The Republic of the Union of Myanmar

Myanmar Climate Change Master Plan

(2018 – 2030)

2019

Acronyms

ADPC	Asian Disaster Preparedness Center
AF	Adaptation Fund
Agro–met	Agricultural meterology
AIMs	Agricultural Information Management System
ARIs	Academic and Research Institutions
CBOs	Community Based Organizations
CDCs	City Development Committees
CFUG	Community Forestry User Group
CIF	Climate Investment Fund
Co–ops	Cooperatives
CSAS	Climate–smart Agriculture Strategy
CSOs	Civil Society Organizations
CTCN	Climate Technology Center and Network
DAR	Department of Agricultural Research
DFID	Department for International Development
DMH	Department of Meteorology and Hydrology
DOA	Department of Agriculture
DPs	Development Partners
DRD	Department of Rural Development
DRI	Department of Research and Innovation
DRR	Disaster Risk Reduction
DRR–WG	Disaster Risk Reduction Working Group
DZGD	Dry Zone Greening Department

ECD	Environmental Conservation Department
EIA	Environmental Impact Assessment
EMF	Environmental Management Fund
EU	European Union
FAO	Food and Agriculture Organization
FD	Forest Department
GAD	General Adminstration Department
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHGs	Greenhouse Gases
GIS	Geographic Information System
hydro–met	Hydrological Meterology
IAs	International Associations
ICT	Information and Communications Technology
IEE	Initial Environmental Examination
IFIs	International Financial Institutions
IIED	International Institute for Environment and Development
INDC	Intended Nationally Determined Contribution
INGO	International Non–government Organization
IPCC	Intergovernmental Panel on Climate Change
IWUMD	Irrigation and Water Utilization Management Department
JICA	Japan International Cooperation Agency
LDCF	Least Developed Country Fund
LG	Local Government

MCCA	Myanmar Climate Change Alliance
MCCS	Myanmar Climate Change Strategy
MCDC	Mandalay City Development Committee
MERN	Myanmar Environment Rehabilitation Network
MES	Myanmar Engineering Society
MOALI	Ministry of Agriculture, Livestock and Irrigation
MOC	Ministry of Construction
MOE	Ministry of Education
MOEE	Ministry of Electricity and Energy
MOHA	Ministry of Home Affairs
MOHS	Ministry of Health and Sports
MOHT	Ministry of Hotels and Tourism
MOI	Ministry of Industry
MOIN	Ministry of Information
MONREC	Ministry of Natural Resources and Environmental Conservation
MOPF	Ministry of Planning and Finance
MOSWRR	Ministry of Social Welfare, Relief and Resettlement
MOTC	Ministry of Transportation and Communication
NAP	National Adaptation Plan
NDMC	National Disaster Management Committee
NECCCCC	National Environmental Conservation and Climate Change Central Committee
NEMC	National Electricity Management Committee
NEP	National Environmental Policy
NGOs	Non–governmental organisations
NORAD	Norwegian Agency for Development Cooperation

NPTDC	Nay Pyi Taw Development Committee
NWMC	National Water Management Committee
PPP	Public Private Partnership
PS	Private Sector
PSC	Programme Steering Committee
REDD, REDD+	Reducing Emissions from Deforestation and Forest Degradation
RIMES	Regional Integrated Multi–Hazards Early Warning System for Africa and Asia
RRD	Rescue and Rehabilitation Department
SAP	Strategic Action Plan
SCCF	Special Climate Change Fund
SEA	Strategic Environmental Assessment
SIA	Social Impact Assessment
SWM	Soil and Water Management
TWG	Technical Working Group
UMFCCI	Union of Myanmar Federation of Chambers of Commerce and Industry
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme (UN Environment)
UNFCCC	United Nations Framework Convention on Climate Change
UN–Habitat	United Nations Human Settlements Programme
UNICEF	United Nations International Children's Emergency Fund
UNIDO	United Nations Indrustrial Development Organization
YCDC	Yangon City Development Committee

Foreword

Myanmar aims to achieve a healthy and happy society that is able to resist changes in climate regimes and whose economic development will be implemented through integrated low carbon approaches by 2030. The Myanmar Climate Change Master Plan (2018–2030) has been formulated and adopted with the view toward mainstreaming a series of prioritized sectoral short, medium and long term actions identified in the Myanmar Climate Change Policy and Strategy.

The Myanmar Climate Change Master Plan (2018–2030) showcases the result of extensive in–depth sectoral consultations and bilateral discussions by line ministerial departments and enterprises, city development committees, research and academia, private and non–governmental organizations, civil–society organizations, development partners from national and international agencies, experts, technical working groups of Myanmar Climate Change Alliance (MCCA) as well as comments from relevant sub–national stakeholders.

The Myanmar Climate Change Master Plan (2018–2030) clearly defines a series of high–priority activities, their respective strategic indicators, and the responsibilities of involved stakeholders across six specific sectors prioritized in Myanmar Climate Change Strategy defined as: *"climate–smart agriculture, fisheries and livestock for food security, sustainable management of natural resources for healthy ecosystems, resilient and low–carbon energy, transport and industrial systems for sustainable growth, building resilient, inclusive and sustainable cities and towns in Myanmar, managing climate risks for people's health and well–being, and building a resilient Myanmar society through education, science and technology".*

The Environmental Conservation Department (ECD) has great confidence that this master plan will provide a guiding roadmap for proactive sectoral preparedness in tailoring and scaling down the responses needed to address annual climate–induced natural disasters facing with Myanmar as well as stimulating opportunities for long term economic development along low carbon pathways. In addition, this Master Plan serves as an operationalizing framework for ensuring Myanmar's achievement of its Nationally Determined Contributions (NDC) to the 2015 Global Climate Change Paris Agreement.

As a national cross–sectoral framework, ECD strongly urges all ministerial and sub–national governments, and investments from private and public organizations to incorporate the Myanmar Climate Change Master Plan (2018–2030) objectives and targets, and necessary budgetary allocations within their respective short and long term development plans, aligning with the specific targets set for 2020, 2025 and 2030. In addition, ECD strongly encourages private sector and development partners to support the government through develop its capacity in terms of technology, finance and human resources.

ECD would like to express its gratitude to the many departments, technical working groups, experts from national and international organizations, non–governmental organizations, civil societies, and private citizens who have contributions to the formulation of this guiding framework, the Myanmar Climate Change Master Plan (2018–2030).

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Introduction: how to use the master plan

This part contains the master plan (MP) for the MCCS (2018–2030), to be implemented by partners in each of Myanmar's six key sectoral areas:

1. Agriculture, fisheries and livestock
2. Environment and natural resources
3. Energy, transport and industry
4. Cities, towns and human settlements
5. Climate hazards and health
6. Education, science and technology

Each sectoral area has a designated focal agency that will monitor progress against the master plan.

The master plan was formulated through over a year–long process of stakeholder consultations — from April 2015 to August 2016 — with representatives from several sectors, brought together under the Technical Working Group (TWG) of the Myanmar Climate Change Alliance Programme (MCCA). The result of these intense exchanges is a series of activities for each area of action, which we set out in this part. Although not a comprehensive list of all the actions possible in these broad sectors, they represent key entry points, with tangible and measurable outputs, that will contribute to achieving the MCCS's overall goal: '*By 2030, Myanmar has achieved climate–resilience and pursued a low–carbon growth pathway to support inclusive and sustainable development*' in line with the national vision of the MCCS, which is to '*transform Myanmar into a climate–resilient and carbon–efficient nation that is capable of harnessing the benefits of low–carbon, resilient development for present and future generations in a sustainable and inclusive manner*'.

Master Plan's design

The master plan's design includes: an overall outcome and expected results for the sector; strategic indicators; objectives for areas of action; activities for these objectives; outputs for the activities; indicators for each action; and timeframes and responsibilities. In this section, we provide an overview of each of these components.

1. Sectoral outcomes: These are concise descriptions of what the sector will resemble after the successful implementation of the master plan. The six sectoral outcomes are:

(a) Climate–resilient productivity and climate–smart responses in the **agriculture, fisheries and livestock sectors** to support food security and livelihood strategies while also promoting resource–efficient and low–carbon practices

(b) **Natural resource** management that enhances the resilience of biodiversity and ecosystem services that support social and economic development and deliver carbon sequestration

(c) Climate–resilient and low–carbon **energy, transport and industrial systems** that support inclusive and sustainable development and economic growth

(d) All township and city dwellers, including the most vulnerable, are safe from increased risks of rapid– and slow–onset natural disasters and live in sustainable, inclusive, **low–carbon, climate–resilient towns**

(e) Communities and economic sectors are able to respond to and recover from **climate–induced disasters, risks and health impacts** and build a healthy society, and

(f) Strengthened **education, awareness and technological systems** that foster a climate–responsive society and human capital to design and implement climate–resilient and low–carbon development solutions for inclusive and sustainable development

Achieving all these sectoral outcomes will help Myanmar achieve the MCCS's main objectives and reach its overall goal of achieving climate–resilience and pursued a low–carbon growth pathway to support inclusive and sustainable development by 2030.

2. Sectoral expected results: These are the key minimal and tangible achievements each sector must attain to achieve the sectoral outcome. They are the building blocks that drive sectoral action.

3. Strategic indicators: An indication of the type of processes, laws, policies and activities that must be set up in order to monitor change. Indicators do not include numeric baselines for now, although the strategy's implementation mechanism may decide to improve them.

4. Objectives for areas of action: These are six areas for action that activities that stakeholders have agreed to focus on during the consultations. They are the objectives each sector aims to attain and activities under each master plan fall under one of the six areas of action (policy, institutions, finance, capacity and technology, awareness, partnerships).

For example, Objective for action area 1: "To integrate climate change in environment and natural resource management policies, plans, research and development, and extension services at national, sectoral and local levels."

5. Activities for these objectives: These are all the activities, as agreed by stakeholders during the consultations, that will contribute to achieving the objectives under each area of action. They range from ongoing projects and sectoral activities that need to be continued and strengthened, to new projects that need to be initiated.

6. Outputs for the activities: Each activity has one or more output that can be achieved within the duration of the strategy. Delivering these outputs will contribute to achieving the expected sectoral results.

7. Indicators: These are both quantitative and qualitative, and show stakeholders which signs to observe to monitor progress. Target values and baselines for these indicators are not presented at this stage; but rather provide an indication of how to monitor progress that the implementation mechanism can improve as required.

8. Timeframe: This is divided in three segments: activities taking place within 3, 8 and 13 years, corresponding to the short, medium and long term. Sectors need to report on or record their activities within these segments. So, for example, activities that can be initiated and achieved in two years fall within the short-term segment while those that will achieve outputs in six years fall under the medium-term. Activities that can be completed only in the long-term fall under the 13-year segment. Some activities –

such as awareness – will fall under all three segments, as we expect that, although tangible outputs can appear in the short term, they will require continuation over time.

9. Responsibility: This sets out roles and responsibilities for leading, driving, reporting on and participating in the actions and activities. An ambitious strategy like the MCCS cannot be achieved without the participation of many different actors.

10. Actors and reporting: Each sector has an overall focal agency that reports to the secretariat on overall progress towards each sectoral outcome. For ease of monitoring and reporting, the MCCS reports on progress towards sectoral expected results only.

There is a lead for each action and activity. The focal agencies are responsible for regularly reporting progress towards sectoral outcomes by consulting the different leads.

1. Climate–smart agriculture, fisheries, livestock for food security

1.1 Sectoral outcome

Climate–resilient productivity and climate–smart responses in the **agriculture, fisheries and livestock sectors** to support food security and livelihood strategies while also promoting resource–efficient and low–carbon practices.

1.2 Expected results and indicators

Sectoral expected results	Strategic indicators
The agriculture, fisheries and livestock sectors have integrated climate change into their relevant policies, planning and budgeting procedures and have put these into practice, taking into account gender considerations.	# of sectoral polices, plans, research and development strategy and extension services that integrate climate change and are practiced at national, sub–national and local levels; # of officials trained on sector–specific guidelines and tools for integrating climate change into planning and budgeting systems; # of sectors, geographical areas, and technology–specific institutional arrangements, including a multi–stakeholder engagement framework developed to implement climate change responses at national, sub–national and local levels; # of climate change adaptation projects implemented through externally supported finance and domestic resources; # of climate–smart technologies and good practices introduced and scaled up in Central Dry Zone, the Ayeyarwady Delta and Coastal Zone and lowland areas; # of farmers (both men and women) benefiting from the introduction of climate–smart technologies and other responses; # of multi–stakeholder partnerships that supported the
The agriculture, fisheries and livestock sectors have adopted climate–resilient and environmentally sound adaptation technologies and climate–smart management practices, supported by international and domestic finance.	
Institutional coordination and multi–stakeholder engagement framework have been established and support the implementation of climate–smart responses in the agricultural, fisheries and livestock sectors,	

including innovative business models and gender–sensitive approaches.	scaling up of climate–resilient and low–carbon responses.

1.3 Objectives for action areas

1. Integrate climate change into agriculture, fishery and livestock policies, plans, research and development, and extension services at national, sectoral and local levels.
2. Establish and reinforce institutional arrangements to plan and implement climate change responses.
3. Establish financial mechanisms to mobilize and allocate resources for climate change response and climate–responsive development.
4. Increase access to climate–resilient and low–carbon technologies and practices.
5. Enhance awareness and capacity to promote and implement climate–resilient and low–carbon responses.
6. Promote multi–stakeholder partnerships to support and scale up climate–resilient and low–carbon responses.

