

**KINGDOM OF CAMBODIA
NATION RELIGION KING**



MINISTRY OF PLANNING

**Framework for mainstreaming climate indicators
into national monitoring and evaluation processes
of Cambodia**

**TA 8179: Mainstreaming Climate Resilience into Development Planning
Package C**

Gender, Monitoring and Evaluation (M&E), and Mainstreaming at Sub-National Levels

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Preface

Cambodia is considered one of the countries in the region highly vulnerable to adverse climate change impacts, which will become more severe and damaging along with projected increase in global warming in the future. Cambodia's economic sectors such as water resources, agriculture, health and infrastructure have already experienced damage and loss resulted from severe floods, droughts and typhoons, and saline intrusion implicating food security and livelihoods especially of the rural population. Initial analysis based on the scenario of a 2°C temperature rise by 2050 estimates that the full damage of climate change on Cambodia's GDP will be at least 1.5% by 2030, and 3.5% by 2050 (NCSD 2015). Recognizing the potential risks of climate change on Cambodia's economic growth now and in the future, the Royal Government of Cambodia has vigorously developed and put into practice appropriate climate change policy response and initiatives conducive to increased climate resilience capacity of Cambodian institutions and communities across all sectors and society. Climate change policy, green growth and sustainable environment and natural resources management are very important elements and outcomes of the National Strategic Development Plan 2014-18 now and of the next NSDP. While progress and achievements are made, however difficulties and challenge exist. Knowledge, skills, technology transfer and resources, including robust M&E framework, for effective planning, budgeting and implementation of climate change projects and programs remains limited at all levels, especially at the sub-national levels.

The Ministry of Planning plays a paramount role in development of NSDP in coordination with all sector ministries, taking into consideration climate change as a real obstacle for achieving sustainable development targets. Cambodia's main national development goals (NSDP, 2014-18) continue to put emphasis on poverty reduction and infrastructure rehabilitation while fostering economic growth at a steady rate of 7-8% per year. Cambodia aims to progress from least-developed country (LDC) status towards a low and high middle-income developing country by 2018 and 2030 respectively. The MOP is also responsible for monitoring of NSDP implementation and development of national statistics. As climate change financing is on the increase, tracking effectiveness and success of climate change mitigation and adaptation is critical part of the project/program management cycle, which will assist the government ministries and development partners in proper resources allocation for climate change projects and programs. Effective and sustainable M&E framework must be put in place for climate change plans and investments which would generate lessons and knowledge base for better planning and financing now and in the future.

The Knowledge product "A guiding frame for integrating climate adaptation indicators into national monitoring and evaluation processes in Cambodia" is prepared building on existing and ongoing practice of MOP, NCSD, sector ministries, and development partners such as ADB and UNDP. It does not intend to provide a fit-for all approach but rather a dynamic framework for improvement through learning by doing.

Therefore we hope that this first Technical Report will guide and enable national institutions, managers, stakeholders to identify and integrate a set of adaptation indicators for monitoring adaptation investment projects and programs as well as adaptation plans.

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The knowledge product “Framework for mainstreaming climate resilience indicators into national monitoring and evaluation processes in Cambodia” is produced as one of the key Knowledge Products of the TA 8179 Package C concerning Gender, and CC Mainstreaming at Sub-national Levels (SNA) and Monitoring and Evaluation (M&E). The Technical Report is a synthesis of analysis of findings, contributions and inputs from various stakeholders and experts involved in climate change mainstreaming, implementation, and M&E reporting. On behalf of the Project Team, we would like first of all to express our deep gratitude to H.E. Dr. Say Samal, Minister of Environment and Chairman of the National Council for Sustainable Development for his valuable guidance and courageous leadership in successful implementation of major climate change response, programs and projects at different levels, which makes Cambodia become one of the advanced countries addressing global warming and climate change impacts. Our deep thanks are given to H.E. Prof. Dr. Sabo Ojano, chairman of the SPCR Coordination Team for his continuous support and coordination conducive to successful consultation with relevant specialists and experts. High appreciation goes to H.E. Tin Ponlok, Secretary General of NCSD and Mr. Sum Thy, Director of DCC for recommendation and practical ideas for harmonization and alignment of M&E framework for CC adaptation and disaster risk reduction. Many thanks are owing to Mr. Meas Sophal, Director of MCRDP, and his management team for guidance and support during entire consultation process. We also express sincere gratitude to technical officers and project managers in charge of SPCR Investment Projects of pilot sector ministries, especially MAFF, MOWRAM, MRD, MPWT, NCDDS and MOWA for consultation and inputs on many aspects of climate change mainstreaming and M&E. We also highly appreciate the guidance and recommendations provided by Dr. Ancha Srinivasan, Principal Climate Change Specialist, ADB without which the technical report would not have been possible.

Finally, we also thank to all experts and specialists from Development Partners, NGOs and CSOs for valuable contributions and experience in climate change activities and M&E reporting. We hope this Knowledge Product will guide future work on monitoring and reporting and to improve planning of climate change projects and programs in Cambodia

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EXECUTIVE SUMMARY

Given the limited knowledge and practices on climate adaptation reporting and the considerable scope for learning in this area, the knowledge product on “Framework for mainstreaming climate indicators into national monitoring and evaluation processes of Cambodia” is developed through an inclusive approach consulting all the stakeholders involved in mainstreaming the results reporting requirements into national M&E systems.

The Ministry of Planning (MOP) is vested with responsibility to coordinate preparation of National Strategic Development Plan (NSDP) conforming to the Government Rectangular Strategy (RS). Climate change policy and strategies of MOE and sector ministries are integrated in the NSDP in a five year planning cycle. The National Institute of Statistics (NIS) plays a key role in compilation, aggregation and analysis of administrative data, population census, and survey to support the planning and update the indicators for monitoring and evaluation of NSDP implementation (MENI), including CMDG and SDG. Integration of the MENI indicators, including adaptation indicators into NSDP is coordinated by the General Directorate of Planning (GDP) of MOP through the M&E Steering Committee and National M&E Working Group. Limited experience and capacity of GDP and NIS in collection of adaptation data and statistics, likewise in the operationalization of Adaptation M&E, represent challenge for effective integration in NSDP.

Climate change mainstreaming in Cambodia has evolved at three levels: national, sector and sub-national levels. CCCSP is considered the most comprehensive document providing key strategic goals and objectives addressing mitigation and adaptation. The sector strategic plans identify a set of key strategies and actions which can transform to specific investment projects contributing to the achievement of overall goals of the CCCSP. NAPA is considered the first milestone in designing and mobilizing resources for adaptation investments, and lay foundation for a robust national adaptation framework. The M&E of adaptation can be designed to measure the progress and its effectiveness based on this adaptation framework. The recent adoption of NAP Process further improve the coordinated planning/programming, implementation and financing.

The institutional arrangement and coordination for M&E integration is governed by an established M&E Steering Committee (four central agencies MOP, MEF, SNEC and CRDB/CDC); a National Working Group on M&E (members from relevant line ministries, representatives from key development partners, civil society organization, and voluntary organization for professional evaluations); and an M&E Secretariat (Members: M&E specialists from General Directorate of Planning and National Institute of Statistics).

The approach of the national M&E Framework is a Results Framework (RF), which connects desired results and actions from the lower levels to the higher levels: program / sub-program, ministry/sector, and the whole economy (NSDP 2014-18). The RT establishes the link between the efforts made for achieving certain goals with the actual performance and the outcomes as the following:

- Inputs (lower level)
- Activities

- The implementation process/output
- Final outcomes
- Impacts (higher level)

The NSDP M&E approach is almost consistent with the PPCR results framework, which can be an entry point for harmonization and alignment of PPCR core indicators at different levels for measuring effectiveness or progress of adaptation plans and investments.

Cambodia's national M&E system has been developed for reporting on the implementation of the National Strategic Development Plan (NSDP). It focused on indicators at macro level, including 63 indicators and 73 supplementary indicators relating to the key reform programs and socio-economic development priorities. These indicators were further cropped to 26 core indicators related to 16 outputs based on the Cambodia Millennium Development Goals (CMDGs).

In parallel the DCC coordinates the development of a national climate change M&E framework since 2013 using the approach "Tracking Adaptation and Measuring Developments" (TAMD) in collaboration with International Institute of Environment and Development (IIED) and in consultation with multiple stakeholders. The DCC also assists sector ministries in developing their respective CC M&E framework following the TAMD approach.

The PPCR Results Framework (PPCRRF) has been implemented in Cambodia during PPCR Phase 2 to measure the progress of SPCR Investments at the program level and aggregate the value at the country level. PPCRRF was initially adopted by the Joint CTF/SCF Trust Fund Committee in November 2010 and was revised later in December 2012 to reflect the experiences of the pilot countries and the MDBs in implementing the original PPCR results framework (CIF 2012). The PPCRRF is well consistent with NRF in terms of results chain, indicating its possible integration into the NRF for monitoring and reporting of adaptation investments at the project/program level. Five PPCR core indicators are selected from the revised list of PPCRRF for monitoring and reporting on the SPCR investments, which comprise both qualitative (Core indicator 1, 2 and 3) and quantitative indicators (Core indicator 4 and 5).

Score cards and data tables have been developed for the five Core indicators taking into consideration the Cambodia context and achievement associated with climate change mainstreaming and planning.

This scoring process and reporting practice for SPCR projects, can be replicated to monitor other non-SPCR adaptation projects following accumulate knowledge and experience.

The national M&E is still in the process of learning by doing towards an effective M&E system. Development and operationalization of adaptation indicators faces challenges and difficulties at all levels. These include different standardization of indicators by different sectors; the lack of good standard and strategy for performance measurement, and data quality among all line ministries and institutions. A part from this, the resources and capacity of the line ministries and institutions are quite uneven and so do the quality and reliability of the collected data.

It is important to note that the 5 PPCR Core Indicators are designed to track the results of climate change planning and mainstreaming, for instance, in terms of process of development and testing of adaptation instruments or investments model, and number of beneficiaries using those instruments, but do not measure the transformative impacts or success of the proposed interventions. This guidance also provides a pragmatic approach and key considerations for harmonizing and designing common adaptation indicators for tracking results at output and outcome levels of adaptation investment taking into consideration of indicators of PPCR Result Framework and other practice such as design and monitoring framework (DMF) or project logical framework. In addition, project evaluation and repeated vulnerability assessment after project end is needed to complement the monitoring as it can assess the relevance and effectiveness, generate knowledge and lessons, and define corrective adaptation instruments or models for future intervention. It is envisaged that evaluation of the Cambodia SPCR will be carried out externally at the mid-term and terminal stages of the Program implementation in line with ADB's MfDR approach. The mid-term evaluation will be of particular importance for the Program management as it will provide in-depth assessment of the performance of Program implementation, including analysis of strengths and weaknesses, key issues for improvement and recommendation for management action.

During the consultative meetings with line ministries and key stakeholders held during the development of the technical report, a number of recommendations were proposed that are not limited to the following, but also include:

1. Awareness raising and coaching with the Sector M&E units and SPCR Investment officers must be given priority to ensure reliable scoring, data collection and reporting of the 5 PPCR core indicators.
2. The NIS in cooperation with NCSA and sector ministries should develop workable data sharing protocol to share data on climate change statistics and adaptation data for wider use. DCC of NCSA should play a proactive role to ensure that indicators are of climate change adaptation relevance.
3. Additional adaptation indicators can be developed to complement the PPCR Result Framework to track the outcomes and outputs of adaptation investments following the National Results Framework and SMART principle. Experience and lesson of the use of 5 PPCR Core Indicators for tracking progress and outcomes of SPCR Investments can serve entry points for enhancing the design and operationalization of M&E of adaptation for adaptation investments.
4. The M&E units of sector ministries should be given clear tasks and sufficient resources to lead identification and operationalization of adaptation indicators for tracking sector adaptation programs and projects in conformity with their sector adaptation strategic plans and action plans. Capacity building on data collection, improved data management and analysis, and operationalization adaptation indicators should be of high priority.

5. Adequate resources and incentives should be allocated from government recurrent budget to meet the smooth functioning of the Planning and M&E Unit of each sector ministry.

Abbreviations

ADB	Asian Development Bank
CCA	Climate Change Adaptation
CCAP	Climate Change Action Plan
CCCA	Cambodia Climate Change Alliance
CCCSP	Cambodia Climate Change Strategic Plan
CCTWG	Climate Change Technical Working Group
CDC	Council for Development of Cambodia
CIF	Climate Investment Fund
CSO	Civil Society Organization
DCC	Department of Climate Change
DFID	Department for International Development
DMK	District, Municipality and Khan M&E (NCDDS)
DNA	Designated National Authority
DRR	Disaster Risk Reduction
EWS	Earlier Warning System
GCF	Green Climate Fund
GDP	General Directorate of Planning (MOP)
GEF	Global Environment Facility
GHG	Green House Gas
GIS	Geographic Information System
GIZ	German International Cooperation
GMS	Greater Mekong Sub-region
IFAD	International Fund for Agricultural Development
INDC	Intended National Determined Contributions
LDC	Least Developed Countries
LDCF	Least Developed Countries Fund
LoCAL	Local Climate Adaptive Living Facility
MAFF	Ministry of Agriculture, Forestry and Fisheries
MDB	Multilateral Development Bank
MEF	Ministry of Economy and Finance
MOE	Ministry of Environment
MOP	Ministry of Planning
MOWA	Ministry of Women's Affairs
MOWRAM	Ministry of Water Resources and Meteorology
MRC	Mekong River Commission
MRD	Ministry of Rural Development
MPWT	Ministry of Public Works and Transport
NAPA	National Adaptation Program of Action
NCDD	National Committee for Sub-national Democratic Development
NCDM	National Committee for Disaster Management
NCSD	National Council for Sustainable Development
NDF	Nordic Development Fund
NGO	Non-Governmental Organization
NIS	National Institute of Statistics
NSDP	National Strategic Development Plan
NWGM&E	National Working Group for Monitoring and Evaluation (MOP)
ODA	Official Development Assistance
PBGF	Performance Based Grant Facility
PPCR	Pilot Program for Climate Resilience

PPCRRF	PPCR Results Framework
NRF	National Results Framework
SCF	Strategic Climate Fund
SGP	Small Grants Program
SIDA	Swedish International Development Cooperation Agency
SNEC	Supreme National Economic Council
SNIF	Sub-national Investment Facility
SPCR	Strategic Program for Climate Resilience
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
UN-HABITAT	United Nations Human Settlements Program
WB	World Bank

I. Introduction

The projected increase in global warming and unpredictable climate change impacts become a growing concern for decision makers and will continue to have significant effects on sustainable socio-economic growth, environment and natural resources management, especially for the countries with low adaptive capacity. Cambodia is among countries highly vulnerable to climate change such as floods, droughts, typhoons, disasters and sea level rise, as large Cambodian rural population still lack adequate public services, infrastructure, knowledge and safety net to cope with uncertainty and erupted climate change causes and effects.

Climate change planning and mainstreaming (CCPM) is now undertaken at three levels: national, sector and sub-national levels. At the national level the focus of CCPM is to build capacity for CC planning and coordination, to develop overall climate change policy responses, such as the NAPA and CCCASP to address both adaptation and mitigation in key sectors, and to develop Climate Change Financial Framework¹ for access to national and global financing mechanism such as GCF, GEF/LCDF, AF...etc. At the sector level, focus of the CCPM is to transform the national policy into specific sector strategies, actions and projects/programs. In Cambodia at least 14 sector ministries adopted sector climate change strategic plans (SCCSP) and climate change action plans (CCAP). The current SPCR Investment Projects are now implemented to address the adaptation needs in key sectors, namely MAFF, MOWRAM, MRD, MPWT and Ministry of Land Management, Construction and Urbanization (MLMCU). At the sub-national levels, small and medium scale specific community adaptation and disaster risk reduction projects and activities are developed and integrated into the district and commune development plans (DCDP) and public investment projects (PIP).

Cambodia is one of the pilot countries (19) participating in the implementation of the Pilot Program for Climate Resilience (PPCR) which now enters the second phase with larger funding for SPCR investments and Technical Assistance (TA). The Technical Assistance for “Mainstreaming Climate Resilience into Development Planning (TA 8179)” has the objective to strengthen the capacity of Cambodian institutions and stakeholders to integrate climate concerns into development plans, programs and projects. The TA comprises four outputs: (i) capacity to coordinate Pilot Program for Climate Resilience (PPCR) investments and mainstream climate change adaptation concerns into national and subnational planning, budgeting, and development strengthened; (ii) feasibility studies for priority adaptation projects with a view to securing international funding conducted; (iii) civil society support mechanism to fund community-based adaptation activities established and the capacity of civil society organizations and nongovernment organizations to mainstream climate resilience into their operations strengthened; and (iv) climate change adaptation knowledge in various sectors generated and disseminated. The TA Package C is designed to scale up implementation of selected activities related to gender, monitoring and reporting (M&R), and CC mainstreaming at subnational levels. The theme on Monitoring and Reporting is implemented by MOP with an expected outcome “Enhanced institutional and technical

¹ Cambodia National Adaptation Plan Financing Framework and Implementation Plan were adopted. (NCSO, Aug 2017)

capacity for monitoring, reporting and evaluation of adaptation investments”. The key outputs include guidance and knowledge products for identification and integration of adaptation indicators, including the PPCR results framework, for monitoring and reporting of the adaptation intervention at different planning levels: national, sector, and sub-national levels. There are 8 SPCR Investments with an envelope of about US\$580 million for completion by 2020.

1.1 Objective and Scope

The knowledge product “Framework for mainstreaming climate resilience indicators into national monitoring and evaluation processes in Cambodia” is one of the Technical Reports (TR) developed with the objective to provide a guidance for the use of the PPCR Results Framework and designing additional adaptation indicators for monitoring and reporting of SPCR Investments and Sector adaptation projects and programs by key sector ministries, namely the Ministry of Agriculture, Forestry and Fisheries (MAFF), Ministry of Water Resources and Meteorology (MOWRAM), Ministry of Rural development (MRD), and Ministry of Public Works and Transport (MPWT). It also provides a harmonized concept for possible integration of some PPCR indicators and additional adaptation indicators into national and sector ministries in conformity with the National Results Framework (NRF). The PPCR Results Framework and tools designed for SPCR adaptation investments constitutes the core component of the guidance manual which will be tested, adjusted and enhanced to fit different needs and requirements for monitoring and reporting of adaptation plans and projects/programs at different levels.

Development of this TR is based on extensive review and analysis of existing M&E practice by various stakeholders at different levels, drawing on lessons from PPCR Results Framework and TAMD, and alignment with the MENI for NSDP.

1.2 Linkages and Audience

This TR is designed to target both the decision makers and the M&E units and M&E specialists of SPCR Investment Projects currently managed by the pilot ministries (MAFF, MOWRAM, MRD, MPWT), including the implementing agencies of Package C of the TA 8179, namely Ministry of Environment (MOE), Ministry of Planning (MOP), Ministry of Women Affairs (MOWA), and National Committee for Sub-national Democratic Development. The harmonized concept however can be applied by M&E specialists and organizations involved in designing M&E of adaptation for programs and projects outside of the current CIF financing such as UNDP, WB, development partners and private investments. The latter can be those companies involved in agricultural concessions, water supply and sanitation, civil engineering and road construction.

1.3 Reading Guide

A number of guide books and publications can be of value for further reading are listed below:

- ADB, WB, RGC, Oct. 2012. “Towards an Effective Monitoring and Evaluation Framework for Adaptation to Climate Change in Cambodia”.
- CARE, 2014, “Framework of Milestones and Indicators for Community-Based Adaptation”;

- Climate Investment Fund, December 2013, “Revised PPCR Framework”.
- Climate Investment Fund, 2014, “PPCR Monitoring and Reporting Toolkit”.
- Dennis Bours, Colleen McGinn & Patrick Pringle, Oct 2013 “Monitoring & evaluation for climate change adaptation: A synthesis of tools, frameworks and approaches”, UKCIP.
- GIZ, August 2012 “Adaptation made to measure” a guidebook to the design and results-based monitoring of climate change adaptation projects;
- GIZ 2014, “Repository of Adaptation Indicators”.
- OECD 2015, “National Climate Change Adaptation”, Emerging Practices in Monitoring and Evaluation.
- WB, 2008, “Toolkit for Monitoring and Evaluation of Agricultural Water Management Projects”.
- UNEP, 2016, “MONITORING & EVALUATION FOR CLIMATE CHANGE ADAPTATION”, A summary of challenges and emerging practice.

II. Climate Change Mainstreaming in Cambodia: Experiences from National, Sector and local levels

2.1 Institutional Coordination, Arrangement and Capacity

The Ministry of Environment (MOE) plays a crucial role in promoting effective institutional arrangement and coordination since the ratification of Cambodia's accession to the UNFCCC in 1995. The Ministry of Environment was assigned as a focal point for UNFCCC, a National Designated Authority (NDA) for Clean Development (2003), and a National Designated Authority for Green Climate Fund (2014). Cambodia is selected as one of the pilot countries to pilot SPCR Programs supported by Climate Investment Funds through ADB.

Important milestones in climate change mainstreaming were the establishment of the National Climate Change Committee (NCCC 2006) which was transformed later in 2015 to the National Council for Sustainable Development (NCSA) with a broader mandate to coordinate many emerging issues of sustainable development such as biodiversity, science and technology, green growth, and climate change (Sub-decree dated 2015). The NCSA is chaired by honorary Prime Minister and led by the minister of environment as a chair. The Department of Climate Change (DCC) is moved to NCSA along with new established departments, namely the Department of Green Economy (DGE), the Department of Science and Technology (DST), the Department of Biodiversity Conservation (DBC), and the Department of Administration, Planning and Finance (DAPF).

The key functions of DCC is to coordinate all technical activities related to planning, implementation and reporting of national communications under obligation as a Cambodia signatory to the UNFCCC. Significant progress and milestones have been achieved by DCC in terms of putting in place coordination mechanism; best practice, guidelines and tools for climate change planning and implementation at various levels; and mainstreaming of climate change adaptation and mitigation at national and sector levels. The DCC is also working with MEF and development partners to develop financing mechanism aiming to allow Cambodia having access to different international funding mechanism such as Green Climate Fund (GCF), Adaptation Fund (AF), Climate Investment Funds (CIF) and Global Environment Facility (GEF).

Another aspect of the climate change institutional arrangement is the formation of the Climate Change Technical Team (CCTT) with representatives assigned from sector ministries involved in climate change activities. Each ministry also setup its own climate change working group with representatives from key technical departments. At least there are 15 active ministries involved in climate change mainstreaming and implementation.

The SPCR Coordination team (Prakas Oct. 2016) was also setup to coordinate planning and implementation of SPCR Adaptation investments in key sectors, namely water resources, agriculture, urban development and infrastructure. The SPCR team is chaired by a Secretary of State (MOE) with a deputy chair assigned from the Ministry of Economy and Finance (MEF).

The Ministry of Planning (MOP) is vested with responsibility to coordinate preparation of National Strategic Development Plan (NSDP) conforming to the Government Rectangular Strategy (RS). Climate change policy and strategies of MOE and sector ministries are integrated in the NSDP in a five-year planning cycle. The National Institute of Statistics (NIS) plays a key role in compilation, aggregation and analysis of administrative data, population census, and survey to support the planning and update the indicators for monitoring and evaluation of NSDP implementation (MENI), including CMDG and SDG. Integration of the MENI indicators, including adaptation indicators into NSDP is coordinated by the General Directorate of Planning (GDP) of MOP through the M&E Steering Committee and National M&E Working Group.

