



Building capacities to address climate change in Myanmar:

Needs Assessment and Strategic Actions
September 2018



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Acronyms

AF	Adaptation Fund
CC	climate change
CCA	climate change adaptation
CDC	city development committee
COP	Conference of Parties
CSO	civil society organisation
DMH	Department of Meteorology and Hydrology
ECD	Environmental Conservation Department
EWS	early warning system
GAD	General Administration Department
GCF	Green Climate Fund
HR	human resources
HRM	human resource management
ICT	information and communication technology
LCD	low-carbon development
M&E	monitoring and evaluation
MCCA	Myanmar Climate Change Alliance
MCCSMP	Myanmar Climate Change Strategy and Master Plan
MoALI	Ministry of Agriculture, Livestock and Irrigation
Mol	Ministry of Industry
MoIN	Ministry of Information
MoNREC	Ministry of Natural Resources and Environmental Conservation (formerly MoECAF)
MoPF	Ministry of Planning and Finance
MoST	Ministry of Science and Technology
MoTC	Ministry of Transportation and Communication
NDA	National Designated Authority
NGO	non-governmental organisation

NIE	National Implementing Entity
PSC	Programme Steering Committee
REDD+	Reducing Emission from Deforestation and Forest Degradation
SCCF	Special Climate Change Fund
TWG	Technical Working Group
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

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1. INTRODUCTION

1.1 Background

The Myanmar Climate Change Alliance (MCCA) was launched in 2013 to support the Government of the Union of the Republic of Myanmar in addressing the challenges posed by climate change. MCCA is an initiative of the Environmental Conservation Department (ECD) of the Ministry of Natural Resources and Environmental Conservation (MoNREC). It is funded by the European Union as part of the Global Climate Change Alliance (GCCA), and implemented by the United Nations Human Settlements Programme (UN-Habitat) in partnership with the United Nations Environment Programme (UN Environment). The MCCA Programme works as a platform to mainstream climate change into the Myanmar policy development and reform agenda through raising awareness on the implications of climate change; building policy, institutional and technical capacity to address climate change; and to demonstrate methodologies to enable communities and local authorities to adapt to climate change through implementation of adaptation measures at local level. The MCCA programme also supported the development of key policy instruments for addressing climate change, notably the Myanmar Climate Change Strategy and Master Plan (MCCSMP) and the Myanmar Climate Change Policy.

As part of its activities the MCCA programme was mandated to support Myanmar produce a focused and well-balanced Capacity Needs Assessment (CNA) to capture the climate change-specific capacity needs of key stakeholders at all levels. It developed this CNA in consultation with local people in vulnerable areas at sub-national level, taking into account the policy, planning and institutional capacity needs of national-level sectoral areas.

At a programme initiation workshop in December 2014, various stakeholders proposed and validated an overall methodology for assessing capacity, capacity needs and actors involved. Following this workshop, an initial assessment of different stakeholder groups' existing and required capacity to address the impacts of climate change was conducted at various levels. Based the overall assessment, the CNA was formulated.

MCCA supported the formation of the Technical Working Group (TWG) – an inter-ministerial body – to guide and coordinate the overall activities. At a strategy formulation workshop in April 2015, the TWG validated a plan to run local consultation workshops in five cluster groups by October 2015 to collect the data it needed to assess capacity needs, formulate the CNA and develop the Myanmar Climate Change Strategy and Master Plan (MCCSMP). The MCCA Programme Steering Committee (PSC) endorsed this plan at its first meeting in June 2015, also agreeing on a work plan, timeframe and potential partners for local consultation workshops and sectoral interview.

Through the MCCA programme, a capacity gap analysis and an assessment of stakeholder capacity needs was undertaken to determine the strategic steps Myanmar needs to consider to enhance its national capacity to deal with climate change. This report is the result of this work: a capacity needs assessment and strategic actions for Myanmar in relation to climate change.

1.2 General basic capacity requirements to address climate change

The objective of this capacity building needs assessment and strategic actions is to enhance Myanmar's abilities to address climate change in a sustainable way. Myanmar has been trying to address climate change — and climate variability in particular — through targeted activities in relation to disaster risk reduction (DRR), social development processes and other sectoral development programmes, including infrastructure development.

However, there is some confusion around whether such efforts remain useful in view of growing climate change concerns and the increasing atmospheric load of greenhouse gases. Questions remain around Myanmar's existing capacities and how effectively it can deal with climate change given the current capacities. To ensure its efforts are sustainable, Myanmar needs to be able to:

- **Learn:** For DRR systems to work, the rural poor in Myanmar's coastal areas and floodplains must be able to react to cyclonic storm or flood early warnings.
- **Determine what might affect a community or the nation as a whole:** This will allow it to analyse situations under a set of plausible 'what if' scenarios in a perceivable future. This is mostly done through computer-assisted modelling, which portrays a set of future pathways through which changes in climatic parameters might induce other hazards. After projecting hydro-geophysical changes for specific timelines, it will be possible to further analyse the extent of a certain hazard type in a given area.
- **Plan:** Making and following a plan can ensure local, regional and national-level resilience are developed gradually. While a community-level adaptation planning can safeguard that community from exposure to certain climate-induced hazards, a national adaptation plan can ensure resilience of the country's overall functioning despite climate change.
- Execute and implement adaptive activities to **reduce vulnerabilities**, while also **monitoring** and **assessing the effectiveness** of existing programmes to evaluate what needs to be done to make the system more resilient. Institutional capacities to deal with climate change activities are particularly important for making the system more efficient.
- **Develop a knowledgeable human resource pool** through education and targeted trainings. Integrating climate change issues into the curriculum will provide a supply of knowledgeable people to deal with long-term problems related to climate change.
- **Decrease energy intensity and reduce emissions** from certain development activities — such as power generation or consumption in appliances — can be a win-win for both the national economy and the global commons. Such a capacity can be vital towards ensuring low carbon development in Myanmar.
- **Generate funds from local and international sources through developing financing ability:** Tapping on available sources of international funds is particularly important. Myanmar must attain adequate capacities to access funding to use other capacities to deal with climate change.
- **Negotiate in international forums on climate change:** Taking part in international negotiation

processes ensures that delegation members are aware of the availability of funds and other opportunities, allowing them to align themselves with ideas and mechanisms that are discussed and decided during international negotiations. It is therefore important to build capacities to negotiate in international forums on climate change.

In addition to the above, there are many specific capacities that could help Myanmar to deal with climate change. Since climate change will continue to impact the country for centuries, it needs to start assessing and building on its current capacities to ensure it can build a minimum set of prioritised capacities within a given timeframe in near future (for instance the period 2018-2030, which is the implementation period for the first Myanmar Climate Change Strategy and Master Plan).

1.3 Conformity with the Myanmar Climate Change Policy and with Myanmar Climate Change Strategy and Master Plan 2018-2030

The MCCA has also developed the Myanmar Climate Change Policy which provides a key policy instrument to guide national action to address climate change, and the Myanmar Climate Change Strategy and Master Plan 2018-2030 (MCCSMP), which provides a roadmap to guide Myanmar's strategic responses and actions to climate-related risks and opportunities over the next 12 years and beyond. Capacity-building is one of the key areas included under the measures of implementation of the Myanmar Climate Change Policy. As such, the Government of the Republic of the Union of Myanmar will need to take overarching and crosscutting measures to implement the policy recommendations by taking the following actions where capacity-building is concerned (as one of the eight key areas):

Undertake and support capacity building activities to enhance the knowledge and skills of relevant stakeholders necessary for effective and gender-responsive climate action, in a continuous, progressive and iterative manner, and establish new institutions and/or a capacity-building framework, as relevant;

Capacity-building is also a key pillar of implementation of the MCCSMP. The findings of this Capacity Needs Assessment will help guide further action under the MCCSMP. To ensure conformity and coherence, as guided by the TWG and PSC, the capacity development effort takes into consideration the MCCSMP and Climate Change Policy's overall framework.

From the overall framework of MCCSMP in Figure 1, it is evident that all the action areas fall within the purview of capacity development. There are a few entry points where the key capacity issues find coherence with action areas. The following table highlights the connections between the two streams of activities.

1.4 Structure of the report

This capacity building needs assessment and strategic directions report contains seven chapters. Chapter 2 presents the report methodologies used. Chapters 3 and 4 present the assessment of existing capacity and the process of identifying Myanmar's capacity needs. The strategic directions for capacity building are presented in Chapter 5, while Chapter 6 briefly explains how the elements of capacity building were prioritised. Finally, Chapter 7 outlines strategic activities to be implemented under each strategic direction and provides a broad institutional framework that identifies the lead and supporting institutions to deliver each capacity building action programme.

FIGURE 1: OVERALL FRAMEWORK OF MCCSMP

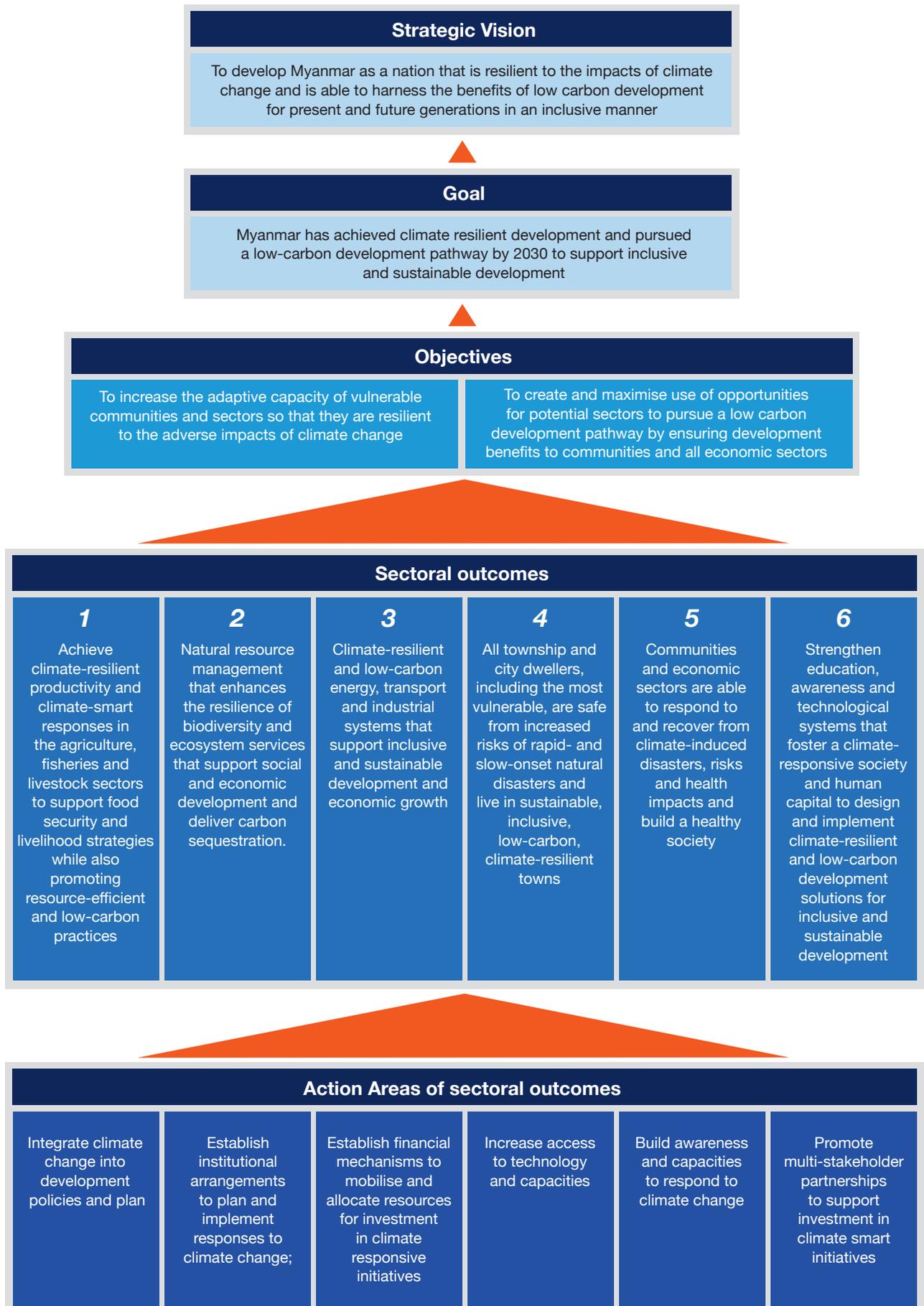


TABLE 1: SYNERGY BETWEEN THE CAPACITY BUILDING AND MCCSMP ACTION AREAS

Key capacity issues	MCCSMP action area
Knowledge generation, updating and management	Awareness Partnerships
Policies, strategies and programmes (including harmonisation)	Policy
Technological development and adoption	Capacity and technology Awareness
Human resource (HR) capacity	Institutions Capacity and technology Awareness
Institutional capacity (including inter-agency synergies)	Institutions Policy Partnerships
Financial capacity	Finance

2. APPROACH AND METHODOLOGY

The generic approach towards developing the Capacity Needs Assessment was to identify existing functional capacity to address climate change among primary stakeholders and their representatives, as well as any gaps in capacity across stakeholders and institutions. The next step was identifying capacity building needs to develop strategic elements and actions for building capacity by involving national institutions operating in Myanmar in various capacities. These initial findings and strategic elements were extensively shared in thematic groups to understand their applicability and enable the prioritisation of capacity needs. An indicative institutional arrangement was then set up and a timeline arranged for each capacity building strategic element.

The Capacity Needs Assessment development process relied on public and institutional consultations and the documentation of anecdotal references. They eventually gathered inter-ministerial vetting from the TWG members. The process was as follows:

- Find out what capacities do exist, particularly in priority vulnerable sectors;
- Identify existing gaps in capacity across stakeholders and institutions;
- Identify capacity needs that are deemed necessary to implement MCCSMP;
- Develop strategic elements and share for understanding their applicability;
- Prioritize among various capacity needs;
- Setting up of an indicative institutional arrangement; and
- Arranging a time-line for each capacity building strategic element.

