



USAID LAOS MICROENTERPRISE ACHIEVEMENTS

Sparking Enterprise Competitiveness and Innovation
in the Lao People's Democratic Republic

October 2018 – September 2024



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ACRONYM LIST

CM	Centimeter
CO ₂	Carbon dioxide
GDP	Gross domestic product
GOL	Government of Laos
KG	Kilogram
KM	Kilometer
LAK	Lao kip
Laos	Lao People's Democratic Republic
LOP	Life of project
m ²	Square meter
MT	Metric ton
PP	Polypropylene
SCU	Saving and credit union
USDA	United States Department of Agriculture
USAID	United States Agency for International Development

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USAID LAOS MICROENTERPRISE PROJECT

The United States Agency for International Development (USAID) Laos Microenterprise project was implemented by ACDI/VOCA over six years from 2018 to 2024 in the Lao People's Democratic Republic (Laos). The \$6,937,158 project was implemented in collaboration with the Ministry of Agriculture and Forestry at the national, provincial and district levels along with project partners Applied Methodology, WOCCU, and HELVETAS.

When the project began, Laos had been experiencing strong economic growth over the previous decade, with GDP growth averaging 7.8% annually, driven primarily by large hydropower and mining projects. One of the threats to achieve its move to the status of a 'more economically developed country' was the lack of a more developed diverse and broad-based private sector. The Government of Laos' (GOL) 2021 – 2025 strategies partly focused on developing micro and small businesses, particularly in the agricultural sector. These small agribusinesses were inefficient, under resourced, and often unconnected and uninformed that they were part of supply chains to larger national and sometimes regional markets. Unfortunately, after the COVID epidemic GDP dropped and has only increased to 3.7% by 2023. Inflation is now over 30% per year making the business operating environment that much more challenging.

USAID Laos Microenterprise had a profound impact on rural communities and strengthened the competitiveness of agricultural microenterprises by expanding access to and adoption of business skills, modern technologies and practices, finance, market linkages, and public-private dialogue.

The project established a self-sustaining cycle of financially more literate microenterprises engaging in marketing and investment decisions. Providing business skills training to a range of stakeholders helped improve the value chain investments supporting entrepreneurs at the village level and businesses operating throughout the district, province, and beyond. All investments were shared between the grantee and the project, which provided between 5-50% of the total investment cost. Investments made tended to reduce operation costs of both farming enterprises and traders, resulting in a more efficient and cost-effective supply chain.

An important approach was the emphasis that farming is a business. 72% of the Lao population are involved in farming, generally working on their family farm, producing surplus to sell to the market and generate an income. However, local officials do not consider them businesses, just farms. The project defined a farming microenterprise as a small, approximately two-hectare farm with three to eight adult family members working together to sell to the market. A farming microenterprise needs to know more than just how to grow crops and raise animals. It needs to calculate budgets, profit margins on different commodities, make investments in technology based on potential returns, allocate land use based on profit calculations, have marketing plans, and develop contacts with buyers.

Duration Sept 2018 – June 2024

Funding Level \$6,937,158

Implementing partner
ACDI/VOCA

Key partner
Applied Methodologies,
WOCCU, and HELVETAS

Implementation location
Xiengkhouang Province

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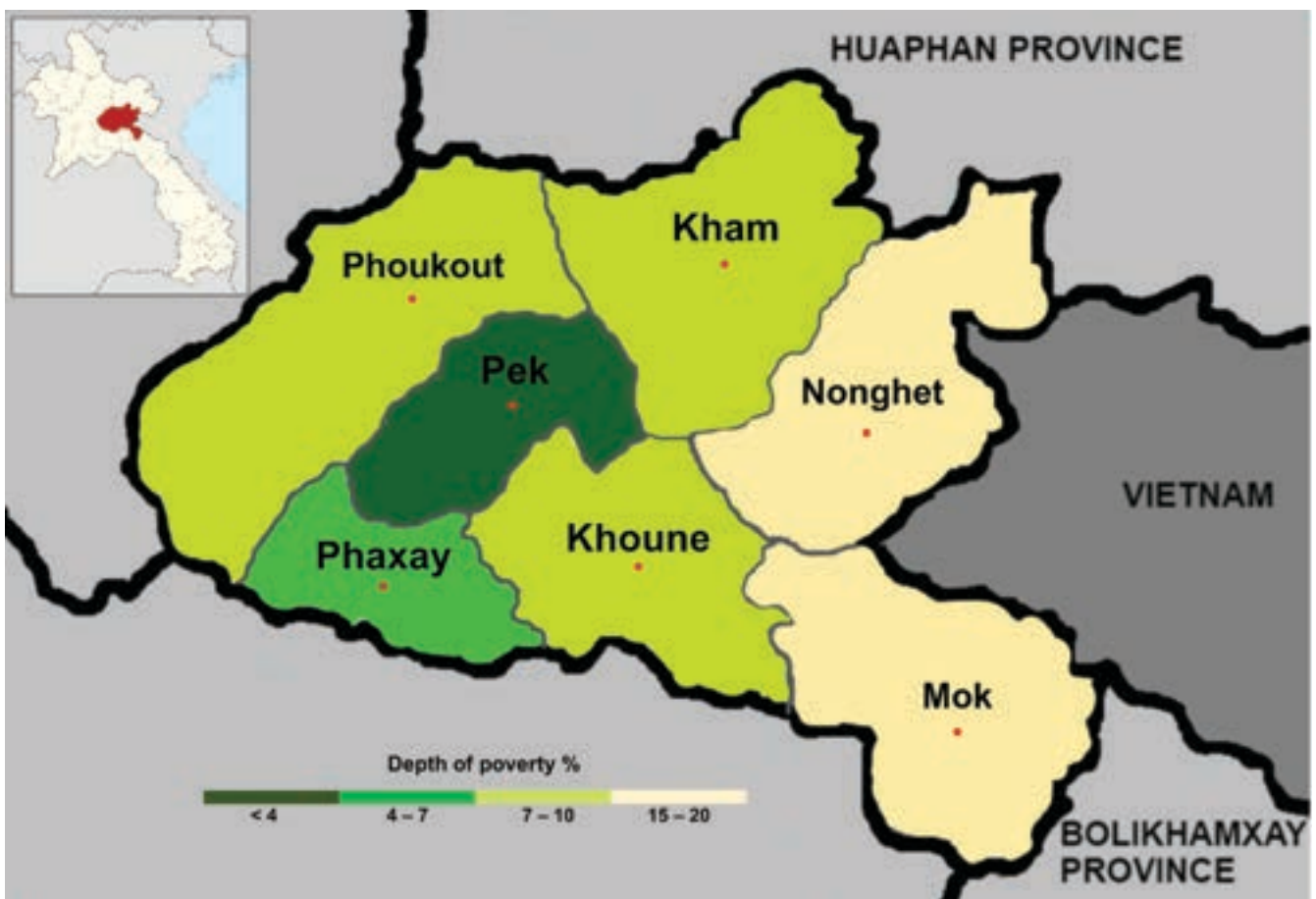
The project worked with traders, processors, farming microenterprises, and startup entrepreneurs. Many of the startup entrepreneurs were farmers who also started a new agricultural business providing a service using agricultural technology in which they invested. To build sustainable relationships between farming and agricultural microenterprises, traders, and processors, it was important that each actor had a shared understanding of skills. This enabled them to understand their role in the supply chain, evaluate value added opportunities, and determine whether their engagement was valuable enough to continue season after season. This approach became a self-sustaining cycle of growth whereby improved communication between stakeholders and investments which reduced operation costs fostered further broadening and increased engagement in value chains.

XIENGHOUANG PROVINCE

The project was implemented in Xiengkhouang, a northern province in Laos 350 km from the capital, Vientiane. With an estimated population of 245,000 in 2015, the average household has 5.9 people, and for 72% of the adults in these families, agricultural activities are their main source of income. Xiengkhouang shares a border with Vietnam and the main official border crossing in Nonghet district is 143 KM from the provincial capital. In total, there are seven districts with varying degrees of economic development and poverty. Notably, 60–90% of the land is considered hilly to steep and is only suitable for upland farming.

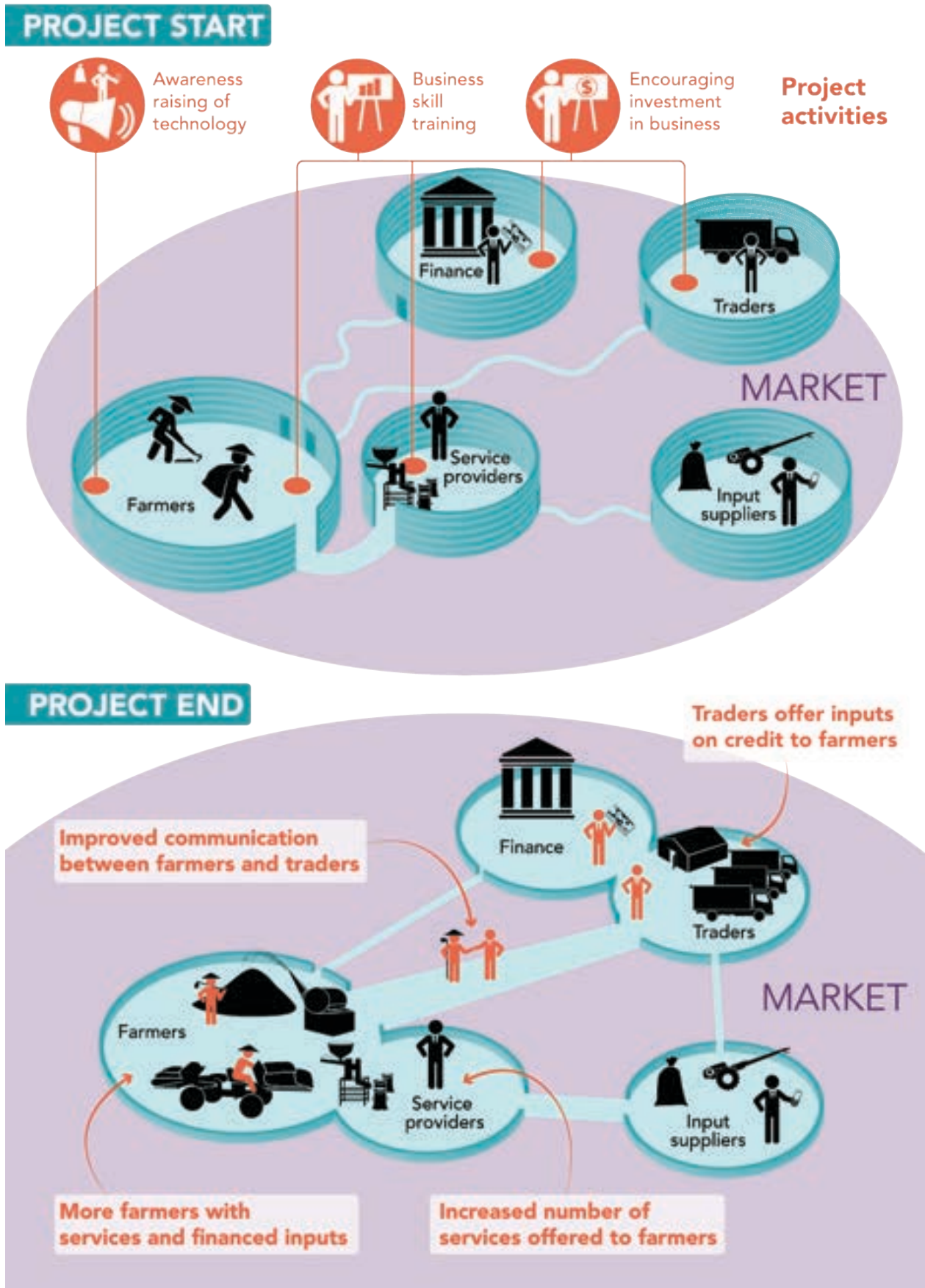
The main ethnic groups in Xiengkhouang are the Lao Loum, Hmong, and Khmu. Based on data collected, 52% of those who attended trainings were Lao Loum, 33% Hmong and 10% Khmu. The remaining 5% accounts for other ethnic groups.

Figure 1. Map of USAID Laos Microenterprise’s zone of influence: Xiengkhouang Province



USAID LAOS MICROENTERPRISE ACHIEVEMENTS

Figure 2. Graphical representation of project activities and changes which occurred during implementation



USAID LAOS MICROENTERPRISE IMPACT



~36,000
agricultural microenterprises benefitted
(of which **99%** were farmers)



~7,800
farming microenterprises
reduced their operation costs



~6,200
farming microenterprises negotiated
better sales



2,713
people with old age eyesight
disabilities provided glasses and
increased incomes by **~59%**

NEW INVESTMENTS IN VALUE CHAINS

~\$2.48 million

- ~\$1.72 million by private sector
 - ~\$244,000 by startup entrepreneurs
 - ~\$1.48 million by traders and processors
- ~\$755,000 by USAID
 - ~\$195,000 in startup entrepreneurs
 - ~\$476,000 in traders, processors and banks
 - ~\$83,000 in eyeglasses

24
types of investment

- ~\$1.68 million (USAID ~\$472,000) agriculture reaching
 - ~17,100 farming microenterprises
 - In **2023** agricultural grantees purchased **~41,400** metric tons (MT) of commodities at a value of **~\$15.4 million**
 - In **2023/2024** season generated **~\$532,000** service sales
 - ~6,000 farming enterprises paid for new services from **155** startup entrepreneurs
- ~\$798,000 (USAID ~\$280,000) handicraft reaching
 - ~11,000 women mainly from farming microenterprises
 - In **2023** **~803,600** pieces of material purchased from weavers valued at **~\$6 million**

FARMING MICROENTERPRISES TRAINING RESULTS

11,340
trainees

- 51% female** (~5,780)
- 49% male** (~5,560)

82% of participants are still using one or more tools up to three years after training

83% of farming microenterprises increased incomes

~7,750 farming microenterprises changed their activities to increase their income

~4,090 men increased household support working between **60–90** minutes on tasks previously carried out by women (leaving more time for women to weave / embroider)

CHANGES IN LARGER BUSINESSES



~55%

expanded sales to outside of the province

- ~8% expanded sales to export internationally
- ~35% changed how they engage with their buyers, specifically they are more strategic and structured in how they sell and in how and when to collect payments



~75%

passed knowledge on to farmers (seed selection, planting and post harvest storage) and weavers (product quality)



~51%

have changed how they work with the farmers and weavers they engage with, mainly around planning and organization of activities



~71%

started keeping detailed records, calculating costs and assessing cash flow

- ~15% started a new business because the new skills made them more confident
- ~55% made changes to their business strategy and how they manage their activities

CHANGES IN MAIZE TRADERS BUSINESSES



~54%

increase in number of farmers in their network, on average the network per trader is now 252 farmers receiving inputs



~23%

increase in customers who buy their products

CHANGES IN WEAVING BUSINESSES



~37%

increase in number of women in networks, on average the network per businesswomen is now 307 women supplying materials



~61%

increase in customers who buy their products

USAID LAOS MICROENTERPRISE LEARNING AND ADAPTATION

5 learning briefs highlight project approaches and innovations over the life of the project.