The National Committee for Sub-national Democratic Development (NCDD, 2008) has a mandate to coordinate implementation of de-concentration and decentralization programs for sub-national administration (SNA). Guidelines and process are developed and put into practice for development of five year development plans and three year rolling investment programs (NCDDS 2017). Currently the NCDDS are working with sector ministries for delegation of sector authorities to the SNA, but the progress has been slow due to lack of sufficient funding transfer from the central to the SNA budget. Climate change mainstreaming is now considered critical part of commune and district development planning but lack of capacity and resources renders its slow progress. Climate change financing mechanism has been explored through implementation of pilot projects such as Agriculture Services Programme for Innovation, Resilience and Extension (ASPIRE), Local Governments and Climate Change Project (LGCC), Reducing the Vulnerability of Cambodian Rural Livelihoods through Enhanced Sub-national Climate Change Planning and Execution of Priority Actions (SRL) with funding support from UNCDF, LoCAL, IFAD, UNDP, GEF / LDCF and DFID. Lessons and experience can serve entry points for enhanced capacity in coordination, planning and financing of climate change activities at the sub-national levels.

Part of the institutional arrangement is the National Committee for Disaster Management (NCDM 1995) which coordinates disaster planning, management and emergency response in coordination with sector ministries and SNA. The NCDM is also honorary chaired by the Prime Minister with permanent chair and members assigned from all ministries concerned, including the arm forces. The NCDM has extensive network of sub-national disaster management committees to assist the NCDM in dealing with all stages of disaster management².

Although coordination³ is progressing well at the national level, work remains to be done concerning coordination and mainstreaming climate change especially at the sub-national levels, capacity building, climate change data collection, aggregation and analysis, the development of a workable financial mechanism and effective M&E framework for monitoring and reporting on mitigation and adaptation

² DRR stage include: prevention, preparedness, response and recovery.

³ The institutional readiness indicator on coordination is accounted for 45% (NCSD 2016).

interventions. The Cambodia Climate Change Alliance⁴, a multi-donor program initiative, now enters a second phase to address the above mentioned issues but the progress remains slow.

2.2 Process of Mainstreaming Climate Change Planning and Implementation

Climate change mainstreaming in Cambodia has evolved at three levels: national, sector and sub-national levels. The process for climate change mainstreaming is not considered as a separate planning exercise but rather it is embedded in the National Strategic Development Plans (NSDP) and associated sector development plans. The process begins with the planning of sector strategies and plans undertaken by the planning departments of respective sector ministries, which are then integrated into the NSDP through the national process (Box 1). Good experience has been gained through development of NAPA⁵ (2006), Cambodia Climate Change Strategic Plan (CCCSP, 2013), Sector Climate Change Strategic and Action Plans (SCCSP 2014), and The National Strategic Action Plan for Disaster Risk Reduction (SNAP). Approval of these plans as well as specific public investment programs (PIP) is coordinated by the MOP and the Council for the Development of Cambodia (CDC). The role of the MEF is to negotiate with line ministries the proposed budgets for their planned activities, which will be consolidated into a budget law to be approved⁵ by the Parliament on an annual basis.

Box 1: Process for 2014 NSDP Planning and Approval

- First Inter-ministerial Meeting to release the Circular as the guiding principles of the RGC and discuss the formulation of line ministries' inputs on 'Performance and New Proposals' will be organised in January 2013.
- Line ministries and agencies are requested to prepare their inputs on 'Performance and New Proposals' in their areas of work (Period: drafts prepared through January-April, 2013).
- Reports on 'Performance and New Proposals' are submitted to MOP by early May 2013.
- Consolidation of the draft plan in MOP (Period: May-July 2013). Consultation with MEF on the draft NSDP for making financial projections and possible link up with MTEF (Period: August 2013).
- Draft NSDP again shared with line ministries and agencies for comments (Period: August-September 2013)
- Parallel consultations on the draft plan with DPs will be done through the established TWG Process (Period: August-September 2013).
- Presentation of the draft NSDP to the technical-level Inter-ministerial Meeting (Period: October 2013).
- Presentation of the revised draft NSDP to the Senior Management in MOP (Period: late October 2013).
- Presentation of the draft NSDP to the political-level Inter-ministerial Meeting (Period: early-November 2013)
- Presentation of the draft NSDP to a high-level consultative meeting of central agencies held by SNEC, mid November 2013.
- Presentation to Council of Ministers, late November 2013.
- Presentation to the National Assembly for approval, late December 2013.

⁴ The second phase of CCCA receives funding from SIDA, UNDP and EU.

⁵ NAPA has not been updated since its first adoption in 2006, but there were NAPA follow-up Project funded by UNDP in 2013.

Preparation of CCCSP and sector strategic plans (SCCSP) needs also to follow the government outline adopted by the Council of Ministers (Box 2). The SCCSP comprises key strategic objectives and actions based on sector vulnerability, which may not have clear link to the CCCSP. Sector ministries are required to evaluate the performance and provide indicators to monitor the progress of implementation of the sector plans and strategies, including climate change response. It is important to note that only summary policy messages of plans and strategies are integrated into the NSDP, the detailed measures and response are left to each sector ministry to put into implementation based on various sources of funding from the government and development partners. The planning process for CCCSP consists of the following steps: i) Stakeholder engagement (engagement of line ministries and identification of priority sectors); ii) Participatory process (setting the scope, vision, mission, goals and objectives; iii) Consultation and review with stakeholders; iv) Political review and consultation with CCTT, NCCC and senior management team for adoption; and v) Publication and launching. Implementation of CCCSP is planned on ten year horizon with mid-term and final review and evaluation, corresponding to two cycles of NSDP planning. The sector CC Strategies and Action Plans follow 5 year planning cycle which coincides with NSDP cycle. The DCC has also adopted the Intended National Determined Contributions (INDC) to tackle both mitigation and adaptation as a Cambodia volunteer commitment to reduce GHG emissions while mitigating climate change impacts.

Box 2: Outline

Introduction
 Vision
 Mission
 Goals and objectives
 Strategy framework
 Strategic analysis
 Strategic objectives
 Strategies
 Activities
 Financial resources
 Monitoring and evaluation

At the sub-national level, the Development Plans (DP) and Three Year rolling Investment Programs (IP3) are prepared based on technical guidelines adopted by the NCDD and MOP, noting that the development plans are prepared in every five years, while IP3 is updated on an annual basis. The planning process for DP and IP3 differ slightly, so does the process at province, district and commune levels. Planning steps for DPs consists of i) dissemination of information on preparation; ii) formulation and consolidation of DPs; and iii) review, adoption and dissemination of DPs. Climate change consideration can be integrated at steps 1 and 2 where climate change problems and adaptation plans can be integrated along with development needs. The guidelines for planning have been updated by the Inter-ministerial Prakas signed by MOP and MOI (2 March 2017), which outlines key planning steps supplemented with guiding tools and methodologies (priority ranking, situation analysis, including tools for climate change analysis and project identification). Planning steps for IP3 at province and district level include: a) Step1: Data collection on development needs for IP3; b) Step 2: Formulation and Consolidation of IP3 document; c) Step 3: Review, Adoption and Dissemination of IP3; d) Step 4: Monitoring, reporting and evaluation of IP3 implementation. Similar planning process is applied to commune IP3, excluding step 4 concerning M&E.

The M&E requirements following the National Results Framework at different planning levels can be illustrated in the figure 1 below.

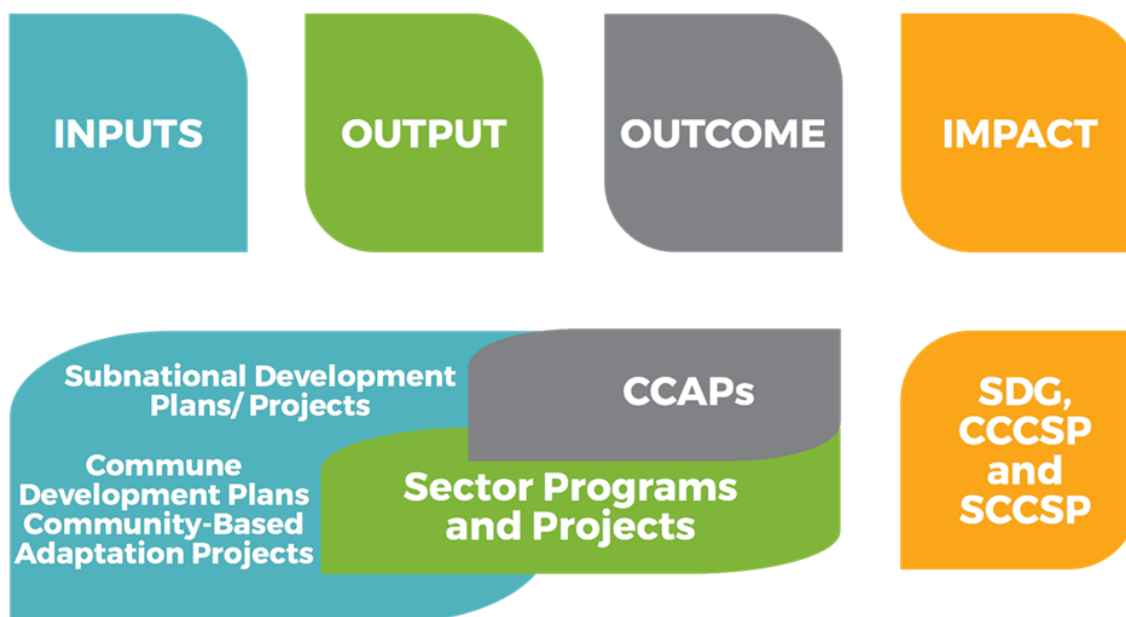


Figure 1: Climate Change Planning and Mainstreaming and M&E requirements

2.3 Financing adaptation projects and programs – Lessons learnt from Cambodia

Cambodia adopts a dual budgeting system consisting of the current (recurrent) budget and Public Investment Programs (PIP). The Policy Based Budgeting consists of 3 steps: Budget Strategic Planning Phase (March –May); Preparation of Annual Budget (June-September); Budget Approval (October-December). The Budget Department of MEF is in charge of current budget, while the MOP is responsible for the PIP based on NSDP 2014-18. All capital project proposals from line ministries are consolidated by MOP in coordination with the Council for development of Cambodia (CDC), which in turn helps mobilize external funding for PIP (PFM, 2015). As most of the capital budget is financed by Development Partners (DPs), the sector ministries tend to deal with DPs directly. The Department of Investment Cooperation (DIC) is in charge of putting the capital budget together, which derives from the externally-funded capital budget⁶ and domestic investment budget.

⁶ Mainly loan financed by ADB and World Bank.

Cambodia budgeting and financing of climate change adaptation and mitigation has gradually become an important part of the planning and budgeting process since the beginning of the Cambodia's Accession to the UNFCCC in 1995. Several CC related policy and strategies have been integrated into NSDP, including the adoption of CCCSP, SCCSP, Green Growth and Natural Resources Management by MOE and key sector ministries. The NSDP together with these key documents serve an important framework for line ministries and sub-national administrations (SNAs) as well as DPs for planning and budgeting CC projects and programs in priority sectors. Given its cross-sector nature of climate change like environment, CC activities and outputs are commonly planned within overall sector development programs and projects, thus likewise their budget. It is worth noting that the government budget (current and capital expenditure in 2017) for environment (CR 80 billion) and CC as a whole remains small, compared to other sectors, such as education (CR 2,740 billion), health (CR 1,697 billion), infrastructure and public works (CR 2,411 billion), water resources (CR 2,357 billion) and agriculture (CR 439 billion).

Tracking Cambodia's expenditure on CC was assessed by UNDP in 2012 through Climate Public Expenditure and Institutional Review (CPEIR) Project which classified all CC related projects into three categories: high relevance⁷, mid relevance⁸ and low relevance⁹. According to these classifications (CPEIR, 2012), the proportion of public expenditure that is climate relevant has grown from 14.9% in 2009 to 16.9% in 2011. Cambodia budget is currently dedicating about 1.3% of GDP to the climate change response, but to address the anticipated future impacts of climate change, it was estimated that Cambodia would need to increase adaptation spending to 3.3% of GDP between now and 2050 (NCSD 2015).

Prospect for climate change financing remains promising for the coming years through some global funding mechanism such as Adaptation Fund (AF), Green Climate Fund (GCF), and Climate Investment Fund (CIF), Global Environment Facility (GEF / LDCF) which would assist Cambodia to transform from the least developing countries (LDC) to a low middle-income country¹⁰. The total amount of public climate finance could grow from about US\$185 million in 2013 to US\$255 million (low increase) or US\$300 million (high increase) per year by 2018 (NCSD 2015). The SPCR funding envelop of about US\$ 588 million over several years until 2020 would add on government expenditure by about 60% and will be a major feature of climate public expenditure in Cambodia. The Cambodia Climate Change Alliance (CCCA) involves relatively small total funding, of US\$ 8.9m (CR 36bn), which funds both important technical assistance and small grants for climate resilient activities. The CCCA is now working to develop the Climate Change Financing Framework and National Funding Modalities accessible to external Funding Mechanism such as GCF.

⁷ Programmes have a clear primary objective of delivering concrete and visible outcomes that improve climate resilience or contribute to mitigation.

⁸ Programmes either have secondary objectives related to building climate resilience, or are mixed programmes with a range of activities that are not easily separated but include at least some that promote climate resilience.

⁹ Programmes are limited to indirect adaptation and mitigation

¹⁰ The per capita GDP is estimated at US\$1.025 according to the WB classification.

Climate change financing at the SNA¹¹ level has been gradually improved though the size of funding remains low. It is important to note that much of SNA budget of about 70% goes to development projects, which have a potential for better financing CCA and DRR projects. Experience is gained from testing CC financing mechanism through implementation of pilot projects such as LGCC¹², ASPIRE and Sub-national resilience livelihoods (SRL). The Subnational Investment Facility (SNIF) and Performance Based Grant Facility (PBGF) are tested at selected districts and communes, which can be a potential for up-scaling. There is good prospect for involvement of private sector in climate change financing given good experience elsewhere in the region. The TA 8179 Package C will further explore viable financing modalities for SNA based on experience and successful outcomes of these pilot projects and good practice in other countries.

The guidance for identification and integration of adaptation indicator into SNA development plans will be elaborated in more detail in a separate technical report. However, a number of challenges are identified that are not limited to the following, but also include:

- There is no clear guidance or budget code yet to track climate change financing in a systematic manner linking to the policy response and PIP. The proposed CPEIR classification should be reviewed so that it can distinguish clearly the climate related expenditure, especially concerning adaptation, from the business-as-usual development programs/ projects.
- There is no clear M&E framework to track the effectiveness and success of CC financing, though some efforts have been made by NCS/D/CCCA and MOE/PPCR. The ratio of public expenditure on climate change financing can be one of the adaptation indicators integrated into the national results framework.
- There is still a lack of coordination among donors and funding entities to come up with a viable and sustainable climate change financing framework for climate change adaptation and mitigation projects and plans.
- Allocation of resources from the government budget for development activities, including CC financing at the SNA remains low and would require additional top up to have a meaningful climate change implementation.

2.4 Adaptation Framework and Adaptation Investments in Cambodia

Cambodia has undergone considerable progress in planning and implementation of climate change adaptation plans and programs as described in previous section, which are reflected in various policy documents such as NSDP, CCCSP and sector climate change action plans. Most relevant policy documents are the NAPA and the recent NAP Process adopted in May 2017 (NCS/D, 2017). NAPA¹³

¹¹ In 2014 SNA comprised one capital city, 25 provinces, 185 municipalities/districts, 1633 communes/sangkats. A total of 14139 villages fall under the communes and sangkats.

¹² It is comprised of three key components: (i) increased awareness and capacity of sub-national governments for CCA planning and mainstreaming, (ii) planning and implementation of sub-projects through performance-based climate resilience grants (PBCRGs), and (iii) strengthening of sub-national planning and fiscal systems for integration of CCA.

¹³ 39 Projects proposed in key sectors: public health (6), coastal zone (8), cross-sector (5), Agriculture/water resources (20).

provides an assessment of country vulnerability and has identified priority sectors for formulation of adaptation response, namely agriculture, water resources, forestry, health and coastal zone¹⁴. The National Adaptation Plan Process (NAP) comprises three key processes: i) Planning/programming; ii) Implementation; and iii) Financing. Priority sector and regions remain unchanged since the first NAPA although transport infrastructure was not the main focus of investment at the time. NAP also highlights the need for the establishment and operation of an overall M&E system to ensure a learning process for climate change adaptation by introduction of TAMD approach for monitoring and reporting climate change effectiveness. Adaptation programs, projects and activities are considered as adaptation investments which can be developed and financed by the government budget, development partners like UNDP, USAID, ADB and WB, and the private financing. M&E of adaptation should be built on the national adaptation framework to track implementation process, the progress and effectiveness, and funding efficiency and success. Key achievement in climate change planning and mainstreaming can be used as general baselines in the following:

- a) Institutional Coordination
 - National Council for Sustainable Development (NSDP)
 - Climate Change Technical Working Group
 - Sector CC Working Groups
- b) Climate Change Vulnerability/Impact Assessment and CC Information
 - National Communications
 - Vulnerability and disaster risk index
 - Knowledge, attitude and perception about climate change (KAP 1 and KAP2)
- c) Adaptation Policy Planning
 - Cambodia Rectangular Strategy
 - National Strategic Development Plan 2014-2018
 - Cambodia Climate Change Strategic Plans (2013)
 - 14 Sector Climate Change Strategic Plans (2013)
 - 14 Sector Climate Change Action Plans (2013)
 - Strategic National Action Plan for Disaster Risk Reduction 2008-13 (2009)
 - Intended Nationally Determined Contribution (INDC, 2015)
- d) CC Financing Framework
 - Government Capital and Recurrent Budget/SNIF
 - Climate Change Financing Framework (NCSD, 2015)
 - CCCA Trust Fund/UNDP
 - UNDP/GEF Small Grants
 - CIF/Bank Financing
 - Green Climate Fund
 - Other development partners such as IFAD, DFID, USAID, NDF, LoCal
 - Private Financing

¹⁴ Is a mix of infrastructure, natural resources rehabilitation and water supply.

e) Adaptation Implementation

- National Adaptation Programme of Action to Climate Change (NAPA, 2006)
- National Adaptation Action Process (May 2017)
- Sector Programs and Projects (PIP, CCCA, PPCR/SPCR, ASPIRE, Tonle Sap Water Supply...)
- SNA Climate Change Plans and Projects (ASPIRE, Tonle Sal Small Holder Livelihood Improvement, LOCAL, SRL, IP3...)
- Community Based Adaptation and Disaster Risk Reduction (UNDP Small Grants, ADB CBADRR supporting mechanism)

f) Monitoring and Evaluation

- NSDP M&E
- Institutional Readiness (TAMD)
- PPCR Results Framework
- Project Design and Monitoring Framework (DMF)
- Log-Frame used by CSOs and NGOs for small community-based projects

The design of M&E of adaptation need to take into consideration the overall adaptation framework as summarized above, which can guide identification of appropriate adaptation indicators for measuring progress of adaptation investments consistent with the National Result Framework.

III. Assessment of National Monitoring and Reporting Framework

3.1 National M&E Framework for NSDP

The institutional arrangement and coordination for M&E integration is governed by an established M&E Steering Committee (four central agencies MOP, MEF, SNEC and CRDB/CDC); a National Working Group on M&E (NWG-M&E); members from relevant line ministries, representatives from key development partners, civil society organization, and voluntary organization for professional evaluations); and an M&E Secretariat (Members: M&E specialists from General Directorate of Planning and National Institute of Statistics).

A quick review of current membership of the NWG-M&E indicates a lack of representation of other ministries and civil society organizations, which would be subject to further improvement. This institutional arrangement for M&E is mainly administered by GDP of MOP, while NIS serves as a repository of statistical data and all indicators. Many guidelines and handbooks for M&E are still in draft form, pending approval¹⁵.

The approach of the national M&E Framework is a National Results Framework (NRF), which connects desired results and actions from the lower levels to the higher levels: program / sub-program, ministry/sector, and the whole economy (NSDP 2014-18). The NRF establishes the link between the efforts made for achieving certain goals with the actual performance and the outcomes as the following:

- Resource allocation (lower level)
- Activities
- The implementation process/output
- Final outcomes
- Impacts (higher level)

The NSDP M&E approach is - on broad lines - consistent with the PPCR results framework, which can be an entry point for harmonization and alignment of PPCR core indicators at different levels for measuring effectiveness or progress of adaptation plans and investments.

a) Impacts/Goals (MACRO Socio-Economic Performance)

The country sustainable development goals are set out by the high government policy agenda – the Rectangular Strategy which is updated in every five years. There are four interrelated Development Goals designed to achieve overall macro-economic performance and impacts at the highest level in 2014-18 as the following:

¹⁵ Orientation Guideline for Monitoring and Evaluation of NSDP Implementation (MENI), National Monitoring and Evaluation Policy (Draft), Guideline for Equity Focused and Gender Responsive Evaluation (EFGRE) of Policies and Programmes (Draft), National Monitoring Guideline/Handbook (to be done), National Evaluation Guideline/ Handbook (to be done) which are still at various stages of development and adoption.

1. Sustainable Growth (Real GDP Growth Rate, Per-capita GDP, Inclusive Growth (Index), Structure of GDP, Paddy Yield Rate, %Forest Cover, Total Cumulative Areas Cleared of Mines/ERW)
2. Poverty Reduction (Poverty Rate, Gini Coefficient of consumption Inequality)
3. Stability (Investment Rate)
4. Human Development (Education, gender, health, water/sanitation)

20 key Core Indicators are proposed at this level with data come from MEF, CDC, MOP and SNEC. In light of the Cambodia's commitment to implementation of UN Sustainable Development Goals (SDG) additional key core indicators from 17 SDG's may be added in the next NSDP cycle, including climate related indicators under Goal 13 "Take urgent action to combat climate change and its impacts". The TAMD approach developed for measuring the institutional readiness and impacts of climate change response through implementation of CCCSP can be integrated to meet the achievement of Goal 13. The National Council for Sustainable Development (NCSO) can be added to play an advisory role in development and operationalization of key impact indicators of both adaptation and mitigation response to climate change.

b) Outcomes (NSDP, Climate Change Strategic Plans and Sector Development Plans)

At this level the aggregated results chain of adaptation plans, investments and projects of sector ministries must contribute to the achievement of key outcomes of macro-economic performance and targets of the NSDP (table 9) in six key development outcomes, where climate change response and outcomes can be fit across all the areas. The National M&E framework proposes a set of 47 core indicators measuring progress and performance in key development areas as follows:

- i) macro-economic management
- ii) macro-economic growth, sectoral growth and diversification,
- iii) management of natural resources,
- iv) infrastructure development,
- v) Governance, and
- vi) Human Development Details

c) Outputs (Sector Programs, Sub-national three year rolling plans, line department projects)

The output indicators can be ideally developed for measuring specific and tangible outputs of projects and programs within medium time frame of project implementation. SPCR Programs and Projects can be placed here, likewise their monitoring framework. Projects and programs are developed to meet the strategy and action plans by both sector ministries and sub-national administration (SNA), therefore it would be more logic the adaptation indicators should be split into sectoral and sub-national indicators as their planning process and project scope are different. The National M&E Framework provides a list of 86 additional indicators for sector ministries and 26 indicators for sub-national administrations, and only a few of them related to adaptation indicators.