The methodology for developing the Capacity Needs Assessment involved:

- An analysis of available literature
- A questionnaire survey (see Appendix 1)
- Sharing and validating initial findings in consultations
- Institution-specific one-to-one interviews
- Discussions at thematic group meetings and TWG meeting.

This section discusses the detailed methodologies applied in each major step, and outlines the limitations of this methodology.

2.1 Assessing existing capacity

A desk study reviewed available literature on Myanmar's existing capacities to deal with issues related to climate change and climate variability, carefully examining documentation on the abilities and lack of abilities of Myanmar's institutions and social organisations to handle climate change affairs. Particular attention was given to abilities to address exposure and sensitivity to climate-induced hazards and to enhance adaptive capacities by means of natural, physical, social, human and financial capital.

Myanmar's culture of reflecting on such abilities and therefore the documentation of various actions through systematic research is relatively weak, so a questionnaire survey was used to gather primary data on abilities. The questionnaire included 97 probing questions on Myanmar's capacity in the following areas:

- Participation in international negotiations
- Policy, political integration and legal framework
- Planning mechanisms
- Programme/project implementation
- Resource mobilisation, allocation and utilisation efficiency
- M&E, oversight and reporting on programmes
- Human resource management (HRM) for climate change programming
- Knowledge generation, collation, retention, sharing and integration
- Knowledge of vulnerability reduction and low-carbon development (LCD) technologies
- Knowledge of information and communication technologies (ICT)
- Community mobilisation and engagement, and
- Sensitivity to marginalised groups and minorities.

The questionnaire (see Appendix 1) was given to local and regional-level personnel who participated in the sub-national MCCSMP consultation workshops in Bago, Myitkina, Pathein, Mandalay and Thandwe. 192 participants, representing different segments of society — including farmers, teachers, government officials, city development committee (CDC) officials, non-governmental organisations (NGOs), the media and the private sector — completed the questionnaire. See Appendix 2 for a complete list of survey participants.

The completed questionnaires were decoded and analysed using a linear scale of 1 to 10 to understand the extent of capacity (analysed in Excel). These scores were used to calculate an average value for each individual question and each capacity issue.

The individuals' reflections on various capacities were shared in each of the five sub-national consultations and also noted down. A few case studies were gathered by individually interviewing a few selected participants, to provide a means of triangulating gathered information on capacity issues. The results were shared and discussed with thematic group members in a series of workshops in November 2015.

2.2 Assessing capacity needs

Both the survey results and the reflections of participants in sub-national consultations and the November thematic group workshops provided inputs for the capacity needs assessment, including on existing capacity levels. The assessment criteria was: the lower the extent of existing capacity (averaged over all participants), the higher the need to build that particular capacity. Preliminary results were cross-checked and triangulated with narrative reflections of sub-national consultation and the thematic group workshop participants.

2.3 Determining strategic direction

The survey results and individual reflections from sub-national consultation and thematic group meeting participants were collated and shared in six secondary thematic Working group workshops in Nay Pyi Taw in February and March 2016. Results were also shared with civil society organisation (CSO) representatives in March 2016 for their comments and suggestions. See Appendix 3 for a list of participants in the latter thematic group and CSO workshops.

Based on analysis of feedback from these workshops, a draft set of capacity building strategies was discussed with all participants and TWG members. The latter endorsed the draft set of capacity building strategies for Myanmar (see Chapter 5 for more details).

Efforts were made to cross-check the strategic elements against strategic priorities and focus areas of the MCCSMP's overall strategy framework.

2.4 Prioritising capacity building

Although the survey (see Appendix 1) was designed to prioritise individual capacity needs with a specific indicative timeline, participants did not reflect on their individual understanding of prioritisation to the degree intended by the questionnaire. So prioritisation was done initially by asking each thematic group to reflect primarily on their own theme and identify the three most pressing capacity building needs, with timelines.

The methodology was further elaborated by involving participants from the February and March 2016 thematic group workshops, who were each given a capacity building prioritisation form (see a sample in Appendix 4) to prioritise their sector's capacity building needs. The completed forms were segregated by strategic direction. The forms provided opportunities to indicate preferable timelines and institutional arrangements for each capacity building programme or activity.

The following thematic groups took part in the February-March 2016 workshops:

- Agriculture, food security and human health
- Urban, building and human settlement
- Environment, forest and biodiversity
- Energy, transport and industry
- Education, awareness, science and technology, and
- Disaster risk reduction and early warning system (EWS)

The form allowed sectors to identify seven priority capacity building strategies from a wider list of capacity building indicators. A linear scale of 1 to 7 (assigning 7 to the top choice and 1 to the least popular) was used to analyse the relative importance of a capacity building strategic choice. All participants were given equal weight in analysing the top most priority and so on. The higher the indicator's score, the higher it was prioritised. Results are presented in Chapter 6.

Finally, one-to-one interviews with representatives of national sectoral ministries and agencies were used to understand sector-specific institutions' views on those priorities. Checklists (see Appendix 5 for a sample checklist, and a list of participants) helped guide the discussion with individual participants, and appointments for these interviews were made well in advance with help from the Environment Conservation Department (ECD) and MCCA. Efforts were made to identify all major national stakeholders, but time constraints meant that many of institutions could not accommodate one-to-one interviews in the two-week long mission in February and March 2016. Preliminary results were shared in the TWG meeting for further discussion and vetting.

2.5 Limitations

Although the methodology served its purpose, it had some major limitations, listed here.

- Documentation on capacity analysis of past climate-driven hazards and LCD was inadequate. Little secondary literature was available, compared to neighbouring vulnerable countries.
- Myanmar had not previously tried to conduct a capacity self-assessment on environmental management, DRR or climate change.
- The assignment's timeframe had to conform with MCCSMP development, which left inadequate time for fully comprehensive and elaborate one-to-one discussions with key stakeholders.
- Background political activities at the time — especially the election — allowed for only limited presentation of ideas with representatives of government ministries and agencies for months either side of the election.
- Institutional key informants — who took part in thematic group workshops — were trying to accommodate too many issues in too little time.
- Despite attempts to cover representatives from of all the country's major regions, the survey was focused on national government and might have missed community-level capacity issues.
- Using a linear analytical tool to prioritise capacity building indicators allowed prioritisation among the topmost indicators, as chosen by participants. Using a non-linear tool alongside this one might have given a different set of answers.
- The methodology for prioritising options and formulating the action plan relied heavily on the availability and participation of key stakeholders from national institutions and agencies including ministries and technical departments, CSOs, the media and the private sector. And although many stakeholders contributed to the process, time constraints meant that many others could not take part in the consultations and one-to-one institution-specific interviews.

3. ASSESSMENT OF EXISTING CAPACITY

Myanmar is one of the most vulnerable countries to climate change, facing problems such as:

- Exposure to recurrent floods and droughts, which jeopardises hydro-electric power generation
- Streams and rivers that are subject to El Niño–Southern Oscillation, which can result in dwindling surface flow regimes and consequent irrigation problems
- High aridity, which makes maintenance of green vegetation and crop cultivation difficult in dry zones , and
- Super cyclones such as Nargis in the coastal delta.

Despite such climate-induced hazards, Myanmar has progressed economically in recent decades, with positive impact on social development and wellbeing. The country’s formal institutions and informal and formal social organisations have applied various inherent capacities to deal with their respective roles, particularly against the backdrop of climate-induced hazards.

But Myanmar will need to increase its capacity building efforts in many spheres of life, to respond to the anticipated increase in the primary and secondary impacts of climate change over the coming decades. These will be a result of changes in rainfall, an increase in the number of hot days, higher average temperatures and a shorter monsoon season, among others.

3.1 General climate change basic capacity requirements

An analysis of climate change capacity self-assessment in developing countries provides a basis for identifying their basic capacity requirements to address climate change. As indicated in earlier section, it is possible to pin down a large number of capacity requirements that could help a country address climate change in a sustainable manner. The evaluation tool in Appendix 1 clusters all these capacity issues into five broad categories:

- Institutional, policy and legal framework
- Planning, implementation, monitoring and evaluation
- Knowledge management
- Community mobilisation and engagement, and
- Sensitivity to marginalised groups.

3.2 Results of the assessment of existing capacity

Results from the literature review and questionnaire surveys indicate that, although Myanmar has certain capacities, in many instances these are inadequate to address critical aspects of the country’s increasing vulnerability to climate change, particularly if it wishes to harness LCD opportunities.

It should be noted that, because the results were averaged over all the surveyed respondents, the analysis loses both the negative bias — generally voiced by NGO representatives — and the positive bias — generally voiced by government representatives.

The general average scores for almost all the capacity elements fall between 3.8 to 5.0 out of a maximum possible score of 10. This indicates that, even if some capacities are there, those are at best only partially developed to deal with climate change-related affairs. Generally, existing capacity is slightly better organised in knowledge management, while the capacity to take into cognisance sensitivity to marginal groups — including minorities — is relatively inadequately organised.

Table 2 shows the results of the analysis for various capacity issues. Scores below 4 indicate ‘anecdotal evidence of capacity’ only and scores below 6 indicate ‘partially developed capacity’. None of the 97 probing questions scored a capacity indicator above 6, which might have indicated widespread, but not developed, capacity.

Table 2: Summary of findings on existing climate change capacity in Myanmar

Capacity issues	Capacity score (0–10)	Key findings
INSTITUTIONAL, POLICY AND LEGAL FRAMEWORK		
Policies, political integration and legal framework	4.56	Although there are sector-specific policies, there has been no effort to harmonise these with needs linked to addressing climate change or to integrate people's needs. Policy harmonisation capacity needs to be enhanced.
International negotiation capacity	4.36	Existing capacity lies with MoNREC. There is little or no capacity in other ministries or agencies, and there has been no effort to share the outcomes of negotiations with other national institutions or stakeholders.
PLANNING, IMPLEMENTATION, MONITORING AND EVALUATION		
Planning mechanism	4.46	National sectoral planning capacity is somewhat developed, but capacity to integrate community views and concerns is nominal.
Programme or project implementation	4.35	Sectoral agencies have somewhat developed capacities to implement projects, but lack monitoring and evaluation (M&E) and feedback capacity on adaptation and mitigation.
Resource mobilisation, allocation and utilisation efficiency	3.72	Existing capacities are not adequately developed, especially regarding innovative finance mobilisation options.
M&E, oversight, reporting on programming	4.02	Existing capacities are somewhat developed, though results-based management is not practiced and M&E is weak.
HRM for climate change programming	3.95	Existing capacities are not adequately developed. Personnel skills are rather weak; even more so at community level.
KNOWLEDGE MANAGEMENT		
Knowledge generation, collation, retention, sharing and integration	4.6	Existing capacities are somewhat developed, but research capacities are poor and the government provides little incentive to make best use of prevailing research capacities.
Knowledge of vulnerability reduction, LCD technologies and Reducing Emission from Deforestation and Forest Degradation (REDD+)	4.19	Existing capacities are inadequately developed. There is a need for impetus on vulnerability assessment and more scientific knowledge integration.
ICT knowledge	4.6	Although the involvement of ICT in issuing early warnings has increased, there remains a need to modernise EWSs.
COMMUNITY MOBILISATION AND ENGAGEMENT	4.04	Existing capacities are somewhat developed, but capacities to integrate gender aspects and regarding climate safe livelihoods options are inadequate.
SENSITIVITY TO MARGINALISED GROUPS	3.44	Existing capacities to address concerns of marginalised groups and minorities dealing with climate change are inadequate.

4. IDENTIFICATION OF CAPACITY NEEDS

Wherever there is a capacity gap, there is also a capacity requirement. But people perceive capacity needs from their own perspectives. The same goes for institutions. So, institutional capacity needs to address climate change are better explained by a representative from a relevant institution, who can reflect on her/his professional experience and judgement.

Myanmar's foremost capacity needs are at community level, particularly those that are in climate change hot spots. Vulnerable members living in these communities need to know the answer to a number of key questions so they can undertake adaptation actions based on the capacity they already have or that they can get through institutional support. These questions include when, how and exactly in what way they will be vulnerable.

The answers to these key questions lie in data on micro-scale vulnerability assessments and a thorough assessment of:

- Local people's inherent capacity to deal with climate-induced adversities
- The endowment of the natural system around them, and
- Any potential institutional support streams that might gradually enhance their capacity. Such support can be systemic — for example, issuing an early warning — or location- and/or situation-specific, such as providing social safety net support following a particular type of climate-induced hazard. So, the capacity building need at one level often depends on capacity availability in other levels.

Based on the questionnaire survey, key informant interviews and institutional/thematic-level discussions, the following emerged as key areas for building capacity to address climate change adaptation and realise LCD pathways as per the MCCSMP objectives:

- Awareness and education
- Promoting research-based knowledge management
- HR development
- Climate change policy
- Implementing vulnerability reduction or LCD actions
- Climate change negotiations, and
- Financing climate change activities.

4.1 Awareness and education

As highlighted under the MCCSMP's awareness and capacity building action area, people must be made aware of climate change impacts, which are likely to be manifested in many different ways. They need adequate orientation on how a known problem might change its pattern and frequency, bringing new hazardous dimensions with differing impacts, timeframe and cost implications, and how they can overcome these with minimal effort and cost. This is also highlighted in the Myanmar Climate Change Policy.

A number of enabling activities can be undertaken to raise awareness of climate change in the coming decades. National research institutions need to enhance their capacity on climate change to produce

credible, research- and evidence-based scientific understanding on climate change. This will involve enhancing the capacity of individual researchers and boosting their research endeavours through collaborative research with national and international colleagues.

