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# TOWARDS A TIPPING POINT?

Climate Change, Disaster  
Risk Reduction and  
Resilience in Southeast  
Myanmar

# Research aim

- The aim of this report is to understand how communities and other stakeholders in southern Kayin State have experienced and responded to the impacts of climate change, and their plans and expectations and strategies for the future.

# Background

- Responses and adaptations to climate change take place within specific 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.
- Conflict-affected, ethnic nationality groups are among the most vulnerable - particularly women and children. 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.

## Methodology



**Desk review** – Analysis of existing documentation, research, data.

### PRIMARY DATA:

**30 Key Informant Interviews (KIIs)** – KNU and DKBA leaders, government departments in Hpa-An and Yangon, several local CSOs.

**Focus Group Discussions (FGDs)** – 12 ActionAid Myanmar Fellows conducted the interviews and focus groups in the 9 villages

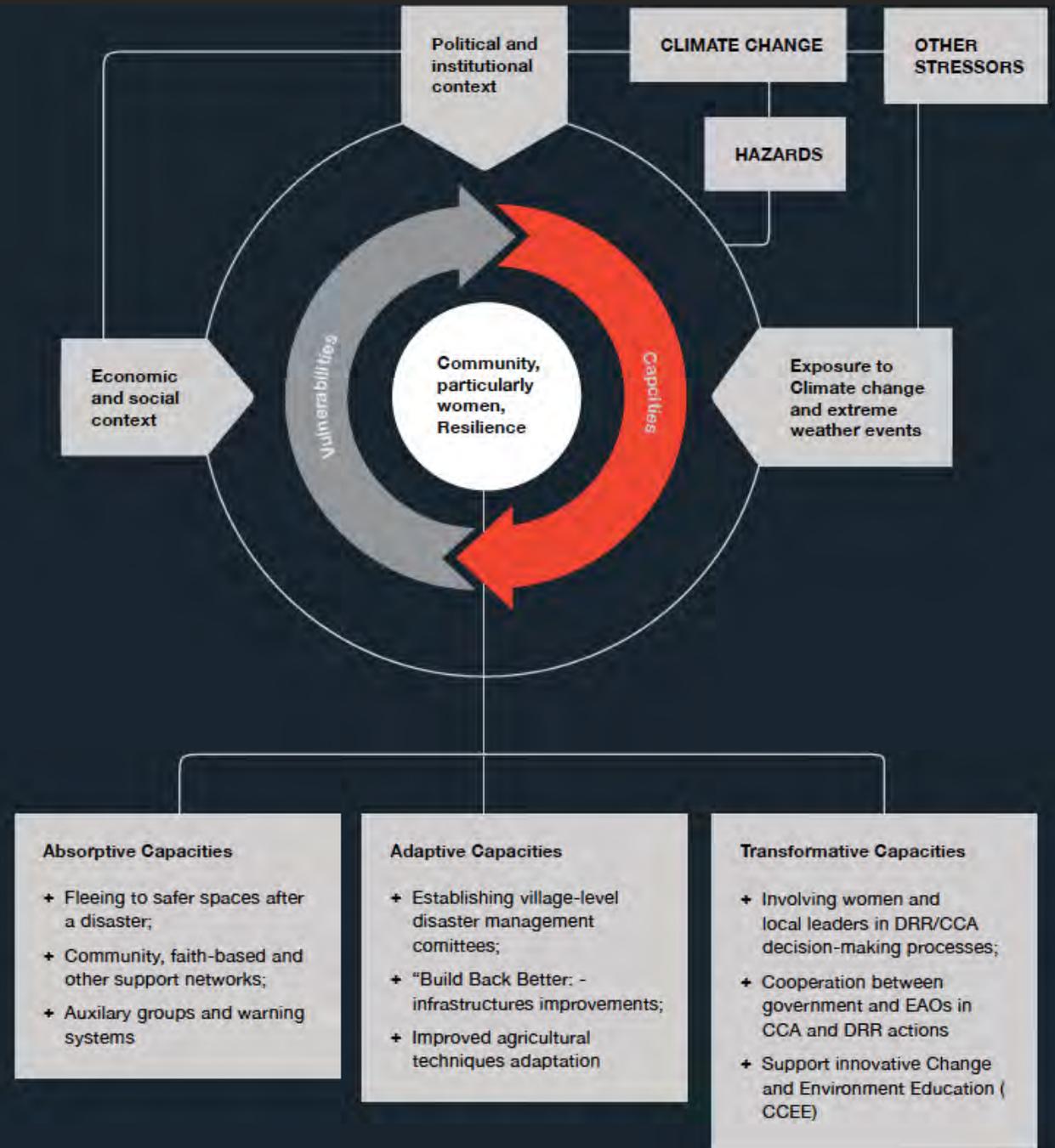
# Conceptual Framework

**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.

**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.



Most vulnerable in SEA  
Climate Risk Index # 02



# Climate change in Myanmar

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.