Systematic data collection **enabled key implementation improvements**



25% more women participated when training moved to mornings

→ [READ ON](#) P7

Continuous testing and adaptation refined **training effectiveness**



97% of farmers adopted at least 1 business skill

→ [READ ON](#) P8

Videos **boosted adoption of agricultural machinery**



32% of participants adopted new technology after seeing promotional videos

→ [READ ON](#) P9

A game **shifted gender norms and family roles**



66% of men took on 60 minutes of women's tasks, enabling an increase in household income

→ [READ ON](#) P10

Eyeglasses **raised household productivity**



59% increase in household incomes after introducing eyeglasses

→ [READ ON](#) P11

SYSTEMATIC DATA COLLECTION TO DRIVE DECISION MAKING

Since the inception of USAID Laos Microenterprise, the Chief of Party emphasized the importance of putting in place simple processes that allowed for systematic collection of data.

Increasingly, donors seek greater accountability and may request data from implementers proving who has been trained, what they were trained on, and how the target population benefited from the training. Provision of such information is near to impossible without systems in place that allow data collection traceability. At the same time, the traceability systems must be affordable, easy to use, and include multiple functions based on staff and project needs. USAID Laos Microenterprise implemented the use of **QR codes on lanyards to capture data both for project implementation and management**. The project team developed simple forms which were accessible on a cell phone; an individual simply needed to select the event, scan their QR code, and using data or wifi, the content was transmitted to the cloud and saved on the project's database. On the project implementation side, all participants scanned their QR codes at project activities, such as trainings. The team was able to track who attend trainings, which sessions, and even who was their trainer.

On the project management side, the QR code system allowed the team to track staff, travel, M&E, track fuel consumption and maintenance needs of motorbikes (rather than paper records), and also to track when Government of Laos representatives participated in events and needed to receive daily subsistence allowance payment (which was transferred directly into a bank account every week).

The systems significantly reduced the paperwork required by team members, many of which were not used to paperwork.

In sum, the QR system allowed the project team to know who was involved in any activity, where it took place, when it happened, and what they learnt.

What did the team do with the information collected?

When the annual survey of participants was conducted, the project team knew exactly who attended what sessions, which allowed the M&E team to tailor its survey to check what they learnt against the relevant training sessions the participants completed. The team analyzed the data by trainer; when results were equally bad, the team recognized the need to revise the tool or training module. When the participants from one particular trainer had results lower than others, the trainer's capacity was checked and, if needed, improved.

A key outcome from the data collection was the finding that **women's training attendance reduced by 20% or more if held after 3pm in the afternoon**; as a result, USAID Laos Microenterprise shifted all trainings to the mornings so that more women could attend. Overall, 52% of participants were women.

What is critical for other implementers to consider?

M&E falls into two categories; i) capturing data to report on indicators and ii) analyzing data and making decisions based on the results. It is unrealistic to think that M&E staff can always do both; it may be most efficient to hire in expertise for data entry, cleaning, and analysis. Recognizing that there are limited professionals available for hire in Laos with M&E expertise, it is important to be persistent in looking for individuals with the right set of skills.

EFFECTIVE BUSINESS SKILLS TRAINING

CHALLENGE | *The problem we observed*

Training is a standard activity INGOs implemented in Laos (and globally). INGOs often perceive that we know how to train effectively. However, even a very basic training can have cultural biases which make it incomprehensible in another country.

In Laos, the majority of our target trainees are adult learners who have not attended school for over 20 years and may be considered illiterate. At the same time, these trainees have been economically engaged for most of their lives and are not interested in being treated like school children. Yet trainers in Laos tend to prefer lecture-style approaches rather than engaging training methodologies, which are proven to be more effective with adult learners.

SOLUTION

Our tactic to address the problem

USAID Laos Microenterprise developed a set of simple business training modules for illiterate learners (although 86% were numerate), relying upon images to portray key messages. The team went further and tested the visual messaging to ensure that the trainees understood the content. A key learning was that not all images translate across cultures.



Chicken icons tested prior to training

The image of a chicken on the left did not resonate in Laos. Through testing, the team learned that the image on the right was more effective.

In addition, the team registered in their M&E system which farmers came to which trainings, who were the trainers, and what were the changes in behavior or adoption rate by the microenterprises. Access to this data allowed the project to recognize when certain modules needed to be completely re-designed or when trainers' skills needed to be built.

IMPACT

The resulting change we measured or observed

The business skills training proved to be impactful with high adoption. A specific tool to help plan household expenses saw an 81% adoption rate and three years later, 79% of those who adopted it, were still using the tool.

The process itself is notable. Continual testing and adaptation of the material resulted in a high quality, impactful product. The adaptive process also allowed the team to recognize where the project's own trainers needed to improve their delivery and facilitation skills. This emerged as critical and very few projects track the impact or adoption of training modules back to the trainer level, highlighting the need to improve weaker trainers. The project learned the importance of training in local languages, the use of facilitation styles that rural villagers connect to, and appreciation of hand-drawn materials that villagers found more digestible. In addition, post-training follow-up is critical to understand which tools and methodologies are most adopted and remembered by trainees.

ADOPTION OF AGRICULTURE TECHNOLOGIES

CHALLENGE | *The problem we observed*

In Laos, as well as globally, agricultural technology adoption by smallholder farmers is a common challenge. This is not because farmers do not want to adopt new practices, but often because of the high risk associated with paying for expensive technologies, a lack of customer-oriented input suppliers, a lack of financial skills to appropriately cost the technology, and a lack of knowledge of possible useful technologies for their unique farming context / environment.

USAID Laos Microenterprise engaged equipment suppliers in Laos to take a more customer-oriented approach, such as going out to communities and the development of simple videos (via a grant) to share information with farmers and market their products. However, the equipment suppliers were not interested. Further, the Covid-19 pandemic exposed supply chain challenges, resulting in a shortage of international equipment in Laos.

SOLUTION | *Our tactic to address the problem*

USAID Laos Microenterprise identified locally available machines (in the provincial and country capitals) and developed a price list. At the same time, the team collected 42 short videos available on YouTube and other platforms and acquired projectors, speakers and sheets for screens to play the videos in communities. The team developed short scripts with local consultants who could speak Lao, Hmong, and Khmu.

Next, meetings were held in villages in the mornings (for higher women attendance) and open to all. Villagers chose which of the videos they would like to watch. The local consultants explained the benefits of the improved machinery and presented the idea of service provision in order to mitigate the high cost of the machine for use on one's own farm only. In addition, service provision would allow more farmers to have access to the improved technology (at a fee). Farmers were offered trainings, including on how to cost a machine for service provision to ensure a profit.

IMPACT | *The resulting change we measured or observed*

The village-based meetings engaged farmers, including women, who were particularly active in discussions about machinery, when conducted in local languages. As a result of engaging farmers at the village level, new machines were purchased, including machines new to the province such as maize and rice harvesters.

Service provision from microenterprises increased by 96%. Approximately 50% of villages now have a tractor service available, and access to threshing services doubled from 15% to 34%. ~32% of farmers went on to hire, rent or buy a technology they had seen in videos.

Overall purchases of agricultural inputs from inputs suppliers also increased from 10% of farmers sourcing inputs from village shops in 2020 to 47% in 2023. In addition, there has been an 8-fold increase in availability of inputs in shops in the villages. Despite these increases, equipment and agri-input suppliers in Laos still lack a willingness to adopt customer-oriented growth strategies, an opportunity for other projects to continue to influence.

CHANGING GENDER BEHAVIOR WITH GAMES

A key learning from USAID Laos Microenterprise is that families will shift their traditional gender roles when presented with a compelling economic rationale. Early in the project, a time use study was conducted to better understand what activities men and women performed throughout the day and how these differed among the main ethnic groups. After reviewing reports and analyzing data, the project team hypothesized that if men (including male youth) supported their wives and/or daughters to complete household tasks traditionally taken on by women (such as feeding chickens), the women would have more time to dedicate to handicrafts (weaving and embroidery), which are important income generating activities in the main ethnic communities. Rather than going out to villages and telling men to adopt these behaviors, the project team developed a simple, yet highly effective and practical game to demonstrate the potential to both men and women, allowing them to realize the economic potential for their own households if women had more time to dedicate to handicrafts.

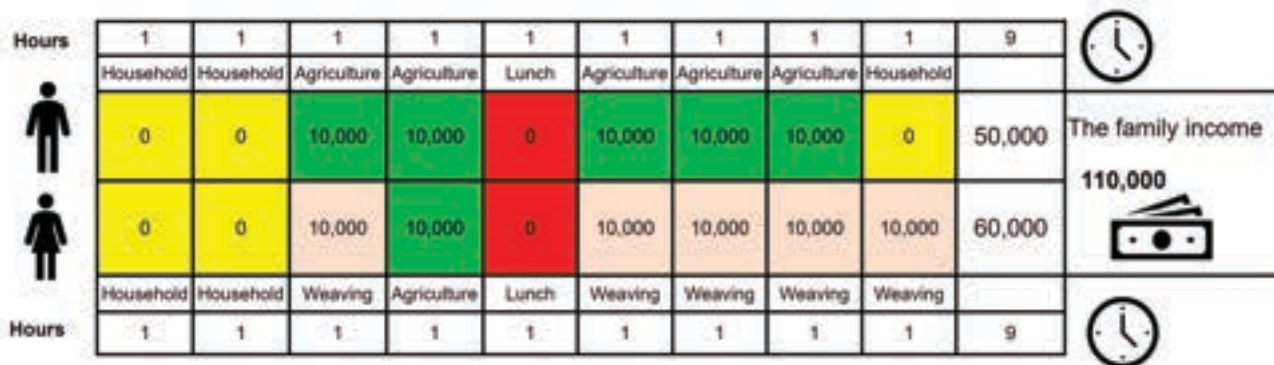


Women adding the tasks during the day to the calendar

The Earning More Income for the Family game was developed and introduced in trainings being conducted in villages with both men and women. The premise of the game is that participants allocate labor towards income generating activities, care responsibilities, and household maintenance activities in different combinations to see the impact on their family income. The key learning objective of the game is the realization by the participants that a man can take on tasks normally reserved for women. After playing the game, participants went home and discussed the key takeaways at home within the household, and, as a result, 66% of participants reported that men began to take on more tasks previously done by women. The game provided a clear entry point to introduce concepts related to workload sharing, women’s labor burden, and gender norms in an approachable way for all participants and non-threatening for male participants. As a result, substantial numbers of men and women across the different ethnic communities that USAID Laos Microenterprise worked with **reported changes in task allocation and men’s engagement in household management and caretaking tasks**. These changes are linked to the efforts USAID Laos Microenterprise made to develop training activities that are based upon a contextual understanding of gender norms and gendered power relations.

Tasks that men began to take on included cooking, washing the dishes, raising small livestock, cleaning the house, and gardening, taking 60 to 90 minutes. By men taking on these tasks, women’s work hours did not reduce, but rather their time was reallocated to income generating weaving or embroidery.

Figure 3. Games help men take on traditional women’s tasks



INCREASING PRODUCTIVITY WITH EYEGLASSES

USAID Laos Microenterprise emphasized quick testing and piloting to try out new approaches. By piloting innovative approaches, the team was able to be nimble and adaptive to findings. Here is a case example of how distributing eyeglasses to women weavers boosted their incomes.

In Laos, particularly in the Lao Loum ethnicity, women on traditional looms weave lengths of handcrafted material, which are made into customary women's skirts, called a sihn. From a young age, girls observe their mothers and learn how to weave. This livelihood is important because weaving provides consistent income each month, while crops and livestock are seasonal and less frequently brings income. Weaving incomes keeps the family going throughout the year.

As women age and their eyesight diminishes, their income also diminishes. By the age of 50, many women can no longer weave. "When I was young, I could produce over 40 lengths a month. Now, my eyesight is less clear, and I maybe manage 30. I make more mistakes and have to redo some of the work," remarked one project participant.

Laos Microenterprise decided to test a potential solution to this challenge, impacting the economic opportunity of many households. The project tested the eyes of 1,360 women (ages 18-55) who weave for business. The results revealed that 61% of weavers needed corrective glasses; 62% of those aged 30-39 and 99% of those over age 40. After receiving corrective eyeglasses, these women became more productive and their incomes increased 59%, on average. Income earned from weaving was spent on household and farming expenses, as well as school costs for those women between the ages of 40-49. Based on positive results of the initial pilot, the project provided eyeglasses to 2,713 individuals, 97% of which were women. The estimated total income increase is the equivalent of US\$720,000 annually.

Of the women who received eyeglasses, 97% reported using them. The main benefits reported include

- 1 Seeing the pattern clearly
- 2 Seeing the threads clearly
- 3 Seeing colors clearly
- 4 Working more accurately
- 5 Working longer hours
- 6 Tying broken threads more easily
- 7 Using a smartphone and reading

All women who wore eyeglasses reported an improvement in the quality of their woven product. In fact, 66% of the weavers said they would pay an equivalent of USD 20 to replace the eyeglasses if they broke.

By testing and piloting the use of eyeglasses to improve incomes of the targeted participants, the project was able to identify a lasting solution to support the livelihoods of women and their households. Women have been able to regain their economic importance in the household.

Figure 4. USAID Laos Microenterprise eye glasses results



USAID LAOS MICROENTERPRISE MARKET ACTIVITIES

USAID Laos Microenterprise designed activities around a private sector driven market systems approach. The team strove to create sustainable economic growth through improving the relationships and trust between farming enterprises, traders and processors and stimulating the growth and integration of a service industry at the community level. The project promoted improved trust and communication between stakeholders based on a new understanding of mutual and equitable profits. We used a package of technical assistance and the partnership fund (a grant mechanism) to mitigate risk, catalyze private sector investment, and accelerate both growth and farming microenterprise engagement. These startup entrepreneurs, traders and processors pulled more farming microenterprises into their supply chains and improved cash flow. At the same time, we pushed farming microenterprises toward commercial viability and improved decision making through the transfer of financial literacy and entrepreneurship skills, access to technologies and services, and economies of scale.

1 WE IMPROVED STAKEHOLDERS' ABILITY TO RESPOND TO MARKET DEMANDS THROUGH

- Developing a range of targeted capacity building activities to improve business skills and financial literacy of all stakeholders
- Improving the knowledge of technologies that improve the efficiency of farming activities and how to price them as a service
- Using the partnership fund (a grant mechanism) to stimulate the adoption of new services and expand the capacity of traders and processors to increase buying, processing, packaging, and transport from growing networks of farming microenterprises

2 WE INCREASED FARMING MICROENTERPRISES' ACCESS TO FINANCIAL RESOURCES THROUGH SAVING AND CREDIT UNIONS BY

- Improving current and developing new farm-based loan products and lending processes, credit management and marketing

3 WE REDUCED BUSINESS OPERATING COSTS THROUGH

- Empowering startup entrepreneurs in rural communities to pursue new service orientated opportunities
- Providing information on technologies that improve farming activities
- Providing training on how to start and price such services
- Using the partnership fund (a grant mechanism) to stimulate startup entrepreneurs to invest in offering a new service for farming microenterprises in their communities

4 WE IMPROVED ACCESS TO MARKETS THROUGH THE ACTIVITIES ABOVE AND BY

- Stimulating an ongoing and improved public-private dialogue, giving a range of microenterprises, traders, and processors a voice in provincial and district discussions on enabling environment constraints

USAID Laos Microenterprise transformed rural markets and drove the growth of more efficient, effective, and competitive farming microenterprises; startup entrepreneurs providing agricultural services; traders; and processors through these activities.

