

# Policy Brief

## Institutional Capacity-Building for Climate-Informed Planning in Cambodia's Water Resources and Agriculture Sectors

*Va Dany, Department of Environment, Royal University of Phnom Penh*

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National Council for Sustainable Development  
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Department of Climate Change



Ministry of Environment

## Abbreviations and acronyms

CCGSP	Cambodia Climate Change Strategic Plan 2014-2023
CCSP	Climate Change Strategic Policy
MAFF	Ministry of Agriculture, Forestry and Fisheries
MOWRAM	Ministry of Water Resources and Meteorology
NAPA	National Adaptation Program of Actions on Climate Change
NAP	Climate Change Action Plans
RUPP	Royal University of Phnom Penh
UNFCCC	United Nations Framework Convention on Climate Change
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
VA	Vulnerability Assessment
VRA	Vulnerability Risk Assessment

## Executive Summary

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This brief lays out a policy recommendation, that institutional capacity for climate change responses in government should be built by adopting a co-production of knowledge approach to capacity-building. Placing current needs in the context of Cambodia's success to date in developing climate change policy, the policy brief recommends that, for the policy to be effectively implemented, institutional capacity needs to be built.

A co-creation of knowledge approach is recommended for this. Co-creation of knowledge is a participatory approach to learning and raising capacity, which enables participants to be active in generating understanding of climate change related issues, and in identifying implementation steps that are relevant to the technical specialism of their department, community or institution.

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## Key Messages for Policymakers

Area	Research priorities
<b>Climate Change Institutional Capacity-Building: Background</b>	<ol style="list-style-type: none"> <li>1. Institutional capacity is critical to every phase of policy, from inception to implementation and evaluation; thus, strengthening capacity is an essential aspect of climate change adaptation.</li> <li>2. If the gap between existing and required capacity for any adaptation action is too large, the realisation of that action becomes impossible.</li> <li>3. Climate change institutional capacity-building in Cambodia in the past was very general; thus, it needs to move to the next level, producing targeted information and specialisations that meet the country's challenges.</li> </ol>
<b>Recommendations for Targeted Further Climate Change Related Trainings</b>	<p><b>Further climate change related trainings for Cambodia's water resources and agricultures should be specific and targeted to different groups of stakeholders, aiming to:</b></p> <ol style="list-style-type: none"> <li>4. Update and enhance the understanding of policymakers, especially planners in specialised departments, and the planning departments of concerned ministries, on sector-specific climate change impacts, available adaptation measures, and best practices, so they can rationalise what 'needs' to be done and what 'can' be done within the available institutional structure and capacity.</li> <li>5. Enhance scientific capacity of technical officials of the ministries' specialised departments, encouraging the transfer and invention of adaptation technologies. It is important that stakeholders have good knowledge of their sector-specific climate change impacts, vulnerabilities and adaptations.</li> <li>6. Enhance scientific capacity of relevant local universities and research institutes, in vulnerability assessments, climate change impact studies, modelling and emissions inventory studies. Research, and the development of adaptation technologies (e.g. climate-smart agriculture technologies and climate resilient water infrastructure), are crucial.</li> </ol>
<b>The Importance of Stakeholder Dialogue</b>	<ol style="list-style-type: none"> <li>7. It is important to maintain the stakeholder dialogue process (research-policy-practice) and encourage social learning and co-production of climate change-related knowledge and capacity. Vulnerability assessments and vulnerability reduction assessments could be a platform serving this purpose.</li> </ol>

## 1. Development of Climate Change Policy in Cambodia has Progressed, and Appropriate Institutional Capacity is Required for its Implementation

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Climate-informed planning in Cambodia is now plausible. Some climate change policies have been developed; for instance, the National Adaptation Program of Actions on Climate Change (NAPA), the Climate Change Strategic Policy (CCSP), and the Climate Change Action Plans (NAP). These policies may assist Cambodia – one of the most vulnerable countries to climate change – in framing its development towards being a climate resilient society. Neo (2012) observes that most climate change adaptation work in the Mekong Region has been autonomous rather than policy-based, which is less effective in addressing climate change vulnerability. Moreover, incorporating climate change concerns into development planning allows adaptation to happen in harmony with the sustainable development of a country. Efforts to mainstream climate change concerns into national and local developments in Cambodia have also been progressed, resulting in more climate change concerns being integrated in both national and subnational development plans (Dany, 2015). These are an initial good start; a start that requires appropriate institutional capacity for the policies to be implemented.

