GUIDE TO SUPPORT THE IMPLEMENTATION OF COMMUNITY-BASED WASTE REDUCTION AND MANAGEMENT ACTIVITIES

Based on the experience of the ANAMAY Initiative in Viengkham District, Luang Prabang Province, Lao P.D.R.

The ANAMAY Initiative is implemented by:

DONRE
Division Office of Natural Resources and Environment

AGRISUD INTERNATIONAL

XonPhao

With the financial support of:

VILLE DE PARIS

syctom
l'agence métropolitaine des déchets ménagers

ACRONYMS

CCL	Comité de Coopération pour le Laos (French NGO)
DEO	District Education Office
DONRE	District Office of Natural Resources and Environment
Gret	Formely « Groupe de recherche et d'échange technologique » (French NGO)
NGO	Non-governmental organisation
SFE	Service Fraternel d'Entraide (French NGO)
SNV	Stichting Nederlandse Vrijwilligers (Dutch NGO)

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INTRODUCTION

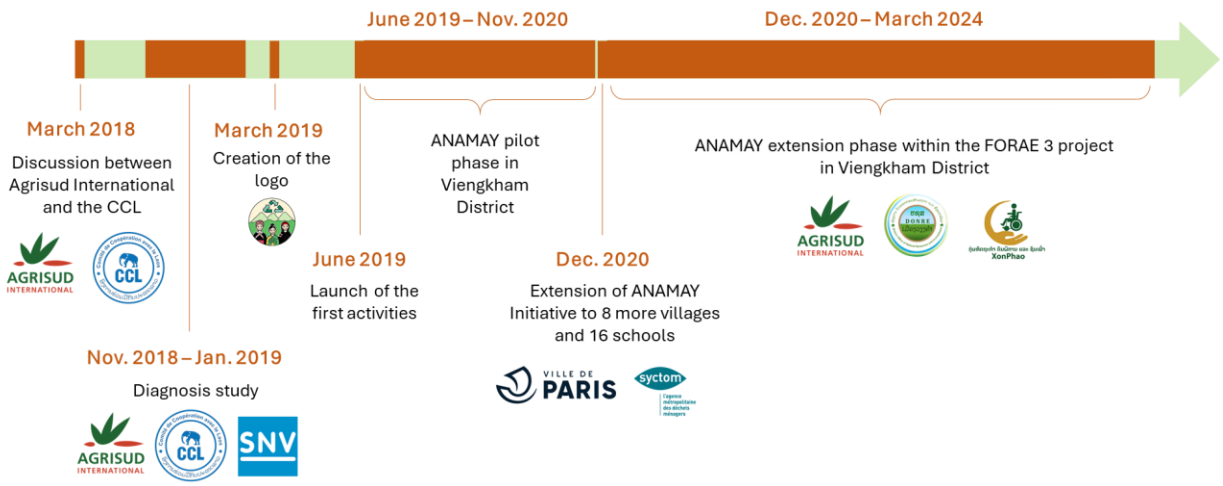
ANAMAY is the Lao word for 'cleaning'. It is the name chosen for an initiative to promote waste reduction and management in rural villages in Lao P.D.R.

1 ANAMAY Initiative history

The initiative was launched in 2018 to address the issue of waste management in rural villages where there is no waste collection and treatment service.

Given the lack of proposed solutions, Agrisud decided to set up a working group with other NGOs, including CCL, SFE, Gret and SNV. The group's first action is a diagnostic study (2018) conducted among rural households on the production and disposal of solid waste. 191 households from 9 different ethnic groups are being surveyed in 7 districts of 5 provinces in northern Laos.

In 2019, based on the results of the study, a pilot phase with awareness-raising activities is carried out in 4 villages of Viengkham district, Luang Prabang province. From December 2020, the initiative is extended to 8 new villages and 16 schools, thanks to financial support from the City of Paris and the Syctom waste management syndicate.



2 Implementation strategy

The Initiative proposes three axes of intervention to reduce and manage household waste in rural villages.

Whatever the province or district, the testimonies of this first diagnostic study remain very similar: rural households are consuming more and more products packaged in plastic that they cannot recycle or eliminate for lack of adequate infrastructures. These plastics end up being burnt or thrown into the environment, polluting the natural elements and threatening people's livelihoods and health.

The study identified four main issues related to waste pollution:

- Products offered in village shops are mostly individually packaged products of small quantities. This is mainly due to the lack of cash flow of households who can't afford to buy in larger quantities.
- Small plastic bags are distributed in abundance with each purchase: the seller is encouraged to provide as many plastic bags as the products purchased. These bags are thrown away immediately after use. Only 7% of the households surveyed reused their plastic bags.
- No local solution is proposed to eliminate this waste: once it is generated, households throw it into nature and/or burn it without understanding the consequences for their health and the environment.
- Lack of information on issues related to poor waste management among families: 64% of the households interviewed said that they had never heard of the dangers of poor waste management, especially the high risk of pollution. 90% of respondents said they had never heard of the time it takes for each type of waste to be processed by the soil. As a result of this lack of information, 74% of households were satisfied with the way they disposed of their waste.

The activities selected and implemented by the ANAMAY Initiative are designed to address these different problems, taking into account the constraints faced by the households, such as the lack of immediate cash flow or the absence of services and infrastructures for the collection and processing of household waste.

The implementation strategy is structured around 3 axes of intervention:

Axe 1: Inform and raise awareness among villagers and students about the causes and consequences of plastic pollution.

Axe 2: Provide alternatives to single-use plastics by developing bulk sales and the use of reusable containers.

Axe 3: Support communities to implement village level sanitation plans.

Shopkeepers involved in the pilot phase

Families involved in the pilot phase

3 Initial diagnosis for the extension phase

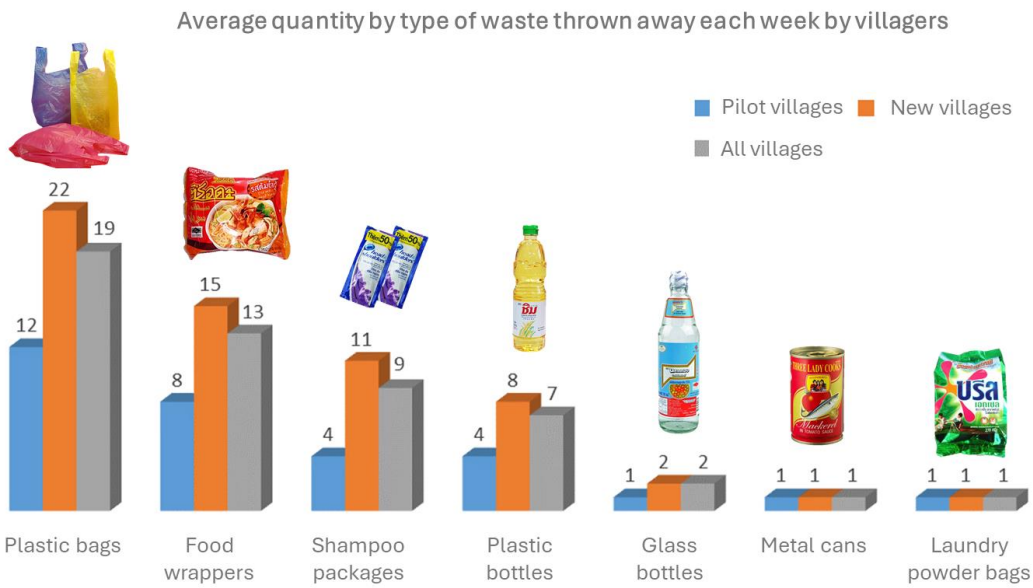
The team is collecting data on household habits and knowledge from a random sample of 115 households in 12 villages (4 pilot villages and 8 extension villages).

This is the second survey on waste to be carried out in Viengkham district. It is done before the start of the activities for a better understanding of the reasons behind households' waste management behavior. The results of the survey give an idea of the challenges facing the initiative. The number of villages and households surveyed depends on the scale of the initiative and the human resources available. It should be large enough to ensure that the sample is representative of the entire population, but not so large that the survey takes months to complete. This diagnosis serves as a reference for the monitoring and evaluation system.

As the ANAMAY Initiative was initially launched as a pilot project in 4 villages in 2019, it was interesting to collect data in the pilot villages and in the new villages, and to compare the results. The questions asked focused on the amount and types of waste households produce, where their waste goes and how they manage it, as well as what they know about the impact of waste on their health and the environment.

The difference between the pilot villages and the new villages in terms of the average amount of waste thrown away each week is significant. The pilot villages have significantly reduced their waste production, although the quantities are still high.

Figure 1: Average amount of waste thrown away by households each week, by type of waste (February 2021)



Plastic bags remain the main problem, with shopkeepers and market vendors systematically offering them with every purchase. Because most of them buy packets of small plastic bags, which are cheaper, they have to provide their customers with several small plastic bags to carry their goods. These bags, which are too small to be used for any other purpose, including as garbage bags, are simply thrown away once the customer has gone home.

However, large plastic bags are much more popular. In the pilot villages, when households were asked if they reused plastic bags for other purposes when they were not broken, 90% said yes, as did 79% in the new villages.
But when asked if they refused plastic bags when they didn't need them, 63% of households in the pilot villages said yes, compared with only 16% in the new villages.

Garbage dump behind houses, Phousanam, February 2021

Another noticeable difference between the pilot and new villages is where they empty their bins. In the pilot villages, only 2.5% of respondents said they empty their bins in nature, while in the new villages, 47% of respondents said they do so.
In the pilot villages, 85% of the respondents said that they had previously participated in a waste management project, mainly the pilot phase of the ANAMAY Initiative. They have also been encouraged to dig garbage pits near their homes in order to concentrate waste in areas where it can be managed, rather than dumping it in nature.
While respectively 98% of respondents in the pilot villages said they felt well informed about the dangers of waste mismanagement and the risks of pollution, only 51% of respondents in the new villages said they felt well informed. In terms of knowledge of the number of years it takes for different types of waste to decompose, 78% of respondents in the pilot villages were confident that they knew this, while this percentage drops to 13% in the new villages.

To note

It is advisable to carry out this initial survey with women rather than men, as they are generally in charge of shopping and cooking. They are therefore more aware of the waste generated. However, the information collected will always be underestimated, particularly for food packaging, as it often does not take into account the quantity produced by children who buy cakes and snacks in village shops.

Once the survey data has been analyzed, the conclusions are presented to the district authorities and the target villages to validate them. These conclusions are also a good basis to start discussions with the communities on waste issues.

RAISING AWARENESS AT COMMUNITY AND SCHOOL LEVELS

Informing and raising awareness among villagers and students about the causes and consequences of plastic pollution is a prerequisite for any waste management action. Without awareness, any practical action taken will not be appreciated and understood by the various stakeholders, and their participation could be negatively affected.

1 **Creation of the District Special Committee for Household Waste Management**
Representatives from the various District offices are invited to discuss their involvement in waste management.

Objectives:
- Strengthen the District's leadership role in waste management
- Implement a set of waste management rules for the territory
- Ensure the continuity of waste management activities at the end of the project

The District Office of Natural Resources and Environment (DONRE) is the main implementing partner for the initiative. It is responsible for organizing this first meeting with representatives of the other offices to discuss how each could be involved. This first meeting is important to ensure the involvement of local authorities from the start of the process and at all stages, to ensure continuity at the end of the project. The main outcome of this meeting was the decision to set up a special District committee for household waste management.

The members of the District Special Committee for Household Waste Management were selected at the end of this first meeting. They are appointed by the district governor, with the deputy governor as chairman and the DONRE director as vice-chairman. The 16 other members of the committee come from 8 other offices and government organizations, as well as a secondary school and 7 villages.

The committee is responsible for formulating district-wide waste management regulations, as well as managing the existing collection service. In the district, there is a municipal landfill site located not far from the main town for the management of waste from 7 villages and 4 schools. The District Special Committee is responsible for monitoring and evaluating the implementation of this service.

Each village targeted by the ANAMAY Initiative also set up a waste management sub-committee, which act as a village relay for the District Special Committee.

The Special District Committee has drawn up a strategic plan comprising 8 guidelines. Once validated, it was distributed to each village targeted by the initiative. This strategic plan provides a framework within which the village authorities, via their sub-committees, can draw up their own regulations.

District Special Committee

- Formulates District-wide waste management regulations
- Supervises the management of the waste collection service and landfill for the villages in the center of the District

Village relays →

Village sub-committees

- Formulates village-wide waste management rules
- Drafts village sanitation plans
- Oversees the implementation of the plan's activities

2 Village meetings

The initiative and its activities are presented in each target village.

These meetings are organized to present the initiative and start discussions with the communities on the issue of household waste in their village.

