

A PROPOSAL FOR A KNOWLEDGE MANAGEMENT
FRAMEWORK AND ACTION PLAN FOR CLIMATE
CHANGE RESPONSE IN CAMBODIA FOR THE
DEPARTMENT OF CLIMATE CHANGE
(GSSD/DCC)

PART 1
KNOWLEDGE MANAGEMENT FRAMEWORK ON CLIMATE CHANGE

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1. INTRODUCTION

The Department of Climate Change (DCC), General Secretariat of the National Council for Sustainable Development (GSSD), is establishing a Climate Change Knowledge and Information reference of excellence in Cambodia supporting the main stakeholders from government, private sector, civil society, research and academia, media and development community working on climate change (CC) adaptation and mitigation in Cambodia.

The Department will bring together the existing expertise, climate change related datasets, information and knowledge required for the climate change response services in Cambodia. It will reinforce existing channels of knowledge and information sharing with an online Climate Change Knowledge Portal, building upon the current CamClimate website. The CamClimate Knowledge Portal will be managed by a dedicated KM Team within DCC and will support the management and exchange of quality-assured data, information and knowledge on climate change and climate change response in Cambodia.

This proposal will describe a Knowledge Management Framework (PART 1) and a KM Action Plan (PART 2) to support the implementation of the Knowledge Management (KM) activities in the coming 3 years in Cambodia including the development and implementation of the new CamClimate Knowledge Portal for which functional and non-functional requirements have been elaborated (PART3).

2. THE CONTEXT

Cambodia is highly vulnerable to climate change, and has been ranked as the second most affected country by extreme-weather events in 2011, with an estimated annual GDP loss of 3.1 percent. The Royal government of Cambodia is fully committed to address the challenges posed by climate change and is actively engaged in global and regional efforts.

Globally and within Asia, research and knowledge on climate change impacts and adaptation and mitigation response, has grown considerably recently, with multiple actors such as the Inter-Governmental Panel on Climate Change (IPCC), research institutes, NGOs and governments contributing to the current wealth of knowledge. However, on the ground, and in particular in vulnerable developing countries such as Cambodia, much of the knowledge being generated and shared and the technical capacities needed to address the challenges posed by climate change still remain scarce.

The need for strengthening climate change knowledge, education and awareness in Cambodia has been recognized in key strategic national documents, such as the Government's Third Rectangular Strategy, the National Strategic Development Plan (NSDP) and the Cambodia Climate Change Strategic Plan (CCCSP) for 2014-2023, underlining the improvement of human and technological capacities as a major development issue for Cambodia.

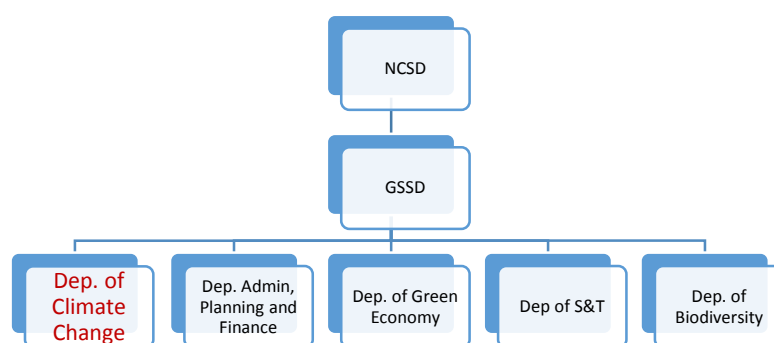
Climate change in particular has been identified as an area where the development of technical capacities and knowledge still require considerable investment to enable an effective response, with

availability of climate data, tools and technologies for adapting and mitigating climate change impacts remaining key constraints to evidence based policy making.

Being able to effectively address climate change knowledge gaps is important for assisting decision-makers to better identify, prioritize and target interventions that reduce climate risk or otherwise tap into opportunities for low carbon resilient development, as well as to assess the effectiveness of their response and to make the required adjustments; supporting stakeholders from government, civil society, academia and private sector in developing sound bankable projects, thus helping to attract additional financing to the still underfunded climate response. It also helps pave the way to a more sustainable future for Cambodia by investing in its human capital, as next generations will be better prepared to face future challenges.

Institutional setting

The Department of Climate Change is a department falling under the Secretariat of the *National Council for Sustainable Development* (NCSA) (see diagram below). The NCSA resulted from the merger of the National Committee on Climate Change and the National Council for Green Growth in May 2015. It comprises of high-level representatives from 20 ministries with the prime minister as the honorary chair and the MOE minister as its chair. The NCSA is supported by a secretariat located within the Ministry of Environment, the *General Secretariat for Sustainable Development* (GSSD).



At present a *National Strategy and Action Plan* (NESAP) is being prepared, focusing on policy tools and financing options, and will provide a roadmap for natural resources and environment planning, ensuring effective environmental protection and sustainable use of natural resources through an inclusive and participatory process with all stakeholders. Concurrently, a *National Environmental Code* is being developed to the NESAP, focusing on legal aspects of environment and natural resource management, and aims to establish overarching principles and a legal framework for sustainable natural resources management and development. The NESAP will cover the period of 2016-2023 and will align with the National Strategic Development Plan (NSDP) and other strategic plans, such as Cambodia Climate Change Strategic Plan 2014 – 2023 (CCCSP).

Cambodia Climate Change Strategic Plan 2014-2023

Cambodia Climate Change Strategic Plan 2014 – 2023 (CCCSP) is the first comprehensive national policy document responding to the climate change issues Cambodia is facing. Integration of climate change into national and sub-national level planning, and the development of climate change strategies, action plans and financing frameworks are among the priority actions undertaken as defined in the National Strategic Development Plan Update 2009 – 2013. The development of the CCCSP is a significant step towards embedding climate change in the NSDP 2014 – 2018 and in sector development plans of all relevant ministries. The CCCSP will guide national entities and assist non-governmental organizations and development partners in developing concrete and appropriate measures and actions related to adaptation and GHG mitigation, which are the supportive pillars for the achievement of the Rectangular Strategy and Cambodia Millennium Development Goals.

The vision, mission and goals of the CCCSP were formulated based on the analysis of institutional capacity, observed climate change impacts and climate change projections.

Vision: Cambodia develops towards a green, low-carbon, climate-resilient, equitable, sustainable and knowledge-based society.

Mission: Creating a national framework for engaging the public, private sector, civil society organizations and development partners in a participatory process for responding to climate change to support sustainable development.

Goals

- Reducing vulnerability to climate change impacts of people, in particular the most vulnerable, and critical systems (natural and societal);
- Shifting towards a green development path by promoting low-carbon development and technologies;
- Promoting public awareness and participation in climate change response actions.

To achieve the vision, mission and goals, the Royal Government of Cambodia (RGC) has identified eight *strategic objectives*:

1. Promote climate resilience through improving food, water and energy security;
2. Reduce sectoral, regional, gender vulnerability and health risks to climate change impacts;
3. Ensure climate resilience of critical ecosystems (Tonle Sap Lake, Mekong River, coastal ecosystems, highlands, etc.), biodiversity, protected areas and cultural heritage sites;
4. Promote low-carbon planning and technologies to support sustainable development;
5. Improve capacities, knowledge and awareness for climate change responses;
6. Promote adaptive social protection and participatory approaches in reducing loss and damage due to climate change;
7. Strengthen institutions and coordination frameworks for national climate change responses;
8. Strengthen collaboration and active participation in regional and global climate change processes.

The CCCSP 2014 – 2023 has set out a number of actions structured into *three phases of implementation*.

1. In the immediate term (2013 – 2014): The focus of this phase is on putting in place institutional and financial arrangements for the implementation of the CCCSP, development of national monitoring and evaluation (M&E) frameworks and indicators, and development of climate change action plans (CCAPs) (2014 – 2018) by line ministries.

At present the following line ministries developed a CCAP:

1. MAFF –Ministry of Agriculture Forestry & Fisheries
 2. MOH - Ministry of Health
 3. MOEYS - Ministry of Education, Youth & Sport
 4. MOWRAM - Ministry of Water Resources and Meteorology
 5. MPTC - Ministry of Post and Telecommunication
 6. MOE - Ministry of Environment
 7. MOWA - Ministry of Women Affairs
 8. MRD – Ministry of Rural development
 9. NCDM – Nat Committee of Disaster Management
 10. MI - Ministry of Interior
 11. MLMUPC – Ministry of Land Management, Urban Planning and Construction
 12. MOT - Ministry of Tourism
 13. MIH – Ministry of Industry and Handicraft
 14. MME – Ministry of Mines and Energy
2. In the medium term (2014 – 2018): This phase will continue to support the implementation of what was planned in Phase 1, with expansion to cover other activities such as accreditation of the Adaptation Fund and Green Climate Fund, research and knowledge management, capacity development, mainstreaming of climate change across sectors at different levels, operation of M&E and data management systems, and launching some high priority projects/programmes in key sectors identified in the Climate Change Action Plans. Initial priority would be given to adaptation activities but gradually GHG mitigation activities will be included. The RGC may undertake a review and revision of the CCCSP 2014 – 2023 building on the lessons learned in Phases 1 and 2.
 3. In the long term (2019 – 2023): The focus of this phase will be on research and learning, but its main objective will be to scale up success cases and to continue mainstreaming climate change into national and sub-national programmes. This will involve an increased use of budget support for national programmes, including funding climate change responses through sub- national administrations.

Stakeholders in Climate Change Response in Cambodia

Stakeholders from the public sector, private sector, civil society, academia/research, communities, and international development partners in Cambodia are forming a complex stakeholder network with a large number of direct and indirect relationships and these stakeholders need to be actively involved in climate change adaptation and mitigation interventions of the action plans and programmes of the CCCSP.