IMPROVED ENTREPRENEURIAL KNOWLEDGE AND SKILLS

An important message to all stakeholders is that farming is a business. The USAID Laos Microenterprise project provided farming microenterprises with training in essential basic business and financial literacy skills such as cost calculation, profit analysis, negotiation strategies, understanding buyer needs, and household expense calculations. This equips them with the knowledge and tools required to independently manage their farms and increase their incomes. Along with these skills, startup entrepreneurs, family businesses, and Government of Laos (GOL) staff received training in cash flow, costing equipment, and operations. For those businesses with the potential for online sales, training on how to use Facebook and WhatsApp as a marketing tool increased access to new markets. For social media training it is important to note that trainees who brought a household youth (son or daughter) could apply their knowledge faster and more efficiently.



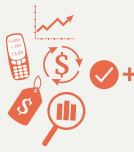
Example of a participant identifying what they farm

LIFE OF PROJECT RESULTS AND IMPACT



11,340

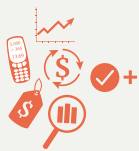
farmers trained on Farming as a Business and or Businesses Supporting Farming in **405** villages across **7** districts



THE MOST POPULAR TOOL

is the household expense tool; two years after receiving training on the tool, **79%** are still using it (only a **2%** drop in **2** years)

After receiving business trainings Farming as a Business and Businesses Supporting Farming



97%

farmers used one or more tools

- Up to three years later, **90%** are still using one or more tools
 - **50%** are still using eight or more tools
- **5 – 11%** shared their new knowledge with someone outside of their household

Figure 5. Business training results of farming microenterprises



INCREASED ACCESS TO IMPROVED TECHNOLOGY AND INNOVATION

In rural locations, farmers often are unaware of the technologies that are available in their main provincial town or in the capital. Instead of taking farmers to see technologies being used in the fields, the project provided video demonstrations for 42 different agricultural technologies to 355 villages. The videos also included digital banking services provided by the national bank, Banque Pour Le Commerce Extérieur Lao.

Working with 15 private sector maize traders, the project supported 25 maize demonstration plots across two districts. Farmers learned firsthand that proper seed spacing not only reduces the cost of seeds, but also increases yields when the plants have enough space to grow well.

LIFE OF PROJECT RESULTS AND IMPACT



6,311

farmers (49% female) participated in technology video demonstrations in 355 villages



~\$826,300

worth of maize seed (~28 MT) distributed by maize traders since 2022



60%

farmers indicated they would use the string and knot system to improve planting



25%

increase in maize yields from proper seed spacing demonstrations



~32%

farmers adopted at least one new technology presented in the videos



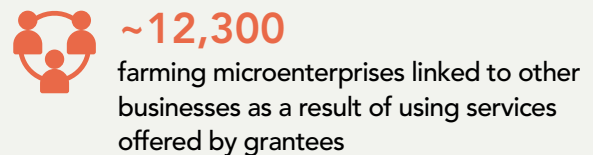
An agricultural technology video demonstration at village level

IMPROVED VALUE CHAIN INFRASTRUCTURE & ACCESS TO MARKETS

The project identified private sector partners working in commodities and products with the potential to grow if systems and infrastructure were improved. Using the \$800,000 partnership fund (a grant mechanism), the project worked mainly with family run businesses by identifying bottlenecks which could be addressed through improved technology. This resulted in improved and more inclusive relationships with rural microenterprises. For a detailed look at these investments, go to page 23.

LIFE OF PROJECT RESULTS AND IMPACT

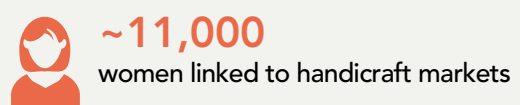
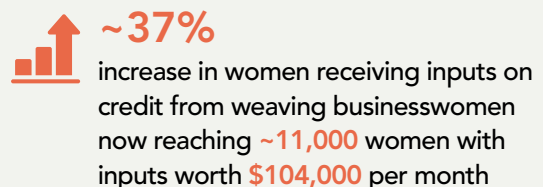
The project catalyzed **\$2.48 million** new investments in value chains



AGRICULTURAL INVESTMENTS



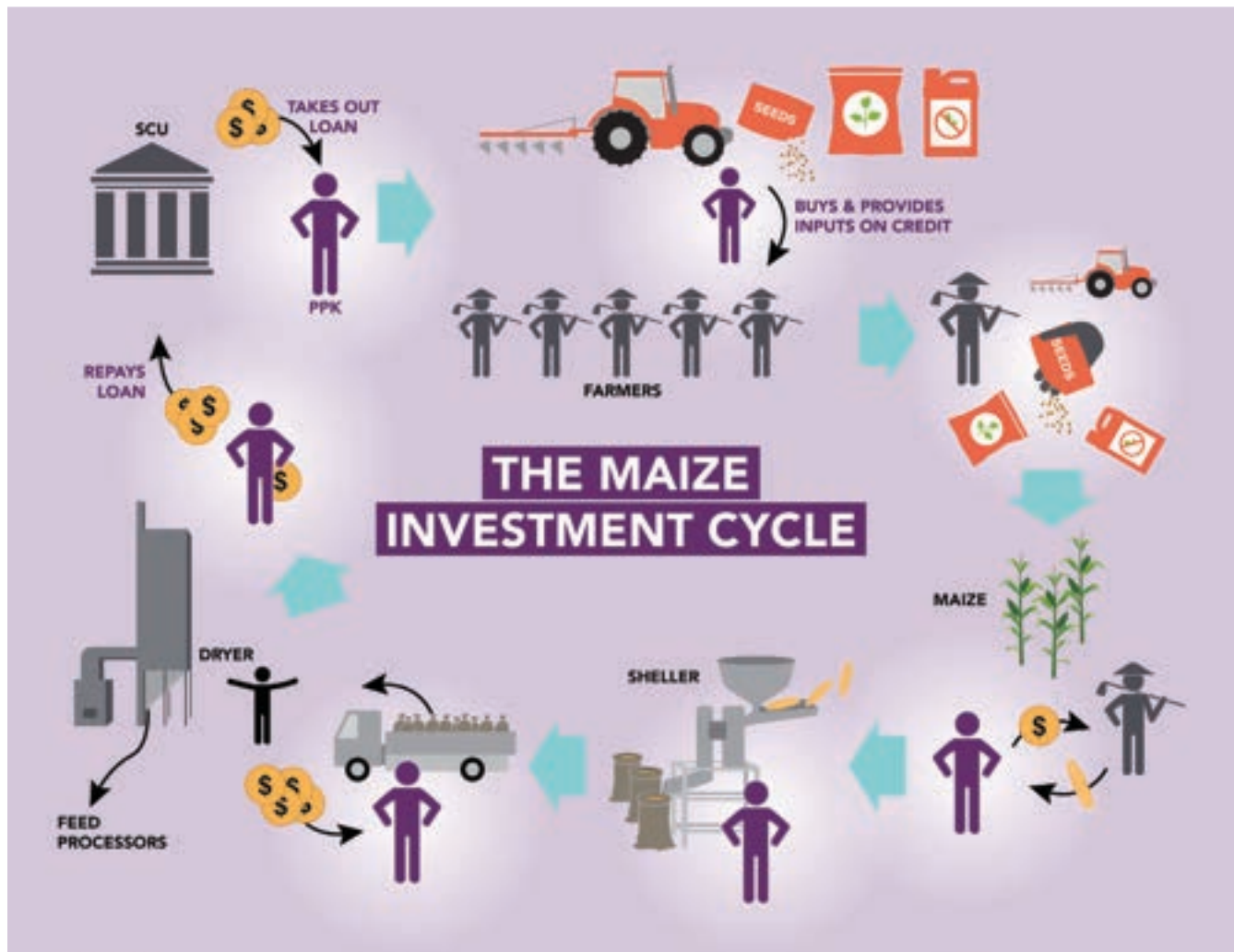
HANDICRAFT INVESTMENTS



INCREASED ACCESS TO FINANCIAL RESOURCES

Implementation efforts led by USAID Laos Microenterprise, in collaboration with three savings and credit unions (SCUs) and one bank across four districts, were instrumental in improving financial accessibility and supporting agricultural ventures. The SCUs were trained and supported with innovative loan policies and tailored financial products. This resulted in an increase in farmers' access to loans with repayment schedules aligned with agricultural cycles. Notably, a new loan product piloted during planting seasons and offered by the SCU to the traders facilitated an increase in farmers having access to farming inputs with repayments linked to the sale of harvested produce.

Figure 6. The maize investment cycle



LIFE OF PROJECT RESULTS AND IMPACT



SAVING AND CREDIT UNIONS

lent ~\$752,000 to 551 borrowers (mainly farming microenterprises) using improved loan products since 2021

REDUCED BUSINESS OPERATION COSTS

The Agents of Change Program, spearheaded by USAID Laos Microenterprise, played a crucial role in driving significant advancements within local farming communities. The project targeted startup entrepreneurs, normally farmers, who were willing to risk investing in new agricultural technology to provide a service not currently available in the community. They were supported with both training and through the partnership fund (a grant mechanism) where USAID contributed to the investment cost. By investing in critical value chain infrastructure and cutting-edge agricultural technologies, such as rice harvesting equipment, small-scale rice threshers, Lod Xings (specialized rugged transport vehicle) for crop transportation, feed compressors, maize shellers, maize planters, grass choppers, and agricultural machinery repair services, these startup entrepreneurs were able to provide vital support to a network of approximately 6,000 farming microenterprises, each serving over 10 – 60+ farming enterprises. This widespread initiative not only catalyzed significant improvements in agricultural productivity, but also generated substantial economic returns, with startup entrepreneur grantees collectively earning approximately \$316,500 through the diverse array of services rendered.



A startup business provides rice harvesting

LIFE OF PROJECT RESULTS AND IMPACT



155
new services offered in villages



~6,000
farming microenterprises paid
~\$317,000 to service providers



30-75%
startup entrepreneurs' incomes
generally increased between 30-75%



83%
service providers will continue the
service with another 12% most
probably continuing



~\$436,000
startup entrepreneur investment



~16,500
loads (~16,500 MT – 24,000 MT)
transported from fields to villages



11%
startup entrepreneurs offered additional
services linking farmers with buyers

IMPROVED PUBLIC AND PRIVATE STAKEHOLDER DIALOGUE

At provincial and district levels, the private sector has few opportunities to discuss the impact of policies and regulations with the government. USAID Laos Microenterprise undertook a strategic approach to bridge the gap between these stakeholders through the provision of trainings on how to communicate more effectively to both sets of stakeholders. This was followed by district level dialogue meetings where both sets of stakeholders came together to discuss issues without the expectation that they would be immediately resolved. Open dialogue resolved simple issues such as receiving copies of recent transport rules. The private sector demonstrated their commitment to continued participation.

Despite support from both the project team and the National Chamber of Commerce and Industry the efforts to encourage an active Xiengkhouang Chamber of Commerce and Industry failed to achieve results.

LIFE OF PROJECT RESULTS AND IMPACT



20

issues that impacted business competitiveness were agreed on at district meetings and were then raised in provincial and national meetings



544

public and private stakeholders participated in business enabling dialogue



TRAINING

44 public and **103** private stakeholders participated in communication training



OVER 76%

private sector representatives would pay their transport costs to attend the meetings, **62%** would pay their own accommodation costs



Businesses and officials discuss cattle business enabling environment issues

BRIEF SUMMARY OF OTHER INITIATIVES

Agricultural Product Fairs

USAID Laos Microenterprise supported four agricultural product fairs alongside other local events, including the national five-year games held in Xiengkhouang in 2022, annual blossom events in Nonghet, and the provincial Hmong New Year event in 2024. Approximately 45,000 people visited the events and over 60 stallholders sold various products including woven sinhs, honey, metal products, ginger and turmeric infusions, chili paste, coffee, tea, noodles, seasonal vegetables, and frogs, among others.



Stallholders promoting their projects on Facebook Live at a project-supported agricultural product fair

Through targeted interventions such as technical assistance, packaging upgrades, and comprehensive online sales strategies, these microenterprises experienced substantial increases in their sales and market reach. At the events, enterprises supported by USAID Laos Microenterprise made over \$118,550 in sales and have continued to use Facebook as a new sales method, reaching more people outside the province and even outside the country than before. For example, one vendor who sold excellent quality Khao Koi Noi rice at the blossom fair in Nonghet met a buyer from Vietnam to whom she now regularly ships rice and still cannot meet his demand for her product.

Competitions

The project held two competitions at the Hmong New Year fair. **The Meaty Cattle Competition** promoted the production of meat as quickly as possible and gently reminded farmers and traders that customers pay more for a meatier cow than a more beautiful one. The competition, open to cows and steers, was judged at the district level, with district winners attending the fair in January.



A fattened cow receiving the cow competition's best in show and meatiest beast prizes at Hmong New Year



The winner of the Innovative Handicraft Competition wearing her entry

The **Innovative Handicraft Competition** encouraged businesswomen operating in the handicraft industry to submit products they had not produced before. Artisans submitted 12 new pieces ranging from handbags, ties, and clothing. The winner was the youngest businesswoman grantee who took over her grandmother's network of weavers and combined Hmong and Laos fabrics and styles in her outfit.

Networking Events

Lao businesses are not well connected. They often do not know who is doing similar work in a nearby district. Business growth is supported by a network of contacts which helps with information and opportunities. To help local businesses grow their own networks, the project held several networking meetings and encouraged networking at business trainings. This resulted in maize traders meeting seed suppliers and ordering enough seed for the upcoming seasons. Through these networking events, maize traders sourced new equipment and lent it on credit to their farmers, two businesses met with a builder of maize dryers, new trading contacts were made, weaving businesswomen created business contacts outside of their province, and helpful links were made to the government tax authority.



Sharing contacts at a networking meeting for business women

Economic Recovery

To mitigate the negative impacts of the COVID-19 shutdown of the country and its markets, the project worked with GOL counterparts to identify people who lost significant levels of income due to market closures. Grants were given to individuals to help them recapitalize their activities, replace lost inputs, and upgrade equipment they could no longer afford. 74 grants (44% female), 99% funded by USAID valued at \$42,362, were given to individuals to support economic activities including chicken and pig rearing, vegetable and coffee growing, small sewing ventures, restaurants, and one mechanic.

Additionally, 2,713 eyeglasses (97% women) were provided to handicraft people with age-related vision disabilities who were no longer able to work at the same levels as before; 2,055 to predominately Lao Loum weaving artisans, 501 to Hmong embroidery artisans, and 157 to tea farmers (~75 men). See learning brief page 11.



A woman grantee is selling her first 6 pigs



Vegetables ready for harvesting for sale

Gender and Inclusion

Gender: 51% of people attending all trainings were women. To ensure women's attendance, trainings were arranged in the mornings, starting generally before 9 am, and trainers spoke the main local languages (Lao Loum, Hmong, Khmu, Phong).

39% of all businesses supported were women-led, and 30% of startup entrepreneurs were also women. Most businesses involved both the husband and wife; the men generally doing the activities (86% of the time), while the women supported administration. In 71% of businesses, the women support their husbands with financial management.

While the whole family is often involved in the planting and harvesting of the main grain crops, sales are generally reported in the senior man's name. 78% of sales of agricultural commodities were reported to be made by men, and 22% by women. Notably, 10,780 women were supported with equipment upgrades by the weaving businesses.



Business skills training at the temple



Women practicing business skills activities

Youth: 30% of people attending all trainings were between the ages of 15–29. People under the age of 30 ran 14% of businesses supported by the project. Youth managed 19% of startup entrepreneurs that provided farming services.