The M&E process is flexible and is open to introducing new indicators (or dropping/altering existing indicators), depending upon actual need. The normal practice for integration of new indicators is that the line ministry can submit a set of indicators either by the request of MOP based on specific goals or outcomes of NSDP or based on the sector goals and plans. The NWG M&E then will review the definition of each indicator, review the source of data and data collection system of acceptable quality, and will assess if the indicators are consistent with the SMART principle. Lack of standard definitions and common data collection methods represent the main challenge for aggregation of results from the lowest to the highest level. The National M&E do not accept specific project indicators as these will disappear or cannot be updated after the end of the projects, and leave the tasks to the line ministries and agencies. The data accepted by the National M&E is derived from administrative data, censuses, and surveys, where the former is updated on an annual basis, while census and survey is carried out in every ten years. M&E for monitoring of development progress at the sub-national levels is still in the initial stage of development due to the lack of resources and capacity.

Currently the GDP and NIS coordinate development, or adjustment and adoption of Indicators for measuring implementation of UN Sustainable Development Goals (SDGs) which may be put into operationalization in the next NSDP cycle. Among 17 Goals, goal 13 is most relevant to climate change adaptation mainstreaming and implementation: “Take urgent action to combat climate change and its impacts”.

3.2 M&E framework for Climate Change Adaptation and Mitigation

The DCC/NCSO has a dedicated M&E Team at its Policy and Coordination Office, led by the Chief of PCO responsible for reporting annually on the core set of indicators (currently reporting on 7 of the 8 national level indicators).



The DCC coordinates the development of a national climate change M&E framework since 2013 using the approach “Tracking Adaptation and Measuring Developments” (TAMD) in collaboration with IIED and in consultation with multiple stakeholders. The DCC also assists sectors in developing their respective CC M&E frameworks using the TAMD approach.

TAMD is a twin-track approach (table 1), which measures the capacity of institutions in managing climate risks by using institutional readiness indicators (track 1 or upstream indicators); and measures the success of climate interventions in reducing vulnerability or lowering carbon emissions by using impact indicators (track 2 or downstream indicators). At the time of TAMD development, the emphasis was on creating an M&E framework for climate responses and collecting baseline data. Baselines were developed at the national level for the following indicators:

- Institutional readiness for climate change (Track 1 upstream indicators)
- Percentage of communes vulnerable to climate change (Track 2 downstream indicators)
- Families affected by floods, storms and drought (Track 2 downstream indicators).
- GHG emissions by sectors and per capita (Track 2).

A set of core indicators are proposed for track 1 and track 2 as shown in diagram below:

Table 1: Track 1 and Track 2 Core Indicators (TAMD)

Track 1 Indicators		Outcome Resilience Indicators		Track 2 Indicators
CRM: institutional readiness/process indicators				Impact: wellbeing or loss/damage
1. Status of development of national policies, strategies and action plans for climate change response. 2. Climate integration into development planning. 3. Coordination. 4. Climate information. 5. Climate integration into financing.				1. Percentage of communes vulnerable to climate change (based on a composite of vulnerability index). 2. Percentage/number of families affected by storms, floods and droughts. 3. GHG emissions by sectors and per capita.

Source: DCC, 2016

The scorecards are developed for each indicator to arrive at a total scores in terms of percentage (%) using a simple formula¹⁶ of aggregation in the ladder. Progress along each ladder is not necessarily incremental or sequential. Each rung is scored according to whether a milestone has been reached: yes = 2, no = 0, partially = 1. The Result of scoring for National, MAFF and MPWT¹⁷ as off 2014 is considered as the baselines as shown in Table 2 below.

Three vulnerability indices (vulnerability index¹⁸, climate vulnerability¹⁹ index, and disaster risk index²⁰) are used to calculate value of the track 2 indicators. As of 2014 (NCS, 2016) it was estimated that 17.2% of communes were highly vulnerable (279 communes), and over 31.5% (512 communes) are quite vulnerable to multiple climate change hazards. The NCS is now working to develop sub-indicators for SDG indicator 13, which is expected to be integrated into NSDP 2019-23.

Table 2: National and Sector CRM Baselines (2014)

Indicator	National		MAFF	MPWT Sector
	2014	2017	2014	2014
1 Climate policy and strategy	30%	50%		31%
2 Climate integration into development planning	25%	37%	50%	45%
3 Capacity and Coordination	45%	61%	42%	28%
4 Climate information	17%	26%	21%	23%
5 Climate integration into financing	25%	42%	31%	26.5%

¹⁶ Total score (%)=[(2YxNy+1PxNp)]X100/2N; N: total number of result change/steps of the ladder

Y: Yes; P: Partly; Ny: number of answer "YES"; Np: number of answer "Partly"

¹⁷ The TAMD has not yet been integrated into M&E operation of MAFF and MPWT, now the readiness indicators (Track 1) are proposed under SDG 13.

¹⁸ A function of population, socio-economic and infrastructure

¹⁹ Combining capacity index, flood index, drought index and forest cover.

²⁰ Combined variability of exposure, sensitivity and adaptive capacity

Source: DCC, 2015/2017

In addition to the TAMD, MOE also uses PPCR results framework for monitoring and reporting of SPCR Investments which is submitted to CIF on an annual basis. Its detailed analysis and harmonization with NRF is provided in section 5 below.

3.3 Sector M&E framework for Climate Change Adaptation and Mitigation (4 sector ministries)

The M&E framework of adaptation is still in initial stage of development and testing of some indicators for tracking sector climate change action plans, projects and programs. Of particular relevance is the use of 5 PPCR Core Indicators by pilot ministries to measure progress of the SPCR adaptation Investments. In addition some ministries have adopted the ministry strategic budget framework (MSBF) guided by MEF (2007) for monitoring and reporting their sector development and at the same time have developed M&E indicators following the TAMD approach with the support of DCC and IIED. Given the lack of common understanding of adaptation M&E in general, and limited capacity of M&E officers across Cambodian institutions, the progress of integration and operationalization of adaptation indicators remain slow. This guidance would provide ample opportunity to agree on common principle and harmonized approach for development of a suit of adaptation indicators for CCAPs and adaptation investments at different levels of climate change planning and implementation.

MAFF

MAFF has adopted a Ministry Strategic Budget Framework (MSBF) initiated by MEF as part of a Public Financial Management Reform (PFM) financed by ADB in 2007. It consists of planning form, monitoring form and evaluation form. Besides the ministry has developed a twin track approach “Tracking Adaptation and Measuring Development” (TAMD) in cooperation with IIED, which is considered a pilot project for measuring CCAP. Because of lack of clarity and resources, TAMD is not yet put into M&E framework of the ministry.

TAMD indicators identified for the agriculture sector are: Rice yield per hectare, Cassava yield per hectare, Maize yield per hectare and Mung bean yield per hectare. This set of indicators was specifically kept short to provide ease of monitoring and also flexibility to further develop enhanced indicators based on lessons learned.

MWPT

MPWT in coordination with IIED has also developed national level scorecards using TAMD approach. Four categorical indicators are used to assess institutional capacities that include:

- Climate integration into development planning
- Coordination
- Climate information
- Climate integration into financing

The TAMD indicators have yet to be operationalized in the ministry planning system.

MRD

MRD has a role at subnational level in the implementation of rural works (road and water infrastructures). Climate proofing of infrastructure works necessitates specific information particularly in terms of feasibility studies and in the integration of climate change impact measurements. This Ministry should be engaged to integrate climate indicators in rural infrastructure works.

Based on the review of the MENI of NSDP 2014, a number of climate change related indicators have been introduced by the MRD as follows:

- Access to safe water source of urban population (CSES)
- Access to improved sanitation of urban population (CSES)
- Rural roads rehabilitated (out of the total rural roads) (CSES)
- Access to safe drinking water sources (rural) (CSES)
- Access to improved sanitation (rural)
- Studied and pilot constructed Pave Rural Road 450Km that have capacity to protect against climate change 100%

MRD organizes data collection using household surveys, along with physical damage and improvement records. Data is to be collected from each province under the program target by MRD staff from representative provincial offices. These resources remain limited and have further little capacity to integrate climate change proofing in their investment plans.

MOWRAM

Similar to MAFF, MOWRAM has also adopted MSBF, but there are no specific adaptation indicators yet proposed and operational in the ministry M&E system. MOWRAM has also developed a set of indicators for monitoring CCAP, but they are not yet operationalized in the M&E system. It has also developed some tools such as the Participatory Irrigation Management and Development (PIMD) to help set up Farmer Water Users Communities (FWUC).

There are several potential datasets generated by MOWRAM which can benefit several adaptation indicators, including observed change in climate variables (see section 4).

3.4 Sub-national M&E framework for Development and Climate Change Plans (NCDD-S)

The NCDD establishes the Project Management and Support Division (PMSD) which plays a key role in management and coordination of all projects, including mainstreaming climate resilience into sub-national level. At provincial level, the Planning and Investment Division of Provincial Administration is vested with responsibility for mainstreaming climate resilience into investment plan of sub-national administration.

For monitoring subnational development, the NCCDS is armed with an M&E and Information Division – composed of an M&E unit, an IT unit and a Communication Unit - a bridge for the NCCDS to work with the MOP. The NCDD-S has developed the District, Municipality and Khan (DMK) internal M&E system to monitor and evaluate the District, Municipality and Khan. The DMK M&E (2015) comprises of four types of data: i) Ordinance and Decision; ii) Planning and Budget; iii) Target indicators; and iv) Expenditure and

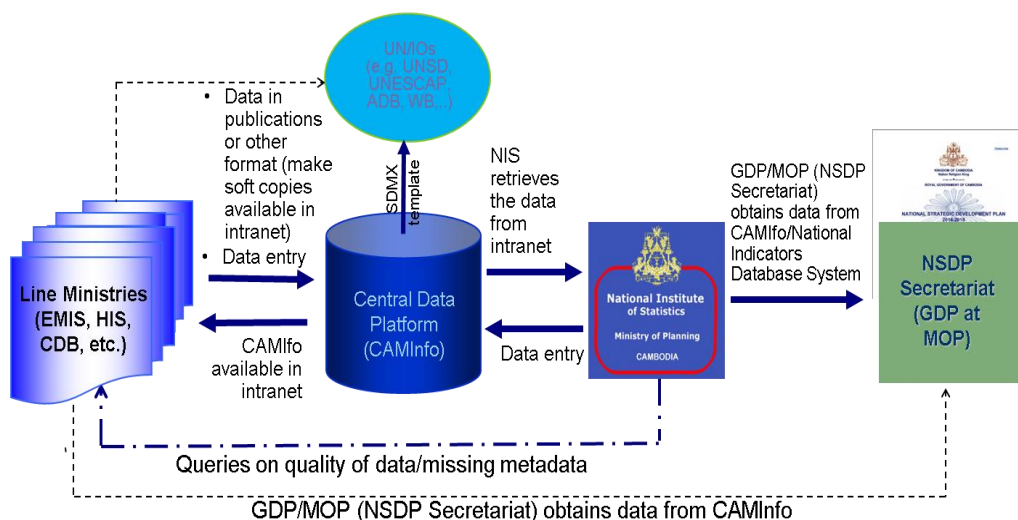
Income. There are no relevant adaptation indicators proposed under current DMK system, which would provide an opportunity for integration of some simple indicators as discussed in section 5.

IV. Existing Data Collection, Analysis and Database Management for M&E of Adaptation

4.1 Institutional Coordination, Arrangement and Data Sharing

Though there is policy and regulation governing the responsibility of data sharing by sector ministries with NIS, data sharing between ministries remains a concern for making data available and accessible at the right time and for specific needs. In order to improve data sharing, NIS considers regular meetings of Statistical Working Group as an institutional mechanism for improving data access by the public institutions. There is no clear data sharing agreement or protocol yet, including cost sharing agreement. The TA may look into a possibility to work with sector ministries for improving data sharing by supporting collection of specific adaptation data and joint sample surveys on climate vulnerability assessment and indicators for adaptation investments. The Figure 2 below is a data sharing and reporting mechanism practiced by NIS and GDP with the lime ministries.

Data Sharing/Reporting Mechanism



13

Figure 2: Central Data Platform and Management (MOP)

4.2 Data collection, compilation and database management under NIS and GDP

Currently, MoP manages four national databases including CamInfo Database, Commune Database, IDPoor and Public Investment Program (PIP) Databases. All these databases are free-access-upon-request.

4.2.1 CAMInfo Database

CAMInfo is a free-access-upon-request national database system aiming to track the progress towards both national development priorities (e.g. CMDGs and NSDP) as well as international frameworks such as MDGs and SDGs. CAMInfo is a tool for organizing, storing and presenting data in a uniform way to facilitate data sharing at the national and sub-national level across government agencies, UN agencies and other development partners with access to the most current socio-economic data and over 600 indicators. CAMInfo has features that produce tables, graphs and maps for use in reports, presentation and advocacy materials.

CamInfo is managed and implemented by the Department of Policy Statistics and Cooperation, National Institute of Statistics, Ministry of Planning. CamInfo adopted DesInfo technology, customized based on Cambodia context with data entry commenced during 2004 -2007.

CamInfo data is shared by CD ROM of database application and dataset, or the users could request the latest update of Access Database file. CAMInfo data is freely available upon request to MoP Minister or by contacting directly the Department of Policy Statistics and Cooperation of NIS, MoP. CAMInfo updated version is released once a year during January or February. Before 2011 CamInfo was released two times a year.

4.2.2 IDPoor Database

As an open-access data source, the IDPoor Database Programme's main objective is to reduce duplication of effort and resources by different institutions and organizations in identifying their target groups for various poverty reduction interventions and to ensure that assistance is provided to those households who most need it by using limited resource efficiently. Households. IDPoor is currently used by the Ministry of Health (MOH) as part of financial mechanism for the poor through Health Equity Fund (HEF).

Household poverty-level information can be aggregated by administrative area (commune, district, and province levels) to compare and identify priority regions for assistance. Poor households are given Equity Cards that can be used to get development assistance from various donors, including health care financing.

The IDPoor web-based application (<http://www.idpoor.gov.kh/> or <http://www.idpoor.gov.kh/en>) has features to provide a tool to verify Equity Card, and to generate reports for different purposes.

The IDpoor data variables includes (1) Head of Household: equity card number, present address of the poor household (village, commune, district, province), name and sex of head of house hold, and the poverty classification for each household (poor level 1, poor level 2); (2) Profile of Household Members: name, relationship to head of household, sex, year of birth, age, photo, and poverty classification; (3) Interviewing: Interviewer, Date of Interview, name of respondent, remarks; and (4) Socioeconomic: housing, food security, ownership (asset, livestock, transportation), productivity (active members, income generation). The indicators include number and percentage of households identified as poor in all villages, number and percentage of people identified as poor in all villages, number and percentage of household headed by males and females in each poverty category, total household in districts and provinces, poverty rate comparison.

The IDPoor data at each village is updated every three-years²¹. IDpoor variables can be used to estimate the number of people under poverty line supported by PPCR Core indicator 5.

4.2.3 PIP Database

The purposes of PIP are to serve as an input (capital expenditure) for annual budget preparation and to seek financial support for the project implementation from development partners, with basic data being available open access. The PIP can be used to categorize projects or programs according to their development goals as well as the type of adaptation intervention.

PIP records all prioritized public investment projects both planned and on-going projects, all required capital and technical assistance expenditures for achieving the priorities in NSDP, and the progress report on financial and physical implementation of all on-going projects. The previous PIP database was developed off line in Microsoft Access during 1995 – 2015, and there are around 300 – 400 projects a year recorded in the database. The current version of the PIP online database was launched in 2015, and there are around 400 projects from 2015 to present. The data source is from Government Ministries and Institutions who implement the public investment projects. The data is entered the PIP database once a year during January to March by the key line Ministries or institutions themselves.

The PIP Database is managed under Department of Public Investment Planning, General Directorate of Planning, MoP. The PIP data can be used to track climate change expenditure if the PIP database is customized to provide code for categories of expenditure as briefly discussed in section 2.3 above.

4.2.4. Commune Database (CDB)

The CDB Database is established as a free-access-upon-request database, and is used to support the development planning and investment programs at sub-national level and allocation of the commune/sangkat fund based on the Poverty Score. CDB is also used to monitor the performance progress at national level and sub-national levels against the Cambodia Millennium Development Goal

²¹ The IDPoor Programme classifies the different data collection activities in the provinces as “Rounds”: Round 1 was conducted in 2007, Round 2 in 2008, Round 3 in 2009, Round 4 in 2010, and Round 5 in 2011. Most areas of Kampong Cham, Kampong Thom, and Stung Treng were covered during Rounds 1–3; IDPoor data for these three provinces will be updated during Round 6 (2012).

(CMDG). CDB Application can create spider score cards at commune level, district level, provincial level, and national level for purpose of understanding development situation of communes, districts, and provinces.

CDB contains over one thousand data fields, and 136 indicators to calculate score cards of nine components in six sectors including economy (agriculture, business), social sector (education, health, vulnerability), environment, administration-security, gender, and poverty. Gender and poverty are the cross-sectors. The score card is set from 1 to 100. The high score-card means that the components/sectors are in good situation while the low score-card means that the components/sectors are considered as priority issues needed to be addressed. CDB data is collected annually in December, at village level, commune level, and district level. There are three groups of data fields/indicators (1) data fields/indicators specifically only for village level; (2) data fields/indicators specifically at commune level; and (3) data fields/indicators specifically only at district level. However, data at lower level can be aggregated to be data higher level such as from village to commune, commune to district, and district to province. CDB has time series data from 1998 to the present. The specific data at village level is collected by village chiefs using the Village Data Book for Commune Development Plan as a tool, and agreed and stamped by the commune chief. The specific data at commune level is collected by commune clerks using the Commune Data Book for Commune Development Plan as a tool. The specific data at district level is collected by district clerks using the District Data Book for District Development Plan as a tool.

The Commune Database is jointly administered by MoP and NCDD-S. The MoP Department of General Planning, General Directorate of Planning, is responsible for general management of the CDB implementation, preparation of policy and guideline, and provision of training for data collection and data compilation with village chiefs, commune chiefs, and district governors. NCDD-S provides technical support on database and data processing, and annual training for data collection or updated technology for CDB implementation.

The CDB data is accessible through official request to MoP or NCDD-S. The data users can also contact Provincial Department of Planning for specific data of the province. The CDB data is normally shared for free for specific purpose of development work.

4.2.5 Population Census and Surveys

The open-access population census dataset consists of data variables and indicators of population size; population growth; population distribution by province, rural area, urban area, region, mother tongue, age group, age dependency ratio, sex composition, sex ratio, average age at marriage, adolescent marriage, literacy rate, adult literacy rate, school attendance, educational attainment, employment and unemployment status, sector of employment, employment classification, secondary economic activity, education level of workers, fertility and mortality, migration, population with disability, and by housing and household characteristics. The population census can provide a number of proxies variables (socio-economic, access to water and sanitation, gender disparity...etc.) for measuring some indicators related to climate vulnerability assessment (as the vulnerability assessment is a function of CC impact and adaptive capacity) and improved livelihoods as a result of climate change adaptation interventions.

The population census data 2008 was collected by each enumerator for an enumeration area of around 100 household or from 500 to 600. The enumerators were recruited from local school teachers and other officers from government agencies. The next population census is planned in 2019 to update the census 2008.

4.3 Data collection, compilation and database management by MOE/NCSD

The Climate Change Department of NCSD currently does not have the database system to keep record and store the climate change adaptation M&E. The data is scattered in various reports, on their website, and in offline spread sheets. Currently MoE is in the process of developing a database to store their climate change data.

4.4 Ministry of Agriculture Forestry and Fisheries

MAFF has established two databases: Agristat and AMIS (Agricultural Market Information System). AgriStat contains data from several sub-sectors such as fisheries, forestry, agriculture, rubber and animal husbandry, while AMIS contains data on the price of agricultural commodity and products.

4.4.1 AgriStat Database

The purpose of AgriStat database is to provide weekly reports to the Prime Minister, and serve as agricultural statistics for key stakeholders and development partners who are working on agricultural development. Some data of AgriStat can be accessible online (www.maff.gov.kh), but the whole database can be available upon request.

AgriStat comprises several data categories as the following:

- Planted and harvested area, yield, and production by type;
- Area and intensity of pest, insect and effect, damage by drought or flooding;
- Use of fertilizer, variety of seeds, pesticides;
- Agricultural machinery;
- Animal husbandry by type;
- Hydrology and meteorology;
- Inland and Marine fish caught, fish processed, aquaculture;
- Wood utilized and exported; and
- Rubber utilized.

MAFF adopts several data collection system through weekly report prepared and sent by Provincial Department of Agriculture and their district offices. Data is collected based on, crop-cutting-of-rice survey, crop and livestock sample surveys, and cost-of-production surveys. The database also obtain data from several ministries such as data on population censuses, socio-economic surveys, and agricultural census from National Institute of Statistics (NIS), and data on water level and rainfall distribution from MOWRAM. Very few impact and adaptation indicators are found in this database as listed below:

- Planted and harvested area, yield, and production by type (Y);
- Area and intensity of pest, insect and effect, damage by drought or flooding (Y);

- Use of fertilizer, variety of seeds, pesticides (Y);

The AgriStat database is managed by the Department of Planning and Statistics, General Department of Technical Affairs, MAFF. The provincial department and their district offices are responsible for data collection and weekly report to MAFF in order to feed into the AgriStat database.

The AgriStat data is shared through MAFF website and publications such as annual reports and bulletins. More detailed data can be accessed by writing a letter to the Minister or by contacting the Department of Planning and Statistics directly.

4.4.2. AMIS Database

The purpose of open-access Agriculture Market Information System (AMIS) is to create agricultural information service that provides agricultural market information and reports regularly, on time, and accurately to all stakeholders and farmers. The market information will benefit agricultural stakeholders and farmers as follows:

- Increased effectiveness in receiving market information from farmers, businessmen, and other key stakeholders, which can be a basis for better marketing and bargaining power of stakeholders for better prices of agricultural produces; .
- Improved capacity of farmers and agricultural businessmen in processing, storage, packaging and transportation of produces after harvesting.
- Strengthening the technical capacity of agricultural officer responsible for agricultural market survey in municipality/province.

AMIS provides data on the prices of agricultural products such as fish, meat, vegetable, fruit, processed products, other crops; including prices and cost related to agricultural inputs, such as fertilizer, pesticide, exchange rate, and cereals. Data is collected by Agricultural Marketing Officers in Phnom Penh and other provinces. The data on wholesale agricultural price is collected three times per week, and retail agricultural price information is done one time per week in 22 major markets and other landing points.

4.5 Ministry of Water Resources and Meteorology

4.5.1. HYMOS Database

The Hydrological Meteorology System (HYMOS) is a temporal database system to keep track of hydrological and meteorological data, river water level and rainfall. The data is used to support planning and decision making of development and irrigation projects.

The data is collected every six-month from all hydrological stations. There are around 110 hydrological stations with records dated from 1920 to present. Only 40 hydrology stations have good records of data. The HYMOS database is managed by Department of Hydrology and River Works, General Department of Technical Affairs, MoWRAM. The HYMOS data is not freely accessible and data is presented as graphs

and tables in the ministry reports. More detail data can be accessible upon official request to the Minister of MOWRAM.

4.5.2 HYMET Database

The Hydrology Meteorology (HYMET) is an open-access database system recording real time monitoring of river water level. The database provides processed information and variables required by the governments of the MRC Member Countries. The HUMET can be used for disaster forecasting and earlier warning systems. The graphics of river water levels are displayed on weekly and daily basis.