The different stakeholder groups have their own roles to play in climate change response in Cambodia. It is the role of the government at national, sub-national and local level is to set the conditions by creating an enabling and conducive environment aimed at facilitating interventions by stakeholders and that contributes to sustainable development and climate change adaptation and mitigation. Local authorities play an important role in integrating climate change principles and practices into local development and investment plans. Civil Society plays a critical role in advocacy, support and empowering of local communities, engaging in applied and action research, implementation of programmes and projects at the local level, critically monitoring action plans and programmes of the government, and participating in policy development and planning of new programmes for climate change adaptation and mitigation. Private sector has an important role as supplier of goods and services to develop and upscale innovative adaptation and mitigation technologies and methods using sustainable business models in partnership with academia and research institutions and communities. Academia and research will do scientific and applied research on climate change, and climate change adaptation and mitigation in collaboration with other stakeholder groups. Local communities groups will have a role in collaborating in programmes and projects on climate change adaptation and mitigation in various sectors, in developing ownership at the community level, enhancing monitoring on results and impact of the climate change response interventions, and enhancing sharing of knowledge on what works and not works, and contributing to increased resilience of local communities to the rapidly changing environment. International development and donor agencies have a supporting role by providing technical and financial support to stakeholders working on climate change in Cambodia.

Communication on climate change

In addition to the present KM Framework there is also a need to develop a communication plan for climate change awareness raising and information of the general public on climate change, the impact of climate change and the solutions and options to respond to climate change impacts.

Communication on climate change should follow a practical step-wise approach in developing communications products using the information and knowledge on climate change brought together by the CC stakeholders through the planned KM activities. The practical approach consists of a number of steps to repackage the existing CC information and knowledge in communication products specifically targeting identified audiences:

1. Define your communication objectives
2. Carry out a communication needs assessment
3. Define your key audiences (target groups)
4. Define your communication targets for each audience
5. Develop the key messages that you want to transfer
6. Select communication channels for each of your audiences
7. Develop an activity plan and schedule
8. Develop and test communication products developed
9. Develop monitoring and evaluation (M&E) plan
10. Implement, monitor and evaluate.

The implementation of the communication activity plan requires a separate trajectory with specific activities implemented by key CC stakeholders with expertise in repackaging and developing

communication products for different stakeholder groups and in dissemination the communication products to the key audiences, among other DCC, the Ministry of Education, universities and schools, civil society, community –based organizations, sub-national and local government institutions and media. The DCC should play a coordinating role by developing a climate change communication strategy and action plan, linked with the current KM Framework

3. WHY A KNOWLEDGE FRAMEWORK AND ACTION PLAN ON CLIMATE CHANGE IN CAMBODIA

Information and knowledge generated by stakeholders working on climate change in Cambodia is still dispersed in ‘silos’ of information and knowledge based on organizational and geographical divisions, and not easily accessible by other stakeholders. Stakeholders in Cambodia still not make optimal use of modern ICTs and the Internet to search for, access, share and use information and knowledge on climate change. Also the systems and tools in place to share information and knowledge are not always easy to use and not providing the information and knowledge needed for climate change response.

Establishing a Knowledge Reference of Excellence on climate change and climate change response at DCC in Cambodia with an online Knowledge Portal that facilitate sharing and access to quality-assured data, information and knowledge on climate change response in Cambodia will:

1. Ensure that stakeholders at all levels are well-informed on climate change in Cambodia, the Cambodia Climate Change Strategic Plan 2014-2023 and implementation of its national and sectoral action plans, and all projects and key results in Cambodia
2. Facilitate stakeholder participation and involvement in policy development and programme implementation on climate change adaptation and mitigation
3. Foster public-private partnerships and collaboration between stakeholders
4. Support research on key challenges and topics in climate change and promote innovation and development of new technologies
5. Ensure knowledge retention within institutions and companies
6. Provide stakeholders the tools required for effective knowledge sharing and communication.

Well-informed stakeholders

The implementation of the climate change response services is complex with different levels and a large of number of stakeholders. Better access to information and knowledge is essential for informed decision-making, policy development and effective implementation of action plans, programmes and projects, reduction of risks during planning and implementation, and ultimately better results and higher impact of the planned interventions. A KM Framework will ensure an effective and efficient flow of information and knowledge between all stakeholders at national, provincial and local level.

Stakeholders with the capacity to participate in policy development and programme implementation

The implementation of a KM Action Plan will require a conducive institutional setting with multi-stakeholder involvement and participation, and coordination and collaboration at all levels, and inclusiveness of the communities and groups at risk, especially youth and women. Capacity development activities need to ensure that all stakeholders are engaged, are participating and being involved in climate change response, and are able to give their input and willing to share information and knowledge. Capacities of all stakeholders including ICT skills need to be enhanced to participate in activities, and have access, use and provide information.

Collaboration and partnerships

A key issue for a good successful implementation of climate change adaptation and mitigation interventions is the facilitation of collaboration and fostering of multi-stakeholder (public-private) partnerships. Existing partnerships with development partners should be further strengthened and consolidated. New information and communication technologies will provide stakeholders opportunities to work together, to share information and knowledge and to learn from each other, and make more efficient use of the scarce financial resources.

Innovative solutions developed and shared

In order to solve the climate change challenges in Cambodia there is a need for continuous innovation and learning facilitated through a proper framework for collaboration, and information and knowledge sharing. There is no “one-size-fits-all” solution. Solutions at the different levels require knowledge sharing between stakeholders, research on and development of new technologies and good practices by different stakeholders, establishment of innovation networks with active participation of the civil society organizations, local communities, research and academia, and the development of new business models for upscaling these innovations.

Knowledge retention

Institutions and organizations in Cambodia working on climate change cope with increased mobility of their experts, moving and leaving organizations resulting in loss of institutional memory. Knowledge management reduces these losses and keeps crucial information and knowledge within the organization. Knowledge management also helps to bring new staff up to speed more quickly, and can easily link less experienced staff to more experienced staff, accelerating the rate of learning. Capturing lessons learned and good practices are essential for re-use of knowledge and information in future programmes and projects.

ICTs for sharing information and knowledge efficiently

The new information and communication technologies (ICTs) give the stakeholders opportunities to work online, share information and knowledge even when people are working at different locations, and make more efficient use of the scarce financial resources.

Sharing information and knowledge is not a common practice in many institutions around the world and also not in Cambodia. Therefore, a change in behaviour and culture is required in organizations

and institutions in Cambodia. An improved information and knowledge sharing culture will act as catalyser for good governance, transparency and better communication between stakeholders and the general public.

4. KNOWLEDGE NEEDS OF STAKEHOLDERS

Active participation and involvement of all stakeholders in the climate change response in Cambodia require that the stakeholders have access to and are able to use up-to-date, accurate and reliable information and knowledge for their participation in policy development and planning, programme and project implementation, and innovation to develop and improve the climate change adaptation and mitigation interventions in Cambodia

Information and knowledge needs

The immediate information and knowledge needs were identified in the consultations with key stakeholders working on climate change (response) in June 2014 and January 2016. Results of the e-Survey are given below in Part 3 of the proposal while key results are given in Annex 1.

Needs for I & K products below are given in order of importance for the respondents of the e-Survey for each of the information & knowledge areas:

Factual data and information on Climate Change (CC) - results old needs assessment

- 1.1 Information on existing datasets on Climate Change (adaptation and mitigation)
- 1.3 Information on organizations, institutions and companies working on climate change in Cambodia
- 1.5 Information on climate change projects in Cambodia (locations, project summary, contact info)
- 1.9 Publications and reports on Climate Change (Response)
- 1.8 Information on sources of funding for climate change response
- 1.12 Weather and weather forecast information
- 1.10 Cambodia Climate Change Strategic Plan 2014-2023 (CCCSP) and sectoral Action Plans (CCAPs)
- 1.2 Information on CC experts and expertise in various sectors
- 1.7 Information on providers of technical support for climate change response
- 1.11 Information on laws, regulations, tax incentives for technology development
- 1.6 Information on key R&D organizations and testing facilities for technology development
- 1.4 Information on importers/exporters/national suppliers of technologies/materials

Information on/for Policy- Planning- Programmes

- 2.1 Climate scenarios for Cambodia
- 2.7 M&E reports on performance of CC programmes and projects
- 2.5 Vulnerability mapping and/or analysis in various sectors/areas (specify in textbox below)
- 2.6 Progress reports on outcomes of CCAPs for various sectors
- 2.3 Policy briefs on priority themes and new developments in CC (national/international)
- 2.8 Outcomes of (innovation) research projects on CC (national/international)
- 2.4 Estimated climate impacts in various sectors/areas (specify sector/area in textbox below)
- 2.9 CC adaptation and mitigation options/technologies in various sectors (national/international)
- 2.2 Trends/developments for various sectors/areas

LLs – GPs – Technologies – training manuals, guidelines

- 3.6 Good practices on CC Response for local communities (booklets, videos, posters etc. for offline use)
- 3.5 Training materials on climate change (response) for various sectors (specify sector in textbox)
- 3.4 Awareness materials on climate change (response) for various sectors
- 3.1 Lessons learned on climate change response in Cambodia
- 3.13 Case studies on successful investments in new CC interventions in other countries
- 3.9 Climate change training manual for TOT in local community
- 3.10 Training in preparing Lessons Learned and Good Practices on CC adaptation and mitigation
- 3.8 Awareness raising and training materials for local partners in various sectors
- 3.7 Good practices on CC Response in various sectors (specify sector in textbox below)
- 3.2 International/regional lessons learned on climate change response
- 3.12 Results of testing and adapting regional and international CC adaptation and mitigation options/technologies in various sectors in Cambodia
- 3.11 Available CC adaptation and mitigation options/technologies in various sectors in Cambodia

Conducive environment for Knowledge Management

There is a need to strengthen the organizational and operational capacity and capabilities of the key stakeholders, and specifically the DCC as the lead institution in climate change response and reference of excellence for all stakeholders in Cambodia. A well-developed conducive organizational environment for knowledge management in terms of technological and institutional arrangements and capacity development will ensure smooth and effective information and knowledge sharing between the stakeholders at all levels.

