



Climate Change Adaptation through Small-Scale
and Protective Infrastructure Interventions in
Coastal Settlements of Cambodia (CCA4CS)

Report on Resilient Housing Capacity-Building in Coastal Cambodia in Kep and Preah Sihanouk Provinces



MARCH 2025
PHNOM PENH, CAMBODIA

BRIEF SUMMARY

The project aimed to strengthen community capacity in resilient housing construction under Output 3.5, targeting at least 200 participants with a 50 percent female participation goal. It sought to promote sustainable building techniques, enable knowledge replication by local construction workers and households, and reduce future repair costs through climate-resilient practices.

KEY ACHIEVEMENTS

Several activities were successfully implemented to meet the project's training objectives. A consultant specialized in resilient housing was recruited to design and deliver the training programme, which was informed by consultations with local authorities, community leaders, and field visits to affected communities. The training targeted three key groups: local construction workers, women from households impacted by strong winds, and sub-national government officials from districts, municipalities, communes/ sangkats, and villages.

First Training

The first training session was held from 8 to 30 December 2022 and engaged 212 participants, including 44 women (20.8 percent). The training covered a range of topics including the impacts of climate change on housing, resilient construction techniques, and the long-term economic benefits of building resilience into home design. A variety of teaching methods were used, including classroom lectures, videos, interactive discussions, role-plays, and hands-on exercises.

Refresher Training

A refresher training session was conducted from 21 to 25 August 2023, involving 158 participants, including 36 women (22.8 percent). This session reinforced the core concepts taught in the initial training and addressed specific knowledge gaps identified through post-training evaluations.

GOOD PRACTICES

1. Broad-Based Community Mobilization through Stakeholder Engagement

The project exceeded its original target by engaging 370 participants through close collaboration with sub-national authorities. This inclusive mobilization enhanced the potential for replication of resilient housing practices within the broader community.

2. Use of Inclusive and Visual-Based Training Approaches

Although theoretical knowledge was effectively transferred, the lack of practical sessions hindered deeper understanding. Future efforts should integrate hands-on activities such as field visits and

live construction demonstrations to reinforce learning.

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LESSONS LEARNED

1. Barriers to Female Participation Due to Social Norms

Female participation reached only 21.6 percent, falling well short of the intended 50 percent target. Cultural attitudes and limited interest among women in construction-related training were key challenges to their engagement.

2. Insufficient Practical Exposure to Reinforce Technical Learning

Although theoretical knowledge was effectively transferred, the lack of practical sessions hindered deeper understanding. Future efforts should integrate hands-on activities such as field visits and live construction demonstrations to reinforce learning.

RECOMMENDATIONS

1. Set Realistic Gender Targets and Promote Inclusive Participation

Future interventions should set achievable gender participation goals aligned with local social norms and actively remove barriers to women's participation. Strategies should include early communication, support for childcare, and tailored outreach to ensure inclusivity.

2. Combine Theoretical Training with Practical Field-Based Learning

Blending classroom instruction with practical site-based learning is essential to reinforce technical knowledge. Activities such as housing assessments and direct participation in resilient construction projects would improve skill development and field application.

PROJECT OVERVIEW

Since August 2021, the United Nations Human Settlements Programme (UN-Habitat) and the National Council for Sustainable Development (NCSD) have been implementing the "Climate Change Adaptation through Protective Small-Scale Infrastructure Interventions in Coastal Settlements of Cambodia" Project (CCA4CS), with financial support from the Adaptation Fund.

The project aims to strengthen climate resilience and adaptation in Cambodia's most vulnerable coastal settlements, in Kep Province and Prey Nob District of Preah Sihanouk Province, through targeted interventions around three interconnected components:

Component 1: Community-scale knowledge and capacity enhanced to sustain the adaptation benefits of the project's investments.

Component 2: Government planning and technical capacity enhanced and knowledge captured and disseminated to sustain and enhance the project's adaptation benefits.

Component 3: Resilience built through investment in small-scale protective and basic service infrastructure and natural assets.

These initiatives will enhance communities' capacity to withstand climate-related challenges by focusing on areas where ecotourism can support long-term sustainability. Through these components, the project addresses immediate climate risks and lays the foundation for long-term sustainability and resilience in Cambodia's coastal communities.

RATIONALE FOR THE INTERVENTION

Poor households residing in coastal lowlands, often in homes constructed with zinc and thatched roofs, are highly vulnerable to storm surges and rising sea levels. During the project formulation phase, 11 target communes were surveyed, and up to 200 houses were reportedly destroyed annually by strong winds, with many more suffering varying levels of damage. While wind speeds in the target areas are moderate (ranging from 60 to 80 km/h), the poor quality of housing—resulting from basic construction techniques and the use of inferior materials—has greatly amplified vulnerability.