Climate change institutions in Cambodia have also been developed, in alignment with the progression of national climate change policies; yet their capacity (i.e. expertise, information, and funding) remains constrained. Both the Ministries of Agriculture, Forestry and Fisheries (MAFF), and Water Resources and Meteorology (MOWRAM), through their CCSPs (Royal Government of Cambodia, 2012, 2013), and research participants (Bowen J. Kathryn, Miller, Dany Va, Charlotte Catmur, & McMichael, 2012; Dany, 2015) admitted their weak institutional capacity in general, and on climate change adaptation and mainstreaming in particular. This may pose significant challenges for the country to meaningfully plan for climate change.

Institutional capacity is critical to every phase of policy, from inception to implementation and evaluation; thus, strengthening capacity is an essential aspect of climate change adaptation. Institutional capacity has been described as an *ability to mobilise existing institutions* to address new policy issues, such as climate change (Willems, 2004). Capacity can be considered the enabling environment wherein individuals and organisations can interact to implement adaptation (UNDP-UNEP, 2011; Willems & Baumert, 2003). As such, a lack of institutional capacity can inhibit the realisation of policy objectives. Also, if the gap between existing and required capacity for any adaptation action is too large, the realisation of that action becomes impossible (Willems & Baumert, 2003).

This policy brief aims to discuss the institutional capacity gaps focusing mainly on climate change related training. It specifically aims to understand the prevailing challenges and constraints, and to learn lessons for improving future capacity-building commitments. It then identifies leverage points for climate change trainings for Cambodia's water resources and agriculture sectors. The policy brief is based on two research projects, and substantiated by relevant literature:

1. A Three-Country Study: An Evaluation of Factors that Influence the Development of Adaptation Measures (Bowen J. Kathryn et al., 2012), and
2. Climate Change Adaptation Planning in Cambodia and Potential for Improvements (Dany, 2015).

## Climate Change Institutional Capacity-Building in Cambodia: Challenges and Lessons Learnt

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At a content level, climate change institutional capacity-building in Cambodia in the past was very general. In 2010, some 40 research participants from across sectors reported that their level of understanding on climate change adaptation was basic, provided that they had attended relevant-but-not-specific trainings/seminars/conferences to their field of expertise (Bowen J. Kathryn et al., 2012). Similarly, in a study from 2012/13 (with another cohort of around 40 research participants from the water resource and agriculture sectors), research participants reported that the trainings they had been provided remained elementary, which made them less useful for their professions (Dany, 2015). Such trainings were necessary for raising stakeholders' awareness, and that is a fundamental first step for mainstreaming climate change (Ayers, Huq, Wright, Faisal, & Hussain, 2014). Yet to move forward to the next step of mainstreaming climate change, Cambodia needs to be able to produce targeted information and specialisations that meet the country's challenges, and therefore needs to move to next level of capacity-building.

Drawing from past climate change capacity-buildings, research participants (see: Dany, 2015; Dany, Bowen, & Miller, 2014) shared some observations and perceptions that are worth considering in order to facilitate more effective and targeted trainings:

First, climate change related trainings in the past were implemented by a large number of different organisations, resulting in fragmented coverage and overlapping audiences (Dany et al., 2014). This practice was resource-ineffective; yet a hard-to-avoid outcome of a project-based approach to climate change related training. As such, the country could consider authorising (capacitating as and if necessary) selected relevant universities and/or research institutions to be climate change knowledge- and capacity-building entities. It is important that stakeholders understand their capacity gaps and be strategic about their own human resource development. Climate change is a cross-cutting issue requiring interdisciplinary teams to work on it; therefore, it is not practical that an organisation sends one member of personnel to take a wide range of climate change capacity trainings. It is also less efficient and resource-ineffective to have different personnel attending a specific training that may not relevant to their expertise.