AT DCC, as coordinating institution of the KM on climate change, several capacity development activities are needed to improve capacity of the staff to support the KM Framework and Action Plan. This will deal with standardization of data collection, metadata on data sets shared, data sharing protocols with stakeholders; quality assurance and control procedures for information and knowledge management; GIS management and programming capacity at the GIS unit at DCC; GIS analysis capacity at DCC for staff; general ICT capacity for using the K Portal sharing information and knowledge at the new K Portal.

At the same time basic ICT and KM capacity needs to be improved for the participating stakeholders from government, academia, civil society, private sector and media to use the K Portal. There are considerable differences in performance and capacity among the stakeholders in Cambodia. ICT skills need to be further developed to facilitate participation of all experts and practitioners in knowledge management for climate change response. The quality of the information and knowledge products also needs to be improved. Any challenges for stakeholders in Cambodia, such as limited ICT skills and Internet connectivity, need to be addressed as early as possible in the implementation of the Action Plan to assure their participation in information and knowledge sharing on climate change response in Cambodia.

5. KNOWLEDGE MANAGEMENT FOR CLIMATE CHANGE RESPONSE IN CAMBODIA

Stakeholders in Cambodia have generated a broad range of information and knowledge products on climate change and climate change response in Cambodia, but information and knowledge products are scattered, not always of sufficient quality, and often not easily accessible. In order to improve knowledge sharing, learning and innovation a KM Framework and Action Plan has been developed to guide KM activities to establish a knowledge sharing culture for climate change response in Cambodia and provide a basis for accessible, quality-assured information and knowledge on climate change in Cambodia.

Working across organisational and geographic boundaries requires a focus on shared leadership and ownership, organisational and cultural change, governance and management mechanism and supporting technology. In addition, the implementation of the KM activities needs the active involvement and participation of all stakeholders in Cambodia.

Guiding principles

The guiding principles for the KM Framework for climate change response are described below.

Relevance

The KM Framework should respond to the needs of all stakeholders and must be embedded in the work flow of the stakeholders focusing on the climate change response interventions. KM should be focusing on continuous improvements of the effectiveness, efficiency and performance of action plans and programmes implemented within the framework of the CCCSP. The present KM Framework should be linked to the existing structures and the supporting Knowledge Portal should where possible use already existing systems, tools and channels.

Change Management

A successful KM programme depends on a knowledge-supportive culture and new mind-set of experts and practitioners. Committed decision-makers and higher management of the NCS, DCC and other stakeholders need to show leadership, encouraging and motivating their staff to participate in knowledge sharing, learning and innovation activities of the Action Plan. Concerns of staff members doing work in a new way should be addressed as early as possible and knowledge sharing behaviour should be encouraged using an appropriate award system.

Participation and Inclusion

Active participation of all stakeholders in knowledge and information sharing should be encouraged and awarded, and the inclusion of practitioners at local community level facilitated with special attention to women and youth. This requires a clear understanding of roles and responsibilities with stakeholders at individual and organizational level. Active participation of stakeholders at all levels will contribute to the improved ownership and result in improved climate change response activities.

Multi-stakeholder Cooperation

A strategic alliance between government, private sector, civil society, academia, and local communities will be the basis for a sustainable climate change response in Cambodia. It is increasingly clear that no single stakeholder group or sector can sustainable development and climate change adaptation and mitigation. Collaboration of partnerships between stakeholders will form the basis for the sustainable development in Cambodia.

Focus on expert knowledge on priority areas of CCR

The KM Framework should put emphasis on the capturing the results and lessons learned of the climate change adaptation and mitigation interventions and programmes contributing to better decision-making at the policy and programme level. There should be special attention to linking up with experts and practitioners with special expertise and qualifications, and encourage them to contribute and share their knowledge building up the knowledge assets for climate change response in Cambodia.

Data management and sharing

At present there is still a lack of standards for data collected in Cambodia. Individual stakeholders collect and share data using their own data management procedures. Standards for data management are especially needed, when there will be an effort to bring together the main datasets related to climate change impact and response. This will require a concerted effort of the different line ministries working on climate change in Cambodia to agree on a basic set of standards for the key data on climate change to be collected. Challenges also exist for data sharing in Cambodia. Data are shared between stakeholders, however no data sharing protocols are in place. A first step would be to reach trust and agreement on data sharing among the different line ministries working in climate change at the GSSD (or NCSD) level.

Subsequently the same process of developing trust and agreement on data sharing needs to take place within ministries, as individual departments within ministries are collecting data related to with climate change for their own work, and in most cases these data are also not (easily) shared. Data sharing protocols will have to set in place and will provide a structured and institutionalized way to share datasets on climate change between and within government institutions and between government institutions and the key data providers and users outside the government, (e.g. research institutes and universities, NGOs, private sector and international donor and development agencies), and will make clear the responsibilities of the different actors involved in data collection and management (including standards used) and the arrangements and conditions under which the data sets are shared (including any costs involved for sharing and using the data).

Quality assurance and control

Another key challenge in Cambodia is the quality of the available datasets, and information and knowledge products on climate change. In order to guarantee that datasets and information and knowledge products comply to high-quality standards required for proper policy development, planning, programme management, research, learning and innovation Quality assurance and Control need to be in place and integrated into the KM support.

This will be arranged by a Quality Assurance and Control Team as part of the the new KM Support Mechanism that will coordinate the Quality Assurance and Control activities, prepare guidelines and standard operational procedures for the preparation of information and knowledge products, and provide adequate training of experts and practitioners in producing and sharing high-quality knowledge products at the Knowledge Portal.

Flexibility

The Action Plan for the next 3 years should be flexible and changes in the planned activities need to be possible in order to adapt to unforeseen events and changes in the climate change context in Cambodia. The supporting K Portal should also be flexible, so new functionality and tools can be integrated in the future based on identified needs of the stakeholders.

6. KNOWLEDGE MANAGEMENT FRAMEWORK FOR CLIMATE CHANGE RESPONSE

This chapter describes the establishment of DCC as a Knowledge Reference of Excellence on Climate Change that will facilitate key stakeholders in Cambodia at national, sub-national and local level and link up with other global and regional networks and institutions that are involved in climate change response in Cambodia and the region. DCC will collect, manage and share quality-assured data, information and knowledge on climate change in Cambodia using an online CamClimate Knowledge Portal in addition to the already existing channels for knowledge sharing. The key objectives of the KM Framework will be specifically linked up with the Strategic Objective 5 of the CCCSP.

Goal

The overall goal of knowledge management for climate change is **to contribute towards the sustainable development in Cambodia in the context of climate change adaptation and mitigation, and green growth.**

Purpose

The purpose of Knowledge Management for climate change is **to improve the performance of public and private climate change response services in Cambodia by establishing DCC as a ‘Climate Change Knowledge Reference of Excellence’**

Specific Objectives

Specific Objectives are:

1. Set up a *Support Mechanism* for governance of the KM Framework and support of the key stakeholders in implementing of the KM Action Plan, including additional support activities such as quality assurance and control, capacity development, and communication and M&E on the progress of the KM Action Plan

2. Develop a Climate Change Knowledge Portal to support online information and knowledge sharing in Cambodia in addition to the existing offline and online channels
3. Improve access to Climate Change quality–assured data, information and knowledge for all stakeholders
4. Improve policy development, planning and programme implementation
5. Foster online collaboration of experts and practitioners on the CCR at using the K Portal next to existing online and offline channels
6. Promote sharing of knowledge, learning and innovation for CC Adaptation and Mitigation.

Results

The overall result will be the establishment of DCC as a ‘*Climate Change Knowledge Reference of Excellence*’ in Cambodia, with as specific results:

1. Enhanced capacity with CC stakeholders with an established *Support Mechanism* for governance and management of the KM Framework and Action plan
2. A Climate Change Knowledge Portal in place to support online information and knowledge sharing in Cambodia next to existing offline channels
3. Improved access to Climate Change information and knowledge for all stakeholders
4. Improved policy development, planning and programme implementation on CC
5. Increased online collaboration of experts and practitioners on the CCR at the K Portal
6. Improved sharing of knowledge, learning and innovation for CC Adaptation and Mitigation.

Conceptual approach

Leadership

All KM activities need to be guided by leadership at the multi-stakeholder level of NCSD/GSSD and fostered and facilitated by a management and coordination structure at DCC. A Governance structure need to guide and manage the KM Framework and actively promote the implementation of the KM Action Plan. This preferably has to be a multi-stakeholder steering committee with active participating of decision-makers at the NCSD/GSSD level. Studies in knowledge management in recent years revealed that support from policy makers and senior management is the key barrier/enabler for KM. When in place, it will enable KM, but when not in place, it will be a killing factor for KM.

Management of KM activities

When leadership is in place, there is a need for proper day-to-day management and coordination of the implementation of the activities of the KM Action Plan. A small, effective KM team initially based at one of the offices of DCC and consisting a senior staff of DCC will be established to ensure this coordination and management of the KM action Plan. As KM Framework and Action Plan on climate change has a multi-stakeholder approach, this KM Team should preferably in the future also bring on board KM experts from other stakeholders.

Linking KM with strategic objecting in Climate Change Adaptation and Mitigation

Linking knowledge management with the strategic objectives of the CCCSP, CCAPs and priority objectives of other stakeholders in Cambodia is needed, building on the current leading role of DCC in

climate change response in Cambodia. This will assure that the planned KM activities are linked to the regular work of the experts and practitioners working in climate change and are focused on their information and knowledge needs.

Stakeholder involvement

Active participation and involvement of senior management and staff members of stakeholders at all levels are essential for effective implementation of the KM Framework. The involvement will increase ownership and foster a successful implementation of the KM activities.

