



# Climate-Smart Village Report: Taung Khamauk Village, Myanmar

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## Taung Khamauk village

Taung Khamauk village is located in Naung Shwe Township, Southern Shan State. The village is situated 3700 feet above sea level. Hills dominate the village topography with moderate to deep-sloping lands. The primary livelihoods of the village are Agriculture and others such as selling fire woods, casual labor, and construction labor. Water scarcity is a significant challenge for agricultural productivity. Rainwater is harvested and stored for domestic use for a year long.

### ***Biophysical, social, and economic conditions***

All of the land areas in the village are under the name of forest area. The soil is generally low base, low activity clay of red, brown, or yellow. The limiting factors of these soils are limited depth, stone, and rock presence, minimal water holding capacity, poor internal drainage, slow soil permeability, low fertility, low cation exchange capacity, presence of toxic ions, and absence of some nutritional elements. The soil type of the village is moderate to highly acidic, generally about pH 4.5-6.

Agriculture and Livestock are the primary livelihoods and subsistence activities. Approximately 80% of the village community is engaged in agriculture and animal husbandry. Although shifted cultivation was practiced in the past, nowadays, farmers are practicing as permanent lands with crop rotation practice. Major crops cultivated in the village are upland rice, corn, tomato, safflowers, chili, sunflowers, soybean, groundnut, pigeon pea, garlic, garden pea, lima beans, radish, and mustard. About 70 households engage in the livestock sector, which includes raising cows, chickens, pigs, and buffalo. Around 20% of the total households of the village are landless and small-skill farmers with no access to land areas. For these people, casual labor, firewood selling, construction worker, vendors, and small general store in the house are the primary livelihoods.

### ***Climate Challenges***

The village has experienced hotter temperatures and erratic rainfall than in previous years. Irregular rainfall during the harvesting time results in the quality of the products. The late onset of the monsoon caused a shifting delay in sowing and harvesting time. Heavy and intense rainfall damaged vegetable production, especially tomatoes, by enhancing late blight disease. Water scarcity, poverty, and the lack of transport also hamper access to technology, services, and information in all aspects of livelihoods. A prolonged drought creates water scarcity for humans, livestock, and animal feeds.

Taung Khamauk was designated as a climate-smart village where participatory action research was undertaken from 2019 to 2020 to find solutions to the challenges posed by climate change on the lives and livelihoods of local farmers. In this project, IIRR promoted the CSV approach, facilitating community-based adaptation (CBA) processes, and a portfolio of CSA options is derived. With support from the International Development Research Centre (IDRC) Canada, the research project was implemented in Myanmar from July 2020 to July 2022. Taung Khamauk village was also one of the research areas in Myanmar to investigate the potential contributions of CSVs and CSA in enriching local food systems for better nutrition, enhancing livelihoods, increasing household resilience, and enhancing gender equity and inclusion.

The purpose of this brief is to describe the updated profile of Taung Khamauk village in Southern Shan State, Myanmar, from 2019 to 2022.

