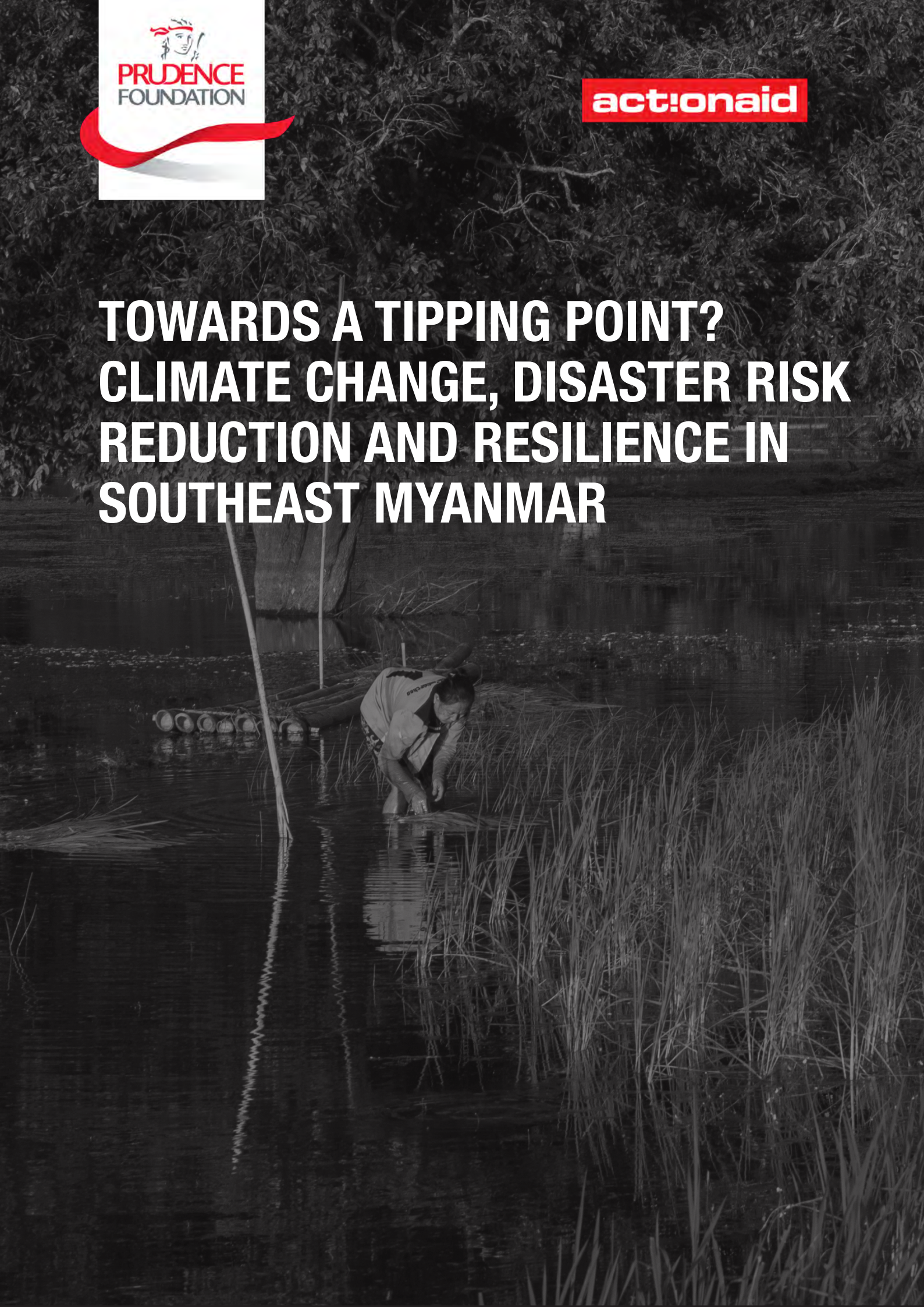


# **TOWARDS A TIPPING POINT? CLIMATE CHANGE, DISASTER RISK REDUCTION AND RESILIENCE IN SOUTHEAST MYANMAR**





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## ABOUT ACTIONAID

ActionAid is a feminist organization that uses a human rights-based approach to ensure that the voices of the most vulnerable, particularly women and youth, are heard. ActionAid is working with communities across the world to develop solutions that help people adapt to climate change impacts, and build resilience.

Since 2013, ActionAid Myanmar (AAM) has been implementing programmes in the southeast of Myanmar through its Fellowship approach (ActionAid 2020). Many AAM Fellows have been long embedded in the research villages accessed for this study (see Methodology section).



## ABOUT PRUDENCE FOUNDATION

Prudence Foundation is the community investment arm of Prudential in Asia and Africa. Its mission is to secure the future of communities by enhancing education, health and safety. The Foundation runs regional programmes as well as local programmes in partnership with NGOs, governments and the private sector in order to maximise the impact of its efforts. Prudence Foundation leverages Prudential’s long term mindset and geographical scale to make communities safer, more secure and more resilient. The Foundation is a Hong Kong registered charitable entity.



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# GLOSSARY AND CONCEPTUAL FRAMEWORK

**Climate Change** is the result of human activities. The main projected changes in the climate include temperature increases, sea-level rise and changing/irregular rainfall patterns (Turnbull et al 2013). Climate change is increasing the frequency and intensity of extreme weather events such as floods, droughts and landslides.

**Mitigation** measures to reduce or prevent the speed and severity of climate change. Examples include increased use of renewable energy, and new technologies or changes in human behaviour, and planting trees and restoring soils in order to “sink” carbon (United Nations Framework Convention on Climate Change 2012).

**Disasters** involve major and widespread disruption to life, from which most people are not able to recover without assistance. The United Nations Office for Disaster Risk Reduction notes that Disaster Risk includes the potential losses that could occur to a community or a society.

**Hazards** are dangerous activities or conditions that may cause loss of life or injury, damage to livelihoods and services, and/or social and economic disruption. Hazards can be slow-onset (e.g. droughts) or rapid-onset (e.g. earthquakes or cyclones).

**Vulnerability**, and capacities to adapt and recover, are determined by the characteristics and circumstances of a community, system or asset. By reducing the vulnerability the risk of disasters is reduced, contributing to greater resilience.

**Resilience** is the ability of individuals or groups to adapt positively to changing circumstances, including challenging and transforming unjust and unequal power relations that structure vulnerability (Sterrett 2016). Resilient people and communities can better withstand shocks, and return to or improve previous standards of living and human security.<sup>1</sup>

**Capacities** are the strengths and resources available within a community or society that can be used to build resilience, including:

1. **Absorptive capacity** to prevent, prepare for or mitigate the effects of negative events, through coping mechanisms that focus on essential basic structures and functions.
2. **Adaptive capacity** brings about longer-term change, including through livelihoods diversification and adapted farming techniques, supported by awareness raising and training.
3. **Transformative capacity** is required when needed changes go beyond people’s absorptive and adaptive abilities, because ecological, political-economic or social structures keep people (particularly women) trapped in poverty and/or conflict, making the existing system unsustainable. Transformative capacity enables people to push for institutional reforms, cultural changes and behavioural shifts, challenging the status quo by addressing power relations.

**Absorptive, adaptive and transformative capacities** reinforce each other in contributing towards community resilience. Tackling climate change in a transformative manner requires considering the root causes of inequality, poverty and gender justice.<sup>2</sup> Climate change is not gender-neutral: women generally experience greater difficulties in accessing their rights, experience higher dependency on local natural resources for their livelihoods, and often lack opportunities to participate in the decision-making.

**Community-based Adaptation and Community-based Disaster Risk Reduction (CBA and CBDRR)** are bottom-up approaches. Communities analyse their own vulnerabilities and capacities, combined with relevant scientific knowledge, in order to find just, sustainable solutions together.

**Climate Resilient Sustainable Agriculture (CRSA)** is based on the science and practices of Agroecology, and recognition of the right to food. It identifies the major risks and challenges faced by communities and develops site-specific adaptation strategies aimed at reducing vulnerabilities and increasing the resilience of smallholder production systems.

**Deep Adaptation** is a framework pioneered by Bendell (2018), who argues that climate change will cause a breakdown in human civilization.

**Social Capital** is a quality of functioning social groups and interpersonal relationships, including a shared sense of identity and values/norms, trust and cooperation.

1 For a range of understanding and ways of working with resilience, see Thomas Tanner et al (2017). On historical, paradigm and policy differences between “classical humanitarianism” (Dunantist, “rooted in the notion of exceptionalism”) and “resilience humanitarianism” (which “starts from the idea of crisis as the new normality”), see Dorothea Hilhorst 2018.

2 See for example Majari Mehta (2007); Natasha Gelling (2015); and FAO (n.d.).

**Figure 1. Resilience Conceptual Framework**





# ACRONYMS

<b>AAM</b>	ActionAid Myanmar
<b>BGF</b>	Border Guard Force
<b>BRACED</b>	Building Resilience and Adaptation to Climate Extremes and Disasters
<b>CBA</b>	Community-based Adaptation
<b>CBDRM</b>	Community-Based Disaster Risk Management
<b>CBDRR</b>	Community-Based Disaster Risk Reduction
<b>CCA</b>	Climate Change Adaptation
<b>CCEE</b>	Climate Change and Environment Education
<b>CIDKP</b>	Committee for Internally Displaced Karen People
<b>CRSA</b>	Climate Resilient Sustainable Agriculture
<b>CSO</b>	Civil Society Organisation
<b>CSPM</b>	Conflict Sensitive Program Management
<b>DKBA</b>	Democratic Karen Buddhist/Benevolent Army
<b>DMH</b>	Department of Meteorology and Hydrology
<b>DRR</b>	Disaster Risk Reduction
<b>EAO</b>	Ethnic Armed Organisation
<b>ECD</b>	Environmental Conservation Department
<b>EU</b>	European Union
<b>FAO</b>	Food and Agriculture Organisation
<b>FGD</b>	Focus Group Discussions
<b>IA</b>	Interim Arrangements
<b>ICRC</b>	International Committee of the Red Cross
<b>IDP</b>	Internally Displaced Person
<b>INDC</b>	Intended Nationally Determined Contribution
<b>INGO</b>	International Non-Government Organisation
<b>IOM</b>	International Organisation for Migration
<b>KESAN</b>	Karen Environmental and Social Action Network
<b>KDHW</b>	Karen Department of Health and Welfare

<b>KFD</b>	Karen Forestry Department
<b>KII</b>	Key Informant Interviews
<b>KNLA</b>	Karen National Liberation Army
<b>KNU</b>	Karen National Union
<b>MCCA</b>	Myanmar Climate Change Alliance
<b>MCCP</b>	Myanmar Climate Change Policy
<b>MCSS</b>	Myanmar Climate Change Strategy
<b>MCSSMP</b>	Myanmar Climate Change Strategy Master Plan
<b>MoNREC</b>	Ministry of Natural Resources and Environmental Conservation
<b>MSDP</b>	Myanmar Sustainable Development Strategy
<b>NAPA</b>	National Adaptation Program of Action
<b>NCA</b>	Nationwide Ceasefire Agreement
<b>NDC</b>	Nationally Determined Contribution
<b>NMSP</b>	New Mon State Party
<b>PC</b>	(KNU-KNLA) Peace Council
<b>TBC</b>	The Border Consortium
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>UNHCR</b>	United Nations High Commissioner for Refugees
<b>VDMC</b>	Village Disaster Management Committee



Harvesting areas of Myapadaingnaing village. Kawkareik Township, Kayin State.

# EXECUTIVE SUMMARY

This is a report about impacts and understandings of climate change, and local responses and adaptations, based primarily on the experiences of nine villages in southern Kayin/Karen State.<sup>3</sup> The research was undertaken and writing began before the Covid-19 crisis took hold in Myanmar. Nevertheless, many of the strategies and adaptations described and analysed here are also relevant to Coronavirus response.

Primary data collection (Key Informant Interviews and Focus Group Discussions) was undertaken by local and international researchers. The research includes an overview of relevant studies and literatures.

Key stakeholders and informants include villagers, local researchers, state and non-state authorities, Civil

Society Organisations (CSOs) and international actors. As much as possible, we have tried to reflect this variety, with a normative emphasis on the agency of local actors, particularly women.

Historically, these mostly Karen (or Kayin<sup>4</sup>) communities have experienced widespread and systematic human rights abuses, in the context of armed conflicts between the government and the Karen National Union (KNU), dating from 1949, the year after Burmese independence. Although the Myanmar government and Army and the KNU agreed a ceasefire in 2012, the peace process has yet to resolve underlying issues driving decades of armed conflict. Many individuals and communities remain traumatised and fearful of all authorities.

<sup>3</sup> The villages experienced severe floods in August 2019, and were subsequently supported by AAM and other donors.

<sup>4</sup> The official government designation for this ethnic nationality group is “Kayin”. However, this Burmese language exonym is rejected by many in the community, who prefer the designation “Karen” (Ashley South 2011).

# CLIMATE CHANGE IMPACTS AND RESPONSES

Myanmar bears little responsibility for the climate crises affecting the planet. Historically, as one of the most under-developed countries in Asia, Myanmar has played a very minor role in producing carbon dioxide emissions or other factors driving climate change. Nevertheless, the country is highly vulnerable to climate-related hazards.

Data from the government's Department of Meteorology and Hydrology show that between 1981-2010 average daily temperatures increased by about 0.25°C per decade, while daily maximum temperatures went up by 0.4°C. Temperatures are expected to increase further by the middle of the century, by between 1.3°C to 2.7°C above historical levels.

Serious changes in rainfall patterns are also expected, with sea levels rising between 20-41 cm by the mid-21st century. Already, the monsoon duration over the last 50 years shows a significant reduction, from 140-150 days in the mid-1950s to less than 120 days in 2008.

However, modelling and projections regarding climate change impacts are problematic. There remain many "known and unknown unknowns" regarding the impacts of climate change. Longer-term adaptation (including "deep adaptation" - changes required in the context of potential societal collapse) will require political will, and technical and financial assistance from international development partners.

Climate change and other hazards disproportionately affect the poorest and most vulnerable. However, it is often difficult to differentiate understandings of and responses to climate change from related issues of livelihoods, and long-standing patterns of conflict and migration. If the communities featured in this report are unable to adapt and respond effectively to climate change, and achieve at least minimum levels of human security, this is likely to drive further migration (albeit with options limited due to the Covid-19 pandemic).

Climate change particularly impacts the agricultural sector, which employs the majority of people in Myanmar. These hazards are especially serious for already vulnerable and marginalised groups and communities, such as conflict-affected people in Karen State who are increasingly exposed to floods and landslides, fire and droughts.

In the immediate aftermath of disaster, local self-help and coping mechanisms are the most important elements of response. External actors usually only arrive on the scene some time later. Key elements in response include the quality of individual local leaders; the availability of relief items, and other resources; and

village leader, families and individuals' engagement in networks of information and distribution. Access to news and relief items is structured in part through relationships embedded in ethno-linguistic and religious (Buddhist) networks. Also important are relationships of solidarity, patronage and protection with government and/or EAOs. Effective local leaders need to have good connections to (potential) patrons, and protectors - whether government officials, local businesspeople, NGOs or armed groups.

## RESILIENCE AND ADAPTATION

The research adopted a holistic conceptual framework of 'Resilience': the ability to withstand shocks and cope with crises. Effective responses depend on stakeholders' capacities to absorb shocks and adapt livelihood and coping strategies, and to transform the often inequitable power relationships which structure vulnerability and marginalisation.

Strong community networks, based on ethno-linguistic and religious identities ('social capital'), have sustained and supported absorptive capacities and foster social protection, despite the increasing severity of hazards. Indigenous Buddhist networks provide both psychological and spiritual care, and material protection and support. Villagers and researchers were keen to point out the importance of Buddhism and Karen identity in mobilising community self-help. Many also mentioned the roles of monks in providing shelter during disasters, and distributing donations from the laity.

The report describes and analyses examples of Community-based Adaptation and Community-based Disaster-Risk Reduction (CBA and CBDRR: see Glossary). Informants reported examples of Climate Resilient Sustainable Agriculture (CRSA), including adopting new crops (green beans) in areas where climate change is negatively impacting rice cultivation. It could be valuable to learn from these experiences, and share local knowledge with other vulnerable communities in Myanmar. Further research is required, in order to build on local farmers' wisdom, in combination with the insights of agricultural sciences.

Local transformative capacity is strengthened when women take greater roles in Disaster Risk Reduction (DRR). Some women report being empowered through experiences and opportunities gained as migrant workers in neighbouring Thailand. Nevertheless, women and other marginalised groups remain especially vulnerable to the impacts of climate change, and often suffer disproportionately from disasters (including the coronavirus pandemic).



With better training and resources, more systematic and effective responses could be implemented. There are possibilities of enhanced cooperation between government and the KNU to address climate change in remote and conflict-affected areas. The report describes some examples of collaboration between these two authorities on flood relief activities. However, these responses and adaptations will not be enough to achieve long-term climate change resilience. Although these nine villages are coping at present, they may struggle in the future - particularly in the more disastrous climate change scenarios, which just a few years ago were at the extreme end of projections, but now seem more likely. Loss and damage as a result of climate change occurs not only because of limited capacities for absorption and adaption (i.e. because coping capacities are being exhausted), but also due to the increasingly severe and unpredictable nature of hazards. Some communities may reach a 'tipping point', beyond which local adaptation strategies no longer work. Particularly vulnerable are potentially marginalised subgroups such as women and people with disabilities.