Myanmar also needs to increase its climate modelling, projection and forecasting capacities. Similarly, to provide for better and advanced early warnings on imminent weather conditions and meso-scale weather advisories, Myanmar's EWS needs to be modernised and made more functional. To do this, the weather data acquisition system also needs to be updated, with advanced scientific tools and equipment such as Doppler radar and automated rainfall/temperature gauges.

Meeting these enabling capacity needs will enable the research results to be shared with local communities, enhancing their ability to plan for building household and community resilience. Local leadership — especially those working for local government institutions — must also be included in the awareness and education programme, perhaps through a short training course designed for them.

Increasing local knowledge and awareness of climate-induced hazards will be strengthened further by educating young people, particularly students. Introducing climate change into the curriculum at all levels and gradually allowing tertiary-level students to specialise on the subject will help Myanmar form capable, skilful professionals, who can take informed decisions.

4.2 Promoting research-based knowledge management

The importance of research and generating knowledge cannot be overemphasised when dealing with climate change. There is a dearth of research findings on the current state of climate change knowledge in Myanmar. And since successful adaptation depends largely on location - and context-specific narratives on vulnerability, filling these research gaps is a priority.

But scientific research can be demanding, both in terms of human resources — in other words, scientists and researchers — and finance. So Myanmar may focus initially on international research collaboration, which will also help develop the capabilities of Myanmar's researchers on various aspects of climate change, particularly climate modelling. Once it has a critical mass of trained researchers, the country can undertake further follow-up research through inter-agency collaboration.

4.3 Human resource development

One of Myanmar's critical capacity needs is in human resources. In part, this need will be met through awareness raising and education. But it is also important to enhance the understanding and skills of the country's officials and technical personnel working in various capacities within the government's institutional set up, the private sector (including banking) and elsewhere. Since they need to enhance their understanding and skills to deal with climate change through adaptation and LCD while continuing to do their work, opportunities need to be created for specialised short courses and on-the-job trainings.

Many government officials take part in project design and planning exercises, particularly on behalf of their respective ministry, directorate or department. But they do not necessarily have technical knowledge regarding climate change and its remedial measures. Without such knowledge, it will be difficult to achieve the goal of mainstreaming climate change in development. So officials dealing

with development planning and project design need to undergo professional training on climate change. Developing a manual for including climate change concerns in project design would be an enabling activity, and will provide ongoing guidance for officials trying to mainstream climate change in development projects.

4.4 Climate change policy

Myanmar has a host of sector-specific policies and sectoral officials capable of delivering policy guidance through their decisions and actions. Although Myanmar has recently developed its Climate Change Policy, other sectoral policies offer few insights on climate change, leaving a major gap in policy guidelines. In such a void, it becomes difficult for government officials to integrate climate change adaptation and LCD into regular activities. There is a need to develop sector-specific policies by integrating climate consideration and related guidance; harmonising inter-sectoral policy on climate change will ensure the effectiveness of such policy guidelines cannot be undermined.

Integrating climate change issues in policies in this way will enable the government to deliver CCA and LCD in a much more efficient way. Indeed, the Climate Change Policy calls directly for such integration through amending existing policies or adopting new ones to further enhance actions under the Climate Change Policy under its Measures of Implementation.

4.5 Implementing vulnerability reduction or LCD actions

In addition to individual skills and national policy directions, there is a need to increase institutional capacity to implement actions to reduce vulnerability or realise LCD opportunities. Strong institutional capacities ensure the timely undertaking and quality of necessary actions while satisfying people's aspirations to become more resilient. Strong resource use efficiency, transparency and accountability in project or activity delivery also ensure that the national government optimises its allocations for CCA and LCD — an essential enabler for sustainable development.

Sectoral ministries and associate departments implement projects according to government rules and procedures, which include fiduciary management norms and procedures, oversight and M&E mechanisms. But stakeholders believe that the current state of affairs related to institutional implementation falls short when compared to international norms, practices and standards. Myanmar's institutions need to identify its weaknesses to enhance and strengthen institutional implementation capacities. This is particularly important in MoNREC, the Ministry of Agriculture, Livestock and Irrigation (MoALI), the Ministry of Transportation and Communication (MoTC), the Ministry of Planning and Finance (MoPF), the Ministry of Electrical Power and Energy, the Ministry of Social Welfare, Relief and Resettlement, the Ministry of Industry (MoI), the Ministry of Health and the General Administration Department (GAD), where climate change will have significant influence in coming decades.

4.6 Climate change negotiations

As a developing country, Myanmar has a lot to learn from international processes and negotiations, which are led by the United Nations Framework Convention on Climate Change (UNFCCC). In 2015, the UNFCCC negotiations culminated in the Conference of Parties (COP) decision for the Paris Agreement (Decision 1./CP21). Although the Paris Agreement settled many unresolved issues, many

issues will need to be (re)negotiated in coming COP sessions and years. These are often highly technical, geopolitically charged and in need of continuous analysis and updating. Ordinary diplomatic skills fall short in such negotiations, so Myanmar needs to develop a critical number of knowledgeable negotiators who can feed into these negotiations to uphold the country's interests. Myanmar already benefits from some capacity building programmes — such as the Global Support Programme for LDC negotiators implemented by UN Environment and UNDP — but these need to be upscaled so the country can maintain its institutional knowledge.

Myanmar is likely to build resilience to climate change if it can significantly enhance its adaptive capacities in various sectors by adopting suitable technologies. And to gain from negotiation streams on technology development and transfer and the technology clearinghouse, Myanmar needs to develop expertise on these issues. It also needs human resources who can develop projects according to Green Climate Fund (GCF) guidelines, enabling it to secure international GCF finance for CCA and LCD. The country needs to enhance these skills quickly to optimise gains from international negotiations.

4.7 Financing climate change

Finance is needed for any action, whether it is conceived and delivered at community or central government level. Even the enabling capacity building activities mentioned above cannot be achieved without mobilising finance.

Climate financing is possible by mobilising national resources or drawing from international ones. In both cases, institutions have to enhance human capacities to gather and subsequently spend those resources through an appropriate mechanism. One of the key pillars of the MCCSMP is financing for climate action.

The MoPF's Budget Department only responds to allocation requests that come through the official planning process, which is also led by the MoPF. Climate financing from national sources is possible only if national sector-specific projects can integrate climate change and pass the National Planning Department's screening process. Ideally, the Budget Department should have adequate funds to cater for the needs of sector-specific ministries and agencies. Unless the resource endowments increase and there is strong policy support for allocating finance to integrate climate change, it will be difficult to meet all these requirements through national resources.

Imposing the 'polluters pay' principle is one way to fund climate change activities. However, such an approach needs proper background analysis, including commissioning studies to probe the possibilities of imposing a green tax or a 'polluters pay' principle in various sectors to discourage emission-heavy activities and begin to gather such finance within Myanmar.

GCF is a potential source for drawing international financing under the UNFCCC mechanism. But GCF offers demand-driven climate financing, and its rules and procedures call for significant capacity improvement in project formulation. Potential executing entities within Myanmar must invest in building the capacity of their permanent personnel to ensure they are capable of drafting good proposals according to GCF standards or criteria.

5. STRATEGY FOR BUILDING CAPACITY TO IMPLEMENT MCCSMP

The government of Myanmar needs a comprehensive capacity building effort to implement the MCCSMP. The capacity building plan has seven key strategic directions, which are discussed in this section.

- Enhancing and strengthening education and awareness of all stakeholders across the nation
- Promoting climate change research, the adoption of appropriate technologies and knowledge management
- Developing human resources for addressing climate change
- Formulating and harmonising policies for responding better to climate change
- Enhancing capacity to implement climate change programmes
- Increasing and enhancing national capacity for financing climate change, and
- Strengthening international climate change negotiation capabilities

5.1 Enhance and strengthen education and awareness of all stakeholders across the nation

Stakeholders across the nation need to be made aware of the implications of climate change and their roles in addressing the phenomenon. Through gradual education, they will be able to reduce adverse impacts, realise mitigation opportunities including REDD+ and even attempt to take advantage of situations projected to arise as a result of climate change impacts. Such a strategic element directly contributes to the MCCSMP's Action Area 5 (awareness) and helps achieve Action Areas 2 (institutions) and 3 (finance).

There are two distinct modalities to achieve education and awareness. First, the population needs to be made aware of the phenomenon to understand climate change and its projected impacts, and to be able to consider adaptive measures. Second, integrating climate change in school and higher education curricula will help ensure that future responsible citizens of Myanmar are capable of addressing climate change through their decisions and actions.

5.1.1 *Helping people to understand and consider adaptive measures*

This will initially involve the most vulnerable people, who are living in climate change hot spots. Location- and context-specific information packages, along with simple information and educational campaign materials should be produced in both printed and electronic formats and channelled through local government institutions and NGOs working in those areas. For climate change hotspots, the ECD could design and implement a training for trainers module with active support from the Ministry of Information (MoIN).

These efforts to educate the most vulnerable will have to be expanded in all other areas to raise awareness among the general population of the adversities they might face in future years as a consequence of climate change.

One important step in the design and implementation of local-level adaptation, is building the capacity of local government institutions. In addition to training for trainers, the ECD will organise and deliver training for concerned or relevant local government officials with active support from the Ministry of Local Government.

In high-impact areas for specific climate-induced hazards such as flooding and cyclones, issuing and improving existing EWSs will become inevitable. But the general population's capacity for responding to such EWSs is weak and it will be necessary to build capacity among primary stakeholders. Authorities will make efforts to introduce and improve EWSs and the types of signals they issue, while the ECD will work with the Department of Meteorology and Hydrology (DMH) and the media to launch and deliver an EWS dissemination campaign to educate community members.

5.1.2 Integrating climate change into the curriculum

Because the impacts of climate change will be felt by both current and future generations, climate change-related knowledge needs to be integrated into educational curricula at all three basic education levels, gradually increasing the depth of information and knowledge in each higher tier. But integration into the curriculum alone will not be successful without also enhancing teaching capabilities. Selected science and geography teachers will be brought under a training for trainers programme with the assistance of the MoE. A learning manual will also have to be developed so teachers can find the information they need during the training. Priority will be given for teachers from schools in climate hotspots.

Climate change is not taught as a specialised subject in any university. University-level full unit courses will be developed and taught as a specialised course. These could form part of existing degrees offered in the following departments: physics (atmospheric science, climate modelling); agriculture, forestry (carbon sequestration); irrigation engineering (crop water requirement); animal husbandry (emissions from dairy cattle and poultry); civil engineering (vulnerability to infrastructure, DRR); development studies (development policy, food security); economics (economic trade-offs, incentives, market, the cost of adaptation and mitigation); public health (health-related vulnerability and adaptation); electrical engineering (power production and efficiency in technologies); architecture (low-cost housing and buildings); urban studies (safer and efficient urban development); population studies (human mobility and forced migration); and public administration (governance studies); among others¹.

Technical/technological universities will teach courses on climate change. For example, in courses involving civil and water resource engineering, climate change-related courses will be developed and taught. Students of architecture will have access to courses on green building design, while electrical engineering students will be taught how to attain high efficiency in electrical power generation and demand-side management through efficient electrical appliances. In such cases, technical universities (for example, the one in Mandalay) will have to work with the authority dealing with technical education, perhaps in coordination with the ECD.

¹ This offers a non-exhaustive list, which needs to be further explored towards development of a fully-elaborated programme.

Another example might involve the University of Forestry, where technical courses on REDD+ and environmental/social safeguards will be offered and taught. In all such cases, ECD will have to develop a separate programme involving the MoE and the relevant departments of technical universities.

5.2 Promote climate change research, the adoption of appropriate technologies and knowledge management

Promoting research and research collaboration among scientific institutions and scientists and enhancing Myanmar's national modelling capacity would both help realise this objective. The former will provide research-based information on location- and sector-specific vulnerability and adaptation needs and can help with calculations on the costs of each adaptation option. The latter could provide computer-simulated climate change projections to produce potential scenarios to use for planning; a prerequisite for any reliable vulnerability assessment.

One particular research topic that will facilitate further research involves modelling climate parameters under various scenarios, which will lead to projection of impacts and vulnerability assessments. The DMH needs to build its capacity for meso-scale modelling, in cooperation with internationally renowned modelling research centres, so it can issue weather forecasts and agricultural advisories with a much longer lead time. Although there is an EWS for flooding, it needs significant improvement. This will require institutional and international collaboration. Modernising the real-time data acquisition system for temperature and rainfall is also a prerequisite for conducting research that will generate EWS data. Myanmar needs to set up Doppler radars and replace its current reliance on manual gauges with remotely operated modern digital data collection equipment.

5.3 Develop human resources for addressing climate change

Both stakeholder surveys and key informant interviews revealed that developing human resources should be the topmost strategic focus for capacity building in Myanmar. Awareness-building and education programmes — especially those that are integrated in the curriculum — will help the country achieve a long-term human resources development objective. But it still needs to build and/or enhance the capacity and skills of its current pool of institutional human resources, who will implement the MCCSMP. There is a dearth of technical capacity and skills among current decision makers and actors in relevant ministries, technical agencies, institutes and even research centres across Myanmar. An institutional human resource development strategy is vital if Myanmar is to build its national capacity. Possible delivery mechanisms include specialised and institution-specific short courses, a manual for mainstreaming climate change into development, and knowledge management systems.

Although addressing capacity building in institutional human resources should greatly enhance institutional capacity, in many sector-specific cases, skill enhancement alone will not suffice. Institutions will also need to recruit additional human resources to deal with daily affairs in relation to climate change adaptation and mitigation, especially in priority sectors.

For institutional human resources development, the following delivery mechanisms may be considered:

Specialised short courses

Organised by ECD, these should be tailor-made for enhancing skills and capacity of sector-specific personnel representing priority institutions. As an enabling activity, training manuals will have to be produced before inviting institutional representatives for such training.