People with disabilities were accommodated in two activities. 98 people with disabilities (30% of which were female) attended the business skills training. 2,713 handicraft artisans and a small number of tea farmers (of which 2,638 were women) were provided glasses to address age-related vision disabilities. For more detail, see learning brief on page 11.



A doctor is testing a woman's eyesight

USAID LAOS MICROENTERPRISE INVESTMENTS

INVESTMENTS IN AGRICULTURE

Micro, small, and medium enterprises play an important role in the Lao economy with microenterprises accounting for around 99% of registered firms. They also make up the bulk of the informal economy with an estimated contribution of about 30% of GDP. USAID Laos Microenterprise strengthened the competitiveness of agricultural microenterprises (including family businesses in trading and processing) by building their knowledge and skills to respond to market needs; increasing access to finance, agricultural equipment, technology; and establishing market linkages between farming microenterprises, startup entrepreneurs, and buyers.

The project collaborated with a diverse range of private sector businesses working at different levels of the supply chain for a range of products. The different sectors include maize, rice, cassava, Job's tears, ginger, vegetable, cattle, chicken, frogs, and weaving (both for clothing and polypropylene bags for packaging commodities). Many of these businesses played a crucial role in facilitating the production of commodities by supplying inputs and aiding in the buying and selling process on behalf of the farming microenterprises with which they collaborated.

Maize sector investments were the most comprehensive covering planting activities such as supporting seed multiplication, demonstrations of improved seed planting techniques and land preparation including weed clearing, ploughing, and seed planting. Investments in post-harvest activities included shelling, drying, and storage.

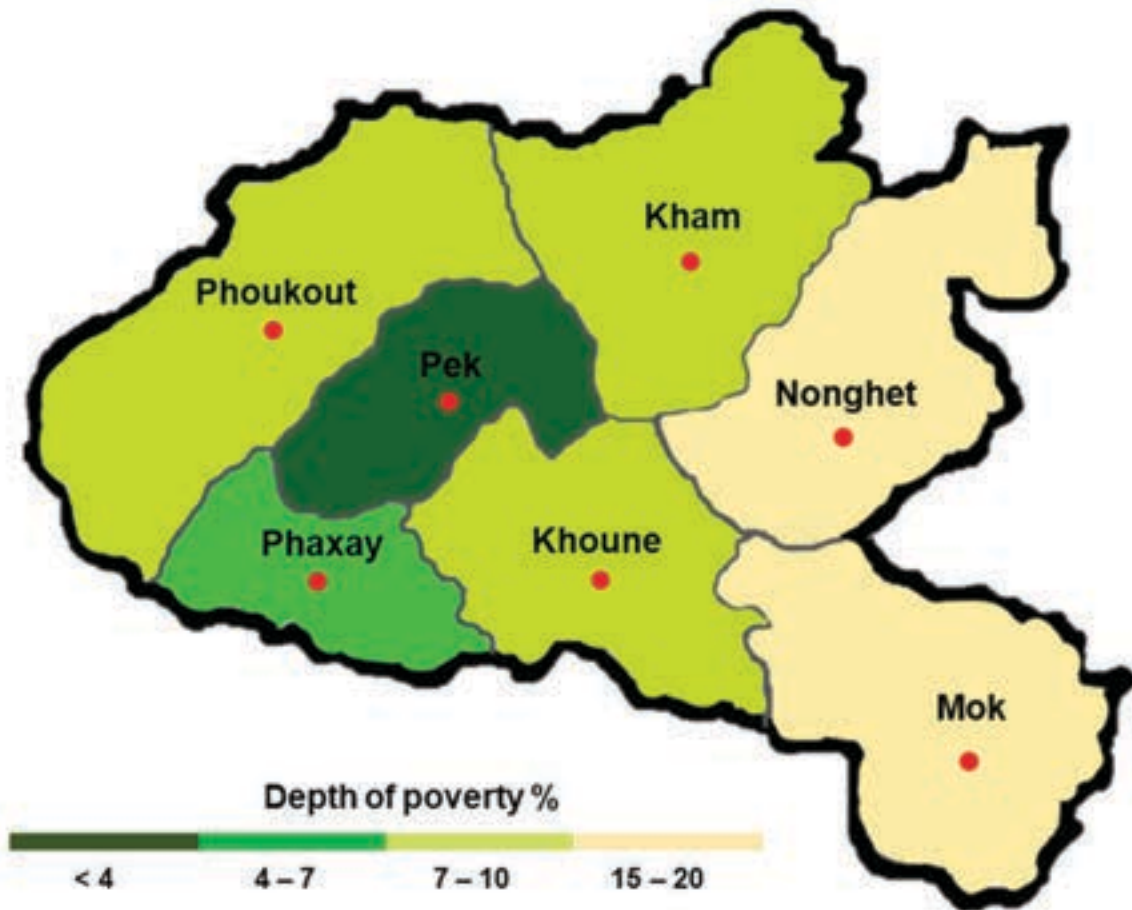
Rice sector investments focused on harvesting, threshing, and grading and sorting for higher quality markets.

In addition to supporting existing businesses, the project supported an additional 152 startup entrepreneurs and 3 groups to engage in agricultural technology services to support farming activities.



Slightly hilly fields being plowed to plant maize

Figure 7. USAID investments in Xiengkhouang



Pek	Phaxay	Kham	Phoukout	Khoune	Nonghet	Mok
Maize	Maize	Maize	Maize	Coffee	Maize	Maize
Rice	Rice	Rice	Rice	Rice	Rice	Rice
Tea	Job tear	Cattle	Cattle	Vegetable	Cattle	Cassavas
Cattle	Cattle	Lodging	Pig	Cattle	Lodging	Cattle
Fish	Frog	Feed	Chicken	Pig	Feed	Chicken
Chicken	Lodging	Weeding	Lodging	Chicken	PP bag	Lodging
Lodging	Weeding	PP bag	Feed	Lodging	Weaving	Feed
Weeding	PP bag	Weaving	Weeding	Noodle		Weeding
PP bag	Weaving		Repair	PP bag		Repair
Weaving	Embroidery		PP bag	Weaving		PP bag
Embroidery			Weaving			Weaving



MAIZE



Maize planted on hills

Maize, the main commercial crop of Xienkhouang is grown primarily for animal feed and mainly exported to Vietnam and China. Production estimates range from 110,000 - 150,000 MT. The main planting season runs from March through June, and harvesting takes place from October through February. The Lao maize harvest corresponds with a deficit period in Vietnam and China so it is in high demand especially from smaller animal feed processors who cannot afford to buy the larger volumes typically imported by sea. This results in Lao farming enterprises getting a reasonable price for their maize.



A trader shelling maize

Traditional maize farming is inefficient. Maize is farmed mainly on upland slopes 3–10 km from the farmers' villages. The degree of slope determines whether machinery can be used to plough, till, plant and harvest. Most fields are planted by hand using about 22 kgs of seed per hectare, requiring more seeds than needed. Farmers transport the cobs back to their villages, and traders bring in shellers to shell and transport maize. The maize is often too wet to store or even transport long distances, so it is sent to traders with dryers, who buy the wet maize to dry and sell it.

Maize is harvested on the cob between 20–23% moisture. The cobs are stored until the sheller arrives. At shelling, 20% of the weight of a bag is waste cobs and the remainder is maize. The closer the shelling is done to the fields, the less distances cobs with low to no value are transported, reducing costs. Similarly with wet maize, the closer the dryer, the less distance unwanted water needs to be transported. Not all interventions can be done in the field, but bringing processing closer reduces costs and post-harvest losses.

Summary of Maize Value Chain Investments

Business Owner	Inputs	Maize Demo	Tractors	Weed Cutters	Planters	Shellers	Sheds	Dryers	Investment
Mr. Wat Xayafong	✓	✓	✓				✓		\$ 70,145
Mr. Sivone	✓	✓	✓			✓	✓		\$ 63,188
Mr. Koutsy	✓		✓	✓		✓	✓		\$ 84,825
Mr. Bounkham	✓		✓			✓	✓		\$ 70,757
Mr. Khamta	✓					✓	✓		\$ 17,774
Mr. Xiengbuddha	✓		✓			✓	✓		\$ 70,812
Mr. Khamseng	✓						✓	✓	\$ 60,595
Mr. Maisong	✓	✓			✓		✓	✓	\$ 31,667
Mr. Viengsamai	✓					✓			\$ 5,466
Mr. Wat Seovongthong	✓		✓			✓	✓		\$ 63,883
Mr. Vone	✓		✓			✓			\$ 48,862
Mr. Bounphanh	✓	✓		✓		✓			\$ 7,857
Mr. Bounmy	✓					✓			\$ 7,967
Startup entrepreneurs				✓	✓	✓			\$ 20,058



Bagged maize cobs being stored on the ground under tarpaulins



Tractor Investment: Improved Services

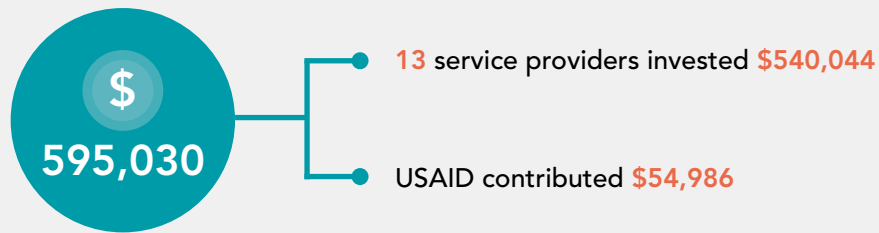
The Kubota tractor M9808 is a new, powerful model designed primarily for land preparation when used with the chisel or disc plow attachments, especially before and during the rainy season so maize can be planted when the soil reaches the appropriate moisture level. Without the tractor, the land must be prepared by hand using a hoe, which is time-consuming and inefficient, often resulting in poor preparation.

At over \$45,000, this tractor is not affordable for small two-hectare farming enterprises. However, these tractors provide an excellent service opportunity where one well-capitalized entrepreneur can provide land preparation services to multiple farmers in one or more communities. The tractor service becomes accessible when the provider offers payment in either cash or crop at the time of harvest, easing the cash constraints of the farmers.



Tractor disc plowing relatively flat land

INVESTMENTS WITH USAID LAOS MICROENTERPRISE FACILITATION



RESULTS IN 2023



13
tractors purchased



~\$273,000
worth of services paid for by
farming microenterprises



~700
farming microenterprises now
paying for plowing service



~1,640
hectares plowed by service
providers

IMPACT

Tractors equipped with plows save on time and labor and enhance soil preparation compared to manual methods. Their use improves crop yields and reduces weed incidence, lowering herbicide use, reducing costs, and increasing income.

Some operators were linked to traders who then distributed inputs (seed and fertilizer) to the tractor operators' customers. Some operators have begun to distribute inputs with their own funds as well.

SUCCESS FACTORS

Tractor operators were embedded in the community, allowing for quick identification of farmers in need of plowing services. Operators were well capitalized individuals, accepting payment either by cash or products at harvest.



Planting Investment: Improved Services



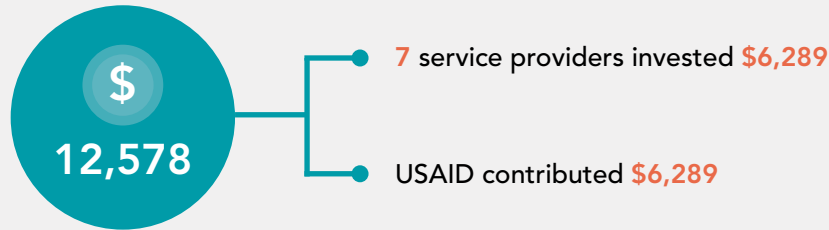
A startup entrepreneur provides maize planting service

Maize farmers have progressed from scattering maize seed by hand to using a hoe to make a depression, dropping in two or more seeds, and replacing the soil over the seeds. On average this method uses about 22 kgs of seed per hectare. However, modern seeds used by farmers recommend planting distances that use 15–18 kgs of seed per hectare to achieve optimum yields.


To increase efficiency and yield, one trader, one tractor operator, and five startup entrepreneurs invested in planting attachments that go on tractors. The trader and tractor operator invested in larger planters, while the startup entrepreneurs purchased smaller add-on machines.

Since the seed planters do not work on land with steep slopes, the project introduced the string with knots concept where a knot is placed every 22 cm approximately (or recommended distance) on a long length of string to ensure optimal planting spacing to increase crop yield and reduce wasting seeds. The farmer simply makes a hole and inserts one seed where the knot is located on the string. The project also worked with 15 maize traders who provided inputs to farmers to develop demonstration plots in two districts (Phoukout and Mok). Farmers were able to compare the higher yields using the string with knots method versus the traditional method. Farmers quickly understood that planting the correct volume of seed per hectare produces the same or greater yield while reducing costs. The traders provided the seed on credit, and if the farmers used the correct volume of seed, the traders provided more inputs on credit to more farmers based on the cost savings.


INVESTMENTS WITH USAID LAOS MICROENTERPRISE FACILITATION




RESULTS IN 2023


 **7** maize planters purchased


 **~\$10,150** worth of services paid for by farming microenterprises

 **25** demonstration plots supported by private sector

 **214** farmers compared proper planting to traditional planting

 **~120** farming microenterprises now paying for planting services

 **~310** hectares planted by service providers

 **25%** increase in yield when maize seed is properly spaced

 **60%** farmers who saw the string and knot spacing demonstration say they will adopt it

IMPACT

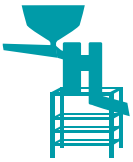
Proper planting distances resulted in higher yields and lower operating costs for farmers.

More farmers were able to receive inputs even though the quantity of inputs remained the same. For every five farmers who received the correct volume of inputs per plot size, an additional farmer could be served because of reduced wastage. Increasing yield per unit of land reduced operation costs and increased profits for both farmers and traders with increased volumes for the same or reduced investment costs.

The farmers now trust the traders who provided them with inputs and the additional demonstration improved farmers' willingness to adopt the new technique.

SUCCESS FACTORS

The improved yield was obvious to farmers on sites which used proper planting distances. The cobs were bigger and heavier.



Shelling Investment: Improved Services



A large maize sheller transported by a Lod Xing to a farmer's upland fields

Maize shelling is a crucial step in the post-harvest handling of maize. Traditionally, at harvest, the maize is still attached to the cob and the cob weight is about 20% of the total weight. The cobs are stored in informal structures near the field before being transported to the farmers' homes in the village (see Lod Xing section on page 62).

If cobs are removed as close to the field as possible, transportation costs are reduced, and consequently, operating costs. Traders, especially those who provide inputs on credit, bring large shellers to the villages that can process 20–30 MT per day. Farmers bring their bags of maize with cobs to the shellers for processing and loading onto trucks which, once full, move to the next stage of the supply chain.