The majority of community perspectives on climate change and DRR reported here focus on the immediate aftermath of disaster. This partly reflects the specifics of the research location, which has experienced widespread flooding in recent years. The emphasis on local disaster response differs from most literatures and policy responses regarding climate change in Myanmar, which tend to focus more on longer-term adaptations. Climate Resilient Sustainable Agriculture (CRSA) can be a bridge between these different perspectives.

Research Fellows from AAM (the primary data collectors) raised an important debate about whether assistance should be provided only on the basis of assessed and targeted needs, with the poorest of the poor receiving more help, or on the basis of relative deprivation. For example, providing flood relief assistance to relatively better-off landowners and local elites (who may be expected to recover from disaster relatively easily) might deviate from needs-based approaches, focusing on the poorest of the poor. However, helping all members of the community is consistent with local traditions of reciprocal aid and sharing of resources, which have helped Karen villagers to survive decades (centuries even) of deprivation and underdevelopment.

## GOVERNANCE ISSUES

The research was undertaken in an area of "mixed administration" where, following the 2012 ceasefire, both the Myanmar government and Army and the KNU exercise varying degrees of control, extract resources from communities, and provide services such as health and education. Within the KNU, responsibility for climate change issues rests with the Departments for Agriculture and Forestry, and the KNU Environmental Protection Committee. The KNU Land Policy promotes traditional community conservation, within a framework of federalism and self-determination in relation to natural resource governance.

Many of Myanmar's remaining forested areas of biodiversity are located in areas controlled by the KNU and other EAOs. Given the crucial role of such natural resources in mitigating climate change, and providing local resources for adaptation, the KNU should play a key role in climate change governance in Southeast Myanmar, as acknowledged in the Nationwide Ceasefire Agreement (Union of Myanmar 2015, NCA, Article 25). However, Myanmar's existing climate change responses and architecture tend to be top-down and technocratic, with only limited consultation of local stakeholders. This centralised and state-centric approach reflects Myanmar's authoritarian political cultures, and the historical marginalisation of ethnic nationality communities.

## GAME CHANGERS?

The combination of climate change and the Covid-19 pandemic may constitute a disaster which stretches local coping mechanisms beyond the limits of resilience. As well as the immediate public health impacts, in the longer term livelihoods are likely to be negatively affected by a reduction in remittances from migrant workers in (or returning from) Thailand, together with reduced farm-gate prices for agricultural products and severely disrupted supply chains, resulting in fewer opportunities for day labour.

The capacities and resilience of individuals, families and communities described in this report will be fundamental elements of a sustainable, just and equitable recovery from the Covid-19 crisis. Without significant help however, communities may experience difficulties in coping.

Especially post-coronavirus, future funding for humanitarian and development aid globally is uncertain. It is therefore more than ever important to support local agency and social capital as part of “building back better” after disasters. The capacities and networks described in this report may prove to be the future of disaster response in a post-aid world.

Climate change can be an opportunity (or “critical juncture”) to re-imagine the kind of world we live in, and negotiate and struggle for transformations in state-society and power relations. The disruptions caused by climate hazards, and the opportunities presented in responding, potentially allow vulnerable and marginalised communities to participate more equitably in development processes, through adaptive technologies and innovative approaches. ‘Building back better’ should include the transformation of social and political-economic relations, through supporting community and women’s leadership. There is also a

strong argument for decentralisation of DRR activities, within a federal constitutional framework, as envisaged in the peace process.

Myanmar has key (albeit rather top-down) DRR and CCA policies in place. However, implementation is patchy and inconsistent. Local authorities, including the State government in cooperation with the KNU, need the right tools and resources to implement and amend these strategies. Moreover, linkages between DRR and CCA should also be strengthened, and understood as complimentary approaches to supporting community resilience.

Longer-term, under the more alarming range of possible climate change scenarios, radical thinking and action are needed regarding the prospects of “deep adaptation” in Myanmar. What major changes are needed in order to survive large-scale future climate hazards (including potentially the collapse of food security)?

If the state of Myanmar is disrupted by climate change-related crises, EAO governance authorities and service providers will have crucial roles to play. It will be important to support and encourage them to act in ways which promote and protect the rights of all people, particularly marginalised and vulnerable groups.



**Flooding in Kawkareik township,  
Kayin State, August 2019**

# RECOMMENDATIONS

The Recommendations section suggests how vulnerable communities (particularly women) can be supported in adapting to climate change hazards in an equitable and transformative manner. Key Recommendations include:

## PRIORITY RECOMMENDATIONS FROM THE COMMUNITY

- + **Disaster Preparedness and short-term emergency support:**
  - » Provide safe shelter; better weather information through radio and social media, including in local languages; pre-position relief supplies.
  - » Establish quick-access emergency funds, including for government to work jointly with CSOs and EAOs.
- + **Infrastructure and other longer-term recovery needs [“build back better”]:**
  - » Re-construct roads and bridges; re-build and maintain riverbanks; re-plant and maintain community forests.
  - » Involve community leaders, including women, in planning and implementation of recovery projects.
- + **Awareness-raising, public education and other long-term adaptations:**
  - » Support communities to identify and adapt/adopt new crops and/or varieties, based on farmers’ traditional knowledge; provide technical inputs and materials for agricultural adaptation; Farmer Field Schools to learn from and share with peers.
- + **Climate Change and Environment Education:**
  - » Community members and CSOs can collect oral histories and narratives, sharing their experiences and adaptations - ‘appreciative enquiry’ case studies can be shared with communities elsewhere in Myanmar. Communities, schools and CSOs can develop locally appropriate CBA and CBDRR etc education and teaching methods.
- + **Local leadership:**
  - » Authorities (government and EAOs) should formally recognize and support local leadership/committees, including women, in advance of hazard onset.

## RECOMMENDATIONS TO LOCAL AUTHORITIES - GOVERNMENT AND EAOS

- + Union-level government should explicitly authorise State/Region government departments to collaborate with CSOs and EAOs in disaster response and rehabilitation activities, as envisaged under the NCA (Article 25). Union-level government and EAO leaders should establish a framework for DRR coordination, enabling local and other government units (including Districts and Township EAO authorities) to work with the private sector to achieve targets. In the longer term, decentralisation of decision-making and control over natural resources should be formalized through federal political arrangements.
- + Commission community-level mapping, to discover local resources and wisdom regarding climate change-adapted seeds and crops; work with national and international experts to identify appropriate seeds and agricultural techniques suitable for adoption and adaptation, based where possible on local knowledge and varieties.

## RECOMMENDATIONS TO INTERNATIONAL AGENCIES AND DONORS

- + Myanmar national aid agency staff should speak local (ethnic) languages.
- + Promote Agroecology and Climate Resilient Sustainable Agriculture by investigating and supporting local knowledge and climate change adapted seeds.
- + Advocate for implementation of the NCA (Article 25) in relation to action on climate change.

# INTRODUCTION

## CLIMATE JUSTICE

Myanmar bears little responsibility for the climate change crises affecting the planet. Historically, as one of the most under-developed countries in the region, Myanmar has played a very minor role in producing carbon dioxide emissions or other factors driving climate change.<sup>5</sup> Nevertheless, Myanmar is highly vulnerable to climate change and weather-related hazards. Many communities are already facing the reality of the climate emergency and dealing with the impacts of droughts, floods, erratic rainfall, cyclones, rising sea levels, crop losses and loss of livelihood (see Literature Review).

There is an urgent need for relevant stakeholders to reach ambitious and binding international agreements to limit the emissions and other drivers of climate change. However, developing countries which contributed little to the original problem (such as Myanmar) should not be expected to shoulder undue costs in the global struggle to mitigate the climate crisis. Actors in the Global North should provide climate finance to vulnerable countries as means to cope with climate impacts and transition to greener pathways.

Issues of climate justice are particularly relevant for Karen communities living in conflict-affected areas of Southeast Myanmar, who have historically been excluded from even limited development opportunities (see section on research locations). Recognition and inclusion of these stakeholders at all levels of climate policy and decision-making is necessary for equity and justice. Furthermore, many of Myanmar's most important remaining areas of biodiversity, which are essential for long-term environmental conservation to combat climate change, are situated in Karen and other ethnic nationality populated parts of the country.

## RATIONALE - WHY THIS RESEARCH, NOW?

The aim of this report is to understand how communities and other stakeholders (including government and non-state local authorities, as well as CSOs and international actors) in southern Kayin State have experienced and responded to the impacts of climate change, and their plans and expectations and strategies for the future. Responses and adaptations to climate change take place within specific (often complex and contested) social, economic and political contexts, involving imbalances of power and voice. Stakeholders have different identities and interests, and collaborate or compete with each other, adopting different strategies and positions depending on their understandings, values and cultures.

Climate change is increasingly recognised as a major threat to the livelihoods and well-being of communities in many parts of Myanmar, including the Southeast (see Literature Review). Loss and damage as a result of climate change occurs not only because of limited capacities for adaption, or coping capacities being exhausted, but it can also be due to the growing intensity of hazards, some of which are likely to be exacerbated in future.

Conflict-affected, ethnic nationality groups are among the most vulnerable - particularly women and children.<sup>6</sup> However, the extent of disruption and likely impacts are not well understood; furthermore, little research has been undertaken regarding how stakeholders understand and respond or adapt to the impacts of climate change. This report provides an overview of these issues, with a focus on inclusive and equitable outcomes.

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5 Upland farmers "slash and burn" (swidden or *taung ya*) rice cultivation is a factor contributing towards "seasonal haze" in the region. The national climate change strategy makes reference to forest fires (Ministry of Natural Resources and Environmental Conservation [MoNREC] 2020, 20). As Borass Saturnino et al (2019, 5) note: "blaming shifting cultivators is unfair ... [and] could result in more extensive and fast-paced transformations of biodiverse spaces into large swathes of monoculture plantations or problematic big conservation projects that expel forest dwellers and users."

6 On gender-differentiated impact of climate change and vulnerabilities of women, see Myanmar Climate Change Alliance (MCCA) 2016.





Migrant workers (Bago region) with their brick making field at Kwinkalay village, Kyarinseikkyi Township, Kayin State, November 2019.

## LITERATURE REVIEW

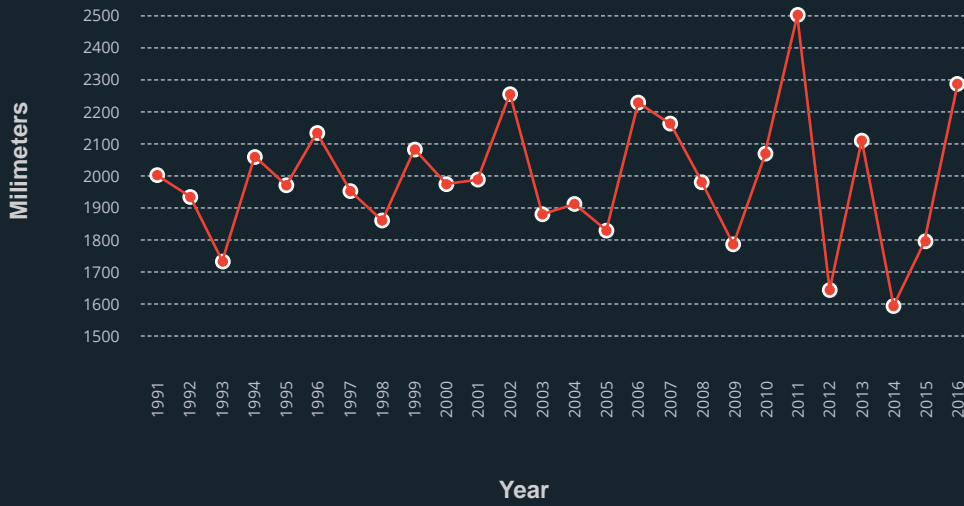
Climate change impacts, adaptation and coping strategies, and the hopes and concerns of communities (particularly women) in Southeast Myanmar are not well understood or documented. This is especially the case in ethnic nationality-populated, armed conflict-affected areas.

## CLIMATE CHANGE - HAZARDS AND IMPACTS

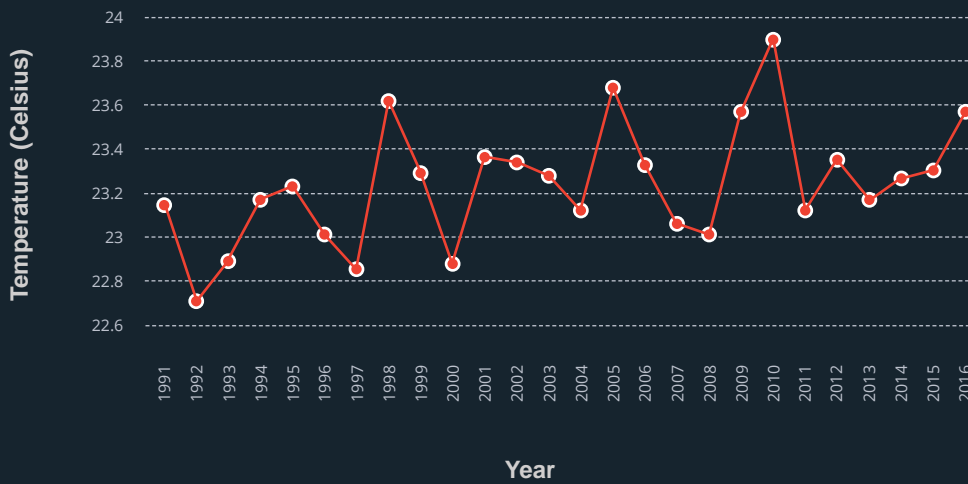
Southeast Asia is one of the most severely climate change impacted and vulnerable parts of the world. Between 1997-2016, about 55% of climate-related disaster deaths in Asia occurred in four countries, including Myanmar (Peters 2018).

Climate Change data for the period 2001-2020 in Myanmar indicates a slight warming of +0.5°C from June to November (the rainy season). SAFEGE The International Department for the Asian Development Bank (2017) notes that during the dry season, warming is more significant (+ 0.7 to +1.2°C, except in the Ayeyarwady Delta area). These patterns likely to accelerate by the middle of the century, with temperatures are expected to increase by up to 2.7°C.

**Figure 2: Annual mean total rainfall across Myanmar**



**Figure 3. Annual mean temperature across Myanmar**



Source: Worldbank - Climate change knowledge portal

# MYANMAR CLIMATE PROJECTIONS

Climate projections elaborated by World Wildlife Fund (WWF), based on data from the government's Department of Meteorology and Hydrology (DMH), show that between 1981 and 2010 average daily temperatures in Myanmar increased by about 0.25°C per decade, while daily maximum temperatures went up by 0.4°C. By the middle of the century, temperatures are expected to increase by between 1.3°C to 2.7°C above historical levels (Horton 2017).

Changes in rainfall patterns are also expected, although these vary by region and season. Projections related to sea-level rise ranging from 20 to 41 cm by mid-century. The monsoon duration over the last 50 years (1955-2008) shows a significant reduction, from 140-150 days in the mid-50s to less than 120 days in 2008. Late arrival of the rains and early ending of the monsoon have been particularly evident since 1977, when the duration of the rainy season dropped below 130 days. Overall duration of the southwest monsoon duration has shortened by about three weeks in Northern Myanmar, and by one week in other parts of the country, compared to observations in the 1950s (Thin Nai Tham 2010).

## WEATHER-RELATED HAZARDS AND IMPACTS IN MYANMAR

### *Cyclones and floods*

Storms contribute yearly to massive displacement within Myanmar, and cross-border migration into Thailand, Bangladesh, Malaysia and China (Thin Nai Tham 2010). In 2008 Cyclone Nargis killed up to 200,000 people, mostly in coastal parts of the Ayeyarwady Delta, and displaced some 800,000 individuals.

Much of Southeast Asia's workforce is engaged in agriculture, forestry, and fisheries - all of which are vulnerable to climate change.<sup>7</sup> Projections of losses in the region include a possible 50% decline in rice yields, and a 6.7% fall in GDP by 2100 (Overland et al 2017). In comparison, the global economic recession of 2008 resulted in a c.4% fall in global GDP.<sup>8</sup>

Extreme weather events hit the poorest countries hardest, as these generally have lower coping capacities, resulting in more time and resources needed to rebuild and recover (Notre Dame Global Adaptation Initiative n.d.). For example, South and Southeast Asia are expected to see some of the world's worst flooding, over the next decade displacing perhaps double the number of people currently affected (Holden 2020).

Globally (in part due to the terrible impacts of Cyclone Nargis in 2008), Myanmar ranks as the country second most seriously affected by climate change in the last 20 years, from 1999-2018 (Eckstein et al 2020). With some 70% of citizens living in rural areas and reliant on agriculture for their livelihoods, Myanmar is highly vulnerable to future climate change. These projected impacts are exacerbated by challenges such as limited rural infrastructure, armed and state-society conflicts, land tenure issues and low agricultural productivity.

