

# How are forests and trees used?

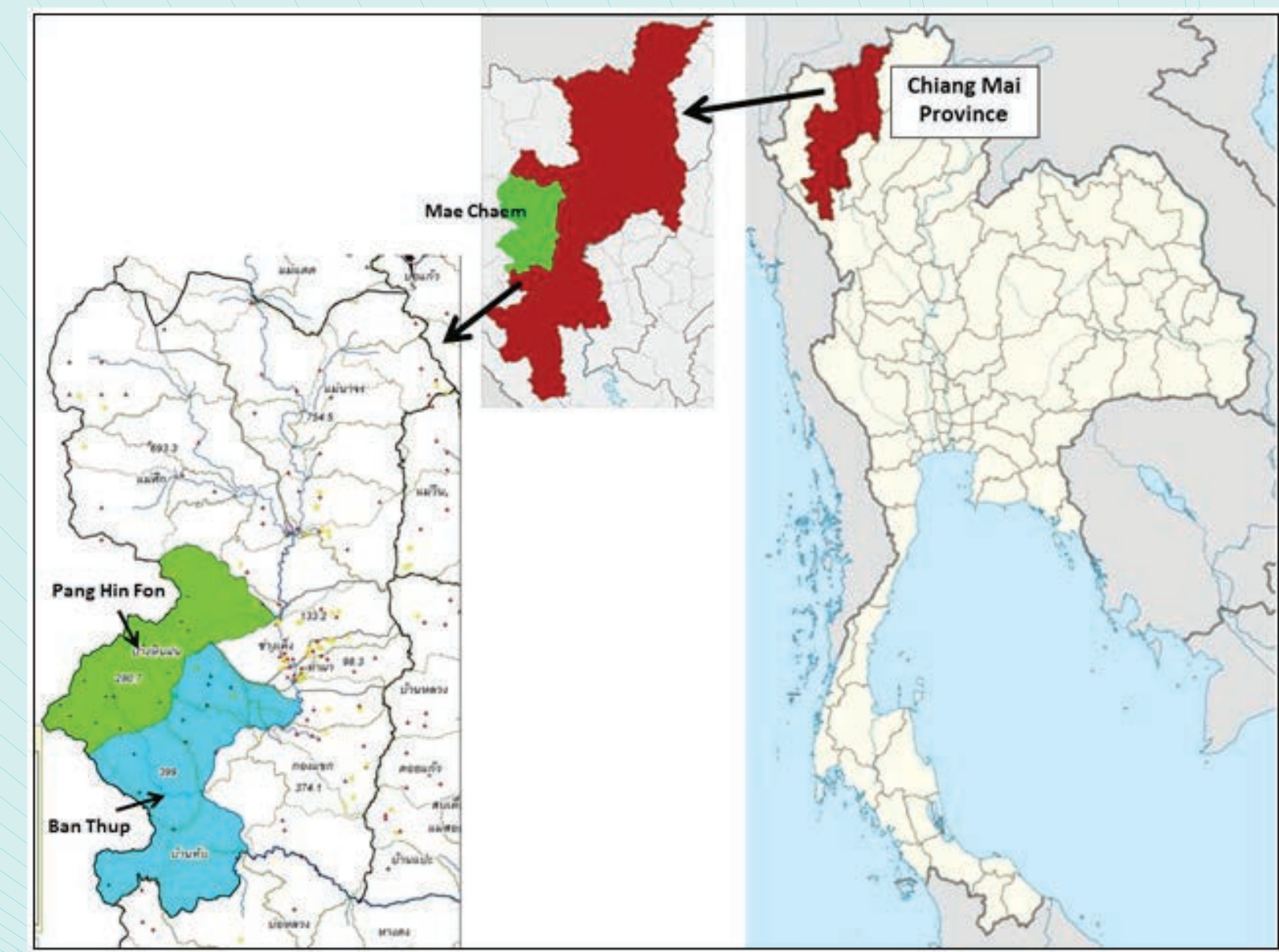
## Northern Thailand

Mae Chaem  
Chiang Mai

Mean Annual  
Rainfall : 1,300 mm

## AGROECOLOGY, FOOD SECURITY, AND NUTRITION IN THE HIGHLAND OF THAILAND

**Malnutrition and food security** remain serious problems in Thailand, particularly amongst ethnic minorities living in remote, upland areas. Sustainably improving local food availability through improved agricultural production has the potential to address these issues. Following is an overview of problems and knowledge gaps in integrating agriculture and nutrition in upland areas of Thailand, and a summary of the specific research gaps this project will address.