1.4 Actors

Lead actor:

Ministry of Agriculture, Livestock, and Irrigation (MOALI), including the following departments:

- Department of Agriculture (DOA),
- Department of Agricultural Research (DAR),
- Department of Rural Development;
- Department of Planning;
- Department of Agriculture Land Management and Statistics ;
- Agriculture Mechanization Department,
- Irrigation and Water Utilization Management Department, and

- Livestock Breeding and Veterinary Department; Department of Fisheries; and Department of Planning

Other actors:

- Academic and research institutions (ARIs) — such as agricultural and forestry universities
- Ministry of Natural Resource and Environment Conservation (MONREC), Environmental Conservation Department (ECD)
- Regional and state government for addressing local priorities
- Ministry of Planning and Finance (MOPF)
- Ministry of Transport and Communication (MOTC), Department of Meteorology and Hydrology (DMH)
- Ministry of Health and Sports (MOHS)
- Ministry of Industry (MOI)
- Ministry of Education (MOE)
- Ministry of Construction (MOC)
- Ministry of Social Welfare, Relief and Resettlement (MOSWRR)
- Local government at regional, district and township levels
- Development partners (DPs), including European Union (EU), Department for International Development (DFID), the Asian Development Bank, the Food and Agriculture Organization (FAO), the United Nations Development Programme (UNDP) and UN Environment (UNEP)
- Farmer and fishery groups and co–operatives (co–ops)
- National NGOs (including women's NGOs)
- International NGOs (INGOs)
- International agencies (IAs)
- International financing institutions (IFIs)
- Civil society organisations (CSOs)

- Community–based organisations (CBOs)
- Private sector (PS)
- Media.

1.5 Master plan 1: Climate–resilient agricultural productivity is achieved to support food security, livelihood strategies, GDP growth and greenhouse gas reductions

Objective for Action Area 1: **Integrate climate change into agriculture, fishery and livestock policies, plans, research and development, and extension services at national, sectoral and local levels.**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Develop guidelines (tools, contents) to mainstream climate change into agriculture, fisheries, livestock and irrigation	Guidelines for mainstreaming climate change developed	# of guidelines developed				MOALI	MONREC (ECD), MOPF
Pilot and promote inclusive and participatory adaptation planning at the local level to integrate climate change in local government, CSO and CBO agriculture and livelihood plans	Local adaptation plans prepared at the local level	# of local adaptation plans prepared in # of climate–vulnerable areas				MOALI	MONREC, NGOs, CBOs
Develop climate change research and extension strategy for agriculture, fisheries and livestock sectors, including an action plan for climate–smart agriculture strategy	Research and extension strategy, including action plan, developed	# of research and extension strategies and action plans in place				MOALI	MONREC

Develop guidelines and action plan to mainstream gender in climate change–related policies of agriculture, fisheries, livestock and irrigation sectors	Guidelines and action plan on a climate change–related perspective on gender in respective sectors developed	# of guidelines, action plans and gender focal officials in each sector		■		MOALI	MONREC
Develop training modules for fisherfolk and farmers on how to integrate climate change into local–level planning	Training module on climate change integration developed	# of fisherfolk and farmers trained on climate change integration	■			MOALI	MONREC, NGOs, CBOs
Implement efficient water management practices in vulnerable townships and states, including mountainous and flood–prone areas, delta regions and Dry Zone	Water management technologies adopted by farmers	# of water management technologies promoted in # of climate vulnerable areas		■		MOALI (DAR)	MONREC (ECD), LG, CSOs, IWUMD
Implement eco–friendly crops and bio–energy schemes targeting climate vulnerable households in Shan state and the Dry Zone	Farmers have increased access to eco–friendly crops and bio–energy schemes	# of farmers adopting eco–friendly crops and bio–energy schemes	■	■		MOALI	PS, MOEE
Identify and implement livelihood diversification activities (both on– and off– farm) in vulnerable areas of Dry Zone, delta, mountain and coastal areas, targeting poor and landless households	Vulnerable households have improved access to livelihood diversification activities	# of households with improved access to livelihood diversification activities	■	■	■	MOALI	MONREC, NGOs, CBOs
Develop mitigation and low–carbon strategy, including plan for agriculture, fisheries and livestock sectors, in line with Myanmar's intended nationally	National mitigation and low–carbon development strategy and plan in place	# of MOALI activities on mitigation and low–carbon development	■			MOALI	MONREC (ECD), MOPF

determined contribution (INDC) and Climate Smart Agriculture Strategy (CSAS)							
Implement information and communication technology (ICT)–based monitoring system and retrofitting works in irrigation systems for effective water management by using geospatial technologies	Water management technologies practiced by irrigation engineers	# of water management technologies promoted in irrigated areas				MOALI (IWUMD)	LG, IAs

Objective for action area 2: **Establish and reinforce institutional arrangements to plan and implement climate change responses.**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Establish national–level climate change and agriculture, fishery and livestock working groups to improve coordination and synergy	Climate change working groups established	# of climate change working group events				MOALI	MONREC (ECD), MOPF
Establish climate change cell or division within MOALI	Climate change cell or division within MOALI established	# climate change cell or division activities				MOALI	MONREC (ECD), MOPF

Establish institutional platform to exchange learning and share knowledge on climate–smart agriculture, fisheries and livestock	Learning and knowledge sharing forum on climate–smart agriculture, fisheries and livestock established	# of events organised by learning and knowledge management forum				MOALI	MONREC (ECD), MOE
Develop terms of reference for climate change cell and human resource capacity to integrate climate change within MOALI	Human resource development plan for climate change capacity building developed	# of ministry staff trained on climate change				MOALI	MONREC (ECD), MOPF
Conduct gender analysis and develop capacity to integrate gender perspectives into climate change responses to agriculture	Gender and climate change working groups established and gender analysis developed	# of gender and climate change working groups' events				MOALI	Women's NGOs, MOSWRR
Develop institutional guidelines and strategy for promoting decentralised community institutions for effective climate change response	Guidelines and strategy for decentralised community institutions developed	# of decentralised institutions formed				MOALI	MONREC (ECD), MOPF, CSOs, DPs
Establish and strengthen cooperatives or farmer, fisherfolk, water user, herder associations to collectively deal with climate change issues	Co–operative, associations and groups capacitated on climate change	# of co–operatives or associations formed				MOALI	NGOs, DPs, LG

Objective for action area 3: **Establish financial mechanisms to mobilise and allocate resources for climate change response and climate-responsive development.**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Develop, integrate and legalise a risk-based insurance system to cover the loss and damage of crops, livestock and fisheries due to climate-induced disasters	Risk-based insurance system is either integrated into existing legislation or the development of new laws and regulation	# of farmers benefiting from risk-based insurance system		■		MOALI MOPF	LG, farmer groups and co-ops, PS
Establish and promote microcredit cooperatives to increase access to financing for small enterprises, benefiting vulnerable households	Microcredit co-operatives established	# of farmers benefiting; # of microcredit co-operatives established	■	■	■	MOALI	LG, NGOs CBOs, DPs, PS
Develop budget guidelines and spending tracking system within MOALI to integrate climate change in annual budgeting	Budget guidelines and spending tracking system developed	% of annual budget allocation on climate change		■		MOALI	MOPF, DPs
Identify and promote financial incentive mechanisms — such as loans, microcredit and grants — targeting vulnerable households in Dry Zone and delta areas, with gender considerations based on	Farmers have improved access to financial incentive mechanisms	# of farmers in Dry Zone and delta with access to loans, microcredit and grants (min. 30% women)		■	■	MOALI	MOPF, PS

gender analysis							
Integrate climate change economic and investment appraisal criteria — such as cost benefit analysis— into internal MOALI strategy and plans	Economic and investment appraisal criteria integrated	# of projects or plans with integrated economic and investment appraisal criteria				MOALI	MOPF, PS

Objective for action area 4: Increase access to climate–resilient and low–carbon technologies and practices.

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Identify climate–smart agricultural technology and practices such as efficient and improved water management technologies that are suitable for Dry Zone, delta, mountain and coastal areas; prepare the extension materials	Efficient water management technologies and practices promoted, including micro and drip irrigation; rainwater harvesting; small and medium–scale irrigation schemes	# of farmers with access to efficient water management technologies and practices				MOALI	LG, ARIs, PS, NGOs, CBOs, IAs
Provide trainings to farmers and fisherfolk on climate–smart agriculture technologies and practices — such as improved soil and nutrient management, improved cropping and community aquaculture — with gender	Farmer and fisherfolk climate–smart technology capacity enhanced	# of farmers trained on climate–smart technology and management practices (minimum 30% women)				MOALI,	LG, NGOs, CBOs, IAs

considerations based on gender analysis							
Establish and promote climate-smart villages that focus on technology demonstration and generating climate change knowledge	Climate-smart villages established	# of climate-smart villages established in climate-vulnerable areas				MOALI,	LG, NGOs, CBOs, IAs
Carry out infrastructure design and studies to protect agricultural land in coastal and delta areas from salt water intrusion	Infrastructure design and studies carried out	# of infrastructure design and studies in the coastal and delta areas				MOALI	MOSWRR, MOC
Implement dam instrumentation, hydro-meteorological monitoring and forecasting models for operating reservoirs in the context of climate change; and monitor reservoir areas using geospatial technologies	Emergency operation procedure developed	Dam safety in context of climate change				MOALI (IWUMD)	MONREC, IAs
Improve reservoir system performance for sustainable water management under climate change	Increase water productivity	Climate smart water management implemented				MOALI (IWUMD)	MONREC, IAs
Establish real-time hydro-meteorological monitoring and warning systems in the reservoir area using ICT and geospatial technologies	Early warning system established at dam sites and nearby	Amount of early warning information disseminated to vulnerable populations in the affected area				MOALI (IWUMD)	MONREC, IAs
Develop and promote early maturing and	Suitable stress-tolerant	# of stress-tolerant varieties				MOALI	LG, ARIs,

heat tolerant rice varieties to cope with drought and water stress–in Dry Zone, delta and coastal areas	varieties or breeds developed and disseminated in dry, delta and coastal areas	and breeds disseminated at local level					NGOs, PS, IAs
Promote community–based seed bank in Dry Zone areas to increase access to resilient seed and planting materials	Farmers have improved access to climate–resilient seed and planting materials	# of community–based seed banks established				MOALI	LG, ARIs, NGOs, PS, IAs
Promote stress–tolerant fish and livestock breeds, targeting vulnerable households in the Dry Zone, delta and coastal areas	Stress–tolerant breeds identified and promoted	# of communities with improved access to stress–tolerant breeds identified and promoted				MOALI	LG, ARIs, NGOs, PS, IAs
Establish early warning system, auto rain gauge, telemetry and auto water level monitoring system in lower delta region	Early warning systems, auto rain–gauge, telemetry and auto water level monitoring system established	# of early warning systems, auto rain–gauge, telemetry and water level monitoring stations in lower delta				MOALI, irrigation–dept	MONREC, IAs
Introduce low–emission farming technology and practices, targeting farmers in climate–impacted regions (Dry, Coastal, Delta and Hilly Zones, flood–prone areas), with gender considerations based on gender analysis	Low–emission farming technology and practices promoted	# of farmers with access to low–emission farming technology and practices; # of female–headed households; # of practices and technologies				MOALI	MONREC, IAs, MOE
Test and promote ecofriendly plans and bioenergy schemes in selected Dry Zone townships	Dry Zone townships have ecofriendly plans and bioenergy schemes	# of townships implementing ecofriendly plans and bioenergy schemes				MOALI	MONREC, IAs, MOEE

Establish three pilot stations for climate change research (crop, fishery and livestock improvement research)	Pilot stations for crop, fishery and livestock improvement research) are established and operating	# of pilot climate research stations established and operating				MOALI	ARIs, MONREC, internatio–nal organisati–on
Promote fuel–efficient agro–machineries, residue management and reduced tillage practices and technology	Fuel–efficient machineries and systems promoted	# of fuel–efficient machineries and systems promoted in # of townships				MOALI	MONREC, IAs, MOEE

Objective for action area 5: **Enhance awareness and capacity to promote and implement climate–resilient and low–carbon responses.**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13		
Establish climate change database management system at the MOALI	Climate changedatabase management system established	# of staff, researchers and farmers benefiting from database system				MOALI	LG, IAs
Provide training to MOALI monitoring unit on approaches to improve climate risk analysis and related data monitoring and management	Training provided to staff of the MOALI monitoring unit	# of monitoring unit staff received training				MOALI	LG, IAs

Develop flood hazard maps in flood-prone areas to assess the agricultural damage	Flood hazard maps developed	# of flood hazard maps developed targeting climate-sensitive agriculture areas and flood-prone zones	■			MOALI	MOTC (DHM), IAs, MONREC
Build capacity to develop national and regional monitoring and surveillance plan for the fisheries sector	National and regional monitoring and surveillance system in place	# of farmers benefiting from the monitoring and surveillance system		■		MOALI	MOTC (DHM), IAs, MONREC
Build capacity to establish more agro-meterological and hydro-met stations to strengthen weather and climate information	Agro-met and hydro-met stations established	# of agro-met and hydro-met stations established	■			MOALI (DOA, IWUMD)	LG, IAs,
Carry out trainings for farmers on using agro-met and climate information	Farming practices based on agro-met and climate information	Amount of agro-met and climate information provided to farmers	■			MOALI (DOA)	LG, IAs
Build capacity to carry out hydrological analysis in all flood- sensitive areas	Hydrological analysis carried out	# of hydrological analyses carried out		■		MOALI, IWUMD	MONREC, IAs
Carry out advanced trainings for hydrologic and hydraulic modeling with earth observation systems and; set up technical co-operation with IAs	Improved hydrologic and hydraulic analysis	# of trainings for improved capacity in hydrologic and hydraulic analysis	■			MOALI (IWUMD)	IAs
Strengthen capacity to improve land use maps of vulnerable townships in the Dry	Improved land use maps for climate vulnerable areas	# of improved land use maps	■			MOALI	MOTC (DMH),