Institution-specific short courses

Initiated and coordinated by ECD in cooperation with technical universities and capable institutes, these should be designed to enhance the skills of personnel representing particular priority institutions. Examples include courses on REDD+ for MoNREC staff or climate change and public health courses for Department of Public Health personnel.

Manual for mainstreaming climate change into development

In the long run, it will be important to mainstream climate change adaptation and mitigation into development activities. This will entail massive capacity building across all ministries and their technical wings or departments. The first step is to work with the TWG to develop a manual to provide step-by-step guidance for mainstreaming climate change and DRR issues at the design stage of any development project, irrespective of its lead ministry. Once the TWG approves the draft manual, the ECD will have to organise a capacity building programme in cooperation with the MoPF.

Knowledge management

Vulnerability, a function of exposure, sensitivity and adaptive capacity, is a dynamic issue irrespective of sectors and type. As such, it needs to be monitored and updated periodically. There is also scope to learn from good and bad practice, with the latter providing insights to prevent mistakes being repeated. Technologies for achieving LCD may change over time and optimisation requires the constant review of ever-changing technological advancements. REDD+ potential is also dynamic, and can change over time. Maintaining a comprehensive and up-to-date national knowledge management system on climate change and vulnerability data is vital. Access to knowledge must be created for the general population, the private sector and national institutions operating at various tiers (including CDCs).

5.4 Formulate and harmonise policies for responding better to climate change

Institutional capacity building is never complete without the integration of climate change in sectoral policies and inter-sectoral policy harmonisation. TWG members and those who were consulted in the thematic group workshops all gave policy formulation and harmonisation high importance.

Institutional modalities for addressing climate change can be greatly boosted by taking various activities on board through sectoral policies and programmes. There are the two major mechanisms for achieving policy development and subsequent harmonisation: integrating climate into sectoral policies and then harmonising these policies.

Integrating climate change into sectoral policies

As a first step, each sectoral ministry will review, adjust and update its sectoral policies (including those under development) to accommodate climate change concerns. The relevant ministry would ideally lead this exercise, seeking technical support from various projects, including the MCCA programme by way of ECD, if needed.

Integrating climate change into sectoral policies

The government through line ministries will need to harmonise policies — by adjusting sectoral policies — before mainstreaming climate change becomes a reality. Harmonisation across sectoral policies can be a tricky and engaging enabling activity, which individual sector-specific ministries cannot do on their own. Each issue flagged by participating ministries will need to be discussed to build a national and inter-ministerial consensus. The ECD will need to lead the coordinated approach to achieve this, involving sectoral ministries and the TWG.

5.5 Enhance capacity to implement climate change programmes

The above-mentioned capacity building strategies are necessary to enable Myanmar's national capacity to implement programmes and projects related to climate change. The primary objective of this strategic move is to enhance the country's institutional capacity to implement various activities. To achieve this, Myanmar will need to improve its fiduciary management and oversight capacity as well as its M&E of climate change activities. These will become extremely important if the government intends to draw on international climate finance to implement its climate change programmes and projects. Without a proven capacity for attaining fiduciary standards in practice and a thorough M&E mechanism in place, it would be extremely difficult to access such finance directly.

Fiduciary management

Implementation of climate change-related programmes or projects will depend largely on the executing bodies' and institutions' fiduciary management capacities. ECD will work with the institutions and the TWG to organise capacity building programmes that provide training to expose institution-specific personnel to good, international-standard fiduciary practices for dealing with various types of climate change activities.

Oversight

To build institutional capacity for overseeing project formulation and design stage, ECD will also work with participating institutions and the TWG to organise capacity building programmes that provide the relevant training for institution-specific personnel.

Monitoring and evaluation of delivery of climate change programmes

During its implementation stage, it is necessary to review and analyse whether a given climate change project has delivered its results. So each potential executing entity should enhance its M&E capacity by ensuring its personnel receives training in such skills. Again, ECD will organise such capacity building programmes in cooperation with participating institutions and the TWG.

5.6 Increase and enhance national capacity for financing climate change

Financing climate change-related activities — whether an independent or mainstreamed project — will require a significant capacity building effort. Financing may be sourced by mobilising internal resources — in other words, allocating a budget — or by accessing international funds such as Adaptation Fund (AF), Special Climate Change Fund (SCCF), Least Developed Country Fund (LDCF) and GCF. Accessing bilateral donations or grants and loans from international finance institutions could also be a potential source of financing climate change actions. But this would require significant capacity at both institutional and personnel levels. The mechanisms discussed below would enhance Myanmar's capacity to harness and channel climate change financing.

Financing readiness

This is an enabling prerequisite for accessing financing, particularly from internationally available sources. Readiness-related capacity building will involve enhancing both the skills of institutional personnel and fiduciary practices at international standard. Both these are discussed in earlier sub-sections. Building the capacity of the NDA will be a part of improving readiness, because the NDA will act as an active mediator between national implementing or executing entities and the financing organisation — for example, the GCF or AF. ECD will coordinate with the NDA to enhance the capacity of officials who access international climate change financing.

Building capacity to develop project proposals

It is impossible to access climate financing from international and national sources without the adequate capacities to develop a good concept into a project. Personnel must be able to conceptualise a project theme; establish a cause and effect relationship while explaining the project's rationale; detail out various activities including enabling activities so that the project eventually performs well and reaches its objectives in a most cost-effective manner; develop a logical framework and theory of change; establish an M&E framework; and so on. Each ministry's planning unit must be empowered by building the capacity of their personnel to develop and streamline excellent projects that help tackle climate change issues or root causes. ECD will take lead by implementing a capacity building programme for project development.

Pursuing greater budgetary flows to integrate climate change in development

Implementing ministries must highlight the need for greater budgetary allocations to integrate climate change into their respective development programmes and projects. ECD will organise inter-ministerial dialogue involving the MoPF and all TWG members to mobilise national financing through budgetary provisions.

Developing internal mechanisms to raise finance

It will be necessary to raise local finance to mobilise larger local funds for climate change. The authority handling national revenue will take the necessary steps for imposing the 'polluters pay' principle, generating funds by imposing green tax and so on. ECD, in collaboration with the authority handling national revenue and under the aegis of the MoPF, will launch studies whose recommendations will be used to generate finance from local sources.

5.7 Strengthening international climate change negotiation capabilities

Because climate change is still evolving and national institutions do not always have the right information on opportunities that are being discussed in international climate change negotiations, it is important to build expertise among a select group of personnel representing the key ministries. This will simultaneously build national capacity to negotiate better under UNFCCC. As well as identifying the right personnel to do this, it will be necessary to conduct capacity building on international negotiations and a few refresher sessions before negotiations. ECD will take the initiative for these trainings and seek the names of potential delegation members from key ministries.

6. PRIORITISATION OF CAPACITY BUILDING ELEMENTS

The prioritisation exercise described in Section 2.2.4 indicated the top ten capacity building priority issues as follows:

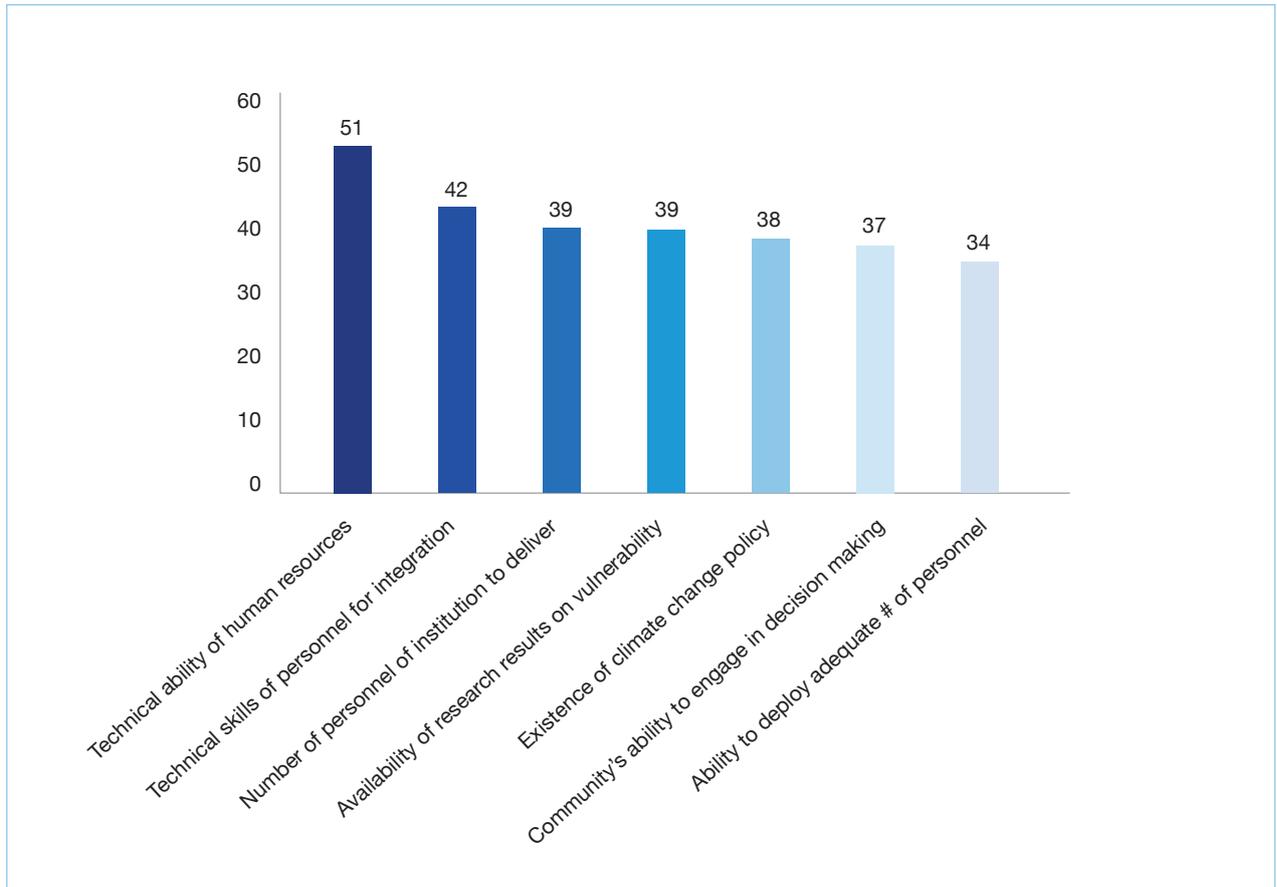
Capacity building issue	Cumulative score received
1. HR and HRM	109
2. Knowledge management	88
3. Policy and legal framework	81
4. Planning	76
5. Institutional implementation	66
6. Resource accession, mobilisation and allocation	60
7. International negotiation	57
8. M&E, oversight and reporting	53
9. Community mobilisation	49
10. Engaging marginalised groups	12

Based on scores from the participating experts, the top three priorities for building capacity in Myanmar are: HR and HRM, knowledge management and policy and legal framework, all with scores of more than 80. The least priority is given to building capacity to engage marginalised groups and minorities in decision-making processes, with a total score of 12. This was perhaps due to the fact that the institutional experts are biased towards institutional capacity building, largely ignoring the need to build the capacity of informal social institutions and their stakeholders.

Analysing these broad results for their finer details reveals that collective choices were more tuned to enhancing the technical ability of human resources; building the technical skills of personnel for greater integration; increasing the number of personnel in institutions to deliver CCA and LCD; and increasing the availability of research results on vulnerability with particular reference to Myanmar. The last two were given equal priority. Figure 2 shows the results of the expert prioritisation process.

Such specific capacity building priorities are rather straightforward. Having secured finance, it is possible to start with an individual priority capacity building programme such as increasing the number of personnel at institutional level to deliver CCA and LCD. But the effectiveness of other specific priority capacity building issues — such as ensuring personnel have the technical skills they need for integrating climate change — is likely to increase significantly if research results are made available, as this would enhance the quality of technical skills training. One specific priority therefore appears to rely on another priority.

Figure 2: Capacity building priorities identified by national experts



7. THE CAPACITY BUILDING ACTION PLAN

This capacity building action plan assigns a set of required outputs and activities under each strategic direction, with a description of the required actions, a timeline and monitoring indicators. Where relevant, it also highlights the lead, associate and coordinating institutions in charge of each action.