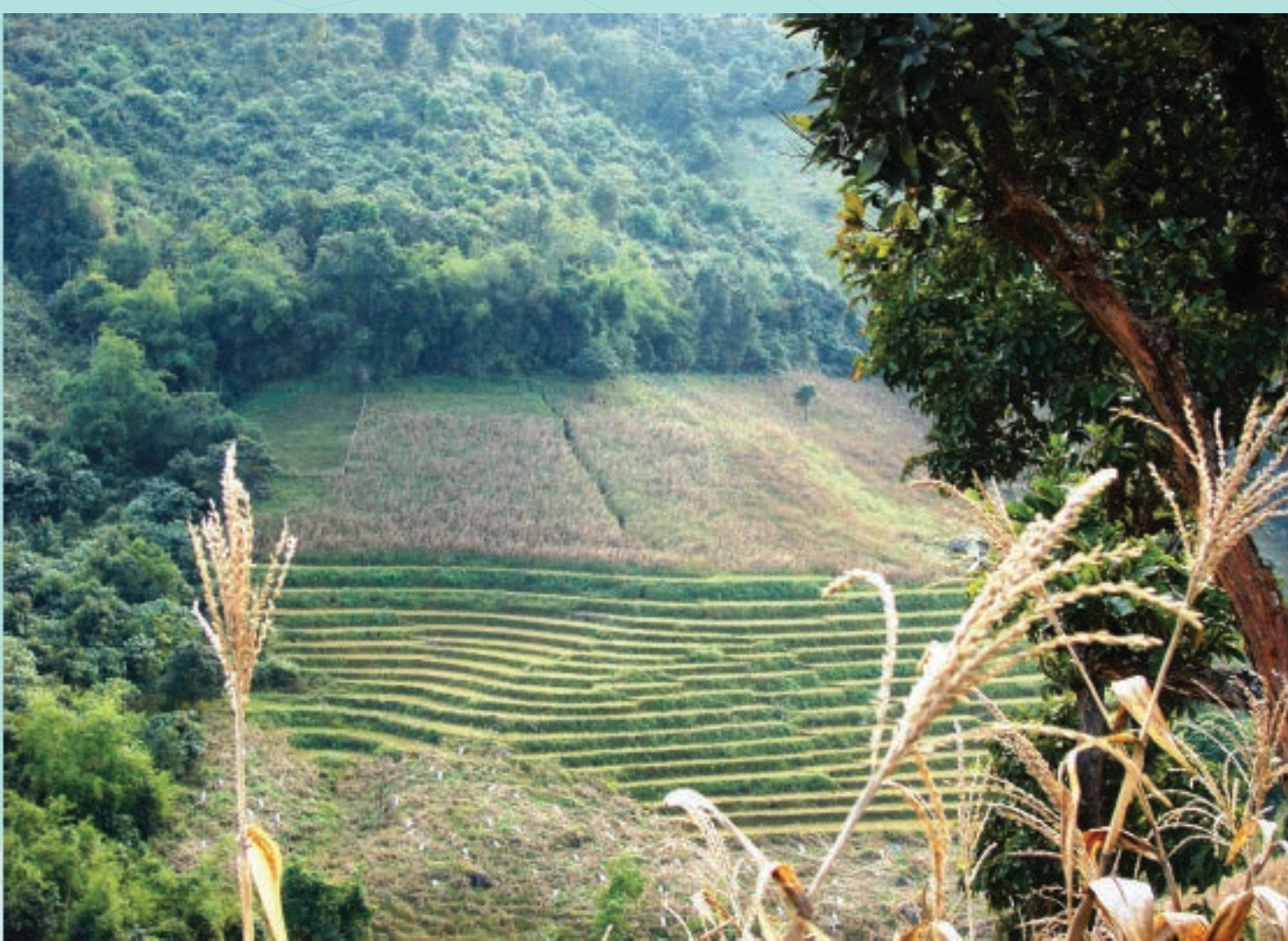


### Objective:

To identify local and practical solutions to improve nutrition and food security amongst smallholder farmers in rural upland communities in Thailand through nutrition-sensitive agriculture solutions.



Type	Month												purposes
	1	2	3	4	5	6	7	8	9	10	11	12	
Paddy rice													HHC, Sale
Upland rice													HHC
Maize													Sale
Shallot													Sale, HHC
Pumpkin													Sale, HHC
Cabbage													Sale
Kidney bean													Sale
Peanut													Sale



### Methods:

Four Karen and 4 Lawa hill-tribe villages in Mae Chaem district, Chiang Mai, Thailand, have been investigated for their food security and nutrition status in order to formulate nutrition-sensitive agricultural interventions. A total of 172 households (98 HHs of the Karen tribe and 74 HHs of the Lawa tribe) were surveyed for their situations on food security, dietary diversity, and child-feeding practices, using household questionnaires. Focus group discussions (FGD) and in-depth interviews (with village representatives and local authorities) on agricultural and food-security issues were also done. The FGDs were done in male and female groups of both tribes.

Food and foodstuff intakes of children

Types of food		No. of children (N=189)	Percentage
Cereals/grains/roots and tubers and processed products	Rice	178	94.2
	Potato, Cassava, Taro	9	4.8
Pulses/legumes/nuts/tofu/soybean	Formula milk	82	43.4
	Fresh milk	40	21.2
Milk and dairy	Sweetened condensed milk	64	33.9
	Yogurt	6	3.2
Meat/internal organs/fish/aquatic products	Cheese	10	5.3
	Meat	0	0.0
Eggs	Organs (liver, kidney, heart, etc.)	100	52.9
	Fish, aquatic product	10	5.3
Vitamin A-rich vegetables and fruits	Green vegetables	51	27.0
	Yellow and red vegetables	101	53.4
Other vegetables and fruits	Yellow and red fruits	32	16.9
	Oil, fat, butter	55	29.1
Sweets	Candy, cookie	142	75.1
	Sugar	111	58.7
Micronutrient supplement product	Candy, cookie	29	15.3
	Sugar	28	14.8
Micronutrient supplement product	Candy, cookie	14	7.4
	Sugar	28	14.8

Source: Household survey, Nov-Dec /2013.

### Results and discussion:

For the first (out of 3) year, it has been found out that they practice both shifting cultivation and permanent-field agriculture, with rice as the main crop. Food is locally grown, bought from the market, and gathered from the vicinity of the villages. The studied population is 50% food secure, and their dietary diversity was about 40%. Only 4 % of 209 children aged 0-5 years old had a minimum acceptable diet. Results of the FGDs showed that the female and the males managed their food systems differently. Potential interventions have been formed based on ideas from local stakeholders and international research partners in order to be tested in the second year of the project, and it will be concluded whether the interventions work or not, in the third year.