Zone, delta and coastal areas							MONREC
Establish an agriculture information management system (AIMS) and agro-advisory mechanism for improving farmers' access to climate-relevant information	AIMS and agro-advisory mechanism established and promoted	# of farmers and fisherfolk benefiting from AIMS and agro-advisory mechanism				MOALI, MOTC (DMH)	MOIN, LG, NGOs, CBOs, IAs, media
Carry out climate change awareness-raising and capacity-building activities, targeting extension agents and government staff	Government staff trained on climate change	# of government staff trained on climate change				MOALI	MOI, MOTC, LG, CSOs, media
Provide climate change training for staff of academic and research institutions so they can generate climate-relevant information and knowledge	Academics and researchers trained on climate change	# of academics and researchers trained on climate change				MOALI	MOI, MOTC, LG, CSOs, media
Establish environment clubs or societies in schools and universities and support them to integrate climate change within their activities	Environment clubs and societies established	# of environment club and society activities				MOALI	MONREC (ECD), LG, NGOs
Develop farmer-friendly, gender-sensitive training and awareness-raising materials to address climate change	Training and awareness-raising materials produced and used	# of training and awareness raising materials produced and used				MOALI	MOI, MOTC, LG, CSOs, media
Provide awareness and training on improved water, soil-nutrient, pest and	Farmers are trained on improved management	# of farmers trained on improved management				MOALI	MOI, MOTC,

disease management practices, with gender considerations.	practices	practices, disaggregated by sex					LG, CSOs, media
Develop flood hazard map and carry out structural measures in flood-prone areas to assess agricultural damage	Flood management in flood-prone areas	# of flood-protected areas				MOALI (IWUMD)	MOTC(DMH), IAs

Objective for action area 6: **Promote multi-stakeholder partnerships to support and scale up climate-resilient and low-carbon responses.**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13		
Establish national, regional, district and township-level multi-stakeholder climate change response committees	Multi-stakeholder climate change response committee established	# events organised by multi-stakeholder committees				MOALI	MONREC (ECD), LG, NGOs
Develop guidelines and regulations to enable private sector and other stakeholder investment on risk financing	Private sector partnerships for investment in insurance and contract farming promoted	# of private sector actors engaged in insurance and contract farming				MOALI	MOPF, PS
Develop collaborative projects targeting a third of the most vulnerable households in five states/regions on an annual basis	Collective actions promoted among different actors to address climate change impacts at local level	# of projects implemented in # of climate vulnerable areas				MOALI	DPs, PS, CBOs

Establish a national-level, multi-stakeholder engaged risk-based financing mechanism (loss and damage fund and modality) to support climate-vulnerable households	Multi-stakeholder engaged risk-based financial mechanism established	# of climate-vulnerable households benefiting from multi-stakeholder engaged risk-based financing				MOALI, MOPF	IFIs, PS, MONREC (ECD)

2. Sustainable management of natural resources for healthy eco–systems

2.1 Sectoral outcome

Natural resource management that enhances the resilience of biodiversity and ecosystem services that support social and economic development and deliver carbon sequestration.

2.2 Expected results and indicators

Sectoral expected results	Strategic indicators
Climate change dimensions are incorporated and enforced in environment and natural resource management policies, rules and regulations	# of policy, strategies, laws and by–laws that integrate climate change, including resilient and low–carbon provisions # of officials trained on sector–specific guidelines and tools for integrating climate change into planning and budgeting systems # of sector – and technology– specific mitigation and adaptation action plans implemented in regions or areas with higher deforestation and degradation issues # of households, NGOs and CBOs benefiting from access to, and implementation of, environmentally sound technologies and good management practices, including ecosystem–based adaptation approach, with training # of geographical areas covered and technology–specific institutional arrangements – including multi–stakeholder engagement framework – developed to implement climate change responses at national, sub–national and local levels # of climate change projects implemented through
Environmentally sound technologies and good management practices are adopted for improving and maintaining forest, water, land and coastal ecosystem health and services.	
Framework for institutional coordination and multi–stakeholder engagement is established and supports access to finance and implementation of responses for health, environment and natural resource management.	

	externally supported finance and domestic resources that address issues in the natural resource management sector.

2.3 Objectives for action areas

1. Integrate climate change in environment and natural resource management policies, plans, research and development, and extension services at national, sectoral and local levels.
2. Establish and reinforce institutional arrangements to plan and implement climate change responses.
3. Establish financial mechanisms to mobilise and allocate resources for climate change response and climate–responsive development.
4. Increase access to climate–resilient and low–carbon technologies and practices.
5. Enhance awareness and capacity to promote and implement climate–resilient and low–carbon responses.
6. Promote multi–stakeholder partnerships to support and scale up climate–resilient and low–carbon responses.

2.4 Actors

Lead actor: MONREC, including the following departments:

- Forest Department
- Environmental Conservation Department (ECD)
- Dry Zone Greening Department,
- National Environmental Conservation and Climate Change Central Committee (NECCCCC).

Other actors

- MOALI: IWUMD
- Ministry of Electricity and Energy (MOEE)

- Ministry of Hotels and Tourism (MOHT): Directorate of Hotels and Tourism
- Ministry of Planning and Finance (MOPF)
- MOTC: Department of Meteorology and Hydrology (DMH)
- Ministry of Industry (MOI)
- Ministry of Home Affairs (MOHA): Department of General Administration (GAD)
- Ministry of Information (MOI)
- National Water Resources Committee (NWRC)
- Local government (LG): regional, district and township
- NGOs — for example, Myanmar Environment Restoration Network (MERN), REAM, ECO–Dev, WWF, EECDI, Spectrum, Green Lotus and FREDA
- Academic and research institutions (ARIs) (forestry university; departments of botany, arts and science, environment science)
- Development partners (DPs)
- International agencies (IAs)
- International financing institutions (IFIs)
- Community forestry user groups (CFUGs)
- Buffer zone user groups
- NGOs
- CSOs
- CBOs
- Other groups — for example, women's groups
- Media
- Private sector (PS).

2.5 Master plan 2: Management of natural resources for healthy ecosystems

Objective for action area 1: **Integrate climate change in environment and natural resource management policies, plans, research and development, and extension services at national, sectoral and local levels**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Integrate climate change in the new environment policy and law, and in existing sectoral policies such as forest, water, tourism and land use	Climate change integrated in environment, tourism, land use and forest policy and laws	# of policies, laws, by-laws and strategies that integrate climate change				MONREC, MOHT, MOALI	MOPF, DPs
Support in preparing climate change policies, National Adaptation Plan (NAP), Green Growth Strategy, National Appropriate Mitigation Actions and Low-Carbon Development Strategy	Climate change adaptation and mitigation policies and strategies developed and legalised	# of climate-resilient and low-carbon development-relevant policies and strategies				MONREC, MOHT, MOALI	MOPF, DPs
Develop climate change vulnerability assessments and local adaptation and resilience plans in all townships and cities	All townships and cities of Myanmar have vulnerability assessments – or at least simplified vulnerability analysis All townships and cities of	# of vulnerability assessments from a low baseline (2 in 2017) # of local adaptation and resilience plans from a low baseline				MONREC (ECD), MOC (DUHD)	MOHA (GAD)

	Myanmar have local adaptation plans – or adaptation and resilience measures integrated into their planning						
Integrate gender considerations and guidelines in INDC implementation action plan, REDD+ and NAP	Climate change adaptation and mitigation policies and strategies developed with a gender perspective	# of policies and strategies with a gender perspective				MONREC	MOPF, DPs
Prepare REDD+ and INDC implementation action plan to integrate climate change into the national legal framework and development plans	INDC and REDD+ policies, strategies and plans integrated in national laws, policies and development plans	REDD+ implementation action plan put into practice in # of townships and states with high deforestation and degradation rates				MONREC and individual depts	MOALI, CBOs, NGOs, IAs, PS
Integrate climate into guidelines for inventory (forest, GHG), monitoring (National Forest Monitoring and Information) and mapping	Guidelines for inventory, monitoring, mapping are developed or updated	# of inventory, guidelines and maps integrate climate change				MONREC	MOALI, MOTC (DMH), MOHA (GAD), MOPF, MOHT
Develop climate screening/proofing and planning guidelines and tools to climate–	Climate screening and planning guidelines and tools	# of climate–resilient plans or investments that integrate				MONREC	MOALI, IAs, MOI,

proof investments	developed	climate change					MOEE, MOPF, PS
Develop/update existing compliance systems (EIA, Strategic Environmental Assessment (SEA) , Social Impact Assessment (SIA) to include climate risk management and mitigation plans	EIA, SIA, SEA applied to enforce compliance to risk reduction and mitigation plans — for example, in mining, large infrastructure construction and industry	# of projects, programmes and investments that apply social and environmental safeguards				MONREC	MOALI, MOI, MOEE, IAs, MOPF, PS
Develop and implement adaptation and mitigation action plans for critical ecosystems including coastal areas, wetlands (such as Inle lake), watersheds and catchment areas	Action plans for critical ecosystems developed and implemented	# of mitigation and adaptation action plans implemented in regions or areas with higher deforestation and degradation issues				MONREC (ECD and other depts)	LG, CBOs, NGOs, DPs
Identify and promote successful climate-resilient ecosystem-based adaptation practices that are suitable for different eco-regions and forest conditions	Successful climate-resilient ecosystem-based adaptation practices suitable for different eco-regions and forest conditions are identified and promoted	# of ecosystem-based adaptation approaches developed, piloted and promoted				MONREC (ECD and other depts)	CBOs, NGOs, DPs
Implement livelihood diversification activities — such as skill oriented training on enterprise development, value addition and marketing targeting — to community forestry user group (CFUG) members,	Improved access to livelihood diversification options for forest-dependent communities	# of communities with access to # of livelihood diversification options				MONREC , MOALI	MOPF, CBOs, PS, IAs

including landless, women and other vulnerable households							
Introduce microfinance and credit facilities to support climate-smart diversified livelihood options for poor households in vulnerable townships or districts to male and female-headed households	Microfinance and credit facilities promoted, targeting vulnerable townships and districts to all households, making sure female-headed households are included and separately monitored	# of vulnerable households with access to microfinance and credit facilities; # of male-headed and female headed households (using gender-disaggregated monitoring)				MONREC, MOALI	MOPF, CBOs,PS, IAs
Develop policy guidelines and directives to establish gene bank to protect species under threat from climate change	Forest gene bank policy and guidelines established	# of policies and guidelines for gene bank management in place				MONREC (FD, ECD)	LG,NGOs, IAs
Pilot and scale up REDD+ activities in the areas where deforestation and degradation is high and in critical forest areas	REDD+ actions implemented, contributing to control deforestation and degradation	# of activities implemented that target critical forest and ecosystem areas				MONREC (FD, DZGD)	MOALI,IAs, PS,

Objective for area action 2: **Establish and reinforce Institutional arrangements to plan and implement climate change responses**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Initiate meetings and discussion to harmonise and align existing co-ordination mechanisms — such as MCCA and NECCCCC — to integrate climate change	Co-ordination among ministries and institutions in relation to climate change policies improved	# of activities carried out by coordination mechanism on climate change				NECCCCC, MONREC	ECD
Develop training courses and curriculum on climate change integration, assessment and planning, including monitoring and evaluation	Forestry professionals' and practitioners' capacity on climate change assessment and planning improved	# of forestry professionals and practitioners trained on climate change				MONREC (FD, ECD) ARIs	MOALI, MOE, MOHT, MOHA (GAD)
Organise discussion forums to strengthen climate change portfolio within ECD and its departments	Climate change department or section established and strengthened within MONREC	# of discussion forums and meetings organised to strengthen climate change functions				MONREC (ECD)	MOPF, DPs
Develop local-level institutional mechanisms to integrate climate change within the sub-national and local plan and activities, with a gender perspective	Decentralised institutional co-ordination mechanism developed	# of township- and community-level co-ordination mechanisms developed;				MONREC (ECD)	MOPF, DPs

		# of sessions discussing gender and climate change					

Objective for action area 3: **Establish financial mechanisms to mobilise and allocate resources for climate change response and climate–responsive development**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Develop fund management and operating guidelines to operationalise an environmental management fund	Fund management and operating guidelines developed	# of meetings and workshop organised to discuss the guidelines				MONREC (ECD), MOPF	Bilateral and multilateral agencies, IFIs, PS
Develop an innovative climate fund mechanism — such as Payment for Eco–System Services or carbon credits — and guidelines at national and sub–national levels (within MONREC–ECD)	Innovative climate fund established	% of disbursement of funds to # of CBOs and communities to incentivise environment–friendly practices such as agroforestry, SWM technologies				MONREC (FD, DZGD), MOALI	LG, CBOs, NGOs, IAs such as the Green Climate Fund (GCF)
Develop a national–level climate financing strategy and roadmap (accessing source and investment areas) to secure	Strategy and plans to harness international financing to ensure the development of a	% of increased access to international climate financing through REDD+ and other				MONREC (ECD)	MOPF, MOALI, MOHT

investment on climate change	credits or incentives mechanism	mechanisms such as Least Developed Countries Funs (LDCF), GCF and Adaptation Fund (AF)					
Develop guidelines and procedures for meeting international standards for fund access — for example, GCF or AF) with gender-sensitive requirements	Guidelines and procedures for meeting international standards for fund developed	# of national preparedness and capacity building activities implemented for GCF and AF readiness				MONREC (ECD)	MOPF, MOALI, MOHT
Develop bankable projects to implement climate change adaptation and mitigation priorities	Bankable climate change projects developed	# of projects developed on climate change-relevant priorities				MONREC (ECD)	MOPF, MOALI, MOHT

Objective for action area 4: Increase access to climate-resilient and low-carbon technologies and practices