Objectives:

- Inform villagers about the ANAMAY Initiative and its goals
- Collect data on how the villagers feel about waste and their needs
- Involve the villagers in the decision-making process on waste management activities

Before the meeting, it is interesting to walk around the village with the village authorities and ask to see all the actual dumping sites where rubbish has been dumped by the villagers and has been accumulating in nature for a long time. Photos should be taken of the different areas and their location.

The meetings are then divided into three parts:

1) An information session on the environmental and health consequences of waste pollution. The photos of village dumps are shown at the end of this presentation; ;
2) A question and answer session;
3) Group work on the causes of waste pollution in the village, the impact of waste and possible solutions to these problems.

The information session is carried out by projecting photos and some texts with a projector, but it can also be done with large poster display and small dramas. The first topics to be introduced are usually about the life span of different types of waste in the soil, the consequences of waste pollution in water, and the dangers of waste and waste burning smoke for humans and animals.

The Q&A session after the presentation allows participants to ask for missing information and to share their comments and insights. This is particularly important as the presentation ends with photos of their own dumping sites polluting the village area. The villagers should be given the floor to react to what they have just seen.

During the group work, the villagers identified the main problems with waste as a lack of knowledge and information about the impact of waste on human, animal and environmental health; the fact that the goods they buy are over-packaged and bought in small packages that they throw away into nature once the product is consumed; the lack of rubbish bins; and the lack of rules and regulations on waste management at village level.
When the time came to discuss solutions, the villagers had already proposed a number of actions that could be taken to address the waste problems in their village, such as: appointing a sub-committee to lead people in addressing waste or garbage problems in the village to keep the environment clean; setting up rules and regulations for waste management and putting up prohibition signs where garbage has been dumped before; organizing village clean-up days at least once a month; digging dumping pits for waste, etc. The proposals will serve as a basis for the village authorities to work with the initiative on waste management at the village level.

3 Identifying awareness-raising topics with the District Committee

The ANAMAY team meets with the appointed District Committee to discuss the results of the initial diagnosis, the feedback from the villagers and to identify 3 main topics for awareness raising.

Objectives:

- Involve the local authorities in all decision-making processes to ensure ownership of the initiative and its activities
- Select awareness raising topics that respond to the problems identified at village level, but also to the district's waste management objectives

The selected awareness-raising topics are:

- Causes and consequences of poor household waste management: the impact of waste pollution on soil, water and air, and how it affects human and animal health;
- The 3Rs (Reuse, Recycle, Reduce) to reduce waste pollution;
- Sorting waste and solutions for recycling waste, such as composting green waste, making handicrafts from plastic waste, etc.

The first district meeting also raised the issue of office waste (paper waste, but also take-away food wrappers and containers, coffee-mix packets, small plastic water bottles, plastic meeting banners, etc.), which needs to be reduced in order for the various offices to set an example for the villagers. It was then suggested that a special workshop be held for all the different district offices to raise their awareness of waste issues. This special workshop brought together 34 participants from 23 different district offices.

It was carried out in 3 stages:

1) Raising awareness and discussing the issue of waste generated by offices;
2) Presenting alternatives to disposable products and exchanging ideas on the solutions to be implemented to reduce this waste for each institution;
3) Voting on the proposed solutions to select the most feasible.

Three solutions were voted:

1) The introduction of waste management rules in each office;
2) the creation of awareness posters;
3) banning the use of certain disposable products in offices.

Two models of awareness posters were prepared by DONRE and validated by PONRE and MONRE (provincial and national levels of DONRE). The posters were produced and distributed to 25 district offices.

To note

Solution 2 is the simplest and easiest to implement. Solutions 1 and 3 require formalization, which can take a long time.

4 Awareness-raising sessions at community level

Awareness-raising sessions are organized in villages on the topics selected thanks to the village and District meetings.

Objectives:

- Raise household awareness of waste issues so that they can make informed choices
- Encourage them to reduce their waste production and to participate in waste reduction and management activities

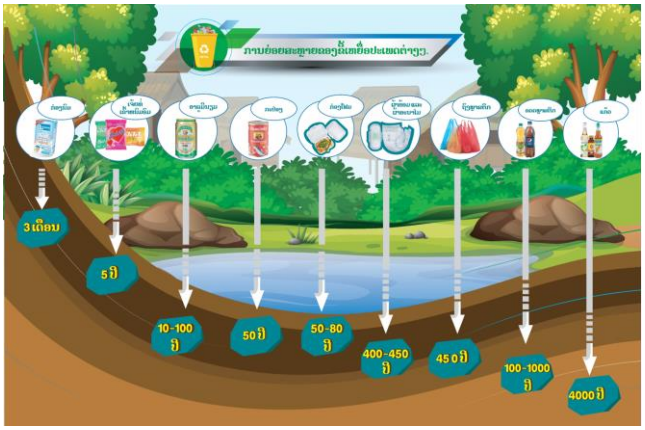
During the first two years of the project (2021 and 2022), awareness-raising sessions were organized in village meeting rooms, lasting around 3 hours. Each session was identical from one village to another and the subjects were presented using different types of media: posters, PowerPoint presentations, games and question-and-answer sessions. These awareness sessions were organized 2 or 3 times a year (depending on the restrictions imposed by the Covid-19 pandemic). All households were invited to attend and participation was generally good.

The awareness-raising sessions in the villages begin with illustrated PowerPoint presentations on the impact of waste pollution on soil, water and air, and how it affects human and animal health, followed by a description of the posters by volunteers from the audience. Next, the theme of waste sorting is presented, followed by a game to test everyone's understanding of the different categories of waste. Four empty bins are placed in front of the participants and labelled according to the 4 categories of waste: general, recyclable, compostable and hazardous. Laminated cards showing photos of different types of waste are handed out. One by one, the participants who have received the images are asked to place their "waste" card in the corresponding bin. Once everyone has placed their card in one of the bins, the facilitator reveals the contents of each bin in front of everyone and any mistakes are corrected as a group.

To note

When organizing the waste sorting game, it is possible to ask each participant to present their waste card and place it in the corresponding bin in front of the whole audience for immediate validation or correction. But this takes a little more time, and it may stop people who are a little more shy from taking part.

In total, 54 village awareness-raising sessions have been organized over 2 years (2021 and 2022), with a total of 1,275 participants (average over the 2 years).



Posters to raise awareness of the lifespan of waste in the ground and the consequences of poor waste management on the village environment, created during the pilot phase of the ANAMAY Initiative.

After a year and a half of awareness-raising activities, members of the village sub-committee suggested adding other forms of awareness-raising. While these awareness-raising sessions have proved effective in raising awareness among adults, they are not adapted to teenagers and the elderly, who do not attend this type of meeting in the village community hall. Teenagers are simply not invited, and older people often stay at home to look after the younger ones. As a result, the members of the sub-committees noticed that these two groups had not changed their behavior and continued to throw their waste on the ground.

5 Awareness-raising fairs at village level

Village fairs are organized with different sensitization booths on various topics related to ANAMAY Initiative activities.

Objectives:

- Disseminate awareness-raising messages to a broader audience
- Present how the initiative's various activities fit together to form a whole for waste reduction

The fairs were organized in the last year of the project (2023). They usually lasted a whole morning and were held in a large area, either the school playground or the football field. The area should be large enough to accommodate 6 different booths. The entrance to the fair is signaled by a large banner and a registration desk is set up to collect data on participation and to give each participant a ticket number so that they have a chance to win one of the lottery prizes.

To organize these village fairs and man the various booths, various officials from the offices involved in the special district committee were called in.

When the participants arrive at the fair, after registering, they sit in front of the stage to listen to the opening speech of the district and village authorities. Then they are divided into 6 different groups. Each group has its own route to follow, from one awareness booth to another, to avoid everyone being at the same booth at the same time and to ensure that everyone completes the awareness circuit. To do this, the group is given a sheet of paper explaining which stand to start at and which direction to follow. The size of the group will depend on the total number of participants.

Banner at the entrance to the village fair in Mokkha

Gathering for the opening speech at the Mokkha fair

A quiz session is organized at the end of the fair, with prizes to be won for those who give the right answer. The lottery draw also takes place at the end of the fair. There are three prizes to be won, including various useful items for reducing waste, such as shopping baskets, Tupperware boxes, water bottles, etc.

To note

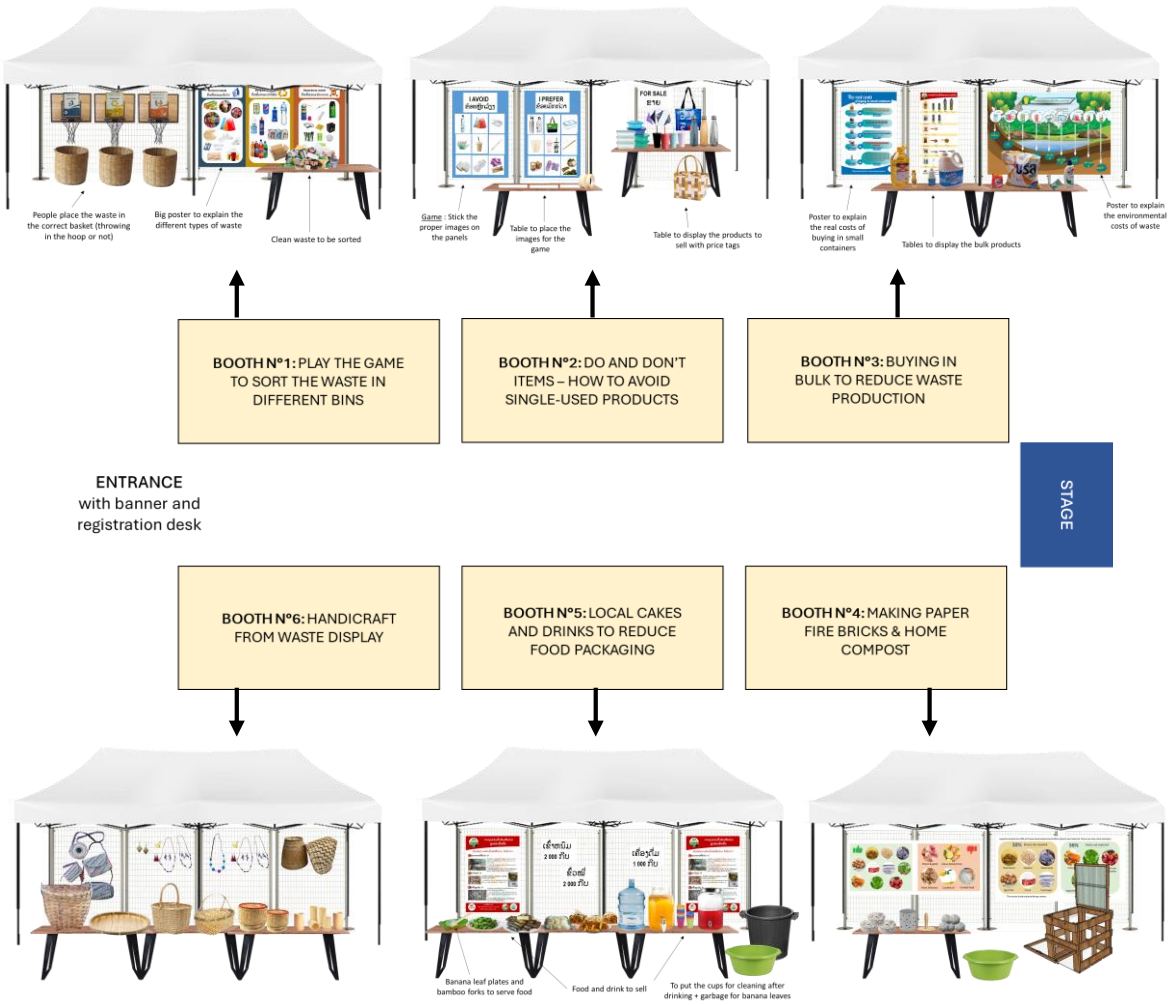
The quiz session with prizes and the lottery are tools to encourage participants to stay until the end of the fair and to take an active part in each booth.

The project team arrives in the village the day before to set up the stands and benches and to discuss the organization with the village authorities and the household waste management sub-committee. The benches and tables are provided by the village, usually by the school. The day before the fair, awareness-raising films are shown on a screen for all the villagers.

Organizing these village fairs requires a certain investment in time, equipment and human resources. It was therefore not possible to organize them in the 12 villages targeted by the initiative. In total, 468 adults and 262 schoolchildren took part in the 6 villages targeted for the awareness fairs. Based on the number of households in these villages, the average adult participation rate is estimated at 73%.

A team of between 10 and 13 people from the various district offices was mobilized for each fair.

Plan of the village fair with its different awareness-raising booths



To note

The equipment needed for each booth will depend on the choice of awareness-raising topics. However, posters should be large enough for everyone to see, games can be played to add an element of fun, and food and drink in recyclable packaging can be provided to encourage people to stay, even if lunchtime is approaching.