The HYMET data of water level is collected from 22 hydrological stations setup along the Mekong River. In Cambodia the data come from eight hydrological stations including Stueng Treng, Kratie, Kampong Cham, Bassak, Phnom Penh Port, Koh Khel, Prek Kdam and Pursat. Each station can automatically record and relay the time series data to the HYMET. During flood season from June to December, the data is update on a daily basis. During dry season, January to May, the data is updated once a week on Monday. The HYMET data is has continuous time series since 2008.

In Cambodia, the HYMET system is managed by MOWRAM with technical support from Mekong River Commission (MRC).

The HYMET data is freely accessible through the MRC web portal, <http://portal.mrcmekong.org/river-monitoring>. For more detail data for specific purpose could be contacted with the Department of Hydrology and River Works, General Department of Technical Affairs, MoWRAM; or contact directly to MRC Regional Flood Management and Mitigation Centre.

4.6 Ministry of Public Works and Transportation (MPWT)

The database of national and provincial road inventory system is in the process of development at the MPWT. The road inventory of national and provincial roads is stored in a spreadsheet separately for each Provincial Department of Public Works and Transportation.

National Road and Provincial Road inventory list contains the following data:

- Road Category: national or provincial road, road number, and starting and ending of road PK in the province.
- Bridge Record: Each bridge record includes name of bridge, PK location, length, width, and type of bridge (concrete, bailey bridge).
- Culvert Record: Each culvert record includes PK location, category of culvert (along with the road, or across the road), type of culvert (box culvert, round culvert).

4.7 Ministry of Rural Development (MRD)

The MRD has developed a road inventory database system to track the efficiency and effectiveness of rural road management and planning for maintenance and upgrading of the road. Since December 2010 a free-access-upon-request computer-based road inventory database has been up and running. As of

the end of 2015, there are 14,609 road lines (equivalent to 42,498 km nationwide) that have been updated and newly entered into the system.

The inventory system of MRD records the following data:

- General Information: Capital/Province, District/Town/Khan, Road Number (currently no road number for rural road), Road Name, Type of Rural Road, Length of Road, Width of Road, GPS Location Starting Point, GPS Location Ending Point, Other
- Geographical Location: District/Town/Khan, Commune/Sangkat, Village
- Structures: Type of Structures (Round Culvert, Box Culvert, Water Gates, Wooden Bridge, Concrete Bridge, Steel Bridge, Cable Bridge), Dimension, Status, GPS Location
- Public Building: Type of Public Building (Health Center, Hospital, School, Training Center, Orphanage, Market, Police Office, Gendarmerie Office, Jail, Pagoda, Church, Chinese Church, Islamic Church, Tourism Area, etc.), Name of Building, GPS Location, and Direction.
- Road History: Activities (Upgrade, Repair, Periodic Maintenance, Routine Maintenance, Emergency Maintenance, Newly Constructed), Year, Implemented By, GPS Starting Point and Ending Point of activities taken, Length, Width. Each time of road repair, rehabilitation, or upgrading is recorded. This information is useful for future planning and decision making for road maintenance or upgrading.
- Type of Pavement (BST Pavement, DBST Pavement, Concrete, Laterite, Earth Soil, Mountain Sand, Mixed of Soil and Sand, Mixed of Stone, and Others), GPS Starting Point and Ending Point of Pavement, and Length of Pavement.

Each Provincial Department of Rural Development (PRD) is responsible for the following tasks in contribution to updating the road inventory system:

- Collecting and managing data of each rural road line, based on the template provided by the system;
- Updating the rural road information; and
- Submission of the updated list of rural road e to the technical team at MRD for consolidation into the road inventory system.
- The technical team at MRD is responsible for nationwide data management, maintenance and updating of the database, training, printing of rural road map for each province, and developing the Geographical Information System for MRD.

The rural road inventory system database is managed by the Department of Rural Road, General Department of Technical Affairs. The data of rural road is free access-upon-request

4.8 The National Committee for Disaster Management Secretariat (NCDM-S)

The open-access CamDi Database of NCDM-S has been developed with technical and funding support from the United Nations Development Programme (UNDP) Country Office and Bangkok Regional Hub. It is managed by the Department of Information and Relations, National Committee for Disaster Management Secretariat (NCDM-S). CamDi has methodology and application to systematically collect,

store and analyze damages and losses caused by disaster events to people, properties, roads, irrigation system, and agricultural productivity. CamDi is used as evidence-based information for planning, policy making, and prioritization of projects related to disaster risk reduction (DRR). CamDi provides analysis options and tools for reporting frequency of loss and damage by type of disasters, affected provinces and sectors.

CamDi records several variables measuring the impacts of disasters on people, infrastructure, rural roads, national roads, provincial roads, urban roads, irrigation system, public building, paddy fields, crops, and livestock. Data is compiled regularly for every disaster event from three levels: commune, district, and provincial levels, which is validated by the Provincial Committee for Disaster Management (PCDM). Currently CamDi has more than 9,200 records of disaster events and affected communes for the period since 1996 to present. The CamDi can be accessed online for free by visiting the website: <http://camdi.ncdm.gov.kh> .

4.9 The National Committee for Sub-National Democratic Development (NCDD-S)

The NCDD-S collaborates with MoP in maintaining and updating the Commune Database (CBD). NCDD-S is responsible for guiding the village chiefs, commune clerks, and district clerks in data collection and data entry into the database, while the provincial Department of Planning of MOP provides training on data collection tools and quality control. CBD is available upon request.

4.10 Potential Use as Proxies for Adaptation Indicators

Table 3 below provides a summary of potential uses of existing datasets for measuring adaptation indicators and calculation of vulnerability indices. A set of selected variables from CDB and CAMDI have been used as proxies by the Climate Change Department of NCS for calculation of vulnerability of communes and disaster risks index for the whole country. Such practice deserves further support with additional assessment of the quality of variables.

Table 3: Potential Use of Existing Databases

Dataset	Access	Update interval	Data field	Relevant Adapt Indicators	Potential Use
CamInfo	Free-access-upon-request	Every Year	Indicators of NSDP, MDG, And SDG M&E	Resilience Capacity, Vulnerability at national level	Macro- economic s indicators, productivities, loss and damages by sector, GDP growth by sector and province, including CC adaptation and mitigation indicators can be available in CAMINFO, though climate change indicators remain limited.
IDPoor	Basic data open access	Every 3 years	Statistics of poor households/ person in each village.	Resilience Capacity, Exposure, Vulnerability of the poor from village level to national level.	Proxies for climate vulnerability risk index, PPCR core indicator 4&5
PIP	Open access	Once a year	Government public investment projects handled by each sector ministry.	Resilience Capacity and Government Investment Project Information related to climate change.	Ratio of funding allocation for climate change adaptation at programs and project level
CDB	Free-access-upon-request	Every year	CMDG M&E at Sub-National Level; village, commune, district profile; sector score card indicators.	Resilience capacity, exposure, hazard challenges, vulnerability from village level to national level.	Calculation of climate vulnerability risk index down to village, commune, and district level, livelihood improvement resulted from climate change adaptation interventions
Population Census and Survey	Free access	Every ten years	population size; population growth; population distribution by province, rural area, urban area, region, mother tongue, age group, age dependency ratio, sex composition, sex ratio, literacy rate, adult literacy rate, school attendance, educational attainment, employment and unemployment status, sector of employment, employment classification, secondary economic activity, education level	Socio-economic improvement and sustainable development due to climate change intervention	Assessment of national adaptive capacity based on the GDP growth, macro-economic performance and other human development index

			of workers, fertility and mortality, migration, population with disability, and by housing and household characteristics.		
AgriStat	Open access upon request	Weekly	Agriculture-related including, planted and harvested area, pest area and affect, machinery, animal, hydrology and meteorology, fish, wood utilized and export, and rubber utilized.	Agricultural productivity improvement, crop diversification index, price fluctuation due to floods and droughts, food security	Improved productivity due to introduction of drought , flood and pest resistant crops Areas affected by floods and droughts Areas affected by pest and diseases associated with rising temperature
AMIS	Open access upon request	Two times per week	Price information of agricultural product	The price fluctuation of agriculture products in the context of climate change impacts	Food security and price of agriculture product prices in correlation with climate productivity and disasters
HYMOS	Upon request	Every six month	Historical data of river water level rainfall.	The historical of change in river water level and rain water level	Floods and drought forecasting and modeling.
HYMET	Upon request	Daily and Weekly	Historical data of Mekong river water level	The historical of change in Mekong river water level, and real time of water change.	Floods and drought forecasting and modeling.
Meteorological data	Upon request	Daily	Rainfall, humidity, wind speed, soil moisture, temperature		Monitoring climate change parameters, floods and drought modeling, Climate change scenario
National and Provincial Road Inventory System	Open access upon request	Annually	Road Category (national or provincial road, road number); Bridge Record (Each bridge record includes name of bridge, PK location, length, width, and type of bridge (concrete, bailey bridge); Culvert Record (PK location, category of culvert)	Road exposed to climate risks such as floods and storms	Length of climate resilience rural infrastructure, project beneficiaries from climate resilience infrastructure
Rural Road Inventory	Open access upon request	Annually	Record of each rural road line information, history of road improvement, and public infrastructure along the road.	Rural road that exposes to climate risk.	Length of climate resilience rural infrastructure, project beneficiaries from climate resilience infrastructure
CamDi	Open access	Every disaster	Human, House, roads, public buildings, irrigations, paddy fields, crop, and livestock subject to damages and losses by disaster occurred	Hazard Frequency, Hazard Map, historical of loss and damages on Human, House, roads, public buildings, irrigations, paddy fields, crop, and livestock.	Calculation of disaster risk index and climate impact, reduced loss and damage resulted from adaptation and DRR interventions

V. PPCR Results Framework and its Harmonization with National M&E Framework in Cambodia

5.1 Experience of Practicing PPCR Core Indicators and Data Collection Methods/Tools

5.1.1 History of PPCR Financing and Implementation

Cambodia is one of the 19 countries selected for implementing the Pilot Program for Climate Resilience (PPCR) financed through a sub-program of the Strategic Climate Fund (SCF) within the framework of US\$ 8.1 billion Climate Investment Funds (CIF). The objective of the PPCR is to pilot and demonstrate ways to integrate climate risk and resilience into core development planning, while complementing other ongoing activities (CIF, 2015). Implementation of PPCR is broken into two phases, where Phase 1 aims to build institutional readiness and capacity at various levels, while in Phase 2 a so-called Strategic Program for Climate Resilience (SPCR) is introduced with the objective to scale up piloting and implementation of specific adaptation investment projects benefiting key sectors of water resources, agriculture, infrastructure and the Technical Assistance (TA). Cambodia's SPCR (CAM SPCR) was endorsed in June 2011 with a total resource envelope of about US\$411 million (ADB, RGC 2012), comprising PPCR grant of US\$50 million, near-zero interest credit of US\$36 million and co-financing of about US\$325 million. Currently there are 9 SPCR Investment Projects with a total budget of US\$ 584.26 million as of 2016.

5.1.2 The PPCR Results Framework and Core Indicators

The PPCR Results Framework was initially adopted by the Joint CTF/SCF Trust Fund Committee in November 2010 and was revised later in December 2012 to reflect the experiences of the pilot countries and the MDBs in implementing the original PPCR results framework (CIF 2012). The objective of PPCR M&E framework is to strengthen national M&E systems to monitor and evaluate the effectiveness of climate change adaptation investments, as well as adaptation plans and institutional capacity in mainstreaming climate resilience at different levels. The PPCR M&E system is designed to support countries to monitor and report SPCR projects and programs and also provide opportunity for integration of relevant PPCR indicators into national M&E system.

The Logical Model of the revised PPCR results framework is conceptualized at two levels: country transformational impacts at the country level and outcomes of the SPCR Programs at the project or program level, which will contribute to CIF Final Outcomes at the global level (CIF 2012). The PPCR framework consists of 11 indicators (table 4), corresponding to 2 transformational impacts and 5 SPCR program outcomes.

Table 4: Revised PPCR Results Framework and Indicators

Level	Impact/outcome statement	Indicator(s)
Global: CIF Final Outcome 15-20 years	Improved climate resilience development consistent with other CIF objectives	
Country: Transformational Impacts (10-20 years)	A.1 Increased resilience of households, communities, businesses, sectors and societies to climate variability (CV) and climate change (CC)	A.1.1 Change in percentage of households (in areas at risk) whose livelihoods have improved (acquisition of productive assets, foods security during sensitive periods of the year); A.1.2 Change in damage/losses (\$) from extreme climate events in areas at risk that are geographical focus of PPCR interventions; A.1.3 Numbers of people supported by PPCR to cope with effects of climate change; A.1.4 Percentage of people with year round access to reliable water supply (domestic, agricultural, industrial)
	A.2 Strengthened climate responsive development planning	A.2.1 Degree of integration of climate change in national, including sector planning, A.2.2 Changes in budget allocations to support CC & CV
SPCR Program Outcomes	B.1 Adaptive capacity strengthened	B.1 Extent to which vulnerable households, communities and businesses use improved tools, instruments, strategies, activities to respond to CV&CC
	B.2 Institutional framework improved	B.2 Evidence of strengthened government capacity and coordination mechanism to mainstream climate resilience
	B.3 Use of climate information in decision making routinely applied	B.3 Evidence showing that climate information, products/services are used in decision making in climate sensitive sectors
	B.4 Sector planning and regulation for climate resilience improved	B.4 Leverage of PPCR funding against public and private investments in climate sensitive sectors
	B.5 Climate responsive investment approaches identified and implemented	B.5 Quality & extent to which climate responsive instruments, investment models are developed and tested

Source: PPCR Revised Framework 2014

Five core indicators are selected from the revised list of PPCR indicators for monitoring and reporting the SPCR investments, which comprise both qualitative (core indicator 1, 2 and 3) and quantitative indicators (core indicator 4 and 5) as listed below. Core indicators 1 and 2 measure the progress of climate change mainstreaming at national and sector levels, while core indicator 3, 4, and 5 monitor the progress and effectiveness of SPCR investments.

Core Indicator 1: Degree of integration of climate change in national, including sector planning

Core Indicator 2: Evidence of strengthened government capacity and coordination mechanism to mainstream climate resilience,

Core Indicator 3: Quality and extent to which climate responsive instruments/investment models are developed and tested,

Core Indicator 4: Extent to which vulnerable households, communities, businesses, and public sector services use improved PPCR supported tools, instruments, strategies, and activities to respond to climate variability or climate change, and

Core Indicator 5: Number of people supported by the PPCR to cope with the effects of climate change⁵.

The scoring criteria, scoring method and tables are developed for scoring and data compilation adapted to the Cambodia context. Scoring exercise and preparation of the report is undertaken in June/July through consultation workshop and small meetings with relevant stakeholders.

Score cards consist of 10 steps with scores ranging from 0 to 10 according to the progress made from the lowest step to the higher step (see annex 1).

5.1.3 Status of Reporting on the PPCR Core Indicators

Use of PPCR M&E framework for Cambodia was started in 2012 since the PPCR phase 1 through a series of consultation with government ministries, stakeholders, development partners and experts at national and sub-national levels (ADB/MOE 2012). It includes preparation of score cards, tables, and methods for scoring of the criterion designed for each core indicator as summarized in table 3. Baseline data was constructed in 2014 for Core indicator 1 and 2 for the second reporting of M&E. A formal institutional agreement, a SPCR M&E working group²² was formed with 10 members representing key line ministries. SPCR Coordination meeting has been convened in June of calendar year to update scoring and validate the PPCR M&E report. Stakeholders from various organizations were also invited to join the scoring exercise. At least three PPCR M&E reports (2014, 2015, 2016) have been produced and experience and lessons have been gained. The next consultation meeting on scoring of the core indicators is planned on 27 June 2017 as an output delivered under of Package C.

Table 5: Core Indicator 1

Planning Level	Score Cards										Average Progress, %	
	1a		1b		1c		1d		1e		2015	2016
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016		
National Level	6	6	3	3	5	5	4	4	2	2	40	40
Water Resources	5	5	3	3	3	4	3	3	1	2	30	34
Agriculture	5	5	3	3	3	4	3	3	1	2	30	34
Transport	5	5	1	3	3	4	3	3	1	2	26	34
Urban Planning	0	4	0	1	0	1	2	2	0	1	4	18

Table 6: Core Indicator 2 (Capacity)

²² MEF, MOP, MOE, MOWRAM, MAFF, MOI, MOWA, MPWT, MRD, and NCDM.

Planning Level	Score Cards								Average Progress, %	
	2a1		2a2		2a3		2a4		2015	2016
	2015	2016	2015	2016	2015	2016	2015	2016		
National Level	3	4	4	5	1	2	4	6	30	42.5
Water Resources	1	2	4	4	1	1	4	4	25	27.5
Agriculture	1	3	4	5	1	1	4	4	25	30
Transport	1	2	3	4	1	1	3	4	20	27.5
Urban Planning	0	1	1	2	1	1	0	1	5	12.5

Table 7: Core Indicator 2 (Coordination)

Planning Level	Score Cards										Average Progress %	
	2b1		2b2		2b3		2b4		2b5		2015	2016
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016		
National Council for Sustainable Development	4	5	5	5	1	0	2	2	1	1	26	26
SPCR Coordination Team	3	4	0	0	0	0	2	2	1	1	12	14

Progressive values of scoring criteria for the period of 2015 and 2016 is presented in Table 5, 6 and 7 below. Analysis of these tables has indicated low values of several core indicators, especially indicators 3, 4 and 5 which imply slow physical progress of SPCR investment projects.

Several lessons are learned based on scoring process and reporting of PPCR framework as the following:

- The PPCR Monitoring and Reporting (M&R) system, using scorecards, is still a relatively new approach for many stakeholders in Cambodia.
- Many stakeholders have limited awareness and familiarity on the PPCR M&R concepts, tools, and scoring processes.
- Several comments and suggestions raised during the workshop include unclear definitions and the difficulty in determining the progressive steps (0-10) of the scoring criteria for each sub-indicator.

Aggregation of the qualitative scores of SPCR projects to the programmatic and country level is a challenge given different context of climate change response by each sector, even within a sector (Core Indicator 3).

Additional field surveys may be required for measurement of core indicator 4 and 5, for example in terms of number of people or business entities use or benefit from the SPCR Projects.

There is no sector M&E unit established to carry out the scoring exercise, quality control and reporting on the SPCR projects/programs implemented under key pilot sector ministries.

- The SPCR Projects mainly follow the DMF indicators rather the PPCR indicators due to lack of clear instruction from the implementing agencies.
- The implementation of SPCR Projects remains slow and if such continues it will not provide progressive results for the M&E reports during MCRDP implementation period.

5.2 Common Principle for Harmonization of Adaptation Indicators

As described in earlier sections, 5 core indicators are selected for monitoring and reporting of PPCR Phase 2 at two levels: country transformative impacts and SPCR program outcomes. 8 SPCR investments and one TA MCRDP are implemented at national, sector and sub-national levels by key sector ministries, including MOE, MOP, MOWA, MOWRAM, MRD, MPWT and NCDD. The challenge of practicing adaptation indicators, together with the lack of common understanding among M&E practitioners, points to the need for common principle and conceptualization of M&E of adaptation. Below is an elaboration of common principle as a platform for harmonization of adaptation indicators for monitoring investments projects and programs.

5.2.1 Challenges of M&E on Adaptation and Solution

A number of institutional, technical and financial challenges and difficulties have been identified during the PPCR phase 1 and a series of consultation with key ministries and stakeholders during PPCR Phase 2 by TA 8179, which should be taken into consideration for harmonization and operationalization of appropriate M&E Adaptation framework. The complexity, cross-sector nature and uncertainties of climate change are the bottom lines of the technical challenge (Inception report) as shown below.

- Longer Time frames between interventions (investments) made and the impacts (return);
- Methods to measure baselines and targets at the transformative impact level; shifting baselines also complicate M&E. Also, aggregating baseline indicators at the program level is a major challenge.
- Counterfactual: difficult to establish “what would have happened without the intervention”
- Attributing development outcomes to PPCR interventions remains difficult – other factors and trends (e.g. socio-economic development, technological advances, etc.) may have impacts on the resilience of communities and the environment, as well as the impacts of PPCR intervention.
- Measuring successes: very subjective (contextual), trade-offs and uncertainties implying damage does not mean failure.

There is however a pragmatic approach and good practice for monitoring and evaluation of adaptation investments developed by various organization, especially UNDP, UNEP, WB, GCF, GIZ and the CIF, which can be used to overcome these challenges.

Drawing on some practice and experience of several international organizations, especially UNDP, UNEP, WB, CIF and GIZ, some solutions are proposed to address the challenges of Adaptation M&E as illustrated in table 8. All known adaptation indicators can be classified into two major categories: qualitative (process) and quantitative indicators. Qualitative indicators are normally used to measure the milestones or results of CC mainstreaming and planning process, for example concerning building adaptive capacity of institutions or stakeholders, coordination for planning and CC financing, collection of CC information and dissemination, policy development and integration into NSDP...etc. The PPCR Indicator 1, 2 and 3 and the TAMD readiness Indicators are considered qualitative or process indicators. The quantitative indicators have been commonly used for M&E of business-as-usual development and

likewise are of common use for tracking adaptation program/project intervention. The proposed solution is regarded as a dynamic which evolve with gradual improvement through learning and practicing M&E of adaptation.