According to the UN Food and Agriculture Organization, the agricultural sector accounts for 37.8% of Myanmar's GDP, employs 70% of its labour force and generates 25-30% of total export earnings. Farmers' access to weather and climate information is limited, and they often rely on traditional forecasting and poor weather information from radio broadcasts.

Current agricultural practices and policies do not prepare or support smallholder farmers to face the challenges of climate change. With limited savings and often high debts, smallholder farmers cannot afford to maximize the utilization of land, causing exposure to vulnerable climatic and financial conditions. This means that a season of poor yield constitutes a significant financial and existential challenge.

7 See for example: Pratikshya Bohra-Mishra 2017; Jonatan Lassa 2015; Chan et al 2017; Caballero-Anthony et al 2015; and Chen et al 2012.

8 Source: World Bank data: <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?end=2012&start=2007>

# KAYIN/KAREN – CLIMATE PROFILE AND EXTREME WEATHER EVENTS

According to the Committee for Internally Displaced Karen People (CIDKP): “...not many people in rural Karen State are aware of climate change’s direct causes, or even use the term to refer to the changes they’re seeing. They are, however, among a growing number of vulnerable people forced to cope with the impacts of extreme weather events exacerbated by climate change” (Saw Blacktown 2019). These hazards have been noted also by government officials: “Due to climate change in Kayin State over the past 20 years, the monsoon season is arriving later, and there are episodes of severe drought” (Director of Department of Meteorology and Hydrology March 20, 2020).

Rainfall patterns in Kayin State are similar to other coastal areas of Myanmar, with average precipitation of around 4,270 mm, peaking in July and August.<sup>9</sup> The hottest months are March and April. Between 1981 and 2010, Kayin State experienced 5 years with rainfall of more than 5000 mm, 175 extreme rainfall events exceeding 100 mm, and 8 events exceeding 200 mm of rainfall during the wet season. Maximum temperatures between 1981 and 2010 increased significantly, with about 32% of days having temperatures that exceeded the previous average of 33.05°C.

The increasing annual and wet season rainfall, greater incidence of extreme rainfall events and increases in daytime temperature exposes households to increased frequencies of flooding and landslides, while lower rainfall in dry seasons leads to reduced access to water (BRACED 2016). Furthermore, as in other parts of Myanmar, in the dry season Kayin State villages are often damaged by fires (see Annex 4).

# CLIMATE CHANGE ADAPTION AND MITIGATION: INTERNATIONAL, NATIONAL AND SUB-NATIONAL STANDARDS

There is a deep connection between struggles to mitigate climate change, the development of adaptive strategies (CCA), and Disaster Risk Reduction (DRR). Benefits in achieving a closer collaboration between DRR and CCA policies include reductions in climate-related losses; more efficient use of financial, human and natural resources; and increased effectiveness and sustainability of adaptation and other responses (Venton and La Trobe 2008).

## ***DRR and CCA International frameworks and standards***

The political and institutional contexts within which resilience can be enhanced or undermined are partly defined by international and national frameworks and implementation strategies. Globally and in Myanmar, climate change mitigation and response plans are relatively modest in scope and ambition, mostly geared towards protecting the political-economic and social status quo. These strategies are probably inadequate to address the massive disruptions and damage potentially caused by climate change.<sup>10</sup>

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9 Averages in rainfall and temperature are referenced to the baseline period of 1981-2010.

10 On Deep Adaptation in Myanmar, see Ashley South, 2019.



## ***International frameworks and agreements***

Myanmar has signed several relevant international agreements and conventions, including:

The **2015 Paris Agreement**<sup>11</sup>, that marks the start of negotiations to the design of a new, internationally binding treaty two decades after the Kyoto Protocol. It aims to limit global warming “well below” two degrees Celsius by cutting carbon emissions. In signing the agreement, the government of Myanmar has committed to adaptation and mitigation measures to fight the impacts of climate change, including through its first Nationally Determined Contribution (NDC - Union of Myanmar 2015).

The **Sendai Framework** for DRR (2015-2030)<sup>12</sup> is a global agreement to reduce and prevent disaster risks across the globe, and increase resilience through: 1. Understanding disaster risk; 2. Strengthening disaster risk governance; 3. Investing in disaster risk reduction for resilience; 4. Enhancing disaster preparedness, and “building back better” in recovery, rehabilitation and reconstruction.

The MCCA was established within the Ministry of Natural Resources and Environmental Conservation (MoNREC) in 2013. It is funded by the European Union and implemented by the United Nations Human Settlements Programme (UN-Habitat) in partnership with the United Nations Environment Programme (UN Environment). The MCCA operates as a platform to mainstream climate change issues into policy development and reforms, including by raising awareness; building policy, institutional and technical capacity; and demonstrating methodologies to enable communities and local authorities to adapt.

The MCCA supported the development of key policy instruments for addressing climate change, notably the **2019 Myanmar Climate Change Strategy (MCCS) and Master Plan (MCCSMP) and the Myanmar Climate Change Policy (MCCP)**. Like most climate change initiatives in Myanmar, the MCCA is dominated by central government and major international actors. Roles for communities and CSOs tend to be limited to information sharing, and as yet Myanmar EAOs have not been included in the MCCA.

The **2012 Myanmar National Adaptation Program of Action (NAPA)** identifies activities to address the most urgent and immediate climate change adaptation requirements. This is a joint project between the Ministry of Environmental Conservation and Forestry and the Ministry for Transport. Reportedly, the NAPA may be adapted to reference the situation and possibilities of working in EAO areas.

## ***National and sub-national strategies and measures***

For every \$100 spent on emergency response in Myanmar, only \$6.61 is spent on prevention and preparedness (Peters 2018). Nevertheless, there are indications that the government takes climate change increasingly seriously.

According to the Myanmar Climate Change Alliance (MCCA 2019), “Actions to advance climate change knowledge and public awareness are urgently needed to enhance Myanmar’s capacity to respond to climate risks. [...] the country should integrate climate change into education and training programmes, improve technical and institutional capacities for research in the field of climate change, develop inclusive public awareness programmes, and establish partnerships at the local, national and international levels.”

These policies and plans (together with the 2018 Myanmar Sustainable Development Plan) recognize the need to mainstream climate change into Myanmar’s development agenda. A “green growth” strategy, taking climate change into consideration, requires developing climate resilient, low emission infrastructure and implementing energy efficiency and renewable energy projects supported by sustainable transport systems and integrated urban planning. This will be a major challenge for the government in a country with many internal conflicts, high levels of poverty and a low taxation base (ActionAid 2018).

11 UNFCCC, 2015. [https://unfccc.int/files/essential\\_background/convention/application/pdf/english\\_paris\\_agreement.pdf](https://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf). As of mid-2020, 183 countries have submitted an Intended Nationally Determined Contribution, including Myanmar.

12 See United Nations Office for Disaster Risk Reduction, 2015. [http://www.preventionweb.net/files/43291\\_sendaiframeworkfordren.pdf](http://www.preventionweb.net/files/43291_sendaiframeworkfordren.pdf). The United Nations Office for Disaster Risk Reduction (UNDRR) is mandated to support implementation, follow-up and review of the Sendai Framework. Compared to its predecessor, the Hyogo Framework for Action (2005-2015), the Sendai Framework promotes women’s leadership in DRR and recognizes their critical role in managing disaster risks reduction policies and plans.

The 2019 **National Environmental Policy** attempts to align climate change adaptation and mitigation measures and DRR strategies with environmental protection and natural resource management approaches. However, a strategic framework and master plans to put the policy into action have not yet been developed.

The 2018 **Agriculture Development Strategy** and Investment Plan (in contrast to previous agricultural strategies) recognizes climate change and vulnerability to disasters as challenges and threats to the development of the agricultural and rural sectors. It promotes Community-Based Disaster Risk Management (CBDRM) and preparedness measures such as creating food and seed reserves.

According to a study on decentralized CCA planning in Myanmar, the M CCP, MCCS and MSDP, which are relatively new strategies, are not fully operationalized at sub-national levels. State-level authorities often regard these policies as ambiguous, containing a broad range of sectors and overly optimistic expectations regarding the possibility of coordinating and mobilising limited human and technical resources.<sup>13</sup> According to the World Bank (2017, 7): “current disaster funds seem insufficient to cover even recurrent losses”. Although local authorities are often aware of the risks associated with climate change, they are not sure about how to apply policies in practice.

### ***KNU policies and actors***

Most of the Myanmar’s major EAOs have established environmental protection policies, although many still rely on logging (and mining) activities for revenues. Since 2009 the KNU has officially banned large-scale commercial logging in its areas of authority or control, with exceptions for community use. However, this instruction is not always respected by local leaders, some of whom may have benefitted personally from natural resource extraction.

### ***Relevant KNU bodies***

Within the KNU, responsibility for climate change issues rests with the **Department for Agriculture** and the **KNU Forestry Department**, and the **KNU Environmental Protection Committee** (which consists of these two departments, plus key Karen CSOs). Most of the KNU’s seven districts have established at least one protected nature reserve.

The KNU’s Land and Forest Policies promote federalism and self-determination in relation to natural resource governance.<sup>14</sup> Between 2008-2017 the KNU established 147 new community forests (in addition to 115 already registered).

For the KNU and Karen CSOs, respect for land rights is essential to sustainable climate change mitigation and responses. Senior KNU officials pointed to the relevance of the organisation’s Land Policy, which supports and promotes customary law and other traditional community practices in relation to land. Despite occasional informal discussions the government has not recognised the KNU’s progressive land policies, or endorsed its land registration activities.

Some of the country’s best remaining forests are located in EAO-controlled or influenced areas.<sup>15</sup> The head of the KNU Agriculture Department pointed out that traditional Karen *kaw* farming systems are central to indigenous efforts to protect and conserve the environment.

According to a KNU Forest Department official: “we have a duty to protect the forest, but we don’t have many resources to do so.”<sup>16</sup> For the KNU, protection of the forest must be community-based, and respect local people’s environmental stewardship. This position reinforces the organization’s claims to sovereignty and legitimate governance in its areas of control and claimed authority.

13 Conclusions from Another Development Workshop: “*Local Governance and Climate Change: Decentralized Climate Adaptation Planning in Myanmar*”. Hotel Gabbana, Hpa-an, Kayin State, 24-5 October, 2019.

14 For an overview of KNU land and forestry management, see Kim Jolliffe 2016, 72-84.

15 As an official of the KNU Agriculture Department said: “in Burma, KNU areas are the biodiverse and naturally green areas” (Personal communication, April 15, 2020).

16 Personal communication, March 9, 2020.

## ***Climate Change mitigation strategies in Myanmar***

Healthy forests are integral for stability of the environment in Myanmar. However, there have been huge changes in land uses within the past 20 years (MCCA 2015). Tree cover in 1990 was 58% of total land area, but was reduced to 51.5% in 2000, and 47% in 2010 (FAO 2010, 141).

Although nearly half of Myanmar's total land area is still forested, most forests are degraded. Managing Myanmar's remaining forest is vital, as deforestation is widespread, contributing to extreme weather conditions and loss of biodiversity, and reducing the absorption of greenhouse gases. The MCCA (2017, 2) has stated that: "one of Myanmar's major challenges ahead is to enhance the carbon sink potential of its forests which can also help generate other co-benefits such as adaptation." The 2019 Myanmar Climate Change Strategy listed among its priorities the maintenance of "healthy ecosystems" to enhance greenhouse gas sinks. Other priorities include "low-carbon and resilience growth" to decouple Myanmar's continued growth from increasing greenhouse gas emissions and contribute to the global climate change mitigation, while meeting Myanmar's social and economic development needs (Union of Myanmar 2019).

Despite these encouraging policies, the Karen Environmental and Social Action Network (KESAN) warns that if deforestation in Karen State continues it will contribute to climate change. Causes of deforestation include the expansion of mono-crop commercial agriculture, often facilitated by land grabbing, and unregulated mining and natural resource extraction.<sup>17</sup>

# **CLIMATE CHANGE, CONFLICT AND MIGRATION**

Armed and other conflicts often cause forced migration. Climate Change can be a cause of conflict and migration, and/or be caused by conflict and migration.

The negative impacts of conflicts and displacement on individual and community well-being are well documented. In general, communities already vulnerable due to armed conflicts experience greater challenges in adapting to climate change. Migration is one of the main adaptations and coping strategies adopted by affected people.

While climate change is increasingly framed as a possible threat to peace and development, there is as yet no systematic comparative analysis in the literature, or scholarly consensus<sup>18</sup>. Disasters can sometimes decrease the incidence of conflict (Ruttinger et al 2015). However, the evidence is patchy and not well understood.<sup>19</sup>

## ***The centrality of politics***

**A recent briefing by the International Committee of the Red Cross (ICRC) states that (Vivekananda 2020):** *The combined effects of climate change and conflict increase the number and intensity of crises for the world's most vulnerable people. To build long term, sustainable peace and resilience, we need better risk analysis to understand the ways that climate change and conflict interact in specific contexts and how they affect people differently [...] All too often, however, we see technical approaches to complex environmental and climate change disasters which do precisely this: they fail to recognize the climate and conflict nexus and thus fail the first rule of any intervention – to do no harm. [...] The solutions to address climate change are inherently political, as are the reasons that some people are more vulnerable to climate change than others.*

<sup>17</sup> According to KESAN, mono-crop plantations have caused at least 33 streams to run dry in the eastern Dawna Range. KESAN's work on climate change and other issues can be found at: <https://kesan.asia/>. This includes Climate change and indigenous knowledge (2018), a Karen language book about how Karen indigenous people have experienced and adapted to climate change.

<sup>18</sup> For a recent discussion of the complex relationships between climate change and conflict, see Katie Peters, Mairi Dupar, Sarah Opitz-Stapleton, Emma Lovell, Mirianna Budimir, Sarah Brown & Yue Cao, Climate change, conflict and fragility: An evidence review and recommendations for research and action (ODI June 2020).

<sup>19</sup> See Katie Peters, 2017 & 2018, who notes the state-centric nature of most DRR efforts (2017, 24).

Given the need for politically informed analysis, and the risks of an overly technical approach, it is important to understand the conflict context of Southeast Myanmar. Since independence, Burma/Myanmar has suffered from conflicts between the government and Myanmar Army, and numerous EAOs (see section on Research locations). Conflict-affected communities are among the most vulnerable to climate change: their coping capacity is low, as well as their options to anticipate, absorb and adapt to climate change (Neaverson et al 2019). Moreover, various studies have shown connections between climate change and the emergence of intercommunal tensions in fragile socioeconomic, political and demographic settings (Ide et al 2020; Schleussner et al 2016; and Xu et al 2016).

The MCCP recognizes that climate change exacerbates inequalities and can fuel conflict (Union of Myanmar 2019, 9j). Conflict also exacerbates the effects of climate-related shocks, as there are usually higher levels of poverty and displacement in conflict-affected areas (Neaverson et al 2019). The impacts of climate change may affect inter-state relations by driving humanitarian crises and migration (Overland et al 2017). Previous research (see for example South and Jolliffe 2015) has noted the difficulty of separating conflict-induced migration from other drivers (including economic factors).

### ***Climate Change and migration***

Patterns of forced and economic migration (which are often not readily distinguishable) interact in relation to climate change in complex ways. Migration can be an adaptation to climate change impacts, and/or potentially a driver of climate change.

Globally, three times as many people are displaced annually due to climate change and extreme weather events than because of armed conflict. Some 97% of those displaced between 2008-2013 were living in developing countries, with 81% in Asia (Nansen Initiative 2015). A recent analysis (Overland et al 2017, 9) notes that: “the greater the proportion of the population engaged in agriculture, the more likely is climate change to cause migration.”

Over the past six decades, millions of people have been forced to migrate due to armed or structural conflicts in Myanmar. Some remain within the country as Internally

Displaced Persons (IDPs) as per guiding principles on internal displacement (OCHA 2001) while others have fled to neighbouring countries as legal or de facto refugees (under the 1951 Refugee Convention).

In the context of decades of armed (and broader state-society) conflict, Karen and other ethnic nationality communities in Myanmar have experienced repeated episodes of forced migration and displacement, often accompanied by widespread and systematic human rights abuses, mostly on the part of the Myanmar Army.<sup>20</sup> As of mid-2020 there were around 100,000 verified refugees in ten Karen and Karenni “temporary shelters” in Thailand, plus around three million migrant workers from Myanmar currently living and working in the Thai kingdom, many of whom are acutely vulnerable and left their homeland for similar reasons to the refugees (Glauert 2017 ; International Organisation for Migration [IOM] 2019).

Migration can provide alternative/additional incomes for those back home through remittances. In 2015 the value of remittances sent home by the approximately three million Myanmar citizens living in Thailand was as much as \$8 billion, or 13% of GDP (Akee and Kapur 2017).

### ***Southeast Myanmar***

After decades of armed conflict, the situation of IDPs in southeast Myanmar is highly complex. Forced migrants range from those in refugee camps, and unregistered communities living in the Thai borderlands, through to those in various ceasefire areas under the authority of EAOs, and in government-controlled areas (South and Jolliffe 2015).