"*Regarding the awareness-raising fair, it was very good. We learn a lot at each booth. We register in the morning, and then we have to participate to each booth. At the end, we got an ANAMAY tote bag. We could also win some gifts by answering questions or in the lottery. This kind of awareness-raising is more efficient with all the booths and the demonstrations. It's more on hand.*"

Mr Phonechan & Mr Daophet, village waste management sub-committee members from Samton village (December 2023)

6 Awareness-raising sessions at school level

These sessions for primary and secondary school students cover the same subjects as for the village community.

Objectives:

- Raise students' awareness of waste issues and the consequences of waste pollution for the environment and the future
- Work towards changing the behavior of the younger generations in terms of waste reduction and management

Students produce a lot of waste as they consume over-packaged snacks and drinks (processed biscuits, instant noodles, drinks in plastic bags, plastic straws, etc.) bought on or around the school grounds during breaks. There are often no garbage bins in the school yard, and even if there are, pupils are not used to using them and often throw packaging and plastic bags on the ground. It is therefore very important to make pupils aware of the impact of their actions on their environment.

These sessions focused on 3 lessons:

1) the consequences of waste pollution on the environment, in particular on water, soil and air;
2) the lifespan of waste in soil & toxic fumes from plastic waste fires;
3) the 3 Rs (Reuse, Recycle and Reduce) with alternatives to single-use products ; the different types of waste (general, recyclable, hazardous, compostable) and a waste sorting game to test understanding.

Question and answer sessions are held and students are rewarded with school materials (notebooks and pens) to encourage active participation.

In all, 65 school awareness-raising sessions were organized during the 2020/2021 and 2021/2022 school years, in the 16 target schools, for a total number of pupils exceeding 2,600 (the figure for the second year, the first having been severely disrupted by the Covid-19 pandemic).

To note

If human and financial resources are available, it is preferable to work with classes of all levels, and to target schools where pupils live alone in dormitories. The area around dormitories is particularly polluted with food packaging waste and hygiene products.

7 School micro-projects for better waste management

Hands-on experience designed to teach students new habits when it comes to managing waste.

Objectives:

- Involve school teachers and the district education office in leading student awareness activities
- Encourage the students to take action to reduce waste in their school and create a cleaner school environment

When it comes to raising awareness among young audiences, it's important that the methods used are linked to action and not just theoretical knowledge. Students learn more quickly when they have the opportunity to experience a lesson rather than just learn about it.

Depending on the school directors and teachers involved in the initiative, these activities varied from school to school, but many were similar because they were encouraged by the project and the District Education Office (DEO).

Raising awareness through art

For the past two school years, the initiative and its partners from the DONRE and the DEO have organized a school drawing competition in which students could voluntarily participate to draw awareness-raising posters on waste management.

Three themes were proposed to the students for these competitions: 1) waste reduction; 2) the impact of waste on the environment; 3) the 3 Rs (Reuse, Recycle and Reduce).

The drawings were then evaluated according to the relevance of the ideas to each theme, and a selection workshop was held with the Education Office and the Environment Office to choose the winners: 3 winners (1st, 2nd, 3rd) per theme. The rankings were done separately for primary and secondary pupils.

A ceremony was held in each school to present the prizes to the winners in the presence of the Director of the Education Office. The winning students received art materials as prizes.

The ideas from the various student drawings were then used by the initiative to create 3 new awareness posters, which were commissioned to an illustrator/designer. The final results were printed in poster size and delivered to all target schools and villages for display.

Posters based on students' ideas

Involving teachers in waste management activities in schools

School micro-projects on waste reduction and management complement the awareness-raising sessions. Their aim is to put students in the driving seat and to put their new knowledge into practice. However, to achieve this goal, teachers must be responsible for selecting and implementing these micro-projects with their students.

Some teachers in the target schools were already involved in a school environmental education program introduced in Viengkham district in 2018 by Agrisud International, through its FORAE (Forestry and Agroecology in Lao rural uplands) project. This program already included lessons on waste pollution and practical actions to reduce and better manage waste with students. However, not all the teachers involved in the ANAMAY Initiative had participated in this school program, and new workshops had to be organized for all the teachers involved in order to implement the waste management activities with their students.

At the end of the workshops, teachers are able to:

- Understand the principles of waste management and how to present them to their students;
- Understand the concept of school micro-projects and how to create them;
- Write short sketches for their pupils to act out and spread the message;
- Organize a drawing competition in their school;
- Implement rules to keep the school clean;
- Draw up a school activity plan on waste management with objectives to be achieved.

In addition to these workshops, teachers have been invited on study tours to visit other schools outside their district that have achieved or are working towards Green School status. Lessons learned from these visits include: 1) the selection of student volunteers to train others in proper waste management; 2) the installation of 4 sorting bins per classroom; 3) the establishment of school rules and regulations for waste management, with penalties for non-compliance; 4) ideas for beautification and learning activities in the school grounds, such as vegetable gardens, tree and flower planting.

"*In our school, we have carried out various micro-projects with the students, such as sorting waste, propagating seedlings for tree planting, and selecting books about the environment for the students to borrow. We have also installed a garbage pit and a compost crib, as well as information signs.*" **Mr Phimvan Keomaseuth, teacher of P4 and P5 levels in Vangbong Primary school (January 2024)**

Following this activity, all the target schools set up their own waste management sub-committee with its own rules of procedure. They have also installed waste bins, sorting activities and information signs, as well as waste pits (with the exception of the central schools, which benefit from the waste collection service). Schoolyard clean-ups are regularly organized with students (every Wednesday) and most schools have also installed compost cribs to recycle green waste.

Awareness-raising school fairs

The ANAMAY Initiative participated in the school fairs organized each year by the FORAE project's School Environmental Education Program. As well as displaying the different scientific experiments that the students have carried out during the year with the program, they have also included activities carried out with the initiative to spread awareness messages on waste reduction and better management. These fairs are held in school playgrounds and are attended by all the students and teachers, allowing for a large audience.

During these fairs, the Initiative team and teachers were able to repeat some of the messages. Games were organized on waste sorting, theatre plays were prepared and performed by the students in front of the public, and local unpackaged cakes and snacks promoted in the villages were offered to the students.

Awareness-raising sessions in classrooms, school micro-projects for better waste management on school grounds and fairs are all tools to inform and convince students to change their behavior in relation to waste generation and management. It is important that messages are delivered through different channels so that they can effectively reach their audience, depending on their age or interest in the subject.

"*The school children have changed their behavior a lot. They don't throw their garbage on the ground anymore. They put it in the bins. If they don't have one nearby, they keep the wrapper in their pockets or school bags until they find one.*"
Mr Phonechan & Mr Daophet, village waste management sub-committee members from Samton village (December 2023)

REDUCING WASTE PRODUCTION AT HOUSEHOLD LEVEL

Raising awareness is important, but it must be accompanied by realistic solutions and proposals to reduce household waste. This chapter presents the various activities of the initiative to support the reduction of single-use plastics.

1 Implementing a bulk purchasing system

One of the biggest problems is the consumption of processed goods in small containers by households which generates a lot of waste. Bulk purchasing is one of the alternative proposed by the initiative.

Objectives:

- Reduce the production of waste by buying only the product and not the container
- Reduce the costs for the households and increase the margin for the shopkeepers

Bulk purchasing is an alternative to buying everything in small containers and a way to reduce waste. It's a Reduce solution from the 3Rs. However, as buying large containers is too expensive for most households, in this system it is the shopkeeper who buys in bulk (large containers) and resells the contents. When buying from the bulk system, the customer brings their own container to get refills from the bulk container.

With bulk purchasing, both the shopkeeper and the customer save money while protecting the environment.

In fact, buying in bulk can be economically more interesting for shopkeepers and customers. While a large bottle of cooking oil (5 liters) costs 180,000 LAK (36,000 LAK per liter), the same oil in a small bottle of 250 ml costs 12,000 LAK. That's 48,000 LAK per liter, which means a difference of 12,000 LAK per liter. This cost of 12,000 LAK is only for the packaging, which is thrown away as waste. And it is the same for many products, not just cooking oil.

The idea of bulk purchasing is to remove this packaging cost from the equation and to reuse containers that are still in good shape and do not need to become waste. When the cost of packaging is removed, it can be used to raise the margin of the shopkeeper and/or the price of the product for the customer.

Vente d'huile en vrac

To note

Ideally, it is always preferable to set a bulk sale price that allows a win-win situation where both the shopkeeper and the customer can benefit from this new type of transaction, but in reality this is not always possible. The smaller the quantity purchased with the bulk purchasing system, the more difficult it becomes to pass on the price difference to the customer, as the Laotian currency, the kips, does not offer notes smaller than 500 LAK. So, even if it is possible to reduce the price of the product by 200 LAK for the customer with this system, it is physically impossible to make her make this saving because the notes to give change do not exist.

Setting up the price of products purchased from the bulk system

In order to calculate the correct prices for the sale of products by refills, it is first necessary to collect information on the prices of the bulk products available and their quantities, as well as the prices of the small container products most commonly purchased by households. Once this information has been collected, a workshop is organized with all the shopkeepers who agree to participate in this activity. After explaining the principle of the bulk purchasing system and the advantages for them and their customers, the different products that can be purchased in bulk are displayed with their prices and their equivalent in small containers.

Using images and real containers of the different products really helps shopkeepers to visualize how the small container products are overpriced because of the packaging.

If I can refill 20 small 250ml bottles from my 5-litre bottle, this means that the cost to me per refill is the purchase price of 180,000 LAK divided by 20, or 9,000 LAK per 250ml bottle.

Using an Excel spreadsheet or simply a sheet of paper and a calculator, the actual price per refill is calculated for all the products selected for the bulk purchasing system. Once this calculation has been made, the prices of the refills are set according to the actual price of the product in small containers (which must be higher), while allowing retailers more profit (margins) to encourage them to sell through the bulk purchasing system.
Prices must always be set with the interests of the retailers in mind. They are the main partners in this activity, which cannot be carried out without their full cooperation and commitment. Even if selling products in bulk does not require a lot of extra work, it still represents more work than selling in small ready-to-use containers, as additional equipment is needed and has to be washed every evening.

Excel spreadsheet calculation for bulk purchasing price, Viengkham District, November 2023

			LPB price				Bulk purchasing		
Products	**Big container size**	**Unit**	**Big container price (LAK)**	**Small or medium container size**	**Small or medium container price (LAK)**	**Bulk purchasing proposed size**	**Bulk purchasing proposed price (LAK)**	**Margin for shopkeeper (LAK)**	**Reduction for customer (LAK)**
Cooking oil	5	L	180 000	250 ml	12 000	250 ml	11 000	2 000	1 000
				1 L	40 000	1 L	38 000	2 000	2 000
Dish soap	3,6	L	85 000	150 ml	6 000	150 ml	5 000	1 458	1 000
				750 ml	23 000	750 ml	21 000	3 292	2 000
Laundry powder	8,5	Kg	200 000	120 g	5 000	60 g	2 000	588	500
				250 g	10 000	100 g	3 000	647	1 167
						200 g	6 000	1 294	2 333

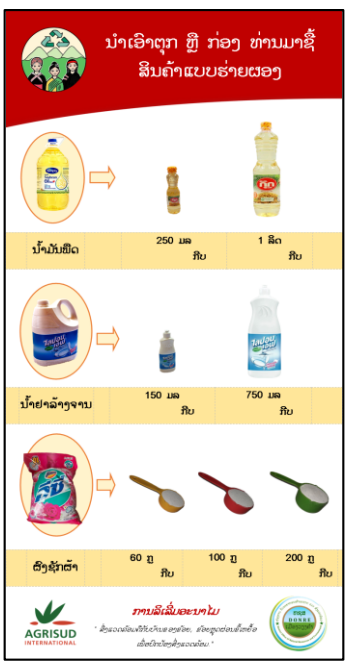
To note

It's best to start with a few products chosen from among those frequently purchased by households. In Viengkham, the bulk purchasing system focused on 3 products: cooking oil, dish soap and laundry powder.
The choice of products depends on the purchasing habits of households, but also on the products available in large containers.

Promoting the bulk purchasing system

The shopkeepers are trained in how to promote the bulk buying system to their customers and how to raise awareness of the impact of small containers on household budgets and the environment. As agents of change, they are also involved in promoting shopping without plastic bags, encouraging their customers to bring their own shopping bag or to carry their purchases home without a bag if not absolutely necessary.

Two posters outside the shop identify them as a partner shop in the bulk sales initiative.



The first poster shows refill prices and quantities, while the second explains why buying in bulk is cheaper than buying in small containers. The posters are printed in large format on banner-type plastic, which means they will last longer. They use images rather than text wherever possible.

