

# USAID MEKONG ARCC COMMUNITY ADAPTATION INITIATIVES

Kok Klang Village, Sakon Nakhon Province, Thailand



Water assessment conducted in Kok Klang village for improving community water management system. © IUCN/Bampen Chaiyarak

The United States Agency for International Development Mekong Adaptation and Resilience to Climate Change project (USAID Mekong ARCC) is working through the International Union for Conservation of Nature (IUCN) to help the Kok Klang community in northeastern Thailand implement adaptation activities that will strengthen the resilience of their livelihoods and local ecosystem to the projected impacts of climate change. Kok Klang is located in Sakhon Nakhon's Tao Ngoi District in the Nam Phung River Basin, which connects the community to the Mekong River through the Nam Kam River Basin. Kok Klang has a population of approximately 1,143 people in 454 households.

The USAID Mekong ARCC climate study projects the Kok Klang community will see an increase in annual rainfall and temperatures, a drier dry season and more frequent and intense large rainfall events increasing the likelihood of flash flooding and waterlogging.

## Climate Impacts and Vulnerabilities

The higher temperatures and increased variability in rainfall will impact the key livelihood and food security options in the village, leaving them more vulnerable to the impacts of climate change. A large number of farmers in these provinces are reliant on rice as their staple food source, on monocultures such as rubber and cassava, and non-timber forest products such as ants' eggs and mushrooms as their main source of income.

Major threats to livelihoods include:

- Heat stress during the wet season could decrease yields of rainfed rice, cause rubber crop failure, impact fodder availability and reproductive rates of cattle and buffalo; and
- Waterlogging, flooding, fungal disease and pests affecting crops due to increased rainfall in the growing season.

## Adaptation Activities

In 2014, the project supported the development of a Kok Klang adaptation plan through a participatory process with the villagers. The community identified the key threats and vulnerabilities from projected climate change and selected four activities that could be implemented and achieved in 2014-2015.

The four activities are:

1. **Improving community water management** by setting up a water management committee and installing household water meters. By monitoring water usage, villagers can ensure there will

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Kok Klang villagers visited Kalasin Agricultural Study Center to learn about agricultural diversification techniques for increasing the resilience of their farming system.  
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be enough water for consumption and use during the dry season, which is projected to become drier in future years.

2. **Improving forest management** by establishing a community forest management committee, investigating the potential of local flora and fauna in the community forest and arranging community reforestation. These activities will help the ecosystem build resilience to withstand threats due to climate change. Enhancing forest health will allow forests to continue to serve as a source of clean water and other materials to support community livelihoods such as non-timber forest products and building materials, and local plants that may have the potential to be grown commercially.
3. **Exploring opportunities for agricultural diversification as a strategy for climate change adaptation through an exchange visit to the Phu Phan and Kalasin Agricultural Study Centers.** By reducing the vulnerability of rice, cassava and rubber plantations and finding alternative sources of income for the community, the villagers will improve the resilience of their farming systems. Agricultural diversification activities include establishing groups on raising black pigs and chickens, native rice and vegetables.
4. **Identifying good waste management practices, including organic fertilizer production, through an exchange visit to Pungkon District.** Current use of chemical fertilizers and pesticides in monocultures has been identified as a major vulnerability in Kok Klang that affects water quality and the fertility of soils. Activities to improve water and soil health through decreased chemical use and application of organic fertilizer will improve the resilience of the agro-ecological farming systems to anticipated climate change impacts.

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## Next Steps

Implementing these four priority activities is an important step in combining local knowledge and climate science to address the vulnerabilities to livelihoods and ecosystems faced by the Kok Klang community due to climate change. The adaptation plan is a valuable resource for the community to prioritize future activities and build on the achievements made in 2014-2015.



Black pigs and black chickens in Kok Klang village © IUCN/Bampen Chaiyarak