The Border Consortium (TBC) and its partners conducted the most recent estimate of IDP numbers in southeast Myanmar in 2018. They calculated that there were still about 162,000 IDPs in the area from Kayah State through Tanintharyi Region (TBC 2018). About half of the IDPs in southeast Myanmar had returned home, or otherwise moved on since the beginning of the decade. Nevertheless, some 250,000 people (including refugees in Thailand) remained forcibly displaced and have yet to find “durable solutions” to their plight.

The biggest challenge to durable solutions (especially “return”) is the presence and conduct of military actors. Particularly concerning is the ongoing (post-ceasefire) existence of Myanmar Army bases located close to

20 For example, despite the official ceasefire, between March and May 2020 Myanmar Army columns attacked civilians and destroyed KNU-established coronavirus public health checkpoints in northern Karen State (Free Burma Rangers 26-20-2020).



civilian settlements, and in areas from which people have fled. This continued militarisation undermines local trust in the peace process. Durable solutions for displaced people will depend on sustainable improvements in the political and security environment and an end to armed conflict, and thus are tied inextricably to the peace process (see Research location section).

## RESILIENCE AND “SOCIAL CAPITAL”

The social capital of communities in Myanmar is a key element in local capacities for resilience. Membership of ethnic nationality and/or faith-based networks is an essential part of social capital in many communities.

Disasters (or responding to them) can sometimes increase social cohesion and contribute to Informal Social Protection, through strengthened networks and community social capital. This happened for example in India and elsewhere following the 2014 tsunami (Peters 2018).

Ethno-linguistic and faith-based networks are important aspects of community social capital, fostering resilience. In times of crisis, people support each other as a result of mutual trust and affection, based on shared identities. Family and friends are often rescuers, and first providers; sources of social protection.

Following De Tocqueville, Putnam et al (1993) use the term “social capital” to refer to: “features of social organisation, such as trust, norms, and networks, that can improve the efficiency of society by facilitating coordinated actions.” For Putnam, trust is a key element of social capital, with community bonds relying on expectations of reciprocity. Strong social capital resources can support abilities to cope with a crisis or to return to pre-crisis status (resilience). As discussed in the Research Findings section, these nine villages provide ample evidence for the importance of faith-based and other identities in social capital formation and deployment.

Regarding attitudes to and within Myanmar civil society in relation to disaster response, McCarthy (2020, 13) argues that: “the outpouring of aid during natural catastrophes reveals moral conceptualizations of citizenship – often actively encouraged by government officials – in which commercial elites, welfare groups and ordinary people provide aid and relief in the aftermath of disasters.” Focusing on the mechanisms and language through which non-state actors understand moral duty, he asks (2020, 13): “who gets included, and how, in visions of moral community which symbolically enable non-state relief efforts? Despite the emancipatory promise of moral citizenship ... non-state relief can also exacerbate social hierarchies and entrench exclusion, as it renders access to emergency aid contingent on inclusion in socially bounded imaginaries of reciprocity.” The practices and processes which generate social capital can sometimes be rather exclusive, particularly when framed in terms of membership (or not) of ethnic or religious communities.

# METHODOLOGY

## GAPS IN EXISTING KNOWLEDGE/LITERATURE

The Literature Review identified only limited knowledge of climate change hazards and impacts, local adaptations and coping strategies, and the hopes and concerns of communities (particularly women) in Karen-populated areas of southeast Myanmar. On the basis of these lacunae, the ActionAid Myanmar (AAM) team developed Research Questions, which were produced during the inception workshop to produce context-relevant Interview Questions (see Annex 1).

## RESEARCH METHODS

The authors reviewed existing documentation and reports regarding climate change in Myanmar and the region, with a focus on Karen/Kayin communities in the southeast (as summarised above). Additional primary data was collected by the authors (lead researchers) and local researchers, who conducted 30 Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs), including with KNU and DKBA leaders, in Myanmar and Thailand, the KNU Liaison Officer in Hpa-an, and a number of government departments in Hpa-an and Yangon (including the Fire Department, Department of Metrology and Hydrology, Disaster Management Department, Social Welfare Department). Several CSO informants were also interviewed.

Primary research in the nine research villages was undertaken by a team of 12 ActionAid Myanmar Fellows, through their CSO: the “Local Fellows Network” (*Ahlin Pan*: “Flowers of Light”). A research orientation (inception) workshop was held in Hpa’an on 5-6

February 2020, during which participants worked with the Research Questions to develop and translate a set of Interview Questions for use in the field (see Annex 2).<sup>21</sup> The local researchers collected data between 8-10 February, following which a debrief and validation workshop was held in Hpa’an on 12 February. A further online debrief and triangulation session was held with the Fellows and researchers on May 6.<sup>22</sup>

## CAVEATS AND LIMITATIONS

This research was undertaken with a limited timeframe and budget, with a focus on local understandings and adaptations. Government and international partner interventions, and the important roles played by EAOs and CSOs, are included only when these were mentioned by KII and FGD participants. Annex 3 provides an overview of “Aspects of previous DRR and CCA actions in the research area,” including the BRACED project (2015-18).

In addition to the great diversity within and between different Karen communities, individual village dynamics are often complex. Karen and other communities are not homogenous, but sites of different identities and interests, and networks of inclusions and exclusions. The research was not always able to uncover intra-village dynamics. However, several informants stated that villagers faced similar issues, and responses did not differ greatly between families. Most villages are (reportedly) relatively “horizontal” in terms of power and money.

The research was (mostly) conducted and writing began before the Covid-19 crisis took hold in Myanmar. Due to the coronavirus pandemic, some roundtable and debrief sessions with the local researchers had to be moved online. While several additional interviews with government staff were conducted by local researchers (and transcribed), some had to be cancelled because of the health emergency.

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21 During the inception workshop, an inventory of potential risks and mitigation strategies was developed.

22 Consent forms were completed for every interview, with reminders that people have the right not to participate in the research.

# RESEARCH LOCATIONS

## MYANMAR - CONFLICT AND PEACE CONTEXT

Since independence in 1948, Myanmar has been affected by armed conflicts between successive governments and several dozen EAOs (and until 1989, a powerful communist insurgency: Smith 1999). Following the military coup of 1962, ethnic communities have often experienced the government and its armed forces (the *Tatmadaw*) as predatory and violent, with an agenda to impose a unifying national identity based on the culture and language of the Burman (*Bama*) majority community, which constitutes about two thirds of the population.<sup>23</sup>

The number of Karen people living in Myanmar is contested, but likely at least five million people, of whom a minority live in the officially designated Kayin State. The rest live in adjacent states and regions, plus Yangon and Ayeyarwaddy Regions. (Some four hundred thousand Karen live in neighbouring Thailand.)

Since the late 1940s and 1950s the main Karen EAO, the Karen National Union, has lost control of most (but not all) of its once extensive “liberated zones”. Remaining areas of KNU control remain in the northern Karen hills, and to a lesser degree pockets of southern Karen State (the research location), as well as in eastern Bago Region, and in Tanintharyi Regions to the south.

From late 2011 through 2012 the U Thein Sein government negotiated (or in some cases re-confirmed) ceasefires with ten of Myanmar’s eleven largest EAOs. These included the KNU, which in January 2012 agreed a bilateral ceasefire, bringing to a halt seven decades of armed conflict. On 15 October 2015 the KNU and seven other EAOs (including two other Karen groups) signed the multilateral Nationwide Ceasefire Agreement (NCA) with the government and Tatmadaw. However, the peace process remains deeply flawed and contested: in the eight years since the NCA, armed conflict has in fact greatly intensified across northern and western Myanmar (Kachin, Shan and Rakhine States).

During a half-century of conflict, the KNU and several other EAOs developed extensive administrations and service delivery systems, including departments of education, health, forestry, agriculture, finance etc. These quasi-state regimes vary in effectiveness and scope, but in many areas these are the main political authorities and providers of social services. In EAO-controlled areas, and in many areas of “mixed administration” (where one or more EAOs compete with the Myanmar Army for control of local populations and resources), the state is still excluded, or regarded locally as an intrusive, violent and predatory force; in contrast, EAOs like the KNU enjoy significant political legitimacy among conflict-affected ethnic nationality communities.<sup>24</sup> Today most EAOs in Myanmar are demanding a federal and democratic systems of government. However, different EAOs have different political positions, and the peace and conflict situation on the ground is complex, with fragmented territorial control, and sometimes armed clashes between different EAOs.

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23 For a detailed analysis of the political dynamics of this period, see: Ashley South et al, 2018; Ashley South 2017; and ActionAid, 2020.

24 While several of the longer-established EAOs demonstrate state-like qualities, others have developed only rudimentary governance and service delivery systems, and many local militias offer few benefits to local communities.

## ***The Nationwide Ceasefire Agreement***

The significance of the NCA was diminished by the fact that a dozen EAOs were either barred from, or refused to sign the agreement.<sup>25</sup> The NCA (which explicitly includes rather than superseding earlier bilateral ceasefires provides three main outcomes, implementation of which remains incomplete and contested: a process of Union-level and sub-national political dialogue, aimed at achieving a federal political settlement; a ceasefire monitoring mechanism (the Joint Monitoring Committee); and arrangements regarding implementation and coordination of services and governance administration, during the interim period of continuing negotiations towards a hoped-for Union Peace Accord (“Interim Arrangements”: see below).

Article 25 (Chapter 6) of the NCA recognises the roles of EAOs in natural resource management and development activities, and mandates international assistance in these sectors, in cooperation with the government. However, failures to implement the NCA remain one of the signatory EAOs’ main grievances.

In areas where ceasefires have held – i.e. across most of Southeast Myanmar – conflict-affected communities have experienced significant improvements to freedom of movement and livelihoods. Nevertheless, communities remain concerned about widespread land-grabbing as ceasefire areas become more accessible to private sector actors, and many are worried about continued militarisation and the prospects of truces breaking down (South 2017; South et al 2018).<sup>26</sup>

## **PRIMARY RESEARCH LOCATIONS**

Primary research was undertaken in nine villages in Kawkareik and Kya Inn Seik Kyi Townships in central-southern Kayin/Karen State (see Map 1).

The government’s territorial-administrative demarcation is not congruent (does not overlap) with that of the KNU. This area is designated by the KNU as Duplaya District, 6 Brigade of the Karen National Liberation Army (KNLA: the KNU’s military wing).<sup>27</sup>

These villages were selected as research locations because AAM provided assistance here following the floods of 2019. Of the nine villages, three were locations where AAM had not worked much before; the other six have hosted AAM Fellows, in some cases since 2013.<sup>28</sup>

The villagers are almost exclusively Buddhist, speaking eastern Pwo (mostly) and Sgaw dialects of Karen, with two villages being primarily *Bama* Buddhist. Unlike upland Karen villages (which generally are smaller, and practice rotational/swidden rice farming), these communities practice irrigated (lowland paddy) rice cultivation. Although harvesting rice remains the main form of food production and income generation, these communities have adopted a range of agricultural and other livelihoods practices.

According to the local researchers, most villages felt that their lives and security have improved since the ceasefires, but many still live in fear of state and non-state armed groups. The KNU has been active in the area since the late 1940s, and since it split with the KNU in 1994-95, the Democratic Karen Buddhist Army (DKBA, also an NCA signatory) has also exerted a strong influence in the area, not least because of the local population are mostly Buddhist.<sup>29</sup> In addition, the KNU-KNLA Peace Council (PC, which split from the KNU in 2007, and also signed the NCA) is also present in the area.<sup>30</sup>

25 Initial NCA signatory EAOs: KNU, Democratic Karen Benevolent Army (DKBA), KNU- KNLA Peace Council (KNU-KNLA PC), Restoration Council of Shan State (RCSS), Chin National Front (CNF), Pa-O National Liberation Organization (PNLO), Arakan Liberation Party (ALP) and the All Burma Student’s Democratic Front (ABSDF). On 13 February 2018 two more EAOs, the New Mon State Party (NMSP) and the Lahu Democratic Union (LDU) signed the NCA.

26 See also numerous Reports of the Karen Human Rights Group (<https://khr.org/reports>).

27 For descriptions and analyses of KNU administration and politics, see Ashley South (2011) and Kim Jolliffe (2016). Among the 7 KNU Districts/ Brigades, Duplaya District (KNLA 6 Brigade) enjoys perhaps the closest (business and political) relationships with the Tatmadaw.

28 In the six villages where AAM had worked before, additional information is available in the community-generated “Village Books”.

29 In 2010 the DKBA further divided, with the bulk of its units becoming Myanmar Army-controlled Border Guard Force (BGF) battalions. However, DKBA units in central and southern Karen State refused to become BGF battalions, and briefly returned to armed conflict before agreeing a separate ceasefire in 2012.

30 For description and analysis of conflict and peace in Karen areas, see Ashley South 2011 and 2017; and Ashley South et al 2018.



**Map 1. Kayin State - government's and KNU's territorial-administrative demarcations.**



Source: South, 2011



**Harvesting areas of Myapadaingnaing village.  
27 Nov 2019, Myapadaingnaing Village,  
Kawkareik Township, Kayin State.**

These villages are in “mixed administration” areas, where control and authority are shared (or contested) between one or more of the above EAOs, and the Myanmar Army. One of the main concerns expressed by the KNU and many civilians is the incursion of government authority into previously KNU-controlled areas. Despite the NCA, local KNU structures have little formal engagement with the government, with most contacts being through informal local (including business) channels.

### ***Interim Arrangements***

The KNU Agriculture Department Director (and Central Committee member) emphasised that the NCA is the preferred framework for collaboration between the KNU and the government on climate change.<sup>31</sup> Article 25 (Chapter 6) of the NCA recognises the roles of signatory EAOs in the fields of health, education, security and natural resource management – which could include action to address climate change. However, there is no mechanism for handling the relationship between EAO and government service delivery and governance systems.

Since 2015, “Interim Arrangements” has become a contested concept, meaning different things to different actors. The “interim period” is generally understood to be that between signing of bilateral ceasefires and the NCA, and the finalisation of a comprehensive political settlement; the “arrangements” referred to are EAOs’ service delivery and governance functions. However, little progress has been made towards agreeing the relationship between state and non-state service delivery regimes has been slow.

Many ethnic stakeholders are concerned that international agencies, and particularly major donors, are pushing a “convergence agenda”, aimed at merging EAO and civil society service delivery with that of the state. While convergence between EAO and government systems may be appropriate in some scenarios and sectors, for most EAOs and CSOs Interim

# RESEARCH FINDINGS AND DISCUSSION

This section reports on the Key Informant Interviews (KII) and Focus Group Discussions (FGD) conducted by the authors and local research Fellows. The narrative reflects Interview Questions developed in the inception workshop, based on the Research Questions (see Methodology section and Annex 2).

## HAZARDS, IMPACTS AND VULNERABILITIES

**Government official (February 11 2020):**

*The rainy season is getting shorter - but the volume of rain is increasing.*

### **Hazards and impacts**

People do not usually experience hazards as the result of “climate change” per se, but rather as flooding, landslides, drought, crop failure etc. Impacts are sector-specific, and it is difficult to disaggregate climate change from other factors driving or complicating individuals, families and communities’ coping mechanisms and strategies. Overall however, there was a consensus from research informants and the Fellow local researchers that climate change is a major factor in people’s lives, is linked to various hazards and is growing more significant every year (increasing as a threat).

Slow-onset hazards mentioned in KIIs and FDGs include drought; irregular rains; a shorter rainy season, but more violent downpours; increased temperatures; and lack of access to water. Rapid-onset hazards are floods – resulting in submerged fields and roads, and damaged bridges; landslides; fire (including from cornfields after harvesting); increased incidence of pests; and strong winds. Some informants also mentioned risks associated with lightning strikes and earthquakes - disasters not attributed to climate change.

**MK FGD:**

*Because of river-bank landslides, there are less farmlands to cultivate and less spaces to live. In early rainy season and late rainy season there is less rain. In the mid rainy season there is lots of rain. Because of much rainwater, paddy can't be cultivated at the right time, and paddy yields are lower.*

As the cultivation time for paddy is reduced, green grams, green beans, peanuts and sesames are grown as replacements.

**PY KII 1:**

*The floods were worse this year. We worry also about fire in the dry season... Although we continue farming, the rice does not grow like before. In the past, one season of rice could feed the whole family for the year. Now the soil produces less and less, and we need to borrow money for agricultural inputs - but still the harvest declines, so we get into debt.*

Deforestation was mentioned by several informants as a driver of climate change. Responders mentioned that poor people cut down trees because they lack income for basic needs. Deforested hills are less able to retain water, and this is connected to increased flooding. Poor villagers’ lack of farmland and other natural resources leads them to engage in marginal agriculture, including farming in forested and/or flood-prone areas; landlessness is also a factor driving unsustainable indebtedness. This is exacerbated by economic underdevelopment, with few non-agricultural jobs available locally.

**TTG KII3:**

*These days there is more deforestation and more population.*

The impacts of these hazards on agriculture and food security are *short-term* crop destruction: livestock killed [pigs, buffalo]; rice and other crops damaged by insects; and *longer term*: less land to cultivate because of landslides; crop failures, and food scarcity.