Development of the KM Framework

A proposal for the KM Framework will be prepared using a step-wise approach with a number of activities in December 2015 – January 2016:

1. Assessment of Information and Knowledge needs of CC stakeholders for efficient and effective implementation of key services, including identification of existing resources and current gaps in knowledge provision and access
2. Identification of supporting systems and tools (technology development) and integration in the IT landscape in Cambodia (ICT CCAP)
3. Priority setting of required KM activities to provide the key Climate Change Response Services and bring together the information and knowledge required to provide those services by linking KM processes and activities to the key objectives of the CCCSP, the SCCSPs and CCAPs of the key line ministries.
4. Identification of the key channels to be used for information and knowledge sharing for the key stakeholder groups
5. Preparation of a proper governance and management set-up for the KM activities.
6. Preparation of an Action Plan for 2016-2018 for the identified KM activities
7. Identification of financial resources for implementation of the KM Action plan

The KM Framework for Climate Change will focus on three closely interlinked core components (People, Processes and Technology) and supporting components (support mechanism, quality assurance and control of data, information and knowledge, capacity development, communication and M&E) discussed below.

Core components

Core components are:

1. **People** – focusing on the key stakeholders in climate change in Cambodia, their knowledge needs, and training needs, and on establishing a knowledge-supportive culture in Cambodia
2. **Processes** - integrating KM processes into the objectives of CCCSP, the SCCSPs and CCAPs of the line ministries in Cambodia; link up with workflow processes of the stakeholders. Also paying attention to existing culture and behaviour, change management, ownership of processes and technologies by key stakeholders.
3. **ICT** – systems and tools that support and facilitate management, sharing and use of information and knowledge, and learning and innovation building on the existing systems and tools and integration in IT landscape of Cambodia (ICT CCAP)

People, their needs, and capacities

The KM activities should be based on the information and knowledge needs of all the stakeholders in Cambodia. This will result in demand-led activities owned by the stakeholders themselves. Not all stakeholders will have the required capacities to fully participate in the KM activities. Therefore, there will be a need for KM training activities linked to a Capacity Development Programme. Especially ICT capacities need to be further developed for the government and civil society staff and local practitioners.

Processes

Selection of the KM activities to share and use information and knowledge products, training, collaboration and learning and innovation should preferably be linked to the objectives of the CCCSP and the mandate of the DCC, and priority objectives of the other stakeholders for CCR and need to fit into/link to the normal work flow of the participating stakeholders. When stakeholders are asked to participate and/or carry out KM activities within the KM Framework outside the normal work flow (such as special working groups, studies, field surveys etc.), sufficient resources have to be allocated to allow participation in these activities.

ICT

With stakeholders fully capacitated and committed to the KM activities for CCR in Cambodia the focus in the KM approach can be moved towards the 'Technology', the communication channels, and KM Portal and supporting tools to facilitate the work flow and activities to be for CCR Interventions and Programmes. This will require ample attention to support and training of different user groups based on their demands. However, technology alone will never be the solution for effective knowledge management, but will always need a focus on people and processes components.

KM Application Areas

The KM Framework will support and facilitate the work of the stakeholders with a range of activities grouped in four main KM application areas:

- 1. Information Management (IM)**
- 2. Policy Development, Planning and Programmes**
- 3. Communication and Collaboration**
- 4. Learning and Innovation.**

1. Information Management (IM)

The first KM application area deals with the management of basic data and information on Climate Change in Cambodia. It deals with bringing together data sets on climate change, e.g. vulnerability, risk assessments and climate change response activities in Cambodia, information on experts and organisations involved in policy development and planning, information on programmes and projects and their outputs, research activities, extension services, and financial services. Sharing datasets between different institutions requires that clear 'Data Sharing agreements' are in place, which are currently not available, not within the government and not with other stakeholders outside

government. The data collection, storage and sharing needs practical data standards for data collection and storage, and data sharing agreements between stakeholders that collect these data. There are data standards and data sharing agreements available and used at the MRC and NCMC, that can be used as examples for the development of data standards and data sharing protocols to be used For data sharing on climate change. The KM Support Mechanism will need to take the lead in developing the required data standards and sharing agreements for sharing datasets on climate change at the K portal.

Information can be used for different purposes, such as expertise localization, project overviews in a specific geographic area or on a specific topic/sector ('who is doing what where'). These types of information are relatively easy to collect and make accessible at a Knowledge Portal for stakeholders working on climate change. The collection, capture, storage and accessibility including quality control, and dissemination of this basic information on climate change in Cambodia are the key activities of the 'Information Management' component.

The build-up of an information section at the Knowledge portal is a 'Technology' activity: the design and development of a systematic structure to store the information and an easy-to-use interface to access it. However, in addition to the 'Technology' component there needs to be sufficient attention for the 'People' and 'Processes' components: assessment of information needs of the key stakeholders, proper guidelines and procedures for stakeholders on how to collect and capture information on experts, organizations, publications and projects, combined with a quality control by dedicated information managers at the different stakeholders coordinated by the KM Team. In addition, where needed, there may need for training in ICT and information management for experts and practitioners that are less experienced in using online systems and tools.

Data and information collection will benefit from capacity development activities focusing on the methodology, guidelines and standard operational procedures (SOPs) for data collection and sampling in data-poor situations, data sharing and quality control procedures. The National Institute of Statistics (NIS) of the Ministry of Planning is officially the responsible institution dealing with data collection standards in Cambodia, although data collection in Cambodia is still decentralized. For spatial data collection the national nominated agency is the Department of Geography of the Ministry of Land Management, Urban Planning and Construction. By setting data collection and sampling standards and harmonizing the different data collection methods currently used by the different stakeholders in Cambodia the quality of data collection including spatial data will be further improved.

2. Support to Policy Development, Planning and Programme Management

The second KM application area brings together the KM activities supporting policy development, planning and programme management. Depending on the needs identified by stakeholders KM activities may focus e.g. on supporting analysis and synthesis of climate change baseline data using an (web-based) GIS mapping, analysis of trends in climate change, scenario modelling for planning, and monitoring and evaluation of results of climate change adaptation and mitigation interventions.

GIS Capacity within MOE for maintenance and management of the GIS functionality at the K portal and with stakeholders for using the GIS functionality need to be developed by training activities.

Currently a new M&E CC Framework is being developed by CCCA/DCC in collaboration with IIED (UK). When available, the new M&E Tool and or information can be linked to or made available at the K Portal. Access and sharing of information on policies, action plans and programmes (resulting from the IM component) will improve the capacity of stakeholders to participate in policy development and programme management on climate change response.

3. Communication and Collaboration

The third KM application area deals with communication and collaboration. KM activities focus on disseminating key information and knowledge to key stakeholder groups using a range of channels, from face-to-face extension, awareness raising and empowering using classical tools as e.g. radio, TV and drama, to online (project) teams and other working groups sharing and working together on a specific project or topic. Communication to the general public will play an important role in getting the support for climate change adaptation and mitigation interventions necessary to reduce the impact of climate change in Cambodia.

This application area will make use of the information and knowledge provided by the previous two application areas. Also the complexity of KM activities is higher and in most cases activities will be more successful with facilitators/moderators supporting the interaction and knowledge sharing between experts and practitioners.

Different modalities can be distinguished for collaboration activities, ranging from formal collaboration in project teams, working groups and partnerships, to non-formal collaboration in thematic or activity-based Communities of Practice (CoPs). A CoP can be formed within a single institution, e.g. a project team at DCC, or can be a multi-stakeholder collaboration, such as a working group at the NCS level.

The basic online functionality that all these collaboration groups need, will be developed at the K Portal by providing virtual work spaces, a functionality where CC experts and practitioners can be working together on a specific task, activity or project and where they can easily share documents, start discussions, request for information, and make comments, in the same manner as they work together in their own offices.

4. Learning and Innovation

The fourth KM application area is dealing with capturing lessons learned, good practices, success factors and failures from programmes and policy development activities and sharing these key knowledge assets for learning and innovation purposes in order to improve the effectiveness and efficiency of the policies and programmes.

This application area consists of a range of KM activities that require the systematic process of facilitation of structured interaction, discussion and collaboration of experts and practitioners on key topics or themes. This application area will use the information and knowledge and communication/

collaboration functionality provided by the previous three applications areas. Online and offline teams, working groups and informal Communities of Practice (CoPs) are examples for this knowledge sharing. Support programmes need to facilitate and foster these complex learning and innovation activities for which development partners can be approached for funding.

The knowledge products that will come out of these KM activities will need a thorough quality assurance mechanism that needs to be institutionalized at DCC, as part of the proposed Support Mechanism.

The 'KM Piano' as a tool for selection of KM Activities

A KM matrix has been prepared to assist with the selection of KM activities, I&K products and tools to be used for the work on climate change of the different stakeholders.

At the individual level experts and practitioners can select the I&K products and online tools at the K Portal from the four application areas that they need for their own work. Each individual expert will have its own individual workspace, where he/she can bring together the information and knowledge and supporting tools for day-to-day use.

At the stakeholder group level there will also be differences in the work to be done between e.g. a government institution such as DCC and a local NGO working on climate change at the community level. Using the KM Piano Matrix each stakeholder or multi-stakeholder group can make a selection of information/knowledge and tools that it needs for its work as a (project)team, working group or steering committee, and bring them together at a group work space with restricted access for the group members only.