7.1 Timeline

The timeline is primarily taken from the MCCSMP, which identifies five years as a short-term timeline for achieving actions under the Sectoral Master Plans. But capacity building cannot wait until the fifth year, as many enabling activities will have to begin much sooner. Only longer-term capacity building programmes may continue beyond five years. So, in a departure from the MCCSMP, the timelines for the capacity building activities are defined as follows:

Definition of timeline	Actual timeline
Immediate and urgent	0 -24 months
Short-term	within 3 years
Medium-term	3 - 5 years
Long-term	beyond 5 years

7.2 The capacity building action plan

Strategic direction 1: Enhance and strengthen education and awareness of all stakeholders across the nation Lead: MoIN

PROGRAMME	ENABLING ACTIVITIES	MONITORING INDICATORS	TIMELINE	INSTITUTIONAL ARRANGEMENTS
Integrating climate change into the curriculum at basic education level	Developing a curriculum for each of the three basic education levels Developing a training manual to support teachers	3 curricula (one for each level) field tested A teachers' training manual on climate change	Immediate and urgent	Lead: MoE Associate(s): Coordination: ECD
	Arranging training for trainers	30 trainers receive training to run orientation sessions for teachers	Short-term	Lead: MoE Associate(s):
Integrating climate change into the curriculum at higher education/university level	Developing a curriculum for each participating discipline	10 curricula fully developed for 10 disciplines at tertiary level	Short-term	Lead: Relevant deans' offices and departments in participating universities Associate(s): Interested departments and institutes Coordination: ECD
Integrating climate change into the curriculum at technical/ technological education level and as specialised topic	Developing a curriculum for each participating discipline	10 curricula fully developed 300 technically trained personnel leaving universities each year (starting Year 4 from inception) with a working knowledge of climate change	Short-term	Lead: Relevant deans' offices and departments in participating technical universities Associate(s): Interested departments and institutes Coordination: ECD
Awareness raising among local communities	Vulnerability assessment of sectors and regions (including CDCs) Developing information dissemination tools and information and education campaign materials Disseminating information	Vulnerability assessment reports available and disseminated to public and agencies 3 information dissemination tools and 10 information and education campaign materials developed Information on climate change disseminated, reaching 10 million people	Short-term	Lead: MoIN Associate(s): MoALI, MOLFRD, MoHA Coordination: ECD
Training of local government institutions' office bearers/leaders	Developing training materials/ manuals Conducting training of trainers Conducting trainings	10 manuals developed 15 specialist trainers receive training 15 sector-specific trainings conducted 150 officials trained	Medium-term	Lead: ECD Associate(s): GAD
Media training on understanding and responding to early warning on hazards	Improving EWS Developing and field testing easy-to-understand early warning dissemination tools Engaging media to train general population	DMH empowered to generate and issue EWS 3 EWS tools developed and tested 30 media personnel trained each year Every warning gets news space in the media	Short to medium-term	Lead: MoIN Associate(s): National and regional press clubs; media houses Coordination: ECD

Strategic direction 2: Promote climate change research, the adoption of appropriate technologies and knowledge management

PROGRAMME	ENABLING ACTIVITIES	MONITORING INDICATORS	TIMELINE	INSTITUTIONAL ARRANGEMENTS
Enhancing collaborative research programme internationally	Identifying research collaboration areas and potential international institutions Arranging available hydro-meteorological and environmental datasets	A research collaboration plan, identifying collaborating institutions, partners and leads National archive built for hydro-meteorological datasets, updated every two months	Short to medium-term	Lead: MoST Associate(s): Technical Institutes and departments of priority ministries such as DMH or Forest Research Institute; international research institutes and bodies; academic institutions Coordination: ECD/MCCA
Enhancing national collaborative research programme on climate change	Identifying research collaboration areas, gaps and potential research institutions and researchers Arranging available hydro-meteorological and environmental datasets	Complete list of research gaps and 20 immediate research needs, with 10 research projects completed in medium term National archive built for hydro-meteorological datasets, updated every two months	Short to medium-term	Lead: MoST Associate(s): National academic institutions; technical Institutes and departments of priority ministries; industrial research units Coordination: ECD/MCCA
Developing a research dissemination platform for sharing research results and outreach	Regularly gathering research outputs from climate change-related and other relevant projects and compiling these periodically Opening a web-based portal and updating it regularly Organising a biennial climate change research symposium	Research products compiled and updated every three months Annotated bibliography produced and updated annually Web-based portal open and updated biweekly Biennial symposium held	Immediate and urgent	Lead: MoST Associate(s): All the research bodies (as above) Coordination: ECD/MCCA
Developing/enhancing climate change modelling and projection capability	Identifying research collaboration areas, potential national and international institutions Arranging available hydro-meteorological and environmental datasets Organising training and higher education for modellers	Research collaboration plan developed, with institutions and respective capacities identified National archive built for hydro-meteorological datasets, updated every two months 10 climate modellers received training from international expert modellers	Immediate and urgent to medium-term	Lead: DMH (MoTC) Associate(s): Academic institutes Coordination: ECD/MCCA
Developing national weather forecasting and advisory issuance capacity	Establishing modern weather data acquisition systems Training DMH scientists on meso-scale modelling and forecasting Disseminating forecasting tools for widespread, up-to-date climate information	Install 50 automatic weather stations and two Doppler radars Train 10 DMH personnel on modelling Disseminate 6 agricultural advisories and 52 weekly weather advisories/warnings a year	Short to medium-term	Lead: DMH Associate(s):

Developing a knowledge management system and dissemination mechanisms for CCA, LCD and REDD+ knowledge products	Developing a climate change knowledge management system (CCA, LCD and REDD+) Taking stock periodically and performing outreach Creating an electronic portal for wider sharing	Knowledge management plan laid out through an inter-ministerial process, specifying an outreach plan Electronic dissemination portal developed and updated bimonthly	Short to medium-term	Lead: ECD/MCCA Associate(s): All the ministries and their respective technical agencies and wings; CDCs; CSOs/NGOs; private sector
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Strategic direction 3: Develop institutional human resources for addressing climate change

PROGRAMME	ENABLING ACTIVITIES	MONITORING INDICATORS	TIMELINE	INSTITUTIONAL ARRANGEMENTS
Delivering specialised short courses to train personnel	Identifying professions that need short courses on climate change Developing needs-based short training courses on climate change Delivering capacity building courses on climate change	List prepared of 10–12 professions that need short capacity building courses on climate change 10 profession-specific short training course modules produced with experts 300 professionals from 10 professions receive climate change training	Immediate and urgent	Lead: ECD/MCCA Associate(s): Federation of Myanmar Chamber of Commerce and Industries; Yangon Chamber of Commerce and Industries; Mandalay Chamber of Commerce and Industries; banking institutions; electronic, social and print media
Delivering institution-specific short courses to train personnel	Identifying institutions where such capacity building training is needed Developing needs-based short training modules or manuals Delivering capacity building training on climate change	List prepared of 15 institutions that need staff capacity enhancement trainings 15 sector- and institution-specific training modules produced and field tested About 450 sector-specialists receive climate change training	Immediate and urgent to short-term	Lead: ECD/MCCA Associate(s): All the priority ministries and their technical agencies and departments
Developing a manual for mainstreaming climate change into development projects	Developing a manual for integrating climate change in development project planning at the design stage	Manual on integrating climate change into development project designs produced	Short-term	Lead: ECD Associate(s): MoPF and other ministries
	Organising training for integrating climate change in development project planning at the design stage	40-50 planning specialists involved 20-25 ministries receive training on integrating climate change	Medium to long-term	Lead: MoPF Associate(s): Sectoral ministries

Strategic direction 4: Formulate and harmonise policies for responding better to climate change

PROGRAMME	ENABLING ACTIVITIES	MONITORING INDICATORS	TIMELINE	INSTITUTIONAL ARRANGEMENTS
Integrating climate change into sectoral policies	Reviewing sector-specific policies, integrating climate change concerns and harmonising sectoral policies to resolve inter-sectoral conflicts Devising the national climate change policy through ministerial consultation	15 sector-specific policy documents reviewed and potential areas for integrating climate change into those policies received endorsement from respective ministries Integrated/overarching climate change policy for Myanmar developed Overarching policy on climate change received inter-ministerial or cabinet approval or vetting	Short-term	Lead: Each sectoral ministry Associate(s): Technical wings of each ministry Coordination: ECD/MCCA
	Reviewing legal frameworks for respective sectoral ministries	Existing laws reviewed and legal regime reframed to ensure climate change activities have appropriate legal provisions	Short-term	Lead: Ministry of Law Associate(s): Sectoral ministries Coordination: ECD
Developing an overarching national climate change policy	Develop an overarching climate change policy for Myanmar	Overarching policy on climate change received inter-ministerial or cabinet approval or vetting	Short-term	Lead: ECD, MoNREC Associate(s): Sectoral ministries

Strategic direction 5: Enhance capacity to implement climate change programmes

PROGRAMME	ENABLING ACTIVITIES	MONITORING INDICATORS	TIMELINE	INSTITUTIONAL ARRANGEMENTS
Enhancing fiduciary management capacity in potential executing entities and national implementing entities (NIEs)	Identifying potential NIE and executing entities Evaluating strengths and weaknesses in their fiduciary practices Training them to strengthen fiduciary practices	Process initiated to seek support for NIE readiness Potential NIEs and executing entities identified Fiduciary practices of each organisation analysed as per GCF criteria 5 dossiers built for potential NIE accreditation application 5 potential NIEs trained to practice fiduciary management according to international best practice Evidence of such practice built	Short-term	Lead: Sectoral ministries Associate(s): Technical wings of each ministry Coordination: NDA, ECD/MCCA
Strengthening NIEs' and executing entities' project oversight mechanism	Evaluating strengths and weaknesses in oversight management system as per project logical framework Training potential NIEs and executing entities to strengthen oversight practices	Oversight frameworks and practices of each potential executing entity analysed according to GCF criteria Personnel from 5 potential NIEs and 10 potential executing entities trained to strengthen oversight practices according to GCF criteria	Short-term	Lead: Sectoral ministries Associate(s): Technical wings of each ministry Coordination: NDA, ECD/MCCA

Strengthening M&E aspects of delivery of CCA and LCD (including REDD+ and afforestation)	Evaluating strengths and weaknesses in M&E system as per project logical framework Training potential NIEs and executing entities to strengthen M&E practices	M&E frameworks and practices of each potential executing entity analysed according to GCF criteria Personnel of 5 potential NIEs and 10 executing entities trained to strengthen M&E practices according to GCF criteria	Short-term	Lead: Sectoral ministries Associate(s): Technical wings of each ministry Coordination: NDA, ECD/MCCA
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Strategic direction 6: Increase and enhance national capacity for financing climate change

PROGRAMME	ENABLING ACTIVITIES	MONITORING INDICATORS	TIMELINE	INSTITUTIONAL ARRANGEMENTS
Building capacity of NIEs and executing entities to develop project proposals to be submitted to GCF, AF and SCCF	Identifying priority sectors that need international financing Training personnel from the planning wing of selected NIEs and executing entities on proposal writing	At least 10 priority sectors identified where international climate financing is needed 30 staff of these sectors and potential NIEs and executing entities trained on GCF-worthy proposal writing	Immediate and urgent	Lead: NDA Associate(s): Potential sectoral ministries and agencies Coordination: ECD/MCCA
	Developing project pipelines for GCF, AF and SCCF	Four pipeline project proposals for financing by GCF, AF, SCCF, LDCF or another bilateral development partner developed	Short-term	Lead: NDA Associate(s): Potential sectoral ministries and agencies Coordination: ECD/MCCA
Ensuring greater budgetary allocations for self-financed projects	Identifying priority projects to be financed through MoPF	Through an inter-ministerial dialogue, identifying projects to be financed through MoPF (rather than GCF)	Short to medium-term	Lead: MoPF Associate(s): MoPF and other lead ministries Coordination: ECD
Developing internal mechanisms to raise own funds for climate change financing	Conducting studies to identify areas to impose green taxes Gathering funds Building a (national) Myanmar Climate Change Fund	Study conducted, identifying key areas where such taxes may be imposed Functional mechanisms to impose such taxes and gather funds established Proposal drafted for establishing a Myanmar Climate Change Fund from these resources	Medium to long-term	Lead: MoPF Associate(s): Sectoral lead ministries Coordination: ECD/MCCA

Strategic direction 7: Strengthen international climate change negotiation capabilities

PROGRAMME	ENABLING ACTIVITIES	MONITORING INDICATORS	TIMELINE	INSTITUTIONAL ARRANGEMENTS
Developing staff capacity in priority sectoral agencies for climate change negotiation	Identifying priority sectoral agencies and personnel Organising trainings on international climate change negotiation Organising refresher short courses to keep personnel updated	10 priority sectors identified to follow climate change negotiations and assist MoNREC/ECD in Myanmar delegation 20 staff from the 10 priority sectors or ministries trained in negotiation skills Training received from Global Support Programme for LDC negotiators shared Refresher short trainings organised for delegation team three to four weeks before major negotiation sessions, such as Subsidiary Body on Scientific and Technical Advice (SBSTA) or COP	Immediate to short-term	Lead: ECD/MCCA Associate(s): Sectoral ministries and agencies
	Include trained personnel in national delegation	Include 3 to 5 trained personnel in each delegation representing Myanmar in the, the SBSTA, Subsidiary Body on Implementation and the COPs	Short to medium-term	Lead: ECD and NDA Associate(s): Sectoral ministries and agencies

APPENDICES

Appendix 1: Evaluation matrix for capacity status and capacity building needs assessment

Capacity indicators (Please read before you start the analytical process: The participants are required to read every question in the left hand side carefully and evaluate corresponding capacity in a sliding scale using either alphabetic classifications as presented OR numerical values assigned to each category of capacity.)	Baseline level of existing capacity A = No evidence of capacity; B = Anecdotal evidence of capacity; C = partially developed capacity; D = Wide-spread, but not comprehensive capacity; E = Fully developed capacity (respective numerical scores are placed below)				
	A 0 ~ 2	B 3 ~ 4	C 5 ~ 6	D 7 ~ 8	E 9 ~ 10
1. CAPACITY ISSUE: INSTITUTIONAL, POLICY AND LEGAL FRAMEWORK					
1.1 International negotiation capacity					
1.1.1 To what extent is there an effective government coordination mechanism for International Climate Change (CC) Convention-related dialogues & policy making					
1.1.2 To what extent is there an effective mechanism to integrate opinions of non-state actors towards framing negotiation positions					
1.1.3 To what extent are there effective mechanisms to ensure coordination between conventions relevant to CC					
1.1.4 To what extent is there a government strategy or plan with clear priorities in place to implement Climate Change Convention derived instruments (i.e., NAPA, NAMA, INDC, Nairobi Work Programme,.....)					
1.1.5 To what extent the National CC Focal Point can develop national communications with their own initiatives and submit to UNFCCC					
1.1.6 To what extent national fiduciary standards and practices might comply with international standards and practices including transparency, accountability, due diligence, and internal control					
1.1.7 To what extent the National CC Focal Point can effectively highlight national interests in UNFCCC negotiations					
1.1.8 To what extent are the negotiation capabilities of the formal delegation members in international dialogues and negotiations on CC?					
1.1.9 To what extent is there adequate and effective mechanism to disseminate outcomes of international negotiations for public awareness and interests					