#### **PY FGD:**

*At the flooding time our village is having crimes. Rubber, gardens, paddy field, fishery, stream, dam, lake got destroyed. Even buffalos drowned. Paddy was dead.*

*Infrastructure impacts* include riverbank erosion;<sup>32</sup> damaged and destroyed roads; bridges destroyed or flooded; collapsed latrines; strong winds blowing down trees; and other property damage, including to houses (sometimes destroyed), and particularly damaged rooves (due to strong winds).

*Impacts on health and safety* include death and injury, at the time of or just after disaster strikes; malnutrition; disease (for example, greater prevalence of dengue fever is widely reported post-disaster); psychological insecurity; heatstroke (especially among the elderly); and illnesses reportedly caused by polluted rivers.

In addition to individual psychological impacts, *social impacts* include increasingly insecure livelihoods, exacerbated by widespread debt (mentioned by many as a major issue, following disasters);<sup>33</sup> family separations (related to migration - see below); deteriorating social capital (and thus less social protection) among disaster-affected communities; and impacts on children who cannot go to school when it is too hot, or when schools are closed because of floods.

### ***Vulnerabilities: high levels of insecurity compounded by flooding***

#### **MK FGD:**

*People feel insecurity. There is less security in poor families. Households with more women also feel insecurity. Villagers quarrel with each other and get lack of trust to each other.*

Historically, these villages had been exposed to long-standing and violent armed conflicts, widespread and extremely serious human rights abuses, and chronic poverty and underdevelopment. Although since

2012 ceasefires in Southeast Myanmar have largely held, many community members remain fearful and traumatized. These Karen communities are marginalised and vulnerable, but also resourceful and creative.

As the nine research villages were all in “mixed administration” areas, it was difficult to assess relative vulnerability between government-controlled, “mixed administration” and EAO-controlled areas. In general, EAO-controlled villages are more likely to be upland areas, with villagers using rotational/swidden farming methods, and tend to be relatively remote and therefore have less access to external assistance. Sometimes in these areas help is provided cross-border from Thailand.

The poor tend to occupy and farm more marginal/vulnerable land, and as a result are likely to be generally more affected by disasters. Poor and landless households near streams and rivers are more vulnerable to flooding than those in more secure locations. Households living on hillsides are also vulnerable to potentially deadly landslides. Women, children and people with disabilities are more vulnerable than men during floods, as they often cannot swim.

#### **MK KII 1:**

*Particularly vulnerable are households with many children, with pregnant women, with disabled people, poor people. It is difficult to access medical services for women during periods of natural disaster.*

In less remote areas, flooding brings different challenges. Chemical and plastic pollution can contaminate water supply after floods, especially along the Thailand border, in KNU and DKBA areas, where corn/maize production is concentrated. Some people also mentioned the danger from burning plastics when clearing cornfields (see below).

32 Some informants said that dredging rivers for sand (for building materials) impacts the integrity of the riverbank, which can cause collapse when the rains come.

33 According to Mike Griffiths 2017, climate change “is perceived by rural communities to be a significant contributor to the rapid decline in sustainability of rural livelihoods, with the emergence of new risks accompanied by new iterations of old ones. Most coping strategies involve borrowing, with over one in ten households in rural Myanmar reporting unsustainable debt levels, resulting in loss of assets, land, and resorting to risky and unrewarding work.”



# DISASTER RESPONSES

## MK KII 1:

*Local resources are paddy fields, village monastery, having own boats, being able to network with outsiders and having rescue activities.*

## MK FGD:

*During floods, we displace... Flooding is faced yearly. Death.*

Responses to hazards can be Absorptive, Adaptive or Transformative, categorized depending on circumstances and capacities used (see Glossary). Responses and adaptations take place within specific, gendered and sometimes contested social, economic and political contexts, involving imbalances of power and voice. Different stakeholders have different identities and interests, and collaborate or compete with each other, adopting different strategies depending on their understandings and positions, values and cultures.

Several informants (and research Fellows) reported the importance of government (Department of Hydrology) radio broadcasts, which were often the first warning people had of impending weather-related hazards. This information sometimes encouraged people to prepare for coming hazards.

When disaster strikes, people often have little warning. Short-term, emergency responses (using Absorptive Capacities) mostly consist of fleeing to safer space (often, higher ground). Many people reported staying in a monastery, or with relatives; those who have the resources flee by boat. There are stories of local people helping each other in the aftermath of floods.

Short-term assistance often took the form of rescue teams seeking out the needy, sometimes in boats. These came from local authorities: government, and also sometimes to KNU, and/or affiliated CSOs (see below).

## MK KII 3:

*During flood, auxiliary groups and warning systems for rescues are organised.*

Often, local (private) entrepreneurs bring drinking water by car after the flood-water recedes. Reportedly, people pay what they can and if they have no money, villagers can reportedly pay in-kind (barter trade) or with labour.

Health facilities in these villages come from government, and to a lesser extent EAO health departments, with no private health care available, except some medicines for sale in village shops. Therefore one of the post-flood priorities for villagers is repairing roads, in order to send sick people to hospitals in nearby towns, and transport vulnerable (and elderly) members to extended family or friend networks in less disaster-affected areas.

In general, processes of decision-making and responses to hazards in these nine villages seem relatively egalitarian - albeit that leadership comes mostly from (government) Village Administrators, monks and other men. There does seem to be space in these Karen communities for women to play leading roles in DRR activities.

Despite the prevalence of patriarchal norms and practices, there is widespread recognition of the importance of supporting women's agency and empowerment. In times of crisis especially, women often take the lead. Women who have participated in empowerment projects (often run by NGOs and/or CSOs) are reportedly more likely to speak out and take the lead, as are those who have returned from being migrants in Thailand, and who may have received some training, and/or been responsible for delivering a significant portion of family income. However, more "traditional" (patriarchal) gender roles are rooted in most communities.

## Fellow:

*During the fighting times, women were often village heads and had more roles in the community - but after the ceasefire, women have gone into the background again.*

## Village woman quoted by Fellow:

*My husband usually takes the lead role in our family - but there is informal power sharing between us.*

Depending on the time of year and day, it can be difficult for women to join trainings because of their roles in the household. Nevertheless, many informants identified ways in which women's participation can be supported.

**PY KII 3:**

*Women need space, and often also financial support. We have a maternal and child group, health committee, and women's affair committee. Bringing women into discussions is good for common understanding.*

Key elements in response include the quality of individual local leaders; the availability of relief items, and other resources; and village leader, families and individuals' engagement in networks of information and distribution. Access to news and relief items is structured in part through relationships embedded in both local ethno-linguistic and religious (Buddhist) networks; and/or related upwards and mediated through relationships with government and/or EAO systems of patronage and protection (complicated, in these areas of "mixed administration"). Effective local leaders seem to have good connections to (potential) patrons, and protectors - whether these are government officials, local businesspeople, NGOs or EAO cadre.

Connections with government and aid officials are very important. In addition to such (neo-patrimonial) patron-client networks, many informants mentioned the importance of cultural resources. Mutual support and self-help (social protection), drawing on bonds of trust and social capital, derive from ethno-linguistic and religious identities and networks, and local traditions of community mobilization and cooperation. However, local cultural memories and resources, for example in relation to communal activities such as working together at harvest time, are reportedly fading with time.

**Male villager quoted by Fellow:**

*Traditional agriculture practices and knowledge are breaking down; because of climate change, the old ways are not working any longer.*

Nevertheless, many villagers mentioned religion (Buddhist faith, and the monastery) as important local resources, and many talked about episodes of working together in times of crisis.<sup>34</sup>

**PY FGD:**

*Our local resources: language; faith in Buddhism.*

**TTG KII3:**

*The monk, village leader, women working together in decision making.*

Indigenous Buddhist networks provide both psychological and spiritual care, and material protection and support, especially (but not only) in the aftermath of disaster. As well as the mutual solidarity that comes from participation in religious community, association with the Buddhist *sangha* provides access to some material benefits. Monasteries become temporary places of refuge, and monks channel support that is collected in the form of financial and in-kind donations from other (relatively less disaster-impacted) villagers, and from Buddhist communities in nearby villages and towns - and also sometimes from migrant workers in neighbouring Thailand. These forms of Buddhist patronage and *parahita* (social work) are expressions of *karuna* (compassion), and crucial elements of the political economy (and ecology) of giving in Myanmar, revealing much about local power dynamics, solidarity and patronage (Walton 2017). Such "organic" and "traditional" activities are at the heart of community but are easily overlooked by external assessments using imposed frameworks. It is important that external interventions do not undermine local systems of sustainable agency.

Local civil society is very important, including in the early stages of response. Youth and women's groups, which are mostly organic (secular but "traditional") organizations generally have elected/selected secretaries. Members may assist people moving house, and help out at local weddings and funerals etc. They also provide local dispute resolution, particularly with women's groups addressing and sometimes helping to resolve domestic disagreements. In times of crisis,

34 Some responses within a Buddhist framework are rather fatalistic: "this is our *Karma*, and we have to accept it" (reported conversation from an interview on March 17, 2020).

youth and women's groups often help with emergency responses, for example assisting flood victims to relocate safely.

Buddhist Monastic committees help to arrange accommodation and food for displaced people, and organise funerals for the drowned. Also as noted above, in times of crisis the Buddhist sangha often collects donations for the victims of floods and other disasters, sometimes through extensive networks that can include migrant workers and urban-dwellers. Many KII and FGD participants mentioned Buddhism and community spirit as sources of strength.

**IK KII3:**

*Cooperation is a good habit within the community.*

**MK KII 2:**

*There was an auxiliary rescue team. Village monk led in warning.*

**HKN KII3:**

*Only Karen people live here; we all speak the same language, and all are Buddhists.*

Village Disaster Management Committees (VDMC) were mentioned by several informants. Unfortunately, following the closure of the BRACED project (see section on Aspects of previous DRR and CCA response), the VDMCs seem to have received little support (at least in these nine research villages). Given limitations on the research, it was not possible to assess the inclusiveness of local village leadership (including VDMCs) in relation to marginalised groups. This is an important issue, given that already marginalised groups are likely to be more vulnerable to the impacts of climate change.

Especially in 2018, when floodwaters were the highest in 30 years,<sup>35</sup> the responses of different government departments seem to have been helpful and appreciated. Arguably (according to government officials), the relatively less damaging impacts of flooding in 2019 were due to improved infrastructure, such as by raising the level of some roads that had been re-built following floods the previous year ("building back

better").

How much government departments can do depends greatly on availability of budget, and orders from above. KIIs within Government Departments revealed a lack of available budgets for emergency relief (e.g. flood response). Responses were often ad hoc, utilising volunteer labour and what supplies were readily at hand. The response was often admirable, if limited; more could be done with better planning and greater resources.

There have been efforts from government to provide aid to flood and fire-affected communities beyond urban areas. This shows government making efforts to reach more marginal communities, including some in conflict-affected areas. Limited cooperation was reported between the KNU and government during the emergency response phase of flood relief. Both KNU and government officials talked about having relatively good relationships regarding relief activities, with each side allowing the other access to "its area" - plus the occasional sharing of relief supplies (mostly government donation to KNU areas).

There are possibilities to expand EAO-government partnerships in remote and conflict-affected areas. Both sides seem open to this in principle and depending on the dynamics of the peace process. So far EAO-government collaboration in Disaster Risk Response seems to be limited to granting each other access to areas of respected areas of control.

**Department of Rural Development  
(February 12 2020):**

*Collaboration on flood relief with the KNU (in this case, Brigade 1) worked well. As requested, we provided them [the District KNU] with dried noodles, rice and peas.*

**General Administration Department  
(February 14 2020):**

*We have a good relationship with the KNU. After the floods, rations were given [by government Village Tract officials] by going along with KNU.*

35 According to a KII government official interviewed on April 14, 2020.

**Male villager quoted by Fellow:**

*EAOs and government both gave us help after the flood, but it would be less confusing for the villages if they can work together.*

*We have a good relationship with the KNU. After the floods, rations were given [by government Village Tract officials] by going along with KNU (General Administration Department February 14, 2020).*

However, villagers also commented on government obstruction of KNU relief and development activities.

**Villager quoted by Fellow:**

*In our village, the KNU has built a big hospital, but government don't allow it to operate and so it is mostly not working. In our village, the government blocks KNU from helping people.*

Numerous informants reported that the KNU and affiliated CSOs provided various types of support to communities in different phases of hazard and response. Participants in KIIs and FGDs mentioned the following EAO or affiliated sources of aid: the District and Township KNU administration, the Committee for Internally Displaced Karen People (CIDKP - the KNU's relief and development wing), the Karen Department of Health and Welfare (KDHW - the KNU health department), the Backpack Health Workers Team (BPHWT), and the Burma Medical Association (BMA). Some Thai (Thai-Karen) private individuals travelled to the affected area from Ber Kler on the Thailand border to help and distribute donated money and goods.

This research did not systematically collect information about assistance provided. Karen CSOs, operating out of KNU-controlled areas and/or cross-border from Thailand, provided short-term relief, and also engaged in longer-term research, advocacy and development activities. Groups like KESAN implement programs that can be framed as responses to climate change, including documenting and supporting Karen farmers' traditional knowledge and cultural adaptations. Together with the Mudraw District KNU (KNLA 5 Brigade), KESAN has also been closely involved in establishing the Salween Peace Park in the northern Karen hills, in partnership with local communities (Hodgdon 2020).<sup>36</sup>

Villagers reported sometimes significant time gaps between needs assessments and data collection by government departments, international agencies and CSOs, and the provision of aid - by which time floods had often receded. Generally, however, outside assistance was very welcome. However, this is not always the case.

**Fellow:**

*Not all communities welcome relief workers. Sometimes, it's dangerous out there - and communities prefer not to risk their lives rescuing aid workers who have got lost on the way (particularly when telephone communications are down).*

**Villager quoted by Fellow:**

*No one came to help us, even though they came and collected data - they gave instead to other (they said more badly affected) villagers.*

In addition to their service delivery and assistance roles, EAOs provide elements of local governance (see "Interim Arrangements" section), including schools, health centres and providing access to justice. Local KNU personnel come from both District (in this case, KNU Duplaya District/KNLA 6 Brigade) and Township level, and also from KNU line-departments (health, education, forestry, agriculture, justice etc.), which report both to District and headquarters leadership.

Units of the DKBA, PC and the (*Tatmadaw*-controlled) Karen BGF are also operational in this area. Like the KNU, each of these organisations provide a degree of local administration in areas under their control authority, and also play important roles in local security (and occasionally, insecurity).

**Fellow:**

*EAOs sometimes keep the peace after floods, by stopping fights breaking out among disaster-affected community.*

36 See also: Karen News "Climate Change - Indigenous Karen Communities Move to Protect Rivers, Forests" (<https://youtu.be/eyYalefdgCA>).



To varying degrees the Myanmar Army, KNU, DKBA and BGF soldiers all gave short-term and limited help to disaster- (primarily flood-) affected communities. Several informants (including KNU and government personnel) noted that transport of aid supplies to remote areas is more difficult. Unsurprisingly therefore, government response extended mostly in lowland areas (including the nine research villages). Furthermore, government officials remain understandably wary of EAOs, and sometimes expressed the political risks involved for government officials in talking to armed group representatives (even the KNU, which is an NCA signatory). Any formal relationship or engagement between government and EAOs would depend on orders from senior (including Union-level) officials.<sup>37</sup>

**MK KII 2:**

*Government provides paddy seed for cultivation, emergency rescue, replaced crops for paddy, medicines, seeds and techniques for winter crops. KNU provides oil, salt, rice for pregnant women, financial support to village community-hired teachers, books, pens and sport materials for students.*

**MK KII 3:**

*KNU conducted a few rehabilitation activities in health and education. The government rebuilt broken things like road and bridge.*

**MK KII 1:**

*The government implements rescue activities, finds shelter for flood-affected people, and some financial support. EAOs provided food for pregnant women. We also gained help from [CSO], from Mandalay, Myawaddy and Bago. AAM's support for road/bridge rehabilitation is also helpful.*

Particularly in the immediate aftermath of disaster, local self-help and coping mechanisms are by far the most important elements of response. External actors usually only arrive on the scene sometime later.

**HKN FGD:**

*Most actions are done by self-help.*

**According to one Fellow:**

*Assistance should be provided on the basis of what people have lost, rather than just immediately needs.*

This raises an important question over whether assistance should be provided only on the basis of assessed and targeted need, with the poorest of the poor getting more (arguably, in line with the humanitarian principle of impartiality) – or based on degree of deprivation relative to villagers' previous condition. Should the better-off (e.g. landowners) receive some aid or compensation, even if they still have remaining assets? Fellows agreed on the importance of moving as quickly as possible from relief to recovery and rehabilitation, and that this should include supporting communities to respond and adapt more effectively in the future.

However, local self-help has its limits. Many individuals and communities remain traumatised and fearful of all authorities.

**MPTN KII2:**

*There is no effective system, the community doesn't dare to speak out.*

In the recovery phase, important resources include the availability of local labour: skilled housebuilders, boat-makers and carpenters are important. Several interviewees and Fellows mentioned that villagers often need to borrow money to pay for unexpected healthcare and other costs (an issue which requires more research).