KM PIANO for selecting KM activities, products and tools to be used

Information and Knowledge needs based on CCR services of DCC and the key stakeholders

KM Application Areas responding to user needs

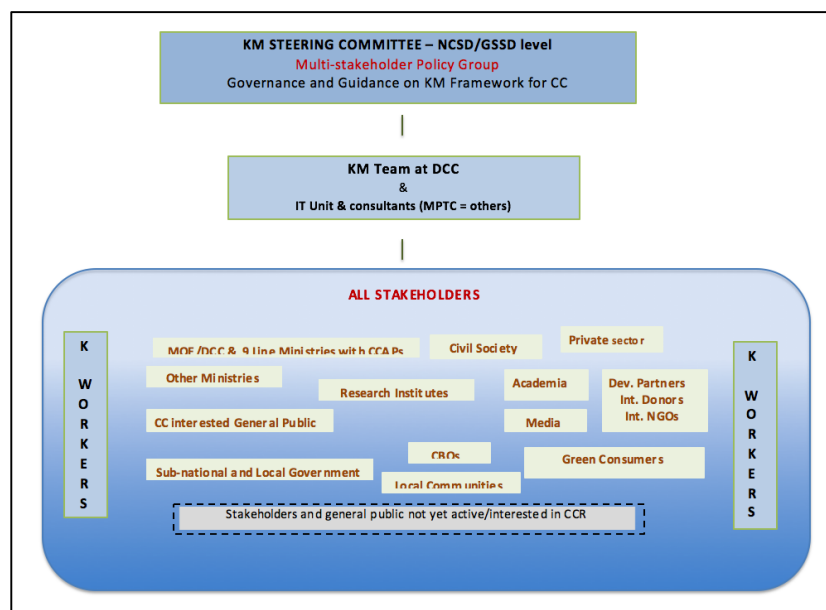
| 1. Information Management | 2. Policy Development, Planning & Programme Management | 3. Communication & Collaboration | 4. Learning & innovation |
|---|---|---|---|
| IM and KM activities (Select a set of KM activities to support your CCR services) | | | |
| <ul style="list-style-type: none"> • Share News and events on CCR • Share information of experts, organisations • Share basic Information on Projects on Maps • Share your resources (publications) • Share (baseline)datasets on different themes | <ul style="list-style-type: none"> • Analyse and Synthesize data/indicators • Trend discovery • Scenario modelling • M&E on policies and Action plans • M&E on programmes and projects • CC Impact assessment • Quality assurance | <ul style="list-style-type: none"> • Awareness raising activities • Extension activities and empowerment • Project collaboration • Working Groups • Workshops & training • Joint reporting/publishing • Partnership development • Collaboration in informal groups (CoPs) | <ul style="list-style-type: none"> • Share Lessons Learned & Good Practices • Share business models for up-scaling • Develop a Research & Development agenda • Do a research priority setting • Develop a new methodology • Share new technologies |
| I&K Products (inputs & outputs) used by or provided by stakeholders | | | |
| <ul style="list-style-type: none"> • News / Events • Expert info • Organization lists • Reports / Publications • Project sheets; project details • Good Practice info • Investment reports • Metadata on datasets • Datasets | <ul style="list-style-type: none"> • GIS maps (static and dynamic) • M&E Matrix / Score card • Trend analysis graph • Project maps • Scenario model • Analysis & synthesis report • Project progress report • Evaluation report | <ul style="list-style-type: none"> • Awareness raising product development for different target groups • Extension materials • Project progress reports • Project publications • Thematic reports • online & offline dialogues • workshop report preparation | <ul style="list-style-type: none"> • Lessons learned (LLs) • Good practices (GPs) • Business Models • Research Plans • Priority setting reports • Technology description • case studies • Scientific paper • Methodology |
| Supporting (offline and Online) Systems and Tools | | | |
| <ul style="list-style-type: none"> • News section • Event calendar • Repositories • Links to resources • Expert directory • Dataset database • Media database • Taxonomy / Thesaurus • Search engine | <ul style="list-style-type: none"> • GIS Planning tools • Decision support systems • Trend analysis software • M&E Tool • Scenario modelling tool • Tracking tool • Logframe tool • Impact assessment tool (Theory of change model) | <ul style="list-style-type: none"> • Face-to-face meetings • Workshops/learning events • Conferences • Online collaboration Space on project, topic, publication for stakeholder/stakeholders • Discussion space • Forum space • Conferencing software | <ul style="list-style-type: none"> • Online training • E-Learning tool • Research planning tool • Online good practice preparation using standard template • Preparing LLs from projects and after action reviews • Media support for technology transfer • Business model matrix (Canvas) |

Supporting Components

Supporting components for the KM Framework and the Action Plan are a Support Mechanism, and additional plans for Quality Assurance and Control of information and knowledge, Capacity Development for stakeholders, and Communication and M&E for progress of the KM activities

Support Mechanism

A **Support Mechanism** will be established for governance and coordination of the KM Framework and Action Plan and with additional support structures in order to assure successful implementation of the KM activities.



The Support Mechanism consists of:

1. **KM Steering Committee at the NCS/D level** will be the governance structure with decision-makers of the key government institutions participating in the NCS/D to guide the KM Framework and Action Plan for Climate Change Response.
2. **KM Team at DCC** for management and coordination of the activities of the Action Plan. This KM team will initially consist of senior managers/staff with KM, IM and IT expertise from DCC, but may be expanded at a later stage with senior staff of other stakeholders, establishing a multi-stakeholder coordination and management team.

The composition of this KM Coordination Team may change over time depending on the expertise required. Key tasks of the KM Team will be coordination of activities, quality assurance of information and knowledge to be shared, and guidance of K workers and IT unit.

Initially the KM Team should consist of at least 4 members:

1. **Senior Knowledge Manager**, leading the team and responsible for the coordination of the KM activities including QA and QC

2. **Senior Information Manager** with IT and outsourcing experience, guiding and coordinating the Information Management activities and the work of the IT Unit & any hired consultants for specific IT development.
3. **Senior Capacity Development specialist** to coordinate the training activities needed for KM activities and dealing with M&E on project of the KM Action Plan
4. **Communication specialist** coordinating the development and the implementation of the communication plan for the awareness raising and communication activities.

The KM Team will get assistance of two additional support structures with specific tasks in Information management, Content management, quality control and IT management:

1. **Information Managers & KM Facilitators at government institutions and other stakeholders that actively participate in the KM activities** – these dedicated ‘Knowledge Workers’ are assigned focal points that will support the KM activities at DCC and other stakeholder institutions and organizations, and will carry out quality control on datasets and information stored at the K Portal. Identification, training and proper awarding of these staff members with specific KM tasks are essential for effective IM & KM activities. These ‘**Knowledge Workers**’ (i.e. the Information Managers and KM Facilitators) need to have skills and capacity for the following activities:
 - Identify I&K knowledge needs, search for and capture information on CC experts, organizations, projects and publications and solutions
 - Quality control of information submitted by staff of own organization/institution
 - Support to colleagues of their own organization/institution and motivate them to share information and knowledge;
 - Advanced ICT and communication skills.
2. **IT Unit** – a dedicated IT Unit will be responsible for the hosting, and maintain the functionality of the new K Portal when developed, and any development of new functionality of the K Portal in the future.

For the K Portal development two consultants, database consultant with GIS expertise and web designer, are being contracted at present and will develop the first version of the K Portal in the coming months. For the maintenance and management of the new K portal the IT Unit will need specific IT skills in using the CMS software package used for the development of the K Portal that will not be available at the moment. External support and training in maintenance and management of the K Portal by a consultant with experience of the used CMS package will probably be needed in the first year.

In addition, the IT Unit will need specifically technical expertise in web-based GIS. The Department of Geospatial Information Service at MOE is the best option for a dedicated GIS Unit responsible for management and maintenance of the GIS functionality of the K portal, as the technical GIS expertise is not available within DCC, although the GIS unit will need additional training in web-based GIS. For the design and the development of web-based GIS functionality within the K Portal external consultants need to be contracted, as this expertise is currently not available at DCC or the GIS department of the MOE.

Strong linkages with other stakeholders and projects working on climate change that are already working or planning to work with the GIS (e.g. RUPP, MAFF, MRC-DMD, Land

management, WFP, SPRT, ASPIRE) will be important with regard to data sharing, the design and development of the GIS functionality at the K portal, and collaboration, advice, and support while implementing the KM activities related to the use of GIS. IN addition close collaboration is also needed with the projects that are also planning to use the services of the same GIS department, e.g. the UNDP project on the Environmental Code and the Environmental portal.

The General Department of Information and Communication Technology (GDICT) of the Ministry of Posts and Telecommunications (MPTC), one of the line ministries at the NCSD, will provide the required IT architecture and hosting for the new KM Portal (including server space for the development of the K portal) as part of Action 2 and 3 of its CCAP. Universal Access Funds may be used for covering the costs of the services provided by the GDICT, providing sustainable, long-term support for required IT infrastructure of the K Portal for Climate Change for the future.

| Support Mechanism | |
|--|---|
| NCSD/GSSD level | Governance Steering Committee (multi-stakeholder) <small>Guidance to KM Framework/Action Plan & KM Team</small> |
| DCC Coordination & Management | KM Team Coordination and Management Unit for support to KM <ul style="list-style-type: none"> • Coordination and implementation of KM activities for stakeholders • Coordination of KM & IM , and Quality Assurance on content generated • Coordination and guidance to KM facilitators & Info managers • Coordination and guidance for IT Unit & Consultants • Coordination of capacity development, communication and M&E on KM |
| MPTC + others IT support | <hr style="border-top: 1px dashed black;"/> IT Unit & Consultants <ul style="list-style-type: none"> • IT Architecture /hosting • K Portal Development • K Portal Maintenance and development of new functionality • ICT training activities |
| Stakeholder level | KM Facilitators & Information Managers <ul style="list-style-type: none"> • On-the-job KM Support to staff of own organization <ul style="list-style-type: none"> • Quality control at organizational level • M&E at organizational level • Training at organizational level |
| IT | K PORTAL & IT INFRASTRUCTURE/INTERNET |

In addition, IT consultants may need to be contracted for specific other software development, not available at DCC or the Ministry of Posts and Telecommunications. Regular progress meetings and active involvement of the KM Team at DCC is also necessary. Therefore, an IT expert with software development expertise should preferably supervise the development of the K Portal for the KM Team in order to reduce risks such as delays in portal development and deployment, redundant deviations from the functional and technical requirements, and sub-optimal functionality of the delivered K portal.

Quality Assurance and Quality Control Mechanism

A Quality Assurance and control mechanism needs to be established within the Support Mechanism. Before publishing and dissemination information and knowledge products at the Climate Change K Portal procedures for quality control and quality assurance will assess the quality of the information and knowledge submitted to the K Portal.

Quality Control deals with routine checking of data and information products on e.g. completeness, errors and omissions, and a minimum set of metadata, and will be carried out on (metadata) information of datasets, experts, organizations, and project information. Responsibility of the quality control will be assigned to dedicated information managers of the different participating stakeholders coordinated by an Information Manager within the KM Team.