# CSA Practices in Taung Khamauk Village

Table 1. CSV practices in Taung Khamauk village

CSA Options	Description	Benefits
<b>Participatory Varietal Selection (PVS)</b>	By doing PVS trials, farmers have a chance to select the adaptable varieties for their specific areas by themselves and can monitor the plant performance before producing commercially which in turn reduces the risk of uncertainty.	A total of 62 farmers participated in PVS. according to the performance results of PVS farmers are using Yn-3230 and Upland 2 for upland rice. The farmers preferred the Yn-3230 variety in 2019-2020. However, the farmers widely cultivated in 2021 and 2022 was Upland-2 variety with red color and better yield.
<b>Diversification of farm production with vegetables; legumes with crop trials for newly introduced crops</b>	Crop diversification was practiced to minimize the risk of losses in case climate variability reduced the main crop yields.	A total of 55 farmers participated in this crop trial activity. Framers liked the two corn varieties introduced by IIRR, namely the Ekery and Yezin-1. Corn cultivation has declined this year because of expensive inputs. Ekery, distributed in 2019, is still used by farmers. Sweet corn (Yezin-1) was cultivated at the homestead level.
<b>Integration of fruit trees on farms (avocado, mango, banana, jackfruit, oranges)</b>	Fruits trees are integrated with field crops on farms to minimize the risk of losses; trees are more tolerant to the variability of rainfall and temperature; sequester more GHGs	Sixty (60) households received fruit tree seedlings of avocado, jackfruit, orange, lime, and longan for farm and homestead plantations. Some farmers have very good knowledge and experience in this practice and applied effectively on their farms. Fruit trees distributed in 2019 are growing well and have started flowering and fruit stage.
<b>Planting of legume trees on farms and along boundaries</b>	The introduction of agroforestry is designed to manage soil degradation and erosion.	Cassia saimea seedlings were provided to five (5) households to grow along boundaries for soil conservation objective.
<b>Homestead production of vegetables, fruits and cash crops</b>	This option was introduced to reduce risks from annual crops and diversify income through producing vegetables, fruits, and cash crops.	Forty-nine (49) households were provided fruit trees of avocado, jackfruit, orange, lime, and longan for homestead production. All the fruit trees are found growing well. Farmers mostly preferred avocados because of their commercial value. Water availability in the homestead is a challenge that hinders some households from growing more trees.
<b>Small livestock production in homesteads</b>	Small livestock raising is considered an important climate-smart agriculture option that helps households deal with crop failure in the failure of rain.	Twenty (20) households received chicken and piglets for small-scale livestock raising. Native pig production is profitable among other introduced practices. 3 households have resulted in good returns from breeding. One has already earned over 20 million kyats from selling breeds, and five (5) households have already received the piglets that were handed over from the project's direct beneficiaries. Only small fowl of chicken that were distributed in 2019 are remaining, and they are freely grazed.

# Research Findings

The research project was implemented in Taung Khamauk village to investigate the potential contributions of CSVs and CSA in enriching local food systems for better nutrition, enhancing livelihoods, increasing household resilience, and enhancing gender equity and inclusion.

Household resilience to climate change was studied from February to March 2022 to understand the role of climate-smart agriculture practices in promoting resilience, especially in the context of COVID-19. A household survey, focus group discussion, and key informant interviews were conducted for this study.

Women's economic empowerment in CSVs was studied in February-March 2022 to examine the extent to which the promotion and practice of CSA options empower women economically. The quantitative method used Abbreviated Women Empowerment in Agriculture Index (AWEIA) questions for the women's survey and the qualitative methods consisted of desk review, focus group discussions (FGD), and key informant interviews (KIIs).

The gender study provides clear evidence that adopting CSA practices has contributed to women's economic empowerment. Women farmers in the Taung Khamauk CSV increase the high level of decision-making in crops related to production activities, minor household expenditures, going to training, and deciding on their wages.

The cost and return analysis was employed in June 2021 to determine the financial and social benefits that were generated by the Climate Smart Agriculture (CSA) options adopted by the village. Primary data for this study were generated through personal interviews of Taungkhamauk households that adopted the CSA options. Results showed that most households benefited from implementing the CSA options. The CSV promoted social values about economic empowerment, household food security, and gender inclusiveness. Upscaling of the CSV approach in other villages in Shan State was recommended. Table 2 shows research activities and achievements in Taung Khamauk CSV from 2020 to 2022.

