Early Warning System Programming and Investment Opportunities in

CAMBODIA

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Early Warning System Investment Planning Workshop

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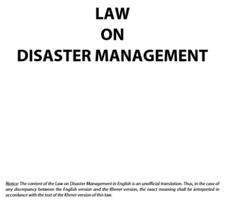
What are the policies/roadmap/strategies that prioritize Early Warning System and Climate Information Services in your country?

- **Law on Disaster Management (2015)**
- **Pentagonal Strategy-Phase I (2023-2028)**
- **National Action Plan for Disaster Risk Reduction (NAP-DRR) 2024-28**
- **Early Warning For All National Implementation Roadmap-2024-2028**
- **Cambodia Climate Change Strategic Plan (CCCSP) 2024-2033**
- **Nationally Determined Contributions(NDC 3.0)**
- **MOWRAM's Investment Plan for Hydrology & Meteorology**
- **New draft MAFF strategy on draft climate change priority action plan 2030**


LAW
ON
DISASTER MANAGEMENT

Notice: The content of the Law on Disaster Management in English is an unofficial translation. Thus, in the case of any discrepancy between the English version and the Khmer version, the exact meaning shall be interpreted in accordance with the text of the Khmer version of this law.

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KINGDOM OF CAMBODIA
Nation, Religion, King

ROYAL GOVERNMENT OF CAMBODIA

CAMBODIA CLIMATE CHANGE STRATEGIC PLAN
2014 – 2023

2013
National Climate Change Committee


KINGDOM OF CAMBODIA
NATION - RELIGION - KING

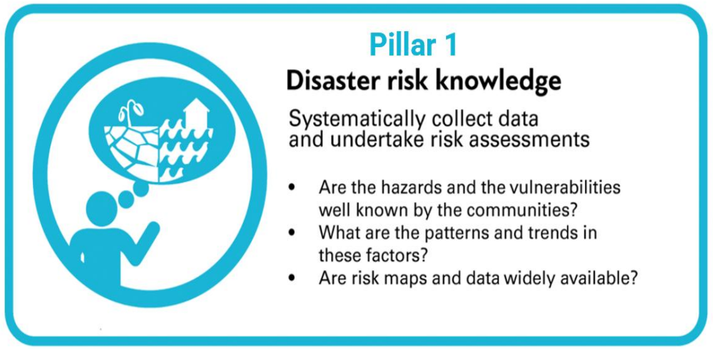

CAMBODIA'S THIRD NATIONALLY DETERMINED CONTRIBUTION (NDC 3.0)

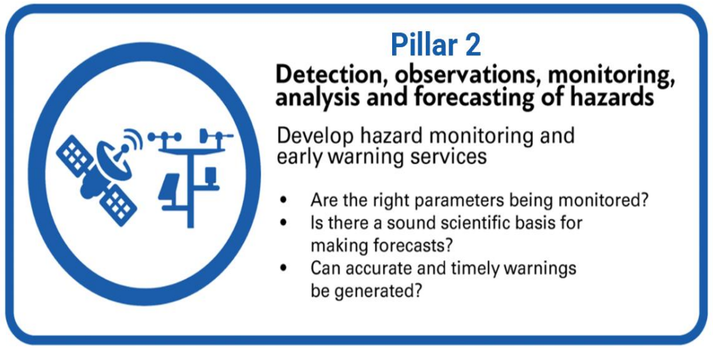
July 2025

Estimated Investment Plan (55.2 Million USD)

Pillar 1
Lead by NCDM

7.2 Million USD



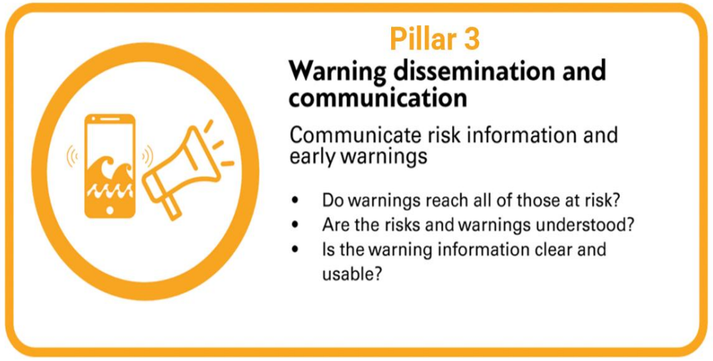


Pillar 2
Lead by MoWRAM

25.5 Million USD

Pillar 4
Lead by NCDM and GS-NSPC

10.6 Million USD



Pillar 3
Lead by –MPTC, NCDM, MoWRAM

8.6 Million USD

Inter –Pillars
Lead by NCDM

3.3 Million USD

Key Outcomes by Pillar in EW4ALL Roadmap

Pilar 1: Risk Knowledge

- Enhanced capability to produce timely, **quality risk and disaster information** using inclusive, participatory approaches
- Enhanced **open access to risk information and knowledge** by all relevant actors