It is also recommended not to write prices on the posters, but to leave the spaces provided blank, so that prices can be written directly with whiteboard markers, then erased and changed as product prices fluctuate.

Although the retailer doesn't need much equipment to sell in bulk, she does need :

2 fennels to refill the bottles

1 for cooking oil 1 for dish soap

1 set of measuring spoons for the laundry powder

1 closing clamp to close tight the laundry powder bag

> "*I am a shopkeeper and even though I educate my customers to reduce their use of plastic bags, there are still many who want them. These bags are then thrown away very quickly in nature. I have told them to throw them in the bins when they are done with them, the same with the kids who buy the snacks, I tell them to throw the wrapper in the bins, but sometimes some kids or villagers from other villages don't really listen and still throw them on the road.*"
> **Mrs Yengxong, shopkeeper partner of the initiative and village waste management sub-committee member, Samsoum village (December 2023)**

Information meetings on the bulk purchasing system are also held at the village level with shopkeepers to present the products, the prices and the difference in prices and the waste produced by buying in small containers. It's a good opportunity to promote the system and also to answer any questions prospective customers may have.

During awareness fairs, the shopkeepers of the village man the booth promoting the bulk purchasing system. It is important that they are visible and involved in their own village.

Lessons learned from this activity

Setting up a bulk purchasing system in rural villages is no easy task. The first obstacle is finding products to buy in large containers. Most of these products are only available in towns and not in wholesalers' shops located in the centre of a rural district. These shops generally only stock products that retail shops sell at village level, i.e. over-packaged products in small containers.

Before introducing products in large containers to wholesalers in Viengkham district, it was important to first create a customer base among village retailers. The first batches of products in large containers are supplied free of charge to the initiative's partner retailers. These are purchased in the town of Luang Prabang. Once their batch has been sold in bulk, the shopkeepers must be able to replenish their supplies from their wholesaler with the money from sales.

In order for wholesalers to offer these products in large containers for sale in the district, a workshop was organized between retail shopkeepers and wholesalers to present the bulk purchasing approach and the requirements for supplying products in large containers. During this workshop, the types of products required were clearly presented (brand, product size), and the frequency of requirements was also discussed.

To note

Providing the first batch of products in large containers free of charge to the partner retailer shops is a way of giving them the start-up capital for this activity in the form of products. Once they see that they can sell them, they will be more inclined to invest in the purchase of new products in large containers to perpetuate the bulk purchasing system.

During the pilot phase of ANAMAY, the bulk purchasing system was tested with five products - cooking oil, dish soap, laundry powder, oyster sauce and shampoo - that were available in bulk in Luang Prabang and widely purchased by villagers in small containers. But oyster sauce was quickly dropped from the list for two reasons: 1) it was not a product that people bought often, especially in Khmu villages; 2) refilling oyster sauce, which is a sticky product, was difficult. It would stick to the sides of the fennel and the shopkeeper felt that she was losing a lot of product in the fennel as she had to wash it all the time. It was not a convenient product for a refill system, so it was dropped.

During the pilot phase, the products most purchased through the bulk purchasing system were cooking oil and laundry powder, as households felt that these products gave them the best discount compared with products in small containers. Dish soap was also cheaper to fill, but not all households used it, and it took a long time for shopkeepers to sell the entire contents of a 3.5-litre bottle. For shampoo, the problem was that customers had to find the right small container to refill. Given the difficulty of finding the right size and practical container for their refills, many households opted to buy shampoo bottles directly in large containers (between 340 ml and 450 ml depending on the brand), as these products proved to be much more economical than the regular purchase of 5 ml shampoo packs.

For the extension phase of the initiative starting at the end of 2020, new products such as sugar and glutamate were added to the list of products sold by refill following suggestions from customers, but they were quickly abandoned due to the difficulties encountered by the business from 2021 because of the Covid-19 pandemic.

Indeed, in 2021, the economic impact of Covid-19, with the end of tourism and the closure of borders, led to a significant devaluation of the local currency, the kip (LAK) and to high price inflation in Laos. As most manufactured goods come from neighboring countries, particularly Thailand, the devaluation of the kip against the Thai baht has had a considerable impact on prices. The prices of these products have doubled or even tripled. Within Laos, wholesalers still had large stocks of products in small containers, which enabled them to maintain their prices for the time being. On the other hand, products bought in large containers were less stocked (because they were less in demand) and stocks had to be quickly replenished from Thailand, leading to a sharp rise in prices.

For almost the whole of 2021, prices per kilo or per liter for products in large containers were therefore higher than those for products in small containers. As a result, the bulk purchasing system introduced by the initiative collapsed completely, because it was no longer viable. It could only be properly relaunched in 2023, when the prices of all products were affected in the same way by the devaluation of the currency. By then, the difference in price per kilo or per liter between products in large and small containers had become even greater than before the crisis.

As the initiative has only recently resumed the process of promoting bulk purchases, by organizing a new pricing workshop with retailers, followed by promotion campaigns in the villages via community meetings and village awareness fairs, it has not had time to collect concrete data on the impact of this activity on waste reduction in the villages. The only data available to date comes from the pilot phase, before the Covid-19 crisis and the devaluation of the currency, when for three months, from August to October 2019, volunteer shopkeepers recorded their sales by refill and pilot families recorded their waste production.

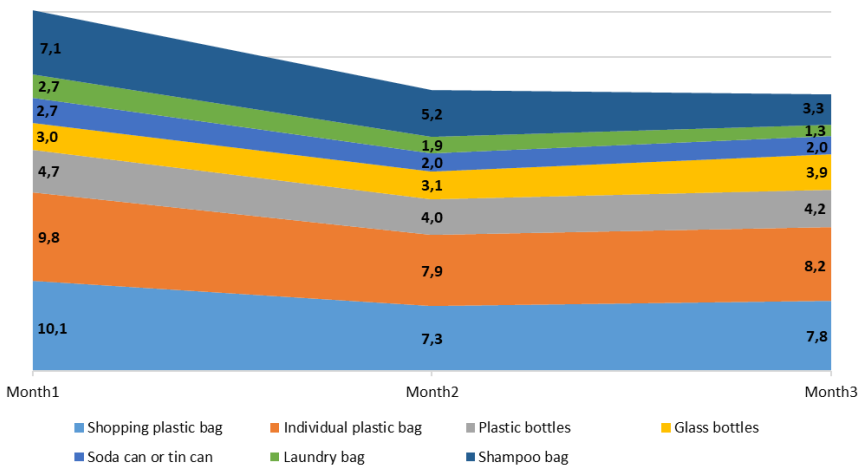
Collecting this data was not easy, as the shopkeepers and pilot families did not always record the data correctly. Some shopkeepers delegated the recording of data to other people, such as their children (who were more literate). Sometimes the shopkeepers were replaced in the shop by a family member who generally did not record the data in the record book.

Despite this, once the data had been cleaned, the remaining data constituted a sufficient sample for analysis.

Sale of laundry powder by refill

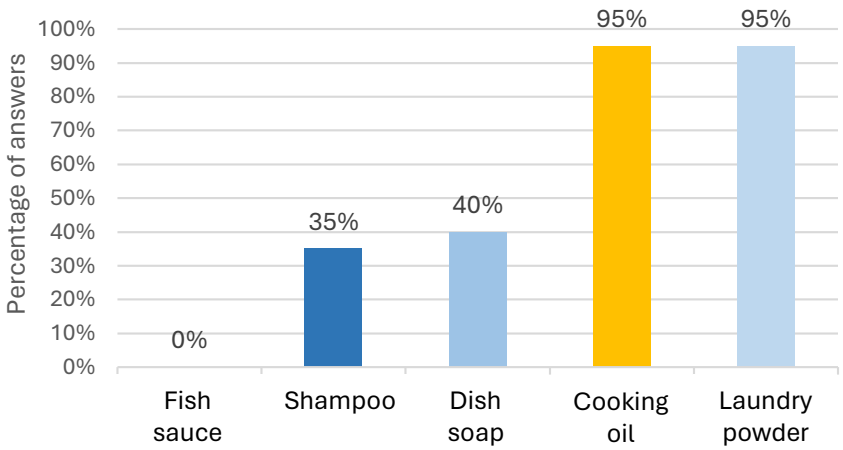
The initial results showed a positive trend, with a reduction in waste production among the pilot families. As can be seen from the graph below summarizing the average monthly production of different types of waste by the pilot families (figure 2), it is possible to observe a slight decrease between the first and second months of the pilot phase for all products, with the exception of those sold in glass bottles, which increased slightly. Between the second and third months, the overall consumption rate remained relatively constant for most products.

Figure 2: Average number of different types of waste produced per pilot family per month



Predictably, the impact of the initiative was greatest for certain types of waste. Plastic bags used daily and usually thrown away immediately after shopping saw a reduction of a third over the three-month period. This result is mainly attributed to the awareness-raising sessions and advice given by the shopkeepers involved in selling bulk products. Consumption of products individually wrapped in small plastic bags (cakes, banana crisps, oil, etc.) also fell by 17%, which is a relatively significant indirect impact, given that most of these products are not on the list of products sold in bulk under the initiative. Consumption of plastic bottles has also fallen (-12%), but remains significant for soft drinks and fruit juices, which are not covered by the initiative. Consumption of packs of laundry powder has been halved. Along with oil, this was the product that sold best in bulk in shops participating in the initiative. Consumption of shampoo in 5 ml packs has also been halved.

Figure 3: Percentage of pilot families buying products in bulk, by type



Measuring spoons for selling laundry powder in bulk

In the central village of Viengkham, only small retailer shops agreed to take part in the initiative, as the larger ones felt that the process took too long to be viable for their business. In the smaller villages, on the other hand, the busiest shops were often the ones that agreed to take part in the initiative because they understood the positive impact on the environment in addition to the economic benefits. However, shops in the same village work at different rates, as shown by the results of the first month's business for the two shops in the village of Had Lao (table below).

Table 1: Comparison of sales between 2 ANAMAY Initiative partner shops in Had Lao (August 2019)

Seller 7. (HLO)				Seller 8. (HLO)			
Month 1	**Qty sold**	**Nbr sales**	**Income (Kip)**	**Month 1**	**Qty sold**	**Nbr sales**	**Income (Kip)**
Cooking oil (ml)	2,000	28	37,000	**Cooking oil (ml)**	1,100	9	19,000
Dish soap (ml)	2,850	14	47,000	**Dish soap (ml)**	450	2	8,000
Fish sauce (ml)	280	1	5,000	**Fish sauce (ml)**	0	0	0
Laundry soap (g)	2,600	13	39,000	**Laundry soap (g)**	1,200	5	17,000
Shampoo (ml)	275	27	27,500	**Shampoo (ml)**	30	4	3,000
Total		**83**	**155,500**	**Total**		**20**	**47,000**

While the first shop (no. 7) carried out an impressive 83 transactions involving ANAMAY products for a total of 155,500 kip during the first month of the pilot phase, the second shop, run by a pregnant woman and located 15 meters from the first shop, only carried out 20 ANAMAY-related transactions for a total of 47,000 kip. Because of the owner's pregnancy, the shop was only open half the day, and the absence of a window opening onto the street, like most of the other shops, also made it less attractive than the others.

The initiative's 11 partner shops generated total revenue of 960,300 kips in the first month, which fell by 10% in the second month and by 33% in the final month, giving a total of 2,385,300 kips from the sale of ANAMAY Initiative products in 3 months.

The higher purchase rate in the first month is partly explained by the novelty of the activity. All the pilot families went to the initiative's partner shops in the first month to try out buying products in bulk and to familiarize themselves with the process, and then they did not need to repeat their purchases straight away. However, a simpler explanation is that the retailers stopped recording the data after the first month.

Refilling a bottle of oil using the bulk system

"For me, participating to the bulk purchasing system activity was important because I would like to help reduce waste. I talk to my customers about how bulk purchasing not only help reduce waste, but also is less costly. If you come with your own container, you can get more products at a lower price. We can reuse the same container over and over. It is a good way to reduce waste. Of course, buying packaged products or refills with the bulk system is not the same. It's easier to buy the products with its package. But the bulk system is the best way because it reduces plastic waste. There is some villagers who haven't understand the bulk purchasing system yet, but it is my role to explain it to them when they come to my shop. I think that many people understand in my village and I am proud that the villagers are interested in bulk purchasing and waste reduction.

Regarding the use of plastic bags, I try not to offer any of them. I always tell my customers to come with their shopping basket or with a reused plastic bags. If they can carry their purchased items home without a bag, I encourage them to do so. But sometimes they insist and I have to give one big gag to them to place all their items together. But I always remind them to bring their shopping basket next time because I know the impact of our plastic bags on the environment and I want to contribute to reduce it."