Capacity indicators (Please read before you start the analytical process: The participants are required to read every question in the left hand side carefully and evaluate corresponding capacity in a sliding scale using either alphabetic classifications as presented OR numerical values assigned to each category of capacity.)	Baseline level of existing capacity A = No evidence of capacity; B = Anecdotal evidence of capacity; C = partially developed capacity; D = Wide-spread, but not comprehensive capacity; E = Fully developed capacity (respective numerical scores are placed below)				
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1.2 Policies & political integration, legal framework					
1.2.1 To what extent are there cross-sectoral climate-resilient policies with clear priorities					
1.2.2 To what extent is there political engagement at national, meso- and local levels on how to meet the risks and opportunities of CC					
1.2.3 To what extent is there effective leadership and a clear vision on how to address the known CC risks and harness perceived opportunities					
1.2.4 To what extent is there an organizational structure aligned to functions with clear responsibilities to address CC					
1.2.5 To what extent are there clear core functions and roles relating to CC to minimize duplication and gaps					
1.2.6 To what extent is the existing level of effective cooperation and/or cross-dialogue among different government stakeholders on CC related issues?					
1.2.7 To what extent is there a national strategy that adequately addresses CC risks and presents opportunities from CC					
1.2.8 To what extent is there a national strategy on CC that adequately creates opportunities for various national actors/ institutions/agencies including NGOs, private Sector & others					
1.2.9 To what extent is there a harmonized legal framework with incentives and compliance mechanisms that reflect CC priorities					
1.2.10 To what extent are non-state stakeholders such as CSOs and private sector participating in the CC coordination mechanisms					
1.2.11 To what extent are the customary norms, values, practices and rules adequately reflected in addressing CC risks and realizing CC opportunities?					
1.2.12 To what extent is there a national CC strategy that expresses particular interests of disadvantaged groups and marginalized but vulnerable population					
1.2.13 To what extent are there clearly defined mechanisms to integrate CC (CCA, sequestration and LCD) into mainstream development activities					

Capacity indicators (Please read before you start the analytical process: The participants are required to read every question in the left hand side carefully and evaluate corresponding capacity in a sliding scale using either alphabetic classifications as presented OR numerical values assigned to each category of capacity.)	Baseline level of existing capacity A = No evidence of capacity; B = Anecdotal evidence of capacity; C = partially developed capacity; D = Wide-spread, but not comprehensive capacity; E = Fully developed capacity (respective numerical scores are placed below)				
	A 0 ~ 2	B 3 ~ 4	C 5 ~ 6	D 7 ~ 8	E 9 ~ 10
2. CAPACITY ISSUE: PLANNING, IMPLEMENTATION, MONITORING AND EVALUATION					
2.1 Planning mechanism					
2.1.1 To what extent are there dynamic, long-term programme and project planning mechanisms that can respond to the projected risks and opportunities of CC					
2.1.2 To what extent are there management frameworks for CC-integrated planning at national level					
2.1.3 To what extent are there management frameworks for CC-integrated planning at meso-levels					
2.1.4 To what extent are there frameworks & modalities towards effectively integrating meso-level plans into national plans and programmes across sectors					
2.1.5 To what extent are there management frameworks for CC-integrated planning at micro-levels (grassroots/local level)					
2.1.6 To what extent are there frameworks & modalities towards effectively integrating local/grassroots level plans into meso-level and/or national plans and programmes					
2.1.7 To what extent does planning take into consideration available evidence on CC and lessons learned from past CC programming?					
2.1.8 To what extent does available knowledge regarding risk/vulnerability, CC modeling and CC scenarios are utilized to inform planning at national level?					
2.1.9 To what extent do risk /vulnerability assessment, CC modeling and CC scenarios are utilized towards informing planning at local and meso-levels?					
2.1.10 To what extent do non-state stakeholders including CSOs and private sector are allowed to participate effectively in CC programme planning?					
2.1.11 To what extent public institutions have been effectively prioritizing CC-related programmes & projects?					
2.1.12 To what extent are implemented projects aligned to CC policy priorities at national level?					
2.1.13 To what extent are there institutional framework and instruments at various levels below national level to conduct governance tier-specific (CC related) planning?					

Capacity indicators (Please read before you start the analytical process: The participants are required to read every question in the left hand side carefully and evaluate corresponding capacity in a sliding scale using either alphabetic classifications as presented OR numerical values assigned to each category of capacity.)	Baseline level of existing capacity A = No evidence of capacity; B = Anecdotal evidence of capacity; C = partially developed capacity; D = Wide-spread, but not comprehensive capacity; E = Fully developed capacity (respective numerical scores are placed below)				
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2. CAPACITY ISSUE: PLANNING, IMPLEMENTATION, MONITORING AND EVALUATION					
2.1 Planning mechanism					
2.1.14 To what extent are there mechanisms to harness indigenous knowledge to CC related planning?					
2.2 Programme/Project Implementation					
2.2.1 To what extent is design, appraisal and implementation of CC projects aligned to CC programs priorities at meso- and local level?					
2.2.2 To what extent are there effective partnerships and coordination among public sector institutions at different tiers implementing CC programming?					
2.2.3 To what extent are there effective partnerships and coordination between the public sector and private sector for implementing CC programming?					
2.2.4 To what extent are there effective mechanisms to share impacts related data by public institutions for informing general public including the private sector?					
2.2.5 To what extent is there effective advocacy for the inclusion of CC in planning, budgets and programming					
2.2.6 To what extent are there effective mechanisms to ensure monitoring and evaluation during project cycle?					
2.2.7 To what extent is there institutional capacity to conduct periodic assessments on status of CCA/LCD programming at various governance tiers and locations?					
2.3 Resource mobilization, allocation & utilization efficiency					
2.3.1 To what extent is there sufficient financial resource mobilization for CC aligned to priorities?					
2.3.2 To what extent is there effective national efforts to mobilize international financing for CC programming (including GCF, AF, LDCF,SCCF, bilateral financing etc.)					
2.3.3 To what extent does national govt. budget allocation reflects CC priorities					

<p>Capacity indicators (Please read before you start the analytical process: The participants are required to read every question in the left hand side carefully and evaluate corresponding capacity in a sliding scale using either alphabetic classifications as presented OR numerical values assigned to each category of capacity.)</p>	<p>Baseline level of existing capacity A = No evidence of capacity; B = Anecdotal evidence of capacity; C = partially developed capacity; D = Wide-spread, but not comprehensive capacity; E = Fully developed capacity (respective numerical scores are placed below)</p>				
	<p>A 0 ~ 2</p>	<p>B 3 ~ 4</p>	<p>C 5 ~ 6</p>	<p>D 7 ~ 8</p>	<p>E 9 ~ 10</p>
<p>2.3 Resource mobilization, allocation & utilization efficiency</p>					
<p>2.3.4 To what extent does government budget allocation at the meso-levels reflect CC priorities</p>					
<p>2.3.5 To what extent are innovative financing options being developed to respond to the challenges of CC (including incentives for private sector financing)?</p>					
<p>2.3.6 To what extent are functioning financial management and reporting systems in place for CC financing?</p>					
<p>2.3.7 To what extent do government institutions effectively utilize available financing for CC programmes?</p>					
<p>2.3.8 To what extent is the NDA play lead role in mobilizing GCF finance for CC?</p>					
<p>2.4 Monitoring & Evaluation, Oversight, Reporting on Programming</p>					
<p>2.4.1 To what extent is there a results-based management (RBM) system and culture in CC programming (incl. clear outcomes/ outputs, and indicators)</p>					
<p>2.4.2 To what extent is there an integrated management information system (MIS) including databases for CC programming established and managed</p>					
<p>2.4.3 To what extent is there a functioning monitoring and evaluation (M&E) system for CC programming</p>					
<p>2.4.4 To what extent are there effective mechanisms to invite non-state stakeholders including NGOs/CSOs and Private Sector for conducting joint M&E?</p>					
<p>2.4.5 To what extent are there reporting mechanisms for CC programming</p>					
<p>2.5 Human Resource management for CC programming</p>					
<p>2.5.1 To what extent is there effective Human resource management (HRM) to attract and retain talent & skills for CC programming at national level?</p>					
<p>2.5.2 To what extent is there adequately knowledgeable (& trained/skilled) human capital deployed at the lead national institution?</p>					

Capacity indicators (Please read before you start the analytical process: The participants are required to read every question in the left hand side carefully and evaluate corresponding capacity in a sliding scale using either alphabetic classifications as presented OR numerical values assigned to each category of capacity.)	Baseline level of existing capacity A = No evidence of capacity; B = Anecdotal evidence of capacity; C = partially developed capacity; D = Wide-spread, but not comprehensive capacity; E = Fully developed capacity (respective numerical scores are placed below)				
	A 0 ~ 2	B 3 ~ 4	C 5 ~ 6	D 7 ~ 8	E 9 ~ 10
2.5 Human Resource management for CC programming					
2.5.3 To what extent are there adequately knowledgeable (& trained/skilled) human capitals deployed at the allied/sectoral national institutions?					
2.5.4 To what extent is there effective Human resource management (HRM) deployed for CC programming at meso-levels?					
2.5.5 To what extent is there effective Human resource management (HRM) deployed for CC programming at local/grassroots-levels?					
2.5.6 To what extent are there plans and associated programmes to enhance national human capital through curricula and skill enhancement trainings?					
3. CAPACITY ISSUE: KNOWLEDGE MANAGEMENT					
3.1 Knowledge Generation, Collation, Retention, Sharing and Integration					
3.1.1 To what extent is CC knowledge generated and codified at national and local levels so that it provides a base to incorporate CC risks and opportunities.					
3.1.2 To what extent is CC knowledge shared and accessible through appropriate media/ platforms to provide a base to incorporate CC risks and opportunities at all levels.					
3.1.3 To what extent do local governments and stakeholders have access to national and / or regional sources of expertise on CC?					
3.1.4 To what extent is global and regional learning adapted to the national context though regional exchange/ learning mechanisms?					
3.1.5 To what extent are global, regional or national 'good practices' contextualized to address community CC risks and opportunities at meso- and local level.					
3.1.6 To what extent is the government working with national and local research institutions to identify, apply, and institutionalize CC knowledge					
3.1.7 To what extent is the Government Lead institution leveraging adequately international institutions and think tanks towards enhancing CC knowledge including data?					

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3. CAPACITY ISSUE: KNOWLEDGE MANAGEMENT					
3.1 Knowledge Generation, Collation, Retention, Sharing and Integration					
3.1.8 To what extent are technical capacities required to analyze CC issues and plan, implement, monitor and evaluate CC programmes identified and strengthened at the national and local levels?					
3.1.9 To what extent do public awareness programs include CC risks and opportunities					
3.1.10 To what extent is the national curricula reflects CC and related programs, innovation of CC related technologies and CC resilience development initiatives in tertiary education?					
3.1.11 To what extent are CC public awareness programs accessible to communities so it overcomes local languages and literacy barriers					
3.1.12 To what extent do environmental education programs (including curricula) integrate CC risks and opportunities					
3.1.13 To what extent is CC environmental education accessible to communities so it overcomes local languages and literacy barriers					
3.1.14 To what extent is local knowledge 'scaled up' to meso-level and national level					
3.1.15 To what extent is the government committed to provide supports and financing R&D organization and Universities to generated CC related data and knowledge hub?					
3.2 Knowledge regarding Vulnerability Reduction & LCD Technologies					
3.2.1 To what extent are there effective targeted efforts to create an information clearing house on CC technologies for Vulnerability Reduction and LCD?					
3.2.2 To what extent are there academic efforts through curricula towards educating future generations on various CC technologies?					
3.2.3 To what extent are there media efforts to popularize certain proven CC technologies?					
3.2.4 To what extent is there specific national/regional institutions to integrate CC related technologies in academic activities?					

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3.3 Knowledge regarding ICT					
3.3.1 To what extent ICT backbones (satellite-based mediums) have effectively been utilized towards educating people or raising their awareness on CC issues?					
3.3.2 To what extent are there efforts to utilize ICT for generating and disseminating warning on climate induced hazards?					
3.3.3 To what extent is the national CC Policies and programming taking advantage of ICT and its multi-faceted opportunities?					
4. CAPACITY ISSUE: COMMUNITY MOBILIZATION AND ENGAGEMENT					
4.1 To what extent are there capacities of local communities in assessing and mapping their vulnerabilities due to CC?					
4.2 To what extent is there community engagement towards setting up CC priorities					
4.3 To what extent is there community mobilization and piloting around CC priorities					
4.4 To what extent are alternative climate safe livelihood opportunities identified and knowledge and skills improved for such livelihood activities?					
4.5 To what extent are gender issues mainstreamed to enable women to engage and mobilize around CC priorities					
4.6 To what extent are the needs of vulnerable groups addressed to enable them to engage and mobilize around CC priorities					
4.7 To what extent is the performance of CC programs assessed by communities and responded to e.g. balanced score cards					
5. CAPACITY ISSUE: SENSITIVITY TO MARGINALIZED GROUPS					
5.1 To what extent is there framework to integrate particular concerns of poor vulnerable communities in CC programmes and projects (all levels)?					

<p>Capacity indicators</p> <p>(Please read before you start the analytical process: The participants are required to read every question in the left hand side carefully and evaluate corresponding capacity in a sliding scale using either alphabetic classifications as presented OR numerical values assigned to each category of capacity.)</p>	<p>Baseline level of existing capacity</p> <p>A = No evidence of capacity; B = Anecdotal evidence of capacity; C = partially developed capacity; D = Wide-spread, but not comprehensive capacity; E = Fully developed capacity (respective numerical scores are placed below)</p>				
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5. CAPACITY ISSUE: SENSITIVITY TO MARGINALIZED GROUPS

5.2 To what extent is there framework to integrate particular concerns of vulnerable ethnic minority communities in CC programmes and projects (all levels)?					
5.3 To what extent is there framework to integrate particular concerns of vulnerable population with disabilities in CC programmes and projects (all levels)?					
5.4 To what extent are there effective modalities to integrate gender analyses towards designing CCA and/or LCD projects including REDD+?					
5.5 To what extent are there M&E mechanisms towards ensuring that ongoing projects have effective provisions for marginalized vulnerable groups as above?					

