ANGKOR
WATER RESILIENCE

Fact Sheet

Angkor was designated as a World Heritage Site in 1992 due to its cultural and natural heritage dating from the ninth to the fifteenth centuries. Angkor is considered a 'hydraulic city' because of the cultural water landscape and its complicated water management network used for systematically stabilizing, storing and dispersing water throughout the province from the foothills of Kulen Mountain to the Tonle Sap Lake. This water management network provided irrigation to offset the unpredictable monsoon season and to support food security for the increasing population. Over thousands of years, much of the water system fell into disrepair. The significance of the hydraulic system has become more apparent with modern satellite and lidar technology combined with archaeological, anthropological and hydrological analysis. This is a cultural landscape with significant heritage values that depend on effective management of water.

Angkor and Climate Change

The anticipated impacts of climate change around Angkor include the increased intensity of drought impacts within the dry season, with more intense rainfall events that could result in flash flooding during the wet season. These predicted events provide a clear rationale for improved water management to ensure that cultural heritage and livelihoods are protected. The ancient Angkor water system provides a unique way to manage water across the landscape for both drought and flood management, however it is in a state of disrepair. Repairing key infrastructure will enable water to be moved east/west, and north/ south and within the established barays (reservoirs), providing multiple benefits to the surrounding communities.

Project Vision

The APSARA National Authority (ANA) is responsible for managing Angkor, with a strong vision to promote benefits for heritage and the communities. The ANA has been studying, rehabilitating and adapting the ancient water networks. This project's approach provides a modern benchmark for resilience and is strongly linked to water management.
Investments in strategic water infrastructures have enhanced water management and provided significant benefits.
This project emphasises the maintenance, scaling and sustaining of these benefits under increasingly erratic weather conditions that will further influence existing water use. It also addresses the technical knowledge needed to enhance understanding about groundwater, and education needed to improve water use efficiency particularly for agriculture.

Project Goal:
Water resources are effectively managed to enhance the resilience of communities that live within and around Angkor Park.

Project Beneficaries:
The project has a target of at least 18,000 household with increased water benefits, 5500 households for improved food security and 5000 households for increased awareness on climate change, heritage, water and food security.

Project Outcomes

The project includes two key workstreams. Firstly, investing in water and green infrastructure to create a functioning water system (**Outcome 1**). Secondly, investing in food systems to more efficiently utilise water systems for productivity (**Outcome 2**), with activities structured over 6 outputs.

Output 1: Water infrastructure works delivered at Doun Keo, Ancient Dyke/Canal and Tonle Sgnout to support storage and movement.
Establishing a groundwater sensors system to monitor water levels to support decision making.
Output 2: Nursery establishment to support 25,000 trees planted along 29.4km of water infrastructure.
Output 3: ANA to host an ASEAN country learning event where practitioners and scientists from the region and beyond can attend and discuss water management at heritage sites.

Output 4: Establishment of 2 compost and coir (coconut mulch) production sites that support nursery and crop production activities.
Output 5: Development of and training delivered to 600 farmers on homestead gardens, including the topics of climate smart agriculture, water management, soil health, heritage crops, climate impact and food security.
Output 6: Develop and deliver environmental education (heritage, water management, climate resilience, environmental stewardship and food security topics) to 16 schools and 16 communities through a range of trainings and outreach activities involving the local pagodas.

Project Timeline:
June 2023 - June 2028

Project Funding:
New Zealand Ministry of Foreign Affairs and Trade (MFAT), NZD $12.7M

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