Table 8: Matrix of Possible Solutions to Address the Challenges

Description of Challenge	Possible Solution
Longer Time frames between interventions (investments) made and the impacts (return);	Process indicators (CIF, UNEP, UNDP, WB) can measure progressive results of interventions in anticipation to contribute to the expected outcome and transformative impacts of the interventions. Continuous monitoring, repeated vulnerability assessment, project mid-term and end evaluation can improve learning and defining corrective actions for implementation improvement. Baselines should be established based on composite of existing proxy variables and sample survey before the project commencement.
Methods to measure baselines and targets at the transformative impact level; shifting baselines also complicate M&E. Also, aggregating baseline indicators at the program level is a major challenge.	Indicators should be consistent with the SMART principle so that simple and clear indicators can be aggregated to the country level. For example, number of people covered by the earlier warning system can be aggregated from all project interventions, be PPCR or UNDP. Disaggregation of indicators into more simple indicators can be easily measured. For example number of people supported by PPCR projects would be difficult to understand, but it would be more clearer for measurement and aggregation if it is broken into more specific benefit in terms of capacity building, access to water for farming, access to resistant crops ...etc. Repeated VRA and systematic collection of climate data and statistics, and socio-economic conditions can help define trend of shifting baselines, though it may involve more resources, especially at the sub-national levels.
Counterfactual: difficult to establish “what would have happened without the intervention”	This challenge complicates construction of baselines and targets in an uncertain changing climate. Analogue of baselines in the business as usual areas with the region of climate change intervention can help define the distinction of outcomes between the two situations. Repeated vulnerability assessment across the provinces and region can help to understand impacts of climate change and the associated cost implication in areas of climate change interventions and the business as usual development.
Attributing development outcomes to PPCR interventions remains difficult – other factors and trends (e.g. socio-economic development, technological advances, etc.) may have impacts on the resilience of communities and the environment, as well as the impacts of PPCR intervention.	Separating the adaptation measures from the overall development course is really difficult and adaptation is often regarded as a top-up for sustained development. GIZ (2014) suggests five steps for defining results framework, where step 2 is to define the adaptation dimensions in terms of adaptive capacity building, adaptation options and sustained development. Indicators can come across all these adaptation dimension which can attribute to some clear adaptation outcomes in a changing socio-economic development. Combination of process indicators and quantitative indicators such the PPCR Results Framework can

	help distinguish the adaptation outcomes.
Measuring successes: very subjective (contextual), trade-offs and uncertainties implying damage does not mean failure.	<p>The success of an adaptation project can be defined by several factors (UNDP), therefore a combination of several indicators should be considered.</p> <p>Coverage: the extent to which projects engage with stakeholders; Example: Number of stakeholders (e.g. communities, households, agencies, decisionmakers) engaged in capacity building activities for vulnerability reduction or improved adaptive capacity (UNDP). Number of people/communities supported by PPCR projects (CIF).</p> <p>Impact: the extent to which projects deliver the intended results, or bring about changes in behavior that support the portfolio’s objectives; Example: Number of communities, businesses, and public institutions use the adaptation instruments or models (CIF) Percent change in use of/performance of information management systems and early warning response times (UNDP).</p> <p>Sustainability: the ability of stakeholders to continue to adapt beyond project lifetimes; Example: Availability of skills and resources necessary to continue adaptation after conclusion of project</p> <p>Replicability/up-scaling: the extent to which experiences, results and lessons are captured and disseminated for broader benefits. Example: Number of ‘lessons learned’ codified.</p>

5.2.2 Principle and Conceptualization

As pointed out in previous sections, there are several M&E frameworks and practices applied at different levels, from the national NSDP level, to sector plans, the SPCR projects, and to the level of small community-based projects. Common principle therefore must be established to harmonize the M&E approach, as well as to address the challenges of adaptation M&E indicated in section 5.2.1 above.

a) Common Principle

The key principle of M&E for adaptation varies from country to country depending on the climate change planning process, the lessons learned from existing practice, and the scope of M&E framework that can be progressively evolved from simplicity to more complexity through testing and learning. Building on the practice of PPCR Core Indicators since PPCR Phase 1 of 2012 some common principle is considered as the following:

- **Nationally appropriate systems:** The results framework is designed to operate within existing national monitoring and evaluation systems, therefore the National Results Framework of NSDP would be a blue print for harmonization;
- **Flexible and pragmatic approach:** Application of various practice and M&E tools (TAMD, PPCRRF, Log-frame, NRF) can be flexible depending on the nature of adaptation projects and programs, as long as the results are well aligned with the NRF and practice. Combination of qualitative (process), quantitative, and binary indicators with periodic project evaluation can

improve learning progress and effectiveness of outcomes and impacts of adaptation investments.

- **Consistency with National and Sector Goals and Objectives:** This means that the adaptation indicators should be aligned with overall goals and outcomes of the national and sectoral strategy and plans such as SDGs, NSDP, CCCSPs, and CCAPs;
- **Data collection and reporting standards:** To be able to aggregate country-level results of programs and projects, a set of common adaptation indicators with clear definitions will be measured using existing data collection methodologies and existing databases, with enhancement to ensure consistency and quality.

b) Common Understanding of the National Results Framework

Following the common principle as described earlier in previous section the framework for monitoring, reporting and evaluation of adaptation should be adapted to the five levels of National M&E Result Framework (NRF): inputs, activities, outputs, outcomes, and impacts. The PPCR Results chain provides indicators at program outcomes and a transformative impact which can be aligned and integrated with the NRF as illustrated in table 9. This alignment between the National M&E RF and the PPCR Results Chain will guide integration of PPCR indicators and additional adaptation indicators at different steps of result chain tracking the overall achievement of outputs and outcomes of adaptation investments.

It is important to have a common understanding on the definitions of results chain in the context of climate change. Some definitions and example of results chain (table 9) are illustrated as follows:

- **Inputs:** refer to the financial, administrative and regulatory provision or support for implementation of particular projects and programs.
- **Activities:** can be understood as a set of specific activities or actions implemented to achieve outputs and outcomes of projects or programs, such as research, development of training modules, setting up earlier warning system (EWS), organizing trainings, development of institutional coordination, construction of roads and irrigation schemes, construction of clean water supply...etc.
- **Outputs:** are tangible results of a set of activities and interventions based on the technical and financial inputs, which can include a number of people trained, climate information established, VRA reports and feasibility study reports developed, knowledge products, adaptation plans developed, investment models developed and tested...etc.
- **Outcomes:** are understood as a result or change that can contribute to enhanced adaptive capacity, improved productivity, increased income and better access to resources and public services.
- **Impacts:** are the significant changes that have a positive and transformative impacts on climate resilience capacity, climate resilience livelihoods and the sustainable development goals.

Table 9: Example of Results Chain in Designing Adaptation Indicators for an Adaptation Project: Introduction of New Drought and Saline Resistant Rice Varieties

Inputs/activities	Outputs	Outcomes	Impacts
Research on drought and saline resistant rice varieties Field testing the drought varieties in some region Training events organized for farmers and communities	Number of farmers trained on planting new seeds Number of field research and field testing reports and knowledge Increased farmers interested in the new seeds Up-scaling (areas) planting of new seeds across the country	Yield and productivity increased in the context of climate change Number of people (benefiting) adopting drought and saline resistant rice...	Income is increased as a result of increased yields, improved livelihoods, rice surplus and increased export

Priority for integration would be given to indicators that have clear definitions, readily available data from National Statistics, administrative data, censuses and surveys, consistent with the SMART²³ principle, which would be easily implemented and aggregated from the lowest small projects, to programs, and country level. In case of either available data of poor quality or absence of data, sample surveys, focused group discussion, data collection tools and checklist (investment models, instruments and tools) can be used for scoring and assigning values.

The above principle and key considerations serve as the basis for developing a harmonized M&E of adaptation for adaptation investments as elaborated in the next section.

5.3 Harmonization and Operationalization of PPCR RF with NRF

As pointed in previous section, there are several M&E frameworks and practices applied at different levels, from the national NSDP level, to sector plans, the SPCR projects, and to the level of small community based projects. Harmonization of existing practices and approach needs a common concept of M&E framework consistent with national M&E framework and sectoral guidelines for M&E for development in general and for adaptation in particular, taking into consideration the institutional, technical and financial challenges that may impede the normal progress of operationalization of adaptation indicators. The purpose of harmonization is therefore to provide a harmonized Adaptation M&E Framework that can be cost-effective, simplicity, reliable and sustainable for integration and operationalization at different levels. Harmonization is proposed in three aspects of M&E of adaptation: i) institutional arrangement and coordination for M&E; ii) harmonized adaptation indicators of PPCR Results Framework with NRF; and iii) designing and operationalization of adaptation indicators for adaptation investments in key sectors.

²³ Specific, Measurable, Achievable, Relevance, and Time-bound

5.3.1 Improved Coordination for M&E of Adaptation Indicators

This section aims to propose a harmonized institutional framework on M&E that can coordinate and support integration of both development and adaptation indicators building on existing institutional mechanism. As noted in earlier section, the institutional arrangement and coordination for National M&E is governed by an established M&E Steering Committee²⁴, a National Working Group on M&E²⁵ (NWGM&E), and an M&E Secretariat²⁶. The NWGM&E plays a central role in coordination and integration of M&E indicators from all sector ministries into the national M&E system. The NWGM&E was established by Prakas dated 5 December 2012 and later amended by Prakas dated 23 April 2013. The NWGM&E consists of 38 members, which is chaired by a Secretary of State of MOP and is assisted by five deputy chairs²⁷ representing GDP, NIS, MEF, SNEC and CDC. The Prakas specifies the role of the NWGM&E as follows:

- Conduct study and research, and define definitions of indicators used in censuses, surveys, and administrative data according to the government guidelines;
- Select indicators and develop methodology for data collection;
- Provide guidance on development of definitions of indicators, selection of indicators, and methodologies for data collection to sector ministries and agencies;
- Provide training on defining definitions of indicators, selection of indicators, and methodologies for data collection to sector ministries and agencies;
- Develop national M&E framework for monitoring and evaluation of implementation of NSDP at national and sub-national levels.

The listed functions above are sufficient for NWGM&E to coordinate integration of development and adaptation indicators, but may not cover other important aspects of M&E: Quality Control, Reporting and Evaluation. Possible function can be added to fill this gap “Provide guidance and coordinate quality control, evaluation and reporting of M&E indicators”.

A review of current membership of NWGM&E has indicated a lack of representation of key sector ministries, agencies and civil society organizations, which can provide inputs and assist aggregation of results from the lowest to the impact levels. Participation of key stakeholders in M&E implementation is important to overcome institutional and technical challenge of M&E framework for adaptation.

Key ministries and agencies involved in climate change adaptation planning and implementation should be invited as member, namely the Ministry of Environment (MOE), National Council for Sustainable Development (NCSD), Ministry of Public Works and Transport (MPWT), National Committee for Disaster Management (NCDM), Ministry of Mines and Energy, Ministry of Land Management, Urban Planning and Construction, and National Committee for Sub-National Democratic Development (NCDD).

²⁴ four central agencies as members: MOP, MEF, SNEC and CRDB/CDC.

²⁵ members from relevant line ministries, representatives from key development partners, civil society organization, and voluntary organization for professional evaluations.

²⁶ M&E specialists from General Directorate of Planning and National Institute of Statistics).

²⁷ Director General of GDP serves as a permanent deputy chair, and Director General of NIS is a deputy chair.

However, representatives of CSOs, NGOs and development partners may not be necessarily included as members in the national committee designated by the government decree, but they can be invited to participate in the scoring process or evaluation where their inputs can provide added value and quality assurance.

A proposed improved NM&EWG is illustrated in figure 3 below.

The sector ministries must establish a functional M&E unit comprising database manager, IT, and M&E specialist to operationalize and update indicators on a regular basis. Capacity and resources including appropriate incentives for M&E unit should be adequately allocated from regular budget for routine data compilation, analysis and reporting of M&E indicators.

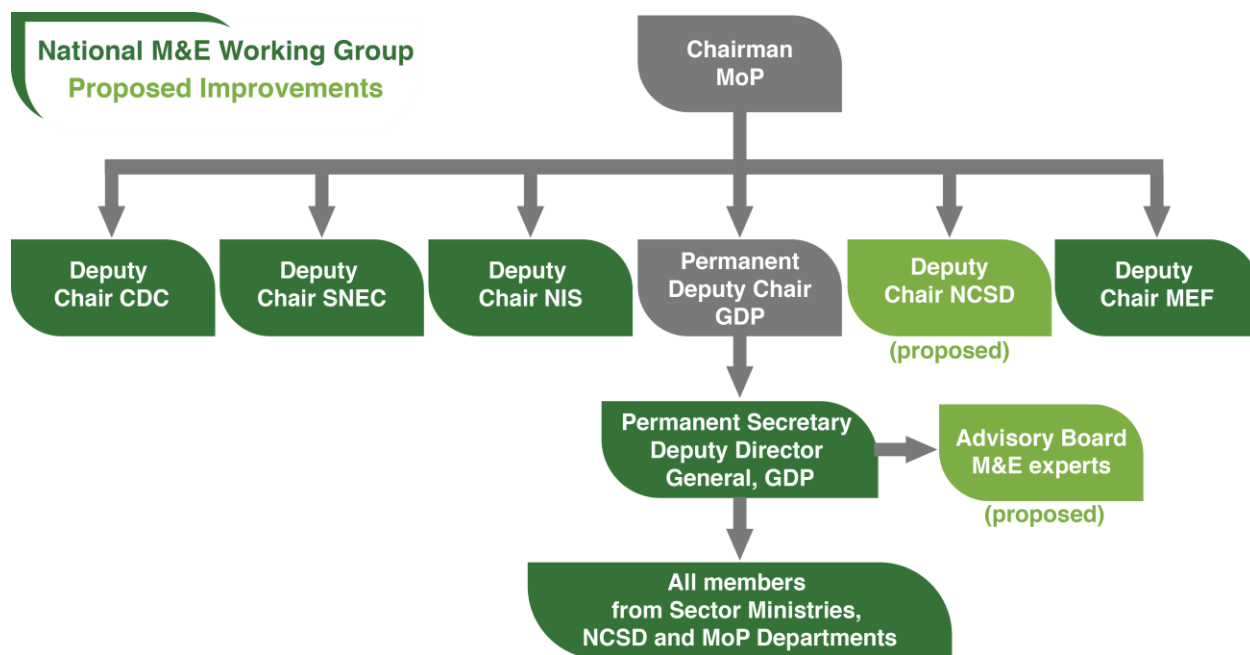


Figure 3: Proposed Improvement of NM&EWG

5.3.2 Harmonization of M&E Adaptation Indicators

a) Harmonization of PPCR Indicators with NRF

The development and integration of M&E of adaptation Indicators is a new task for many government agencies, development partners and stakeholders in the region, and no exception for Cambodia. Good concepts and best practice have been used for measuring the effectiveness and success of many aspects of socio-economic developments, but they are not sufficient to address the technical challenges associated with the complexity and uncertainties of climate change impacts and adaptation response.

Currently 5 PPCR Core indicators are used to track 8 SPCR Investments, of which Core Indicator 1, 2, 3 are process (or qualitative) indicators and Core indicators 4,5 are quantitative. Core Indicator 1 and 2 have some elements overlapping with the TAMD readiness indicators, which may be subject to harmonization with the latter as the purpose of monitoring is almost the same. Core indicators 3, 4, 5 are designed to track adaptation investments with specific score cards and tables adapted to the 8 SPCR investments. But the experience and lesson learned can point the possibility of its use for other projects outside of the SPCR portfolio following its adoption of sector ministries as part of their sector M&E. The PPCR Results indicators can be fit into the NRF as elaborated in table 10 below. Core Indicator 1 and 2 have some similarity with readiness indicators, therefore are not required to be integrated into NSDP, though sector ministries can maintain in their database.

Table 10: Harmonization of PPCR Indicators with National RF

Result Framework (NSDP)	Categories of Indicators (NSDP)	Institutional Responsibility	PPCR Indicators	Adaptation Indicators Proposed by NCSD
<p>Goal /Impacts Indicators (20 key core indicators)</p>	<p>1) Poverty Reduction 2) Sustainable Growth 3) Stability 4) Human Development (Education, gender, health, water/sanitation)</p>	<p>MEF, MOP, CDC, and SNEC, NCSD</p>	<p>A.1.1 Change in percentage of households (in areas at risk) whose livelihoods have improved (acquisition of productive assets, foods security during sensitive periods of the year);</p> <p>A.1.2 Change in damage/losses (\$) from extreme climate events in areas at risk that are geographical focus of PPCR interventions;</p> <p>A.1.4 Percentage of people with year-round access to reliable water supply (domestic, agricultural, industrial)</p>	<p>Number of communes vulnerable to climate change</p>
<p>Outcome Indicators (47 core indicators)</p>	<p>1)Macro-economic management (Budget Revenues and Expenditures, Inflation Rate, FDI, Current Account Balance, Two-way Trade, International Assistance) 2)Sectoral growth and diversification (Sectoral Growth Rates, Tourist Arrivals, Distribution of Employment by Sectors, Irrigated Area (All Crops), Land Under All Crops, Crop Diversification Index, Marketable Surplus Index)</p>	<p>MOE/NCSD MOP, Sector Ministries, NWGM&E</p>	<p>Core Indicator 5 (A.1.3): Number of people supported by the PPCR to cope with the effects of climate change.</p> <p>Core Indicator 4 (B1): Extent to which vulnerable households, communities, businesses, and public sector services use improved PPCR supported tools, instruments, strategies, and activities to respond to climate variability or climate change.</p> <p>Core Indicator 1 (A.2.1): Degree of integration of climate change in national, including sector planning.</p> <p>Core Indicator 2 (B2):</p>	<p>SDG Indicators (NCSD)</p> <p>Institutional Readiness Indicators (NCSD)</p> <p>Ratio of climate-related expenditure to total public expenditure Mainstreaming climate change issues into national and subnational plans</p>

	<p>3)Management of natural resources (Surface of 23 Protected Areas, Community Protected Areas)</p> <p>4)Infrastructure (Length of Paved roads, Railway Track Rehabilitated and Constructed, TV/Radio, Print Medium, Per-capita Electricity Use)</p> <p>5)Governance (Rate of Issuance of Land Certificates to Farmers, Conflict on Land/Property, Criminal Offences)</p> <p>6)Human development details</p>		<p>Evidence of strengthened government capacity and coordination mechanism to mainstream climate resilience.</p> <p>B.3 Evidence showing that climate information, products/services are used in decision making in climate sensitive sectors</p> <p>B.4 Leverage of PPCR funding against public and private investments in climate sensitive sectors</p> <p>A.2.2 Changes in budget allocations to support CC & CV</p>	
Output Indicators (86 additional indicators)	Project and Program-level Indicators are maintained by implementing ministries and agencies as per the RF developed for each program	Sector Ministries and NCCDS/DMK, SPCR M&E working group	Core Indicator 3 (B5): Quality and extent to which climate responsive instruments/investment models are developed and tested.	

b) Additional Adaptation indicators and Gender Responsive Indicators

The purpose of the Core indicators for SPCR investments is to measure the results of mainstreaming of adaptation instruments and investment models (mainstreaming process) in the selected provinces of climate risks. It does not yet look at the measurement of impacts and effectiveness, which may become part of the project evaluation.

Based on the list of investment models of the SPCR Investments, additional indicators to track SPCR investments, including CBADRR to complement the 5 PPCR Core Indicators can be proposed as described in the table 11 below. Each indicator can be sex-disaggregated to reflect the gender concerns, including incorporation of gender analysis in the CC planning and decision making (example PPCR Core Indicator 3, 4, 5). In addition to table 11, a few specific gender responsive indicators are recommended concerning gender mainstreaming, women empowerment and capacity building as the following:

1. Number of institutions or agencies use gender analysis and sex-disaggregated data for designing adaptation investments and adaptation plans (gender mainstreaming).
2. Proportion of women in the CC governance body in implementation of adaptation investments (empowerment).
3. Percentage of women having access to extensions, climate information and climate resilience livelihoods and sanitation (adaptive capacity building).

Table 11: Additional Indicators for SPCR Investments

Project Title	Investment Models /Instruments ²⁸	Additional Adaptation Indicators for measuring Outcome level ²⁹
Component II- Project 2- Climate-Resilient Rice Commercialization Sector Development Program	Climate resilient irrigation infrastructure	Areas covered by climate proof irrigation infrastructure Number of farmers with year-round access to climate proof irrigation for farming
	Weather-indexed crop insurance scheme in three provinces (Battambang, Kampong Thom, and Prey Veng)	Agricultural areas covered by weathered crop insurance Number of farmers having access to other micro-financing scheme to cope with crop loss and disasters
	Laser Land leveling to improve water-use efficiency	
Water Resources Component II- Project 1- Promoting Climate-Resilient Agriculture in Koh Kong and Monduliri Provinces	40 rainwater harvesting ponds for 60 ha of home garden crop production	Areas of home garden accessible to water from ponds
	One climate resilient irrigation scheme rehabilitated with a command area of 250 ha	
	15 km of bioengineered sea barriers with self-closing culverts preventing incursion of saline water during winter high tides benefiting 750 ha	
	9000-ha of forest sustainably managed for ecosystem-based adaptation	
Component I- Project 2- Enhancement of Flood and Drought Management in Pursat	Flood and drought forecasting models and early warning systems	Areas covered by and number of farmers use earlier warning system.
	Design standards and guidelines for climate resilient infrastructure	
	Improved flood protection and water management infrastructure	
	Community-based disaster risk management system	

²⁸ Source: PPCR M&E report 2016.

²⁹ Based on consultation and review of existing international publications.

Component III- Project 1- Climate Proofing of Roads in Prey Veng, Svay Rieng, Kampong Chang and Kampong Speu Provinces	Rehabilitated and upgraded roads/dykes and dredging of lake in flood-prone parts of 4 provinces	Change in incidents of road damage and associated maintenance cost due to flood
	Bioengineering and other ecosystem-based adaptation measures	Length of road incorporating bioengineering design
	Community-based emergency management system pilot in Kampong Chhnang	Number of communes adopting community based emergency management system
Component III- Project 4- Climate Resilient Rural Infrastructure in Kampong Cham Province	240 km of rural roads, including 193.9 km in Tboung Khmum and 50 km in the five Mekong River islands, rehabilitated to climate-resilient condition	Change in incidents of road damage and associated maintenance cost due to floods
	11 jetties with climate resilient standards rehabilitated or developed	
	Community-based emergency management system	Number of communes adopting community based emergency management system
Component III- Project 2-Climate Proofing Infrastructure in the Southern Economic Corridor Towns	Wastewater treatment facilities in 3 towns (Battambang, Bavet, Poipet)	
	Flood control and flood protection structures in Battambang and Neak Loeung	Change in loss and damage by flood
Component III- Project 3-Flood- resilient Infrastructure Development in Pursat and Kampong Chhnang Towns	Embankment protection for flood control (Kampong Chhnang)	Change in loss and damage by flood
	Drainage improvements (Pursat)	
	Community small-scale infrastructure improvements in pre-identified poor and vulnerable areas in each municipality	
Component IV- Technical Assistance: Mainstreaming Climate Resilience into Development Planning	Vulnerability assessment/risk screening tools	
	Adaptation guidelines/manuals	
	Educational curricula on adaptation and disaster risk reduction (DRR)	Number of universities and faculties integrating the curricula into their course programs
	Small grant scheme to community-based organizations and non-governmental organizations	% or # communities adopting climate resilience livelihoods (agriculture, water, and sanitation) through CBCADRRs or PPCR (e.g. drought and saline resistant seeds, crop diversification, composting and green manure, integrated pest management, dripping irrigation, water management, pond sanitation and community waste management...etc.)

		<p>% or # communities having half year-round (and year round) access to water via support of CBCADRRs (gender disaggregated)</p> <p>% communities, households and businesses use climate awareness, information (early warning) and CBCADRR tools (VRA) to cope with CC risks and reduce CC vulnerability (sex disaggregated)</p> <p>% communities and communes adopting CBADRR management plans</p> <p>% or # CSOs and NGOs use climate information and VRA for CBCADRR planning, implementation and M&E</p> <p>% or # women in leadership position of CSOs and NGOs using climate change information for CBCADRR planning and M&E</p> <p>% or # communities and households having access to climate information by different means (radio, Facebook, TV, and early warning system)</p>
	Reports/knowledge products on adaptation and DRR	
	Adaptation feasibility studies	Feasibility study tools are used by sector ministries for identification of adaptation investments.

5.3.3 Key Considerations for Identification of adaptation Indicators for Monitoring Adaptation Investments

Based on key priority areas of the current Cambodia Adaptation Framework presented section 2.4, adaptation investments are designed in response to the adaptation needs of four main sectors: agriculture, water resources, health, and infrastructure. Coastal zone can be considered as an important eco-region, but not as a sector, for possible intervention in the four sectors. The current SPCR Investments models are well aligned with these key sectors (Table 11), but with added focus on urban infrastructure and sanitation. Key considerations are proposed for defining adaptation indicators as the following:

- Analysis of the key focus of the sector strategies and actions in terms of investments and expected targets/outcomes in key sectors of water resources, agriculture, health, and infrastructure.