Second, the climate change capacity-building programs implemented were not effectively targeted, meaning that their contents and design were not appropriate or specific enough to meet the needs of different groups of stakeholders. It is therefore recommended that capacity needs-assessments should be undertaken to inform the designs of any climate change-related training programs so that they address the actual capacity gaps of an organisation. Furthermore, some research participants reported low quality in training programs, observing some confusions in interpreting climate change related concepts such as climate change resilience, climate proof, and climate vulnerability (Dany, 2015). An accreditation of existing training programs may ensure the quality of trainings to some extent; yet this could have an unintended effect, reducing efforts for climate change capacity-buildings if too much administrative complexity is required as a result.

The final, and perhaps the most important, reason was that personnel lack motivation to learn about new things such as climate change (Dany, Bajracharya, Lebel, Regan, & Taplin, 2015). Good performance and relevant skills of

individuals are the basis for policy implementation (Willems & Baumert, 2003); therefore, it is essential that personnel have good motivation and the right incentives (Jutting, 2003; Lebel, Nikitina, & Manuta, 2006). Some research participants concluded that this lack of motivation was due to low government salaries and poor incentives for officials to work on climate change (Dany, 2015). A number of studies (cf. Jutting, 2003; Pretty & Ward, 2001) argue that incentives can influence the behaviour of actors. The research participants also suggested that financial incentives should be considered for the members of climate change committees, because these climate change related roles are additional responsibilities (Dany, 2015). For this purpose, further research to understand the impacts of the most recent increase in government salaries on government officials' job performance overall, and on their performance of climate change-related responsibilities in particular, could be useful. Also, an in-depth investigation to understand stakeholders' values, and their motives for designing appropriate incentive schemes for employees (e.g. supplementary supports, promotions, engagements) is recommended. It may also be interesting to understand institutional change – the extent to which recent progression in international and national climate change institutions and policies has helped Cambodia's ministries to mainstream climate change related roles and responsibilities into their normal duties and decision-making processes.

### 3. Targeted Capacity and Leveraging-Points for Water Resources and Agriculture Sectors

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The importance of sector-specific knowledge and expertise on climate change impact, vulnerabilities, and adaptation, addressing both social and biophysical aspects, was indicated by some research participants (Dany et al., 2014). Studies (e.g. Arias et al., 2014; Baran, Schwartz, & Kura, 2009) recommended location- and subsystem- (e.g. inland fisheries) specific climate change impact and vulnerability research, to inform the development of these programs towards becoming more climate change resilient. On the social side, research is needed into how social acceptance of the newly-introduced agriculture adaptation measures can be improved (Howden et al., 2007). The UNFCCC (2006) agrees, suggesting that the introduced adaptation measures should be socially affordable, culturally acceptable, and environmentally sustainable.

The MAFF's CCSP suggests strengthening knowledge in the areas of climate change adaptation and technologies for agriculture. The Ministry is seeking knowledge on new crop varieties, especially rice varieties that are more climate change resilient (Royal Government of Cambodia, 2013). This proposal is logical because, while rice is a primary component of the local diet and a planned export produce (Royal Government of Cambodia, 2011), it is vulnerable to climate change and climate extremes (Royal Government of Cambodia, 2001). The MAFF's CCSP also specifies the need to build knowledge and information on climate change vulnerability and adaptations for other MAFF subsectors, such as animal husbandry and fisheries.