**MK KII 2:**

*We suffered serious economic losses. The government gives some loans to farmers for cultivation, but the farmers can't pay back the loan because of poor agricultural results.*

<sup>37</sup> Personal communication from a Government Official on February 11, 2020. Similar findings (i.e. local level government officials needing authorisation from above before being able to engage with EAOs) were reported by the Myanmar Interim Arrangements Research Project (2018).

Villagers borrow money from: family and friends; micro-finance groups, which may be NGO-inspired or more locally conceived and managed (typical pay-back is one year, with low interest); take out government agriculture loans (but extensive paperwork and sometimes complicated criteria for inclusion are deterrents); and/or private money-lenders. Borrowing money is reportedly very common, including for emergency needs, but high interest rates and at times questionable business practices make this very stressful for villagers. Although indebtedness to private moneylenders was mentioned by many informants as a serious problem, there are reportedly relatively few examples (at least in these nine villages) of farmers losing their land as a result of unpaid debts.

## ADAPTATIONS - PAST, PRESENT AND FUTURE

### MK KII 2:

*Short-term strategies are fishery (for daily food). It is hard to do in rainy season and easy in other seasons. Selling products within village. Youth, middle-aged and women usually migrate.*

### Agricultural adaptations

In recent years, many villages have started growing corn as an alternative crop (mostly near the Thailand border where there is a market).<sup>38</sup> Farmers are also growing more beans, rather than climate change-vulnerable rice - including switching to bean cultivation after floods, if rice crops are destroyed and especially if fertile new silt is layered on old fields.

### MK KII 2:

*As the farming is not productive, other crops have to be grown in summer as replacements.*

### MK KII 1:

*Paddy field destruction because of flood, more losses, farming by irrigation, growing crops by spraying fertilizers/insecticides, not successful though it cost. Changing crops to grow such as peas, green grams, sesames and peanuts which get successful.*

There are some successful examples of collaborative work between the community and government agricultural department (see “Case Study - adapted agriculture”). Within the BRACED project, AAM worked with five communities to test the effectiveness of climate-resilient farming techniques on the crop yield, and also to measure the effect of capacity building processes with farmers using CRSA and agroecology approaches. Demonstration plots (similar to Farmer Field Schools) were used to showcase how the project could be expanded and sustained to make the agricultural industry more resilient countrywide.

However, such options are not always possible for the poorest farmers or landless villagers. If they cannot afford agricultural inputs (or have no land), villagers may have few options other than to migrate in search of work (especially if daily paid labour is not available nearby - which is likely to be increasingly the case in the context of the coronavirus pandemic).

New forms of agriculture production (including growing corn along the Thailand border) can increase pollution through use of pesticides, and also spread plastic pollution - which in turn can be implicated in uncontrolled fires. Reportedly, use of pesticides and fertilisers has increased since the ceasefires, with villagers having somewhat more space to pursue longer-term livelihood strategies.

### P KII 1:

*Firebreaks are created. Crops are grown based on the rain. Beans are grown more.*

Other adaptive responses include migration to nearby villages for day-labour and/or longer term to Thailand (see below). Remittances from Thailand are very helpful, including for agricultural investments. On occasion, these are channeled through religious networks (Buddhist monks).

38 Thai civil society groups have criticised the environmental impacts of corn production, including land encroachment and deforestation, burning of land and high chemical use. In May 2018, the Thai government banned continued use of two pesticides and a herbicide commonly used in corn production, which may still be used in neighbouring Myanmar. Maize is considered a relatively reliable crop with a good market in Thailand, including for animal feed (Daniel Hayward, 2018).

## CASE STUDY - ADAPTED AGRICULTURE<sup>39</sup>

M- village in Kawkareik Township has 147 households; all are Buddhist. This was an AAM post-flood rehabilitation project village.

The main livelihoods are irrigated farming and fishing, both of which rely on the nearby river. Some households also raise livestock such as cows, pigs and chicken. Crops, animals and houses all face destruction and damage due to annual floods. Members of about 20 farming households faced debts, so they migrated to Thailand to work.

Local farmers started learning adapted agriculture practices in 2015-2016, when they attended climate-resilient agricultural training, and gained advice on growing green grams and green beans. They gathered a group of 10 farmers and hired an experienced teacher from the Dry Zone. Following a successful first year, they applied the technique in growing green grams and green beans as winter crops to sell commercially. Paddy was cultivated for daily needs and sold if there is a surplus.

Among the main challenge in growing green grams and green beans was cows eating the baby crops. The bean growers had to negotiate with animal husbandry people through the village authorities and township administration. After allocating grazing rights, bean growers and cattle farmers got on well.

In 2016 and 2018 the Kawkareik Township and State governments (respectively) recognized the village as a model of best practice in growing green grams. The Department of Agriculture provided insecticides and fertilizer, as well as tractors and loans for winter crops from the agricultural bank.

Green grams can be sold for about 25,000 Myanmar Kyat per acre. The main traders come from Yangon and Bago, and village products are collected and sent to them in rented cars. In 2019-20 however, villagers faced high costs in buying chemical fertilizers and insecticides for their beans. The soil is reportedly becoming less productive, with no good seeds available. It seems that government and international partners will need to continue supporting this project in order for it to become embedded and prosper long-term.

39 Researched and written-up by Saw S- (Local Fellows Network).



Photo: Prize-winning green bean field



**P KII 2:**

*As there is no job [in Myanmar], have to find jobs in Thailand... No money to invest. Bad transportation. Live in relatives' house. Wages saved in the hot season has to spent in the rainy season.*

## FUTURE SUPPORT

### **Disaster preparedness and short-term emergency support**

Informants expressed the need for better access to information (meteorology updates and warnings), through enhanced radio and social media coverage; pre-positioning of relief supplies (including lifejackets); basic relief items (food, clothes, shelter, money); rescue boats (and training in use thereof); phones and/or other means of networking (including for emergency contact with vulnerable people). Several informants (particularly in leadership positions) suggested or agreed on the importance of Quick-access emergency funds - including for government to work jointly with CSOs, and perhaps also EAOs. A number of informants, particularly from government departments, mentioned the important coordination and leadership role of the GAD (KII 11, March 12 and 14, 2020).

Several informants talked about the value of coordinating emergency response and DRR activities, perhaps through a steering committee.

**Department of Fire Services Official  
(February 11 2020):**

*Coordination and cooperation with CSOs would best be done through a steering committee.*

**MK KII 1:**

*We need better networking between government administrators, elders from the community and Fellows.*

Many people said they wanted to see boats and/or other emergency response equipment stockpiled in advance. When boats were provided in 2018 to help flood response, the Fire Brigade (reportedly) didn't know how to use them (KII February 2, 2020). In many other respects however, the response of the Fire Brigade was admirable, given limited resources (KIIs with Government Departments February 2, 2020). There are auxiliary fire fighters in every village. However, government officials acknowledged that access to more remote areas without road infrastructure is difficult. Data on fire prevalence in the research villages indicate the need for fire safety awareness.

Government officials had some suggestions about how to improve future support. In 2019 the Fire Services Department responded to gales and landslides:

**Government official (February 2 2020):**

*Although floods cannot be prevented, they can be predicted. Around April to June, rooves should be checked because of gales. If situated in lowlands, higher buildings should be built. If not, higher land should be located. Rations should be prepared for two weeks. Life-jackets and lifebuoys should also be provisioned...*

*How great it would be if a fire extinguisher [during the hot season] and first aid kit were given to each household living in common-flooded areas for prevention.*

### **Environmental education and public awareness**

The Environmental Conservation Department mentioned the importance of environmental education, including in the context of government's "Clean and Green" school program.<sup>40</sup> The ECD has an Environmental Conservation and Climate Change Monitoring Committee at Union, State and District levels, working on policy frameworks and strategy, coordinating with respective government departments, concerned with environmental management and protection from environmental pollution, and public education/awareness raising.

A number of possible awareness-raising and public education initiatives were suggested, including fire-risk education (especially for corn farmers – e.g. firebreaks); emergency response preparedness; and education on adopting and adapting new agricultural techniques.

40 Interview with ECD official, February 17, 2020.



**MK KII 2:**

*I do not encourage migration. I don't want villagers to go abroad - so we need to improve the agriculture and animal husbandry systems, and have reliable markets.*

According to Mike Griffiths (2019): “The merits of an educational approach to climate change are increasingly recognized, ideally integrating climate change topics and thinking into curricula at primary, secondary and tertiary levels... [However,] much of the current training on climate change is ‘siloe’d’, often within agriculture-specific disciplines, and would benefit from a more integrated approach.”

Several informants mentioned the connections between CCA and Education. Projects could be developed together with local communities and schools (government and/or EAO or community-administered schools, including these working jointly together). This could include development of curriculum materials, in partnership with government Ministry of Education and EAO-affiliated Ethnic Basic Education Providers, who between them run some 2000 schools in Southeast Myanmar (South et al 2018; Lall and South 2019). As well as formal in-school education, extra-curricular training could also be developed to support Community-Based Adaptation (CBA) and Community-Based Disaster Risk Reduction (CBDRR). The experiences of these Karen areas could also help to inform and inspire communities (including schoolchildren) in other parts of Myanmar in regard to Climate Change and Environment Education (CCEE).

### **Long term support for adaptation**

This include replacement paddy and other seeds; training activities (together with CSOs and VDMCs) for agricultural adaptation; participatory agro-ecology support to identify and adapt/adopt new crops (and/or varieties), based where possible on traditional knowledge (and/or experiences of farmers in other parts of the country); technical training and material inputs for working with new plant or seed varieties (including the need for cultural sensitivity); Farmer Field Schools (including learning from peers); improved animal husbandry training; information and advice on safe migration.

*Infrastructure* needs include reconstructing roads and bridges (“build back better”); rebuilding and maintaining riverbanks; building tube-wells (to address water

shortages). A few people mentioned the importance of re-planting forests.

**Fellows:**

*Grow more trees - especially near streams and rivers.*

**KKC KII1:**

*We need to rebuild the forest for environmental maintenance.*

Several informants identified ways in which women’s participation can be supported:

**MK FGD:**

*Support animal husbandry for women-headed households. Encourage and guide women to take part in development activities [...] Ask advice from women during community decision making.*

**KKC KII3:**

*We need to involve them in leading roles. Women should encourage each other.*

Agricultural adaptations work best when combined with (or growing out of) traditional knowledge and practices. Agroecology approaches are likely to be fruitful, fusing ancient wisdom and technical innovation.<sup>41</sup>

41 The head of the KNU Agriculture Department (Interview April 15, 2020) pointed out that Karen *hka* farming system are essential to indigenous efforts to protect and conserve the environment and address climate change. In several areas the KNU is working with CSOs and communities to support locally-owned adaptations such as coffee cultivation in the hills of Toungoo District.

# CONFLICT, MIGRATION AND CLIMATE CHANGE

## PY KII 1:

*It would be great if there is no fighting, but rather peace.*

## TTG FGD:

*All groups should be united and make peace, as we all want peace.*

Relationships between climate change and armed conflicts are complex: both factors influence each other (inter-structural causation: “structuration”). Both factors are drivers of migration (see below).

Issues and connections include the generally lower level of effective CCA among conflict-affected populations, whose resources and capacities may be depleted due to socio-economic and political marginalization and conflict. Competition over access to and control of natural resources, and other interest (and identity) based conflicts, can lead to disputes between EAOs and government forces, and between different EAOs, which are often related to logging concessions or cross-border trade “tax gates”. These include clashes between the KNU and DKBA, Karen BGFs, and with the NMSP (an NCA signatory EAO).<sup>42</sup>

Some informants referred to “two governments”: the Government of the Union of Myanmar, and the KNU, and/or other EAOs such as the DKBA. Many expressed the desire for peace between these two historically antagonistic regimes.

## PY KII 1:

*Neither the government nor the KNU helps much.*

## P KII 2:

*We worry about being persecuted by the government.*

## MPTN KII2:

*We are under the control of KNU and government, but systems of lands control and ownership are unclear [with two different systems working against each other].*

For many villagers, “natural disasters” are more predictable than man-made hazards. Villages have experience in responding to floods and other extreme weather hazards; armed conflict and insecurity are more difficult to predict or engage with - but in principle can be resolved through negotiation (unlike the weather). Both can cause destruction of lives, food and livelihoods. Some villagers and Fellows distinguished between hazards which are best addressed collectively (e.g. flooding), and those such as armed clashes, where families respond differently, depending on the capacities and connections to conflict parties.

## MK KII 1:

*Natural hazards are faced yearly and hard to prevent. Although armed conflicts are not happening all the time, they can be prevented with negotiation.*

## MK FGD:

*People can respond to EAOs individually. Natural hazards have to be responded collectively.*

## MPTN FGD:

*People fear gun-fire more than natural disaster.*

<sup>42</sup> Since 2017 there have been several clashes between the KNU/KNLA and NMSP in areas of overlapping “mixed administration” around the Three Pagodas Pass border crossing with Thailand (southeast of the nine research villages in this study).

**TTG FGD:**

*We can avoid the natural disaster by listening to weather news or information. Armed conflict cannot be predicted and no security.*

## **Migration – within and beyond Myanmar**

In principle, migration can indirectly cause climate change, and/or climate change can cause migration. Globally, extreme weather events are more significant than armed conflicts as drivers of forced migration and displacement, and this is increasingly the case in Southeast Myanmar. Due to the large number of communities mainly relying on weather-dependant agriculture for livelihoods, climate change is becoming one of the main drivers of migration, as well as negatively influencing other factors, such as unemployment and poverty.

**Government official (April 11 2020):**

*There is a direct link between less rain, crop failures and migration.*

**KK FGD:**

*About 200 households migrated to Thailand for many years ... because the village suffers floods every year and the paddy fields can't produce rice.*

In difficult times, Karen family members adopt diverse but coordinated strategies to spread risks and take advantage of any opportunities. Individuals within an extended family may adopt different tactics, with some members moving to nearby villages or towns, and/or staying with relatives (benefactors, and other actual or potential patrons), in order to access work or educational options. Other family members enter the workforce, locally or further afield. This requires the right connections (patronage), in order to access (relatively) safe migration experiences, and (relatively) well-paying jobs (South and Jolliffe 2015).

Migration can expose individuals to considerable risks, as demonstrated by the plight of many migrant workers in Thailand (especially women). Other family members (women, and particularly the elderly) stay at home to look after children - often exposing them to the frontline of threats, should disasters or conflicts strike, as well as undermining social capital and protection back home

(which are adversely affected when many people leave the community).

**Fellow:**

*Usually, one or two family members migrate, while others stay in the home village. However, sometimes entire families move to other locations, including cross the border to Thailand. Many people living in Thailand only return home once every 3-5 years.*

Individuals and communities mostly understand these risks well, but often have little choice but to pursue such dangerous options. Families spread risk - with the family unit (and at a larger scale, the community or even the ethnic nation) as key variable and aggregator of risk, rather than individuals. Such strategies can sometimes be in tension with the individualistic orientation of international norms and standards (South et al 2012).

People fleeing disasters - including flooding and armed conflict - often move away from hazards into new areas which are often at a higher altitude and/or more heavily forested. This in turn can drive deforestation, as people clear land for new fields, and leads to greater concentration of population density in previously remote areas. Large numbers of IDPs and other new arrivals in upland areas can reduce agricultural productivity, especially when local people mostly practice rotational, swidden agriculture. This requires long (ten-year plus) cropping cycles, maintaining soil fertility by leaving land un-cultivated for long periods, and is only sustainable with relatively low population densities, and adherence to the wisdom of traditional practices. New forms of agriculture production can also increase pollution through use of pesticides etc.

The already vulnerable poor (including female-headed households) are often forced by lack of access to land and other resources to farm more marginal areas (including riverside plots), exposing them to greater risk. People who have to move from land currently or previously flooded or burnt can be defined as climate change-induced forced migrants (whether refugees or IDPs).

Forced migration is inherently risky. Nevertheless, despite the many negatives involved, migration can be an empowering experience, including for women.

**MK KII 1:**

*Women migrate mostly to Thailand because back home there is poor production, no market to sell, and increased debts. Migrant women gain experiences relating to health, skills and perspectives and apply back in villages.*

Some women report greater self-confidence and respect within the community after having received training in the context of migration (including in the workplace, and/or through NGOs and CSOs). As discussed in the Literature Review, migrants provide important additional incomes for those back home through remittances.

**Fellow:**

*They collect money among migrant workers in Thailand, and send back to Myanmar.*

Many migrants in Thailand maintain relationships and networks back home, and often send money to their families in Myanmar, especially in times of crisis. It may be that those remaining behind (our interviewees) have a rosy view of the life of migrants in Thailand.

Nevertheless, many informants and Fellows spoke about the continuing close relationships within dispersed communities on both sides of the Myanmar-Thailand border.

As noted above, access to information and resources (including relief and adaptation assistance) often depends on individuals, families and communities' embeddedness in networks of patronage. This includes connections to government and EAO authorities - and local, national and international aid agencies - as well as more localised ("traditional", religious and cultural) networks of support and solidarity.