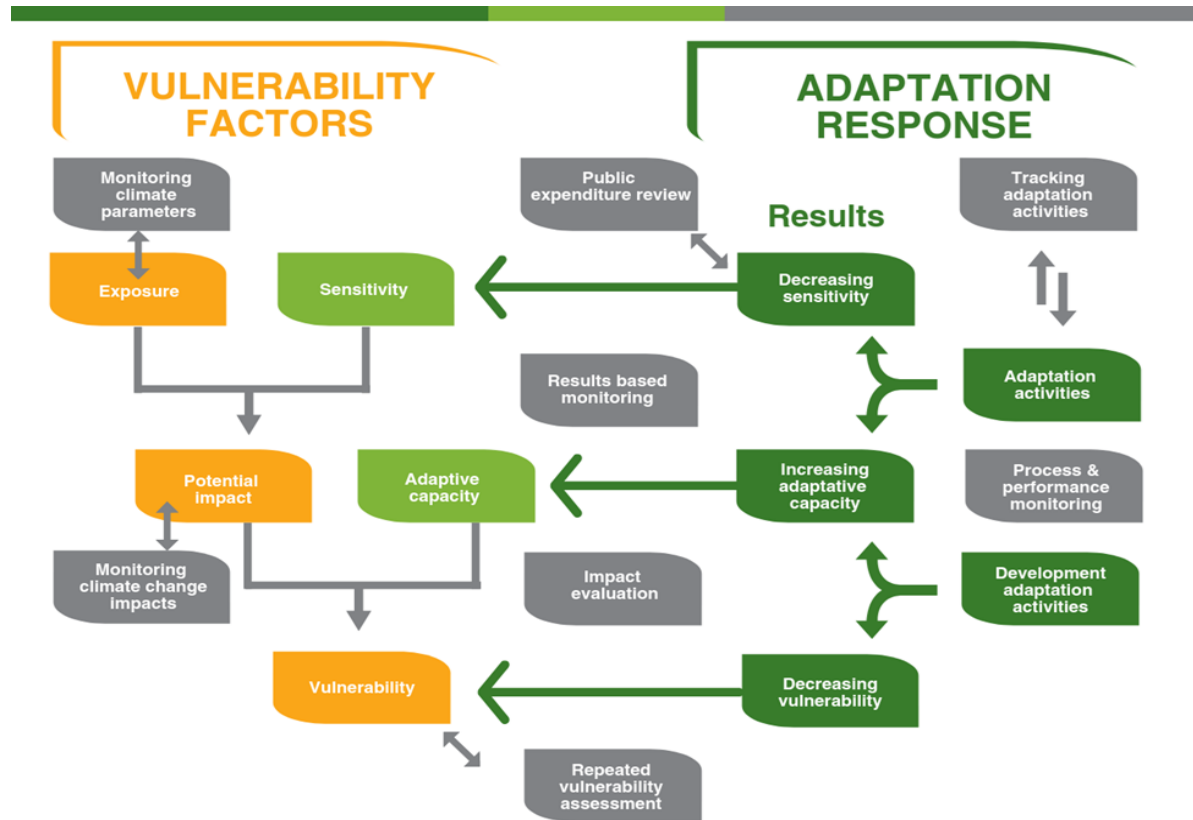


Figure 4: Adaptation Framework and M&E

- Adapting to the three levels of NRF: outputs, outcomes and impacts level, bearing in mind that impacts and outcomes may require more resources for data collection.
- The indicators should reflect the key results of adaptation intervention or investments: decreasing vulnerability, reducing impacts, decreasing exposure/sensitivity, and enhancing resilience/adaptive capacity (figure 4). It is important to note that adaptation indicators of projects may not be considered for integration into NSDP as indicators may not be followed up after the project end.
- Results of activities can be used to monitor implementation progress, but may not be important indicators for aggregation to the program or country level.
- A combination of process, quantitative and binary indicators can be used to track adaptation investments, but clear definitions and data collection tools must be agreed as adaptation measures and technologies can be interpreted differently among stakeholders.

Table 12 below provides a set of possible adaptation indicators by key sectors to guide M&E practitioners in development of M&E of adaptation, taking into consideration the PPCR result framework. The list is not exhausted and additional adaptation indicators can be identified based on the nature of each adaptation investment.

Table 12: Possible Adaptation Indicators by Sector in Combination with PPCRRF

Outcome Indicators	Water Resources	Agriculture	Infrastructure	Safe Drinking Water and Sanitation
Example of Adaptation Indicators	<p>Number of people with diversified income</p> <p>Percentage of poor people in drought-prone areas with access to safe and reliable water</p> <p>Percentage of urban households with access to piped water</p> <p>Percentage of water demand being met by existing supply</p> <p>Percentage of households at reduced flood risk due to construction of new flood control dikes or enhanced defenses</p> <p>Reduction of flood damage and disaster relief costs in cities due to increased standards for flood protection and improved flood emergency preparedness</p> <p>Number of communes vulnerable to climate change.</p> <p>Number of FWUCs adopting climate resilient irrigation and water management</p>	<p>Number of people with diversified income</p> <p>Percentage of livestock insured against death due to extreme and slow-onset weather events</p> <p>Percentage of farmland covered by crop insurance</p> <p>Percentage of additional fodder for grazing livestock</p> <p>Increase in agricultural productivity through irrigation of harvested land</p> <p>Number of model farmers adopting climate resilience agriculture and crop diversification</p> <p>Increase in the percentage of climate resilient crops being used</p> <p>Increased agriculture productivity due to introduction of climate resilient crops</p> <p>Percentage of agricultural areas cultivated with drought resistant varieties</p>	<p>Percentage of climate resilient (proof) roads in the country</p> <p>Length of roads damaged by floods</p> <p>Number of people benefiting from the roads (direct and indirect)</p>	<p>Number of People access to safe drinking water and sanitation</p> <p>Proportion of people benefits from urban waste management and sanitation</p>

	<p>Number of people living in flood prone areas</p> <p>Number of properties flooded per year</p> <p>Number of households affected by drought</p>	<p>Percentage of total livestock killed by drought</p> <p>Agricultural areas affected/damaged by drought, floods and pest</p>		
PPCR RF	<p>A.1.1 Change in percentage of households (in areas at risk) whose livelihoods have improved (acquisition of productive assets, foods security during sensitive periods of the year);</p> <p>A.1.2 Change in damage/losses (\$) from extreme climate events in areas at risk that are geographical focus of PPCR interventions;</p> <p>A.1.4 Percentage of people with year-round access to reliable water supply (domestic, agricultural, industrial) Core Indicator 5 (A.1.3): Number of people supported by the PPCR to cope with the effects of climate change.</p> <p>Core Indicator 4 (B1): Extent to which vulnerable households, communities, businesses, and public sector services use improved PPCR supported tools, instruments, strategies, and activities to respond to climate variability or climate change.</p>	<p>A.1.1 Change in percentage of households (in areas at risk) whose livelihoods have improved (acquisition of productive assets, foods security during sensitive periods of the year);</p> <p>A.1.2 Change in damage/losses (\$) from extreme climate events in areas at risk that are geographical focus of PPCR interventions;</p> <p>A.1.4 Percentage of people with year-round access to reliable water supply (domestic, agricultural, industrial) Core Indicator 5 (A.1.3): Number of people supported by the PPCR to cope with the effects of climate change.</p> <p>Core Indicator 4 (B1): Extent to which vulnerable households, communities, businesses, and public sector services use improved PPCR supported tools, instruments, strategies, and activities to respond to climate variability or climate change.</p>	<p>A.1.2 Change in damage/losses (\$) from extreme climate events in areas at risk that are geographical focus of PPCR interventions;</p> <p>Core Indicator 5 (A.1.3): Number of people supported by the PPCR to cope with the effects of climate change. (disaggregated by gender, poverty line, and disable groups)</p> <p>A.2.2 Changes in budget allocations to support CC & CV</p>	<p>A.1.1 Change in percentage of households (in areas at risk) whose livelihoods have improved (acquisition of productive assets, foods security during sensitive periods of the year);</p> <p>Core Indicator 5 (A.1.3): Number of people supported by the PPCR to cope with the effects of climate change. (disaggregated by gender, poverty line, and disable groups)</p> <p>A.2.2 Changes in budget allocations to support CC & CV</p>

	A.2.2 Changes in budget allocations to support CC & CV	A.2.2 Changes in budget allocations to support CC & CV		
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VI. Guidance for integration of PPCR RF in key Sectors

6.1 Implications of revised PPCR logic model on Cambodia

The logic model is a diagram intended to demonstrate the cause and effect chain of results from inputs and activities through to project outputs, program outcomes, and national/international impacts. The logic model is not intended to show how these results will be measured through indicators. One of the strengths of the logic model is the flexibility with which it can be applied to a variety of circumstances and contexts. As with all results frameworks these logic models should not be seen as a blueprint for implementation, but rather a framework that can be adjusted as progress is made and lessons are learnt, especially at the project and country levels of the results chain. The original PPCR logic model was approved by the joint meeting of the CTF and SCF Trust Fund Committees in November 2010. It was later suggested that the initial logic model should be modified to give greater focus to the key operational objectives of PPCR. (CIF, 2012).

The stated impact objectives for PPCR are (a) increased resilience of households, communities, businesses, sectors and society to climate variability (CV) and climate change (CC); and (b) improved climate responsive development planning. The proposed outcome objectives for PPCR are: (a) adaptive capacities strengthened; (b) adequate institutional frameworks in place; (c) climate information in decision making routinely applied; (d) improved sector planning, and regulation for climate resilience improved; and (e) innovative climate responsive investment approaches identified and implemented.

SPCR in Cambodia will contribute to achieving these results outlined in the paragraph above through programs and projects that build infrastructure, develop capacity, and provide financing to the 7 adaptation investment projects currently getting implemented across the country. Although the revised results framework contains fewer indicators, it will still be necessary to test the practicality of the results framework, particularly linking projects/programs with higher level country objectives. As project level output/intermediate indicators are specific to each project/program and the priorities of each country, they are not specified in the PPCR results framework. However, project/program documentation will demonstrate how the output indicators that are selected will help achieve outcomes at the PPCR program (country) level (CIF, 2013).

The Department of Climate Change (DCC), General Secretariat of the National Council for Sustainable Development, coordinates climate change efforts across ministries. To this end, in 2016 the CCSP developed a national-level M&E framework applying the Tracking Adaptation and Measuring Development (TAMD) model. TAMD is a globally-recognized methodology for CCA M&E of CCA. It was

developed by the International Institute for Environment and Development (IIED) as a ‘twin-track’ approach to M&E of CCA at the national level; the framework is also flexible enough to be applied in other contexts, including at the Ministry level. The twin tracks encompass “how widely and how well countries or institutions manage climate risks (Track 1) and how successful adaptation interventions are in reducing climate vulnerability and in keeping development on course (Track 2)” (IIED 2012). A number of Cambodian Ministries already have approved Climate Change Action Plans (CCAPs) in place, each with a detailed M&E framework. The TAMD framework is now being applied to selected ministries to bridge the detailed sectoral M&E systems to the national CCA M&E framework.

The report presents the first iteration of applying this framework to Cambodia’s Ministry of Agriculture, Forestry and Fisheries (MAFF). The sectors covered by this Ministry are exceptionally vulnerable to climate change: they are highly affected by floods, droughts, and other “natural” disasters, and are also exceptionally sensitive to even subtle weather and climate variations. The Royal Government of Cambodia’s (RGC) overall CCA policies thus include considerable emphasis on work within MAFF’s mandate. RGC has set ambitious goals to increase rice yields and otherwise expand productivity and commercialization of the agricultural sector, and CC represents a serious potential threat towards meeting those targets. Adaptation strategies in agriculture, forestry, and fisheries are essential to meeting Cambodia’s overall economic development aims. To this end, MAFF’s 2014-2018 Climate Change Action Plan (CCAP) articulates the following goals:

6.2 Guidance to MAFF, MPWT, MOWRAM and MRD in harmonizing Key indicators of revised PPCR Results Framework and national M & E System

The national M&E system opens opportunities for incorporating new indicators as long as the ministry or agency responsible to monitor those indicators are identified, statistical data for monitoring are available and capacity and resources are ensured. Based on these conditions, it is foreseen that a number of critical climate change related indicators could be proposed for incorporation into the national M&E framework after gaining certain M&E experiences and results will be achieved during the PPCR II.

The revised draft revised PPCR Results framework approved by PPCR sub-committee includes a total of 5 national level indicators to monitor core indicators of PPCR objectives such as increased resilience of households, communities, businesses, sectors and society to climate variability (CV) and climate change (CC) and climate responsive development planning. Indicators at project level are to be developed as they start getting implemented.

Selection of baselines and targets for the 5 core indicators of revised PPCR Results Framework in Cambodia needs further work as such information currently does not exist especially for indicators including percentage of households whose livelihoods have improved, change in damages and losses to extreme events, number of people supported by PPCR to cope with climate change.

As a part of revised PPCR results framework, pilot countries such as Cambodia are required that the projects/programs submitted to the PPCR SC for approval has to clearly articulate on how the outputs will contribute a PPCR outcome and include a draft result frameworks at the project/program level with a set of concise output indicators as provided by the CIF guidance note (CIF, 2013).

Mainstreaming PPCR Results framework into the national M&E system is critical to ensure the sense of ownership of the programme by the RGC. Hence regular monitoring and evaluation to ensure that NSDP implementation proceeds along the intended path at the required pace to achieve its goals and targets has been increasingly encouraged by the RGC. Coordinating effective monitoring and evaluation of progress is a core component of the MoP's overall responsibility for oversight of the NSDP. It is fortunate that development of the next term NSDP 2019-2023 will start soon, and the CCCSP's M&E Framework is also being designed now.

This provides momentum for mainstreaming the climate resilience into the new term NSDP through M&E implementation of the PPCR Phase 2 which recently kick-started. The five years coincided (2013-2018) implementing period of the three strategic plans will provide opportunities to apply, learn and improve the mainstreaming strategies, coordination and intended results.

In Cambodia's SPCR, the following climate responsive instruments/investment models are considered and implemented across the adaptation investment projects under MAFF, MRD, MPWT and MOWRAM:

- a) Technologies or infrastructure investments (e.g., improvements to buildings, agricultural, coastal, hydro-meteorological, transport, water, drainage, ICT, and energy systems)
 - upgraded water management infrastructure
 - rehabilitation and climate proofing of irrigation systems
 - construction of paddy drying and storage facilities
 - climate proofed provincial roads
 - climate proofed rural roads
 - upgraded urban roads with drainage structures
 - construction of urban and flood protection infrastructure
 - improvement of wastewater treatment and solid waste management facilities
- b) Data, analytical work, technical studies, and knowledge assets (e.g., climate scenarios, forecasts, vulnerability assessments, climate risk/impact analyses, maps, needs assessments, guidelines/manuals)
 - enhanced regional data, information, and knowledge base for the management of floods and droughts
 - vulnerability mapping and assessment and ecosystem-based adaptation measures
 - strategic local economic development plans with sex-specific and climate-resilience measures
 - adaptation guidelines
 - risk screening tools
 - Adaptation feasibility studies
- c) Public awareness platforms (e.g., information dissemination platforms, media campaigns, weather information, knowledge sharing events, stakeholder networks, websites, educational curricula, market prices and training)
 - training on community-based disaster risk management
 - training for improving efficiency of irrigation water use through land leveling

- rice mill management training initiatives that integrate climate change concerns
- training through developing and piloting weather-indexed crop insurance scheme
- training to mainstream adaptation into road infrastructure planning and maintenance
- information dissemination platforms
- awareness raising activities
- knowledge sharing events
- media campaigns
- PPCR website
- stakeholder networks
- educational curricula on adaptation
- d) Financial instruments (e.g., micro/insurance, micro/finance, small grants, loan facilities)
 - weather-indexed crop insurance scheme
 - payment for ecosystem services
 - small grants to community-based organizations and non-governmental organizations
- e) Public/community services (e.g., water and sanitation, transport, flood protection, irrigation, early warning, social protection, education, health)
 - flood protection, water supply and sanitation, transport, irrigation, early warning systems
 - climate resilient measures, including planting and green maintenance
 - community-based emergency management system pilot in Kampong Chhnang province
 - community based disaster risk reduction projects (small grants)

Considering prevailing conditions and circumstances of the national M&E, the best approach to mainstream the revised PPCR Results Framework into the national M&E system is through the M&E Framework for monitoring the CCCSP under the MoE. The PPCR Team can work closely with the Climate Change Department (CCD) under MOE to collaborate with the MoP in designing and integrating the Climate Change M&E framework into the national M&E framework working at core indicator and overall program output / outcome levels.

A brief analysis of harmonizing core indicators of revised PPCR Results Framework and national M & E system is provided as hereunder with guidance on potential sources of data collection by line ministries including MAFF, MPWT, MRD and MOWRAM.

6.2.1 (A1) Increased resilience of households, communities, businesses, sectors and society to climate variability and climate change

The Number of people supported by the SPCR in Cambodia to cope with the effects of climate change indicator estimates the number of people supported by the 7 SPCR adaptation projects to cope with the effects of climate change implemented in various provinces of Cambodia. This includes targeted (direct) and indirect beneficiaries. In order to estimate this figure at the country program (SPCR) level, information must be collected from each relevant project and then aggregated at the level of the SPCR. Figures collected by routine monitoring will simply be aggregated, because synergistic benefits cannot be measured by this indicator alone. The PPCR project/program level indicators must logically derive from and directly feed into the results at SPCR impact level.

During multi-stakeholder consultations with policy makers, NGOs and CSOs of Cambodia, it was well guided by the TA team that relevant projects are those that include targeted interventions in key sectors i.e., the 7 SPCR loan projects. It does not include programs which are supporting planning processes, knowledge and evidence gathering, or other building blocks processes unless the supported population can be discretely identified. For this indicator, beneficiaries should not include Cambodian government employees who directly benefit e.g. training, salaried, etc., unless they are a part of the greater target project population where they would have been normally counted.

The number of people supported by each relevant project or program needs to be established first and then aggregated across the 7 adaptation investments projects spread across Cambodia in order to estimate and report on the total number of people supported by the SPCR. The sum of targeted (direct) and indirect beneficiaries needs to be reported as the total number of people supported at the project and SPCR level. However, this total should also be disaggregated in project and SPCR results tables and reports that the Government of Cambodia submits to ADB and CIF on an annual basis.

Direct support to individuals or households implies a much higher attribution to the overall benefits from the SPCR projects implementation in Cambodia (e.g., number of people connected to improve water supplies or number of people enrolled in crop insurance programs). Indirect beneficiaries are those whom projects cannot target but whom can be affected by and benefit from projects (e.g., people living in a large catchment area or densely populated urban area benefitting from flood protection infrastructure). Indirect beneficiaries should be fully accounted without applying a discount factor.

Harmonizing with NSDP data collection

For establishing the baseline and subsequent monitoring all efforts should be made to use recent data sourced from Cambodian national systems (e.g., CamInfo, IDpoor, PIP etc). Data is available from the offices of National Institute of Statistics (NIS) and General Directorate of Planning under the Ministry of Planning. However, recent data relevant to each of the 7 adaptation investment projects are coordinated by the concerned line ministry. A data sharing protocol is currently under development by the MoP for collecting, compiling and harmonizing project specific data including baselines that should be used to monitor the number of targeted (direct) and indirect beneficiaries of each sectoral project.

Monitoring data on direct and indirect beneficiaries needs to be collected on the level of the individual (number of people) or household (number of households) at the provincial and sub-national levels of Cambodia. However, for reporting on total, direct and indirect beneficiaries, data needs to be expressed as number of people. A standard multiplier for household size based on the most recent national census or nationally representative household survey should be used to convert number of households to number of people residing in the district, khan and sangkats of provinces of Cambodia.

Where social (vulnerability) baseline surveys and analyses have been conducted, monitoring will allow for disaggregation of the number of poor, vulnerable, and/or female beneficiaries. Disaggregated data will be reported as percentages of the total number of people supported by the SPCR

6.2.2 (A2) Degree of integration of climate change in national, including sector, planning: Measurement will be at the level of the SPCR and by way of a qualitative scorecard

The indicator is designed to capture the extent to which considerations of climate resilience (risks, opportunities) are integrated into planning processes at district, Khan and Commune levels of

Cambodia. This indicator provides reference data about the strength of Cambodia's climate-responsive development planning.

In this indicator, degree refers to the maturity of the process of integration of climate resilience within national, ministry and sector planning processes in Cambodia. This indicator is a qualitative assessment of the various strategic plans and documents to observe changes in terms of climate change mainstreaming and quality. The qualitative assessment needs to focus on the following criteria:

- Existence of a specific climate change plan or a climate resilience strategy embedded in the principal planning documents at various levels (District, Khan and Sangkat);
- Responsibility assigned to coordinate climate resilience planning and adequate resources available;
- Specific measures to address climate resilience identified and prioritized;
- Routine screening for climate risk in planning processes;
- Existence of a formal monitoring and evaluation system that reviews climate risk screening, assessment, and reduction measures, and integrates lessons learned into planning.

Harmonizing with NSDP data collection:

For establishing a baseline and subsequent monitoring of the extent to which climate change is integrated into district, including commune planning, data should be drawn from official policy planning documents. In addition, baseline information may be drawn from district and commune database (CDB), including meeting documents, workshop and budget reports, policy papers, and other relevant reports available from civil society and the SPCR Cambodia stakeholder community.

This information will help the reporting ministry of Cambodia to calibrate and to justify the appropriate responses to the qualitative scorecard. All documentation containing relevant information (the evidence base) that has informed the self-assessment should be stored by the respective Ministry and the SPCR ministerial focal point for future reference.

6.2.3 (B1) Extent to which vulnerable households, communities, businesses, and public sector services use improved PPCR supported tools, instruments, strategies, and activities to respond to climate variability or climate change.

The indicator indirectly estimates the extent to which the SPCR in Cambodia is strengthening the adaptive capacities of target stakeholders, by measuring their uptake of climate responsive tools, instruments, strategies, and activities that the PPCR is supporting. The target stakeholders are vulnerable households, communities, businesses, and public sector services at district, khan and sangkat levels. It is to be noted that each of the 7 SPCR adaptation investment projects explicitly explains what makes the target users of a particular PPCR supported tool/etc vulnerable in their baseline documentation and subsequent reporting.

Climate responsive tools, instruments, strategies, and activities are those that incorporate climate variability and climate change considerations to reduce vulnerability and enhance the resilience of people, products, or services at national and sub-national levels in Cambodia including:

- Policies, plans, and regulations (e.g., adaptation policies, disaster risk management policies, resource management plans, sector development plans, investment plans, land use zones/plans, design codes/standards) at commune, khan, sangkat, district and provincial levels of Cambodia
- Technologies or infrastructure investments (e.g., improvements to buildings, agricultural, coastal, hydro-meteorological, transport, water, drainage, ICT, and energy systems) at national and sub-national levels;
- Data, analytical work, technical studies, and knowledge assets at sectoral and programmatic levels (e.g., climate scenarios, forecasts, vulnerability assessments, climate risk/impact analyses, maps, needs assessments, guidelines/manuals);
- Information dissemination platforms (e.g., media campaigns, knowledge sharing events, stakeholder networks, websites, educational curricula, trainings);
- Financial instruments (e.g., micro/insurance, micro/finance, small grants, loan facilities);
- Public/community services (e.g., water and sanitation, transport, flood protection, irrigation, early warning, social protection, education, health)

Tools are considered “PPCR supported” if they are developed, tested, promoted, or used within the scope of activities carried out in Cambodia SPCR program, including with financial or technical support from all sources.