Pillar 2: Monitoring and Forecast

- Increased availability of **quality observation data** to assess and monitor priority hazards
- Enhanced **data exchange and access** for forecasting and warning systems
- Increased **capabilities to forecast** all priority hazards
- **Impact-based forecasts and warnings** produced for all priority hazards
- Strengthened **governance** structures, **institutional arrangements**, and **collaboration** for hazard management

Pillar 3: Dissemination & Communications

- **Status** of warning dissemination and communication systems **reviewed** and **documented**
- **Technical advice provided** on how to implement next steps on warning dissemination and communication
- Strengthened **national capacity** to coordinate and implement roadmap **actions for warning dissemination and communication**
- Enhanced national **capacities for warning dissemination and communication**

Pillar 4: Preparedness & Response

- Strengthened **enabling environment** for response to warnings
- **Preparedness capacities** increased at the **local level** to response quickly and effectively
- **Financing and delivery mechanisms** connected to effective **anticipatory action** plans, ahead of hazards

Has Climate Information Services been piloted or operationalized for any sector in your country (agriculture, water, energy, transport, tourism, or others)? What challenges did you encounter and lessons learned from these?

- Yes, any way, Cambodia not yet has National Framework on Climate Service

Sector	Institutional Arrangement of Climate Service Delivery	Challenges	Lessons Learned
Agriculture, Water	MOWRAM/ NCDM MAFF, FAO, and MoWRAM (Under PEARL project fund from GCF)	Limited climate infrastructure coverage,	strong stakeholder engagement
		Accessibility, understanding, and trust	Improving the accuracy and skill of climate forecasts
		Funding and capacity	Climate information needs to be presented in a clear, concise, and accessible format

Has Climate Information Services been piloted or operationalized for any sector in your country (agriculture, water, energy, transport, tourism, or others)? What challenges did you encounter and lessons learned from these?

Sector	Institutional Arrangement of Climate Service Delivery	Challenges	Lessons Learned
Agriculture	**Ministry of Agriculture, Forestry and Fisheries (MAFF)**: Implements climate services specifically tailored to the agriculture sector and works on integrating climate information into agricultural planning. **Ministry of Water Resources and Meteorology (MoWRAM):** Responsible for weather forecasting and climate data collection and provides climate information to various sectors, including agriculture and water management **National Committee for Disaster Management (NCDM)**: Focuses on disaster risk reduction and management and utilizes climate information to enhance preparedness and response strategies. **Ministry of Environment (MoE)**: Coordinates climate change adaptation and mitigation efforts and oversees national climate policies and environmental protection. **Local Governments**: Play a crucial role in the dissemination of climate information at the community level and engage local stakeholders in climate adaptation activities.	• Limited access to reliable and real-time climate data hindered effective implementation. • There was a lack of trained personnel to analyze and utilize climate data effectively. • Inadequate infrastructure for data collection and dissemination affected the quality of information. • Low awareness among stakeholders about the importance of climate information services led to underutilization.	• Involving farmers, local communities, and government bodies in the development process fostered better adoption and relevance of the services • Training programs for local staff in data interpretation and application were crucial for effective use. • Investing in reliable meteorological infrastructure improved data collection and dissemination.

Are your country's Climate Information and Early Warning System priorities articulated in ADB's Country Program Strategy (CPS) and programming pipeline/projects in your country?

- Yes

ADB CPS Priority/ Strategic Objective	ADB Programming Pipeline/ Projects
Year: 2024-2028 Theme: A Partnership for Prosperity, People, and the Planet CPS Priority/ Strategic Objective: 1. Accelerate Private-Sector-Led Economic Diversification 2. Advance Human Development 3. Strengthen Climate Resilience	Irrigated Agriculture Improvement Project – Additional Financing
	Integrated Water Resources Management Project
	Second Integrated Water Resources Management Project
	CAM (59087-001) Resilient Health Infrastructure Project (Track 1- for 2026)
	Climate Risk Assessment Cambodia Rapid Immunization Support and Resilient Health Infrastructure Project (CRISP for 2025)

Are your country's Climate Information and Early Warning System priorities articulated in ADB's Country Program Strategy (CPS) and programming pipeline/projects in your country? (con't)

- Yes

ADB CPS Priority/ Strategic Objective	ADB Programming Pipeline/ Projects
Year: 2024-2028 Theme: A Partnership for Prosperity, People, and the Planet CPS Priority/ Strategic Objective: 1. Accelerate Private-Sector-Led Economic Diversification 2. Advance Human Development 3. Strengthen Climate Resilience	Greater Mekong Subregion Health Security Project (phase 2 for 2027)
	GMS Cross-border Livestock Health and Value Chains Improvement Project in Cambodia (current, ending 2032)
	Reinforcing the capacities of meteorological and hydrological services and enhancing the early warning systems in Cambodia and Lao People's Democratic Republic (PDR) (CREWS Cambodia and Lao PDR) (implemented by WMO)
	Strengthening Climate Information and Early Warning Systems in Cambodia project (UNDP, GEF-LDCF)

What potential Climate Information and Early Warning System sectoral investments could your country and ADB work together?