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Develop, test and scale up sustainable soil and water management technologies and practices in climate vulnerable areas	Alternative technologies and land use practices for managing deforestation and degradation piloted and promoted	# of households and CBOs in the mountain and coastal region received training and extension support on alternative technologies				MONREC	LG, CBOs, CFUGs, MOALI, NGOs
Organise events to improve farmers'	Increased farmer access to	# of households and CBOs in				MONR	LG, CBOs,

technological access to climate-smart technology and practices — for example, improved land management practices such as agroforestry — with gender considerations	climate-smart technologies	mountain and coastal regions who have received training and extension support on alternative technologies; # of female-headed households				EC	CFUGs, MOALI, NGOs
Establish forest gene banks and conservation zones targeting climate-sensitive ecosystems such as mangroves and wetlands	Gene bank and species conservation zones established	# of forest gene banks and conservation zone targeted climate sensitive ecosystems established				MONR EC	LG, CBOs, CFUGs, MOALI, NGOs
Implement energy efficiency plans focusing on biomass conservation — for example, improving fuel-wood use efficiency through technology; energy-efficient stoves; biogas; or bio briquettes — with gender considerations in the most vulnerable townships, targeting a number of households	Energy efficiency schemes and biomass conservation implemented	# of households with access to energy-efficient schemes such as biogas and bio-briquettes; # of female-headed households				MONR EC, MOEE	MOPF, MOEE, CSOs, PS, IAs

Objective for action area 5: **Enhance awareness and capacity to promote and implement climate–resilient and low–carbon responses**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Develop plan and materials for climate change awareness and capacity development (for training of trainers)	Climate change awareness and capacity building plan developed	# of climate change awareness and capacity development materials				MOE, MONREC (ECD)	MOHA (GAD), MOALI, MOIN, CSOs,As, media, NGOs, LG
Implement training and awareness–raising activities on climate change, targeted at landless, female–headed households and vulnerable communities, including ethnic groups	Improved awareness of public on the importance of ecosystem health and services in light of climate change impacts	# of training, education and awareness–raising activities, including vocational training, for vulnerable households				MOE, MONREC (ECD)	MOHA (GAD), MOALI, MOIN, CSOs, media,LG, NGOs, IAs
Provide capacity building training on vulnerability and risk assessment (inventory, climate hazard mapping), information management (database	MONREC has improved capacity to effectively respond to climate change impacts	# of trainings organised involving # of forestry professionals				MONREC	MOE, MOPF,IAs, NGOs

system) and dissemination (communication strategy)							
Organise capacity–building activities targeted at academic and research institutions to mainstream climate change	Improved academic and research capacity	# of capacity–building activities involving # of academic and research professionals				MONREC, MOHA (GAD), ARIs, MOPF	IAs, PS
Provide grants for university teachers and students to conduct research on climate change issues within the environment and natural resource management sectors	Research grants established and operationalised	# of university teachers and students engaged in climate change impact on these sectors				MONREC, MOHT, ARIs	MOPF, MOALI, IAs
Develop mass communication and dissemination strategy for communicating climate change to local communities with a gender–sensitive communications approach	Mass communication and dissemination strategy developed	# of media involved on communicating and disseminating climate change awareness				MONREC, MOIN, media	MOALI, CBOs, DPs

Objective for action area 6: **Promote multi–partnership mechanisms to support and scale up climate–resilient and low–carbon responses in the environment and natural resource management sectors**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Establish a climate change, environment and biodiversity working group involving multiple stakeholders	Working groups on climate change established	# of functional coordination mechanisms involving multiple stakeholders				MONREC (ECD, FD), PS	LG,CSOs, IAs, PS
Support CFUG and other networks' activities to enhance public participation in addressing climate change issues	Enhanced coordination and networking among CFUGs	# of national federations of community forestry and water user groups established and promoted				MONREC	MONREC, CSOs,LG, IAs such as WWF
Develop strategy and proposals for joint actions to access climate finance – for example, through GCF, AF, LDCF or the Climate Investment Fund	Strategy and proposals on climate finance developed	# of climate change projects implemented in # of climate change priority areas				MONREC	MOPF, CSOs, donors
Implement joint collaborative project involving government, NGOs, development agencies and international partners in targeted climate–sensitive and vulnerable areas of Myanmar	Joint collaborative projects implemented at local level	# of joint and collaborative projects addressing climate change issues in the natural resource management sector				MONREC	MOPF, CSOs, donors

3. Resilient and low–carbon energy transport and industrial systems for sustainable growth

3.1 Sectoral outcome

Climate–resilient and low–carbon **energy, transport and industrial systems** that support inclusive and sustainable development and economic growth.

3.2 Expected results and indicators

Sectoral expected results	Strategic indicators
Energy security for the country is based on generating a large share of its energy from renewable sources and high energy efficiency in domestic, industrial and other use	# of sectoral laws and norms that are inspired by sustainability concerns % implementation of the Green Growth Framework High share of energy generated from sustainable, renewable sources within the timeframe of the MCCS % of existing rules and regulations in industrial and transport sectors enforced, to ensure low–carbon and air quality thresholds are respected at national and urban levels # of incentive schemes in place to support the private sector to transition to low–carbon production, investment in renewables and management of production processes # of schemes and programmes that incentivise the introduction of solar power energy generation, biomass and other sustainable sources of renewable energy # number of businesses that introduce climate change in their business planning to ensure resilience and protect jobs # of green jobs created
Transport systems are adapted to heightened risks of disasters from new climatic conditions and sustainable through efficiency and low–carbon technologies	
Industrial systems are highly productive and competitive due to their climate–resilient, sustainable, low–carbon and green characteristics.	

3.3 Objectives for action areas

1. Integrate climate change into energy, transport and industry policies, plans, research and development, and extension services at national, sectoral and local levels
2. Establish and reinforce institutional arrangements to plan and implement climate change responses.
3. Establish financial mechanisms to mobilise and allocate resources for climate–resilient and low–carbon development.
4. Increase access to climate–resilient and low–carbon technologies and practices in the energy, transport and industry sectors.
5. Enhance awareness and capacity to promote and implement climate–resilient and low–carbon responses.
6. Promote multi–stakeholder partnerships to support and scale up climate–resilient and low–carbon responses.

3.4 Actors

Lead: MOEE, MOTC and MOI's Directorate of Industrial Collaboration

Focal agencies: alternates between MOEE, MOI and MOTC.

Other actors

- MONREC (ECD)
- MOALI
- MOPF
- MOTC (DMH)
- MOC
- MOIN
- MOHA

- MOSWRR
- Local government (LG) at state, regional, district and township levels, including city development committees (CDCs)
- Myanmar Engineering Society
- Private sector (PS) (UMFCCI)
- Academic and research institutions (ARIs)
- NGOs
- IAs
- IFIs
- CSOs
- Media
- UN agencies — UNIDO, UNEP and UN–Habitat
- Development partners (DPs)

3.5 Master plan 3: Resilient and low–carbon energy, transport and industrial systems for sustainable growth

Objective for action area 1: **Integrate climate change into energy, transport and industry policies, plans, research and development, and extension services at national, sectoral and local levels**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Integrate climate change within existing energy policies, plans and legal instruments (EIA, SEI, SEA)	Climate change integrated within existing energy policies plan and legal instruments, in particular the new National Energy Master Plan in a way that helps Myanmar reach iths INDC targets	# of policies and plans that integrate climate change; National Energy Master Plan includes climate change				MOEE	MONREC (ECD), MOPF, IAs
Develop a strategic energy plan and investment portfolio that ensures national security and lower GHG emissions through promotion of renewable energy technologies	Strategic energy plan and investment portfolio developed using i.a. renewable energy technologies	# of institutions that implement energy plan and investments				MOEE	MONREC (ECD) MOPF, IAs
Develop climate proofing/screening	Climate proofing screening	# of institutions that use				MOEE	MONREC

guidelines, methods and tools to integrate climate change risk into investments	guidelines, methods and tools developed	climate proofing/screening guidelines, methods and tools					(ECD), MOPF, IAs, PS, CSOs
Integrate climate change into transport sector policies and plans by developing guidelines and regulations for climate proofing transport infrastructure, port facilities, roads, railways and bridges	Climate change considerations reflected within transport sector policies and plans	# of transport infrastructures – such as port facilities, roads, railways and bridges – climate–proofed				MOTC, MONREC (ECD)	MOPF, CDCs, LG, PS
Integrate climate change in industrial development planning by developing climate–resilient planning guidelines and tools	Planning guidelines and tools developed	# of industrial plans that account for energy and water use and scarcity				MOI	MOPF, CDCs, PS, MONREC

Objective for action area 2: **Establish and reinforce institutional arrangements to plan and implement climate change responses**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Improve institutional mechanisms to better assess and plan climate change investment and interventions	Institutional mechanisms on assessment strengthened	# of government institutions trained on climate change investment assessment				MOEE, MOI, MOALI	PS, MONREC, MOTC,

							DPs, IAs
Integrate climate change within existing institutional mechanisms (NEMC)	Climate change integrated within existing institutional mechanisms (NEMC)	# of activities and initiatives carried out by NEMC				MOEE (NEMC), MONREC	MOI, MOALI
Establish and strengthen climate change cell within MOEE	Climate change cell established and strengthened within MOEE	# of climate change initiatives implemented by climate change cell				MOEE (NEMC), MONREC	MOI, MOALI

Objective for action area 3: Establish financial mechanisms to mobilise and allocate resources for climate–resilient and low–carbon development

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Develop a financial investment plan for the energy sector to finance and implement climate–resilient and low–carbon development activities	Financial mechanisms and guidelines — on tax and international finance — are developed	% of funds are being generated through tax and international finance				MOEE, MOPF	MOI, PS, IAs
Develop guidelines for including energy efficiency and low–carbon development priorities within the Environmental	Energy efficiency and low–carbon development integrated within the EMF	# of energy efficiency projects or initiatives funded by EMF				MOEE, MONREC, MOI	MOI, MOPF, DPs, PS,

Management Fund (EMF)			■				IFIs
Disburse climate change finance for low-carbon and resource-efficient technologies, namely for renewable energy technologies	Improved public and private sector access to climate finance for low-carbon and resource-efficient technologies, namely for renewable energy technologies such as hydropower (as designature in Myanmar's INDC)	# of public and private sector bodies that have access to climate finance		■		MOEE, MONREC, MOI	MOPF, DPs, PS, IFIs
Allocate revenue from natural resource extraction to a climate change fund—such as the EMF	Increased allocation to the climate change fund in question (such as the EMF)	% of fund allocated to climate change fund	■	■	■	MOEE	MONREC, MOALI, MOI, PS, IAs

Objective for action area 4: **Increase access to climate-resilient and low-carbon technologies and practices in the energy, transport and industry sectors.**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Introduce and promote innovative technology for renewable energy – for example, solar, wind, tidal and wave in the energy, transport and industry sector	Improved access to innovative technology for renewable energy from sustainable sources in the energy, transport and	# of innovative technologies for renewable energy from sustainable sources targeting the most vulnerable		■		MOEE	MOI, MOE, MOALI, PS, CSOs

	industry sector	households that have been scaled out and disseminated in five climate sensitive geographical areas					
Provide training and exposure to stakeholders on improved technology for energy and waste management to reduce GHG emissions and promote environmental sustainability	Stakeholders trained on energy and waste management technologies	# of people trained on improved energy and waste management				MOI, CDCs	MONREC, MOEE, PS
Identify and promote energy-efficient and climate friendly technologies and practices — such as improved cooking stoves, off- and mini-grid energy and access to biomass — with a gender-sensitive approach	Energy-efficient technologies and practices promoted	# of communities in Dry Zone, delta and coastal regions with access to improved cooking stoves, off- and mini-grid energy, access to biomass, etc.				MONREC, MOEE, MOALI, MOI	MOEE, IAs
Promote low-emission technologies — such as renewable energy — targeting the energy and industry sectors	Low-emission and renewable energy technologies promoted	# of industries using renewable energy and low emissions technologies				MOI, MOPF	MOEE, MONREC, PS, IAs
Introduce alternative modes of service delivery to improve the energy efficiency system in transport, building and industry sectors	Alternative modes of service delivery introduced	# of cities and urban areas promoting low-cost public transport modes, such as rapid transit, light rail transit, improved, fuel-efficient motor vehicles				MOI, MOTC, CDCs	MONREC, PS, IAs

Objective for action area 5: **Enhance awareness and capacity to promote and implement climate–resilient and low–carbon responses**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Carry out studies looking at climate change impact and implications in the energy, industry and transport sectors	Climate change impact studies carried out	# of development plans revisited and updated to reflect the climate change scenario and impact				MOEE	MOI, MOTC, MONREC, MOE, ARIs
Carry out risk assessment of public infrastructure and develop risk reduction and mitigation plans	Risk assessment of public infrastructure carried out	# of towns and cities that implement building codes and municipal/town planning and regulations				CDCs, MOC	MOEE, MONREC, PS, IAs
Prepare training guidelines and module on energy efficiency and low–carbon development of the energy sector	Training guidelines and module developed	# of sectors (energy, industry, building and transport) and agencies with capacity to assess the implications of climate change in their sector				MOEE, MOI, MOALI,	PS, MOTC, MONREC, DPs, IAs
Provide training to government and private sector stakeholders on climate proofing and screening guidelines and methods	Capacity of government and private sector on climate proofing and screening developed	# of government and private sector stakeholders that have received training on climate screening and assessment				CDCs, MOC	MOEE, MONREC, PS, IAs

Establish weather and climate information services in cities and towns, including rural areas	Weather and climate information services established	# of cities and towns that have established weather and climate information for public access				MOIN, CDCs, MOC	MOTC, (DMH), MOHA (GAD), MOSWRR, MOIN

