

# USAID MEKONG ARCC COMMUNITY ADAPTATION INITIATIVES

Hae Ko, Loh Yo and Huai Kang Pla Villages, Chiang Rai Province, Thailand



Hae Ko villagers are raising black pigs that are more heat tolerant than traditional pigs.

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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 assist three villages in Thailand's Chiang Rai Province to implement adaptation activities that will strengthen the resilience of their livelihoods and local ecosystem to the projected impacts of climate change.

The highland villages of Loh Yo and Hae Ko are located in the western Pa Tueng sub-district approximately 50 km from Chiang Rai city. The villages are connected through the Mae Chan watershed, a sub-basin of the Mae Kok River Basin that drains into the Mekong River Basin. Huai Kang Pla is in the lowland reaches of the Mae Chan watershed in the eastern Pa Tueng sub-district.

The USAID Mekong ARCC climate study projects that Chiang Rai Province will experience some of the largest relative increases in rainfall within the Lower Mekong Basin, up 140 mm/year, and large rainfall events and flooding are expected to occur more regularly. The study also projects an annual 2°C increase in temperature by 2050 and drier dry seasons.

## Climate Impacts and Vulnerabilities

Chiang Rai's projected higher temperatures and increased variability in rainfall will impact key livelihoods and food security in the villages, leaving them more vulnerable to the impacts of climate change.

Major impacts include:

- Reduced crop yields for monocultures such as rice, which is a critical food and income source, and impacts on livestock such as pigs and chickens.
- Increased forest fires, which affects non-timber forest products such as bamboo shoots, honey, ants' eggs and vegetables, all important food and income sources for the village.
- Increased flash floods and storms leading to higher levels of water turbidity which reduces the availability of clean drinking water and leads to more disease in the community.

## Adaptation Activities

In 2014, the project supported the development of adaptation plans for Loh Yo, Hae Ko and Huai Kang Pla villages through a community participatory process. The communities identified the key threats and

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<http://www.mekongarcc.net/communities>



Villagers in Huai Ya No, one of the sub-villages of Huai Kang Pla, installed water filtration tanks.  
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vulnerabilities due to climate change and selected priority activities that could be implemented and achieved in 2014-2015. These activities are summarized under the following three themes of water management, agricultural diversification and forest management.

### 1. Water Management

Hae Ko and Huai Kang Pla communities prioritized improving water filtration for drinking water. In order to provide clean drinking water and prevent disease during heavy rainfall, they proposed to install a water filtration system on the village water supply.

### 2. Agricultural Diversification

All three villages prioritized learning about crop and livestock diversification to improve resilience to climate change impacts, so the Hae Ko and Huai Kang Pla communities visited the Huai Hong Krai Royal Study Center and Loh Yo village visited the Angkhang Royal Agricultural Station. Following these visits, the villages are raising black pigs that are more resistant and heat tolerant than traditional pigs and produce manure that can be used as fertilizer to improve soil. The Loh Yo community is now planting Assam tea as an alternative to the monocultures of maize and rice as it is tolerant to increased temperatures and irregular rainfall and is a high value crop. Villages intercrop Assam tea with fruit trees to increase the resilience of their farming systems.

### 3. Forest Management

All three villages considered improving the management of forests to protect their water source and non-timber forest products a priority. For example, Huai Kang Pla village aims to set up a community forest management committee to promote reforestation and conservation efforts that will protect non-timber forest products such as bamboo shoots, galangal and honey which are at risk from forest fire and poor management.

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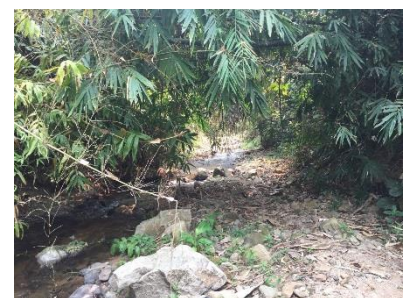
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## Next Steps

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



(Above left) Loh Yo villagers on exchange visit to the Angkhang Royal Agricultural Station  
© IUCN/Ratkawee Boonmake; (Above right) Bamboo trees in the watershed forest of Loh Yo community @ IUCN/Angela Jöhl Cadena.