Quality Assurance deals with a peer-review process for selected information and knowledge products wherein the content created will be validated by subject experts based on a predefined set of criteria that need to met. This requires a procedure for approval of the I & K products before they will be published and be accessible at the K portal. The Quality Assurance needs the coordinated by a Quality Assurance Coordinator at the KM Team in collaboration with a (internal or external) QA Review Team of subject experts. In Annex 2 a QA-QC mechanism is further elaborated.

Capacity Development for KM

Staff and management of DCC and other participating stakeholders need to have the capacity and skills to participate in the KM activities for CCR, both with regard to content generation (producing I&K products) and the ICT skills to use the K portal (submitting, searching for and using I&K products). Selected DCC staff and units will be participating in the KM Team coordination and management activities and will need training in standards for data and information collection, management and sharing, quality control, and development, management and maintenance of specific tools and systems for the K Portal to facilitate information and knowledge sharing. Capacity development activities based on needs of the key stakeholders will be to be incorporated into the KM Action Plan.

Communication on KM activities

Regular progress reports should be provided to the key stakeholders in order to keep them up-to-date with the progress of the implementation of the KM activities of the action plan, including the progress with the development of the new Knowledge Portal. Where needed, additional consultation of the key stakeholders should be done. This will foster their participation and increase the ownership of stakeholders for knowledge sharing on climate change response in Cambodia.

Monitoring and Evaluation of KM activities

A M&E plan needs to be in place for an effective monitoring of the KM activities and KM support facilitating the KM activities in the coming 3 years. This will allow for adaptation of the KM Action Plan in terms of activities or time planning, when needed

Additional Requirements for Knowledge Management

Linking KM Activities with the day-to-day work flow of DCC and the other key stakeholders (*'in and above the work flow'*)

The KM activities need to be incorporated in the work flow of the people involved at DCC and the other participating stakeholders. This can be done in two ways: *in the workflow* or *above the workflow*.

1. The KM activities are integrated into the normal work of the staff. And capturing and sharing information and knowledge and collaboration activities being part of their work are carried out without extra time allocation or costs. This called *Knowledge management in the workflow*.
2. Asking staff to stop with their regular work and work specifically on capturing and sharing knowledge is costing extra time (and thus extra costs) is doing *Knowledge Management above the workflow*.

Both types of KM activities may be necessary and need to be combined in a rational manner. Activities in the work flow will not require much extra resources, but KM activities above the workflow will require a proper budgeting in terms of human resources and time allocation.

Online vs Offline collaboration

Online communication and collaboration using the K Portal with a range of online tools will always be combined with face-to-face meetings, workshops and communication using traditional voice and text messages. However, online communication will partly replace face-to-face communication and collaboration as a more cost-effective means of collaboration and interaction, reducing the high costs involved with travel and subsistence related to organizing face-to-face meetings and activities. New technologies such as broadband Internet and conferencing software will make online meetings and interaction more practical and effective in the future for a wide range of meetings.

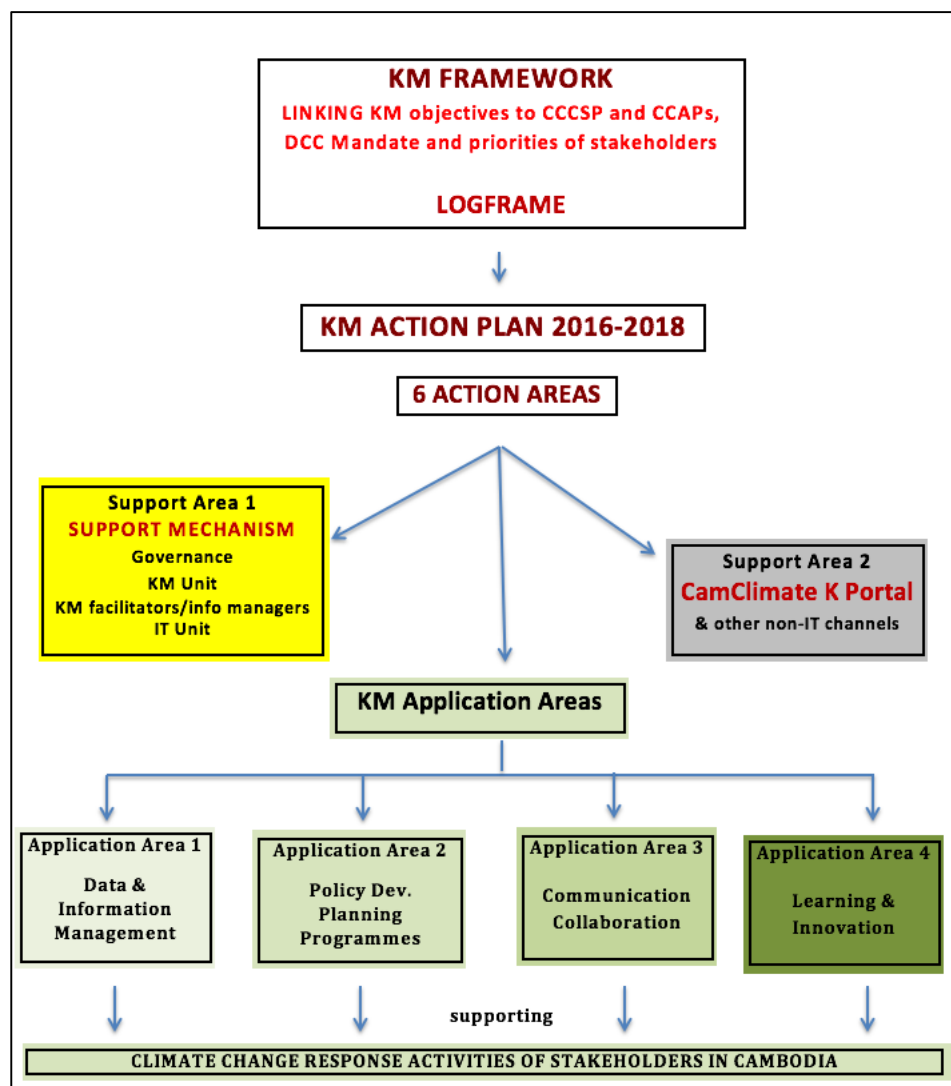
At the sub-national level up to the local community level the use of ICT and the KM Portal will be more challenging, due to the limited language and ICT skills at those levels. At those levels offline tools will still be the key communication and collaboration tools, although new ICT developments will have to be explored and new ICT introduced also at these levels, e.g. use of videos and audio for transferring key information and knowledge on climate change and climate change response, use of mobile tools for early warning systems, use of mobiles for voice-calls services to reach illiterate people etc. These last-mile solutions to be developed to actively support local communities can best be piloted and up-scaled in collaboration with the local communities themselves involving the stakeholders activity working at the local level, such as research institutions, NGOs and CBOs, and with active involvement of private sector companies working in ICT and mobile services. These solutions may need initial support of international development agencies for development and piloting, but should be built on sustainable business models for upscaling, involving private sector (e.g. mobile providers) and government (e.g. using of the existing universal access funds).

Functional Requirements for the Knowledge Portal

In order to facilitate and support the design and the development of the new Climate Change Knowledge Portal the key functional and non-functional requirements have been elaborated in a separate document (PART 3).

7. KM ACTION PLAN (2016-2018)

The KM Action Plan will focus on key activities in six action areas, the two support areas (Support Mechanism and Knowledge Portal), and the four KM applications areas for the information and knowledge services and capacities to support the implementation of Cambodia's climate change response (CCCSP).



For the preparation of the KM Action plan it will be good to use a two-pronged KM approach. With the KM Framework in place, there will be a long-term focus and added value, but at the same it will be necessary to show the value of KM by providing immediate results with small interventions and activities that give quick wins, e.g. after action reviews by a project team, capturing lessons learned at the end of a project, peer assist meeting with external experts at the start of a project, K retention when a staff member leaves. In the action plan the KM team will have to show the value of KM with these quick wins, but at the same time move to pilot projects and activities with a longer duration.

In addition the KM approach and action plan needs to address the added value of KM for both the organizations (see Chapter 3) and for individual staff members (improved capacities and expertise through learning with as result better performance in their own work).

A 3-year Action plan for the implementation of the KM Framework is prepared based on achieving the specific KM objectives and will guide the implementation of KM activities by DCC and other key stakeholders for CCR in Cambodia. A logframe has been prepared to facilitate the selection and prioritizing of the Km activities for the next 3 years.

The Action Plan consists of three phases with a step-wise introduction of KM Activities combined with a range of support activities (e.g. awareness raising, capacity development and change management activities, the development and implementation of the Support Mechanism and the K Portal).

Each phase has a duration of one year. The KM activities started in a specific phase will continue in the following phases, being institutionalized and incorporated in the regular work flow and activities of staff, experts and practitioners of the different stakeholders.

Phases of the KM Action Plan

Phase 1. KM Start-up (Year 1)

In Year 1 the initial focus will be on the establishment of the KM Support Mechanism with emphasis on the development and implementation of the K Portal, awareness raising and sensitization of key stakeholders on the new KM activities, change management measures for KM, and adequate linkage with the objectives of the CCCSP and CCAPs, the mandate of DCC and priorities of key stakeholders. The activities will focus on the Results 1 and 2 of the KM Framework. A Monitoring and Evaluation plan will be prepared for assessing the performance of the KM Framework, and the results of the KM activities.

Subsequently, a training of trainers (TOT) will be given to the K Workers in information management (IM), quality control, and ICT skills (when required), so they will be able to train their colleagues at DCC and other stakeholders. The TOT training in IM and ICT skills will take less than 1 week. Subsequently these trained K workers at DCC and selected stakeholders will train their colleagues in one-day training activities in IM procedures and use of the K Portal. Online support and user manuals will be set up for registered users at the portal. Experts and practitioners with IM & KM experience, especially for academia, (international) NGOs and development agencies, may even register and start the KM activities without the one-day training.