# Climate observations and projections

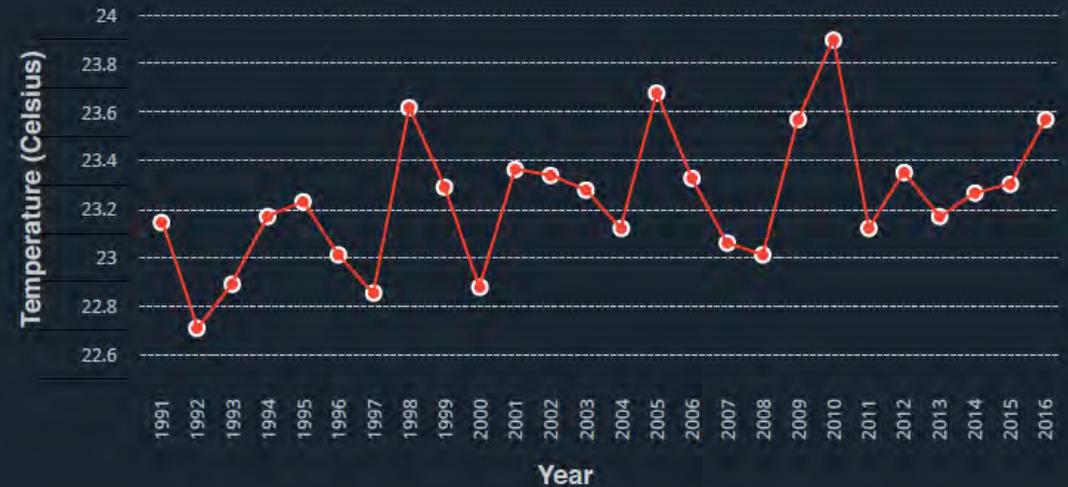
Between 1981 and 2010 average daily temperatures in Myanmar increased by about 0.25°C per decade, while daily maximum temperatures went up by 0.4°C.

By the middle of the century, temperatures are expected to increase by between 1.3°C to 2.7°C above historical levels.

Changes in rainfall patterns are also expected, although these vary by region and season.

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.

ANNUAL MEAN TEMPERATURE ACROSS MYANMAR



ANNUAL MEAN TOTAL RAINFALL ACROSS MYANMAR



# Resilience, adaptation and the Covid-19 emergency



- The pandemic, like some climate change hazards, is stretching the **coping capacities** of the communities.
- As with responding to the climate crisis, local agency and social capital will be key resources in the pandemic recovery phase. Support is needed to ensure that “building back better” after disaster includes investing in social capital.
- Enhanced capacities and potential changes in power dynamics among communities coping with climate change, can be valuable lessons and resources from a resilience perspective, and lessons learned can be shared with other communities and stakeholders.

# Towards a tipping point?

- Although these nine villages are coping at present, they may struggle in the future - particularly in the more disastrous climate change scenarios.
- Loss and damage as a result of climate change occurs not only because of limited capacities for absorption and adaptation, 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 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 Thailand, together with reduced farm-gate prices for agricultural products and severely disrupted supply chains, resulting in fewer opportunities for day labour.



# Kayin climate profile and extreme weather events



Maximum temperatures between 1981 and 2010 increased significantly, with about 32% of days having temperatures that exceeded the previous average of 33.05°C.



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.

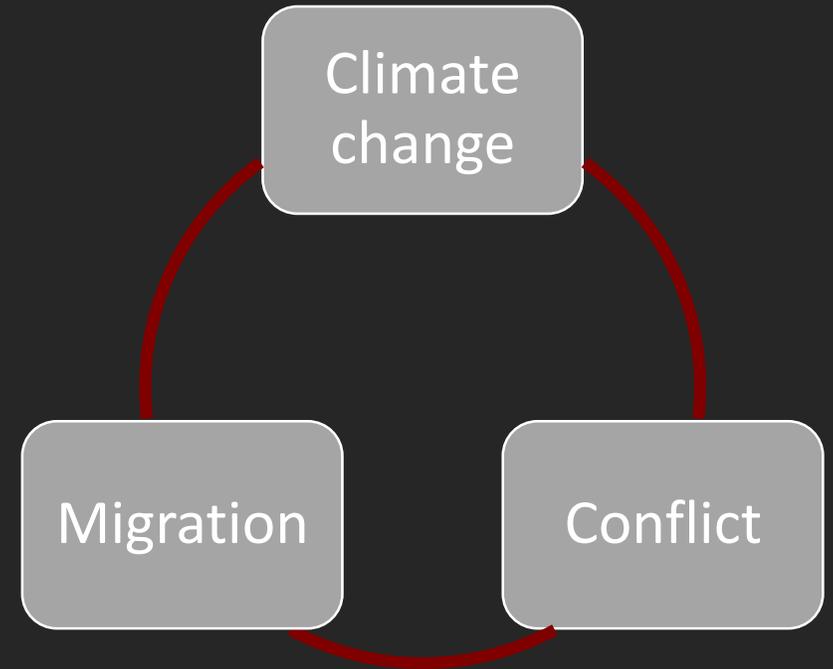
The increasing annual and wet season rainfall, greater incidence of extreme rainfall events and increases in daytime temperature exposes households to increased frequencies of flooding and landslides, while lower rainfall in dry seasons leads to reduced access to water. Furthermore, as in other parts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

