

Renovation of informal settlements

Feedback and methodology

Habitat and living conditions improvement project – Phnom Penh, Cambodia
May 2019

Contents

Acronyms	3
1. Context.....	4
1.1. Scope of the document.....	4
1.2. Overall project introduction	4
1.3. Habitat renovation activities.....	4
1.4. Project stakeholders' reminder	5
2. House renovation process	6
2.1. Concept	6
2.2. Price	7
2.3. Choice of materials and suppliers	7
2.4. Renovation work.....	8
3. Methodology to conduct renovations	9
4. First year results.....	13
Annex 1: Typical house design	14
Annex 2: Agenda of the construction training provided on December 2018.....	17
Annex 3: Feedback on the construction training provided on December 2018.....	18
Annex 4: Agenda of the house maintenance construction awareness provided on June 2019	19
Annex 5: Feedback on the house maintenance construction awareness provided on June 2019	20
Annex 6: Criteria to prioritize houses for renovation	21
Annex 7: Houses prioritization made on year 1 of the project.....	22
Annex 8: Communities' households mapping	23
Annex 9: Feasibility study template.....	24
Annex 10: House owner agreement on renovation work	25
Annex 11: House owner and skill labor agreement on price and work.....	26
Annex 12: Example of Bill of Quantities.....	27
Annex 13: Materials delivery receipt.....	28
Annex 14: Construction evaluation template	29

Acronyms

AFD	: Agence Française de Développement
CHRK	: Customized House Repair Kit
FAP	: Fondation Abbé Pierre
HfHC	: Habitat for Humanity Cambodia
MFI	: Micro Finance Institution
PASSA	: Participatory Approach for Safe Shelter Awareness
PE&D	: Planète Enfants & Développement
SKO	: Samathapeap Khnom Organisation

The renovation process involves organizing community-driven vulnerable household identification, designing customized house repair kit for the households selected, supplying and delivering the materials, and monitoring and evaluating the renovation work done.

This activity results from 3 years of similar projects.

1.4. Project stakeholders' reminder

Planète Enfants & Développement

Planète Enfants & Développement is a French NGO based in Cambodia since 1984. Since its creation, PE&D aims at changing durably the conditions of vulnerable children and their families and acts systemically thanks to collaboration with local and institutional stakeholders.

Samatapheap Khnom Organization

Samatapheap Khnom Organization is a local organization and PE&D's local partner regarding social support. PE&D and SKO have been working together since 2007 and have a strong experience in the family development method.

Fondation Abbé Pierre

Fondation Abbé Pierre is a French foundation that co-financed the project. Its mission is to enable poor people to access decent housing and a dignified life, regardless his resources and his social situation.

Agence Française de Développement

Agence Française de Développement is a public financial institution that implements the policy defined by the French Government. It works to fight poverty and promote sustainable development. They financed part of the project.

2. House renovation process

2.1. Concept



Figure 2: one of the beneficiary house before renovation

The targeted houses for reparation are made of wood structures and tin sheets, as shown in the above figure, and are the most precarious ones of the HaLi project's communities. PE&D offers to co-finance and manage the supply of new materials such as wood columns, beams, zinc sheets. This is in order to make those houses more resilient to rain and flooding, to improve their reliability and to improve in a way their global comfort. This low-cost solution allows a quick habitat improvement and to decrease negative impacts due to their precarity. If the house is on the ground floor and flooded during season, the house is elevated during renovation.



Figure 3: house of the same beneficiary after renovation

As most of the beneficiaries live in no-rights informal areas, the materials provided and the renovation made are thought to be reversible and removable. Thereby if there is an order of removal or expulsion, the designs allow families to recover materials acquired to resettle somewhere else. PE&D is not aiming at building concrete houses on no-rights lands, but to provide some help to those facing difficulties.

Each repair kit delivered is customized for each house. A feasibility study is conducted in order to determine which parts of the house need to be improved: structure, wall, roof and/or floor. As a result of this feasibility study and a discussion with the beneficiary, the customized house repair kit is designed. On annex 1 schemes of a full renovated house are shown.

2.2. Price

On average, a CHRK costs 295\$. PE&D is affording 195\$ and beneficiaries need to provide the remaining amount – at least 100\$. Requesting them a financial contribution ensure their empowerment in the process they engage in. The minimum amount requested was calculated based upon a survey prior to the first stages of the project. It has shown a family spent on average between 100 and 200 USD/year on its habitat renovation. A partnership with a microfinance institute, Chamroeun MFI, was done to help beneficiaries support their part with a microloan.