Harmonizing with NSDP data collection:

It is important to use data sourced from existing project/SPCR documentation and other relevant reports available from civil society and the PPCR stakeholder community in Cambodia in order to establish the baseline and subsequent monitoring of this indicator. This information will help the reporting ministry to gauge and to justify the appropriate strength of their responses to the qualitative scorecard. Relevant reports available from civil society and the PPCR stakeholder community will be an integral supplement. All documentation containing relevant information that has informed the self-assessment should be stored by the respective Ministry and the SPCR ministerial focal point for future reference.

6.2.4 (B.2) Evidence of strengthened government capacity and coordination mechanism to mainstream climate resilience

Mainstreaming climate resilience in Cambodia needs to ensure that considerations for climate risk and resilience flow into national M & E processes such as the upcoming NSDP 2019-23.

Government capacity to mainstream refers to levels of institutional knowledge pertaining to climate risk and climate resilience in the relevant line ministries; the technical capacity; the political will as evidenced by national policies and legislative undertakings; and the level of resources allocated to mainstream climate resilience.

The indicator calls for the measurement of two distinct components:

- (1) Strengthened government capacity to mainstream climate resilience, and
- (2) Strengthened coordination mechanism to mainstream climate resilience.

While measuring strengthened Cambodian government capacity, the key indicators that serve the purpose are not limited to the following but also include: evidence of enhanced institutional knowledge, enhanced levels of political will or support for mainstreaming sector exercises/processes, the levels of resources being allocated to mainstreaming exercises /processes in sectors, and the human capacity to mainstream, enhanced.

In measuring strengthened coordination mechanism of the Royal Government of Cambodia, the key indicators that need special attention include the following: evidence of enhanced levels of functionality of the mechanism set up to mainstream climate resilience and adequate budgetary resources allocated and/or ability to source new and additional financing.

Functionality of coordination mechanism in Cambodia shall be assessed using the following parameters: (i) extent to which the mechanism is formalized (ad hoc group versus cabinet sanctioned institution); (ii) integration into all government ministries/sectors (iii) comprehensiveness of non-governmental stakeholder representation; (iv) availability of climate resilience information to general public; (v) ability to self-assess and update earlier undertakings; (vi) inclusiveness, in particular in terms of women/gender (CIF, 2013).

Harmonizing with NSDP data collection:

For establishing a baseline of strengthened Cambodian government capacity all efforts should be made to use data sourced from national repositories (meeting documents, workshop and budget reports, policy papers, etc.) and other relevant reports available from civil society and the PPCR stakeholder community. This information will help the reporting entity to gauge and to justify the appropriate strength of their responses to the qualitative scorecard.

For subsequent monitoring of strengthened coordination mechanism in Cambodia, self-assessment and reflective processes will inform the responses to the score, but where possible, meeting documents and reports should be used to help the reporting line ministry in Cambodia gauge the appropriate strength of their responses to the qualitative scorecard.

Additionally, relevant reports available from civil society and the PPCR stakeholder community in Cambodia will be an integral supplement. All documentation containing relevant information (the evidence base) that has informed the self-assessment should be stored by the respective Ministry and the PPCR ministerial focal point for future reference.

6.2.5 (B5) Quality and extent to which climate responsive instruments/investment models are developed and tested

The indicator indirectly estimates the extent to which the SPCR implementation in Cambodia is identifying and implementing climate responsive investment approaches, by documenting the instruments and models that have been developed and tested with SPCR support and assessing their quality.

Climate responsive instruments / investment models are those that incorporate climate variability and climate change considerations or can be applied to enhance the climate resilience of people, products, or services, such as (CIF, 2013):

- Policies, plans, and regulations (e.g., adaptation policies, disaster risk management policies, resource management plans, sector development plans, investment plans, land use zones/plans, design codes/standards)
- Technologies or infrastructure investments (e.g., improvements to buildings, agricultural, coastal, hydro-meteorological, transport, water, drainage, ICT, and energy systems);
- Data, analytical work, technical studies, and knowledge assets (e.g., climate scenarios, forecasts, vulnerability assessments, climate risk/impact analyses, maps, needs assessments, guidelines/manuals);
- Information dissemination platforms (e.g., media campaigns, knowledge sharing events, stakeholder networks, websites, educational curricula, trainings);
- Financial instruments (e.g., micro/insurance, micro/finance, small grants, loan facilities);
- Public/community services (e.g., water and sanitation, transport, flood protection, irrigation, early warning, social protection, education, health).

Climate responsive instruments/investment models are considered SPCR supported in Cambodia, if they are developed, tested, promoted, or used within the scope of activities carried out under SPCR projects in Cambodia, including with financial or technical support from all sources.

Measurement will be at the level of each project/program and by way of a qualitative scorecard. A single agreed scorecard per project/program will be shared with the SPCR Cambodia focal point for aggregation and synthesis at the programmatic level. Good performance will be indicated by an improvement of the score over time, compared to a baseline.

Harmonizing with NSDP data collection:

The concerned line ministry in Cambodia should make efforts to use data sourced from existing project/SPCR documentation and other relevant reports available from civil society and the PPCR stakeholder community. This information will help the MoE (reporting entity) to gauge and to justify the appropriate strength of their responses to the qualitative scorecard.

Self-assessment by the project team together with relevant stakeholders and reflective processes will inform the scoring, but where possible, meeting documents and reports should be used to help the MoE entity gauge the appropriate strength of their responses to the qualitative scorecard. Relevant reports available from civil society and the PPCR stakeholder community will be an integral supplement. All documentation containing relevant information (the evidence base) that has informed the self-assessment should be stored by the respective Ministry and the PPCR ministerial focal point in Cambodia for future reference.

6.3 Guidance on Indicators to measure progress of NSDP implementation

The Royal Government of Cambodia promotes the participatory approach in the national planning and development. Equally, the sector-level and participatory approaches to NSDP monitoring and evaluation have been used as potential sources of more focused and periodic monitoring and evaluation of NSDP and integrated in the NSDP implementation process (MoP, 2017). Moreover, in the future, the grassroots participatory NSDP monitoring and evaluation will be enhanced by using new and innovative

tools (For example, the citizen's scorecards for rating the grassroots' perception on changes and satisfactions with quantity and quality of different public services).

Based on the above policy, monitoring and evaluation process to monitor the implementation of climate resilience development project/program and the SPCR in Cambodia, above all, should be regarded as a participatory learning process which enables capacity building, and application of lessons learned from the project and program experiences. At the same time, this participatory M&E process will form integral part of the SPCR and the Cambodia's Climate Change Strategic Plan (CCCSP) as a whole. Meaningful participation of key stakeholders at all levels in the M&E implementation of 7 SPCR adaptation investment projects need to be ensured.

A quick glance at the four climate change related indicators integrated into the NSDP 2014-18 by NCSD / GSSD team provides valuable guidance on the adding additional adaptation indicators into the upcoming NSDP 2019-23. A brief highlight of each indicator mainstreamed into NSDP 2014-18 by NCSD is presented as hereunder:

6.3.1 Ratio of climate-related expenditure to total public expenditure:

This indicator is tracked through Climate Public Expenditure Reviews (CPEr). The most up-to-date information on this indicator is contained in the published Report on Climate Public Expenditure Review 2013-2014, showing that the portion of climate change spending to total GDP was 1.3% in 2014. It should be noted that the 2014 value for this indicator is higher than what was originally projected, if we take into account the downward adjustment of the 2013 baseline and 2014-2018 targets due to the modifications in the methodology (adjusted values are presented in the table above). Further detail on the updated methodology can be found in 2013-2014 CPEr report (MEF, 2016).

6.3.2. Mainstreaming climate change issues into national and sub-national plans

This indicator measures the number of ministries and government agencies which have developed and are implementing instruments to mainstream climate change into national and subnational planning processes. These include ministries and government agencies that have developed sectoral CC Strategies and/or CC Action Plans or have produced CC mainstreaming guidelines or policies. The value for this indicator is 14 in 2016. Although the current value of the indicator is lower than NSDP targets for 2015 and 2016, it represents a remarkable progress from the number registered in 2014, where only 8 ministries and government agencies had developed and approved their respective CCAPs. (NCSD, 2017)

It should be noted that the Department of Climate Change (DCC), which is now part of the General Secretariat of the National Council for Sustainable Development (GSSD/NCSD) following the institutional changes introduced in 2015 reform, is working with different ministries and a wide range of stakeholders to implement the 2014-2023 Cambodia Climate Change Strategic Plan (CCCSP). This work includes efforts to mainstream climate change into planning through the development and implementation of the CCAPs of the following 14 ministries and government agencies: MoE, MAFF, MoH, NCDM, MRD, MLMUPC, MoT, MoInf, MoEYS, MHI, MME, MoWA, MoWRAM and MPWT. A number of other efforts are currently taking place, notably the guidance produced by NCDD to mainstream climate change into sub-national planning processes which is being tested in a number of provinces. (NCSD, 2016)

6.3.3 Number of communes vulnerable to climate change:

This indicator tracks the number of communes which are classified as ‘highly vulnerable’ or ‘quite vulnerable’ using vulnerability index (VI) scores, as per methodology developed for Cambodia’s National Climate Change Monitoring and Evaluation Framework. The value for this indicator is 791 communes in 2014.

It should be noted that the methodology for the calculation of the VI and VI scores, which are the basis for the calculation of this indicator, was developed after the approval of NSDP. Thus the discrepancies observed between the values now reported for the indicator and the values included in NSDP for this indicator’s baseline and 21014-2018 targets are to be expected (GSSD, 2016; IIED 2016). DCC will keep tracking the evolution of this indicator annually through the country’s national climate change M&E framework. Further detail on the vulnerability of communes in Cambodia can be found in the documents referenced above. Results from the 2014 the vulnerability assessment (using the VI values) indicate for example that of the 791 communes, 279 communes scored as ‘highly’ vulnerable, and 512 communes scored as ‘quite’ vulnerable to multiple climate change hazards, namely floods, storms and droughts.

6.3.4 Carbon credit from CDM and other mechanisms (REDD+ and voluntary markets):

DCC currently tracks this indicator through a proxy indicator – planned annual emission reductions of greenhouse gases from all registered/approved Clean Development Mechanism, CDM (including Program of Activities, PoA), Joint Crediting Mechanism (JCM), and Reducing Emissions from Deforestation and Forest Degradation (REDD+) projects.

This proxy indicator is calculated as the sum of the average annual GHG emission reductions (expressed in tCO₂eq) indicated in the project design documents (PDD), counted from the year of their registration or approval by the respective mitigation mechanism (CDM, JCM and REDD+). The indicator uses data from the following sources: (1) data published by UNFCCC in the CDM database on annual averages of expected annual greenhouse gases (GHG) emission reductions from Cambodia’s CDM registered projects, measured in tCO₂eq/yr; (2) data from PDDs approved by the Joint Crediting Committee for JCM projects; (3) data from PDDs once the methodology is approved by the National Entity for REDD+.

This indicator registered 7,350,934 tCO₂eq/yr emission reductions in August 2016. Of these, CDM accounts for 2,021,818 tCO₂eq/yr, JCM for 3,590 tCO₂eq/yr, and REDD+ for 5,325,526 tCO₂eq/yr. Overall the indicator is in line with the yearly targets originally set by NSDP (though slightly underperforming if compared with the adjusted yearly targets), registering a sharp increase in 2016 due to the approval of the Seima REDD+ project. When observing separate components of the indicator, it is also noticeable that GHG emission reductions have stagnated after 2013, mostly due to the significant decrease in demand for and price of carbon credits (GSSD, 2016).

While efforts were made to collect and compile latest status of monitoring of climate indicators incorporated by NCS into NSDP 2014-18, it was realized that the MoP has already requested NCS to provide the latest data on the status of each climate indicator in terms of yearly targets achieved ever since 2014 through 2018. While the work on this aspect is still in progress, a quick compilation of information is undertaken by the MoP team and is summarized in the table-13 as below:

Table 13: NSDP 2014-18 climate indicators tracked by GSSD

NSDP #	Indicators	Unit	Baseline: 2013 Est.	2014 Proj.	2015 Proj.	2016 Proj.	2017 Proj.	2018 Proj.
2.34	Ratio of climate-related expenditure to total public expenditure <i>This should read:</i> Ratio of climate change spending to GDP (Baseline and indicative target values adjusted due to methodologic update are indicated in brackets)	%	1.30 [1.00]	1.35 [1.07]	1.39 [1.10]	1.43 [1.13]	1.47 [1.16]	1.50 [1.18]
	<i>Actual values registered for this indicator as of 2016, using the current methodology:</i>		1.00	1.3				
2.35	Mainstreaming climate change issues into national and subnational plans	No. (Ministries & Institutions)	11	13	15	17	19	21
	<i>Actual values registered for this indicator as of 2016:</i>		9	9	13	14		
2.36	Number of communes vulnerable to climate	No. (communes)	650	600	550	500	450	400
	<i>Actual values registered for this indicator as of 2016, using the current methodology (see technical note):</i>	No. (communes)		791				
2.37	Carbon credit from CDM and other mechanisms (REDD+ and JCM) [Baseline and indicative target values adjusted due to more precise quantification of the 2013 baseline are indicated in brackets]	CO ₂ eq/yr	2,050,000 [2,226,061]	2,100,000 [2,280,377]	2,150,000 [2,334,650]	2,200,000 [2,388,814]	2,250,000 [2,443,040]	2,300,000 [2,497,275]
	<i>Actual values registered for this indicator as of Aug 2016 (see technical note):</i>		2,226,061 of which: CDM/PoA: 2,021,818 JCM: 0 REDD+: 3,590	2,226,061 of which: CDM/PoA: 2,021,818 JCM: 0 REDD+: 3,590	2,226,061 of which: CDM/PoA: 2,021,818 JCM: 0 REDD+: 3,590	7,350,934 of which: CDM/PoA: 2,021,818 JCM: 3,590 REDD+: 5,325,526		

(Source: GSSD, 2017)

6.4 Guidance on SPCR Project Investments Evaluation in Cambodia

Evaluation of the Cambodia SPCR shall be carried out at the mid-term and terminal stages of the Program implementation in line with ADB's MfDR approach. The mid-term evaluation will be of particular importance for the Program management as it will provide in-depth assessment of the performance of Program implementation, including analysis of strengths and weaknesses, key issues for improvement and recommendation for management action. The conclusions and recommendations as well as management response to them will be submitted to the Royal Government of Cambodia for their decision/approval.

The evaluation exercises will be independent in terms of their findings and recommendations, but will be guided by the terms of reference prepared by the ADB PPCR Task Team, the representatives of the CIF as well as PPCR National Coordinator. The terminal evaluation will be carried out during the last year of the Program implementation in order to undertake an in-depth assessment of the results achieved in relation to the plan. It will focus on the Program's effectiveness in realizing the planned outcomes and progress towards achieving the goal, including how valid and realistic the Program design has been (including the assumptions), analysis of key factors that have facilitated or hindered the Program effectiveness, and recommendations for the future follow-up measures.

Thus, the evaluation would be useful for management decision on the future of the Program – to continue as it stands, or modify and continue or phase out. Ideally, the terminal evaluation report should be available, by latest, six months before the planned terminal date of the Program implementation.

VII. Challenges and policy priorities to address in Cambodia

The building blocks of the climate change response are steadily being put in place. However, the momentum cannot be lost and continued investment in the key areas listed above is critical to the achievement of the goals and targets established in NSDP. All the suggestions and challenges identified during the consultative process involving key stakeholders in preparation of the knowledge product is presented as hereunder

- Incipient operationalization of the new institutional arrangements, with detailed arrangements and procedures yet to be fully developed;
- Inadequate capacity to access climate financing (government institutions and non-government agents), including slow progress in the accreditation processes underway for national institutions to access international funds (e.g. Adaptation Fund, Green Climate Fund);
- Weak institutional capacity for Information and Knowledge Management and for Monitoring and Evaluation on climate change;
- Lack of sector and nationwide assessments and studies (e.g. vulnerability assessments, GHG inventory and assessments of mitigation potentials, feasibility and impact of new adaptation and mitigation technologies) to support decision making;
- Weak institutional capacity, from the central to the local levels, to mainstream climate change in legal and regulatory frameworks and in planning and budgeting processes in order

- to accelerate and scale up the implementation of adaptation and mitigation measures prioritized in the CCAPs;
- Lack of adequate awareness raising and communication to the different segments of the public on the important roles that they can play in responding to the challenges posed by climate change

Lessons learnt:

Cambodia has gained considerable progress in promoting climate change response and mainstreaming at different levels and across many sectors. Knowledge and experience on planning, climate change assessment, and budgeting is well accumulated and considered more advanced among developing countries. Evidence of its notable achievement can be recognized by its established coordination mechanism led by NCSD, putting into practice several policy response and strategic plans by sector ministries, piloting several large adaptation programs and projects at national and sub-national levels, conducting climate change assessments on some key sectors, and promoting capacity building and knowledge dissemination among stakeholders. It is worth noting that Cambodia climate change planning adopts a participatory approach with gender inclusiveness. However there are still a number of challenges to overcome to succeed in the long run. M&E framework for adaptation is still at the beginning of its development. Other non-climate factors comes to play such as degradation of natural resources, poverty, population growth, rapid land use change and environmental pollution.

This Technical Report is developed to reflect the current gap in monitoring, reporting and evaluation of climate change adaptation plans and investments. An extensive analysis of National MENI system and sector M&E frameworks has indicated almost absence of adaptation indicators. Very few adaptation indicators are introduced at the NSDP level, but their values often missing or are not realistic. Efforts have been made to develop M&E framework for adaptation, notable the TAMD and the PPCR Result Framework. Because of different scope, objective, and scale of adaptation plans and programs, together with the technical and financial challenge, both differ in terms of approach, practice and reporting, which points to the need for a harmonized framework that is based on common principle and concept.

The M&E for adaptation is still in the initial stage of its integration in the existing M&E system, but because of climate change uncertainties and complexity therefore it requires approach different from the existing practice. It requires qualitative, quantitative and binary data to value the indicators. As M&E for adaptation encounters a number of challenges, so does the adaptation planning and appropriate selection of adaptation options, the harmonized M&E framework is regarded as a dynamic document which can be improved based on learning by doing practice.

- There is a need to agree on a harmonized M&E institutional arrangement and coordination among MOP, MOE, NCSD, Sector Ministries and Sub-national Administrations. The current NWGM&E of MOP should be upgraded to coordinate integration of adaptation indicators by adding more sector representatives that are not yet members. Additional consultation is required among key players, especially MOP and NCSD to set up a viable and efficient NWGM&E for Adaptation. The PPCR Core Indicators can be well integrated with the National M&E system

and can provide synergy with the TAMD approach, especially regarding monitoring the adaptation investments. The PPCR Process indicators should be adapted to the institutional readiness indicators developed by DCC. All process indicators may change overtime so review and adjustment may be conducted in every CC planning cycle.

- The harmonized M&E framework is proposed following the MENI Result Framework: inputs, activities, outputs, outcomes, and Impacts. Integration of new adaptation indicators into National M&E must have clear definitions, reliable data of acceptable quality and consistent with the SMART principle. Data collection, management and analysis of climate change statistics and adaptation indicators should be developed and managed by the National Institute of Statistics given its broader functions to develop national statistics.
- Additional adaptation indicators can be developed for key sectors to complement the gap of PPCR Results Framework. A few simple adaptation indicators can be developed for sub-national projects, including community-based adaptation projects. Core indicator 5 is most suited and easily collected by SNA.
- Regular training on data collection, analysis and reporting must be provided at the national and project site levels. The Guidance on the USE of PPCR framework for MAFF, MOWRAM, MRD, MPWT is subject to further consultation with managers in charge of SPCR investments and Sector M&E units.

Policy priorities to address challenges

- Operationalize the new institutional arrangements for climate change, further defining, testing and adopting detailed arrangements and procedures for the different governance and technical support structures which will foster inter-ministerial collaboration, as well as mechanisms to facilitate communication/coordination between government agencies and non-government stakeholders;
- Awareness raising and coaching with the Sector M&E units and SPCR Investment officers must be given priority to ensure reliable scoring, data collection and reporting of the 5 PPCR core indicators.
- The NIS in cooperation with NCSD and sector ministries should develop workable data sharing protocol to share data for wider use. DCC of NCSD should play a proactive role to ensure indicators are of climate change adaptation relevance.
- The new adaptation indicators can be developed to complement the PPCR Core Indicators and at the same time reflect the ministry Climate Change Action Plans and the outcomes of SPCR Investments following the NFR and SMART principle. The M&E units of sector ministries should be given clear tasks and resources to coordinate integration and operationalization of PPCR Core indicators (or some) and additional adaptation indicators into adaptation investments.
- Adequate resources and incentives should be allocated from government recurrent budget to meet the smooth functioning of the Planning and M&E Unit of each sector ministry.
- Continue to invest in strengthening institutional sectoral capacity, from the central to the local levels, to mainstream climate change in legal and regulatory frameworks and in planning and

- budgeting processes, focusing on mobilizing resources to accelerate and scale up the implementation of adaptation and mitigation measures prioritized in the CCAPs;
- Develop and implement an awareness raising and communication strategy on the NAP process, targeting the different segments of the public and in particular the key agents of change, aiming at greater engagement of stakeholders in the national effort to build a low carbon climate resilient society.

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Annex 1: Score cards for 5 PPCR Core Indicators 1, 2, 3,

Core indicator 1 — Degree of integration of climate change into national planning

National Level (Score)	Is there an approved climate change policy/plan for the nation/sector?
	1a
0	No legislation or national/sector policy on climate change exists.
1	National Adaptation Program of Action (NAPA) exists (achieved in 2009) but response is limited to project based approach.
2	National/sectoral policy document on climate change is drafted.
3	National/sectoral climate change strategic plan integrating adaptation and mitigation approved by the Council of Ministers (achieved in 2013).
4	National/sectoral climate change action plan is under development
5	National/sectoral climate change action plans approved.
6	National/sectoral framework for monitoring and evaluation (M&E) of climate change is in progress.
7	National/sectoral climate change action plans regularly updated based on evidence gathered by M&E framework of climate change and a new action plan prepared at the end of the planning cycle (e.g. once every 5 years).

8	Progress monitoring reports of Cambodia Climate Change Strategic Plan (CCCSP) submitted annually to a central agency. Progress M&E reports of sectoral strategic plans submitted annually to the ministry concerned.
9	Legislation that provides legal mandate for implementation of climate change policy objectives developed.
10	CCCSP/sectoral CC strategic/action plans updated regularly based on evidence gathered from implementation of the M&E framework.

Core indicator 1 — Degree of integration of climate change into national planning

National Level (Score)	Have climate resilience strategies been embedded in the central government's/sector's principal planning documents?
	1b
0	No reference to climate change vulnerability in national and sectoral planning documents.
1	Limited reference to climate change vulnerability in national/sector's principal planning documents.
2	CC vulnerability is mentioned in national/sectoral principal planning documents as a development issue but without any specific adaptation measures and allocation of funds.
3	Climate change adaptation measures are stated in the national/ sectoral principal planning documents.
4	Specific adaptation measures included in national/sectoral principal planning documents with related budget allocations.
5	Specific adaptation measures identified in sectoral climate change action plans are integrated into Provincial Development Plans in at least <u>six provinces</u> with related budget allocations.
6	Specific adaptation measures identified in sectoral climate change action plans are integrated into Provincial Development Plans in at least <u>twelve provinces</u> with related budget allocations.
7	Specific adaptation measures identified in sectoral climate change action plans are integrated into Provincial Development Plans in at least <u>twenty four provinces</u> with related budget allocations.
8	Specific adaptation measures identified in sectoral climate change action plans are integrated into at least 25% of communes with budget allocations.
9	Specific adaptation measures identified in sectoral climate change action plans are integrated into at least 50% of communes with budget allocations.
10	Specific adaptation measures identified in sectoral climate change action plans are integrated into all communes with budget allocations.