Appendix 2: List of participants in sub-national consultations

Name	Position/job title	Organisation/department
Daw Own Mar Myint	Assistant Director	Environmental Conservation Department
U Aye Ko	Chair of CF User Group	Chaung Oo Community Forestry
U Myint	Deputy Director	Department of Rural Development Affairs
U Win Zaw	Executive Engineer	City Development Committee
U Soe Min Aung	Second In charge of Commonden	Myanmar Red Cross Society
U Zaw Lin	Representative	Farmer
Dr. Myint Myint Htay	Staff Officer	Department of Livestock Breeding & Veterinary
Daw Khin Yaw Thit	Staff Officer	City Development Committee
U Win Myint	Second Assistant Engineer	City Development Committee
Daw Kay Thwe Mya Mya Oo	Assistant Director	City Development Committee
U Han Myint Tun	Assistant Director	Department of Rural Development
U Myint Zaw	Chair of CF User Group	Sagaing Township
U Khin Zaw	Staff Officer	Forest Department
U Kyaw Min Soe	Staff Officer	Dryzon Greening Department
U Tint Swe	Chairman	Local Community
U Pyae Phyo Tun	Staff Officer	General Administration Department
U Kyaw Naing Htwae	Assistant Director	Department of Relief & Resettlement
U Tun Tint Hlaing	Staff Officer	General Administration Department
U Zaw Win Aung	Secretary	Local Community
U Ko Ko Naing	Assistant Director	Department of Meterology and Hydrology
U Khaing Myo Lwin	Assistant Director	Irrigation Department
Daw Khaing Ye Mon Lin	Staff Officer	Environmental Conservation Department
Daw Khin Sandar	Win Deputy Staff Officer	Department of Rural Development Affairs
Daw Soe Soe Aung	Staff Officer	Ministry of Hotels and Tourism
Daw Thandar Phone Win	Secretary	Association of Women Affairs
Daw Lal Lal Soe	Staff Officer	General Administration Department

Name	Position/job title	Organisation/department
Daw Phyu Phyu Tun	Assistant Director	Department of Social Welfare
Daw Wint War Phyu	Assistant Director	Department of Rural Development Affairs
U Aung Ko Min	Meteorology Officer	Department of Meteorology and Hydrology
U Than Htut Swe	Director	Dept. of Relief & Resettlement
U Myint Naing	Executive Member	NGO/CSO
U Thet Khaing	Associate Professor	Dept of Geography
U Zaw Tun Aung	Staff Officer	Environmental Conservation Department
Dr. San Hla Htwe	Staff Officer	Department of Agriculture
U Shwe Win	Member	Mandalay City Development Committee
Daw Than Than Wai	Staff Officer	Information&Public Relation Department
U Kyaw Myo Naing	Farmer	Local Community
Daw Htar Htar Oo	Representative	Association of Women Affairs
Dr. Wint Thu	Chairman	City Development Committee
U Sein Win	Chair Person	Local Community
U Ba Lwin Oo	Deputy Director	Dry Zone Greening Department
Dr. Tin Myo Win	Staff Officer	Ministry of Health
Dr. Win Naing Phone	Member	City Development Committee
U Ko Ko Aye	Director	Environmental Conservation Department
U Maung Maung Oo	Executive Member	NGO/CSO
Daw Khin Mar Aye	Assistant Director	Department of Social Welfare
U Aung Myint	Representative	Private Forest Plantation
U Tun Win	Assistant Engineer	City Development Committee
U Nay Lin	Farmer	Local Community
U Thant Zin Oo	Staff Officer 2	Myanmar Red Cross Society
U Chit Oo Ko	Deputy Staff Officer	Environmental Conservation Department
U Aye Lwin		CSO
Dr Aye Aye Mar	Professor/ Head	Meiktila University

Name	Position/job title	Organisation/department
Dr. Thi Thi Nwe	Township Officer	Livestock Breeding and Veterinary Department
Daw Ohn Mar Tun	2nd Regional Officer	Department of Fishery
Daw Ni Ni Win	Assistant Officer	Department of Fishery
Daw Dewi Win	Major	MRCS
Daw Khin Soe Soe San	Divisional Officer	Energy
Daw Than Than Oo	Member (E.C)	Regional Women Affair Organization
Daw Khin Mi	Assistant Director	CSO
U Tin Kyaw	Staff Officer	Forest Department
U Soe Naing	Assistant Director	DRD
U Ko Ko Oo	Deputy Director	ID
U Aung Kyaw	Assistant Director	RRD
U Tin Maung Htay	HA (1)	Public Health Department
Dr. Min Aung Pan	Prof; and Head	Geography Department
U Ye Win Nyunt	Staff Officer	
U Kyi Win	Represent	Community Forestry
Daw San San Khaing		Education
U Aung Nay Htun		Community Forestry
U Aung Naing Soe	Staff Officer	ECD
U San Yu	Steering Committee Alternative	EITI (Working Group)
U Aye Lwin	Represent	Community Forestry
U Khaing Tun	Staff Officer	ECD
U Kyi Thar Hlaing	S/O	ECD
U Saw Aye Win	Represent	Community Forestry
U Saw Kapaw Hmu	Represent	Community Forestry
U Min Chit San	Staff Officer	Department of Agriculture
U Khin Zaw	Staff Officer	Forest Department
U Myint Thein	Farmer	Farmer Association

Name	Position/job title	Organisation/department
U Maung Maung	2nd Officer	GAD
U Ye Myint	Chairman	CSO
U Saw Aung Shin	Represent	Karen Literature and Culture
Daw Win Kyi	Assistant Director	CSO
Daw Yin Myat Thi	Staff Officer	DSW
Daw Khin Thidar Oo	Associate Professor	Education
U Soe Mying	Deputy Director	HTDC
Daw Kyawt Myat Khaing	Officer	IPRD
U Aung Zaw Tun	Deputy Staff Officer	GAD
U Chit Oo Ko	Deputy Staff Officer	ECD
U Zaw Lwin	Coordinator	Public Network
Daw Lay Lay Nwe.	Representative	Myanmar Women Affair
Daw May Yadanar Oo	Deputy Staff Officer	Environment Conservation Department (ECD)
Da Maw Si Aung	Staff Officer	Agriculture Department
U Chit Oo Ko	Deputy Staff Officer	Environment Conservation Department (ECD)
U Zaw Min Oo	Representative	Community Forestry (CF)
Daw Cho Myat Myat Htwe	Staff Officer	Information & Public Relation Department
U Aung Win	Staff Officer	Planning Department
U Kyaw Naing Oo	Staff Officer	Environment Conservation Department (ECD)
U Kyaw Kyaw Oo	Staff Officer	Environment Conservation Department (ECD)
U Soe Naing	Staff Officer	Department of Fishery
Daw Aye Aye Than	Staff Officer	Department of Education
U Aye Thaug	Health Assistant - 1	Department of Health
U Than Tun	Secretary	Community Forestry (CF)
U Thet Naing Win	Assistant Director	Ministry of Development
Daw Than Than Win	Staff Officer	Relief and Rehabilitation Department
U Win Naing	Assistant Director	Forest Department

Name	Position/job title	Organisation/department
Daw Mu Mu Nwe.	Staff Officer	Hotel and Tourism Department
U Aung Zaw Tun	Assistant Director	Supervision and Insepection Department
U Than Win Aung	Junier Engineer-3	Department of Rual Development
Daw Hnin Wutt Yee	Junier Executive Officer	Urban and Housing Development
Dr. Aye Aye Maw	Research Officer	Livestock and Veterinary Department
U Thaug Tin	Deputy Commander	Myanmar Red Cross Association
Daw Swe Swe Oo	JAT	Myanmar Women Affair
Daw Naing Naing Win	Accountant	A Lin Tan (NGOs)
U Tin Maung Yee	Assistant Director	Department of Methodology and Hydrology
U Thet Naing	Deputy Commander	Myanmar Red Cross Association
U Myo Min Zaw	Deputy Staff Officer	General Administration Department
U Kyaw Oo	Head of Village	Farmer
U Min Maung	Coordinator	World Vision (An NGO)
U Myint Thein	Assistant Director	Irrigation Department
U Tin Htut Aung	Staff Officer	General Administration Department
U Kyaw Thant	PHS - 1	Department of Health
Dr Nay Aung	Professor	Geography Department, Myitkyina University
U Yan Myo Naing	Deputy Director	Department of Rural Development
Daw Than Aye	Deputy Director	Education Department
U Myo Thein Yu	Branch Clerk	Hotel and Tourism
Daw Ja Bauk	Program Officer	Spectrum
Captain Than Zaw (Retired)	Vice President	Myanma Veteran Association
U Khin Soe	Township Officer	Road Department
Daw Ja Bu	Executive	Myanma Women Affair Association
U Soe Win Naing	Training Coordinator	Eco Dev (KCWG)
U Chin Win	Manager	Myanma Timber Enterprise
U Tin Htike	Staff Officer	Department of Meterology

Name	Position/job title	Organisation/department
U Thu Wan	Assistant Director	Department of Gem (Jade)
U Min Min Oo	Geologist	Department of Gem (Jade)
U Ar Shar	Project Manager	Pyoe Foundation
U Thein Myint	Director	Forest Department
U Gan Maw	Assistant Program Manager	World Concern
U Aung Tun Lin	Representative	Paysatthu NGO
Daw Tin Tin Myaing	Staff Officer	Planning Department
U Tun Tun Oo	Deputy Director	State Irrigation Department
U Saw Yu	Deputy Director	Department of Mines
U Zaun Lun	Site Corrdinator	FFI
U Htay Myint	Assistant Director	Department of Urban and Housing Development
Ma Aung Ja	CSO Mapping Consultant	UNDP
U Soe Nyein	Director	Livestock and Veterinary Department
U Ganesh	Staff Officer	Myanmar Red Cross Society
U Wunna	Mobilizer	TNGL
U Kyaw Soe	Staff Officer	ECD
U Than Win Aung	Staff Officer	ECD
Daw Yi Yi Myint	Deputy Staff Director	ECD
Dr Yan Myo Naing	Demonstrator	University of Myitkyina
Saga Ja Htung Nin	Coordinator	MRI
Daw Ei Ei Khaing	Deputy Staff Officer	Environmental Conservation Department
U Thet Htun	Distribution Officer No.(1)	Myanma Petroleum Enterprise, Tha Bu Chaing
U Myint Aung	Auditor	Rakhine Coastal Region Conservation Association
U Kyaw Swa	Finance Officer	Rakhine Coastal Region Conservation Association
U Soe Shwe	DSO	Department of Rural Development
Daw Phyu Phyu Aung	Engineer Incharge	Department of Rural Development

Name	Position/job title	Organisation/department
U Htwe Tin	Junior Assistant Teacher	Department of Basis Education
U Aung Lwin	Staff Officer	Department of Meterology and Hydrology
U Maung Maung Thein Phye	Chairman	Rakhine Environmental Conservation
U Soe Naing	State Officer	Environmental Conservation Department
U Nay Thu Aung	Deputy Staff Officer	Environmental Conservation Department
U Thein Than Soe	Township Officer	Forest Department
U Ye Naing Soe	Media	
U Soe Moe Thant	Observer	
U Htun Naung	Secretary	Sat Thwar Community Forestry
U Zaw Myo Naing	Vice Chairman	Taing Kyo Community Forestry
U Maung Maung Oo	Member	Sat Thwar Community Forestry
U Ba Shwe	Staff Officer	Department of Basis Education
U Win Aung	Deputy Township Officer	Township Education Office
Daw Poe Nge Nge Hlaing	Member	Association of Women Affairs
Daw Thin Thin Mar	Member	Association of Women Affairs
U Kyaw Win	Secretary	Mya Kyar Khaing Company Limited
U Zaw Win	Member	AGE
Daw Thwin Htay Lin	Member	PSC
U Tin Myaing	Member	PSC
U Thura Kyaw	Staff Officer	Forest Department
U Tin Thein	Deputy Director	State Planning Department
Daw Kyu Kyu Myint	Staff Officer	District Planning Department
U Khin Maung Myint	Assistant Director	Township Development Committee
U Win Maung Maung	Assistant Director	Myanma Hotels and Tourism Service
U Aye Myint Mg	Staff Officer	Department of Maritime Administration
Daw Thin Thin Maw	Member	Association of Women Affairs
U Htay Lwin	Manager	Milling and Marketing Department (MTE)

Name	Position/job title	Organisation/department
U Myo Nyunt	Staff Officer	Irrigation Department
U Hla Sein	Senior Clerk	Irrigation Department
U Kyaw Kyaw Htwe	District Engineer	Public Construction Service
Dr. Myat Myat Moe	Deputy Medical Officer	Department of Health
Dr. Eizzer May Khat Kyaw	Assistant Surgeon	Department of Health
Dr. Kaung Myat Thu	Staff Officer	Department of Livestock Breeding & Veterinary
U Maung Maung	Member	Rakhine Coastal Region Conservation Association
U Ko Ko Naing	Vice Chairman	Community Forestry
U Htun Wai	Warrant Officer	Myanmar Red Cross Society, District
U Maung Htwe	Assistant Staff Officer	Department of Fishery