Such climate-relevant capacity-building should have two purposes. First, training should build the capacity of MAFF's policymakers and planners, especially key department planners (generally they are Directors or Vice-Directors of departments), and the Department of Planning, to enable them to practice climate-informed planning. As Pervin et al., (2013) stress, it is important to capacitate policy stakeholders so that they can rationalise what needs to be done and what can be done within the available institutional structure and capacity. Second, the training

should also aim at building relevant scientific capacity of specialised departments (e.g. the Department of Rice and the Department of Horticulture) and local academic institutions, such as the Royal University of Agriculture, the Cambodian Agriculture Development and Research Institute, the Cambodian Centre for Study and Development in Agriculture, and the Institute of Technology Cambodia. This will be a fundamental first step for mainstreaming climate change concerns into national development (Ayers et al., 2014). The trainings should, in this way, aim at strengthening the scientific capacity of stakeholders in researching, developing, inventing, and adopting adaptation measures, climate-smart agriculture technologies, and climate-resilient water-management infrastructure, for instance.

Climate-specific capacity-building – essentially, capacity-building on how to conduct vulnerability assessments, climate change impact studies, modelling and emissions inventory studies – is needed, and should involve key local universities and research institutes. Suggested leveraging points for the capacity include the Royal University of Phnom Penh, Institute of Technology Cambodia, Royal University of Agriculture, Department of Climate Change, Department of Meteorology, and Department of River Works and Hydrology. This will build domestic scientific capacity, leading to targeted scientific information that can inform relevant policies.

The lack of local meteorological expertise and training centres in Cambodia presents significant challenges for the MOWRAM to meet its mission, which is to provide accurate and timely weather forecasts and early severe weather warning information. Overseas development assistance, including climate change funding, that aims to support this sector, should therefore support both infrastructure- and human resource-development. Given the fact that there are no local meteorology training programs, overseas development assistance should consider supporting young scholars to obtain their education, preferably starting with undergraduate degrees in meteorology and climate sciences, which are critical for developing this sector. Additional training for relevant officials is also essential. In the long run, it is vital to develop such training programs locally in Cambodia.

#### 4. Co-Production of Knowledge: a New Approach for Capacity-Building on Climate Change

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Studies (e.g., Lemos & Morehouse, 2005; Yuen, Jovicich, & Preston, 2013) recommend ‘co-production of knowledge’ as a new approach for capacity-building on climate change. Lemos and Morehouse (2005) explain that the interactions between researchers and stakeholders in the co-production process facilitate their understanding of co-produced knowledge and its applications and practical value. These interactions also allow stakeholders to exchange information, share learning and build relationships and trust, thereby promoting collective adaptation actions (Yuen et al., 2013). Locally in Cambodia, stakeholders also valued the process of developing NAPA, and held it to be as important as its outcome, indicating that the comprehensive engagement processes behind NAPA facilitated knowledge, understanding and cooperation (Bowen, Miller, Dany, McMichael, & Friel, 2013).

Recently, climate change vulnerability assessments (VA) have been suggested as one important platform for social learning and co-production of knowledge (Preston, Mustelin, & Maloney, 2013; Yuen et al., 2013). A few climate change vulnerability assessments have been undertaken in Cambodia (Bowen J. Kathryn et al., 2012), as part of



regular studies to inform National Communications to the United Nations Framework Convention on Climate Change. Similarly, a number of climate change vulnerability reduction assessments (VRA) – a form of community-based assessment – have been undertaken to inform the process of mainstreaming climate change at the sub-national level (Dany, 2015). Both of the assessments – VA and VRA – are suitable platforms for co-production of knowledge on climate change in Cambodia. It is important to note here that appropriate design and engagement processes for these assessments are key to effective facilitation of social learning and co-production of climate change knowledge; see Yuen et al., (2013) for details.

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### **General Inquiries:**

Department of Climate Change

General Secretariat of the National Council for Sustainable Development

C/O Ministry of Environment

No. 503, Road along Bassac River, Sangkat Tonle Bassac, Chamkarmon, Phnom Penh

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