



# Project Fact Sheet: Cambodia

## Climate-Sensitive Flood Risk Mitigation in Koh Andeth

### Background on Koh Andeth District

- Located near the border between Vietnam and Cambodia on the west side of the Bassac River
- Floods in this area are influenced by flows from several directions- Overbank flow from the Bassac, Mekong overbank flow across trans-Bassac region, flow from Prek Thnot River across the West Bassac floodplain, flow from the Stung Takeo River, changing tides, and local rainfall.
- Rice cultivation is an important source of income. Due to rehabilitation of the irrigation system as well as the introduction of new agricultural technologies, most crop land in selected villages has been converted into direct planting high density recession and dry season crop fields. Rice yield is about 3.5-5 tonnes per hectare and farmers grow up to 3 crops per year, many using large amounts of chemical fertilizer and pesticides.

### Project Overview

**Time frame:** August 2014- February 2016

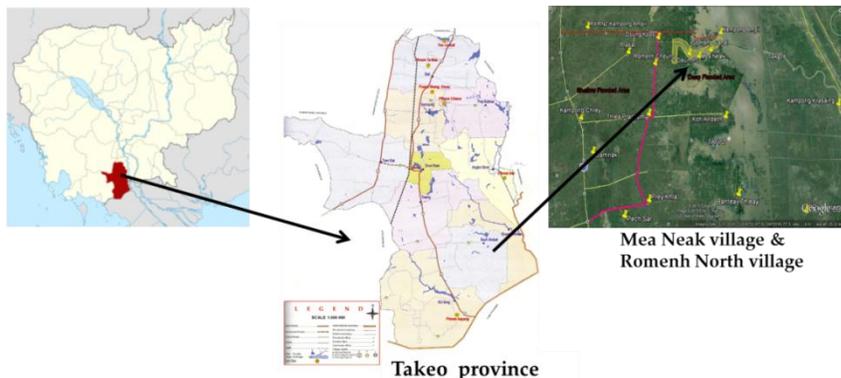
**Budget:** approx.100,000 Euro

**Location:** Mea Neak , snd Romenh Noth Villages (some activities in Romenh Tboung Village), Koh Andeth District, Takeo Province

**Impact:** 660 direct beneficiaries and 1,978 indirect beneficiaries from trainings, tree planting, flood marker installation, and pond rehabilitation

**Partners:** CEDAC, CARE Cambodia, Sok Saing Im, National Flood Expert

### Location of pilot in Cambodia



- Koh Andeth district borders the Boeung Prek Lapov protected area, which is one of the largest remaining remnants of seasonally-inundated wet grassland in the Lower Mekong Basin and an important habitat for birds, plants, fish and other wildlife. The expansion and intensification of rice cultivation in Koh Andeth has had a number of negative impacts on the surrounding wetlands. In particular, the decline in water quality and damage to capture fisheries through heavy pesticide use threaten the health and food security of the district's residents.

<b>Relevant information on target villages</b>	<b>Mea Neak Village</b>	<b>Romenh North Village</b>
<b>Village size</b>	117 households (583 people)	576 households (2,574 people)
<b>% of labor force involved in rice farming</b>	87%	83.45%
<b>Other economic activities</b>	Livestock	Livestock, fishing
<b>Drinking water supply</b>	Primarily comes from a storage pond for drinking water constructed in 2005, groundwater has high salinity	213 households connected to running water, 267 households have their own wells, 30 have ponds
<b>Access to sanitation</b>	Entire village has 7 toilets, open defecation is common	414 (of 576) households have private toilets
<b>Access to electricity</b>	40% of households are connected to energy grid, with the remaining using batteries or burning firewood	Almost all households have access to electricity

\*Note: Romenh Cheung was added as one of the target villages for adaptation measure implementation after the vulnerability assessment had been completed.

## Results of vulnerability assessment

- **Baseline flood behavior:** The 2011 flood had a maximum water level of 4.1 m and a return period of 30 years. It was particularly destructive because it came earlier than expected.
- **Climate change-induced flood behavior:** The results of the analysis show that by 2030, due to climate change, peak flood levels increase by 0.15-0.20 m for all floods with 2-year to 200-year average recurrence intervals.
- **Economic vulnerability:** Average annual flood damage (AAD) is \$260 USD per household and \$66,000 USD for all of Romenh Commune.
- **Economic vulnerability increases due to climate change:** Estimated AAD under climate change conditions increases by \$110 USD per household and \$27,000 USD for Romenh Commune (41% increase). This amount serves as a benchmark when considering investment in climate change adaptation measures.
- Since 2011, the main component of flood damage in this area has been crop losses caused by early flooding.

## *Suggested adaptation measures*

Based on an assessment of the focus region's exposure to floods, sensitivity, and adaptive capacity, the following adaptation measures were identified to help the target villages reduce their vulnerability to flood risk.

1. Install a 'flood reference base elevation pole' in the two villages to record the water level of past floods and to provide an indication of likely peak levels during the onset of future floods.
2. Training in the use of chemical fertilizers and pesticides to reduce negative impact on environment, generate income and improve food security.
3. Training in rice-aquaculture and fishpond-aquaculture to generate income and improve food security.
4. Tree planting (eg melaleuca) around villages for firewood, windbreaks and community forestry.
5. Improve wastewater management (disposal point) and solid waste management (incineration).
6. Assist Mea Neak village rehabilitate their communal water supply pond.

## *Implemented adaptation measures*

After a series of consultations with relevant stakeholders, the following measures were selected for implementation based on their potential for upscaling, technical feasibility, financial feasibility, gender sensitivity, willingness of communities, and sustainability. These measures were implemented between September 2015 and February 2016.

### *Objective 1: Improved capacity of villagers on early flood warning systems.*

1. Set up 3 flood bench markers (2 in Mea Neak and 1 in Romenh Cheung)
2. Trained village volunteers to use and maintain flood markers
3. Installed 2 community flood information signboards

### *Objective 2: Promote environmental awareness and protection - including, tree planting, waste management and water, sanitation and hygiene (WASH).*

4. Provided training to 384 participants (285 women) on tree planting, WASH, waste management, and environmental protection for 1.5 days
5. 3,514 tree seedlings were distributed amongst 324 people.

### *Objective 3: Strengthen water supply infrastructure.*

6. Cleaned and repaired Mea Neak's 399 square meter communal pond- excavated soil from pond centre and elevated embankment

### *Objective 4: Identify and promote agricultural practices well-suited to the local context that can generate income and reduce negative environmental impacts*

7. Conducted a training needs assessment, with special attention paid to integrated pest management, systems of rice intensification, fisheries, farmer producer organizations and market linkages.
8. Provided practical training on topics including sustainable and ecologically-sensitive agriculture, integrated pest management, integrated crop management and diversification, and new market opportunities
9. Provided technical follow up and coaching for farmers applying the knowledge acquired in the training