Among the most striking examples of community response are some of the CSOs described above, including (but not only) those working in partnership or under the general authority of the KNU. Karen CSOs play key roles in disaster relief and adaptive recovery. However, Gerard McCarthy (2020) argues that, despite the many positives inherent in self-help initiatives, non-state relief can also exacerbate social hierarchies and entrench exclusion as it renders access to emergency aid contingent on inclusion in socially bounded relations of reciprocity. Being well-networked with the right patron is important for accessing protection and assistance, especially in times of crisis; it can also be rather exclusionary.



## ***Social capital and secularism***

A key element of social capital in Karen (and other ethnic nationality/minority) communities in Myanmar is membership of faith-based groups and networks. However, this collective resource is often overlooked by a highly secular international aid community.

International access to conflict-affected communities in Myanmar is limited by security concerns and by government restrictions. Nevertheless, many international donors and aid agencies seek to provide assistance and elements of protection (including against climate change hazards) in partnership with national NGOs and CSOs. Such local organisations have long done much of the humanitarian “heavy lifting” in conflict-affected parts of Myanmar.

Many of these CSOs and national NGOs are closely associated with faith-based networks, within Myanmar and internationally. Furthermore, people living in these conflict-affected areas are usually part of communities of faith - Buddhist or Christian, Muslim or animist. This faith-based social capital allows people to survive under difficult circumstances, to share limited resources and love and help each other.

The identities and frameworks of action deployed by local actors (including so-called “beneficiary communities”) are sometimes rather different to those of their (predominantly Western/international) patrons and donors. The humanitarian enterprise has deep roots in the social/political and religious history of “the West” (Barnett and Weiss 2011); the enlightenment and “escape from religion”. The mainstream “aid industry” is often highly secular.

Western aid agencies increasingly focus on eliciting local participation, and supporting local capacities (or “social capital”). However, this language and intention of empowerment marks power dynamics, whereby agendas and values are largely determined by donors

and aid agencies. This is apparent in Myanmar, where Western donors often require local actors to mask the faith-based nature of their work and cultural orientations in order to fit secular norms and frameworks. This is somewhat ironic, given Western aid agencies’ rhetoric of eliciting local participation and building social capital and resilience.

Furthermore, local agency is often deeply linked to organic, community-oriented networks of communal identity and reciprocal action, embedded in decades and centuries of tradition and practice. However, international aid approaches (and donor demands) are mostly based around shorter time-frames, and different demands of accountability and monitoring. Thus aid agency projects inadvertently tend to re-configure local initiatives in terms of “projects”, rather than recognising and supporting organic (and ongoing) interventions. These factors can seriously undermine international agencies ability to work with local partners and impede development of long-term and deep community relationships.

Membership of faith-based networks (which often overlap with ethno-linguistic communities) is a hugely important resource, deeply connected to individual and communal identities. Like ethnicity, religion can be divisive/polarising and exclusivist. Strong traditional cultures are a blessing, and contribute much towards social capital in and protection of Karen and other communities. However, these values often entail conservative social mores. Very few interviewees expressed interest or knowledge of the problems that may be faced by lesbian, gay, bisexual and transgender (LGBT) or other sexual or identity-related sub-groups. Both international and national stakeholders should beware of valorising local agency<sup>43</sup> without being aware of the possible negative aspects of non-liberal conventions and values. Embracing diversity requires an open-minded and open-ended conception of who belongs to the political and social community.

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43 For a critical survey of the ‘local turn’ in humanitarian action, see Larissa Fast and Christina Bennett, HPG Working Paper - From the ground up It’s about time for local humanitarian action (ODI May 2020)

# CONCLUSION AND RECOMMENDATIONS

Climate change (like the coronavirus pandemic) can be an opportunity, or “critical juncture”<sup>44</sup>, to re-imagine and struggle for the kind of world we want to live in. The disruptions caused by climate hazards, and the opportunities presented in responding, potentially allow vulnerable and marginalised communities to participate more equitably in development processes, through adaptive technologies and innovative approaches. ‘Building back better’ should include the transformation of social and political-economic relations, including through supporting community and women’s leadership, and recognising the important roles played by CSOs and EAOs.

However, climate change also threatens to undermine the already marginal livelihoods of rural people. Loss and damage as a result of climate change occurs because not only because of limited capacities for adaption or coping, but can also be due to the growing intensity of hazards, which are likely to be exacerbated in future.

The need for more locally relevant and effective CCA and DRR can in part be addressed through a decentralisation of power and decision-making within a federal constitutional framework, as envisaged in the peace process. This should include greater authority for the State government to make decisions within a nationally agreed Union-level framework, in the context of moves towards federalism in Myanmar, as envisaged in the peace process.

Many of Southeast Myanmar’s most important remaining areas of biodiversity, which are essential for long-term environment conservation to combat climate change, are situated in ethnic nationality-populated, conflict-affected parts of the country, under the control or influence of the KNU and other EAOs. Given the crucial role such natural resources have in mitigating climate change, and providing local resources for adaptation, the KNU should play a key role in climate change governance in Southeast Myanmar, as acknowledged in the Nationwide

Ceasefire Agreement (Union of Myanmar 2015, NCA, Article 25).

This report was (mostly) written and researched before the Covid-19 crisis took hold in Myanmar. The pandemic will likely drive a re-evaluation of donor priorities, and examination of connections between public health, human security and livelihoods, resilience and CCA.<sup>45</sup> Responses to the pandemic may play an important role in the fight for climate justice – to achieve more equitable and green solutions, to protect communities and the planet.

Several of the strategies and adaptations described and analysed here are also relevant to Coronavirus response, at the individual, household, community sub-national and national levels. The vulnerabilities and resilience of individuals, families and communities - affected by climate change and/or Coronavirus - will be fundamental to sustainable, just and equitable recovery and rehabilitation. However, most policy responses to climate change in Myanmar remain state- (and donor-) centric, with little input from or consultation of communities.

Under the more alarming range of possible climate change scenarios for Myanmar and the region, some local coping strategies may become inadequate or redundant. In the case of such a tipping point (possibly induced by the Coronavirus pandemic), it will be necessary to undertake more radical thinking and action regarding the possibilities and prospects of “deep adaptation”.<sup>46</sup> This will require large-scale political and agricultural adaptations, including more decentralized decision-making. Particularly if the state of Myanmar is disrupted by large-scale climate change-related (or other) crisis, EAOs and associated governance and service providers, will have key roles to play. It is important to support and encourage them to act in ways which promote and protect the rights of all people, and particularly marginalised and vulnerable groups.

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44 Periods of radical transition can provide opportunities to reimagine and reform political systems. Sontag and Cardinal (2015, 5-9) discuss “critical junctures” in the political economy of policy change: how coalitions of power and interest form around hegemonic regimes, and may be challenged by a “counter-hegemonic” movement (or moment), as previously marginalised groups seek to advance their positions. For such counter-hegemonic challenges to succeed, the voices of those advocating change need to be heard and acknowledged.

# RECOMMENDATIONS

## RECOMMENDATIONS FROM THE COMMUNITY

Suggestions from community members in the nine villages, together with the Fellows. These recommendations are for authorities, NGOs and donors.

### 1. TO ENHANCE ABSORPTIVE CAPACITIES AND SUPPORT COPING MECHANISMS:

- a. Disaster Preparedness and short-term emergency support [DRR]:
  - i. Provide safe shelter.
  - ii. Better information: make meteorology updates and warnings easily available through radio and social media, including in local languages.
  - iii. Pre-position relief supplies, including food, clothes, shelter, money; Rescue boats and training in use thereof; Phones and/or other methods for networking.
  - iv. Quick-access emergency funds - including for government to work jointly with CSOs and EAOs.
- b. Infrastructure and other longer-term recovery needs ["build back better" - DRR & CCA]:
  - i. Re-construct roads and bridges; Re-build and maintain river-banks; Build tube-wells to address water shortages.
  - ii. Re-plant forests; maintain and revive community forests.
  - iii. Involve VDMCs and other community leaders, including women, in planning and implementation of recovery projects.

### 2. ENHANCE ADAPTIVE CAPACITIES, TO SUPPORT LONGER TERM CHANGE:

- a. Awareness-raising and public education [DRR]:
  - i. Enhance emergency response preparedness.
  - ii. Fire-risk education (especially for corn farmers) – e.g. fire-breaks, and explore alternatives to burning-off unwanted vegetation.

- iii. Provide information and advice on safe migration; Relevant vocational and skills training.
- b. Other long-term support for adaptation [CCA]:
  - i. Education on adopting and adapting new agricultural approaches.
  - ii. Replacement paddy and other seeds.
  - iii. Identify and adapt/adopt new crops and/or varieties, based on traditional knowledge and experiences of farmers in other parts of the country.
  - iv. Training activities with CSOs and VDMCs, and technical inputs and materials for agricultural adaptation (including new plant and seed varieties); Farmer Field Schools to learn from and share with peers.

### 3. ENHANCE TRANSFORMATIONAL CAPACITIES, TO SUPPORT STRUCTURAL CHANGES:

- a. Climate Change and Environment Education:
  - v. Community members and CSOs can collect oral histories and narratives, sharing their experiences and adaptations - 'appreciative enquiry' case studies can be shared with communities elsewhere in Myanmar (e.g. with Karen farmers in Tanintharyi).
  - vi. Communities, schools and CSOs can develop locally appropriate CBA and CBDRR etc education materials and teaching methods. Integrate climate change education across disciplines, rather than a "siloed" subject. Government and/or EAO-administered schools can work together to develop climate change curriculum materials etc - partnership between Ministry of Education and EAO-affiliated Ethnic Basic Education Providers.
  - vii. Work with the experiences of these nine villages, to inform and inspire communities (including school-children) in other parts of Myanmar; develop an advocacy and communication strategy.
- b. Local leadership [DRR & CCA]:
  - viii. Authorities (government and EAOs) should formally recognize and support local leadership/committees, including women, in advance of hazard onset. Provide financial support to local disaster risk management/response leaders. Work with and provide training and funding to VDMCs.

- ix. Include women in the VDMC and other local leadership activities. Link to village youth and women's groups, and to monastic committees. Training and other activities should be scheduled at times which are convenient the community (particularly women).

## RECOMMENDATIONS TO LOCAL AUTHORITIES - GOVERNMENT AND EAOS

Enhancing resilience to climate change is prioritized in the National Adaptation Programme of Action, and other Union-level policies and regulations. However, developing and implementing such frameworks has largely been done in a top-down and centralised manner. The government and its international partners should be more inclusive, and seek more and meaningful participation from key stakeholders including communities, and relevant CSOs and EAOS.

Action on climate change will inevitably take place in the field of local government and governance, including in areas under the authority or influence of EAOS. Joint action on climate change between the government (Union and State-level) and KNU should be framed in relation to Interim Arrangements (NCA, Article 25). Such initiatives will need to be properly funded by government and international partners.

### 1. ENHANCE ABSORPTIVE CAPACITIES AND COPING MECHANISMS:

- a. To be equitable and impartial, implement climate change response and adaptation program as much as possible in government-controlled, "mixed administration" and EAOS areas [DRR & CCA].
- b. Provide timely and language-appropriate information and advice to communities through social media and radio [DRR].
- c. Develop decentralized emergency response funds, with criteria for quick release, encouraging local authorities to work together with CSOs and EAOS [DRR].

### 2. ENHANCE ADAPTIVE CAPACITIES, TO START LONGER TERM CHANGE:

- a. Commission community-level mapping, to discover local resources and wisdom regarding climate change-adapted seeds and crops. Use participatory mapping techniques [CCA].

- b. Work with national and international experts to identify appropriate seeds and agricultural techniques suitable for adoption and adaptation, based where possible on local knowledge and varieties [CCA].
- c. "Build back better" (example of improved roads following the 2018 floods): provide adequate budgets, and encourage quick decision-making [DRR and CCA].

### 3. ENHANCE TRANSFORMATIONAL CAPACITIES, TO START STRUCTURAL AND SYSTEMATIC CHANGES:

- a. Central government should explicitly authorise State and Region government departments and personnel to collaborate with CSOs and EAOS in disaster response planning and implementation, and rehabilitation activities, as envisaged under the NCA (Article 25). In the longer term, decentralisation of decision-making and control over natural resources should be elaborated and guaranteed through federal political arrangements [DRR].
- b. Union-level government and EAOS leaders should establish a framework for DRR coordination, enabling local and other government units (including Districts and Township EAOS authorities) to work with the private sector to achieve targets [DRR].
- c. Cooperate over access to different authorities' areas of control, especially in delivering disaster relief supplies. A coordination body should be established between government, Myanmar Army and relevant EAOS, with participation as necessary from CSOs. This coordinating body could also support and facilitate data collection and sharing, and DRR planning [DRR].

## RECOMMENDATIONS TO INTERNATIONAL AGENCIES AND DONORS

International donors should fund these Recommendations. In this complex and contested context, it will be necessary to adopt Conflict Sensitive Program Management (CSPM), including regularly updating conflict sensitivity assessments.

As much as possible, international agencies and donors should resist management-led demands to "projectize" organic local responses, by insisting that local initiatives conform to pre-conceived international frameworks of planning, implementation and reporting (including Monitoring and Evaluation demands). Support local cultures and strategies, without co-opting these.



sues into the classroom strategies, and adapting topics to the local/national context and culture [CCA].

## **1. MYANMAR NATIONAL STAFF SHOULD SPEAK LOCAL LANGUAGES.**

- a. When bringing in outside technical and program support, demonstrate conflict sensitivity by ensuring local ownership, including wherever possible employing and training local (Karen) candidates [DRR and CCA].

## **2. ENHANCE ABSORPTIVE CAPACITIES AND COPING MECHANISMS:**

- a. Support Community-based Adaptation and Disaster-risk Reduction approaches (CBA and CBDRR) [DRR and CCA].
- b. Supported DMH weather forecast dissemination (including in local languages), and climate data collection [DRR & CCA].

## **3. ENHANCE ADAPTIVE CAPACITIES, TO START LONGER TERM CHANGE:**

- a. Local adaptation: seed/grain banks, water harvesting/storage facilities, community forests etc [CCA].
- b. Following the BRACED project, promote Agroecology and Climate Resilient Sustainable Agriculture (CRSA) by investigating and supporting local knowledge and climate change adapted seeds [CCA].
- c. Training on climate-resilient agricultural techniques, pest management, home gardens, compost, development of plots for testing new crop varieties and techniques, livestock management and maintaining soil quality [CCA].

## **4. ENHANCE TRANSFORMATIONAL CAPACITIES, TO START STRUCTURAL AND SYSTEMATIC CHANGES:**

- a. Advocate for implementation of the NCA (Article 25) in relation to action on climate change.
- b. Support innovative Change and Environment Education (CCEE), using interactive teaching methods. Topics can be developed by communities and CSOs and integrated into school curricula, mainstreaming climate change is-

# **RECOMMENDATIONS TO COMMUNITIES**

## **1. ENHANCE ADAPTIVE CAPACITIES, TO START LONGER TERM CHANGE:**

- a. Grow more trees - especially near streams and rivers (to prevent erosion), and in community forests [CCA].
- b. Take the lead in identifying and adopting/adapting seed and plant varieties [CCA].

## **2. ENHANCE TRANSFORMATIONAL CAPACITIES, TO START STRUCTURAL AND SYSTEMATIC CHANGES:**

- a. Support local women and male leaders [DRR and CCA].
- b. Communicate and advocate to government and international partners, regarding needs, expectations and hopes, and best practices [DRR and CCA].

# **RESEARCH NEEDS**

- + To cope with emergencies and recovery needs, villagers often borrow money (from micro-finance groups, and also moneylenders). This requires more research (pros and cons).
- + Further research is required on the inclusiveness (or not) of local village leadership structures (e.g. VDMCs).
- + More information is needed on private sector preparedness, and how best to support market-led approaches in an equitable manner.
- + Compare and contrast upland and lowland communities' climate change challenges and experiences, and adaptation strategies. Lessons learned?

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# ANNEXES

## ANNEX 1. RESEARCH AND INTERVIEW QUESTIONS

### Research Questions

- + To what extent are women participating and leading in the decision-making on disaster risk reduction (DRR) and climate change adaptation (CCA)?
- + What is required for establishing a women-led sustainable model for self-organising, leadership and collective action when responding to CCA and DRR?
- + What makes local communities resilient to shocks and stresses (particularly climate related)? What experience and strategies do communities have in responding and adapting to natural and man-made crises, including in relation to conflict?
- + What roles are played by ethno-linguistic and faith-based networks, in fostering community social capital and resilience?
- + How the national policies related to climate change and DRR engage with local practices in order to build community resilience?
- + What factors undermine local communities' resilience (characteristics of vulnerable households)?
- + What is the difference in vulnerabilities and local capacity between lowland and upland areas? What are the differences in vulnerabilities and local capacities between government controlled, "mixed administration" and EAOs-controlled areas?
- + What roles do non-state powerholders/authorities (e.g. EAOs) play in supporting (or undermining) communities' responses to disaster? How can local authorities (including EAOs) better support local adaptations and coping practices?
- + Are there particular livelihoods or coping strategies that are more vulnerable or more resilient to shocks and stresses (compare against climate projections – are these livelihoods exposed to climate stress)?
- + How do migration and displacement reduce or enhance people's ability, particularly women, to cope with climate related shocks/stresses?