Disaster and Climate Risk Management

1. **Enhance Early Warning Systems**: Strengthen inclusive, digital, and impact-based forecasting through the Early Warnings for All (EW4ALL) initiative.
2. **Drought and Heat Contingency Planning**: Develop contingency plans for drought and heat, ensuring that Commune Development and Investment Plans include inclusive disaster risk measures.
3. **Nationwide Monitoring Network**: Establish an automated meteorological and hydrological monitoring network to improve weather forecasting and early warning systems.
4. **Integrated Data Service Platform**: Create a platform for real-time access to data that supports climate resilience and sustainable water management.
5. **Infrastructure for Disaster Risk**: Promote climate resilience through improved housing, urban planning, and building standards. Integrate climate-resilient housing for low-income households into the national building permit system.
6. **Establishment of Safe Evacuation Centres**: Set up Climate and Disaster Resilience Safe Evacuation Centres.

What potential Climate Information and Early Warning System sectoral investments could your country and ADB work together?

Pillar 2: Monitoring & Forecast

- **Legislation and policies** on (Hydro) Meteorology/ MHEWS endorsed
- Install **new AWS** and **hydrometric stations** to ensure national coverage
- Over 80% of the Automatic Weather Stations (**AWS**) are **operational** and **functional**
- **Enhanced marine** detection, monitor and **forecast** for hazards
- Setup new or integrate existing database management system/tools
- **Capacity building of forecasters** on advanced tools like Numerical Weather Prediction (NWP)
- Establish and pilot **impact-based forecasting systems** for flood and drought in high-risk areas.

What measures and reforms are needed to ensure sustainability of the identified Climate Information and Early Warning System investments?

Financial Sustainability:

- **Diversified and Long-Term Funding**: Sustainability requires a mix of national budget allocations, private sector investment, and a range of international climate funds (e.g., the Green Climate Fund, Global Environment Facility). Mechanisms like the Systematic Observations Financing Facility (SOFF)
- **Cost-Benefit Analysis**: Demonstrating the economic benefits of CIEWS is crucial for securing long-term funding.
- **Innovative Financing**: Explore innovative financing models, such as public-private partnerships, climate risk insurance, and blended finance, to leverage private sector capital and expertise.

What measures and reforms are needed to ensure sustainability of the identified Climate Information and Early Warning System investments?

Governance and Policy Reforms

- **Integrated National Policy and Legal Frameworks**: embedded in national laws, policies, and development plans, such as National Adaptation Plans (NAPs) and Nationally Determined Contributions (NDCs).

- **Strengthened Institutional Coordination**: collaboration across multiple government ministries and agencies (e.g., meteorological services, disaster management, agriculture, health) as well as with civil society, the private sector, and local communities. **Participatory and Inclusive Governance**: Involving local communities, particularly marginalized and vulnerable groups, in the design and implementation of CIEWS is vital.

What measures and reforms are needed to ensure sustainability of the identified Climate Information and Early Warning System investments?

Capacity Development

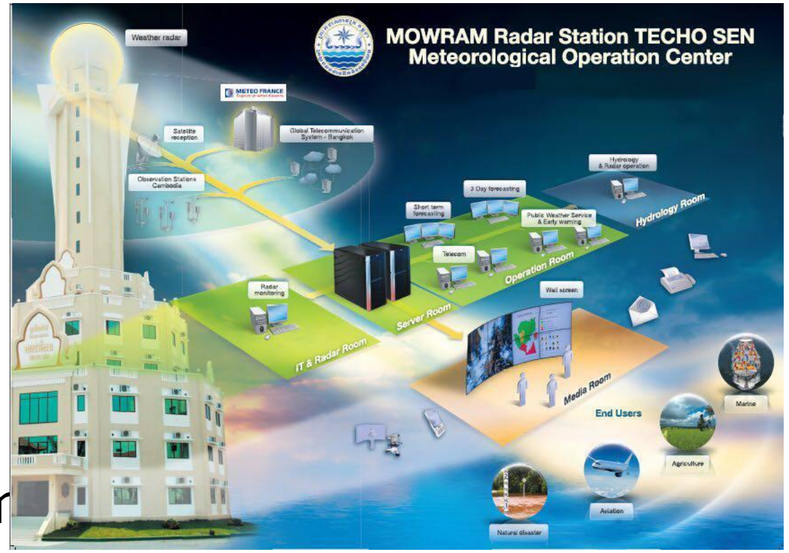
Fundamental to enhancing climate action and sustainable development.

Empowering stakeholders, fostering collaboration, and building the necessary skills and knowledge.

What measures and reforms are needed to ensure sustainability of the identified Climate Information and Early Warning System investments?

Technical and Operational Sustainability

- **Appropriate and Scalable Technology**
- **Infrastructure Maintenance and Upkeep**: the lack of a plan for the maintenance and repair of equipment. dedicated budgets and trained personnel for the long-term upkeep of observation networks, data centers, and communication infrastructure.
- **Open Data Policies**: wider range of stakeholders, fostering innovation and creating new climate services and applications that can further support sustainability.



Thank you for your attention!