In the first year the 25 DCC staff members and 100+ staff members of selected stakeholders may register at the K Portal in the first year. In the second and third year focus will be more on inviting and training other stakeholders at national and sub-national level. The training activities in Year 1 will initially focus on Information management, dealing with the collection and sharing on data and information on CC expertise (experts and organizations), resources, project information. At the second half of Year 1 training activities may start focusing on online collaboration at the K Portal (with one or two pilot activities).

In the second half of the first year the piloting of one or two collaboration activities at DCC should be started with participation of other stakeholders on specific CCR interventions in order to showcase the functionality of the K Portal. Of course planning of these pilots will depend on the progress made in the implementation of the K Portal in the first half of Year 1.

In year 2 and 3 training activities will focus also on the other two remaining application areas, on policy development, planning and programme management (including use of web-based GIS, and M&E) and on knowledge sharing, learning and innovation (e.g. describing lessons learned, good practices, and new technologies and supporting innovation systems).

Phase 2. KM Expansion (Year 2)

In Year 2 the IM activities started in Year 1 will be expanded with KM activities for the other application areas, focusing on policy development, planning and programmes, and learning and innovation, and linkages will be made with other international programmes such as the IFAD Innovation project and the ADB-funded Climate Change Programme SPRT.

In the second year new KM activities can be started with other stakeholder groups at national and subnational level. New stakeholders at all levels will be invited and, when needed, trained in ICT, IM and collaboration, and supported by the K workers, further broadening the participation of CC stakeholders in the KM activities.

Phase 3. KM Consolidation (Year 3)

In Year 3 the main focus is on expanding and consolidating the stakeholder participation in the KM activities, and further developing the functionality of the K Portal, all based on identified knowledge and training needs of the stakeholders.

In principle each stakeholders is responsible for securing their own financial resources for all KM activities 'within the work flow', but especially for the KM activities 'outside the work flow' (such as for the training activities) the Governance Steering Committee and the KM team will, where possible, provide assistance in acquiring external funds in consultation with the development partners and donors.

A KM Action Plan for the coming three year with the logframe of the KM Framework, a tentative time schedule, and a budget for the activities outside the work flow of the stakeholders for which external funds needs to be available, is presented in a separate document (PART 2).

ANNEX 1. KEY RESULTS OF E-SURVEY ON INFORMATION AND KNOWLEDGE NEEDS ON KM FOR CLIMATE CHANGE

44 staff members of key stakeholders filled the online questionnaire. Results on information needs and systems and tools in use and for future use are given below. A report on the key results of the questionnaire are given in PART 3 of this proposal.

List of current I&K products (with for each product the number of responses in the e-Survey)

| | |
|--|-----------|
| 1.1 Information on existing datasets on Climate Change (adaptation and mitigation) | 34 |
| 1.3 Information on organizations, institutions and companies working on climate change in Cambodia | 30 |
| 1.5 Information on climate change projects in Cambodia (locations, project summary, contact info) | 28 |
| 3.6 Good practices on CC Response for local communities (booklets, videos, posters etc. for offline use) | 27 |
| 1.9 Publications and reports on Climate Change (Response) | 26 |
| 1.13 News and events on Climate Change Adaptation and mitigation in Cambodia | 26 |
| 1.8 Information on sources of funding for climate change response | 25 |
| 2.1 Climate scenarios for Cambodia | 25 |
| 3.5 Training materials on climate change (response) for various sectors (specify sector in textbox) | 25 |
| 2.7 M&E reports on performance of CC programmes and projects | 24 |
| 3.4 Awareness materials on climate change (response) for various sectors | 24 |
| 1.12 Weather and weather forecast information | 23 |
| 2.5 Vulnerability mapping and/or analysis in various sectors/areas (specify in textbox below) | 23 |
| 1.10 Cambodia Climate Change Strategic Plan 2014-2023 (CCCSP) and sectoral Action Plans (CCAPs) | 22 |
| 2.6 Progress reports on outcomes of CCAPs for various sectors | 22 |
| 3.1 Lessons learned on climate change response in Cambodia | 22 |
| 3.13 Case studies on successful investments in new CC interventions in other countries | 22 |
| 1.2 Information on CC experts and expertise in in various sectors | 21 |
| 3.9 Climate change training manual for TOT in local community | 21 |
| 3.10 Training in preparing Lessons Learned and Good Practices on CC adaptation and mitigation | 21 |
| 2.3 Policy briefs on priority themes and new developments in CC (national/international) | 20 |
| 2.8 Outcomes of (innovation) research projects on CC (national/international) | 20 |
| 1.7 Information on providers of technical support for climate change response | 19 |
| 1.11 Information on laws, regulations, tax incentives for technology development | 19 |
| 2.4 Estimated climate impacts in various sectors/areas (specify sector/area in textbox below) | 19 |
| 2.9 CC adaptation and mitigation options/technologies in various sectors (national/international) | 19 |
| 3.8 Awareness raising and training materials for local partners in various sectors | 19 |
| 3.7 Good practices on CC Response in various sectors (specify sector in textbox below) | 18 |
| 3.12 Results of testing and adapting regional and international CC adaptation and mitigation options/technologies in various sectors in Cambodia | 18 |
| 1.6 Information on key R&D organizations and testing facilities for technology development | 17 |
| 2.2 Trends/developments for various sectors/areas | 16 |
| 3.2 International/regional lessons learned on climate change response | 16 |
| 3.3 (Expert) networks for Knowledge sharing on CC adaptation and Mitigation ((inter)national/regional) | 16 |
| 3.11 Available CC adaptation and mitigation options/technologies in various sectors in Cambodia | 16 |
| 1.4 Information on importers/exporters/national suppliers of technologies/materials | 15 |

List of future needs I&K products (with for each product the number of responses in the e-Survey)

| | |
|--|-----------|
| 1.1. Information on existing datasets on Climate Change (adaptation and mitigation) | 18 |
| 1.9 Publications and reports on Climate Change (Response) | 15 |
| 1.13 News and events on Climate Change Adaptation and mitigation in Cambodia | 14 |
| 3.1 Lessons learned on climate change response in Cambodia | 13 |
| 1.2 Information on CC experts and expertise in in various sectors | 12 |
| 3.5 Training materials on climate change (response) for various sectors | 11 |
| 1.5 Information on climate change projects in Cambodia (locations, project summary, contact info) | 10 |
| 1.10 Cambodia Climate Change Strategic Plan 2014-2023 (CCCSP) and sectoral Action Plans (CCAPs) | 10 |
| 1.3 Information on organizations, institutions and companies working on climate change in Cambodia | 9 |
| 3.9 Climate change training manual for ToT in local community | 9 |
| 1.7 Information on providers of technical support for climate change response | 8 |
| 3.4 Awareness materials on climate change (response) for various sectors | 8 |
| 3.6 Good practices on CC Response for local communities (booklets, videos, posters etc. for offline use) | 8 |
| 1.8 Information on sources of funding for climate change response | 7 |
| 2.1 Climate scenarios for Cambodia | 7 |
| 3.8 Awareness raising and training materials for local partners in various sectors | 7 |
| 3.10 Training in preparing Lessons Learned and Good Practices on CC adaptation and mitigation | 7 |
| 3.13 Case studies on successful investments in new CC interventions in other countries | 7 |
| 2.7 M&E reports on performance of CC programmes and projects | 6 |
| 2.3 Policy briefs on priority themes and new developments in CC (national/international) | 5 |
| 2.6 Progress reports on outcomes of CCAPs for various sectors | 5 |
| 1.11 Information on laws, regulations, tax incentives for technology development | 4 |
| 1.12 Weather and weather forecast information | 4 |
| 2.5 Vulnerability mapping and/or analysis in various sectors/areas (specify in textbox below) | 4 |
| 2.8 Outcomes of (innovation) research projects on CC (national/international) | 4 |
| 2.9 CC adaptation and mitigation options/technologies in various sectors (national/international) | 4 |
| 3.2 International/regional lessons learned on climate change response | 4 |
| 3.3 (Expert) networks for Knowledge sharing on CC adaptation and Mitigation (inter)national/regional) | 4 |
| 1.4 Information on importers/exporters/national suppliers of technologies/materials | 3 |
| 2.2 Trends/developments for various sectors/areas | 2 |
| 3.7 Good practices on CC Response in various sectors (specify sector in textbox below) | 2 |
| 1.6 Information on key R&D organizations and testing facilities for technology development | 1 |
| 2.4 Estimated climate impacts in various sectors/areas (specify sector/area in textbox below) | 1 |
| 3.11 Available CC adaptation and mitigation options/technologies in various sectors in Cambodia | 1 |
| 3.12 Results of testing and adapting regional and international CC adaptation and mitigation options/technologies in various sectors in Cambodia | 1 |

List of online and offline systems and tools currently used for exchange of I&K products

| | |
|--|-----------|
| 2. Google Search (or other search engines) | 32 |
| 1. Websites on Climate Change in Cambodia (e.g. CamClimate website) and abroad | 31 |
| 5. Email & documents sent by email | 30 |
| 7. Social media (Twitter, Facebook, LinkedIn, others) | 28 |
| 16. Face-to-Face meetings, workshops, conferences, project meetings | 25 |
| 13. Books and reports (received at workshops/conferences) | 24 |
| 4. e-Newsletters (online or sent by email) | 20 |
| 15. Calls (phone/mobile) with colleagues | 20 |
| 20. Face-to-Face Informal meetings/talks with colleagues | 18 |
| 3. Online libraries (e.g. of universities, int. organizations and resource centres) | 16 |
| 17. Face-to-Face Training, Brown Bag meetings, awareness raising meetings | 16 |
| 9. Online conferencing, chatting and messaging (e.g. Skype, GoogleTalk) | 14 |
| 14. Library of your organization | 14 |
| 10. e-Learning website(s) | 12 |
| 12. GIS applications for mapping (e.g. ARCGIS, QGIS, GoogleMaps etc) | 9 |
| 11. Online databases and repositories (e.g expert, organization, publication databases) | 8 |
| 18. Face-to-Face Helpdesk/Training | 8 |
| 19. Face-to-Face Mentoring /Peer assist | 7 |
| 6. RSS feeds from websites | 5 |
| 8. Online Communities of Practice (CoPs), e.g. UN Teamworks, DGroups | 5 |

