



**វិទ្យាស្ថានសភាកម្ពុជា**  
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STRENGTHENING PARLIAMENTARY CAPACITY

## Briefing note

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# Overview of the Impact of Drought on Rural Farmers in Cambodia

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## List of Abbreviations

DM law	Law on Disaster Management
ESCAP	Economic and Social Commission for Asia and the Pacific
HRF	Humanitarian Response Forum
INGOs	International Non-Governmental Organizations
NESAP	National Environment Strategy and Action Plan
NAP DRR	National Action Plan for Disaster Risk Reduction
NCDM	National Committee for Disaster Management
NGOs	Non-Governmental Organization
UNICEF	United Nations Children’s Fund
WFP	World Food Programme

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## **1. Introduction**

### ***1.1 Research problem***

Drought is defined as a natural event often arising from global warming that has recently caused an increase in temperature and a lack of rainfall. Drought has resulted in long, unusual dry seasons [1, 2, 3], which have had a negative impact on humans, animals, and particularly on the agricultural sector. Ultimately it has negatively affected food security and safety of the country as a whole. In Cambodia, drought has caused serious water shortages, particularly affecting local agriculture and livelihoods [4], and has led to low agricultural productivity [4, 5]: Cambodian agriculture relies on wells, ponds and lakes, which are rain-fed. While irrigation is important to store water for use when there is a shortage, only 20 percent of the national irrigation system actually meets the needs.

As a result, there is a need for concrete evidence to support discussion at the policy-making level in order to minimize the negative impact of drought on local communities in Cambodia, particularly on farmers.

### ***1.2 The objectives of this briefing note***

The overall aim of this briefing note is to improve the client's understanding about the impacts of drought on rural farming communities in Cambodia, and how these might be mitigated, and to identify some lessons that can be learned from other countries in Southeast Asia and from expert opinion.

### ***1.3 Research questions***

To achieve the objectives, the briefing note answers the following questions:

- a) What is the impact of drought on rural areas in Cambodia?
- b) What responses and actions have been taken by government and relevant stakeholders in order to provide support for the communities who are affected?
- c) What are the lessons learnt and expert opinions?

### ***1.4 Methodology and limitations***

The briefing note will review secondary data. Existing reports, journal articles and relevant sources of information from government bodies and national and international civil society

organizations will be considered to the extent possible, given the short time available for this research.

The sources of data for this briefing note are limited. However, first, it highlights the impact of drought on rural farmers in Cambodia and the associated adaptive measures embraced by farmers. Then it examines the strategies and policies implemented by government agencies and relevant stakeholders. It focuses mainly on documents that relate to the impact of drought on farmers in rural areas up to 2016. Overall, the researcher has sought information that involves data, statistics or charts, and diagrams that are relevant to the client's needs.

## **2. Background information about drought in Cambodia**

Cambodia suffered droughts annually from 2009 to 2013, affecting around 7.8 million people and causing damage estimated at around USD 165 million [6]. More recently, Cambodia has experienced drought linked to the effects of the El Niño climate cycle of 2015-16 which decreased rainfall and increased heat. This delayed the monsoon rains leading to drought. As a result, in 2016, according to the National Committee for Disaster Management, 2.5 million people in Cambodia were affected by drought in 18 out of the country's 25 provinces. This caused water shortages and general dehydration [4]. In 2018, drought affected about 20,000 hectares of rice fields in 13 provinces. In that year, rainfall decreased in the middle of the rainy season resulting in drought in some areas, and this persisted until the end of the season when lakes and ponds had dried up. This was the cause of water shortages as a result of which, overall, there was insufficient access to water in respect of 19,000 hectares of land. Kampong Cham was the province that was affected the most - 9,000 hectares - followed by Battambang, Tbongkhum and Kampong Thom. Even so, in 2018 the country was not as badly hit by drought as it was in 2016, when a total of 16 provinces were affected - about 235,000 hectares of land had inadequate access to water in that year, and 260,000 families suffered water shortages that caused the deaths of many fish and animals [4, 7, 8]

### 3. The current impacts of drought on rural farmers in Cambodia

#### 3.1. *The impacts of drought on livelihoods*

Cambodia's 25 provinces have recently faced water shortages because the severe droughts have resulted in the drying up of ponds, wells, streams and reservoirs. Drought has exerted an impact on agriculture, and also on domestic access to sources of water. The water scarcity caused by drought has also had a negative effect on food security and human health.