Investors

Phoukout District

Mr. Wat Seovongthong	020 93316216
Mr. Koutsy Milavong	020 55531311
Mr. Xiengboutda	020 55285750
Mr. Bounkham	020 58876717
Mr. Khamta	030 2128887
Mr. Sivone	020 22152260
Mr. Vone Manyvong	020 97412999
Mr. Bounphan	030 2828242

Phaxay District

Mr. Bounmy	030 2838489
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Kham District

Ms. Viengsamai Lorbriayao	020 56768080
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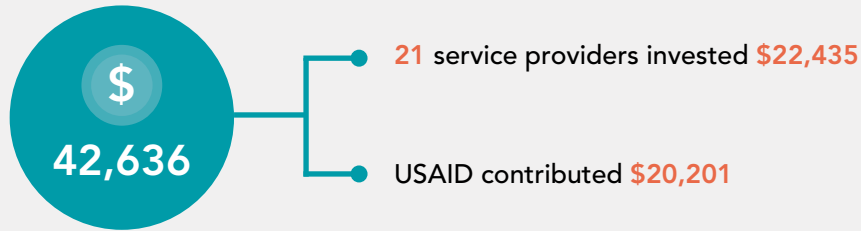
10 Start up entrepreneurs

Total investment \$42,636

~5,130 farmers reached

~66,000 MT of maize shelling per year

INVESTMENTS WITH USAID LAOS MICROENTERPRISE FACILITATION



RESULTS IN 2023/2024 SEASON



31
maize shellers purchased



~\$13.8 MILLION
worth of maize purchased by traders



~\$13,000
worth of services paid for by farming microenterprises to service providers not linked to traders



~5,100
farming microenterprises maize shelled after harvest



66,000 MT
maize shelled by traders and service providers



MAIZE GROUP
invested to provide services for members and local traders

IMPACT

Increased shelling capacity at the trader level results in more efficient collection of maize from farmers they provided inputs to and less risk of the farmers selling to other traders. This in turn results in more farmers getting inputs in the following season.

Modern machines have less maize breakage, reducing infestation problems during storage.

When maize shelling services operate near full capacity, business operation costs decline, and the maize supply chain is more competitive.

SUCCESS FACTORS

Most of the traders were well-established for at least ten years, had strong links with specific villages, and were trusted by local farmers. They provided inputs on credit and were capable of quickly handling the volume produced, reducing the risk of farmers selling to other traders for quick cash.



Sheds Investment: Improved Handling

During harvest seasons, farmers need to harvest large areas of maize at the same time. However, in Laos, there is always more crop than the existing infrastructure can manage. In Xiengkhouang, maize is harvested while still quite wet, with moisture levels around 20–23%. It needs to be shelled and either moved to the dryer or used as quickly as possible to prevent spoilage.

As shelled maize is poured into sacks and transported from the village, the trader determines how wet it is, how long it can be stored, and if it must be rushed to the next point for drying. If dry enough, it is kept at the aggregation point longer; if too wet, it is moved on as quickly as possible to a dryer. The trader's aggregation points in Phoukout District were extremely rudimentary, often consisting of nothing more than maize piled on the ground under some tarpaulins.

The traders, recognizing the poor storage conditions and the losses incurred, wanted to invest in storage sheds. The roofed sheds have concrete floors and are open on the sides to promote airflow to help remove moisture evaporating from the maize.

The project only supported traders who had already provided farmers with inputs on credit and had supported a minimum number of farmers. The project ensured that the size of the shed investment was proportional to the number of farmers who received inputs. Finally, the project provided a performance-based incentive to expand the number of farmers receiving inputs under careful monitoring to ensure that the traders had the financial capacity, and the new farmers were reliable and would repay their informal loans.

Investors

Phoukout District

Mr. Wat Seovongthong	020 93316216
Mr. Koutsy Milavong	020 55531311
Mr. Xiengboutda	020 55285750
Mr. Khamseng	020 22345015
Mr. Wat Xaiyafong	020 28588839
Mr. Bounkham	020 58876717
Mr. Khamta	030 2128887
Mr. Sivone	020 22152260

Mok District

Mr. Maisong	020 93891855
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Total investment \$187,735

~3,600 farmers reached

~2,250 m² storage space built



Improved shed ready for harvest: note open sides to promote airflow to prevent mold



Newly built maize shed full of maize

“With the new maize shed, I can store the maize out of the rain and avoid rotting. Even when the prices drop, I still buy at a good price, the same price. After harvest, I bring the maize directly to the shed, preserving the quality and ensuring I can sell it at a high price later.”

- Trader

INVESTMENTS WITH USAID LAOS MICROENTERPRISE FACILITATION



RESULTS IN 2023/2024 SEASON

2,250 m²
of improved storage built, 9 new temporary Sheds

~\$7.6 MILLION
worth of maize purchased from farming microenterprises

16%
increase in farmers receiving inputs on credit from traders

~3,620
farming microenterprises linked to markets, 91% received inputs on credit

~36,400 MT
maize passed through sheds

100%
new farmers receiving inputs on credit repaid at harvest

IMPACT

The traders reported they had less post-harvest loss due to poor storage.

The traders also reported that farmers trusted them more because they saw they were investing in permanent non-moveable infrastructure. This encouraged farmers to plant more maize this year, resulting in increased farmer incomes and increased trading volumes.

SUCCESS FACTORS

The traders with long-term credit arrangements in the communities saw a real need and were very committed to making this investment work. The GOL helped with supporting the development of the storage designs.



Drying Investment: Improved Handling



Batch dryer installed beside a trader's maize shed

As maize is harvested at a moisture average of 20–23%, once shelled it needs to be rapidly dried otherwise it will go moldy. To improve the maize value chain, the project supported two main traders who invested in sheds to also add dryers in different districts, Phoukout and Mok. The dryers are batch dryers processing up to 20 MT per batch (lower if the moisture is higher) and taking between 12–20 hours to dry per batch. The dryers are installed alongside the improved storage and can handle between 20–45% of the maize purchased daily. The dried maize moves into the store, while the remainder of the wet maize is quickly sold to other traders with dryers.

The trader in Phoukout was so impressed with the dryer he bought a second one and invested in two augers to move maize into and out of the dryers. He entered into a long-term agreement with Ahui Chicken farm in Phoukout to supply them with maize throughout the year as part of their chicken feed. He is now selling directly to a buyer in Thailand which is a new market for him.

Investors

Phoukout District

Mr. Khamseng 020 22345015

Mok District

Mr. Maisong 020 93891855

Total investment \$23,500

2 dryers capacity 40 MT per day

2 augers

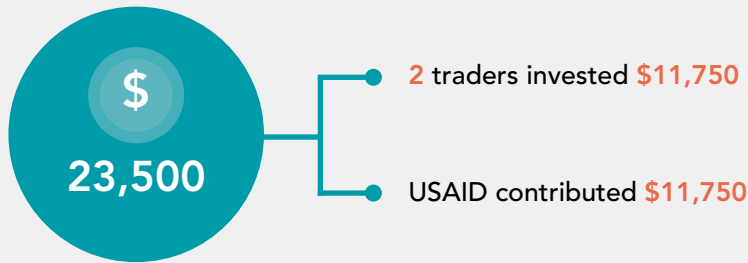


The experts are setting up the fan of the dryer




Setting up the dryer bin

INVESTMENTS WITH USAID LAOS MICROENTERPRISE FACILITATION



RESULTS IN 2023/2024 SEASON

 **2 & 2**
2 dryers and 2 augers purchased

 **~550 MT**
dried during harvest

 **~4800 MT**
increased drying capacity per season (**40mt** per day)

IMPACT

Drying maize reduces the risk of post-harvest losses, and when linked to the shed investment, allows traders to store dry maize while moving additional volumes of wet maize to other dryers.

One of the two investors is now selling to the international market with a contract to supply 3,000 MT of dried maize to Thailand.

The technical expert trained local artisans to build dryers ensuring future supply.

SUCCESS FACTORS

Both traders have a clear vision of how they want to develop and expand in the future. There are clear cost savings in transporting dry maize compared to wet maize. Since low-cost small-scale batch dryers are not easy to build or buy, the project identified a technical expert (an American who lived in Laos long-term and spoke Lao) to build the dryers.



RICE



Farmers manually threshing paddy in the traditional way after harvest

Rice is the dominant arable crop in Laos and nearly every farmer grows it. They keep what they need to eat for their families for the year in storage and sell the balance. Different locations are known for their 'special' varieties, and each has its own taste and texture.

Kao Kai Noi is a glutinous, late-maturing variety of rice grown only in Xiengkhouang and Huaphan provinces and is the main rice variety grown. The short, rounded, globular-shaped grain is considered shatterproof and much more difficult to thresh than other varieties of sticky rice. It is typically consumed after being steamed and locals believe they have not eaten if they do not eat it daily. It is made into rice noodles, rice cakes, and fermented beverages like Beer Lao Gold.

Summary of Rice Value Chain Investments

Business Owner	Rice Harvesters	Large Thresher	Small Thresher	Milling Grading	Investment
Mr. Xorvang		✓			\$ 7,493
Mr. Xaifong		✓			\$ 6,876
Mrs. Va Vang				✓	\$ 23,640
Startup Entrepreneurs	✓		✓		\$ 67,934



Water logged paddy fields



Harvested stalks and paddy stacked waiting for threshing



Pellet Maker Investment: Improved Handling



Compost ready to be used after maturing for 2–4 months

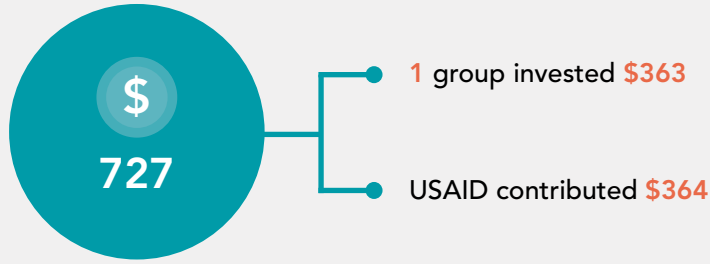
The Khao Kai Noi group of Horkang village, Phaxay, was originally established to help its 20 farmers collectively market their rice, but evolved into compost production to enhance soil fertility. The project conducted the Sell More for More training for the group, which helped members identify and achieve common goals, effectively allocate different roles, and ensure fair distribution of profits based on individual contributions.

The high-quality compost, commonly used as organic compost to grow the rice variety known as Kao Kai Noi, is light. When applied, some of the compost is picked up and lost in the wind, creating systemic waste for all users. Pressing the compost into pellets creates a weighty product resistant to wind, while retaining the ability to be integrated into the soil as the rain starts.



Compost after making into pellets

INVESTMENTS WITH USAID LAOS MICROENTERPRISE FACILITATION



RESULTS IN 2023



2

pellet making machines purchased



~\$4,300

sales income generated by the group



14%

higher sales achieved than targeted



25 farming microenterprises purchased compost

~46 MT



pelleted compost produced and sold by the group

IMPACT

There is good market demand for the compost beyond Khao Kai Noi, including other high value crops like tea that must maintain their organic status to sell to China.

SUCCESS FACTORS

Khao Kai Noi needs good soil structure to flourish but does not respond productively to chemical fertilizers. Only compost maintains soil fertility and pelleted compost is much easier to handle.



Rice Harvesting Investment: Improved Services

Paddy fields in the northern provinces are in small, oddly sized fields that are divided by high bunds (ridges) to retain water. Traditionally, members of the extended family and neighbors gather to cut the harvest by hand, moving from ripe field to ripe field as quickly as possible. It is hard work and requires a significant number of people, which is increasingly difficult to find as youth move to towns.

Inspired by video demonstrations, one startup entrepreneur, Mrs. Yeng invested in the first rice harvesting machine in the province, followed by eight more the following season. The harvester seamlessly attaches to the front of the widely available walking tractor, which is already used in field preparation during planting, enabling it to navigate over the bunds.

At the beginning it was challenging; farmers were worried it would knock the paddy off the stalks, but in demonstrating its use on the startup entrepreneur's own crop, other farmers quickly requested the service.



The rice harvester new to Xiengkhouang in action cutting paddy at harvest

“Before using machinery, one hectare of rice took 25 laborers and a full day to harvest. Now, with the rice harvester, it takes only half a day. In the past, labor costs would have been over Lao Kip (LAK) 2 million, but with the machine, it only costs LAK 800,000.”

- Startup Entrepreneur



Service provider providing rice harvesting services to farmers

INVESTMENTS WITH USAID LAOS MICROENTERPRISE FACILITATION



RESULTS IN 2023/2024 SEASON

9 rice harvesters purchased

~\$11,700 worth of services paid for by farming microenterprises

~240 farming enterprises now paying for harvesting services

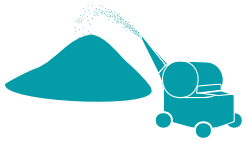
~230 hectares harvested by service providers

IMPACT

Mechanization of harvesting paddy reduces costs and labor requirements and reduces post-harvest losses since the harvest can be cut more quickly.

SUCCESS FACTORS

After seeing the project videos, the startup entrepreneur Mrs. Yeng was empowered to try the new rice harvesting technology. The grant program cut her costs in half and made her feel more secure in making the first investment in this new technology in Xiengkhouang. The project made a testimonial video of her using the harvester and shared it in subsequent village trainings, encouraging more people to adopt the technology.



Rice Threshing Investment: Improved Services

After harvesting and piling the stalks in the field with paddy still attached, the next step is threshing. Over 60% of farmers still thresh traditionally, lifting the stalks over their heads, and swinging them down to hit a piece of wood until the grains are dislodged. The extended family and community come together to thresh the rice. However, using a threshing machine is far more efficient.

The project made investments in threshing at two different levels. In Mok, the project supported two larger scale operators to upgrade large threshing machines which moved rapidly from village to village during the harvest season. Of these two investments, one serviced the Hmong communities, the other serviced Lao Loum communities.

Additionally, the project helped invest in 48 startup entrepreneurs at the village level where threshing services had not been available before.

Investors

Mok District

Mr. Xorvang 030 9395531

Mr. Xaifong 020 94149939

All districts

48 start up entrepreneurs

Total investment \$71,278

~1,800 farmers reached



Large rice thresher separating paddy from stalks in the field

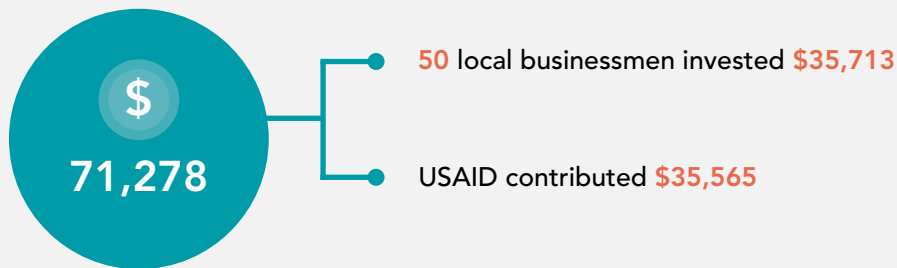


Service provider providing rice harvesting services to farmers

"I have a plan to acquire more threshing machines and build rice and maize warehouses as I buy more rice and maize from local farmers."


- Business Owner

INVESTMENTS WITH USAID LAOS MICROENTERPRISE FACILITATION



RESULTS IN 2023/2024 SEASON

 **50**
rice threshers purchased

 **~\$28,500**
worth of services paid for by farming microenterprises

 **~1,800**
farming microenterprises in **49** villages across **7** districts now paying for threshing services

 **~3,000 MT**
threshed by service providers

IMPACT

Investing in modern threshing machines reduces the incidence of grain breakage during threshing. Broken grains after milling reduces the value of the rice sold.

Mechanization of threshing paddy reduces costs and labor requirements and reduces post-harvest losses since the harvest can be collected from the fields more quickly.

SUCCESS FACTORS

The Businesses Supporting Farming training and technology videos encouraged farmers to consider both paying for services and investing in technology to enhance their operations. The grant mechanisms reduced the first season's risk, resulting in strong demand for this vital service for farmers' most common crop, especially at a time of labor shortages due to the migration of younger people to urban areas.