# Myanmar Climate Change and DRR frameworks

Frameworks and Agreements	CLIMATE CHANGE	DISASTER RISK REDUCTION
<b>International Agreements</b>	2015 Paris Agreement	The Sendai Framework
<b>National Frameworks</b>	2019 Climate change Strategy Myanmar Climate Change Policy	2017 Myanmar Action Plan on Disaster Risk Reduction
	2012 Myanmar National Adaptation Program of Action (NAPA)	2015 Myanmar National Framework for Community Disaster Resilience
<b>KNU Governance</b>	Department of Agriculture, KNU Forest Department, KNU Environmental Committee Land and Forest Policies	

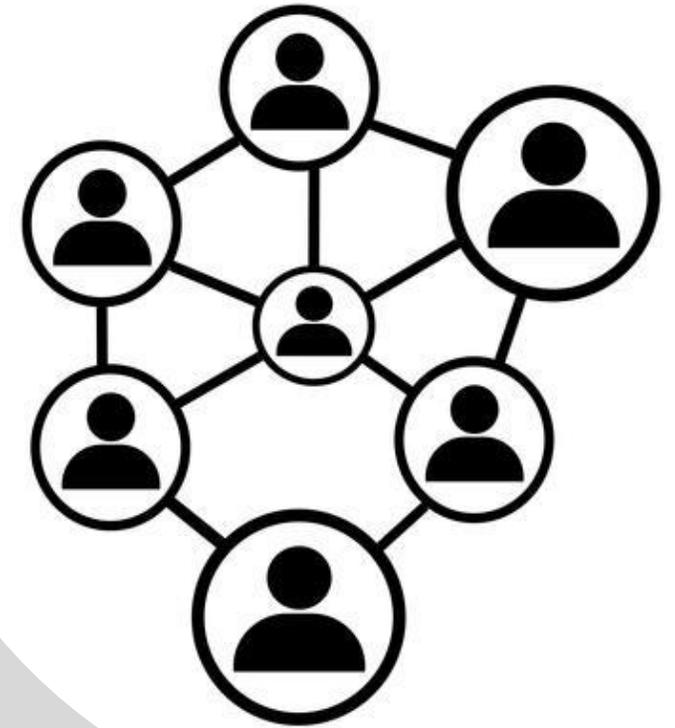
# Climate change, conflict and migration

- Migration is one of the main adaptations and coping strategies adopted by affected people.
- Climate Change can be a cause of conflict and migration, and/or be caused by conflict and migration
- The greater the proportion of the population engaged in agriculture, the more likely is climate change to cause migration
- The MCCP recognizes that climate change exacerbates inequalities and can fuel conflict. Conflict also exacerbates the effects of climate-related shocks, as there are usually higher levels of poverty and displacement in conflict-affected areas.
- 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



# Resilience and Social Capital

- **Social Capital** refer to “features of social organisation, such as trust, norms, and networks, that can improve the efficiency of society by facilitating coordinated actions”.
- 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.
- 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.





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

*”*

*Kayin State government official*

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# Findings – Hazards, impacts and vulnerabilities

- 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 (drought, irregular rainfalls, increased temperature, floods, fire) and is growing more significant every year.
- 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.
- Infrastructure impacts include riverbank erosion; damaged and destroyed roads; bridges destroyed or flooded; collapsed latrines; strong winds blowing down trees; and other property damage, including to houses, and particularly damaged rooves.
- Impacts on health and safety include death and injury, at the time of or just after disaster strikes; malnutrition; disease; psychological insecurity; heatstroke; and illnesses reportedly caused by polluted rivers.
- In addition to individual psychological impacts, social impacts include increasingly insecure livelihoods, exacerbated by widespread debt; family separations (related to migration); 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.



*“ 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.*

*”*

*From Key Informant Interview in MK village*

# Findings – Disasters responses

- Short-term, emergency responses (using Absorptive Capacities) mostly consist of fleeing to safer space. 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
- In general, processes of decision-making and responses to hazards in these nine villages seem relatively egalitarian - albeit that leadership comes mostly from 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.
- 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

“  
*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... the rice does not grow like before*  
”

*From Focus Group Discussion*

# Findings – Adaptations

- Many villages have started growing corn as an alternative crop. 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.
- 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).