List of online and offline systems and tools that people want to use in the future (more) for exchange of I&K products

| | |
|--|-----------|
| 1. Websites on Climate Change in Cambodia (e.g. CamClimate website) and abroad | 31 |
| 3. Online libraries (e.g. of universities, int. organizations and resource centres) | 23 |
| 7. Social media (Twitter, Facebook, LinkedIn, others) | 22 |
| 16. Face-to-Face meetings, workshops, conferences, project meetings | 21 |
| 4. e-Newsletters (online or sent by email) | 20 |
| 5. Email & documents sent by email | 20 |
| 2. Google Search (or other search engines) | 19 |
| 10. e-Learning website(s) | 19 |
| 13. Books and reports (received at workshops/conferences) | 19 |
| 11. Online databases and repositories | 18 |
| 12. GIS applications for mapping (e.g. ARCGIS, QGIS, GoogleMaps etc) | 18 |
| 8. Online Communities of Practice (CoPs), e.g. UN Teamworks, DGroups | 17 |
| 9. Online conferencing, chatting and messaging (e.g. Skype, GoogleTalk) | 16 |
| 14. Library of your organization | 13 |
| 17. Face-to-Face Training, Brown Bag meetings, awareness raising meetings | 13 |
| 18. Face-to-Face Helpdesk/Training | 11 |
| 20. Face-to-Face Informal meetings/talks with colleagues | 11 |
| 15. Calls (phone/mobile) with colleagues | 10 |
| 19. Face-to-Face Mentoring /Peer assist | 10 |
| 6. RSS feeds from websites | 8 |

ANNEX 2. QUALITY ASSURANCE AND CONTROL MECHANISM

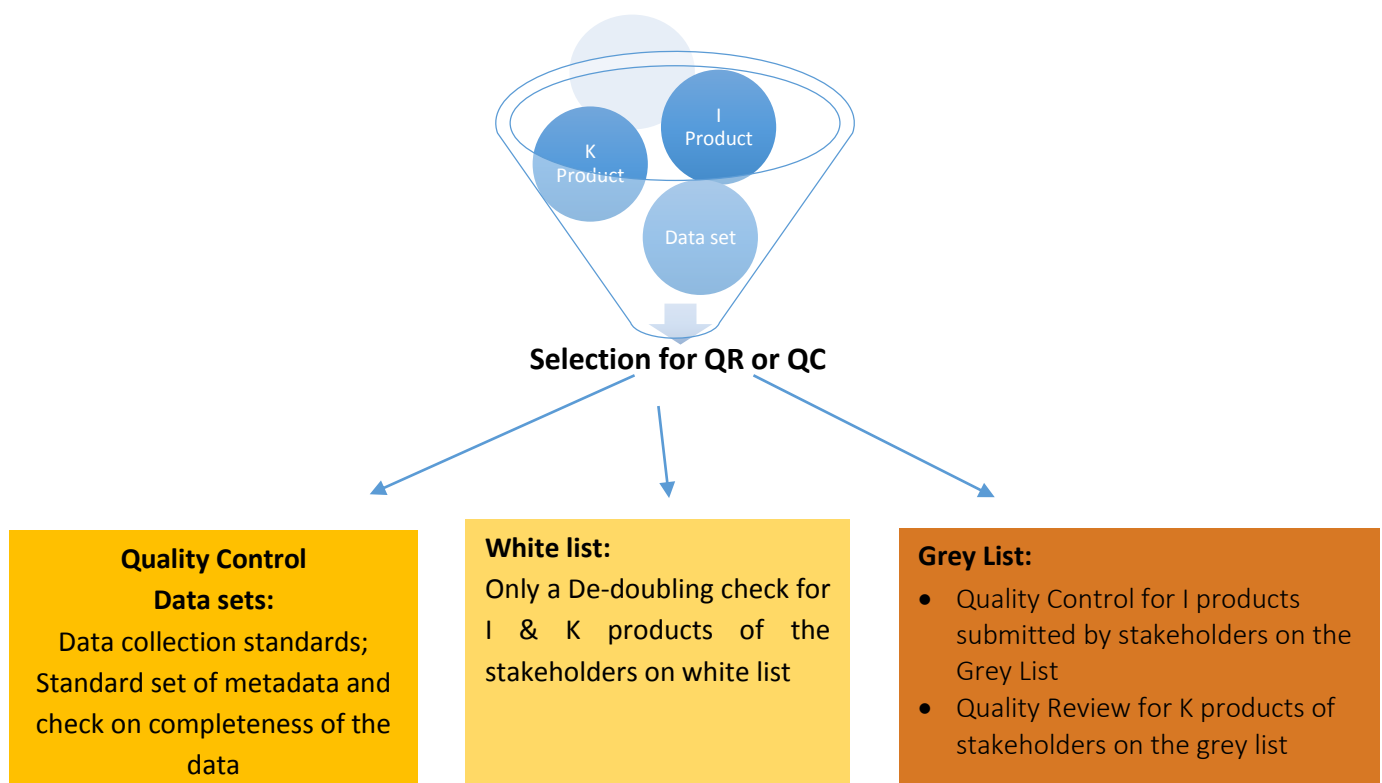
Introduction

A Quality Assurance (QA) and Control (QC) Mechanism needs to be established within the KM Support Mechanism. The first line of the QA and QC Mechanism will be done by the Information Managers and KM Facilitators at the stakeholder level. They will do the QC required and forward K products and datasets to the second line for Quality Review at the KM Team. Before publication and dissemination of the Information and Knowledge (I&K) products at the K Portal a simple procedure will be used for the first line K Workers.

Proposed Procedure

A QA-QC procedure will be established to assure the quality of the datasets and I & K products submitted at the K Portal on Climate Change.

1. Datasets will always be analysed and evaluated by a dedicated Quality Control Team dealing with primary data sets
2. For I&K products two lists of stakeholders will be prepared by the KM team:
 1. White list of qualified stakeholders that do not need QR for their I & K products.
 2. Grey list of stakeholders that are not yet qualified. The I&K products of those stakeholders all need a Quality control by the K Workers and a Quality Review for selected K products.



The KM Team will prepare the initial 'White list' for the stakeholders. All other stakeholders not on the White list are automatically put on the Grey list. The White list will be updated annually by the KM Team.

The Information Manager/KM facilitator will check on which list the stakeholder has been listed that submits any new K product to the Quality Review Team.

Option 1. The stakeholder is on the white list → the I or K product will be approved. Only a de-doubling check will be carried out to check whether the I or K product is not already at the K Portal.

Option 2. Stakeholder is on the grey list, a QC procedure will be carried out for simple Information products (e.g. information submitted on an expert, organization, project, published publication to one of the databases at the K Portal) to check completeness of the information submitted. and more complex K products, such as analysis/synthesis of CC impacts and interventions, lessons learned, good practices, new technologies or new solutions and/or options for CC adaptation/mitigation, a Quality Review by the KM Team need to be carried out.

Datasets submitted will all be reviewed by a 'Data Quality Control Review Team' established by the KM Team to assess the quality and completeness of the dataset and its metadata.

PROCEDURE FOR QUALITY CONTROL CHECK (QCC)

QCC to be carried out by the Information Manager (i.e. an Information Manager assigned by a participating stakeholder) with regular control of the Information Manager at DCC KM Team of the QCC at the stakeholder level.

QCC Procedure:

Step 1

1. Information Manager will check the product based a prepared QC list of minimum metadata to be collected for each information item (Expert, organization, project, publication)
2. Extra check: Undoubling in case of a double submission of an Information item at the K Portal

Step 2

Two options:

- 1) Approval of the Information item by Information Manager
- 2) Request by the Information Manager to the submitter/owner of the Information item to change or add some metadata.

Step 3

New submission the the pending Information item for a Quality Control Check after changes have been made or missing metadata have been added.

Step 4

Information Manager will check the product on basis of the requested changes

Step 5:

Final result of QCC: I or K Product approved or rejected at K portal

PROCEDURE FOR THE QUALITY REVIEW

Quality Review will be coordinated by a 'Quality Review Team' (QRT) managed and coordinated by the KM Team at DCC. The QRT will work together with assigned CC subject specialists and will review a K product and advise of the K product has the required quality for publication based on a predefined list of criteria.

The QR Team will use the K Portal for the review activities of the K products and a dedicated QRT Workspace will be set up, where automatically all new products for Review will be brought together.

QR Procedure:

Step 1

1. K Facilitator/Information Manager will select the K products that need a Quality Review
2. Extra check by Information manager: Undoubling in case of double submission of a K product at the K Portal

Step 2

1. Information Manager will submit K Product to QRT at the QRT Workspace

Step 3

Q Review of the submitted K products by the QR Team.

Three Q Review status options:

- 1) approval of the K product
- 2) pending - approval depends on a number of changes list to be made before the K product will be approved.
- 3) rejected – quality of the K product is too low.

Step 4

Second Review for all products with 'pending status'

Two options for the second review:

- 1) approved – when all required changes are made
- 2) rejected – quality too low for approval of the K product. Rejected products need to be submitted again for a complete new review procedure (step1).

Step 5

The approved K Products will receive a 'Q Review label' indicating the approval by the QRT.

I & K Products at K portal:

1. Approved Information items with a QCC from stakeholders submitting information items to the K Portal
2. Publications or reports already in the public domain reviewed in another way, e.g. publication in an international journal that also will be automatically approved
3. K Products of stakeholders from the white list automatically approved, and K products of stakeholders from the grey list with an approval by the QRT.

All other I & K Products that are not (yet) approved for publication at the K portal (either pending or rejected), are only visible for the QRT at the QRT Workspace.