Rice Milling, Sorting and Grading Investment: Improved Handling



Rice milling, sorting and grading machine producing milled rice

Before becoming a project grantee, Mrs. Va Vang operated as a trader in Mok district for 10 years trading four different special paddy varieties (Khao Koi Noi, Jasmine or Khao Hom Mali, Khao Lai, and Khao Ma Lai). At harvest, she purchased paddy from up to 600 farmers, and then sold it to four different buyers throughout the year. Mok district has some of the worst roads connecting it to other districts and provinces leading to increased transport costs of 'raw' material, comprised of 20% waste product that had little value in the final markets.

Even though there is twice as much milling capacity in Xiengkhouang as rice to mill, none of the mills would sort and grade her rice so that she could obtain a higher price for better quality rice in the premium markets in Vientiane and Vietnam. Mrs. Va Vang needed a good integrated milling and grading machine to produce sacks of unbroken rice varieties.

Investor

Mrs. Va Vang 030 9349129

Investment \$23,640

~750 farmers reached

~2,600 MT of paddy purchased



Grade 2 milled rice with broken grains

INVESTMENTS WITH USAID LAOS MICROENTERPRISE FACILITATION



RESULTS IN 2023/2024 SEASON



1+1

1 rice milling, grading and sorting machine and 1 three-phase transformer purchased



~750

farming microenterprises linked to markets



~\$1.4 MILLION

worth of paddy purchased from farming microenterprises



~1,800 MT

paddy purchased from farming microenterprises



~730

paddy bought from 2 traders

IMPACT

While Mrs. Va Vang still purchases paddy rice varieties, she faced significant challenges with the upland varieties. Farmers in Mok are rapidly switching to cassava, where the income potential is higher, in their upland fields. With project support, she diversified her income by offering rice milling and sorting services to traders enroute to the capital.

SUCCESS FACTORS

Mrs. Va Vang faced challenges at almost every stage while establishing her milling and grading facility, yet she always persevered. She continues to pivot when needed and to find solutions by adapting her business model to take advantage of emerging trends.



Sliced casava drying in the sun on tarpaulins

Having become a key crop in southern Laos, cassava is quickly gaining popularity in Xiengkhouang. Farmers who live in Khoune and Mok have already started growing it on steep hillsides. It is easy to plant and requires little care while growing, but with yields reaching 15 MT+ per hectare, it does require considerable work at harvest. This involves digging the tubers from the ground and transporting them to the farm where they are sliced and dried before post-harvest losses occur. Traders usually want dried cassava because they do not have the facilities to slice and dry it themselves. Cassava processors in Laos grind the dried plant chips into flour for export to Thailand and Vietnam where it is used in industrial manufacturing.



Shed, Slicers and Tarpaulin Investment: Improved Handling

Mr. Parvue first introduced cassava to farmers in Mok in 2018. He provided them with the stems which were cut into pieces and planted in the upland fields. Initially, Mr. Parvue purchased wet cassava from the farmers, but as the numbers of farmers and volumes increased, drying it became a challenge. Mr. Parvue and the project discussed different solutions, ultimately deciding to help farmers dry the cassava on-farm so Mr. Parvue could offer a better price for their dried and clean cassava chips, rather than having him handle large volumes of wet casava himself.

The investment included the construction of a storage shed for dried cassava bought from the farmers prior to transportation for further processing, along with the acquisition of tuber slicing machines and 100 tarpaulins. The slicers are shared among farmers from each of several villages for collective use. The tarpaulins were distributed to farmers to keep the casava slices off the dirt while drying, ensuring they are kept as white as possible.

Investor

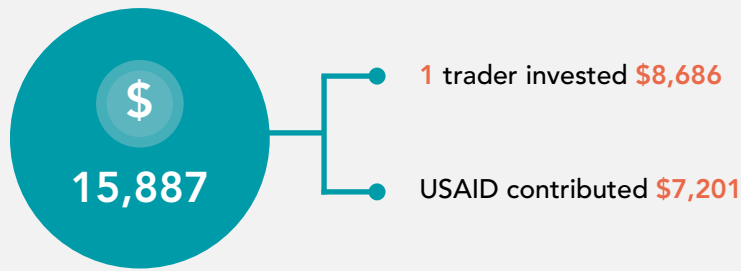
Mr. Parvue Yang 020 22533408

Investment \$15,887

~229 farmers reached

~2,130 MT of dry cassava bought

INVESTMENTS WITH USAID LAOS MICROENTERPRISE FACILITATION



RESULTS IN 2023/2024 SEASON



98m²

Improved storage built, 17 Casava slicers and 100 tarpaulins purchased



~230

farming microenterprises linked to markets



~\$330,000

worth of dried casava purchased from farming microenterprises



~2,100 MT

dried casava purchased from farming microenterprises



3

farming microenterprises purchased casava slicing machines with the help of the trader



~100

farming microenterprises used equipment provided by the trader

IMPACT

Farmers have quickly recognized the benefit of owning a low-cost slicer so they can manage their post-harvest drying more easily.

Tarpaulins improved the whiteness of the dried cassava and Mr. Parvue was able to sell more to higher value markets.

The additional services Mr. Parvue provided to his farmers encouraged them to sell their produce to him instead of other traders.

SUCCESS FACTORS

The project took time to talk through the different business options and suggested changes which helped Mr. Parvue to rethink how he operates and whether he could execute his initial plan. Farmers who received the tarpaulins and slicing machines waited to sell to Mr. Parvue and did not sell to the other non-local traders who flocked in at harvest.



COFFEE



Cooling recently roasted coffee

Coffee is a high value crop introduced to Xiengkhouang relatively recently and supported extensively by projects to help farmers improve their production. Previously, coffee was only grown and processed in the south of the country. Now, in Xiengkhouang, over 500 MT of coffee cherries are produced on plantations or interplanted under secondary forest by more than 500 farmers, mainly in Khoune, but also in Phaxay, Kham, Nonghet and Mok.

Significant work by international non-government organizations has been provided to increase and improve farm-level production, as well as installing washing centers and drying tables at village level. Coffee cherries go bad quickly, so either the farmer or a processor needs to collect them and begin processing promptly. Washed and dried coffee fetches a higher price than unprocessed cherries, allowing farmers to benefit from additional income from doing the post-harvest handling themselves.



Drying House Investment: Improved Handling

Ban Pieng Cooperative in Koune district has 52 members, all from the same village. In the past, other donor projects have supported them with skills to grow coffee and a washing center for processing. However, the drying tables were not ideal and often the cooperative sold cherries to Mueang Xieng Coffee, a local processor, instead of dried beans because of processing problems. This meant they got a lower price since often the transport of the wet cherries took time and resulted in poorer quality. This was a significant constraint since, when properly dried, their coffee is one of the best in the province. Mueang Xieng Coffee and the cooperative created an arrangement where a certain amount of the sales value goes into a development fund. Mueang Xieng Coffee discussed with the cooperative the opportunity to invest in a proper coffee drying house to improve the quality of the parchment (dried and cleaned cherries) and supported them through the implementation.

Investor

Ban Pieng Cooperative

Investment \$3,737

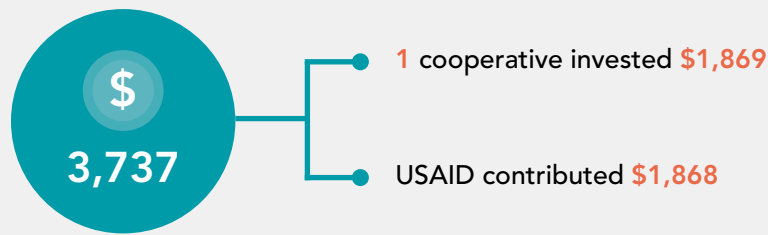
Up to 52 farmers

5.6 MT parchment processed





Coffee representative checking the coffee as it dries


INVESTMENTS WITH USAID LAOS MICROENTERPRISE FACILITATION



RESULTS 2023/2024 SEASON

 **1**
drying house built and drying
tables installed

 **~52**
farming microenterprises selling
collectively through the group

 **~\$21,400**
sales income generated by
the group

 **~20,000 kgs**
cherries dried to **~4,100 kgs**
of parchment

IMPACT

As an endorsement to the quality that resulted from this partnership, the coffee that won first prize in the natural arabica category at the Lao Annual Green Coffee Competition in 2023 came from the Ban Pieng Cooperative.

SUCCESS FACTORS

The cooperative is well organized and managed and has a clear plan for the future. Mueang Xieng Coffee maintains close connections with the cooperative offering premium prices.



Coffee Grading and Sorting Investment: Improved Handling

Mueang Xieng Coffee in Koune district began operations in Xiengkhouang in 2012, both by purchasing coffee from existing farmers and by promoting coffee planting among new farmers. The company buys coffee beans (mostly dry, but some wet) from about 300 households across four districts including Khoune, Phaxay, Pek and Nonghet. Their main market is selling milled, sorted beans to roasters in Vientiane, as well as developing their own line of roasted beans. Before COVID, it exported some small lots to the U.S., but the small volumes made the logistics challenging and expensive. Through collaboration with the USDA CLEAN project, Mueang Xieng Coffee received exposure at several international tasting events and the roasted coffee sourced from Ban Phieng Cooperative won prizes at the Lao Annual Green Coffee Competition.

Mueang Xieng Coffee invested in improving the handling of the parchment received at their center. Before the grant, they hand sorted all parchment, removing the poorer beans which would reduce the quality of the final product. The investment in a gravity sorter to assess the density of each bean and reject substandard ones improves the overall quality of each lot. Additionally, they are expanding their roasted coffee lines. Depending on individual internal coffee bean dynamics, roasting times vary per lot. They invested in a roaster suitable for smaller samples which helps to establish the optimum roasting time per lot. This paid off when they won several coffee competitions.

Investor

Mr. Todd Sander

020 56910116

Investment \$22,350

Up to 300 farmers reached

7 MT Parchment & cherries
purchased per year




Coffee processing machinery and parchment waiting to be sorted

INVESTMENTS WITH USAID LAOS MICROENTERPRISE FACILITATION




RESULTS 2023/2024 SEASON



1 + 1 + 1
1 coffee gravity sorter and grader,
1 roaster and 1 three-phase
electricity transformer purchased



~\$22,600
worth of cherries and parchment
purchased from farming
microenterprises and groups



~230
farming microenterprises
linked to markets



~5,900 KGS
purchased from farming microenterprises,
4,400 kgs of parchment and 7,300 kgs
of cherries

- o Ban Pieng Coffee Cooperative
supplied 92% of parchment and
15% of cherries

IMPACT

Mueang Xieng Coffee believes the roaster played a part in their wins at the Lao Annual Green Coffee Competition held in March 2023. Mueang Xieng Coffee came in first place in the Arabica Naturals category, second in the Arabica Honey category, and third in the Arabica Washed category.

SUCCESS FACTORS

Farmers are growing coffee thanks to their comprehensive training. The highly organized Ban Pieng Cooperative is the main supplier to Mueang Xieng Coffee. Their cooperation enabled Mueang Xieng Coffee to invest significantly in upgrading the post-harvest handling facilities.



FROGS



Young frogs sunbathing in rearing pens

The Lao love to eat every type of food. Their lives center around it so much that when they sit down to eat, everything comes to a standstill. In recent years, a new frog variety was approved by and supplied to frog breeders from the Ministry of Agriculture training center in Vientiane. The frog is a hybrid between the local field frog, and one supplied by the King of Thailand. It grows quickly, reaching about 250 grams in 3–4 months, and is delicious. Until this investment, it had only been bred in and around Vientiane.



Frog Breeding Investment: Reproduction and Rearing

Since 2009, Mr. Wang has traded fingerlings (baby fish) and froglets (young frogs), transporting them from Vientiane and selling to shops and directly to a few farmers. However, transport is challenging for the young animals, particularly when they need to be kept in temperature-controlled water. These challenges often result in 10–20% transport related deaths.

To determine if the climate in Xiengkhouang, which is colder than Vientiane, could support frog breeding, Mr. Wang kept some frogs and started breeding them. He then applied to the project to establish a frog breeding farm in Phaxay District which would sell froglets to the local farmers.

The investment had four phases: training to Mr. Wang on how to breed frogs, investment in the frog breeding infrastructure and breeding stock, training farmers on frog rearing requirements and helping them invest in frog rearing infrastructure, selling froglets to farmers, and then selling frogs to the market.

Investor

Mr. Wang Vongpasert 020 22945983

Investment \$9,877

26 farmers reached

89,600 froglets sold

14.4 MT frogs sold to the market



Mrs. Wang holding frogs ready for market



A farmer feeding the froglets in the supported ponds

INVESTMENTS WITH USAID LAOS MICROENTERPRISE FACILITATION



1 trader and 26 farmers invested \$6,090

USAID contributed \$3,787

RESULTS IN 2023



39
breeding ponds constructed



~\$3,700
worth of froglet sales



~\$26,000
worth of frogs sales made by farming microenterprises



~\$17,200
worth of frog sales made by Mr. Wang



26
farming microenterprises invested in rearing basins



~89,600
froglets bred, reared, and sold to 26 farming enterprises



~14.3 MT
of frogs sold by 26 farming microenterprises



~7.9 MT
frogs sold by Mr. Wang

IMPACT

The first year established that frogs breed well in Xiengkhouang (and climate warming will help this), therefore, Mr. Wang is expanding his operation and is reaching over 50 farmers in the 2024 season since there is still plenty of unmet demand for frogs in the market.

SUCCESS FACTORS

The expert training and ongoing guidance provided to Mr. Wang ensured that he had the necessary skills and knowledge to successfully breed his frogs. The training to the farmers ensured they could successfully rear their froglets.



CHICKEN



Farmer buying approximately one-week-old chicks



Buying back chickens ready for the market

Chicken is staple food worldwide, and Laos is no exception. While the Lao often favor the meat of local breeds, restaurants typically serve meat from hybrid breeds. On average, local chickens only lay 90 eggs per year and, if lucky, raise 18 chicks per year, well below the quantity needed to meet commercial demand. Hybrid chicks, designed to grow fast, require more food than local chicks and because they are often grown intensively, also require better care.

Egg Incubation Investment: Reproduction and Rearing

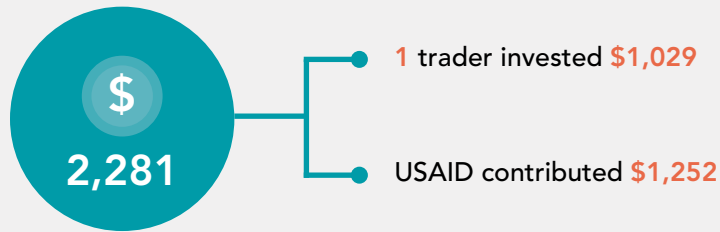
Mrs. See Vang is a chicken trader. She began buying grown chickens from farmers in neighboring villages, and then expanded into buying week-old chicks from another province, selling them to farmers, then buying the chickens back. Transporting young livestock can be stressful for the animals and often results in a proportion dying.

Mrs. See Vang approached the project to invest in a large scale 300 egg incubator so she could hatch chicks in Mok and sell the birds after vaccination at about 10 days old. While the business idea made sense financially, Mrs. See Vang lacked experience in egg production. Due to her illiteracy and background as a Hmong speaker, Mrs. See Vang required quite significant technical support to help her overcome challenges around accessing essential information needed to effectively invest in her business. The project arranged for the supplier of the incubator to train her on its usage, as well as arrange a trip to visit a commercial chicken farmer (with an incubator) in Kham to learn the basics, particularly around the care of the egg layers and the ratio of cockerels to hens in pens.