Mrs Lin Thammavongchan, shopkeeper partner of the initiative, in Vang Heung village (March 2024)

2 Promoting a plastic-free market

Fresh produce markets are places where plastic bags are widely used to carry customers' purchases. They are places that generate a lot of waste (plastic bags and foam boxes).

Objectives:

- Reduce the waste generated by the market's customers
- Propose alternatives to plastic bags and foam boxes to the market's customers
- Change the behavior of the market's customers with regard to disposable items

On the 15th and 30th of each month, the fresh produce market in the center of the district promotes the reduction in the use of plastic bags and other single-use items, and encourages customers to bring their own shopping baskets and other containers to do their shopping.
During these days, awareness-raising activities are carried out and a booth is set up to offer shopping baskets and reusable boxes for sale at subsidized prices.

Eliminating plastic bags from markets is a long-term process that must be carried out step by step and steered by the local authorities.

The first step is to organize meetings with the District Special Committee on Household Waste to discuss the conditions for implementing this activity. The first question to be answered during these meetings is "What is the goal we want to achieve with this activity?". This will help to set a clear objective and answer the second question: "How will we achieve this objective?", i.e. what activities will be carried out to achieve the objective. For each activity identified, a third question is asked: "Who is responsible for this activity?".

In Viengkham district, while the initiative wanted to ban plastic bags completely from the market, the local authorities were more cautious and decided to set two days a month (the 15th and 30th) when plastic bags would be reduced. This meant that there was no real ban, but customers were encouraged not to take plastic bags or foam boxes on these days.

The market vendors were encouraged to take part thanks to an awareness-raising session for them. Their role was to discourage their customers from asking for a plastic bag and to use a basket instead. Baskets could be bought at very low prices on these days.

The villagers in the central villages of the district were informed about the plastic bag reduction days through information spots on village loudspeakers by the village chiefs, and a booth was set up near the market to sell shopping bags and reusable boxes to market customers. These products were not available in Viengkham district at the time. They had to be purchased and shipped from the cities of Luang Prabang and Vientiane. As the actual prices could be a barrier for the poorest families, most of the costs were covered by the initiative and customers were charged only 10% of the actual prices.

On the first day of this activity, the director of the DONRE came to officially open these "plastic-free days" with a speech. Awareness-raising posters and films were also shown. On the 15th and 30th of every month, the district team sets up the awareness booth and promotes the reduction of plastic bags while selling reusable shopping items.

In total, the initiative was able to support the organization of 8 of these events, from October 2023 to February 2024. The sales of baskets and reusable boxes were very successful thanks to the low prices. However, the quantities available for sale were rarely sufficient. With the "first come, first served" principle, most of the customers who came to the market in the afternoon were disappointed to have missed the opportunity, as the stocks were already gone.

Awareness and sales booth

Opening speech from the DONRE director

The final survey carried out in February 2024 showed that 48% of households interviewed in the central villages said they did not throw away plastic bags. This percentage was much lower in the initial diagnostic survey carried out three years earlier, in February 2021, when only 6% of the same villagers said they did not throw away plastic bags. The number of plastic bags thrown away per week fell from 20 bags per week in 2021 to 9 bags per week in 2024 for households that said they still threw away plastic bags. To the question "Do you reuse plastic bags when they are not torn?", 100% of respondents in these 4 villages answered yes in 2024, compared with 86% in 2021. However, to the question "Do you sometimes refuse plastic bags from shops?", 43% said yes in 2021, while only 19% said they sometimes refused plastic bags in 2024. It would be interesting to understand the reasons for this change, given that the people questioned in both surveys make up almost the same sample of households (90% of the same households). But one of the lessons learned from this survey is that while raising awareness among customers is important, it is equally important to involve market traders and sellers in the process, as they are often the ones offering plastic bags, even if customers don't ask for them.

3 Promoting local cakes and snacks

School children often buy snacks at school during breaks. The only options available to them near schools are over-packaged industrial cakes or sweets, which are not very nutritious and generate a lot of waste.

Objectives:

- Reduce waste from school children's snacks
- Provide local alternatives to over-packaged industrial cakes sold by shopkeepers to school children

In order to create new businesses by selling local cakes near the schools, 23 women from 6 villages were trained by the Lao Women's Union to make 5 types of traditional cakes. Prior to this, a market survey was conducted among school children in 16 target schools to determine their preferences for cakes. The survey showed that traditional cakes were more appreciated, but their price had to remain attractive compared to industrial cakes.
In boarding schools, students were also keen to have access to ready meals. As boarding schools are located far from village centers, students tend to rely on one or two small shops nearby for their food, and these do not sell fresh produce, with the exception of eggs. Many of the high school students' diets consisted of instant noodles and industrial cakes.

However, after the trainings, in the school year 2020/2021, only 12 women produced cakes, consumed them with their families and sold them on occasions: market days, events (parties, workshops, meetings). The closure of schools due to the Covid-19 pandemic and the absence of schoolchildren explain the lack of sales at school level. However, in the school year 2021/2022, given the lack of progress in this activity, the project team identified two new bottlenecks: 1) inflation in the price of raw materials, especially oil and sugar, which discouraged women from investing without a guarantee that their cakes would be sold; 2) the monopoly of shopkeepers near schools in selling food to pupils. Most of these shops are run by relatives of the school directors or teachers, who are often from outside the villages and who forbid local women from selling cakes and snacks near the schools.

As a result, the sale of traditional cakes remains marginal, mostly at events such as meetings, workshops and school fairs. During these days, local cakes and snacks were well received and sold at a reasonable price to students attending the events. At village awareness-raising fairs, the cake makers had a promotional booth where they explained why their cakes were better for nutrition and the environment, and where people could taste them.

In conclusion, if the promotion of traditional cakes and snacks to students was a good idea for better nutrition and waste reduction, the initiative should have involved school authorities from the start of the process to prevent such opposition from the teaching staff to sell these products near schools.

4 Making handicrafts from recycled waste

Some waste, such as plastic bags, plastic banners or large laundry bags, can be used as raw material to make handicraft products.

Objectives:

- Reduce waste by turning plastic waste into handicraft products
- Raise awareness that waste can have a second life and be useful
- Create new small businesses for women

This activity was carried out by Xon Phao Disabled People Working Group, a Vientiane-based association for disabled people from ethnic minorities.

In the first year of the project, Xon Phao trained 34 people, including 28 women, in 4 pilot villages to make bags and jewelry from recycled plastic, as well as washable sanitary pads. The washable sanitary napkins were not part of the plastics upcycling program, but were a product the initiative wanted to produce and test as an alternative to disposable industrial napkins, which generate a lot of waste each month.

Training in August 2021

In the second year, 9 more people (including 5 women) from 4 villages, all with disabilities, were also trained, while 11 previously trained women received additional training in marketing and product design. Finally, in January 2023, a new training course was held at the training centre of Xon Phao in Vientiane for 6 trainees (including one man) to improve their technical skills in the production of handicraft products and a new product was also introduced: washable nappies for babies.

The results of this activity were mixed. On the one hand, the quality of the handicraft products for jewelry and handbags was improving and they were attracting interest from local shops in nearby tourist towns. On the other hand, the artisans were finding it difficult to produce in large quantities because of a lack of raw materials. In fact, if the villagers still throw away plastic bags, most of them do not reach the artisans as they are thrown in general bins and not on special bins.

Regarding the sale of products, most of these artisanal products do not sell very well within the District. The artisans testify that they are often asked by their relatives to give them for free, especially jewelry. But these products arouse the interest of other audiences outside the district: the Laotian urban middle classes and tourists (especially Western ones). However, with the absence of tourists in Laos during 2021 and a timid recovery in 2022, due to the Covid-19 pandemic, the enthusiasm of the artisans after the first training quickly waned due to lack of outlets.

Several products (jewelry and handbags) were sent to Vientiane, to Xon Phao, to be sold in their store, but with the exception of a few better made ones, the latter are often of lower quality than those made by the members of Xon Phao and therefore sell less well.

Promoting the products to stores in town

Presentation of products during a meeting

Regarding sanitary napkins and reusable diapers which were prototype products to be tested, the test group, made up of female relatives of project agents and district staff, did not validate these products after testing them. The women said these products were not very practical because they had to be washed and dried.
It is possible that the people chosen to constitute the test group were not the most relevant because they are people with higher purchasing power which allows them to buy disposable products. For villagers in more rural villages, disposable diapers are washed for reuse. They can be seen drying on fence posts. It is therefore recommended to target these households instead to carry out tests on this type of new product. In addition, as Xon Phao has little experience in making this type of product, it is possible that these prototypes were not the most suitable.

Making a washable sanitary napkin

Washable diaper prototype

MANAGING WASTE AT VILLAGE COMMUNITY LEVEL

Households are responsible for waste generation, so it is important to raise their awareness and offer solutions for waste reduction and recycling, but they will still generate some waste even if the quantities are reduced. So what can we do to ensure that household waste is not dumped in the nature or incinerated without any safeguards for people's health?

1

Setting-up Village Sanitation Action Plans

At the village level, each waste management sub-committee prepared a Village Sanitation Action Plan, listing the rules and regulations for waste management and the community activities to ensure the cleanliness of the village.

Objectives:

- Establish a regulatory framework for waste management at village level
- Set up activities to keep the village clean
- Making village waste management everyone's business

After the creation of the Special District Committee for household waste management, each of the villages targeted by the initiative was asked to nominate members to form sub-committees at village level to prepare their waste management regulations and their sanitation action plan, in line with the District's eight-point policy plan.

The activities of the implemented plans are:

- Organizing monthly waste clean-up days in the village;
- The installation of waste bins for each household and a waste pit for each group of houses;
- The selection of a site for the development of a future landfill;
- The installation of informative signs prohibiting the dumping of rubbish in places currently used as illegal dumps.

Sub-committee members are elected at a village meeting. They are first nominated by their peers, and then a show of hands is held to see if the majority accepts the nomination. This method of nominating committee members is very common in rural Lao villages. The initiative decided to respect their election process and not interfere with their choices. The people chosen are usually respected members of the community who are already involved in local organizations. These organizations are: the village chief's office, the council of elders, the village security office, the village military, the health agent, the household group units (nouay), the youth association and the women's association.

The number of members of each sub-committee depends on the size of the village and ranges from 5 to 12 members. The percentage of women in the committee varies from 0% (no elected woman in a 5-member committee) to 86% (6 elected women in a 7-member committee), with an average of 23% women.

The names of the selected committee members, their roles and the rules for waste management in the village are recorded in an official document signed and stamped by the village chief and submitted to the district authorities.

To note

The first Village waste management regulations were quite similar to those drafted by the District Special Committee, even down to the level of fines to be paid by offenders. But as the months went by, the sub-committee members realized that they were not suited to their own situation and needed to be revised. In 2023, each village revised their plan according to what they felt would be accepted by their community. For example, a fine of 100,000 LAK per offence was reduced to 10,000 LAK for the first offence, with an increasing fine for each repetition.

2 Organizing monthly clean-up days

Clean-up days are opportunity for the villages to get rid of their old garbage that have been lying around their village for years.

Objectives:

- Cleaning up the village of waste that has accumulated over the years
- Improve the cleanliness of the village
- Make all villagers responsible for the cleanliness of their village and encourage them to stop throwing their garbage anywhere

Village clean-up are organized monthly by the Village Waste Management subcommittee in order to clean the public area of the village from the waste that have been thrown in nature and which have been accumulating for years. This activity mobilizes the majority of the households and a cleaning route is designed.

Usually, all attendees will start at one entry of the village then will walk side by side following the main road collecting all waste on the sides of the roads.

Only the public areas of the village are covered by this collective collection scheme. Back gardens are the responsibility of their owners. While the villages targeted by the initiative are generally fairly clean, there are still many gardens full of garbage. These areas have been used as personal dumps by some families for many years, and much of the waste is now buried in the ground or hidden by vegetation. Cleaning them up will take time and personal commitment from the households concerned.

"*We organize the village clean-up day every month on the 30th. All the villagers are involved. Sometimes some people are busy, but that's OK, we understand, and they come the next time, and then it's other people who are busy, but in general we don't have to take any measures to ensure participation. We start at the south entrance to the village and we all go up together and collect the garbage along the road until we get to the second entrance to the village. We do this every month and each month we see that we have less and less garbage to collect. The village is much cleaner than before. Even in the backyards, where cleaning is done individually, we can see that there is a lot less rubbish. People don't throw their waste in the backyard anymore, they use the bins.*" **Mr. Yern Young, village waste management committee member in Samsoum village (December 2023)**

At the start of this activity, certain areas of illegal dumping had been identified by the village authorities as "hot spots" that needed to be cleaned up. Households living nearby were then designated to clean up these areas during monthly clean-up days. Cleaning these areas takes time. Waste has been accumulating for years and much of it is buried in the ground. Painted wooden signs have been put up in each of these areas to indicate that it is forbidden to litter here.