**Table 2. Accomplished activities and achievement of Research project in Taung Khamauk CSV**

Research area	Research Activities	Status	Achievement
Women's economic empowerment at the household level via the promotion of climate-smart agriculture	<ul style="list-style-type: none"> <li>AWEIA-survey (20F)</li> <li>Focus group discussion (2 groups)</li> <li>Key informant interview (3)</li> </ul>	Completed	The Working paper has been published and is available at: <a href="https://www.researchgate.net/publication/358768842">https://www.researchgate.net/publication/358768842</a>
Costs and the potential of local adaptation platforms (CSVs) in providing both social and economic benefits to the poorest and most vulnerable in the village	<p>Household survey (80) Key informant interview (5)</p>	Completed	<p><b>Papers to publish</b> Cost-benefit analysis of establishing a climate-smart village in Southern Shan, Myanmar: The case of Taungkhamauk Village, Nyaung Shwe Township</p>

## Community support fund

This research allocated a CSV community support fund to provide the implementation of CSA options in the villages. A community support fund was provided for women-headed households regarding their income generation and livelihood activities. As another option, targeted farmers were provided trees for agroforestry

purposes. Support for internally displaced people (IDPs) was started in March 2022 due to current political instability and current economic situations in Myanmar, including Southern Shan State. Table 3 shows the support activities and benefits of allocating community support funds.

**Table 3. Kind of support activities and the number of beneficiaries in Taung Khamauk CSV.**

Support	Activities	Beneficiaries	Benefits
Livelihood support for targeted women beneficiaries	Support 2 women self-reliance groups	30	<ul style="list-style-type: none"> <li>A total of 1,000,000 MMK was provided for each group as an initial fund. -Up to present, the saving amount increased to about 1,400,000 MMK</li> <li>Around 22 households have received loans from the groups. -The next fund installation with 1,300,000 MMK for each group will be done in August 2022.</li> <li>The women's groups will support the community activities from their savings.</li> </ul>
Support agroforestry	Support 820 of 6 kinds of fruit trees (avocado, custard apple, Longan Jackfruit, Lychee)	29	The trees were planted in 2021 and were growing well.
Support s	Establish a 1.5-acre community garden at s camps in Inn Dein village, Naung Shwe Township	60-300	<ul style="list-style-type: none"> <li>Currently, some vegetables can be harvested and distributed to IDPs.</li> <li>The garden will be practical not only for people within the camps but also for other camps.</li> <li>With the project's contribution, the other community garden was established at Naung Shwe camp, benefitting 300 IDPs.</li> </ul>

## Story from the field

### Women saving groups: Daw Aye Sein's story

Daw Aye Sein, 47 years, has participated in the CSV project as a leader of the women's self-reliance group (WSG). The groups received 1 million MMK from IIRR for the contribution as capital. Moreover, IIRR and KMF also provide financial management training which comprises budgeting, accounting, and management methods for WSG.

***We regularly save from the beginning of the project with 3000 MMK a month. It is already 27 times, and the amount of funds in our group is increasing to 1,380,000 MMK, including capital and monthly saving of members. The group members also start the benefits from the group. With a 1% interest rate, our group provides loans to 13 women among 14 members. The loan taker also pays the interest rate regularly. The purpose of providing a loan is for agricultural production, such as purchasing seeds, fertilizer and land preparation, etc., so the one who wants to get the loan needs to mention where she will use it. I also took a loan of 100,000 MMK from the group to use for land preparation.***



Photo: Women saving groups in Taung Khamauk village (Source: IIRR Myanmar)



Photo: Women saving groups in Taung Khamauk village (Source: IIRR Myanmar)

## Community Garden in IDP camp: U Taw Ywel's story

In March 2022, IIRR and KMF supported to start a community garden with diverse vegetable production at Inn Dein Village, Naung Shwe Township. Project contribution includes land rental fees, systemic irrigation structure, inputs such as seeds and fertilizer, equipment and materials needed for the garden, and labor charges. The staff also trained in good agricultural practices.

***We have grown various vegetables, including coriander, mustard, watercress, yard-long bean, kidney bean, gourd, eggplants, pumpkin, cucumber, radish, carrot, and mushroom. We can start to harvest some vegetables, but some cannot grow well because of pests and diseases. We can reduce the cost of vegetables because we do not need to buy them from the community garden. Fresh vegetables from the garden ensure we can access our basic nutritional requirements. Moreover, we can learn mushroom production and also drip irrigation systems which are new to us.***



## Information Resources

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