Investor
 Mrs. See Vang 030 9812382

Investment \$2,281
 43 farmers reached
 Total 1,868 chicks hatched

INVESTMENTS WITH USAID LAOS MICROENTERPRISE FACILITATION



RESULTS IN 2023



1
300-egg incubator purchased (~25 egg laying chickens and 5 cockerels purchased and installed in 5 pens)



43
farming microenterprises bought chicks, 20 resold chicken to the trader later



~\$1,200
worth of chicks sold to 43 farming microenterprises



~1,900
chicks hatched in the incubator



~\$2,700
worth of chickens bought from 20 farming microenterprises



~400
chicken bought 4-5 months for resale in the market

IMPACT

Unfortunately, the depreciation of the LAK resulted in lower purchasing power of most chicken consumers. At the same time, the rising prices of imported animal feed resulted in most commercial pig and chicken farmers struggling to recover costs. Mrs. See Vang's business has remained closed while waiting for meat prices to climb to a level where farmers make a profit, and she is confident she will restart in May 2024.

SUCCESS FACTORS

Establishing a relationship between the commercial chicken farmer in Kham with Mrs. See Vang provided her with firsthand learning on how to run her enterprise and manage her laying stock, which was a key factor leading to the improved performance.

Despite facing initial setbacks, including losses in her egg-laying stock, Mrs. See Vang's resilience and determination propelled her through setbacks.



OTHER MACHINERY SERVICES

The first step of preparing the fields for planting in the new season is to remove the weeds that have grown since harvest. Weed cutters take about two days to clear a reasonably heavily weed infested hectare. At other times of the year, a weed cutter can cut the special fodder grasses used to feed cattle. Two traders bought 32 weed cutters and placed them with operators in villages to help prepare the fields for the maize farmers to whom they provided credit. Startup entrepreneurs purchased other machines, which offered a similar service but for a wider range of crops.

Feed compressors take homemade animal feed used for chickens and press it into pellets for more efficient feeding. Women generally conduct chicken feeding, and 50% of the investments in the feed compressor machines were made by women to provide services to other women in their community.

When harvested, farmers must dry cassava to prevent discoloration and rotting. It is demanding work to individually slice each tuber with a machete. The slicing machine was a popular startup investment for entrepreneurs in Mok where cassava cultivation has spread quickly in the past two years.

RESULTS



39 WEED CUTTERS

2 traders bought 32 machines and 7 startup entrepreneurs for 7 machines, investment value of \$9,773, service to ~300 farmers for ~566 hectares in 2023



10 FEED COMPRESSORS

10 startup entrepreneurs, investment value of \$3,178, service to ~100 farmers in 2023



5 CASSAVA SLICERS

5 startup entrepreneurs, investment value of ~\$3,621, service to ~50 farmers in 2023/24 season

SUCCESS FACTORS

Providing startup entrepreneurs with a simplified approach to the grant process and making grant giving based solely on performance stimulated these investors to start small businesses in addition to their farming business.

INVESTMENTS LINKED TO AGRICULTURE



POLYPROPYLENE BAGS

Polypropylene (PP) bags are the backbone of the agricultural industry worldwide. PP bags come in a variety of sizes, weights, colors, and prices. They are used to transport both inputs and outputs to and from farms, processors, and other industries. These woven bags are made of interlocking flat strands of plastic, are relatively cheap, and are one of the most easily recyclable plastics available.

In Laos, and in Xiengkhouang particularly, PP bags were primarily sourced from Vietnam. The bags are generally single-use and are used on farms, at processor locations, and by traders. The waste bags are often burnt to get rid of rubbish rather than put back into the supply chain for recycling.

To make PP bags, small beads of plastic are melted and extruded into sheets of plastic, which are cooled, cut into fine strands, and wound onto bobbins in one integrated process. The bobbins are then fixed into the weaving machines which weave the tubes of PP material. Old bags can be washed and then processed into beads and re-integrated into the system.



Weaving machine making a PP tube which will be cut and sewn into bags

PP bags are derived from processing oil, extracted from deep underground. Its processing and waste disposal results in large volumes of CO₂ being released into the atmosphere, which contributes to climate change.

When 1 kg of PP bags are burnt (about 14 used bags), it is estimated that they release 2.9 kgs of CO₂, whereas if they are recycled, 1.2 kgs less CO₂ is emitted.



Poster at village to encourage farmers not to burn PP bags



Used bags purchased from farmers



PP Bag Investment: Improved Handling

Mrs. Onsy is one of the larger entrepreneurs in Xiengkhouang. Working with her husband, she has four different streams of business income. With two of her businesses linked to weaving, she is the largest wholesaler of traditional hand-woven material – sihns – in the province. Mrs. Onsy buys from many of the project’s weaving women business grantees. She also runs the only PP bag-weaving factory in the province. In 2020, she imported the PP bag weaving machines from Vietnam and

managed to get the Vietnamese trainer into the country before the COVID lockdown, who set them up and trained her staff on the operations. The factory in Pek District officially opened in December 2021.

Before the grant, she was producing between 6–7 million PP bags per year, with 40–60% of production utilizing used bags collected from mainly urban areas.

Mrs. Onsy applied for a grant to purchase more equipment but upon reviewing her business model, a significant obstacle to her expansion was identified: the inadequate systems for collecting used PP bags and the lack of awareness regarding their recyclability. While the company purchased used bags from people who brought them to the factory, the process of informing the public about this option was inefficient. For example, the project team asked maize trader grantees what they did with their old PP bags, and they said they burnt them and had no idea that they could be recycled. On average, each maize trader had about 2.5 MT of used PP bags that were burnt at the end of the season.

The grantee wanted to expand operations with 10 more sets of PP bag weaving machines, three specialized sewing machines, and a crusher to crush lumps of plastic for recycling. Recognizing the need to source more recycled bags locally before purchasing more equipment, the project implemented a performance-based grant with targets to incentivize the grantee to collect a minimum of 5.2 million used bags.

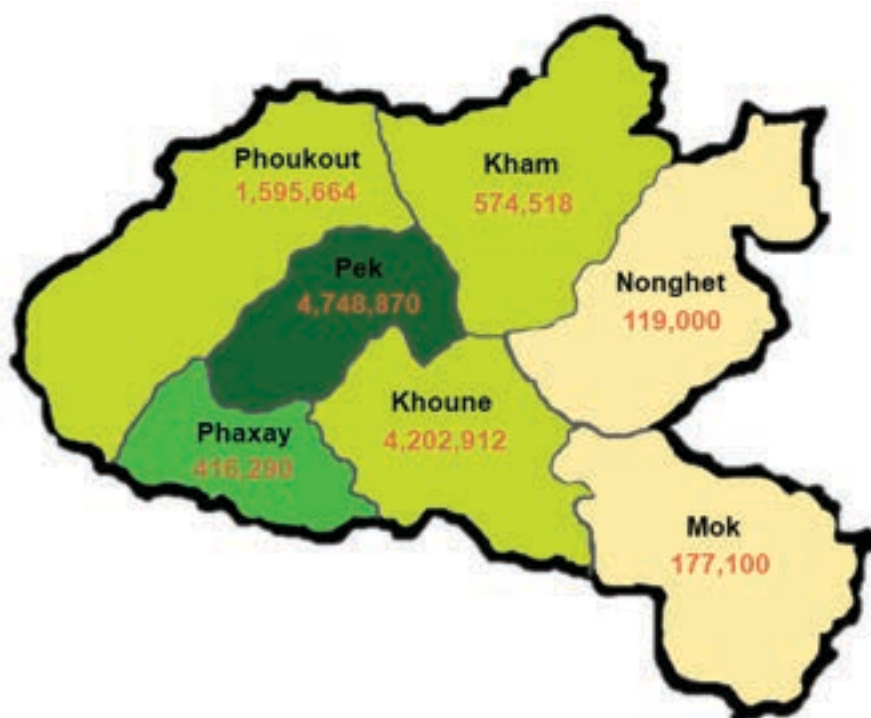
Investor

Mrs. Onsy Thamavong 020 92376081

Investment \$222,949

~12.9 million used bags recycled
in 6 months

Figure 8. Number of used PP bags collected per district in 6 month



INVESTMENTS WITH USAID LAOS MICROENTERPRISE FACILITATION



RESULTS OVER 6 MONTHS



10+3+1

10 PP bag weaving machines,
3 specialized sewing machines,
and 1 plastic crusher purchased



2X

PP bag sales to retailers in
Xiengkhouang doubled



~1,100 MT

reduced CO₂ emissions



~12.9 MILLION

used PP bags collected against a
minimum target of 5.2 million



~1.5 MILLION

used PP bags collected from
farmers in rural villages against a
minimum target of 1.4 million

IMPACT

Raised awareness and organization of supply chains tripled the volume of used PP bags delivered to PP factory.

The expanded factory will supply over 10 million bags per year to over 34,000 farming microenterprises in Xiengkhouang. Recycling over 12 million used PP bags improves Laos' air quality, reduces its carbon footprint, decreases its reliance on imported raw materials, and provides farmers an affordable input to transport their products to market.

The payment for the used bags means the system is sustainable and will continue beyond the project closure.

SUCCESS FACTORS

The government was very supportive of reducing CO₂ emissions. The Provincial Office for Education asked for posters to be put up in all the schools and requested teachers to talk to pupils about how their families could help the environment.

The project pushed for improving the collection of used bags and the grantee rapidly embraced a system of communicating its demand for bags for recycling, recognizing it was not as difficult as first imagined. Recycling used bags reduced the need to purchase raw material from Vietnam, which was cumbersome and time consuming.

The performance-based nature of the grant provided a clear objective for the grantee to establish efficient systems for bag collection and a motive to target small waste traders.



CATTLE MARKET

Based on the project's annual microenterprise survey, between 33–52% of farmers sell between 2–3 cows per year, at an average price of \$575 per cow. A cow's price varies greatly by age, the amount of meat it carries, and whether it is a fighting cow or not. Extrapolating these data points to the 240,000 households in the province, of which 80% are involved in farming, implies over 200,000 cattle are sold each year with an approximate value of over \$123 million. By sales value, cattle make up 60% of the provinces' total annual animal sales (though the number of cattle is considerably lower than pigs and chickens).

The cattle trade between villages, districts, provinces, and Vietnam and China, is vigorous and involves multiple stakeholders. Cattle are sold to Vietnam daily through mostly informal channels. Some cattle trade is between farmers; those with younger cows sell them off to farmers who specialize in fattening. However, a considerable amount of these sales happen in the meat markets outside of Laos.



Buffalo climbing off back of truck



Cow in the hot sun waiting to be sold from the back of a truck before the investment in covered areas that provide shade

The cattle market is not intended to be a place all farmers use, but the weekly process of price sharing informs farmers of the different animals for sale. If they feel the trader is not offering a fair price, they can either bring their animal to the market or wait for a better offer.



Cattle Market Investment: Improved Services

Mr. Aokxai and his wife have been cattle traders since 2008. With the support of the provincial authorities, Mr. Aokxai prepared a complex business plan for operating an integrated cattle market, with a slaughterhouse, government livestock services, and other value-added business opportunities. With no experience in this field, he struggled to find investment.

Investor

Mr. Aokxai Philavong 020 97896649

Investment \$41,149

Over 15,000 cattle passed through the market in 5 months

In 2019, an informal cattle market started up in the center of a village on the outskirts of Phonsavahn in Pek District, which the government shut down due to the lack of approvals and inappropriate location. Grasping the opportunity, Mr. Aokxai sought permission to start up a market on his site on the outskirts of Phonsavahn. Traders immediately started to use the site and sales were made; however, the facilities were poor. The animals had little to no shade, the weighing scale was old and poorly calibrated, there was no ramp to unload animals for weighing, and the selling process could take all day as buyers and sellers moved back and forth between the trucks, slowly coming to price agreements.



Cow being weighed by newly installed scale



Young bull waiting on new ramp to be loaded onto a truck

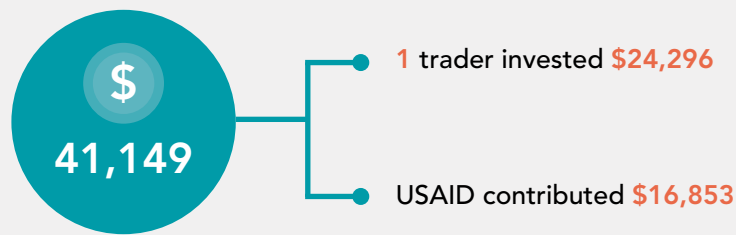
Working with the project, Mr. Aokxai developed an investment plan to provide permanent shade to approximately 30 trucks, to install a modern calibrated scale and a suitable cattle ramp, and to build an auction ring where animals could be displayed and auctioned off efficiently. Mr. Aokxai also agreed to distribute the weekly prices of the six main types of cattle in the market to around 50 villages every week.

Auctioning animals where buyers compete openly by bidding against each other is a completely new concept to Laos. The project trained Mr. Aokxai's team in the basics of how auctions work in Europe and America. Mr. Aokxai's team trained buyers on how to bid for cattle in auction conditions. There is great potential for opening this system up to live online bidding from buyers in other locations (such as Vietnam) and then adding logistic services to move the cattle to the buyers.



Auctioning off a 3 – 4-year-old meaty cow in the new auction ring with registered buyers waving their batons to increase their bidding price

INVESTMENTS WITH USAID LAOS MICROENTERPRISE FACILITATION



RESULTS OVER 5 MONTHS



1+48+1

1 auction ring, 48 m of shaded area for 30 trucks built and 1 scale purchased



AUCTIONS

Held 4 times in 6 weeks, 13 animals sold



BUYERS

were impressed with the speed of negotiation



~15,200

cattle passed through the market



~3,000

payments for using the scale, 30% for buffalo

IMPACT

Remote farmers can more easily find out the current prices of cattle being traded.

It is too early to say if auctioning cattle will take off, but early indications are that traders are using it as a way of speeding up the daily process of buying cows.

As users adapt to the system, it is expected to streamline Xiengkhouang province's annual sales of around 200,000 cattle, destined for markets in Laos, Vietnam, and China.

SUCCESS FACTORS

Enhancing cattle production is the provincial government's key agricultural goal, and Mr. Aokxai has good relationships with GOL officials. Mr. Aokxai is a well-respected cattle trader with a network who already uses his facilities and trusts his judgment.

The scale, whose official calibration was witnessed by the traders, built confidence in its accuracy that was previously lacking.

The beefy cow competition allowed the project to collect telephone numbers of village chiefs and village vet officers to include in a weekly WhatsApp price information message.



VILLAGE MARKET

Physical marketplaces provide the first step in improving market access for farmers, connecting them with multiple buyers at once. Regular market days mean more buyers and sellers, increasing competition, and ensuring the best prices based on supply and demand. Numerous market participants also allow for the possibility of multiple transactions, making aggregation of transport loads easier for traders. Similar qualities get similar prices, differences in volumes change the price, and all can be seen and overheard by others. The regular occurrence of the market allows for the larger traders to start using it as a source of product for their onward sales. A reliable and growing supply of goods results in investment in value-added opportunities further down the supply chains and increased demand at the market, sending signals to the farmers to increase production.