Objective for action area 6: **Promote multi-stakeholder partnerships to support and scale up climate-resilient and low-carbon responses**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Develop public-private partnership (PPP) procedures and guidelines for private sector investment in low-carbon energy production and consumption in industrial, construction, mining and other sectors	Institutional mechanism and partnership modality developed	# of private sector actors engaged in climate change investments				MOEE, MOI	PS, MOPF, IFIs
Establish linkages and collaboration between local government (CDCs) and international and national actors to increase number of buses, trains, cars that use low-emission technologies	Increased collaboration between local government, private sector and other agencies	# of buses, trains and cars using low-emission technologies – for example, hybrid cars				MOEE, MOI	MOPF, MONREC, PS, DPs, MOALI

Develop regulations to promote tax exemptions, loans and grants as incentives for clean energy investment for private sector and international cooperation	Regulations to promote tax exemptions, loans and grants developed	# of private sector and the international community increasing investment in low-carbon responses				MOEE, MOI	PS, MOPF, IFIs

4. Resilient, inclusive and sustainable cities and towns where people can live and thrive

4.1 Sectoral outcome

All township and city dwellers, including the most vulnerable, are safe from increased risks of rapid- and slow-onset natural disasters and live in sustainable, inclusive, **low-carbon, climate-resilient towns.**

4.2 Expected results and indicators

Sectoral expected results	Strategic indicators
Town and city residents have access to resilient infrastructure and services that protect them from natural hazards of increased intensity, continue to perform during and after shocks and are best adapted to the new climatic context	Local and national spatial and land-use planning frameworks include climate change considerations from a low baseline # of laws, policies and by-laws for urban management and development that include climate change, from a low baseline % of new, converted, retrofitted infrastructure, basic services and buildings, that are climate change responsive, from a low baseline % of town planners, architects and engineers who can to assist townships and cities to plan and manage with climate change considerations from a low baseline # of township and city climate change action plans based on ecosystem adaptation or other approaches that support development of green cities
Climate change resilience, low-carbon development and social inclusivity approaches are defining elements of urban planning and development, providing mitigation and adaptation co-benefits	
New buildings are designed and constructed to be energy- and resource-efficient and resilient to natural hazards and disasters; they emit less carbon and produce savings from reduced energy consumption, thus providing equity and affordability	

	# of real estate, developers and private industries who integrate climate change in their development projects

4.3 Objectives for action areas

1. Integrate climate change into urban development and management legal, policy, normative and planning instruments.
2. Build climate change–responsive institutional and decentralised processes in urban settings.
3. Build financial capacities for addressing climate change at local level, using multiple sources of funding.
4. Increase access to technology for urban climate resilience.
5. Increase the human resource capacities and awareness of CDCs and townships to address climate change.
6. Promote public–private and civil society partnerships at town and city levels for climate change resilience and sustainable urban development.

4.4 Actors

Focal agency: Ministry of Construction (MOC): Department of Urban and Housing Development (DUHD)

Leads: MOC (DUHD); CDCs and townships

Other actors:

- MOHA: GAD
- MOEE
- MOTC
- MONREC
- RRD

- National Environmental Conservation and Climate Change Central Committee (NECCCCC)
- State/Region Committees for Environmental Conservation and Climate change
- CDCs, including:
    - Mandalay City Development Committee (MCDC)
    - Yangon City Development Committee (YCDC)
    - Nay Pyi Taw Development Committee (NPTDC)
- Township development committees
- UN: UN–Habitat, UNEP and UNIDO
- Development partners(DPs)
- Local government: regional, district and township
- NGOs
- CSOs
- CBOs, including local ward/neighbourhood groups
- International technical experts (ITEs)
- International technical support (ITS)
- Private sector, including UMFCCI and other business associations
- Myanmar Engineering Society

4.5 Master plan 4: Climate–resilient, inclusive and sustainable towns and cities where people can live and thrive

Objective for action area 1: Integrate climate change into urban development and management legal, policy, normative and planning instruments

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Mainstream climate change adaptation and mitigation into legal and policy framework for urban development and management	All main urbanisation policies – National Urban Policy, Housing Framework and National Spatial Development Framework – include climate change	# of laws, policies and regulations that include climate change from a current low baseline				MOC	CDCs, MOHA (GAD)
Develop by–laws at township and city level that incentivise low–carbon development and require climate–resilient development	By–laws in place within: 1 year in NPTDC 3 years in YCDC and MCDC 10 years in other townships	# by–laws in main cities integrating climate change from a low baseline # by–laws in townships integrating climate change from a low				CDCs	MOE, MOEE, PS

		baseline					
Integrate energy efficiency, environmental considerations and disaster resilience into building regulations	Existing building regulations reviewed for opportunities to integrate energy efficiency and disaster resilience Myanmar National Building Code adopted within one year, integrating energy and water supply efficiency provisions, green buildings and hazard–sensitive construction EIAs systematically applied as needed	# of laws, norms, codes analysed from existing baseline documents # of codes under approval with efficiency and disaster–sensitive provisions (positive baseline) # of other infrastructure and planning regulations that integrate resource efficiency and disaster–sensitive measures				MOC	CDCs, MOHA (GAD)
Develop climate change and disaster risk management action plans at urban and local levels	Existing plans reviewed and gaps to be addressed by climate change and disaster risk management plans identified within two years Climate change adaptation, mitigation and	# of plans in townships and CDCs from a baseline composed of examples in some towns and cities				CDCs	Local ward/ neighbour hood groups; ITEs

	disaster risk management plans exist in each CDC within five years Greater Yangon plan integrates climate change and disaster risk management within five years						
Undertake climate risk assessments for essential public buildings and emergency services	Risk assessment of public infrastructures carried out and risk reduction and mitigation plans developed within three years in main cities and towns Training provided to government and private sector stakeholders on climate proofing and screening guidelines and methods within five years Climate–smart building codes and regulations are reinforced within ten years	# of risk assessments in main townships from a low baseline in townships and some examples in CDCs				CDCs, MOC	MOE, MOEE, MONREC, PS, IAs

Objective for action area 2: Build climate change–responsive institutional and decentralised processes in urban settings

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Strengthen urban institutional processes that promote sustainable transport	Feasibility studies for urban public transport developed at city level within two years Urban public transport plans developed for implementation in collaboration with private sector with financing identified, within five years Public transport authorities established in urban areas to develop and implement mass transit systems within 15 years	# of urban public transport authorities from a zero baseline				CDCs	MOC
Strengthen local governance ability to address climate change with focal points for climate change adaptation and resilience	Local governance processes reviewed to assess roles in addressing climate change Townships and CDCs have nominated focal points for climate change	% of townships including focal points for climate change resilience, from a low baseline				MOHA (GAD), CDCs	MOC, ITEs

Objective for action area 3: **Build financial capacities for addressing climate change at local level, using multiple sources of funding**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Increase budgeting at local level for climate change adaptation and mitigation	Feasibility studies for township-level budgeting for climate change adaptation and mitigation carried out; financing plans for townships developed within three years Agreed percentage of CDCs' annual budget allocated to climate change activities within 6–10 years, and through a taxation system within 15 years	# of local taxes that can be related to climate change activities				CDCs	MOC
Increase capacity of local authorities to access additional sources of funding, including national and international climate financing	CDCs and townships access national and international finance for local resilience initiatives within 5–10 years	% of budget and extra-budgetary investment from national and international climate change sources				CDCs	PS, IAs, international climate funds

Objective for action area 4: Increase access to technology for urban climate resilience

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Assess technology gaps for addressing and monitoring climate change adaptation and mitigation, including disaster-resilient buildings and technologies such as urban ecosystem-based adaptation interventions and nature-based solution for green cities.	Assessment of technology gaps carried out and action plan developed within two years Local authorities trained and supported and have the capacity to understand measures and technologies to employ for adaptation and mitigation within 5–7 years	# of technology gap assessments conducted				CDCs	MOC
Pilot cost-effective adaptation and mitigation technologies that also promote green cities in line with Myanmar's plan for greening cities	Local authorities have knowledge of cost-effective green technologies and access to evidence base on how they can contribute to climate action.	# of green technologies employed for adaptation and mitigation purpose in green cities				CDCs	MOC; ECD

Objective for action area 5: **Increase human resource capacities and awareness of CDCs and townships to address climate change**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Improve urban authorities' capacity to use basic technology for data collection, data management and geographic information systems (GIS)	Assessment of capacity gaps carried out and action plan developed within two years Local authorities access and receive training on skills to use a number of tools within five years E-governance system reactivated to promote GIS mapping and other good practices within five years	# of staff trained from a low baseline # of townships targeted				MONREC (ECD, DoF) DMH, RRD, MOC, MOHA, CDCs	CDCs, IAs, ITS
Strengthen capacity of local government officials to assess vulnerability and plan for climate change adaptation from township to national level	Training on assessing vulnerabilities, climate change impacts and adaptive measures provided for staff in three major cities within two years Training for staff in all townships provided within five years	# of vulnerability assessments produced from a low baseline # of plans townships and CDCs have generated autonomously without international expertise, from a low baseline				MONREC (ECD, FD, DMH), RRD, MOC, MOHA,	CDCs, IAs, ITS

						CDCs	
Increase sectoral capacity for effective liquid and solid waste management	Existing systems reviewed and action plan for improvement and scale up devised within two years Financing for liquid and solid waste management systems identified, including for planned urban expansion within five years Adequate liquid and solid waste management systems to service urban populations within ten years	# of systems reviewed # of improved liquid and solid waste management systems from the current baseline				CDCs, utility companies	MOC, PS
Increase town planning capacities to integrate climate change into spatial strategic urban and land–use planning	National town planners lead CDCs' strategic urban plans and land–use plans integrating climate change Training provided to government and private sector stakeholders on climate proofing and screening guidelines and methods within five years	# of town planners, engineers and architects who have been trained, from a low baseline				ECD, FD, DMH, RRD, MOC, MOHA, CDCs	CDCs, IAs, ITS

Revise existing education curriculum to include climate change (particularly for engineering and architecture at university level)	Existing curricula reviewed to identify entry points for including climate change within two years University and technical institute curricula for engineering, architecture and planning integrate climate change and disaster risks reduction techniques New curricula developed and rolled out to engineering and architecture courses within five years	# of curricula in relevant topics integrating climate change from the current baseline, including the basics of environmental planning				MOE, MOC	Universities, IAs
Implement campaigns for community awareness of likely impacts of climate change and basic disaster risk reduction (DRR) techniques	Modules prepared within two years Training provided to heads of 100 households to capacitate them to provide ongoing information on DRR measures to their own communities	# of campaigns conducted from a low–baseline				CDCs, NGOs	CSOs, PS, neighborhood wards

Objective for action area 6: **Promote public–private and civil society partnerships at town and city level for climate change resilience and sustainable urban development**

Activity	Output	Indicator	Timeframe (Years)			Responsibility	
			3	8	13	Lead	Support
Establish multi–stakeholder partnerships and participation and debate mechanisms in local climate action at township level	Functioning multi–stakeholder groups exist at township level engaging on climate change impacts, adaptation and sustainability, promoting low–carbon and sustainable investments	# of functioning multi–partner committees # of public debates and campaigns				GAD, RRD, DMH, CDCs, PS, CBOs, NGOs	NGOs, CSOs
Establish PPPs to encourage investments in climate–resilient, low–carbon developments through zoning, planning and incentive mechanisms	Private sector sensitised through forums and business cases within two years Procedures in place for private sector projects to follow building regulations and codes and invest in energy– and water–efficient systems, low–carbon construction and urban industrial and commercial ventures, within five years	# of public private forums from some existing baseline examples # of public–private partnerships and projects for low–carbon development from a low baseline				PS, MOC, ECD, CDCs	CDCs, MOHA, MONREC

5. Climate risk management for people's health and wellbeing

5.1 Sectoral outcome

Communities and economic sectors are able to respond to and recover from **climate–induced disasters, risks and health impacts** and build a healthy society.

5.2 Expected results and indicators

Sectoral expected results	Strategic indicators
Climate risk management system is well established, robust and nationally integrated to respond effectively to increased intensity and impact of risks and hazards on people's health and wellbeing	# of climate risk management systems developed, including risk– informed policy development and planning guidelines, tools and framework # of local communities, local government an CSOs with access to risk mapping, early warning system and disaster–resilient technologies for disaster preparedness and emergency management and response # of states and townships with capacity for climate risk management planning # of social protection policies, strategies, budgeting and plans that integrate climate change # of private sector companies, development partners, government bodies, CSOs and international communities who allocate % of resources to social protection and resilience–building activities # of states and townships that integrate climate change in their budgeting system to finance climate risk management and social protection
Myanmar has improved social protection, gender consideration and risk finance capacity to prepare for and recover from potential loss and damage resulting from climate change	
Myanmar's health system is improved and can deal with climate–induced health hazards and support climate–vulnerable communities to respond effectively to disaster and health hazards from climate change	

	activities at national and sub-national levels # of laws, by-laws, policies and plans within the health sector that integrate climate change # of health professionals and government staff with capacity for climate risk and disaster mapping, early health hazard detection and forecasting and resilient planning # of households in climate-vulnerable states or regions and townships with access to improved health and sanitation practices and resilient health infrastructures

5.3 Objectives for action areas

1. Integrate climate change into disaster risk reduction, social protection and health legal, policy and normative instruments.
2. Build institutional and decentralised processes to plan and implement climate change responses.
3. Build financial capacities for addressing climate change at local level, using multiple sources.
4. Increase access to technology for climate risk management and improved health and wellbeing.
5. Increase human resource capacities and awareness of communities, government, private sector and CSOs to address climate-induced risk and disasters.
6. Promote public-private and civil society partnerships at national and sub-national level for climate change resilience and sustainability.