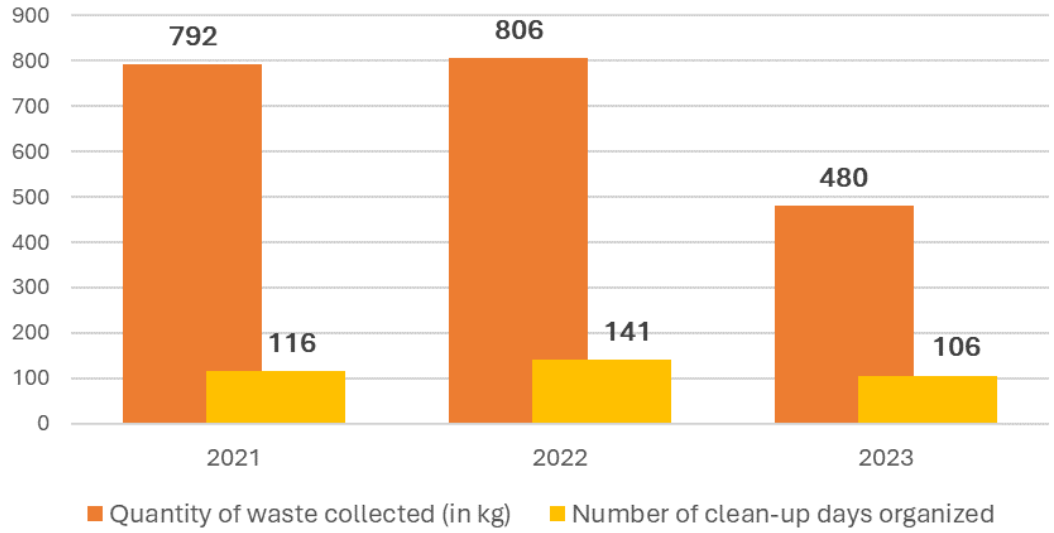
One of the « hot spots » (illegal dumping site) in Samton village, February 2021

The same place in march 2024 with its painted wooden information sign

Thanks to awareness-raising activities and the installation of waste bins for each household and garbage dump pits for each group of households, the quantities of waste found in nature, particularly alongside the roads, are much lower. What remains is waste thrown away by passers-by from outside the village, often passengers in a moving car or bus, who throw their garbage out of the vehicle windows.

For the duration of the project, the quantities of waste collected each month during the village clean-up days and the number of participants were recorded, between January 2021 and August 2023. The data showed a good participation rate (85% of households) and 2 tons (2,078 kg) of waste collected from the countryside during the 363 collection days organized. This represents an average of 5.7 kg of waste collected per collection day. This may not seem like much, but most of this waste is plastic bags and food packaging, which are fairly light.

Figure 4: Quantity of waste collected (in kg) and number of clean-up days organized



This figure shows that the average quantity of waste collected per clean-up day decreases from year to year: 6.8 kg/day in 2021, 5.7 kg/day in 2022 and 4.5 kg/day in 2023.

The reduction in the quantity of waste collected per clean-up day is explained by the fact that the quantity of waste still in nature decreases with each collection day. Awareness-raising campaigns and the installation of waste bins and dump pits also help to prevent new waste from being deposited.

The waste collected on these days is generally sorted by type and deposited in dump pits or burnt after collection.

3 Putting up information signs

Various types of information signs have been installed in the villages to inform the population of the new waste regulations.

Objectives:

- Protecting natural areas to prevent them from once again becoming unauthorized dumping grounds
- Inform villagers of new regulations on waste disposal sites

During the first year of the project, simple wooden signs were made and placed at illegal dumping sites to inform villagers that it was forbidden to dump waste there. But these signs were not always effective.

According to the villagers, young children and elderly people who cannot read do not respect what is written on the signs. The project team therefore ordered and distributed new, improved signs with symbols, waste bins underneath and an indication of the fines for non-compliance.

Wooden sign placed at one of the illegal dumps near the river

Improved sign indicating fines, with garbage bins underneath

It's not always easy for members of the village waste management sub-committee to know who is still dumping waste in prohibited areas. And even when they do know, it's hard for them to enforce the fines. They often don't dare ask the offender for the amount owed, and settle for warnings. That's why clean-up days are so important for them, to clean up these sites, but above all to discourage households from continuing to use them as dumping grounds, at the risk of having to clean them up again every month.

To note

The use of bins that are considered "too nice" (hard colored plastic ones) in public areas can be risky as they can be stolen.
It is therefore advisable to use bins made locally from local materials (such as bamboo) and to tie them to a post so that they have to be removed to be emptied. This makes them less likely to be picked up by someone for their own use.

4 Putting up household garbage bins and digging waste dumping pits

Installation of garbage bins for each household and a waste pit for each group of houses.

Objectives:

- Ensure proper waste management at household level
- Provide designated areas for waste dumping, where it can be sorted and processed according to type

All households must have at least 2 bins, including one for general waste and one for recycling. Some households have also installed compost bins to sort their green waste. The bins take different shapes and forms depending on the materials available to the families. It can be a large rice bag, a plastic box, a bamboo basket or a plastic bin.

Two bins in front of each house in Samton village

Waste pits are usually shared by a group of houses, as there is often not enough space to dig them individually. The number of pits dug varies according to the size of the village. Where possible, the waste pits are also plural in order to sort the different types of waste thrown into them. The quality of the management of the pits (especially the sorting of the waste) varies from one group of households to another. Some pits are already full, sometimes with dry grass. Some pits overflow. Some are well managed with regular burning. It really depends on the commitment of the household groups and the inspection by the sub-committee.

Compost bin in Samton

Waste pits are often seen as a temporary solution until a village landfill is set up. In the mountain villages of northern Laos, there is little space to dig the pits. It is therefore not possible to bury the waste when the pit is full and dig a new one. The only way to dispose of waste in pits is to burn it. Burning waste in pits poses two main problems: 1) the smoke given off by the burnt waste, which is often plastic and gives off fumes that are toxic to human health; 2) the waste in the pit is generally not dry and is difficult to burn. A third problem with pits is that when it rains, run-off water rushes in and can also cause the walls to collapse, contributing to them gradually filling up with soil.

Waste pits in Phouthong village

5 Setting up a village landfill

A landfill is a place where the waste produced by the households is managed collectively with proper facilities.

Objectives:

- Replace the use of dump pits with a more permanent solution
- Provide facilities to properly dispose of the different types of waste without endangering human and animal health and the environment

Selecting a suitable site for the landfill

With regard to the selection of sites for future landfills managed by village sub-committees, not all the villages targeted by the initiative have been able to reach this stage. Only 4 villages out of 8 have been selected for the development of landfill sites (the 4 villages in the center of the District are not involved in the activity as they benefit from the District landfill).
The villages were selected according to a number of criteria: villages where waste is sorted at household level; where waste pits are properly managed; and where efforts have been made to reduce household waste (recycling activities) and to clean up the village environment.
Once these villages are ready to move to better waste management, they need to select a suitable site for a village landfill. The site validation criteria are as follows:

- **No slope:** If waste is deposited on slopes, there is a risk that it will move downslope with run-off water, polluting other areas, often river areas. A sloping area will also be more expensive to develop, as it will have to be levelled to install the infrastructure.

- **Not too close to the village:** The landfill should not be located too close to the village and houses to avoid problems with odors, rodents, cockroaches and other pests. The smoke from the burnt waste should also not reach the houses. But the landfill must not be too far away either, as it would be too difficult to access it to dispose of the waste.

- **Good hydrogeological conditions:** The site should not be located in flood-prone areas or in areas where the water table is high, to avoid groundwater contamination.

- **Soil quality:** It is preferable for the soil on the site to have low permeability and to be clayey in order to minimize the migration of contaminants into the surrounding environment.

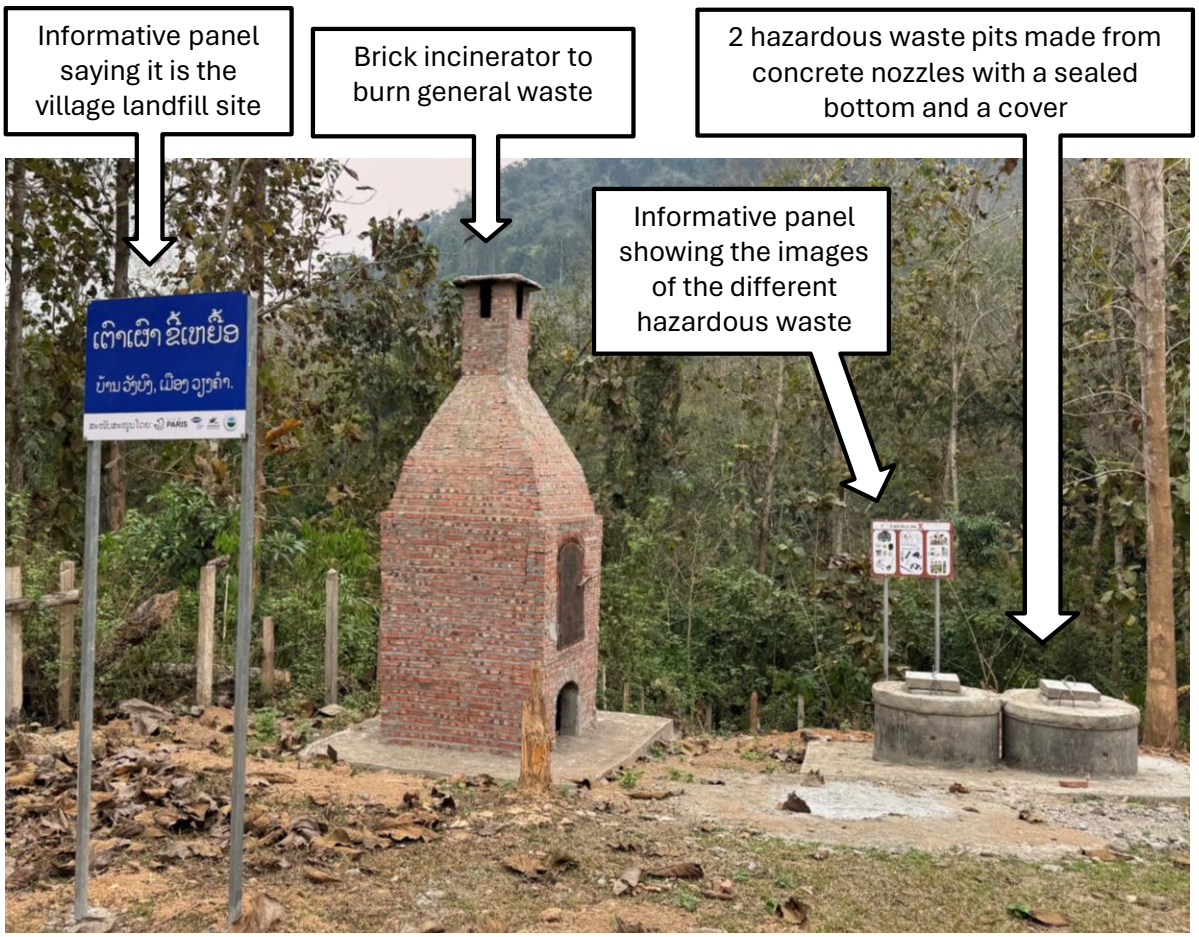
- **Availability of suitable land:** Sufficient land is required to meet waste disposal needs over a long period, taking into account the village's population growth and waste production rates. The land must belong to the community rather than to a single owner.

- **Accessibility and transport infrastructure:** The site should have convenient access to transport routes to facilitate the transport of waste.

Once the site has been selected, it must be validated by the DONRE, which will authorize the construction of the household waste management facilities.

Development of the landfill site

Each landfill site is developed with two main facilities: a brick incinerator to burn the waste in a more controlled environment and two sealed concrete pits to bury hazardous waste.



Village landfill in Vangbong village

This type of facilities is new to Viengkham district. The model villages in the initiative were the first rural villages in the district to be equipped with them to manage their waste.
Finding the right masons and workers to carry out the work was not easy, and the shape of the incinerator (especially the chimney) changed slightly from one village to the next, with workers improving with experience.

"*It took quite a long time to build the incinerator because we don't have skilled people here to do the work, and we lacked experience because it was the first incinerator in the whole district. But we think that in the future some families will want to build one for their own use.*"
Mr Phonechan & Mr Daophet, village waste management sub-committee members from Samton village (December 2023)

The incinerator is designed to incinerate general waste only. It should not be used for hazardous waste (chemical bottles, light bulbs and fluorescent tubes, aerosol spray bottles, broken glass, etc.), which are dumped in the hazardous waste pits.

There are some essential features that the incinerator needs to function properly.