Phongmanh Village Market Investment: Improved Services



District, provincial, national and USAID officials celebrating the opening of the market

Phongmanh Village Authority located in Phoukout District designated a piece of land for farmers from Phongmanh and another five villages to sell their products on Saturday mornings. Each week up to 160 farmers hired tables or put mats on the ground in an open field completely exposed to the elements. This forced the market to close by ten in the morning when it was hot, while in the wet season it was often too muddy to attract people.

Phongmanh Village Authority also managed the village’s development fund. Previously it provided loans to people in need but demand for this had reduced. Every month the purchasing power of the fund fell as ~40% inflation hit the country. The village authority reached out to the project to jointly invest in upgrading the market’s facilities.

Investor representative

Mr. Thongsy Bounthavong 020 22945017

Investment \$20,385

~220 farmers reached

Market services 6 villages

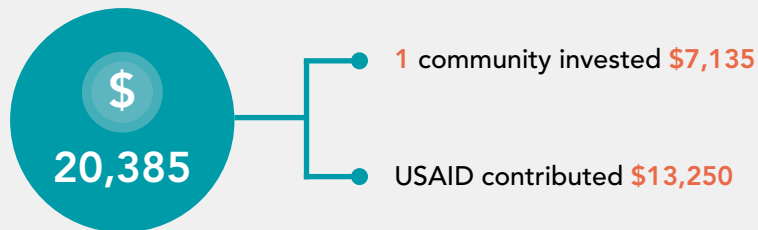


Farmers selling products at the opening events

"I am very pleased with the permanent market structure. I am now no longer afraid of rain and can protect myself from the sun. More farmers and sellers come to the market now."

- Local seller

INVESTMENTS WITH USAID LAOS MICROENTERPRISE FACILITATION



RESULTS OVER 6 MONTHS



1,290m²
village market built



~240
farmers from 6 villages used the market

IMPACT

The market has allowed ~25% more local farmers to consistently sell more goods regardless of the weather.

SUCCESS FACTORS

The district government helped the village authorities understand their responsibilities and kept the building plan on track.

While the site was already functioning as a market and was a meeting place for buyers and sellers, the investment built long term structures to improve operations.



Lod Xing collecting maize from upland fields

Much of rural Xiengkhouang is mountainous. While paddy is planted on the small amounts of flat land in the valleys, most of agriculture is on hills up to 10 kms away from the village. The rugged four-wheel tractor, locally known as a Lod Xing, is ideal for transportation on dirty, rocky, and hilly tracks in the northern provinces of Lao. With the addition of the platforms at the front and behind the driver, the Lod Xing can carry up to 1,000 kg on hilly trails and 1,500 kg on flat terrain. However, its investment cost of between \$5,500 – 7,500 (depending on engine size) is too high for most individual small farmers to own.

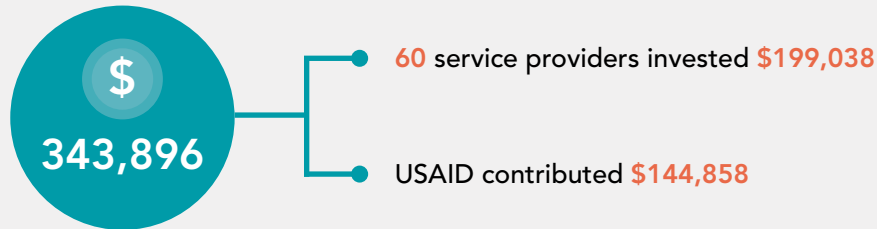
Generally farmers have about two hectares of land and plant a range of crops; the most common are maize and cassava, but also upland rice, ginger, Jobs tears, arrowroot, pineapple, and leafy vegetables. On average, a hectare of maize produces about 4 MT; about 90 bags at 45 kgs each. A hectare of cassava produces at least 15 MT; just over 330 bags. Without suitable transport, each family member helps to carry the harvest home on their backs with one family member taking one back on the motorbike. The manual labor is a disincentive to investing in increased farm productivity because increased production means more to carry back. Furthermore, family members sleep in shacks beside their field to protect their harvest, another burden delaying expansion.

Transportation Investment: Improved Service

The project received many applications for investment in Lod Xings. In the 60 villages where there were no transport services, the investment made by 60 startup entrepreneurs was an excellent business opportunity. Charging per load and based on the distance travelled, each new business provided services on average to 35 other farmers from the main village carrying 3–5 loads per day during the harvest season.

Prior to making the investments in Lod Xing, the project supported the startup entrepreneurs with training on simple business skills on how to calculate service fees to cover operation cost, including the cost of the machine, budgeting, profit and loss, and marketing to get customers. Additional follow-up training was provided in group settings where startup entrepreneurs could compare their experiences and share learning.

INVESTMENTS WITH USAID LAOS MICROENTERPRISE FACILITATION



RESULTS IN 2023/2024 SEASON



60
Lod Xings purchased
in 60 villages



~\$190,000
worth of services paid for by
farming microenterprises



77%
increase in income for Lod Xing
operators, on average now earning
an additional **\$2,025** each



~2,070
farming microenterprises now
paying for transport services



~16,500 MT
commodities transported by
service providers



69%
Lod Xing operators are applying new
business skills like record keeping

IMPACT

~2,000 farmers no longer carry their crops from their fields on their backs or by motorbike.

In one district, farmers in upland areas, which previously had no transport, are now planting five hectares of maize instead of two.

Nearly half of Lod Xing service providers helped farmers with selling their produce, 23% were paid for services, while 27% just help with contacts and price information.

SUCCESS FACTORS

The lack of reliable transport services in the villages was a business opportunity waiting to be discovered. The entrepreneur training reassured them that if they worked hard, they could cover all their costs and make a profit. The training ensured they understood their costs and could charge reasonable rates. It also helped them to clearly communicate to their customers why rates fluctuate in response to changes in fuel and other prices.



REPAIR SERVICES



Mechanic repairing an engine in his repair shop

Like everywhere else in the world, farmers in rural Laos rely on technology to reduce the amount of labor and time they dedicate to farming and improve their efficiency. However, machines require proper maintenance and servicing. While farmers can acquire agricultural machinery, they still have limited ability to maintain and repair them when they break down.

Local mechanics have been serving farmers by repairing and maintaining their machinery for years. Typically, farmers visit their workshops for repairs, but during busy harvest seasons, some mechanics offer home services. About 70% of farmers own at least one machine including tractors, grasscutters, chainsaws, rice threshers, and of course, motorcycles, which make up around 30% of repair requests.

Without the right equipment, some mechanics, despite their best efforts, struggle with modern machinery's more complex maintenance needs. While they can handle simple repairs, they often face challenges with more advanced issues, leading to longer repair times or incomplete solutions. Farmers are often forced to travel to larger shops in the provincial center, located 45-200 kilometers away, for these more complex repairs, which means they have less time to work in their fields.



Agricultural Machinery Repair Shops

Investment: Improved Services

The project supported four businesses, three in Phoukout and one in Mok, to improve their business operations. Investments included new equipment, an extended storage area for equipment dropped off by farmers, and, in one case, training farmers on how to do simple maintenance.

"With the better equipment, I serve farmers more quickly, save time, and I have reduced my labor costs. This has helped farmers a lot by saving them time needed to repair their machines while getting efficient service, meaning they reduce their costs of traveling to Phonsavanh."

- Business Owner

Investors

Phoukout

Mr. Dao Vonemany 030 9745794
Mr. Khamphorm 020 92632046
Mr. Khamphuang 020 29207799

Mok

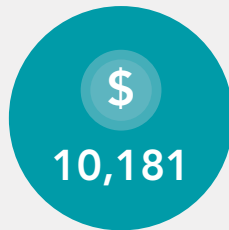
Mr. Jue Vang 030 2884371

Total investment \$10,181

~690 Farmers reached

~\$3,870 Service income per season

INVESTMENTS WITH USAID LAOS MICROENTERPRISE FACILITATION



4 microenterprises invested \$4,386

USAID contributed \$5,795

RESULTS IN 2023/2024 SEASON



4
repair centers upgraded



~690
farming microenterprises in **58**
villages paying for repair services



~\$3,900
worth of services paid for by
farming microenterprises per season



~1,000
repairs carried out by
service providers per season



104
farmers received maintenance training

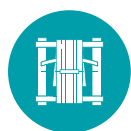
IMPACT

The businesses now enjoy closer longer-term relationships with more local farmers.

SUCCESS FACTORS

The businesses were already well established, with a large potential customer base, but lacked a suitable range of repair equipment to provide for all their needs. With the new equipment, they could service more farmers and carry out a larger range of jobs.

INVESTMENTS IN HANDICRAFTS



WEAVING



Weaving on a traditional Laos hand loom



Weaving on a traditional hand loom with other weavers

Hand weaving lengths of material is the primary income source for many women in Laos. The material produced is made into the traditional skirt known as a “sihn”, which to this day is worn by women for important meetings, weddings, and, for older generations, every day. Designs vary from very simple pieces for school uniforms, to complex, intricate designs including snakes, birds and other animals, and motifs which have traditional meanings. The threads used include cotton, silk and sometimes synthetic. Patterns often change every 4–6 weeks reflecting market demand for variety in key urban buying centers.

In Xiangkhouang, most Lao Loum women (and related ethnicities) living in rural areas spend between 2–5 hours working on the loom. For a family farm it is the third most important income and contributes on average just over 30% of the family income. Women earn around \$150 per month producing on average six lengths of material.

These earnings significantly support family living costs, secondary school costs, and some agricultural expenses, empowering women in rural areas.

The project collaborated with a large number of private sector businesses with strong networks of contracted weavers working in every district. Investments in weaving clothing material focused on equipment upgrades to increase the productivity of weavers and the quality of their products, alongside Facebook marketing skills to improve the range of sales outlets available to the women weavers.

Summary Weaving Investments

District	# of partners	Est # weavers	Est # products per month	Total Investment
Kham	11	3,368	20,248	\$191,883
Phoukout	8	1,650	12,831	\$173,860
Pek	4	2,427	19,796	\$121,689
Nonghet	3	2,514	10,093	\$152,325
Khoune	5	592	3,581	\$35,791
Phaxay	3	425	2,553	\$35,669
Mok	1	87	420	\$6,966
TOTAL	35	11,063	69,523	\$718,183



Weaving Investment: Improved and New Equipment



Lengths of material displayed for sale at one of the agricultural fairs

About 20 years ago, the structure of the weaving industry changed. Instead of individual women producing pieces all over the country independently, businesswomen started to invest in contractual relationships with many women. The businesswomen agreed to provide the required equipment (looms, beaters, and accessories) plus yarn and the design patterns to women in the villages in exchange for their weaving services. On average, the businesswomen working with the project have 300 women in their respective network (ranging from 40 to over 800). They collect the pieces once or twice a month and sell them on to wholesalers in Phonsavahn, the main town in Xiengkhouang, Vientiane, or some southern cities. Additionally, a couple of the businesswomen also export to Thailand, Japan, and Myanmar.

Investors

35 businesswomen (see page 75)

Total investment \$718,183

~11,063 women reached

In recent years, the demand for the length of the sihn has changed from being relatively short to much longer. The width (and therefore the length) of the material is determined by what is called the beater, a tool which divides each thread running in the same direction from the others. The beater makes up about 50% of the total equipment investment. Also, in recent years the beater has evolved from being made traditionally with bamboo to metal and wood.

The quality of the material produced is also determined by the structure of the loom. Old-fashioned looms are often attached to the house structure, making nighttime work impossible because of the noise it makes. Additionally, poor construction, often resulting in joints not at 90 degrees, leads to a looser weave with a lower value in the market.

the beater



Businesswoman distributing an improved longer beater to a weaver

35 women-led weaving businesses (including one small women's weaving group which produces the iconic "one district, one product" school bag used throughout the province) invested in upgrading old equipment, buying new equipment, and expanding the number of women in their networks. The project provided training in simple business skills and how to use Facebook as a marketing tool, as well as held networking opportunities where they shared experiences, made new connections, and traded with each other.

Additionally, one businesswoman set up a second weaving house where 14 looms were installed, and women come from the village to weave in one location. The women enjoyed this innovation because they could talk to each other as they worked and avoided being disturbed by family demands.

Another two businesswomen trained Hmong and Khmu women to weave.



Red bags on display at the fair



Bobbin winder for use of 14 women being distributed


INVESTMENTS WITH USAID LAOS MICROENTERPRISE FACILITATION




RESULTS IN 2023



OVER 10,300
pieces of equipment (looms, beaters, accessories and bobbin winders) purchased



~\$5.7 MILLION
worth of pieces purchased from women




40%
businesswomen now use Facebook and Facebook Live to make sales



2,976
new women added to existing networks (~37% increase), bring the total in the networks to over **11,000** women (includes about **3** men)



~800,000
pieces made and sold by over **11,000** women



~25%
businesswomen expanded into new products (handbags, clothes, neck ties, cushion covers)

IMPACT

~17% increase in productivity and 100% improvement in quality for women who upgraded to new equipment.

Over \$2 million increase in income annually at the businesswomen level.

Improved communication between businesswomen and their weavers has improved regular production.

Over half of the business women have increased the number of buyers to which they sell.

SUCCESS FACTORS

All of the businesswomen were already well established with 6–20 years of experience in operating their businesses. They all had a good understanding of the equipment needed and where to source it. Since Xiengkhouang produces some of the most reasonably priced designs in Laos, there was a ready market to absorb the increase in production.

Weaver Business Owners

Kham

Mrs. Monekham Thongphanya	020 56489566
Mrs. Larkhouanchai Phomthavong	020 55187651
Mrs. Khambang Maliya	020 55188526
Mrs. Bounmi Ernthavanh	020 55595539
Mrs. Bingthong Dalavanh	020 97730095
Mrs. Mok Xaichanhom	020 98061875
Mrs. Meeting Phimvongsa	020 99383901
Mrs. Choum Manavong	020 56798905
Mrs. Khamfong Phanthami	020 28566456
Mrs. Souk Bangbouathong	030 9124232
Mrs. Young Louengkhammoun	020 59195555

Pek

Mrs. Poup Sysouphan	030 5346282
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Nonghet

Ms. Pouy Leumany	020 99914718
Mrs. Sone Mathichan	020 59155655

Mok

Mrs. Lamphanh Chansamay	020 28951559
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Phoukout

Mrs. Bouasone Sorsaikham	020 58630985
Mrs. Sing Manyvong	020 97412999
Mrs. Khamphone Xaisopha	020 58630985
Mrs. Lita Mudthavong	020 93451740
Mrs. Mai Chansounon	020 98291563
Mrs. Pheng Pasitaphai	030 9546329
Mrs. Sengvone Phimphavone	020 29695155

Khoune

Mrs. Duangchan Sythanachan	020 91013589
Mrs. Lamphai Simmavong	020 91411916
Mrs. Khamphae Simmavong	020 96125352
Mrs. Bounma Douangtawan	020 23455474
Mrs. Da Sengsoulichanh	020 98257117

Phaxay

Mrs. Vongphet Sengmixay	020 55544934
Mrs. Phoutthasone Outthalavong	020 76371335
Mrs. Khamla Noymanivong	020 55556908

Multiple districts

Mrs. Sompheang Sorsomphan	020 55661730
Mrs Keo Vongphachan	020 54448060
Mrs. Bouakham Keomixay	020 55976599
Mrs. Bounma Douangdala	020 99965099
Mrs. Douanpheng	020 55187779



Video of Laos Microenterprise
supported by USAID's achievements