**Drinking water and health:** A total of 18 provinces in the country have reported water shortages, and the government has called on the people to use water sparingly, although there have been no regulations in place to ration use [9]. To combat water shortages, in 2016, local villagers in Banteay Meanchey province received 200,000 riels (or USD 50) from Provincial Health Department Centers every three months to buy water, but this was not sufficient to cover their actual need for 2,000 liters per day, costing 30,000 riel (or USD 7.50). Purchasing water from private companies in Poipet (a major city in Banteay Meanchey) was not only expensive, but also required travel over distances that made access unrealistic for families that were experiencing particularly acute financial difficulties [10]. Moreover, drought has had a particularly negative effect on children: 32 percent of children under the age of five have experienced problems that could be linked to a shortage of water, and of waterborne diseases that have been affecting children, no less than 20 percent can be attributed to unsafe water and, by extension, water shortages [9, 11]. Indeed, overall, 50 percent of Cambodians who live in rural areas do not have access to clean water, with drought as a substantial contributing factor to this figure.

**Food security:** The United Nation's Committee on World Food Security states that people are 'food secure' if they have access to sufficient, safe and nutritious food in order to meet their dietary needs for an active and healthy life. Food security is a major concern in Cambodia, where 25 percent of the population suffered from malnutrition in 2004-2005 - 18 percent of households did not have enough food, and 11 percent reported being hungry [12, 13]. In addition, overall, 27 percent of households had experienced income losses and lack of food over that time span, and 20 percent had experienced hunger. In contrast, among the households that were less affected, only 12 percent lacked adequate dietary diversity and just 6 percent had experienced hunger (Appendix 1)[12, 13]. With insufficient or unreliable

access to water, farmers' yields are often severely affected and food, therefore, becomes scarcer, presenting a link between drought and a lack of food security.

### ***3.2. The impact of drought on rice paddy fields***

Around 80 percent of the Cambodian population live in rural areas [14], including about three million rice farmers [15]. Limited water management, including access to, and storage of, existing water resources, along with the change in rainfall patterns (the delay in, or early finish of the monsoon rains), mean that droughts have occurred in Cambodia that have affected the country's economy. This has been the result of crop failure, environmental damage and health issues. For instance, from 1998 to 2002, 20 percent of the rice production in Cambodia was destroyed by drought. In contrast, Table in Appendix 2 shows that only 0.71 percent of the total rice field area was destroyed or affected by drought in 2010. In 2012, drought again caused substantial damage, affecting 7.45 percent of the rice cultivation area, and in 2015 the impact increased to 11.46 percent. In 2016, 7.32 percent of the relevant land was affected - still a significant figure although it was lower than that of 2015 [16].

## **4. Government policy and legal framework**

### ***4.1. Current policy and strategy for disaster management***

The Strategic National Action Plan on Disaster Risk Reduction (NAP-DRR) is the official framework for disaster risk management in the country. In addition, the National Environment Strategy and Action Plan outlines the environmental situation in Cambodia relating to sustainable development and highlights financing options for natural resource management and environmental protection.