Furthermore, a general lack of knowledge regarding resilient construction methods has exacerbated risks, leading to unsafe living conditions and increased exposure to health hazards and disaster impacts. Therefore, building local expertise and capacity in resilient housing construction was recognized as critical for improving community safety and resilience.

BRIEF DESCRIPTION OF THE INTERVENTION

Under Output 1.2, the project aimed to promote resilient housing practices by enhancing the community's

capacity for resilient construction techniques, which was also addressed under Output 3.5. The initiative aimed to target at least 200 participants to achieve 50 per cent female participation. The key objectives were to encourage resilient housing construction, monitoring, management, and maintenance at the community level; to build the capacity of local construction workers and households affected by strong winds for replication of resilient practices; and to reduce the financial burden of future repairs through the promotion of stronger, more sustainable construction techniques.

This report summarizes the project's achievements, highlights good practices and lessons learned, and presents recommendations based on experiences gained from the capacity-building activities across eight communes.

KEY ACHIEVEMENTS

Several activities were successfully implemented to meet the intervention objectives. A consultant specialized in resilient housing was recruited to design and deliver the training program based on consultations with local authorities, community leaders, and field visits to affected communities. Three primary trainee groups were identified: local construction workers, women from families impacted by strong winds, and sub-national officials from districts, municipalities, communes/sangkats, and villages.

First Training

The training activities included a first training session held from 8 to 30 December 2022, which trained 212 participants, including 44 females (20.8 percent). The sessions covered the impacts of climate change on housing, resilient construction techniques, and the economic benefits of resilient designs. Training methodologies included in-class lectures, videos, discussions, role-plays, and exercises.

Refresher Training

Knowledge improvement was significant. Pre-training surveys indicated that 90 percent of participants had a poor or very poor understanding of climate change impacts on housing, while post-training results showed that 89 percent of trainees achieved fair (55 percent), good (23 percent), very good (8 percent), or excellent (3 percent) levels of understanding.

A refresher training was conducted from 21 to 25 August 2023, involving 158 participants, including 36 females (22.8 percent). This session reinforced key concepts and addressed knowledge gaps identified during earlier sessions.

GOOD PRACTICES

1. Broad-Based Community Mobilization through Stakeholder Engagement

The project demonstrated notable success in mobilizing participants. Through proactive coordination with subnational stakeholders, the project mobilized 370 participants, exceeding the original target by 54 percent. This broadened community engagement and enhanced the potential for community-led replication of resilient housing practices.

2. Use of Inclusive and Visual-Based Training Approaches

Another effective practice was the use of interactive capacity-building methods that featured visually rich materials. Training sessions incorporated visuals, videos, role-plays, and practical exercises and were designed to accommodate participants' varied literacy levels. This approach created a psychologically safe environment, resulting in high levels of participant engagement and a deeper comprehension of the training content.

LESSONS LEARNED

1. Barriers to Female Participation Due to Social Norms

Despite proactive outreach efforts, female participation only reached 21.6 percent, falling short of the 50 percent target. Cultural norms and a lower level of interest among women in construction-related activities were identified as significant barriers to achieving greater female participation.

2. Insufficient Practical Exposure to Reinforce Technical Learning

Additionally, while conceptual knowledge transfer was effective, the absence of practical, on-site sessions limited the depth of learning. Practical skills could have been further strengthened through site visits, field assessments, and direct hands-on activities. Future interventions should prioritize integrating practical, field-based learning to consolidate theoretical knowledge better.

RECOMMENDATIONS

1. Set Realistic Gender Targets and Promote Inclusive Participation

For future initiatives, it is recommended that realistic gender participation targets be set that are aligned with the local cultural context. Early announcements of training schedules and explicit encouragement of women's participation, including accommodations for childcare needs, should be prioritized to create a more inclusive environment.

2. Combine Theoretical Training with Practical Field-Based Learning

Furthermore, future capacity-building programs should combine in-class training with on-site practical sessions. Field assessments comparing ordinary and resilient housing, practical exposure to construction activities, and opportunities to observe or participate in resilient housing construction projects greatly enhance learning outcomes and knowledge application in the field.

DOCUMENTATION

Name	Type	Produced Date	Location
Training Needs Assessment Report	Report	September 2022	Link
First Training Report	Report	December 2022	Link
Refresher Training Report	Report	August 2023	Link

PHOTOS





This publication is part of the knowledge-sharing outputs under Component 2 (Output 1.2) of the Climate Change Adaptation project in Cambodia, supported by the Adaptation Fund and implemented by the United Nations Human Settlements Programme (UN-Habitat) as the Implementing Entity and the National Council for Sustainable Development (NCSD) as the Executing Entity



ADAPTATION FUND

Climate Change Adaptation through Small-Scale and
Protective Infrastructure Interventions in
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