1) A metal grate to support the burning material

Waste in contact with the ground or a flat surface won't burn completely. The bit in contact with the ground loses heat to the ground and cannot reach the correct combustion temperature. It also doesn't get enough oxygen to burn completely. Moisture from the ground can also be drawn in, making the situation worse. The solution is a metal grate suspended over the bottom of the incinerator. This allows free passage of air into the burning material. The grate is a welded mesh of 12mm rebar. Thicker is better. Grates rust and burn out. The life of the grate depends on how much the incinerator is used. Standing idle in wet conditions will also shorten grate life.

2) A chimney to allow for high combustion temperatures

A restricted chimney draught to allow high combustion temperatures and a more complete burn. A fire will burn hotter if it gets more air - up to a point. Beyond that, more air just cools things down. Anyone with experience of autogenous welding or operating an airtight wood-burning stove knows that there is a critical amount of oxygen at which the combustion temperature is highest. Low combustion temperatures are not good because the plastics etc. don't burn completely and produce lots of smelly, nasty, toxic smoke. There is an ideal, critical amount of air; it depends on what is being burned. The crude approach is to simply restrict the chimney a bit to make the fire burn hotter.

"*Before, when we used to burn the garbage in the dump pits, it was very unhealthy because the smoke goes everywhere and it's very toxic for our health. Now we don't see the smoke, it goes out of the chimney, away from us. We don't breathe it anymore. Also, when we burn outside, if it's windy, the wind can carry away some of the burning rubbish and that's dangerous. Often only the top layer of the garbage burns, not the inside, and it is very difficult to get it to burn completely. We don't have this problem anymore with the incinerator and it burns much faster.*" **Mr Phonechan & Mr Daophet, village waste management sub-committee members from Samton village (December 2023)**

3) A metal door

A door for loading the material to be burned, which can be closed to keep out excess air that would lower combustion temperatures. Be careful as a metal door will heat up considerably during the combustion process. It shouldn't be handled without proper protective equipment, such as gloves.

4) An ash cleaner under the grate

Ash should be collected regularly and buried. Ideally there should be only ash, no plastic pieces. The opening under the door should be high enough to allow for easy cleaning, but should not be so wide as to allow too much air to enter the combustion chamber.

5) A knowledgeable operator

In the absence of sophisticated controls, a good operator is needed. Someone who knows how to build a hot fire before introducing a load of partially wet waste. The operator must separate the waste into 'combustibles' and 'organics', such as food waste. The "combustibles" are burned in the incinerator. Food waste is composted. Metal waste is sold to collectors or put on a scrap heap to rust. Glass bottles shouldn't be burned, they should be reused or piled up. The operator wears protective equipment (gloves, mask, high boots) when using the incinerator or handling any type of waste.

Village landfill in Samton village

Other features can be added to the village landfill.

For example, in the village of Samton, the landfill also has a garbage storage area where households can bring their garbage bags to be stored until the next day when the incinerator is used.
To ensure that the incinerator cannot be used by anyone other than the operator, it is a good idea to fit a lock to the metal door.

Not all waste can be incinerated. Some are too dangerous, with the risk of explosion or leakage of harmful chemicals. This is particularly true of aerosol cans, light bulbs and batteries. Hazardous waste should be buried, but not directly in the ground, as the chemicals can spread and contaminate groundwater. It is preferable to build pits with concrete nozzles. The bottom of the pit should also be sealed with cement and a lid placed over it to prevent it filling up with rainwater.

Hazardous waste pits in Samsoum village

As with the metal door of the incinerator, it is recommended that a chain and padlock be used to close each lid of the hazardous pits so that no-one other than the operator can use them. An information panel showing photos of all the types of waste that can go into these pits is also useful to avoid mistakes and the pits being filled too quickly with waste that has no business being there.

To note

It is not the operator's job to sort the waste at the landfill. He/she has to make sure that the different types of waste are disposed of properly, but households should be the ones to prepare the waste accordingly. Each household should have different bins at home. Ideally, there should be two bins: one for general waste, which goes to the incinerator, and one for recycled waste, which can be reused or sold. Hazardous waste is not everyday waste, so it doesn't need a bin, but it should be kept separate and ready for garbage collection day.

6 Organizing household waste collection

The collection and treatment of household waste is organized by the village sub-committee. A village meeting is held to discuss the modalities of implementing this service.

Objectives:

- Dispose of household waste properly
- Ensure the sustainability of landfill facilities by using trained operators and charging for waste collection

Village meetings to organize the waste collection and treatment service

To decide on the organization of the waste collection and treatment service at the village landfill, meetings are held with the members of the village waste management sub-committee and the representatives of each household.

An initial 2-hour meeting was organized to present the project's recommendations for managing the village landfill: identifying and training village operators, sorting and collecting household waste, using the incinerator (duration, types of waste, maintenance) and the hazardous waste pits, paying for the waste collection service and maintaining the infrastructure and equipment.

The aim of this first meeting is to present the service and how it works. The village authorities and the sub-committee then take time to discuss with their community in order to decide on the number of village operators to manage the village landfill, the number of collection days per month, the amount of the operators' monthly payment and the amount of the household contributions. They present their strategy to the project at the second meeting before the final decisions are made.

To determine the amount of contributions to be paid by each family to benefit from a waste collection and treatment service at the village landfill, a simple operating account must first be drawn up.
This operating account must take into account both the service's operating costs (village operators' allowances, equipment costs and depreciation of infrastructure and equipment) and the service's income (monthly or annual household contributions), with the aim of balancing the budget over the year.
However, as this is a new service in the villages and its effectiveness has not yet been proven, households have been reluctant to pay the appropriate amount to include the costs of depreciation of infrastructure and equipment.

Case study: waste collection and treatment in the village of Samton

This village of 74 households was the first in Viengkham district to benefit from the construction of a village landfill. Initially, the 7 members of the village waste management sub-committee took turns to burn the waste in the incinerator, free of charge. Household waste was incinerated once a month, at the same time as the waste collected during the clean-up day.

Household waste is stored in large rice bags until the 30th of the month. As food waste and green waste are deposited in the compost bins, households said that the waste stored did not smell bad as it was mainly plastic bags and food packaging, the type of waste that goes into the general garbage bin and cannot be recycled. Recycled waste, such as plastic bottles, is kept in a separate area, the recycling bank, which the villagers built from bamboo and placed in the center of the village.

"We are responsible for organizing the clean-up day on the 30th of every month. All the villagers take part in the clean-up. We start from the entrance of the village to the exit, cleaning along the road. Once the waste is collected along the road, we go to the incinerator to burn it. Each family will also bring their own garbage that they have kept aside for a month. They have about 2 to 4 bags each. Once we are at the landfill, the committee members are in charge of checking the garbage to make sure it is well sorted so they can continue burning it or put it in the hazardous waste pits. They take turns to manage the fire." **Mr Phonechan & Mr Daophet, village waste management sub-committee members from Samton village (December 2023)**

Then, following the village meeting dedicated to setting up the waste collection and treatment service, the village took certain decisions concerning the number of operators to manage the landfill (2), the monthly payment they each receive (50,000 kips), and the amount of household contributions each month (2,000 kips).

When drawing up the operating account for setting up a service, the annual depreciation costs of the infrastructure and equipment are calculated. This is done by dividing the purchase price or construction cost by the lifetime (in years) of the investment.

In the case of the village of Samton, the total cost of developing the landfill was almost 24.5 million kips (around €1,150 at the 2023 exchange rate) to build the incinerator and the hazardous waste pits (materials and labour), and to purchase two large wheelbarrows to collect and transport the waste. Other smaller equipment such as rakes and shovels were also provided, as well as safety equipment for the village operators (gloves, masks and boots). In addition to the incinerator and hazardous waste pits, the village of Samton has also built a storage area for household waste, at an additional cost of 4.3 million kips, so that households do not have to keep garbage bags at home for a month.

Investments made	Purchasing price (LAK)	Service life (Years)	Annual depreciation
1 incinerator	17 352 000	15	1 156 800
1 storage area for waste	4 290 000	10	429 000
2 hazardous waste pits	4 487 000	10	448 700
2 wheelbarrows to collect waste	2 600 000	5	520 000
TOTAL ANNUAL DEPRECIATION COSTS (LAK)			**2 554 500**

This total cost for annual depreciation should be included in the service's operating account. In other words, this amount of 2.5 million Kips should be set aside each year to contribute to a fund capable of financing the replacement of equipment and infrastructure when the time comes.

However, to date, none of the model villages have been able to include these depreciation costs in their operating accounts. In the village of Samton, the amount of contributions set for households is 2,000 kips per household per month, which is too low to include depreciation costs.

Operating account for the waste collection and treatment service, Samton

Annual costs	unit	quantity	Unit cost (LAK)	Annual cost
Depreciation of investments	per year	1	2 554 500	2 554 500
Safety equipment for staff	per year and operator	2	360 000	720 000
Maintenance of wheelbarrows	per year	2	50 000	100 000
Maintenance of the incinerator	per year	1	150 000	150 000
Compensation for village operators	per month and operator	24	50 000	1 200 000
TOTAL ANNUAL COSTS (LAK)				**4 724 500**

Annual income	unit	quantity	Unit cost (LAK)	Annual income
Household contributions	per household / month	888	2 000	1 776 000
TOTAL ANNUAL INCOMES (LAK)				**1 776 000**
BALANCE OF THE ANNUAL ACCOUNTS				**- 2 948 500,0**

Including the annual costs of depreciation and replacement of safety equipment for village operators, the total annual income from household contributions is not sufficient to cover all costs and the service's operating account is in deficit.

As this is the first year of operation of the service, it is normal that the initial amount that households are prepared to pay is low (less than 10 cents). But once the service is up and running and becomes a necessity in the lives of the villagers, it is important that this amount is increased to 5,000 LAK per month (around 24 cents) in order to increase the annual income and obtain funds for maintenance, repair costs and the replacement of infrastructure and equipment.

The Covid-19 pandemic caused a delay in implementing this activity, so the initiative was not able to observe a period of implementation of the service or continue its management support. Two points remain to be monitored to ensure the long-term viability of the service: 1) the rate of collection of household contributions; 2) the setting of a price for the service that covers all costs.

7 Promoting green and clean villages and schools

After more than 3 years of involvement by the District, villages and schools in the initiative's activities, with good results, it's time to assess how far we've come and reward the efforts made.

Objectives:

- Assess the work carried out by villages and schools to reduce and better manage household waste
- Identify villages and schools eligible for Village Green or Green School status
- Congratulate them officially with a ceremony and a plaque for the work they have done to keep their environment clean

The villages and schools targeted by the ANAMAY Initiative are assessed by the DONRE with a view to awarding them the status of "Green Village" or "Green School". To do this, the DONRE follows the guidelines of its provincial office, the PONRE, which proposes a list of criteria for assessing the level of respect for the environment in villages and schools.

The criteria are classified in 3 categories: Green, Clean and Beautiful.

Evaluation criteria*		
Green	Clean	Beautiful
• Trees covering 10% of available land • Flowerbeds or gardens • Energy and water saving through appropriate equipment	• Waste collection and sorting • Clean toilets for every family • Clean water points • No littering • No stagnant dirty water • No rubbish burning in the village or school area • Clean village and school from rubbish and weeds	• Decorative trees and flowerbeds • Clean village or school • Community participation in national events

** The evaluation criteria are being presented here in their summarized forms. The more detailed guideline can be requested to PONRE offices.*

After an on-site assessment by DONRE staff, a score is awarded to each village and school. To qualify for category I, the overall score must be over 90%, while for category II it must be 80%.

All 12 target villages have achieved Category II status. Of the 16 schools taking part in the ANAMAY Initiative, 11 have obtained "Green School" status in category II and one school (Viengkham secondary school) in category I.

The entire process was validated by PONRE, which signed and stamped the official documents and certificates.

Document summarizing the results validated by PONRE

As soon as the official documents and certificates were ready, the project supported the organization of official ceremonies at village level with the district partners. These ceremonies take place in collaboration with the village communities and school authorities. They are an opportunity to highlight all the work that the village and the school have done to ensure that they are green, clean and beautiful.
Village chiefs and school headmasters receive their certificate and a sign to be placed strategically in the village and at the school entrances in recognition of their new status. The green signs state the name of the village or school, followed by their status as a "Green, Clean and Beautiful" model.

Official speech in the village of Vang Heung

Handover of signs for the village and the 2 schools in Phousanam

Installation of a "Green School" sign at the entrance to Viengkham secondary school

As well as recognising the work undertaken by the villages and schools to clean up their environment from household waste, the project also supported the installation of 4 large signs at each entrance to the district to promote their new green and clean district policy.