5.4 Actors

Leads:

- Ministry of Social Welfare, Relief and Resettlement (MOSWRR)

- Ministry of Transport and Communication (MOTC): Department of Meteorology and Hydrology (DMH)
- Ministry of Health and Sport (MOHS): Department of Public Health

Other actors

- National Disaster Management Committee and its members (NDMC)
- MOHA: police, GAD, fire service
- MONREC (ECD, Remote Sensing and GIS survey Dept)
- MOALI: IWUMD
- MOPF
- MOC
- MOIN
- MOE
- Local government (LG: state, district, township)
- Representatives from line ministries with DRR/climate change adaptation activities
- DRR–WG
- UN: UNDP, FAO, UN–Habitat, UNICEF and UNEP
- JICA
- ADBC
- RIME
- NGOs, INGOs
- CSOs, CBOs
- Private sector (PS)
- DPs
- IAs
- Media
- Universities.

5.5 Master Plan 5: Climate risk management for people's health and wellbeing

Objective for action area 1: **Integrate climate change into disaster risk reduction, social protection and health legal, policy and normative instruments**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Review existing policies, strategies and guidelines to identify gaps and scope for integrating climate change	Review paper developed, looking into existing policies, strategies and guidelines	# of policies, strategies and guidelines reviewed				MOSWRR, MOHS, MONREC	MOTC, MOALI, MOHA
Integrate climate change into DRR, social protection, gender equality and health policies and plans for risk–informed policy development and planning	DRR, social protection and health policies and plans integrate climate change	# of policies and plans that integrate climate change				MOSWRR, MOHS, MONREC	MOTC, MOALI, MOHA
Provide support to townships or districts to develop and update disaster preparedness plans to include climate change risks and hazards	Climate change integrated into local–level plans and responses	# of townships or districts that have developed and updated disaster preparedness plans to include climate change risk and hazards				MOSWRR, DMH	LG, NGOs, CBOs, IAs
Implement DRR and climate change adaptation activities and scale these up in vulnerable townships in the delta, Dry	DRR and climate change adaptation activities implemented in vulnerable	# of townships that have implemented DRR and climate change adaptation activities				MOSWRR, DMH	LG, NGOs, CBOs,

one, coastal and mountain regions	townships	targeting # of households					IAs
Update and implement multi-hazard preparedness and response plans to include climate induced disasters	Existing multi-hazard preparedness response plan updated to include climate change	# of multi-hazard preparedness and response plans at national and local level updated to include climate change				NDMC, MOSWRR, MOALI, MOHS	GAD, LG, DPs, CSOs, CBOs
Implement activities to reduce climate-induced, water-related health hazards through increased access to safe drinking water, improved sanitation and behaviour change communication	Increased access to safe drinking water and improved sanitation for climate change-vulnerable households	% of reduction in climate-induced, water-related health disorders (diarrhoeal diseases) among residents of townships in Central Dry Zone				MOHS	NGOs, CBOs, LG, DPs
Pilot social protection measures — such as social transfers, livelihood diversification, weather-indexed crop insurance and access to credit and assets — in five vulnerable regions	Social protection measures piloted	# of household in five vulnerable regions benefiting from social protection measures				MOSWRR	MOPF, DPs, PS MONREC MOALI, NGOs, LG

Objective for action area 2: **Build institutional and decentralised processes to plan and implement climate change responses**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Strengthen disaster management committees for effective preparedness and response, including additional human resource development in the context of climate change	Improved capacity of disaster management committees for integrating climate change	# of ministry staff who have received # trainings on climate change adaptation and DRR integration	■			MOSWRR, MONREC (ECD)	MOTC, MOHA (GAD), LG
Conduct health vulnerability assessment and develop health adaptation planning to address climate change impacts.	Up-to-date knowledge on key risks to the health sector	# of planning documents that address health risks under climate change	■			MOHS	
Carry out study to explore national, regional and district linkages and potential mechanisms for climate risk management	Study conducted	# of institutional mechanisms and networks reviewed	■			MONREC, MOSWRR, MOTC (DMH)	MOHA, MOALI, LG, IAs
Develop new institutional mechanism for effective early warning system and communication	New institutional mechanism set up	# of national, regional and district linkages set up for effective early warning system and communication	■			MONREC, MOSWRR, MOTC (DMH)	MOHA, MOALI, LG, IAs
Strengthen the National Disaster	National Disaster Management	# of initiatives on climate		■		MOSWRR	MONREC

Management Technical Center in Hintada to provide technical support on climate–induced risk and climate change modules	Technical Center strengthened with climate change modules	change adaptation carried out by National Disaster Management Technical Center					, MOTC, MOPF, MOHA, UCSDC

Objective for Action Area 3: Build financial capacities for addressing climate change at local level, using multiple sources.

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Integrate climate change within national and sub–national DRR planning and budgeting	Climate change integrated in national and sub–national DRR planning and budgeting systems	# of sub–national governments in the delta, coastal, Dry Zone and mountain regions that have allocated % of budget for climate change–focused DRR activities				MOSWRR, MOPF	IFIs, MOTC, MONREC (ECD)
Provide training and exposure visits to build capacity of relevant institutions to improve financial management capacity to explore and manage funds for DRR and climate change adaptation	Training and exposure visits organised for government officials	# of government officials who have received training and participated in climate change–related financial management exposure visits				MOSWRR, MOPF	IAs, PS, MONREC (ECD), MOTC (DMH), IFIs, CSOs
Mobilise a national contingency fund to	National contingency fund	% of contingency fund that				MOSWR	IFIs,

support responses to climate risk and disasters	mobilised to include climate change	supports of climate risk and disaster responses				R, MOPF	MOTC, MONREC (ECD)

Objective for action area 4: Increase access to technology for climate risk management and improved health and wellbeing

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Provide training to government staff on ICT and other skill–based areas for effective climate change adaptation and DRR responses	Number of trainings organised	# of government staff who are trained in ICT and other skill–based areas for effective climate change adaptation and DRR responses				MOSWRR, MOTC (DMH)	MOHS, MONREC (ECD), MOI, IAs, UMFCCI
Develop early warning system that is accessible around the day to increase public access to weather and climate–related forecasts	Early warning system strengthened	# of communities who can an early warning system that is accessible around the day				MOTC (DMH), MOSWRR, MOALI, MONREC	MOI, IAs
Improve the efficiency of existing systems by modernising equipment, instruments and tools (ocean, marine)	Improved quality of early detection and forecasts	# of DMH staff with capacity to use weather and climate forecasting hardware and software				MOTC (DMH)	Union and state governm

							ent, CSOs, IAs, MOHA
Set up water, air and food assessment laboratory or facilities in MOHS and in three major cities	Water, air and food assessment laboratory or facilities established	# of major cities with water, air and food assessment facilities				MOHS, CDCs, MONREC (ECD)	IAs
Retro-fit and climate-proof critical infrastructure – including schools and hospitals – in climate-vulnerable townships	Critical infrastructure retro-fitted and climate-proofed	# of schools and hospitals in climate-vulnerable townships retro-fitted and climate-proofed				MOSWRR, MOPF	MOTC, IAs, MOHS, MOC, LG, NGOs
Develop climate and weather information services – such as an agro-weather information management system – to generate information for communities	Weather and climate information services developed	# of Regional Climate Model generation capacity developed involving number of modelers				DMH (MOTC), MSWRR, MOALI	MONREC (Remote Sensing and GIS survey Dept), NGOs, INGOs, MOHA, CDCs

Train government officials and development practitioners in scientific and technical skills, such as vulnerability assessment and risk and hazard mapping	Government official trained on vulnerability assessment and risk mapping	# of government agencies that are making vulnerability and multi-hazard maps available for all the township within vulnerable districts and states				MOTC (DMH)	MONREC, MOALI, MOSWRR, LG, DPs
Set up national and sub-national-level (in delta, Dry Zone, coastal, flood and mountain regions) integrated surveillance systems for climate-sensitive diseases, with metrology data for early health warning system	Disease surveillance systems established	# of national and sub-national level disease surveillance systems that are in place				MOHS departments	MOTC (DHM), DPs, CSOs

Objective for action area 5: **Increase human resource capacities and awareness of communities, government, private sector and CSOs to address climate-induced risk and disasters.**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Provide training to local communities on shelter management, search and rescue in the context of climate change	Communities trained on shelter management, search and rescue	# of communities in vulnerable areas (dry zone, delta)- who are trained in disaster management				MOSWRR	MOC, LG, DPs, CBOs
Provide training and exposure to DMH staff for climate change research	Training and exposure visit for DHM staff	# of DMH staff who have been exposed to, and built their capacity in, climate change				MOTC (DHM)	MONREC, MOHS, internatio

		research					nal and regional collaboration
Raise awareness on the health impacts of climate change and provide training on mainstreaming climate change in health programming and planning.	Training and exposure visit for national and local government health officials	# of health staff who have increased their awareness and understanding of the health impacts of climate change				MOHS	
Establish research grants to DMH, sectoral agencies and university students to build their capacity to generate knowledge and evidence that is useful for climate risk management	Research grants established and made available	# of research grants made available to DMH, sectoral agencies and university students				MOSWRR, MOTC	MOHA, DPs, NGOs, CBOs
Incorporate climate change and health modules in school, university and training curricula	Climate change and health modules available and integrated into school, university and training curricula	# of climate change and health modules in curricula				MOHS, MOE	

Objective for action area 6: **Promote public–private and civil society partnerships at national and sub–national levels for climate change resilience and sustainability**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Form new – or revitalise and upgrade existing– district, township, state and national level multi–stakeholder disaster risk management committees, integrating climate change within their portfolios	Multi–stakeholder disaster risk management committees set up and strengthened at all levels	# of district–, township–, state– and national–level multi–stakeholder disaster risk management committees formed or revitalised	■			MONREC (ECD), MOTC (DMH), MOSWRR	LG, PS, CSOs, DPs
Set up a network and DMH links with international networks to exchange information and knowledge on climate and disaster forecasting	Regional and international networks and links set up	# of DMH initiatives and links with regional and international agencies on climate change			■	MOTC (DMH), MOSWRR	MOIN, MONREC, ECD, IAs
Design and implement multi–stakeholder projects on climate risk management in climate–vulnerable areas	Multi–stakeholders engaged in designing and implementing projects	# of joint projects that are implemented in climate–vulnerable townships and districts		■		MOSWRR, DHM	MOPF, MONREC, LG, DPs, PS, CSOs
Develop multi–stakeholder, social protection and resilience–building projects for Green Climate Fund and Adaptation Fund targeted to the most	Projects for Green Climate and Adaptation Funds developed	# of government officials from respective ministries engaged in developing proposals to target the Green Climate and	■	■		MOSWRR	MOPF, MONREC, MOHS, LG, PS,

vulnerable townships in Dry Zone, delta and coastal areas		Adaptation Funds					CSOs, UN

6. Education, science and technology for a resilient society

6.1 Sectoral outcome

Strengthened **education, awareness and technological systems** that foster a climate–responsive society and human capital to design and implement climate–resilient and low–carbon development solutions for inclusive and sustainable development.

6.2 Expected results and indicators

Sectoral expected results	Strategic indicators
Capacity of actors in the education sector is developed to integrate principles of sustainability, low–carbon development and resilience into the curricula at primary, secondary and tertiary levels	# of policies, strategies and action plans in the education, science and technology sectors that integrate climate change # of primary, secondary and higher–level institutions that integrate climate change in their curriculum, courses and teaching materials # of university graduates and researchers trained and capacitated to carry out independent and innovative work on climate change # of ICT materials – including research and extension products such as research papers, thesis, policy papers and technical working papers – that reflect climate change issues and solutions # of university professors, lecturers, school teachers and university graduates who can help the government and private sector consider climate change in their planning and management
Capacity of actors in the science, technology and education sectors is developed to generate research and build and use climate information systems	
Institutional capacity and multi–stakeholder partnership are enhanced to access and manage climate financing to ensure climate–responsive education, science and technology	

	# of households in climate–vulnerable states and townships that are aware of the consequence of climate change and can identify response measures # Increase in % of climate financing for information, knowledge, research and capacity building from government, development agencies, international organisations and other sources # of networks and partnerships among different actors set up to promote climate–responsive education, science and technology # of joint collaborative projects to strengthen education, science and technology to promote climate resilience and low–carbon development strategies and actions at national and sub–national levels.

6.3 Objectives for action

1. Ensure that legal, policy and normative instruments in education, science and technology integrate climate change.
2. Build climate change–responsive institutional and educational processes.
3. Build financial capacities for strengthening climate information services, using multiple sources.
4. Increase access to climate information services, research and technological innovations.

5. Increase human resource capacities on climate research and knowledge management and build climate change awareness in communities, government, private sectors and CSOs.
6. Promote multi–stakeholder partnerships at international, national and sub–national levels for climate change education, science and technology.

6.4 Actors

Lead:

- Ministry of Education, including the following departments:
- Department of Educational Research, Planning and Training
- Basic Education, and
- Higher Education.

Other actors

- Department of Research and Innovation
- MOIN: Department of Information, Department of Public Relations
- MOSWRR: Department of Relief and Resettlement
- MOPF
- MOALI
- MOTC: DMH
- MONREC: ECD
- Research institutes under different ministries
- Academic and research institutions (ARIs), including universities: including Mandalay Technological University (Faculty of bio–technology); Yangon Technological University (University of Distance Education); Yangon University (Department of Geography); University of Agriculture (University of Forestry)
- Local government (LG): regional/state, district and township
- UN: UNICEF, UN–Habitat, UNEP, UNDP

- EU
- CSOs
- Climate Technology Centre Network (CTCN), under UNFCCC
- Public and private sectors, including media
- Youth, children's, women's and other social groups.