Appendix 3: List of participants taking part in thematic group and CSO workshops

Name	Designation and institution represented	Contact
Mr Min Maw	Deputy Director, EC	D067-431319
Mr. Khin Thida Tin	Deputy Director, ECD	09255801255
Mr. Myo Min Oo	Assistant Director, Ministry of Hotels and Tourism	067 406105
Ms. Thin Aung	Project Coordinator, UNDP	09 793104879
Mr. Wint Wint Tun	Deputy Director, Department of Fisheries	09 421006512
Mr. Khin Zaw	Director, Department of Irrigation, Management and Water Utilization	09 448536368
Dr. Aung Than Oo	Assistant Director, Hydrology Branch, Irrigation Department	09 5155224
Ms. Khin Nu Nu Soe	Staff Officer, ECD	
Mr. Aung Than Kyam	Assistant Director, ECD	09 250155729
Mr. F. Arnold	UN-REDD Programme, UNDP	09 72221456
Dr. Tin Tun Aung	Director, DHPROM, Ministry of Health	067 411232
Dr. Aung Kyam	Assistant Director, Department of Public Health	067 431432
Dr. Aung Moe Myo Tit	Deputy Director, Department of Agriculture Research, MoALI	09 43136679
Mr. Kyaw Htay	Deputy Director, Survey Department	09 33143166
Dr. Ok Kar Soe	Deputy Director, Livestock Breeding and Veterinary Department	09 8090834
Mr Soe Wai	Assistant Director	09 250901910
Mr. Khin Taw	Director, Water Resources Utilization Department	09 448536368
Mr. W. Soe Soe	Director, Agricultural Mechanization Department	09 444033438
Ms. Thu Zar Myint	Director, Department of Agriculture	09 5101612
Mr. Min Lwin	Assistant Director	401711
Dr Aung Than Oo	Assistant Director, Hydrology Branch, Irrigation Department	09 5155224
Mr. Min Lwin Tun	Assistant Director	09 297662537
Mr. Bawi Kyone	Assistant Head of Department, YCDC	09 5502767
Dr. Myat Taw Htat	Deputy Director, NCDC	09 254080544

Name	Designation and institution represented	Contact
Ms. Wah Wah Kyaw	Assistant Director, NCDC	09 43045675
Mr. Hla Mauns Thein	Deputy Director General, ECD, MOECAAF	067 431326
Ms. Thin Thin	Staff Officer, ECD, MOECAAF	09 964621101
Ms. Mya Khwar Nyo	Assistant Engineer, MCDC	09 2039787
Mr. Nway Hmu	Deputy Director, DUHD, MOC	09 448536922
Mr. Ye Myint Htun	Director (Civil), DHPI, MOE	P09 973205874
Mr. Tint Lom Oo	Deputy Director, DEPP, MOEP	067 410485
Mr. Soe Win	Assistant Director, WSP	09 250907970
Mr. Nyunt Aung	Assistant Superintending Engineer, MOEP	09 450539376
Mr. Kyaw Myo Win	Assistant Engineer, HPGE, MOEP	09 420722181
Mr. Myint Thu	Executive Engineer, HPGE, MOEP	09 49880270
Mr. Kyaw Moe Oo	Deputy Director General, DMH, MOT	09 250954636
Mr. Nay War Tun	Staff Officer, International Relation	067 404370
Mr. Nay Myo Win	Staff Officer, DZGD	067 405387
Ms. Win Sander Kyi	Deputy Director, RRD	09 420125124
Dr Hrin Nei Pram	Director General, Department of Meteorology and Hydrology	09 5014924
Mr. Thein Tun Oo	Director, Ministry of Home Affairs	067 420025
Mr. Khin Nyein Mon	Programme Officer	09 799606508
Mr. Kyaw Moe Ans	Consultant, MERN	09 458020787
Dr. Aung Naing Soe	Deputy Director General, Dept Higher Education	09 8301929
Ms. New Ni	Deputy Director General, MOST	09 420708944
Mr. Aung Myint	Director, Basic Education Department, MOEduc	09 5661148
Ms. Cho Cho Thin	Associate Professor, Yangon Technology University	09 5185438
Dr. Win Min Oo	Assistant Director, Dept Rural Development Affairs	09 2045995
Dr. Hlay Thint	Rector, Yangon University of Distance Education	09 450455371
Dr. Myo Myint	Associate Professor, Mandalay University (MOST)	09 43044946
Mr. Soe Hteik	Deputy Director, Department of Education, Planning and Training	09 260616021

Name	Designation and institution represented	Contact
Mr. Aung Win	Facilitator, MERN	09 43029343
Ms. Aye Aye Tint	Assistant Director, Ministry of Education	09 49338228
Mr. Kyaw Nyein	Executive Committee Member, FRED A	09 73040981
Ms. Htay Hlay Aung	Senior Agronomist, Golden Plain Co. Ltd.	09 799562655
Mr. Sin Bo	General Secretary, FRED A	09 254214071
Mr. Than Soe Oo	Project Coordinator, OIKOS	09 444033065
Mr. Tint Tun	Vice Chairman, MSAM	09 5417527
Mr. Han Wnna Tun	DRR Coordinator, CDA	09 795654468
Mr. Thant Zaw Aye	Local program Supervisor, CDA	09 73186275

Appendix 4: Sample format for prioritising capacity building needs (energy sector)

Name: Kyaw Moe Oo, Deputy Director General, Department of Meteorology and Hydrology

Date of interview: 25 February 2016

Priority needs	Timeline (years)	Lead agencies/institutions (Proposed)	Associated agencies/institutions
HR strength (both number and technical skills)	0 ~ 4	MOT, MOEP	MOE, MOI, CDC, MOHA
Need for research results relating to vulnerability to climate change	0 ~ 4	MORT	MOEP, MOE, CDC, MOCEF
Awareness of communities to take part in informed decision making process	0 ~ 4	MOEP	MLFRD, MOHA, MOIn
Need for clearly defined roles and functions of stakeholders	0 ~ 4	MOCEF	MOT, MOE, MOEP, MOI, MORT, MOHA
Need for a streamlined knowledge generation program in DMH	0 ~ 2	MOT, MOCEF	MOI, MORR, MNPD, MOF
Need to enhance ability to deploy adequate number of personnel to implement programs/projects	0 ~ 4	MOEP, MOE	MOT, MORT, MOI, CDC, MOHA, MLFRD
Need to enhance ability to take part in international negotiation on climate change	0 ~ 4	MOFA	Concerned ministries in relation to Energy

Notes (if any):

Appendix 5: Sample checklist used for guiding one-to-one institutional interviews For Ministry of Agriculture

Is there any specific policy element regarding your ministry's affairs which deal with climate change (adaptation and/or mitigation)?

If so, do you think the policy is adequate to cater the need for Myanmar?

Does your ministry has any specific adaptation and/or mitigation plans for Agriculture?

Do you think the existing regulatory guidance are adequate to ensure adaptation and/or mitigation in affairs related to agriculture?

Do you think the personnel/officials dealing with affairs on agriculture have adequate capacity?

In case there is a 'capacity gap', in which of the aspects the officials might have less than adequate capacity? Please rank: (a) Policy understanding, (b) basic vulnerability of the sector,(c) adaptation potential, (d) mitigation potential, (e) program/project formulation, (f) program implementation, (g) communicating across tiers of governance, (h) taking part in climate negotiation on behalf of Myanmar,, (i) other (specific)

At which level of governance/office management, the 'capacity gap' is perhaps the most among officials? (a) Central Government level, (b) Meso-level, (c) Grassroots level, (d) Urban Centres, (e) all levels.

Does your ministry maintain good collaboration with other allied government ministries/agencies?

Do you think your ministry maintains adequate mechanisms to integrate non-state actors' concerns, advocacy and movements?

Do you think the current budgetary allocations for your ministry being adequate to deal with CC related activities/programs/projects?

Do you think the existing personnel in your ministry has the capacity to develop annual plan on agriculture while integrating CC issues?

Is it mandatory on the part of the Ministry to develop an Annual Plan?

How do you think the officials at bottom tiers (away from the central level) having capacity to develop annual plans towards integrating CC issues?

Do you think agriculture related research agencies have the capacity to deal with climate change related risks and vulnerabilities in the short-, medium- and long-term?

To what extent are implemented projects aligned to CC policy priorities at national level?

In the processes of developing ministry's annual development plans, is there adequate mechanism to reflect people's needs and concerns? How do you do so?

Those officials who implement programs/projects on behalf of the Ministry, do you think they have the right capacity to do so judiciously?

If your answer to the above question is no, in your opinion what are missing? Pls narrate

Does the central government allocate a healthy budget to enable your ministry to implement ADP?

Is there any chronic shortcoming in budgetary allocation?

If it is the case, in which areas you are required to cut short the planned activities?

Are there any capacity issues that relates to slow or untimely mobilization of resources while implementing a program/project?

Do you think value for money is given high priority in application of procurement policies?

Are there any outstanding issues which indicate deliberate misappropriation/mis-utilization of public funds?

If yes, which are those? Pls narrate

Has the central government adequate capacity to monitor and oversee such misappropriation of funds?

Is there a human resources development programme for the ministry?

How often HRD programs are taken to enhance capacity of the officials?

In the HRD manual for the ministry, do you find that CC issues are duly incorporated yet?

Is there a need for enhancing capacity of the personnel for the ministry to enhance their understanding on climate change issues?

How do you rate national level overall research capacity on CC issues in general and on CC issues related to Agriculture in particular?

Are the research outputs made available in public domain?

Where do the researchers on CC and Agriculture generally belong to: (a) Government institutions, (b) non-government institutions, (c) Academics, (d) spread over evenly.

Has there been any deliberate efforts to retain research capacity on CC and Agriculture?

Are there adequate knowledge on CCA and LCD technologies?

Where do the technological knowledge generally belongs to: (a) Government institutions, (b) non-government institutions, (c) Academics, (d) spread over evenly.

Has there been any effort to use ICT towards generating/sharing agricultural risks in relation to climate change in Myanmar?

Do you have agricultural advisories that are disseminated through ICT modalities?

What is the state of community mobilization in agricultural responses to CC?

Do you have mechanisms to consider community mobilization and participation in devising CC responses in the field of agriculture?

Does your ministry consider the same for including minority voices?

Appendix 6: List of institutional representatives interviewed on one-to-one basis

Name	Designation and institution represented	Contact
U Bawi Kyone	Assistant Head of Department, Pollution Control Division, Yangon City Development Committee	095 1 246571
Ms. Khin Mi Mi Hlaing	Director, Budget Department, MoPF	069-410586
Dr. Nyi Nyi Kyaw	Director General, Forest Department, MOECAP	nnkforest@gmail.com 095 67 405400
Dr. Hrin Nei Thiam and Hydrology, MOT	Director General, Department of Meteorology 095 014924	dg.dmh1@gmail.com
Mr. Khin Muang Hla	Executive Director, Myanmar Red Cross Society	ed-mrcs@myanmarredcross.org.mm
Mr. Muang Muang Khin	Adviser, Myanmar Red Cross Society	
Mr. San San Maw	Director, Myanmar Red Cross Society	
Mr. Tint Tun	Chairperson (Research), Marine Science Association, Myanmar	tinttun@gmail.com
Ms. Mya Khwar Nyo	Assistant Engineer, Mandalay City Development Committee, Mandalay	myakhwarnyo@gmail.com
Mr. Than Soe Oo	Project Coordinator, Istitu Oikos, Myanmar	thansoeoo0011@gmail.com
Dr. Than Tun Aung	Deputy Director General, Department of Public Health, Ministry of Health	aungthantundr@gmail.com
Dr. Htun Tin	Director, Department of Public Health	
Dr. Kyaw Khine San	Assistant Director, Department of Public Health	
Dr. Aung Naing Soe	Deputy Director General, Department of Higher Education, Ministry of Education	ansoemyanmar@gmail.com
Mr. Tim Moe	Assistant Director, Dry Zone Greening Department, MOECAP	tin.moe@gmail.com
Ms. Wint Wint Tun	Deputy Director, Department of Fisheries, Ministry of Fivestock, Fisheries and Rural Development	wintwint19@gmail.com
Mr. Soe Myint Tun	Deputy Director General, Irrigation Department, MOALI	dydgid@gmail.com
Dr. Aung Than Oo	Assistant Director, Irrigation Department, MOALI	09-5155-224 aungthoo@gmail.com
Dr. Tin Htut	Permanent Secretary, Ministry of Agriculture, Livestock and Irrigation (MOALI)	tinthutagri@gmail.com
Ms. Toe Thiri Aung	Deputy Director, Central Epidemiology Unit, Ministry of Health	toethiri.atl@gmail.com

Name	Designation and institution represented	Contact
Dr. Than Tun Aung	Deputy Director General, Disaster and Public Health Emergency, Ministry of Health	95-67-431078
Ms. Myo Min Han	Manager, Energy Policy and Planning Office, Energy Planning Committee	094 28 111 815
Mr. Nay Aung	Manager, Energy Policy and Planning Office, Energy Planning Committee	09-2570-25570
Mr. Aung Mow Oo	Assistant Director, Forest Research Institute	09-512-6017
Dr. Myot Su Mon	Assistant Director, Forest Department, MOECA	sumonforest@gmail.com
Dr. Hrin Nei Thiam	Director General, Department of Meteorology and Hydrology, Ministry of Transport	09-2509-54636
Mr. Kyaw Moe Oo	Deputy Director General, Department of Meteorology and Hydrology, Ministry of Transport	kyawmoeoo59@gmail.com
Ms. Ei Phyn Mon	Deputy Chief Reporter, 7 Day daily	whiteroses14@gmail.com
Ms. Khin Khin Soe	Reporter, Myanmar Times (newspaper)	kkhinesoe2009@gmail.com
Mr. Hla Mon Thian	Deputy Director General, Environmental Conservation Department, MOECA	
Mr. Khin Zaw	Director, department of Irrigation & Water Utilization, MOALI	95-9-6520 571