#### ***4.1.1. The National Environment Strategy and Action Plan 2016-2023***

Cambodia's National Environment Strategy and Action Plan, 2016–2023 (NESAP), provides a roadmap for natural resources and environmental planning, ensuring effective environmental protection and the sustainable use of nature resources. The NESAP 2016–2023 includes a strategic action plan that covers administration, financing and capacity building, as well as awareness-raising. The NESAP 2016-2023 has the objective to strengthen inter-ministerial cooperation to promote collaboration in respect of environmental conservation and sustainable natural resources, as well to build capacity in response to policy implementation

requirements. In addition, the NESAP 2016-2023 supports national and sub-national administrations to nurture the sound management of the environment, and to establish and implement financial mechanisms and benefit-sharing in order to heighten environmental protection and natural resource management. It also aims to promote awareness and to build capacity in the use of technology in order to improve the preservation and control of the environment and natural resources.

Overall, NESAP 2016-2023 aims to integrate measures to protect nature and develop sustainable approaches to environmental management involving government ministries and institutions, as well as the private sector and development partners, local communities and all stakeholders working closely together to promote development in Cambodia that is green, climate resilient and sustainable [17]

#### *4.1.2. National Action Plan for Disaster Risk Reduction 2019-2023 (following on from its predecessor covering 2014-2018)*

The National Action Plan for Disaster Risk Reduction 2014-2018 (NAP-DRR 2014-2018) aimed to continue the focus in earlier documents on an active and integrated approach to mitigate risks through a sustainable, productive and practical strategy embracing strong partnerships with all stakeholders. It also aimed to build resilient national and local communities that were oriented to sustainable development. In order to achieve the objectives of the NAP-DRR 2014-2018, action was needed for Cambodia to strengthen its capacity for disaster management at national, sub-national and local levels, increase its risk assessment and warning systems, and develop the creativity and knowledge to build resilience. Its intention was to reduce risks by mainstreaming relevant policy, planning and implementation, and by increasing the capacity to respond to emergencies at all levels [18].

To continue work towards these objectives, the Royal Government of Cambodia incorporated actions from previous plans into the National Strategic Action Plan for Disaster Risk Reduction (NAP-DRR) for 2019-2023. The new NAP-DRR 2019-2023 continues with clear guidelines for all stakeholders in respect of the implementation of disaster risk reduction in Cambodia over the next five years. Thus, the NAP-DRR 2019-2023 acts as a continuance of previous plans [19].

#### ***4.2. Cambodian Law on Disaster Management***

Cambodia adopted the Law on Disaster Management (DM Law) in 2015. This law outlines the roles and responsibilities of institutions and the associated mechanisms. The objective of the Disaster Management Law is to support adaptation measures before natural or human disasters take place, to establish emergency response procedures and to outline the necessary steps for post-disaster rehabilitation. The DM Law formalizes the National Committee for Disaster Management (NCDM) as the main authority of the Royal Government of Cambodia in charge of disaster management, and mandates it to lead, administer and coordinate all disaster management activities. The law also formalizes funds for the operation of the National Committee for Disaster Management, allocated from the national budget in the budget plan of the Office of the Council of Ministers: the State is required to maintain a sufficient reserve to address disaster management.

According to the Law, the NCDM also supports disaster risk reduction through advanced preparation by, for instance, introducing early warning systems, and having strategic and emergency responses already in place. In addition, the Law on Disaster Management proposes post-disaster responses made available through the provision of basic materials, equipment, and human and financial resources for relief, rehabilitation and reconstruction (Article 10 11, 12, 13) [20].

### **5. The implementation of legislation and actions taken to respond to drought issues**

#### ***5.1. Government Stakeholder: The National Committee for Disaster Management***

In accordance with the Disaster Management Law of 2015, the National Committee for Disaster Management (NCDM) is headed by the Prime Minister and has 22 members from various government ministries as well as representatives from the Royal Cambodian Armed Forces, the Cambodian Red Cross and the Civil Aviation Authority [5].