6.5 Master plan 6: Education, science and technology for a resilient society

Objective for action area 1: **Ensure that legal, policy and normative instruments in education, science and technology integrate climate change.**

Activity	Output	Indicator	Timeframe (years)			Responsible	
			3	8	13	Lead	Support
Develop a new science and technology strategy that integrates climate change	New strategy on science and technology developed	# of government bodies and universities investing in climate science and technology				MOE	MONREC (ECD), IAs
Revise curricula and syllabus of all the main universities and schools to integrate climate change	New curricula developed integrating climate change	# of university and college courses and curricula that integrate climate change within environmental science, forestry and other fields, such as social or life sciences				MOE, ARIs	MONREC (ECD), MOPF
Integrate climate change in education sectoral planning systems at national and local levels by developing guidelines and tools	Climate change integrated in education sectoral planning systems	# of activities on climate change reflected in education sector plan				MOE	MOPF, MONREC (ECD)

Objective for action area 2: Build climate change–responsive institutional and educational processes

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Develop guidelines and procedures for integrating climate change within existing formal and informal education institutions, including training centres	Guidelines and procedures for integration developed	# of students, government staff and researchers benefiting from guidelines and procedures integrating climate change the climate change training centre				MOE, MOPF	MONREC (ECD), ARIs, DPs
Set up climate change coordination mechanisms in the education sector to establish better linkages and synergy	Coordination mechanism set up	# of education institutions that are part of the climate change coordination mechanism				MOE, MOPF	MONREC, ECD, ARIs, DPs
Form new or revitalise existing organisation to mobilise women, youth, children and vulnerable groups to ensuring the engage on climate change	Institutional mechanism formed or revitalised	# of groups, forums or institutions formed or revitalised for climate action				MOE	Other government agencies, LG, NGOs, donors
Develop strategies to strengthen the MOE's capacity to integrate climate change within institutional portfolios	Strategy on developing MOE's institutional capacity to manage climate change developed	# of MOE initiatives to build its institutional mandate and capacity to integrate climate change in education				MOE	Other government agencies, LG, NGOs, donors

Objective for action area 3: **Build financial capacities for strengthening climate information services, using multiple sources**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Set up climate change research fund and develop guidelines to enhance education and research climate change	Climate change research fund set up and guidelines developed	# of research projects and innovations supported through the research fund				MOE, MONREC (ECD)	MOPF, IAs
Finance projects on climate change–related education, capacity and research	Climate change–related projects implemented	# of climate change and education research and development projects financed				MOE, MONREC (ECD)	Relevant ministries, IAs
Develop and circulate budget guidelines for climate change integration in education, science and technology	Budget guidelines for climate change developed	% of education and science and technology development budget allocated to integrating climate change				MOE, MOPF	MONREC (ECD), LG, CSOs

Objective for action area 4: **Increase access to climate information services, research and technological innovations.**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Implement multi-disciplinary technology and research-focused projects on climate change	Multi-disciplinary technology and research projects on climate change implemented	# of multi-disciplinary technology and research projects implemented in climate-vulnerable areas				MOE, ARIs	MOPF, MONREC (ECD), IAs
Organise technology fairs at national and local levels to disseminate climate-smart technologies and knowledge	Improved access to information and knowledge on climate-smart technologies	# number of technology fairs organised at national and local levels				MOE	Other governme nt agencies, LG, NGOs, donors
Develop and promote a number of ICT events and materials to disseminate information on climate-resilient technology to youth, children, women and other vulnerable social groups	Improved ICT systems at national and sub-national levels	# of ICT events and materials developed and promoted				MOIN	MONREC (ECD), MOC, DMH, IAs

Objective for action area 5: **Increase human resource capacities on climate research and knowledge management and build climate change awareness in communities, government, private sectors and CSOs.**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Develop, package and distribute public awareness-raising materials on climate change	Public awareness-raising materials developed and provided to members of the public	# of people in climate-vulnerable areas with access to public awareness-raising materials				MOIN, MOE	MONREC, MOE, CSOs, media, PS, LG
Provide training to all relevant ministries to raise awareness on how to integrate climate change resilience into programme and project cycles	Capacity of ministerial staff on climate change enhanced	# of training events organised for government staff				MOE	GAD, MONREC (ECD), IAs
Provide training to all relevant ministries to raise awareness on how to integrate gender into climate change-resilient programmes and project cycles	Ministerial staff capacity on the linkages between gender and climate change enhanced	# of training events organised for government staff				MOE	CSOs, IAs
Conduct training courses for school teachers on climate change	School teachers sensitised on climate change	# of teachers at # of schools in climate-vulnerable areas that have received training				MOE, MONREC (ECD)	NGOs, IAs

Provide training on conducting on climate change research to academic and research institutions and professionals	Capacity in academic and research institutions is strengthened	# of training events and # of research projects on climate change that were organised and supported				MOE	GAD, MONREC (ECD), IAs
Organise events to mobilise women, youth and children on climate change awareness and capacity building activities	Women, youth and children trained and mobilised	# of events targeted to youth, women and children				MOIN	MOSWRR, MONREC, LG, media
Organise events to increase awareness of media on climate change	Training and awareness-raising activities for media organised	# of media disseminating climate change information targeting climate-vulnerable townships and districts				MOIN	MONREC (ECD), LG, state and private media, CSOs

Objective for action area 6: **Promote multi-stakeholder partnerships at international, national and sub-national levels for climate change education, science and technology.**

Activity	Output	Indicator	Timeframe (years)			Responsibility	
			3	8	13	Lead	Support
Set up climate change working group within MOE for climate change awareness, capacity and technology	Multi-stakeholder partnership modality and mechanism set	# of collaborative projects on public awareness, capacity building and promoting				MONREC,	DPs, CSOs, PS

transfer	up	innovation				MOPF	
Organise joint climate change science and technology fairs at national and regional/state level	Climate change science and technology fairs organised	# of science and technology fairs organised and # of visitors attending each event				MONREC, MOPF	MOPF, PS, IAs
Implement joint government – donors – CSOs – private sector events on climate science, education and technology, targeting vulnerable areas	Joint collaborative project implemented	# of projects set up, and increased % of international funding secured, for climate change resilience and low carbon–related technology transfer				MONREC, MOPF	PS, IAs
Set up media and private sector network for climate change information and knowledge exchange	Networks among the media and private sector set up	# of functions of the media and private sector on climate change				MOIN	MOSWRR, MONREC, LG, media, PS, NGOs, DPs

Annex I: Detailed strategy formulation process

1. Description of the process

The MONREC[i] has coordinated the formulation of the Myanmar Climate Change Strategy 2018–2030 (MCCS) and its related master plan throughout the formulation and adoption process. It reached agreement on the methodology in December 2014, started the formulation in April 2015 and completed it in 2016.

The MCCS is one of the key outputs of the MCCA, a programme implemented by the United Nations Human Settlements Programme (UN–Habitat) and the United Nations Environment Programme (UNEP) with funds from the European Union, from 2013 to 2018.

The MCCS was formulated through an interactive process of evidence generation, involving consultations with a multiplicity of actors at national, sub–national and local levels. Most of these consultations were under the MCCA's TWG, comprising representatives from government ministries, universities, the three main city development committees, the private sector (UMFCCI), civil society and development partners such as UNDP, Action Aid, Braced Programme and DRR Working Group. A number of other development partners, NGOs, civil society organisations (CSOs), the Youth Forum, township administrations and citizen groups also participated in consultations and interviews or provided direct inputs.

The MCCS therefore reflects multiple views and perspectives and captures this diversity effectively. Designed with principles of inclusion and oriented to the delivery of results, the MCCS can be monitored as a long–term programme or project. As well as direct consultations and interviews, the drafting team reviewed policy documents and secondary data, working on all available published policies, laws, documents and available advanced drafts with national importance.

Participants of the MCCA inception workshop in December 2014 agreed the methodology for the strategy. Workshop participants included the TWG, government officials from key ministries and representatives from UN agencies, development partner organisations, NGOs, local government, and private sector organisations. They discussed the process for formulating the MCCS – including priority areas for consultations at national, sub–national and local level – and set up four workstreams:

1. Defining the scope of the MCCS
2. Understanding vulnerability, risks and mitigation potential

[i] Formerly the Ministry of Environmental Conservation and Forestry. It became MONREC in April 2016.

3. Developing and disseminating the MCCS, and

4. Periodic review and updating.

Under the direction of the ECD, the MCCA had delivered workstreams 1 to 3 by July 2016. It will continue delivering Workstreams 3 (dissemination) and 4 for the duration of its lifespan. The MCCS has also set up other mechanisms to ensure Workstream 4 is delivered.

ECD has played a central advisory role to guide the team in each phase of research, supported by MCCA and the strategy drafting team comprising International Institute for Environment and Development (IIED), MERN and the MCCA.

Every effort has been made to align the strategy with Myanmar's socioeconomic development objectives and with policy documents; environmental policy; annual, medium and long–term development plans; the second Framework for Economic and Social Reform (FESR) and decentralisation policy. Because the MCCA developed the strategy, and the MCCA has also advised the government in several climate change aspects, the strategy is aligned as much as possible to several other climate change or environment policies that the government has been drafted in parallel. These include the INDC, which MCCA contributed to, and the Green Growth Framework, whose drafting team repeatedly consulted with MCCA.

2. Guiding principles of MCCS formulation

The strategy formulation has been guided by the following set of principles:

Ensuring policy coherence: The MCCS builds on existing climate change policies, including the National Adaptation Programme of Action, INDC, REDD+ roadmap, the Climate Smart Agriculture Policy. This strategy complements planned climate change policies, including the National Climate Change Policy, the National Adaptation Plan and the Green Growth Strategy. Its vision, objectisves and priorities are aligned with national and sector development plans and implementation arrangements, including the National Comprehensive Development Plan, sustainable development agenda, energy policies and plans, Environment Policy and associated action plan, DRR policies and plans, and other national policies and sectoral strategy and priorities.

Ensuring multi–stakeholder engagement: Multiple stakeholders have been engaged in drafting the MCCS, at national and sub–national levels. The formally established MCCA TWG oversaw the formulation process and provided technical inputs throughout, while the PSC of the MCCA ensured policy guidance. So, the strategy was prepared in close

consultation with national and local level stakeholders who represented a cross–section of government institutions, national NGOs, civil society, community representatives, private sector actors, development partners, professionals and academia from a wide range of sectors. Bilateral discussions, three national and five sub–national workshops were conducted by the drafting team and with the support of MCCA to engage with stakeholders. The sub–national workshops took place in five of Myanmar's climate–vulnerable states or regions, with more than 600 participants from local government, CSOs, communities and the private sector. The MCCA worked in parallel at local level for adaptation, capturing views on climate change from 23 townships in six states and regions. Altogether, some 2,000 individuals representing more than 40 institutions at national and sub–national level took part in the strategy development process, which clearly acknowledged that a vast body of knowledge resides with a dispersed and diverse range of stakeholders and experts.

Providing strategic direction: The MCCS provides a strategic direction to achieve climate–resilient and low–carbon development results. The strategy guides investment in six priority sectors, identified by stakeholders as key for inclusive climate–resilient and low–carbon development. They are a mix of primary, secondary and tertiary sectors that all play a key role in economic and social development. Stakeholders identified a need to put in place a strong implementation framework for the strategy and identified three key implementation pillars to support the MCCS:

(a) An enabling environment that establishes policy, institutional, financial and M&E systems
(b) Support to climate–smart decision making, and
(c) Multi–stakeholder partnerships to invest in low–carbon and resilience interventions.

Ensuring a result–based approach: All actors consulted – particularly government and development partners – insisted on the need to formulate a strategy that can be implemented as a project to achieve measurable results. Recognising the challenges involved in setting up baselines and indicators, the MCCS is nonetheless inspired by the logic of results and measurability. For this reason, it uses the logical framework language of expected outcomes, expected results, objectives and indicators.

3. Methodology and process

Once the overall methodology was approved in December 2014, the ECD and MCCA proceeded through five consecutive phases (see Figure):

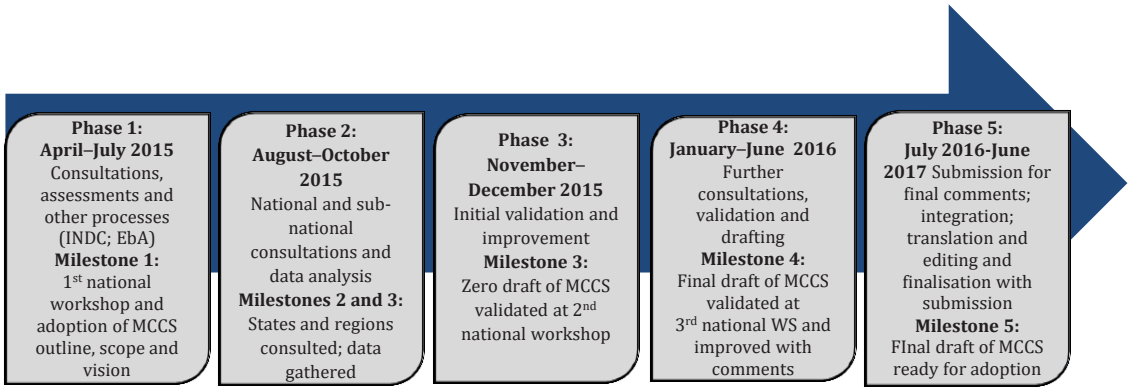

Figure 1: The five phases of the MCCS formulation process

Phase 1. Defining the objectives and scope of the MCCS

Process

In the first phase of evidence generation, the MCCA TWG convened to agree on the main purpose, objectives and methods for formulating the strategy and a preliminary outline of strategy and master plans. The newly–formed TWG met officially, for the first time after the inception workshop in December 2014, at the initial national climate change strategy and master plan workshop on 7–8 April 2015 in Nay Pyi Taw.