- + How does interaction with border countries (economic migration, conflict-related displacement, trade/market opportunities) affect local communities', and particularly women's, resilience?
- + What vision do women and local communities have for enhancing their community resilience and DRR preparedness? How can these perspectives be better represented and included in formal decision-making? Recommendations for Township / State authorities, but also EAOs / mixed administration areas.

### Interview Questions

တွေ့ဆုံမေးမြန်းခြင်းအတွက် မေးခွန်းများ - မြန်မာနိုင်ငံ အရှေ့တောင်ပိုင်း တွင် ရာသီဥတုဖောက်ပြန်ပြောင်းလဲခြင်း နှင့် ဘေးအန္တရာယ် ထိခိုက်ဆုံးရှုံးနိုင်ခြေ လျော့ပါးရေးဆိုင်ရာ သုတေသန (ကရင်ပြည်နယ်)

#### 1. WHAT ARE THE MAIN HAZARDS AND VULNERABILITIES EXPERIENCED BY COMMUNITIES?

- ၁။ ရပ်ရွာလူထုအနေနဲ့ အဓိကတွေ့ကြုံရတဲ့ အန္တရာယ်တွေနဲ့ ထိခိုက်လွယ်မှုတွေက ဘာတွေလဲ?
  - 1.3. What are the slow (e.g. drought) and quick onset (e.g. flood) hazards?
    - (၁.၁) ဖြည်းဖြည်းချင်းဖြစ်လာတဲ့ အန္တရာယ် (ဥပမာ- မိုးခေါင် ရေရှားခြင်း) နှင့် ရုတ်တရက်အမြန် ဖြစ်လာတဲ့ အန္တရာယ် (ဥပမာ - ရေကြီးခြင်း) တွေ ဘာတွေရှိလဲ?
  - 1.4. What are the other factors driving vulnerability? (e.g. deforestation, use of land/access to resources, conflict, socio-economic deprivation etc)
    - (၁.၂) ထိခိုက်လွယ်မှုကို ဖြစ်စေတဲ့ အရာတွေက ဘာတွေလဲ ? (ဥပမာ - သစ်တောပြုန်းတီးခြင်း၊ မြေယာအသုံးပြုပုံ /သဘာဝအရင်းအမြစ်များကို လက်လှမ်းမီမှု၊ ပဋိပက္ခ၊ လူမှုစီးပွားရေး ကျဆင်းခြင်း စသဖြင့်)
  - 1.5. What are the impacts (e.g. impact on agriculture, impact on safety, social impacts etc)?
    - (၁.၃) အကျိုးသက်ရောက်မှုတွေက ဘာတွေရှိလဲ? (ဥပမာ - စိုက်ပျိုးရေးအပေါ် အကျိုးသက်ရောက်မှု၊ လုံခြုံမှု အပေါ် အကျိုးသက်ရောက်မှု၊ လူမှုရေးအပေါ် အကျိုး သက်ရောက်မှု စသဖြင့်)

1.6. What are characteristics of vulnerable people and households, especially women?

(၁.၄) ထိခိုက်လွယ်တဲ့ လူများ နဲ့ အိမ်ထောင်စုများ၊ အထူးသဖြင့် အမျိုးသမီးများ ရဲ့ ဝိသေသလက္ခဏာတွေက ဘာတွေလဲ?

1.7. What are the differences in vulnerabilities between government controlled, “mixed administration” and EAOs-controlled areas?

(၁.၅) အစိုးရအုပ်ချုပ်တဲ့ နယ်မြေ၊ အစိုးရ နှစ်ရပ် အုပ်ချုပ်တဲ့ နယ်မြေ နဲ့ တိုင်းရင်းသားလက်နက်ကိုင်အဖွဲ့တွေ အုပ်ချုပ်တဲ့ နယ်မြေတွေကြား ထိခိုက်လွယ်မှုတွေက ဘယ်လိုခြားနားသလဲ?

**2. HOW DO COMMUNITIES AND OTHER STAKEHOLDERS SEEK TO COPE?**

၂။ ရပ်ရွာလူထုတွေနဲ့ တခြားပါဝင်ပတ်သက်သူတွေက အန္တရာယ် တွေကို စီမံခန့်ခွဲဖို့ ဘယ်လိုနည်းလမ်း ရှာသလဲ?

2.1. What resources do communities have – cultural (language and religion) and material?

(၂.၁) ရပ်ရွာလူထုတွေမှာ ဘာအရင်းအမြစ်တွေ ရှိသလဲ - ယဉ်ကျေးမှုအရ (ဘာသာစကားနဲ့ ကိုးကွယ်ယုံကြည်မှု) နဲ့ ပစ္စည်းများ?

2.2. What are short-term, medium/long-term strategies (e.g. agriculture adaptations, diversifying livelihoods and markets, migration etc)? What are hazardous/dangerous adaptations?

(၂.၂) ရေတို၊ ကာလတစ်ခု/ရေရှည် နည်းဗျူဟာတွေက ဘာ တွေလဲ (ဥပမာ- စိုက်ပျိုးရေးအပေါ် လိုက်လျောညီထွေ စွာ လုပ်ဆောင်ခြင်း၊ ပိုမိုကောင်းမွန်တဲ့ အခြား အသက်မွေးဝမ်းကြောင်းလုပ်ငန်းများနဲ့ ဈေးကွက်များ ကို ရှာဖွေလုပ်ဆောင်ခြင်း၊ ရွှေ့ပြောင်းသွားလာခြင်း စသဖြင့်)? အန္တရာယ်ရှိတဲ့ လိုက်လျောညီထွေစွာ လုပ်ဆောင်ခြင်းတွေအနေနဲ့ ဘာတွေရှိလဲ?

2.3. What adaptation and responses worked well? Example of good practices.

(၂.၃) ဘယ်လိုလိုက်လျောညီထွေစွာ လုပ်ဆောင်ခြင်း နဲ့ တုံ့ပြန်ခြင်းတွေက အဆင်ပြေခဲ့သလဲ? အလေ့အကျင့် ကောင်းလေးတွေရဲ့ ဥပမာတွေက?

2.4. Are responses to natural hazards different to responses to armed conflict and insecurity (and how) ?

(၂.၄) သဘာဝအန္တရာယ်တွေကို တုံ့ပြန်တာက လက်နက်ကိုင်ပ ငွ်ပကွဲနဲ့ မလုံခြုံမှုတွေကို တုံ့ပြန်တာနဲ့ ခြားနားပါသလား (ဘယ်လိုခြားနားပါသလဲ)?

2.5. Who takes the lead on these decisions and activities - roles of women?

(၂.၅) ဒီဆုံးဖြတ်ချက်တွေနဲ့ လုပ်ငန်းစဉ်တွေကို ဘယ်သူက ဦးဆောင်ပါသလဲ - အမျိုးသမီးတွေရဲ့ အခန်းကဏ္ဍတွေက ရော?

2.6. How does migration (including to Thailand) reduce or enhance people’s ability, particularly women, to cope with climate related shocks/ stresses? Are patterns of migration (where do they go and for how long) changing because of climate change?

(၂.၆) ရွှေ့ပြောင်းသွားလာခြင်း (ထိုင်းနိုင်ငံအပါအဝင်) က လူတွေရဲ့ အထူးသဖြင့် အမျိုးသမီးတွေရဲ့ ရာသီဥတု ကြောင့် ဘေးဖြစ်နိုင်စွမ်းတွေကို စီမံခန့်ခွဲမှု စွမ်းရည်ကို ဘယ်လိုလျော့ကျစေသလဲ သို့မဟုတ် ဘယ်လိုတိုးမြှင့် စေသလဲ? ရွှေ့ပြောင်းသွားလာခြင်းပုံစံတွေ (ဘယ်နေရာ တွေကို သူတို့သွားသလဲ၊ ဘယ်လောက်ကြာ နေထိုင် သလဲ) က ရာသီဥတုပြောင်းလဲခြင်းကြောင့် ပြောင်းလဲ နေပါသလား?

2.7. How do authorities (government, EAOs) and other stakeholders (civil society, international organisations) respond to disasters, and is this helpful?

(၂.၇) အာဏာရှိသူများ (အစိုးရ၊ တိုင်းရင်းသားလက်နက်ကိုင် အဖွဲ့များ) နဲ့ အခြားပါဝင်ပတ်သက်သူများ (အရပ် ဘက်အဖွဲ့အစည်းများ၊ နိုင်ငံတကာအဖွဲ့အစည်း များ) က ဘေးအန္တရာယ်ကို ဘယ်လိုတုံ့ပြန်ကြလဲ? အထောက်အကူဖြစ်ပါသလား?

2.8. What are the differences in capacities to respond between government controlled, “mixed administration” and EAOs-controlled areas?

(၂.၈) အစိုးရအုပ်ချုပ်တဲ့ နယ်မြေ၊ အစိုးရ နှစ်ရပ် အုပ်ချုပ် တဲ့ နယ်မြေ နဲ့ တိုင်းရင်းသားလက်နက်ကိုင်အဖွဲ့တွေ အုပ်ချုပ်တဲ့ နယ်မြေတွေမှာ ဘေးအန္တရာယ်အပေါ် တုံ့ပြန်မှုတွေက ဘယ်လိုခြားနားသလဲ?

**3. WHAT CHANGES DO PEOPLE EXPECT IN THE FUTURE?**

၃။ အနာဂတ်မှာ လူထုက ဘယ်လိုအပြောင်းအလဲတွေကို မျှော်လင့် သလဲ?

3.1. What kinds of support do communities need to cope with future climate change disruption – for emergency and for long-term adaptation?

(၃.၁) အနာဂတ်မှာ ရာသီဥတုပြောင်းလဲမှုတွေ ဆိုးရွားလာ တဲ့ခါ ရပ်ရွာလူထုအနေနဲ့ ဘယ်လိုအထောက်အပံ့မျိုး တွေ လိုအပ်မလဲ - အရေးပေါ်အခြေအနေနဲ့ ရေရှည် လိုက်လျောညီထွေစွာ နေထိုင်နိုင်ခြင်းအတွက်?

3.2. How can external support (NGOs, government, EAOs) be improved?

(၃.၂) ပြင်ပမှ အထောက်အပံ့များ (အစိုးရမဟုတ်တဲ့အဖွဲ့ အစည်းများ၊ အစိုးရ တိုင်းရင်းသားလက်နက်ကိုင်အဖွဲ့ များ) ကို တိုးတက်အောင် ဘယ်လိုလုပ်ဆောင်နိုင်မလဲ?

3.3. How can women be encouraged and supported to play leading roles in adapting to climate change?

(၃.၃) အမျိုးသမီးတွေကို ရာသီဥတုပြောင်းလဲခြင်းအပေါ် လိုက်လျောညီထွေစွာ နေထိုင်ရေးမှာ ဦးဆောင်တဲ့ အခန်းကဏ္ဍတွေမှာ ပါဝင်နိုင်ဖို့ ဘယ်လိုအားပေးနိုင်မလဲ၊ ဘယ်လိုအထောက်အကူပေးနိုင်မလဲ?



## **ANNEX 2. ASPECTS OF PREVIOUS DRR AND CCA ACTIONS IN THE RESEARCH AREA**

The 2018 floods affected large areas close to Thanlwin (Salween) River, and required a government response, as 196 villages and 40,000 people were affected. In the aftermath of the response, the Department of Social Welfare conducted a post-disaster assessment, with the government-aligned Kayin Youth Affairs Committee (with technical support from UNHCR); no budget was allocated by the government.<sup>47</sup> Following this disaster, the government initiated a long-term rehabilitation plan to re-build and improve embankments on roads etc.

The 2019 flood was less damaging, in part due to actions taken after 2018 to improve the roads and raise the road-level (“build back better”). However, reaching more remote areas was still difficult.

Kya In Seik Kyi Township was particularly badly affected in 2019. Government assistance was limited due to lack of budget, although an Emergency Response Fund of 20 million Kyat (c.\$US15,000) was agreed with the Chief Minister, and a DRR Emergency Response Committee (including DFW, DDM and Fire Department) was established.

A number of informants mentioned the important role played by the Department of Meteorology and Hydrology in providing early warning/information, which some communities used to plan local emergency response. In terms of immediate response, the government provided healthcare (first-aid), basic needs (including food and rice - also from UN agencies and NGOs); longer-term support included road-building and raising the road level, health awareness raising, providing seeds and training, irrigation and waste management.

The DDM, in collaboration with Health Department,

Meteorology Department, Myanmar Red Cross, and INGOs (AAM, Malteser, IRC, Mercy Corps and others) organized community trainings.<sup>48</sup> The UNHCR and various international and national NGOs provided food (oil, rice, noodles) and non-food items (blankets, buckets, bed-nets etc). Local brick-makers and house-builders were engaged as part of the reconstruction and recovery activities, supporting local skills and markets. AAM organized cash-for-work activities in nine villages<sup>49</sup>, rebuilding roads, bridges and a primary school. (On post-flood aid from EAOs, see Findings).

### **The BRACED Project**

Villagers in Hpa-An Township were involved in the Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) project,<sup>50</sup> which between 2015-18 supported the creation of Village Disaster Management Committees and increased knowledge and understanding on DRR and CCA-related issues to the communities. The BRACED project contributed to building community resilience in three at-risk climatic zones (the Central Dry Zone, Coastal Zone and Hilly Areas) through a unique model of policy, action and media outreach. This was a diverse collaboration amongst local and international partners that combined DRR, CCA, environmental, community-development, policy development, gender and livelihoods expertise. As part of the BRACED consortium, AAM supported 101 Community Resilience Action Plans, and 56 women’s self-help groups.

Under BRACED, the resilience of almost 35,500 people was improved. 1,428 farmers and fisherfolk were trained on sustainable agriculture practices, providing them with better crop yields. Household resilience scores increased in target communities (between 21% to 26%) compared with non-target communities (17% to 20%).

47 KII interview with Department of Social Welfare Director in Hpa-An, conducted on the 11 February 2020.

48 KIIs with Government Departments in Hpa-An (11 February 2020).

49 These nine villages which received cash interventions (funded by Planet Wheeler Foundation and the Prudence Foundation) were selected for primary data collection for this report.

50 The BRACED consortium consisted of Plan Myanmar, AAM, WorldVision, BBC Media Action, UN Habitat, and the Myanmar Environment Institute.

# ANNEX 3. HISTORICAL EXTREME WEATHER EVENTS IN KAYIN STATE

## Floods and Landslides

**August 2019:** more than 10,000 households were affected across Bago Region, Kayin and Mon States, with approximately 60,000 people displaced and widespread damage to infrastructure (OCHA 2019). More than 12,000 people were displaced in Kayin State because of the floods, with an additional 10,300 people already forced to flee because of armed conflict in early 2019.

**July-August 2018:** monsoon floods killed at least 11 people and displaced more than 100,000 (Moon 2018). More than 23,000 people were affected in Kayin State, and local media reported extensive damage to rice paddies (AHA Centre 2018).

**July-August 2017:** Although Kayin State was not one of worst-affected areas, flooding affected 13 of the country's 14 states and regions, with tens of thousands of people displaced or evacuated. The number of people temporarily displaced between July and September was over 320,000 (OCHA 2017).

**July-August 2015:** Myanmar experienced the worst monsoon flooding in a decade, with 125 people killed and 1.7 million people temporarily displaced (OCHA 2015). Over 1.4 million acres of farmland were flooded, more than 841,000 acres of cropland was destroyed, and around 242,000 livestock were killed.

## Drought

**2015-2016:** the **El Niño**<sup>51</sup> phenomenon was one of the strongest since 1950, with a significant influence on weather patterns in Myanmar. This resulted in drought conditions with intermittent “very severe” category cyclones in the Asia-Pacific region, causing dry soil, high risk of fires and acute water shortage (OCHA 2016).

## Fire

According to the Fire Department in Hpa-An, 45 fire incidents were reported in Kayin State in 2018, which caused an estimated financial loss of 179 million kyat. In 2019 fire incidents numbered 46, with damage estimated at 107,497 million kyats<sup>52</sup>.

Fire is the most frequently reported hazards in the country, because of climatic conditions, including rising temperatures, and unplanned development often using inflammable construction materials (Union of Myanmar et al 2009). Compared to other areas of Myanmar, Kayin State is considered a low fire risk zone<sup>53</sup> with on average less than 50 annual cases of fire.

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51 El Niño is a climate cycle in the Pacific Ocean with a global impact on weather patterns: *What is El Niño*, <https://www.livescience.com/3650-el-nino.html> (2015).

52 Figures from Fire Department, Ministry of Social Welfare, Relief and Resettlement, Hpa-An Office (Feb 11, 2020). Given the often very limited government access to remote areas, these figures are likely to significantly under-represent the extent of fire damage.

53 UN-Habitat and Myanmar Relief and Resettlement Department, 2015.



**CREDIT: Ko Myo for ActionAid**  
Village woman harvesting in her  
farm at Myapadaingnaing Village,  
Kawkareik Township, Kayin State.  
Nov 27 2019

**act:onaid**

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