The function of the NCDM is to make recommendations to the Royal Government by establishing principles, main policies, and disaster preparedness alerts, and by providing emergency response management, as well as coordination with national ministries and international partner agencies. Additionally, the NCDM has Sub-National Committees for

Disaster Management in cities, provincial towns, districts and communes. These are responsible for developing technical emergency response plans, policies and strategic plans, as well as coordination and collaboration in the event of disasters [21]. To address drought-related issues, which currently affect all of Cambodia's 25 provinces - or about 2.5 million people and 625,000 households, particularly in the provinces of Banteay Meanchey, Battambang, Pursat and Kampong Speu - the Prime Minister has spent about 500 million riel (about USD 125,000) on drought and water supplies for 100 districts in the country covering around 600,000 families who have been experiencing water crises [22].

In respect of recovery measures, the NCDM is responsible for making recommendations to the government to identify the needs, financial resources and assistance required after a disaster [21].

## ***5.2. Non-State actors and local communities***

The Humanitarian Response Forum (HRF) is a network of United Nations (UN), non-governmental organizations (NGOs), and international organizations (IOs) that are engaged in emergency preparedness, humanitarian and early recovery response in Cambodia. The HRF works in close collaboration with the government, especially with the NCDM, in order to ensure coordinated and effective support for people who are affected by disasters. INGOs and NGOs also respond to issues caused by long- and short-term droughts, by, for instance, rebuilding pump wells, and providing food. In addition, the World Food Program (WFP) has provided food for 300,000 primary school children plus 200,000 selected family members - in total, 500,000 people in 11 provinces. The United Nations International Children's Emergency Fund (UNICEF) has provided financial resources for the purchase of water, which has benefited 365,993 people including 37,342 children under five years of age, as well as 113 schools that were severely affected by water shortages. Overall, the non-state sector has shown a strong commitment to respond speedily to help Cambodian communities facing problems [22].

### ***5.3. Challenges in implementing policies and enforcing laws and regulations***

Prior to 2015, the budget of the National Committee for Disaster Management (NCDM) was derived from that of the Council of Ministers, rather than being defined and enforced by national law. Consequently, the disaster management system had limited financial resources at its disposal, and the NCDM could not function effectively [23].

The main obstacles to policy implementation and the enforcement of laws and regulations in Cambodia are financial constraints, lack of technical management, lack of human resources and limited knowledge and skills, as well as a low level of international collaboration in disaster risk reduction [6]. In addition, early warning systems, the Ministry of Water Resources and Meteorology and the sub-national administration, particularly at the provincial level, do not yet have sufficiently modern means of communication and lack the equipment to respond properly to disasters. The sub-national committees also face serious challenges due to a lack of appropriate skills and management strategies, along with a limited budget for disaster risk reduction, prevention and preparedness activities [6].

## **6. Options for overcoming the challenges**

### ***6.1. Expert opinions***

Because Cambodia is often critically affected by natural disasters, the government has put in place actions to assist victims (the provision of equipment and food aid) and is committed to continuing its long-term action in a sustainable manner.

Some recommendations and opinions made by the country's authorities as well as experts from cooperation agencies and ASEAN are summarized below:

- The Ministry of Water Resources and Meteorology could promote the rehabilitation of Cambodia's irrigation systems and the improvement of warning systems through the installation and operation of a new climate station [24];
- The National Action Plan for Disaster Risk Reduction could promote the mainstreaming of disaster risk reduction into the policies and programs of relevant government ministries and strengthen disaster risk management at the sub-national and community levels;

- The Hyogo Framework for Action (HFA) could promote priority actions for disaster risk reduction including an improvement in disaster preparedness for effective response at all levels and in monitoring disaster risks and enhancing early warning systems [25];
- ASEAN and the Economic and Social Commission for Asia and the Pacific (ESCAP) could encourage Cambodia to improve its drought risk assessment, impact-based forecasting, technology-supported monitoring and early warning systems [23].

These recommendations and opinions cover mitigation, rehabilitation and drought preparedness in Cambodia.