About 200 people participated in this workshop, including development partners and other non–members of the TWG. Workshop participants agreed on the following aspects of the strategy:

1. Scope and purpose
2. Vision, which they later revised
3. Timeframe
4. Policy alignment
5. Mission (or overall objectives)

6. Main thematic or sectoral areas to be addressed
7. Sectoral engagement
8. Draft outline (table of contents)
9. Format of the overall implementation master plan and master plan, and
10. Roles and responsibilities in different sectors.

The workshop agreed on the planning and reconfirmed the methodology for the strategy and master plan formulation. Participants also agreed on the place and timings for national and local consultations, as follows:

Cluster	Region/state	District	Township
1	Mandalay Sagaing	Mandalay Sagaing	Natogyl Myinmu
2	Ayeyarwady	Hinthada Labutta Pathein Pyapon	Hinthada Labutta Kyaunggon Ngapudaw Thabaung Bogale
3	Kachin	Myitkyina	Myitkyina
4	Bago Kayin	Bago Hpa–an	Bago Waw Hlaingbwe Hpa–an
5	Rakhine	Kyaukpyu Thandwe	Kyaukpyu Manaung Ramree Gwa Tounup Maungdaw

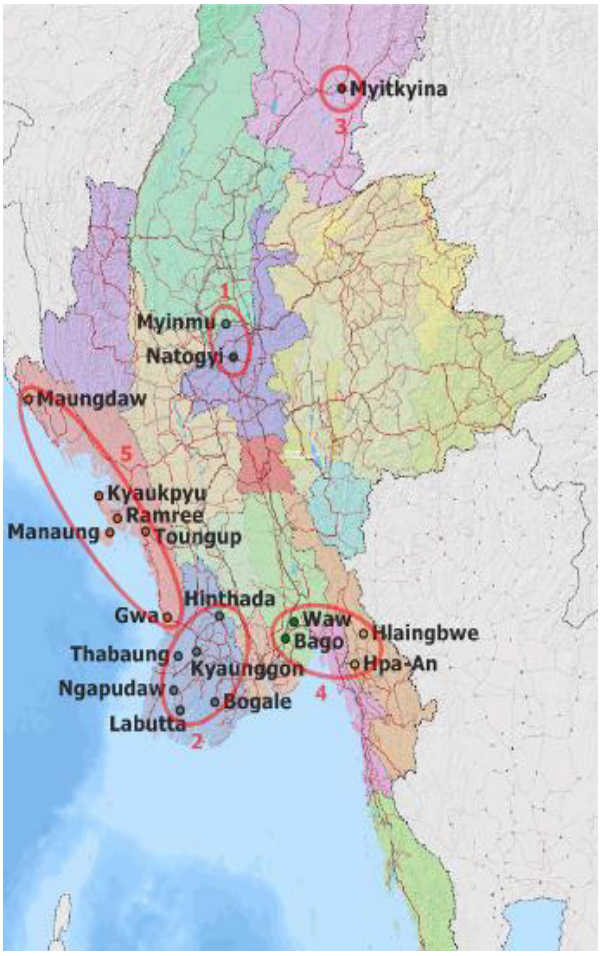

Figure 2: Five clusters formed out of 19 townships suggested at the Initiation Workshop in December 2014.

During this first phase, the MCCA also focused on supporting the Government, through the mobilization of the TWG, for other policy processes, such as formulating the INDC between April and September 2015, for submission to the UNFCCC by 30 September 2015. Although this diverted the focus from the strategy, it was extremely useful to consolidate areas of work and sector thematic groups. It was also useful to increase TWG members' awareness on climate change, which in turn supported the elaboration of the MCCS.

The methodology to assess capacities to address climate change in Myanmar, recruited experts and started the study.

Milestones and outputs

1. First national technical workshop of the MCCS

2. Scope, purpose and main areas of the MCCS defined; outline adopted
3. INDC draft formulated, with involvement from TWG
4. Drafting teams selected and recruited
5. Capacity development needs assessment initiated

Figure 3: First national workshop for MCCS formulation, April 2015 in Nay Pyi Taw

Phase 2. Data collection, thematic consultations and sub-national workshops

Process

Phase two involved the bulk of data collection and analysis, which informed the strategy formulation. Data collection took place between August and October 2015. ECD led the process, through MCCA, with the support of consultants from the International Institute for Environment and Development (IIED) contracted by UN Environment under MCCA; MERN; the chief technical advisor of MCCA and other experts.

This phase involved two main streams of work — one based on a secondary data review and bilateral or thematic meetings at national level, and the other based on local level consultations. For the latter, we clustered townships identified for the sub-national consultations according to vulnerability, geography and administrative arrangements and host townships according to their administration arrangements.

Policy review: For the policy and institutional review, the team first reviewed national and international policy documents to situate the MCCS within Myanmar's policy and institutional framework. These included Myanmar's national, sectoral and sub–national policy documents, development partners' country strategies and other secondary resources. The review revealed Myanmar's policy direction and corresponding management, financing and evaluation arrangements. The team reviewed climate change documents such as the INC, National Adaptation Programme of Action, INDC, REDD+ roadmap; national policies to address natural disasters, such as Myanmar's Action Plan for Disaster Risk Reduction (MAPDRR); multilateral environmental agreements; and resource management approaches. A review was undertaken of policies for various sectors, including energy, agriculture, forests, industry, transport, urban settlements, water, DRR, biodiversity, education and health.

Key informant interviews: The team also conducted a series of key informant interviews with individuals and organisations between 24 August and 15 October 2015. Key organisations included government bodies such as the ECD, MOPF, MOALI, MOSWRR and DMH; the MCCA; and individual development partners, including the Norwegian Agency for Development Cooperation (NORAD) and the UK's Foreign and Common wealth Office. Key individuals included climate experts, namely INDC consultants. Interview data supported the workshop and review outputs, clarifying government ministries' policy and operational processes and reinforcing the MCCS's scope and focus. The team also organised meetings with the Environmental Sectoral Working Group.

Vulnerability assessment: The team then proceeded to a vulnerability assessment, identifying initial options for building climate resilience in Myanmar and opportunities for low–carbon development. The assessment, based on exposure, sensitivity and adaptive capacity, the three key dimensions of vulnerability identified by the IPCC, revealed experienced and potential climate change impacts on assets and systems, including critical thresholds; asset and system priorities, according to their vulnerability; and options and actions for adaptation and mitigation. The team collated the evidence from these activities in a database to enable cross–policy, cross–sectoral and cross–level analyses to be made.

Consultation workshops: MCCA organised a series of national–level consultation workshops to gather information and feedback on the data generated so far. Participants

identified the vulnerability of assets and systems, ascertained priorities across sectors and stakeholder groups and strategised practical responses. They verified and expanded the information gathered in Phase 1. These workshops included:

First civil society forum (29 September 2015, Nay Pyi Taw): Participants included CSO practitioners, NGO practitioners and government ministers. CSOs highlighted their resilience and low–carbon objectives, sectoral priorities and corresponding actions. Participants offered feedback on the scope and objectives of the MCCS and strategised collaboratively on actions to meet shared objectives.

First national technical consultation workshop (30 September to 2 October 2015): Participants included the TWG, other government officials, CSO and NGO practitioners, research institutions and development partners. Participants verified sector–level information and identified sectoral priorities and actions. Sessions included energy and industry; agriculture, fisheries and livestock; forests and biodiversity; urban environments and transport, DRR; education; and planning and finance; with participants taking part in individual sessions according to their expertise. Participants provided feedback on climate changes and their impacts, policies, institutional arrangements, financial structures and climate information activities. They discussed each sector in the context of the proposed MCCS objectives, identifying and prioritising necessary actions and identifying related capacity requirements.

Development partner consultation (15 October 2015): Hosted by the Development Partners Group and attended by representatives from NORAD, DFID, EU, UNESCO, UN–Habitat and JICA. Participants provided feedback on the scope and objectives of the MCCS, verified their country–level activities and examined their future objectives and funding priorities.

Sub–national consultation workshops: Organised managed and facilitated by local NGO, MERN, according to the list agreed in Phase 1. Each workshop took place over three days, with 600 participants attending the five workshops in five states or regions. Local government officials were the primary participants, along with some local NGO practitioners. The workshops provided information on climate impacts, priorities and responses across different geographical zones in Myanmar. At each workshop, discussions and activities provided information on:

1. Change in climate, based on scientific data

2. Local perception of current climate change
3. Projected future climate change (short/mid/long term)
4. Vulnerable sectors, areas and groups
5. Available capacity and capacity development needs
6. Prioritised actions to address future vulnerabilities
7. Policy and institutional assessment, and
8. Mitigation potential.

At the same time, MCCA conducted consultations in select a townships for ecosystem–based adaptation to climate change projects in the Delta and Dry Zone areas. This meant they consulted an extra 500 people in additional townships and communities on the issues of climate change and on the priorities. In parallel to these consultations, the capacity development assessment team also interviewed participants on their existing capacities to deliver the options identified and initiated a draft assessment based on the results.

Milestones and outputs

1. 1,100 people consulted in 23 townships (13 officially for the MCCS)
2. TWG, 30+ permanent members consulted as a whole and in thematic groups
3. Civil society forum consulted about 15 CSOs
4. Development partners consultations (2)
5. Documents reviewed
6. Database set up
7. Capacity development assessment zero draft.

Figure 4: Participants of the local consultations in Thandwe, October 2015

Phase 3. Initial validation and improvement, first draft of strategy

Process

As a result of the analysis of the data gathered in Phase 2, the team formulated an annotated draft of the MCCS in November 2015 for validation. Members of the TWG agreed the scope of the draft. The content relied on a preliminary analysis of information collected from the policy and institutional review, secondary sources and multi–stakeholder workshops and key person interviews.

The team submitted the draft for validation at the second national workshop for the formulation of the Myanmar Climate Change Strategy and Master Plan in Nay Pyi Taw on 2 November 2015, with the TWG providing feedback and clarification. They identified the following thematic areas for the master plans: agriculture and food security; forest and biodiversity; DRR and early warning systems; energy, industry, buildings and transport; urban and human settlements; and education and awareness.

The team used the feedback to validate and fine–tune the preliminary draft in preparation for presentation at the international Global Climate Change Alliance workshop at COP 21 in Paris in December 2015. ECD and MCCA participated in COP 21, where MONREC's deputy director general also presented the essence of the preliminary MCCS at a meeting. The team integrated the feedback from both these events into the MCCS advanced drafts and undertook a subsequent consultation process to validate and develop the master plans.

Milestones and outputs

1. Second national workshop for the formulation of the MCCS
2. Annotated draft of strategy approved by TWG
3. Presentation at COP 21
4. Draft of master plan, and
5. Series of thematic and bilateral meetings.

Figure 5: Second national workshop, Nay Pyi Taw, 2 November 2015

Phase 4. Additional information gathering and validation of the advanced draft

Process

With the aim of collecting additional information and feedback to produce an advanced draft and seek validation, the team started Phase 4 in January 2016, with a second round of national consultations between 23 February and 8 March. These meetings aimed to finali semaster plans for addressing sectoral climate change with clear milestones and timeframes, and additional input to the MCCS.

The meetings includedthematic consultations – half–day workshops for each thematic sector where 10–20 primary stakeholders reviewed, validated and advised upon the draft master plans and agreed milestones and timelines. The team refined the master plans, based on the guidance they received at these consultations.

At the same time, the team organised a TWG workshop on 3 March 2016 to discuss the strategy's main components and revised master plans. The TWG members provided input for further refinement. A second smaller meeting with the civil society group in Yangon, on 4 March 2016 ensured their views were captured properly.

Based on the additional information and further discussions, the drafting team produced a new version of the draft strategy in March 2016, and submitted it to the MCCA and ECD. This draft underwent internal reformulation and improvement including new data and in view of the new understanding from Myanmar's national transition in April 2016, strengthening the overall output between April and May 2016. Experts from UN–Habitat and UN Environment, with MCCA and ECD, analysed the draft strategy to check facts, strengthen the narrative and reinforce the coherence of the strategic pillars.

On 5 June 2016 –World Environment Day – the team presented the advanced draft summary to high–level representatives, and received further inputs. On 10 June 2016, the team presented abstracts of the advanced draft at the third Myanmar Climate Change Strategy workshop in Nay Pyi Taw. The meeting, attended by more than 150 people, in particular the TWG and partners, revisited the overall strategy pillars, worked on the details of the master plan and provided feedback and input to strengthen the activities and refine the milestones. The team also submitted the abstracts to the Youth National Forum for their analysis and comments, which they provided on 17 June 2016 for inclusion. The team in charge of the capacity development need assessment also presented their findings at the workshop.

Milestones and outputs

1. Advanced draft of MCCS ready for official submission
2. Draft capacity development needs assessment ready for use
3. Third national workshop

Phase 5. Finalisation and dissemination of the MCCS

Process

This Draft was composed of the main of Myanmar Climate Change Strategy – MCCS documents, the revised master plan and a number of other appendices.

In July 2016, the ECD and MCCA submitted the draft for formal comments to the TWG, so cound proceed to finalisation and submission to the highest government levels for approval and adoption, through four consecutive workshop for MCCS (Draft) during December 2016 and April 2017 and one final workshop for Myanmar Climate Change Policy (Draft) on 2017 April 27.

The project results of Myanmar Climate Change Alliance – MCCA which is Myanmar Climate Change Policy, Strategy, and Master Plan (2018–2030) to know Stakeholders held in National and Regional/ State Knowledge Dissemination at Nay Pyi Taw, Yangon, Mandalay and Ayeyarwady Regions in October 2018.

Milestones and outputs

1. Edited draft submitted for official approval.

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