"*The ANAMAY Initiative is very important and useful. It has supported Viengkham district in line with our strategy to become a 'clean and green district'. I have noticed that the targeted villages and schools are very different from those without support. It is much cleaner. They have garbage bins and pits, and compost cribs. They sort waste, they have village clean-up days, they have rules. Even some villages now have the incinerator. Now that Viengkham district has received new lessons from ANAMAY, we have improved many things. Even if the project stops, we will continue to monitor and support the target villages and schools, and also support other villages in Viengkham district to organize awareness raising on the impact of waste and waste management.*"

Mr. Bounthan KeoOubon, Head of Viengkham DONRE (March 2024)

CONCLUSION

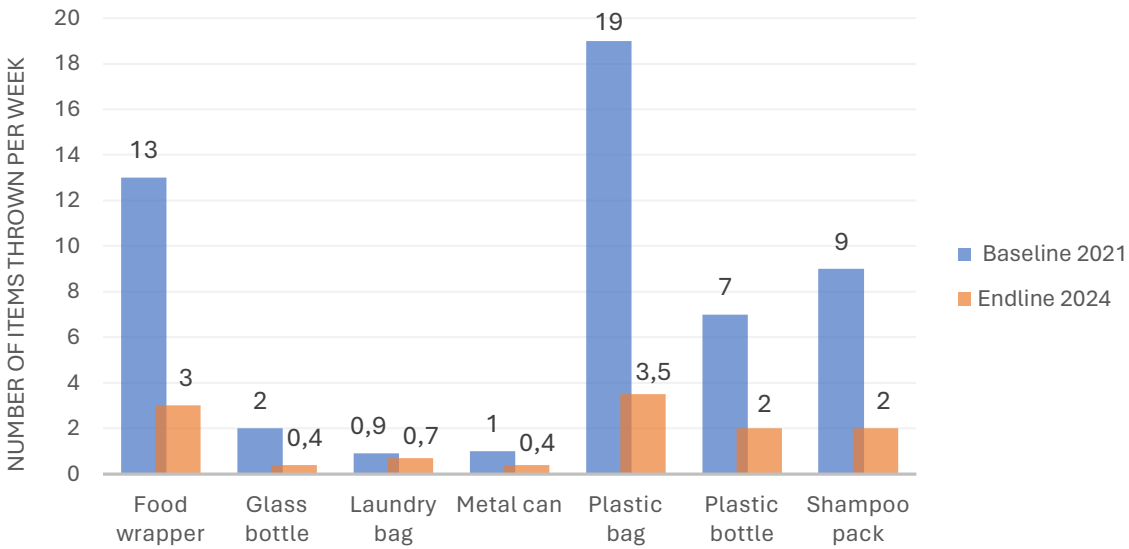
The expansion phase of the ANAMAY Initiative ended in March 2024 after 40 months. Despite the negative impact of the Covid-19 pandemic on the implementation of the project in 2021, the team was able to complete many of the planned activities and this is reflected in the results.

1 Monitoring change

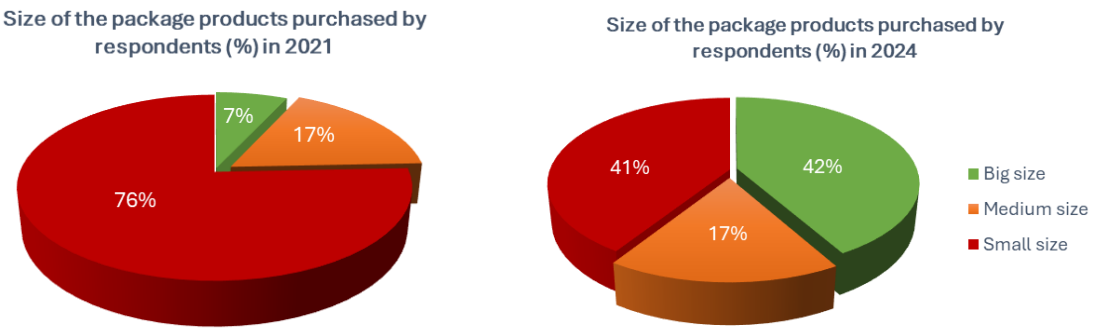
An endline survey was carried out in February 2024, three years after the baseline survey in February 2021, with almost the same sample of households (90%) and the same questions.

The baseline survey was conducted in 12 villages with 115 households, while the endline survey was conducted in 11 villages with 115 households. The average household size is 5.6 persons per household in 2024 (5.7 persons in 2021). Of the respondents in 2021, 44% reported having participated in waste management activities in the past (mostly from pilot villages), compared to 94% of respondents in 2024.

Figure 5: Comparison of waste discarded every week on average between 2021 and 2024

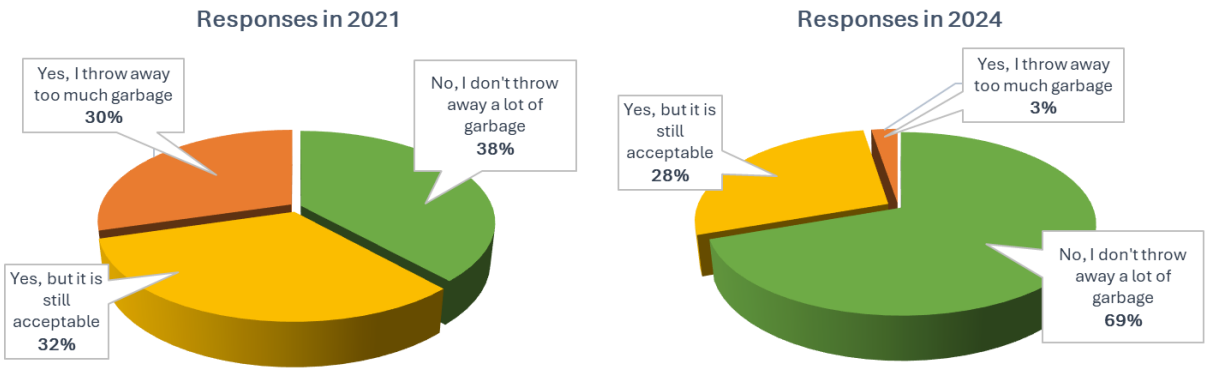


The figure above shows a clear reduction in the amount of waste generated and disposed of between 2021 and 2024 for all the items studied. One of the clear reasons for this reduction is the purchase of larger products than before.



The reasons why 41% of respondents will still be buying small sizes in 2024 are : it is cheaper for them to buy small-package products because they cannot afford the prices of large sizes (49% of respondents) ; the small size is more convenient (19%) ; they use less of the product when it is in a small pack (17%) ; or that it is mostly cakes and carton milk for children (11%). Only 4% of respondents said it was because shops only offered small size package products.

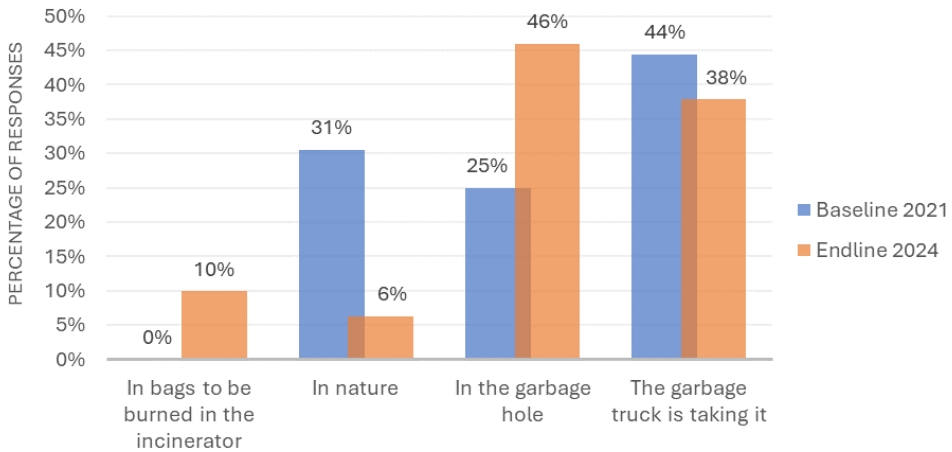
Figure 6: Comparison of responses between 2021 and 2024 to the question "Do you feel like you throw away too much garbage?"



Compared to the answers given in 2021, villagers are more confident in saying that they don't throw away too much waste. In fact, we have seen a drastic reduction in the amount of waste generated and thrown away, and people feel this change.

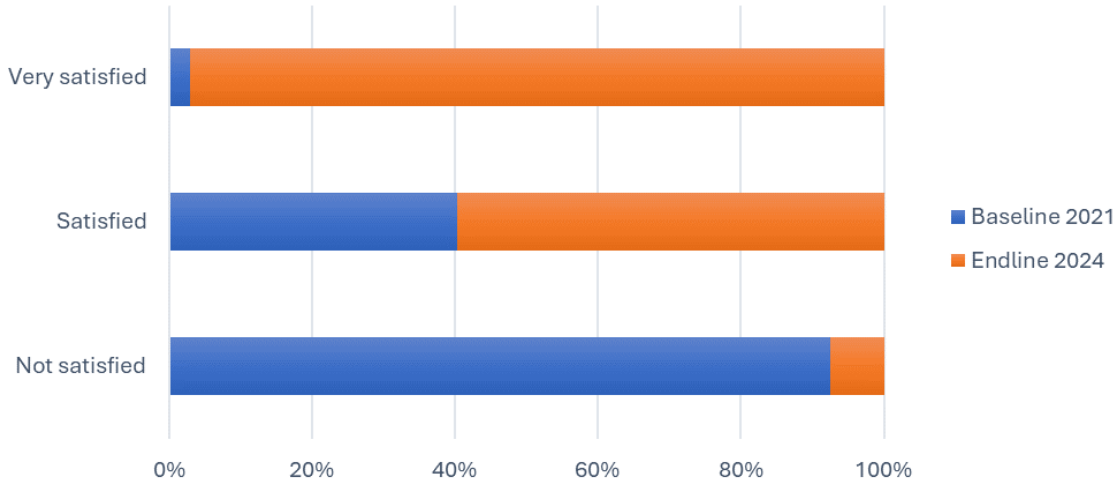
The number of respondents who say they have a bin at home has not changed much, as the percentage of people with a bin was already high in 2021 (94% of respondents). In 2024, it's 97%, with 3% of households still saying they don't have a bin at home. However, there are changes in the destination of waste.

Figure 7: Comparison of responses between 2021 and 2024 to the question "Where do you empty your garbage bin?"



Significant changes can be seen in the reduction of dumping in nature, considering that in 2021, 50% of households answered 'yes' to the question 'Do you dump waste in nature', compared to 15% in 2024.

Figure 8: Comparison of responses between 2021 and 2024 to the question "How do you feel about the way you manage your waste?"



In general, households are more satisfied than before with the way they manage their waste. They also feel more informed and aware of the impact of waste pollution on their health and the environment. When asked "Do you feel you are well informed about the dangers of poor waste management and the risks of pollution?", 77% of households answered "yes" in 2024, compared to 67% in 2021. And when asked about the number of years it takes for garbage to decompose, 72% said they were aware of this at endline, compared to 36% at baseline.

Finally, when asked if they felt that the situation regarding waste management and cleanliness in their village had improved since the start of the initiative, 99% of households answered 'yes'. They commented that there was less rubbish in their villages since the project began, thanks to the awareness sessions and the incinerators.

2 To conclude...

After more than 3 years of implementation, some lessons can be drawn from this initiative to reduce and better manage waste in rural Lao villages.

The strategy for implementing the initiative seems to have borne fruit. The final results clearly show that waste has been reduced at household level and is better managed at village level. The complementarity between awareness-raising activities and solutions for reducing and managing household waste is important. However, it is essential to repeat the messages through community and school awareness-raising activities, as well as through the activities carried out by the village sub-committees and bulk traders.

As for the activities proposed to reduce waste at household level (sale of bulk products, traditional cakes and recycled products), these were hit hard by the impact of the Covid-19 pandemic, and so could not be tested and evaluated under the right conditions. Nevertheless, it is important to note the importance of prior market research to ensure the existence of a long-term customer base.

Finally, the creation of a special district committee and village sub-committees is a major factor in the success of the initiative. Without the regulations in place and the commitment of the communities to implement their sanitation plans, the results would be far less visible in the villages and the initiative's activities less sustainable.

The ANAMAY Initiative project team would like to thank its government partners in the Viengkham district for their support, as well as its financial partners, the City of Paris and the Syctom waste management syndicate.

We would also like to congratulate the villagers and their representatives for achieving their objectives of reducing and better managing household waste. None of this would have been possible without their total commitment and determination to make their village and their environment cleaner and safer.

For further information, please contact Claire Kieffer, Knowledge Management officer at Agrisud International: ckieffer@agrisud.org.

DONRE ເມືອງວຽງຄຳ
District Office of Natural Resources and Environment

AGRISUD INTERNATIONAL

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