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

*From Key Informant Interview in MK village*

# Findings – Future support



## Better Access to Information

Meteorology updates and warnings, through:

1. Enhanced radio and social media coverage;
2. Pre-positioning of relief supplies;
3. Basic relief items; rescue boats; phones and/or other means of networking



## Quick-access emergency funds

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.



## Environmental education, awareness

The Environmental Conservation Department mentioned the importance of environmental education, awareness raising and public education initiatives.



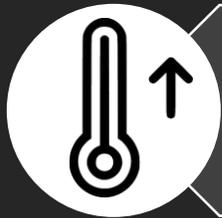
## Long-term adaptation

1. Replace the paddy and other seeds
2. Technical training activities (together with CSOs and VDMCs) for agricultural adaptation
3. Participatory agro-ecology support to identify and adapt/adopt new crops, based on traditional knowledge

# Key Messages - 1



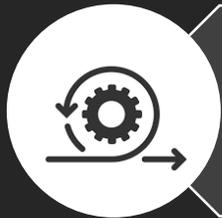
Myanmar bears little responsibility for the climate crises affecting the planet. Nevertheless, the country is highly vulnerable to climate-related hazards.



Between 1981-2010, daily maximum temperatures went up by 0.4°C and are expected to increase further by the middle of the century. 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 shows a significant reduction.



Climate change particularly impacts the agricultural sector, which employs the majority of people in Myanmar. Hazards disproportionately affect the poorest and most vulnerable groups, such as conflict-affected people in Karen State who are increasingly exposed to floods and landslides, fire and droughts.

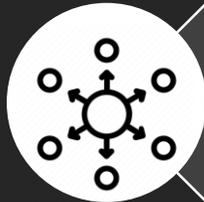


Climate change can be an opportunity (or “critical juncture”) to re-imagine the kind of world we live in, and struggle for transformations in state-society and power relations. ‘Building back better’ should include the transformation of social and political-economic relations, through supporting community and women’s leadership. Climate change adaptation is best governed through an inclusive and decentralised process, including key roles for EAOs and CSOs.

# Key Messages - 2



Local transformative capacity is strengthened when women take greater roles in Disaster Risk Reduction (DRR).



DRR activities should be decentralized, within a federal constitutional framework, as envisaged in the peace process.



In the immediate aftermath of disaster, local self-help and coping mechanisms are the most important elements of response. Strong community networks, based on ethno-linguistic and religious identities ('social capital'), have sustained and supported absorptive capacities and foster social protection.



Climate Resilient Sustainable Agriculture, including adopting new crops (green beans) can be an effective adaptation in areas where climate change is negatively impacting rice cultivation.

# Key Messages - 3



Many of Myanmar's remaining forested areas of biodiversity are located in areas controlled by the Karen National Union (KNU) and other EAOs, who should play key roles in climate change governance in Southeast Myanmar, as acknowledged in the Nationwide Ceasefire Agreement.

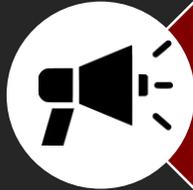


The capacities and resilience of individuals, families and communities described in this report will be fundamental elements of a sustainable, just and equitable recovery from the Covid-19 crisis. However, these responses and adaptations may not be enough to achieve long-term climate change resilience, particularly in the more disastrous climate change scenarios.



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.

# Key Recommendations: From the Community



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 EAO.



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.

# Key Recommendations from the Community



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.



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.



Authorities (government and EAOs) should formally recognize and support local leadership/committees, including women, in advance of hazard onset.

# Key Recommendations to Local Authorities - Government and EAOS

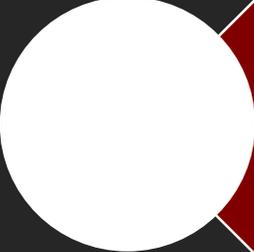
Union-level government should explicitly authorise State/Region government departments to collaborate with CSOs and EAOs in disaster response and rehabilitation activities, as envisaged under the NCA (Article 25).

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.

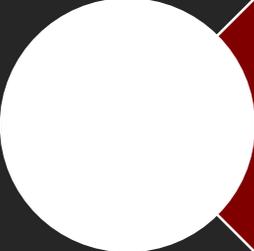
In the longer term, decentralisation of decision-making and control over natural resources should be formalized through federal political arrangements.

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

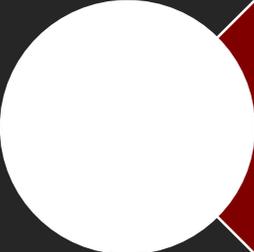
# Key Recommendations to International Agencies and Donors



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.