## **6.2. *Lessons learnt from Thailand***

In 2010, Thailand experienced its worst drought in 20 years with the Mekong River at its lowest level for 50 years. It was hit badly again in 2015-2016. Thailand has, therefore, suffered drought in recent decades that has led to the country experiencing the lowest levels ever in water reservoirs throughout the country [25]. In 2015, ten provinces across the country were particularly affected by drought and this had a severe impact on crop production for households covering a total of 1,165,308 rai<sup>i</sup> used for rice cultivation by 1,165,308 farmers and 3 rai used for other crops. The Thai government approved a budget of 1.363,76 million baht in 2015, and 10.99 million baht has already been distributed to 10 provinces [26]. As a result, the government has been able to give assistance to the most vulnerable areas based on the establishment of irrigation systems, the operation of pumps, and the provision of water trucks and wells.

In addition, the Thai government developed drought management strategies in 2015, focusing on prevention and mitigation in areas vulnerable to drought for 31 provinces. Associated intervention has involved the Geo-Informatics and Space Technology Development Agency (GISTDA) and other stakeholders who have assisted in taking care of those affected by drought as well as in developing regional and central operation centers in order to campaign for effective disaster management. Under relevant laws and regulations, the Thai government provides money, and promotes job and livelihood opportunities, for

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<sup>i</sup> A rai is a unit of area equal to 1,600 square meters (16 ares, 0.16 hectares, 0.3954 acres).

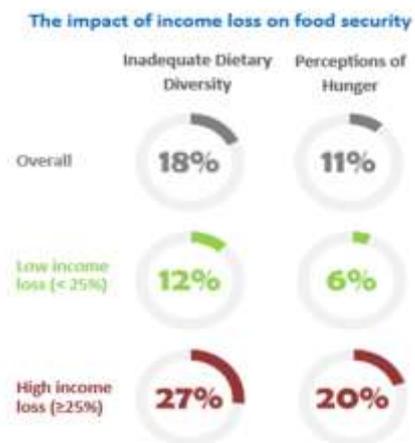
victims of drought. Moreover, the Thai government has allocated a budget to support the prevention and reduction of the negative impacts of drought in all sectors, particularly that of farming, to lessen problems in the future [26].

## **7. Conclusion**

The impact of drought on rural farmers in Cambodia is a serious issue. There has been a need for the Royal Government of Cambodia and non-government organizations to collaborate to mitigate the impact of drought on rural farmers in Cambodia, especially in terms of preparedness, emergency response, and rehabilitation and the restructuring of water management systems. This briefing note highlights that drought imposes many challenges on rural farmers in Cambodia that are still to be addressed, and that their resilience to drought needs further attention. Those key challenges include limited budget - especially at the sub-national level - capacity and training issues, an inadequate national early warning system, and a lack of knowledge about risk, of technical management, of skills and of a standard warning system to respond to drought. Thailand's experience of drought in 2015 provides lessons for the Cambodian government and stakeholders to further lessen the risks for rural farmers in Cambodia who are similarly affected. It specifically suggests that increases in knowledge, training and capacity building, a strengthening of national and international cooperation, coordination, budget planning, agency warning systems and recovery work, would be helpful.

## Appendix 1

Figure 1: The impacts on food security



Source: Unicef / FAO WFP September 2016

## Appendix 2

*Table 1: Impacts of drought on arable rice land in Cambodia, 2010-2016*

Year	Affected Area (Hectare)	Damaged Area (Hectare)	Total Arable Rice Land (Hectare)	Percentage of Affected and Damaged Areas out of the Total Rice Land
2010	14,103	2,934	2,391,016	0.71
2011	3,659	53	2,496,569	0.15
2012	167,819	19,420	2,512,038	7.45
2013	9,542	178	2,567,723	0.38
2014	116,129	20,289	2,564,572	5.32
2015	252,189	41,469	2,561,957	11.46
2016	173,613	16,751	2,599,586	7.32

*Source: Ly Vathana Intern from the Parliamentary Institute Cambodia*

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