Core indicator 1 — Degree of integration of climate change into national planning

National Level (Score)	Has responsibility been assigned to institutions or persons to integrate climate resilience planning?
	1c
0	Institution or persons responsible for coordinating climate resilience activities not yet identified.
1	Institutions were engaged to integrate climate resilience planning. The Climate Change Unit (CCU) at the Ministry of Environment (MoE) (2003) and the National Climate Change Committee (NCCC) were established (2006). Specific staff from various ministries identified as members of NCCC.
2	Specific staff from key ministries identified as part of Climate Change Technical Team under the NCCC to serve as focal points for coordination of climate change issues in respective ministries.
3	CCU in MoE upgraded to Climate Change Department (CCD) in 2009. CCD serves as the Secretariat of NCCC (since 2009) and NCSD (since 2015). Specific staff in each ministry identified as part of working groups and/or focal points on climate change established in the ministries.
4	The organizational structure and terms of reference for the Secretariat of NCCC/NCSD with mandate to deliver inter-ministerial coordination of climate related initiatives, and to formulate policy and strategy response to CC is in progress. Responsibilities of working groups and/or focal points on climate change in sector ministries are clarified to ensure coordination and policy formulation fully takes into account climate change risks and opportunities.
5	The organizational structure and terms of reference for the Secretariat of NCCC/NCSD with mandate to deliver inter-ministerial coordination of climate related initiatives, and to formulate policy and strategy response to CC is approved.
6	The Secretariat of NCCC/NCSD becomes fully functional. Working groups and/or focal points on climate change in sector ministries have legal framework to deliver its coordination and policy formulation mandate on CC.
7	Specialized interministerial sub-groups (e.g. climate finance, technology) are established.
8	Annual meetings are organized by NCCC/NCSD to review progress of the CCCSP. CC working groups in key ministries review progress of sectoral climate change action plans which are shared during annual meetings of NCCC/NCSD.
9	A representative group of stakeholders from civil society, academia, and private sector are actively engaged in the CCCSP annual progress review.
10	Annual progress reports on implementation of CCCSP and/or sectoral climate change action plans, emphasizing monitoring and reporting of core indicators, are submitted by the NCCC/NCSD secretariat to the Council of Ministers.

Core indicator 1 — Degree of integration of climate change into national planning

National Level (Score)	Have specific measures to address climate resilience been identified and prioritized? e.g. investments and programs
	1d
0	There are no specific measures (investment and programs) to address climate resilience.
1	A pilot trust fund for climate change adaptation is established by the Ministry of Environment (MoE). Specific resources are allocated in each line ministry for climate change resilience.
2	A climate public expenditure review is conducted jointly by the MoE and Ministry of Economy and Finance (MEF), with support from UNDP (2012). Planning units in line ministries support the review.
3	A tracking system for adaptation finance is under development at MOE; investments focusing on adaptation in line ministries are being monitored.
4	A climate change financing framework is approved. Plans for establishing an inter-ministerial sub-working group on climate finance is in progress.
5	A national fund for coordinated management of adaptation finance is established. Line ministry planning units establish an efficient tracking system for climate expenditure.
6	NCCC/NCSD Secretariat manages a coordination mechanism for budgetary and extra-budgetary (bilateral, multilateral, civil society and private sector) financial resources for climate change adaptation. Specific staff in line ministries are identified to coordinate on climate finance.
7	Climate change adaptation expenditure review is regularly conducted and is included in the CCCSP progress report. Identified staff in each line ministry responsible for tracking climate finance support the review.
8	Budgetary and extra-budgetary resources mobilized are between 30-50% of the annual requirements identified in the climate change action plan.
9	Budgetary and extra-budgetary resources mobilized for climate change adaptation are about 50% of the annual requirements identified in the climate change action plan.
10	Budgetary and extra-budgetary resources mobilized for climate change adaptation are at least 80% of the annual requirements identified in the climate change action plan.

Core indicator 1 — Degree of integration of climate change into national planning

National Level (Score)	Do all planning processes routinely screen for climate risk?
	1e
0	No specific arrangements for routine screening of climate risks exist.
1	Vague reference to screening tools for climate risk in planning.
2	Screening tools for climate risk planning are being identified.
3	Pilot screening for climate change risks in a selection of projects occurs, but screening is not mandatory.
4	Screening for climate change risks are conducted in at least 50% of the public-funded projects.
5	Screening is consistently applied with great effectiveness.
6	Formal procedures are in place for screening all public-funded investments against climate risk in sector ministries and adaptation indicators are defined and submitted to MOP for inclusion in the NSDP indicators framework.
7	Formal procedures are in place for screening private investments against climate risk in sector ministries and adaptation indicators are defined and submitted to MOP for inclusion in the NSDP indicators framework.
8	A code to track expenditure for climate risk management is established.
9	CC technical staff of each ministry is included in the committee in charge of preparing the annual NSDP progress review against climate risks.
10	A budget code to track expenditure on climate risk management is consistently applied in all provincial, sectoral and national budgets.

Core indicator 2a — Evidence of strengthened government capacity to mainstream climate resilience

National Level (Score)	Are information, studies and assessments addressing climate change, variability and resilience available?
	2a1
0	There is no reliable information related to climate change, variability and resilience available.
1	Very limited information on vulnerability assessments and climate change impacts available and no centralized data management system is in place.
2	Scientific studies and socio-economic data related to climate change impacts are available in different institutions but there is no clear policy for data and information sharing.
3	Procedures for establishment of a data management system for collecting and sharing data and information on related climate change issues are in place at the Climate Change Department (CCD) of the Ministry of Environment (MOE) and in various ministries.
4	A climate change knowledge management center is established where each ministry contributes to CC learning. A public meta-database listing climate change information is available on line (PPCR may consider establishing this).
5	A database listing climate change interventions implemented by government agencies, NGOs and the private sector is available on line in each ministry and includes projects funded by domestic and international development partners.
6	Meteorological, hydrological and climatological data are readily available through publicly accessible mechanisms (web, phone, agricultural extension agencies, other networks, organizations etc.).
7	Protocol to clarify institutional responsibilities for climate data standards, modelling, forecasting, and management at national, regional, provincial, and district levels approved by the NCCC/NCSD.
8	Climate data and other information and appropriate tools relevant to climate change adaptation are available to public institutions in a format that can be easily used for sector level modelling and climate risk assessments.
9	A national coordination mechanism for climate data and information sharing is available and high quality of climate data and other information relevant to adaptation is ensured.
10	Climate risk frameworks, vulnerability assessments and scenario planning used routinely/extensively to address climate change, variability and resilience.

Core indicator 2a — Evidence of strengthened government capacity to mainstream climate resilience

National Level (Score)	Is the necessary climate change expertise available?
	2a2
0	There is no expertise on climate change adaptation is available.
1	Knowledge and awareness of climate change issues is limited to academia and a few staff.
2	A few staff members of ministries and academia are aware of climate change impacts but adaptation, science and policy expertise is limited.
3	There is high level of awareness of climate change impacts and what it means in terms of risks to development.
4	A few government staff members are formally trained in general climate change issues (e.g. science, policy).
5	Many key government staff are formally trained in general climate change issues (e.g. science, policy).
6	A few government staff have advanced knowledge or expertise in CC adaptation and resilience.
7	Many staff have advanced knowledge or expertise in CC adaptation and resilience.
8	A few staff with relevant experience and knowledge on CC resilience are in key positions in the ministry.
9	Many (more than 10) staff with relevant experience and knowledge on CC resilience are in key positions in the ministry.
10	Climate change focal points and climate change representatives of each line ministry are fully functional in performing their responsibilities and in providing feedback to the National Climate Change Committee (NCCC).

Core indicator 2a — Evidence of strengthened government capacity to mainstream climate resilience

National Level (Score)	Do national/sector incentives and legislative policies expressly address climate change and resilience?
	2a3
0	Policymakers are not aware of incentives and legislative policies that address climate change and resilience
1	Limited awareness of policymakers on incentives and legislative policies to address CC and resilience.
2	National policy documents indirectly refer to incentives for addressing CC and resilience.
3	Incentives and legislation are assessed to examine implications of integrating CC and resilience.
4	Some measures to revise policies/incentives to integrate CC and resilience are identified.
5	National/sectoral incentives and legislation are partially revised to incorporate adaptation to climate change and submitted for review to various ministries.
6	National/sectoral incentives and legislation are more explicitly revised to incorporate adaptation to climate change and submitted for review to various ministries.
7	Implications of revised national/sectoral incentives and legislation are assessed.
8	A number of incentives and policies are shortlisted.
9	Revised national/sectoral incentives and legislation are approved/endorsed by various ministries.
10	Revised national/sectoral incentives and legislation are implemented by various ministries.

Core indicator 2a — Evidence of strengthened government capacity to mainstream climate resilience

National Level (Score)	Does the government/sector participate in the coordination mechanism?
	2a4
0	No focal points on climate change in government/sector.
1	There is a plan for establishing cross-sectoral coordination mechanism to address climate change.
2	Cross-sectoral coordination mechanism for climate change activities (NCCC/NCSO) is established and TOR is defined.
3	Rules and procedures for sector involvement in cross-sectoral coordination mechanism for climate change are under development.
4	Each sector identifies specific individuals to participate in cross-sectoral coordination mechanism.
5	Cross-sectoral coordination mechanism in place, but not every sector participates.
6	Cross-sectoral coordination mechanism meets regularly.
7	Rules and procedures for CC coordination at provincial level are under development.
8	Each district identifies specific individuals to participate in coordination.
9	Regular meetings are organized by each province to review progress of CCAP at provincial level.
10	Nominated staff from each district participates in coordination mechanism at provincial level and provides feedback to his/her district authorities.

Core indicator 2b —Evidence of strengthened coordination mechanism to mainstream climate resilience

National Level (Score)	Is the coordination mechanism functional e.g., established, effective and efficient?
	2b1
0	Climate change coordination mechanism does not exist.
1	Different line ministries begin to address climate change but without a clear coordination mechanism.
2	Terms of reference (TOR) for creating a climate change coordination entity at national level is drafted. TOR for establishing SPCR coordination team is created.
3	Decision to establish a climate change coordination entity at national level (NCCC/NCSD) and SPCR Coordination Team is approved.
4	Specific staff from key departments in line ministries are mandated (with TOR) to work as Climate Change Technical Team (CCTT). Specific staff from various ministries are identified to be part of SPCR coordination team.
5	Climate change focal points in each line ministry are assigned for coordination of climate change issues within their ministry, as well as to report the progress to NCCC/NCSD. SPCR Coordination team is fully functional and meets regularly.
6	NCCC/NCSD organizes regular (annual) meetings to monitor, assess, and report on progress of Cambodia Climate Change Strategic Plan (CCCSP), including budget, and to identify capacity gaps, training and support needed. SPCR Coordination team report progress to NCCC/NCSD on coordination of PPCR funded investments during SPCR coordination team bi-annual meetings.
7	Key representatives from sub-national governments, civil society, academia, private sectors participate as observers during regular meetings of the NCCC/NCSD and SPCR Coordination team.
8	Key representatives from sub-national governments, civil society, academia, private sectors participate in regular meetings of the NCCC/NCSD and SPCR Coordination team but with limited role in decision-making and policy processes.
9	Key representatives from sub-national governments, civil society, academia, private sectors participate in regular meetings of the NCCC/NCSD and SPCR Coordination team and play significant role in decision-making and policy processes.
10	CCCSP updated on a regular basis based on evidence gathered from implementation of the M&E framework for climate change.

Core indicator 2b —Evidence of strengthened coordination mechanism to mainstream climate resilience

National Level (Score)	Does it coordinate climate resilience interventions other than those funded by PPCR?
	2b2
0	NCCC/NCSD does not coordinate any climate resilience interventions.
1	NCCC/NCSD coordinates climate resilience interventions funded by the PPCR.
2	NCCC/NCSD coordinates climate resilience interventions other than those funded by the PPCR.
3	
4	NCCC/NCSD is mandated to coordinate and report progress of all climate resilience interventions including those funded by PPCR.
5	
6	Specific individuals from various climate resilience financing interventions, including the PPCR, are identified as focal points for coordination.
7	NCCC/NCSD effectively coordinates and reports progress of all climate resilience interventions including those funded by PPCR to the Prime Minister, who is honorary Chairperson of NCCC/NCSD.
8	
9	NCCC/NCSD effectively coordinates and reports progress of all climate resilience interventions including those funded by PPCR to international organizations (e.g. as part of the National Communications to the United Nations Framework Convention on Climate Change.
10	

Core indicator 2b —Evidence of strengthened coordination mechanism to mainstream climate resilience

National Level (Score)	Is there a broad set of non-government stakeholders involved?
	2b3
0	All members of NCCC/NCSD and SPCR team are government officials.
1	NCCC/NCSD and SPCR team includes only government officials but one civil society representative serves as an observer.
2	NCCC/NCSD and SPCR team includes government officials only. However, one representative each from civil society and private sector serve as observers.
3	NCCC/NCSD and SPCR team includes only government officials. Two representatives each from civil society (including from Women’s Union) and one representative from the private sector serve as observers.
4	NCCC/NCSD and SPCR team includes government officials and a civil society representative.
5	NCCC/NCSD and SPCR team includes government officials and two representatives each from civil society (including from Women’s Union) and the private sector.
6	NCCC/NCSD and SPCR team includes government officials and four representatives each from civil society (including from Women’s Union) and the private sector, and two each from academia and development partners.
7	NCCC/NCSD and SPCR team decisions are made only by the government officials.
8	NCCC/NCSD and SPCR team decisions are made by the government officials and civil society representatives including from Women’s Union by consensus.
9	NCCC/NCSD and SPCR team decisions are made by the government officials and civil society representatives and the private sector by consensus.
10	NCCC/NCSD and SPCR team decisions are made by broad set of stakeholders by consensus.

Core indicator 2b —Evidence of strengthened coordination mechanism to mainstream climate resilience

National Level (Score)	Is the relevant climate resilience information in the public domain?
	2b4
0	No climate change vulnerability and risk assessment in Cambodia is available in public domain.
1	Preliminary information on climate change vulnerability and/or risk assessment is available in public domain, but no specific information on sectoral assessments.
2	Overall sectoral assessments on climate change vulnerability for some sectors and related information on adaptation are available in public domain.
3	Overall sectoral assessments on climate change vulnerability of all key sectors and related information on adaptation are available in public domain.
4	Detailed vulnerability assessment data for some sectors and related information on adaptation are freely accessible to stakeholders to support their activities related to climate change response.
5	Detailed vulnerability assessment data for all sectors and related information on adaptation are freely accessible to stakeholders to support their activities related to climate change response.
6	All key sectors have translated the vulnerability and adaptation assessments into strategies and plan for addressing climate change and resilience but documents are not available in public domain.
7	Sectoral climate change adaptation policy, strategy and plan in some key sectors are available and accessible to the public.
8	Sectoral climate change adaptation policy, strategy and plan in all key sectors are available and accessible to the public.
9	Sectoral climate change operational plan including information on adaptation projects in some key sectors is available and accessible to the public.
10	Sectoral climate change operational plan including information on adaptation projects in all key sectors is available and accessible to the public.

Core indicator 2b —Evidence of strengthened coordination mechanism to mainstream climate resilience

National Level (Score)	Are females and males participating equally?
	2b5
0	All members of NCCC/NCSO and SPCR coordination team are males.
1	Only one woman representative in the NCCC/NCSO and SPCR coordination team, but decisions are mostly taken by male representatives.
2	Women representatives are there in NCCC/NCSO and SPCR coordination team but their participation in discussion is very minor.
3	Women representatives are there in NCCC/NCSO and SPCR coordination team but their participation in discussion is limited.
4	Women representatives are there in NCCC/NCSO and SPCR coordination team and their participation in discussion is significant.
5	Ratio of women and men is 2:5 in NCCC/NCSO and SPCR coordination team, participation of women in discussion is significant but decisions are largely made by men.
6	Ratio of women and men is 3:5 in NCCC/NCSO and SPCR coordination team; participation of women in discussion is significant and decisions are made by men but partly influenced by women.
7	Ratio of women and men is 4:5 in NCCC/NCSO and SPCR coordination team; participation of women in discussion is significant and climate change decisions are made by men and influenced by women.
8	Ratio of women and men is 4:5 in NCCC/NCSO and SPCR coordination team; participation of women in discussion and decision making is significant.
9	Ratio of women and men is 5:5 in NCCC/NCSO and SPCR coordination team; participation of women in discussion is significant and decisions are made by both men and by women.
10	Both males and females participate in equal numbers in NCCC/NCSO and SPCR coordination team and make decisions on consensus basis.

Core indicator 3 — Quality and extent to which climate responsive instruments/investment models are developed and tested (including planned)

National Level (Score)	Has the instrument / investment model been developed and tested?
	3a
0	There is no instrument / investment model on climate change and resilience.
1	Inventory on instruments / investment models for climate change and resilience in other countries is available.
2	Information on instruments / investment models related to climate change response in Cambodia are defined and documents are available.
3	Protocol for developing instrument or investment models is created.
4	Tools / instruments have been tested.
5	Assessment or evaluation of the suitability of tools / instrument has been done.
6	Training manual or tools / instrument are available on line.
7	Training on use of tools and instruments are provided to key technical staff.
8	Tools have been adopted in the development planning.
9	Tools have been adopted in the investment projects.
10	A database of adaptation instruments and investment models along with appropriate procedures for use are available on line.

Core indicator 3 — Quality and extent to which climate responsive instruments/investment models are developed and tested (including planned)

National Level (Score)	Has the instrument / investment model been implemented to the scale proposed?
	3b
0	No Instrument / investment model addressing climate change vulnerability and risk is implemented.
1	Instruments / investment models addressing climate change vulnerability and risk are partially implemented in some projects other than PPCR funded projects.
2	Instruments / investment models addressing climate change vulnerability and risk are partially implemented in some PPCR funded projects.
3	Instruments / investment models addressing climate change vulnerability and risk are partially implemented in most of PPCR funded projects.
4	
5	Instruments / investment models addressing climate change vulnerability and risk are almost fully implemented in most of the PPCR funded projects.
6	
7	Instruments / investment models addressing climate change vulnerability and risk are almost fully implemented in most of the PPCR funded projects as well as non-PPCR funded projects.
8	
9	Instruments / investment models addressing climate change vulnerability and risk are fully implemented in all adaptation projects (PPCR and non-PPCR).
10	

Core indicator 3 — Quality and extent to which climate responsive instruments/investment models are developed and tested (including planned)

National Level (Score)	Has the instruments/investment model appropriately incorporated the needs of both females and males into its design and implementation?
	3c
0	There is no assessment of needs of females and males in order to incorporate findings into design and implementation of instruments/investment models in addressing climate change vulnerability and risk.
1	The assessments on needs of females and males are done for some PPCR projects. Results of the assessment have been partially incorporated into design and implementation of instruments/investment models in addressing climate change vulnerability and risk.
2	
3	The assessment on needs of females and males are done in all SPCR projects and results have been partially incorporated into design and implementation of instruments/investment models in addressing climate change vulnerability and risk.
4	
5	
6	The assessments on needs of females and males are done in all adaptation projects and results have been fully incorporated into design and implementation of instruments/investment models in addressing climate change vulnerability and risk.
7	
8	
9	The review of the implementation of instruments/investment models in addressing climate change vulnerability and risk is conducted at regular intervals for making further improvements in incorporating the needs of females and males in all adaptation projects.
10	

Core indicator 3 — Quality and extent to which climate responsive instruments/investment models are developed and tested (including planned)

National Level (Score)	Has the instruments / investment model incorporated the needs of vulnerable populations into the design and implementation?
3d	
0	There is no assessment of needs of vulnerable populations in order to incorporate findings into design and implementation of instruments/investment models in addressing climate change vulnerability and risk.
1	The assessments on needs of vulnerable populations are done for some PPCR projects. Results of the assessment have been partially incorporated into design and implementation of instruments/investment models in addressing climate change vulnerability and risk.
2	
3	
4	
5	The assessment on needs of vulnerable populations are done in all SPCR projects and results have been partially incorporated into design and implementation of instruments/investment models in addressing climate change vulnerability and risk.
6	
7	The assessments on needs of vulnerable populations are done in all adaptation projects and results have been fully incorporated into design and implementation of instruments/investment models in addressing climate change vulnerability and risk.
8	
9	The review of the implementation of instruments/investment models in addressing climate change vulnerability and risk is conducted at regular intervals for making further improvements in incorporating the needs of vulnerable populations in all adaptation projects.
10	

Table 13: Core Indicator 5

Project Title	Sub-indicators	Direct Beneficiaries	
		Actual result	Expected result
Component II-Project 2- Climate-Resilient Rice Commercialization Sector Development Program	Number of people supported by the PPCR to cope with the effects of climate change	0	105800
	Number of people below the national poverty line supported by the PPCR to cope with the effects of climate change	0	24218
	Females supported by the PPCR to cope with the effects of climate change	0	54000
Water Resources Component II-Project 1- Promoting Climate-Resilient Agriculture in Koh Kong and Mondulhiri Provinces	Number of people supported by the PPCR to cope with the effects of climate change	0	20000
	Number of people below the national poverty line supported by the PPCR to cope with the effects of climate change	0	4578
	Females supported by the PPCR to cope with the effects of climate change	0	10300
Component I-Project 2- Enhancement of Flood and Drought Management in Pursat	Number of people supported by the PPCR to cope with the effects of climate change	0	9900
	Number of people below the national poverty line supported by the PPCR to cope with the effects of climate change	0	1870
	Females supported by the PPCR to cope with the effects of climate change	0	5940
Component III-Project 1- Climate Proofing of Roads in Prey Veng, Svay Rieng, Kampong Chang and Kampong Speu Provinces	Number of people supported by the PPCR to cope with the effects of climate change	20000	200000
	Number of people below the national poverty line supported by the PPCR to cope with the effects of climate change	3770	37780
	Females supported by the PPCR to cope with the effects of climate change	11000	110000
Component III-Project 4- Climate Resilient Rural Infrastructure in Kampong Cham Province	Number of people supported by the PPCR to cope with the effects of climate change	0	100000
	Number of people below the national poverty line supported by the PPCR to cope with the effects of climate change	0	22890
	Females supported by the PPCR to cope with the effects of climate change	0	51000
Component III-Project 2-Climate Proofing Infrastructure in the Southern Economic Corridor Towns	Number of people supported by the PPCR to cope with the effects of climate change	0	185820
	Number of people below the national poverty line supported by the PPCR to cope with the effects of climate change	0	42534
	Females supported by the PPCR to cope with the effects of climate change	0	92910

Component III-Project 3-Flood-resilient Infrastructure Development in Pursat and Kampong Chhnang Towns	Number of people supported by the PPCR to cope with the effects of climate change	0	90000
	Number of people below the national poverty line supported by the PPCR to cope with the effects of climate change	0	20601
	Females supported by the PPCR to cope with the effects of climate change	0	46000
Component IV- Technical Assistance: Mainstreaming Climate Resilience into Development Planning	Number of people supported by the PPCR to cope with the effects of climate change	0	350000
	Number of people below the national poverty line supported by the PPCR to cope with the effects of climate change	0	80115
	Females supported by the PPCR to cope with the effects of climate change	0	179900

Source: PPCR M&E report 2016