In case a beneficiary is willing and able to provide a bigger amount of money for the renovation, the CHRK would include more elements but PE&D's contribution would remain the same.

2.3. Choice of materials and suppliers

In order to reach the objective of 295\$ for the full kit, several choices have been made:

- Choice of materials that present the best ratio quality / cost
- Choice of local suppliers, to avoid transportation costs

Most often, suppliers don't provide all the materials. They are specialized for instance in wood. Bigger costs can be divided into three kinds of supplies: wood beams, wood columns, and zinc sheets. 3 suppliers at least for each of this kind of supplies have been identified and quotations were collected to get the unit prices of the materials they sell.

It was not possible to select a single supplier, for the reason mentioned above and for the other reason that many can lack temporarily some items. As PE&D is having 8 different construction works in 2019, and have no storage facilities, PE&D can't buy everything at the same time and need to have a list of few suppliers, to be able to have backup options when materials are scarce.

Then, a list of preferred suppliers has been established, considering different factors:

- Location of the shop should be close to the construction sites
- Prices should be in the range of the market
- Supplier has usually stock
- The materials sold by the supplier are of good quality

The contacted and selected suppliers are described below:

Supplier	Wood beams	Wood columns	Zinc sheet	Masonry	Preferred supplier
Khut Vandy	Selling				Selected
Eam Ravit	Selling	Selling	Selling		Selected
Huan Loang	Selling	Selling	Selling		Selected
Che Neang	Selling	Selling			Selected
Hout Houn	Selling		Selling		
Tang Meng Rath			Selling		
Nak Bun Kheng				Selling	Selected
Cheang Am				Selling	
Pun Samourn				Selling	

Among the suppliers, 4 have not been selected:

- Hout Houn: the wood rafters have specific sizes, and do not fit the requirements
- Tang Meng Rath: the zinc sheets have specific sizes, and do not fit the requirements
- Cheang Am: The location is too far from the construction sites
- Pun Samourn: The location is too far from the construction sites

All the others fit with the factors listed above.

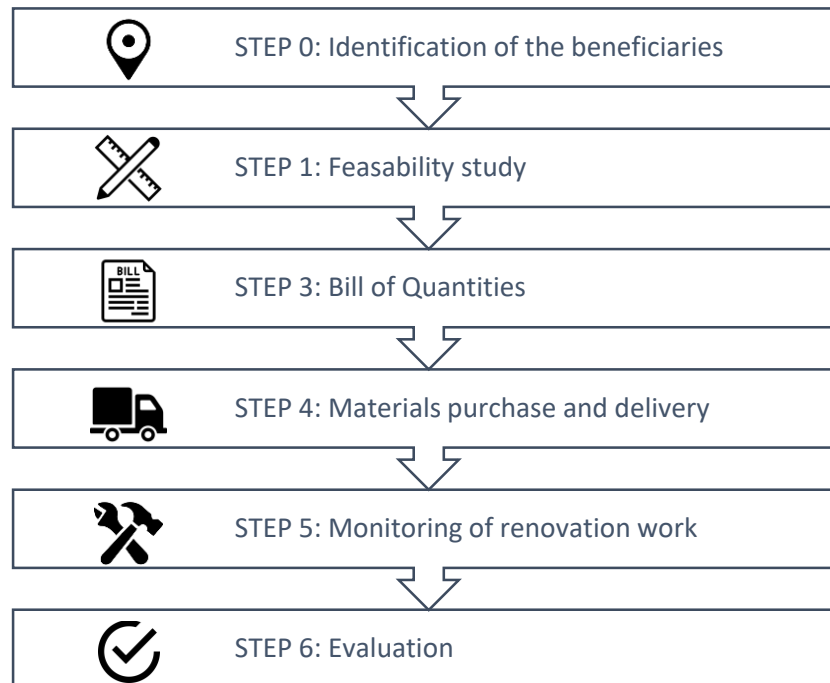
2.4. Renovation work

Constructions are handled by beneficiaries directly, if possible, or else by inhabitants of urban poor communities who engage to realize the works with low prices to support their community. This means, that no enterprise has been contacted for the realization of works, as the price would not fit the budget, and as we would not foster social cohesion.


PE&D is supervising the renovation work and ensuring it was well done. Construction training are organized in the communities to power-up their self-capacity. Agenda and feedback are presented on annexes 2 and 3. If a beneficiary could not do the renovation work by himself and do not know anyone able to do so, PE&D is referring people who attended training.

Furthermore, part of the project awareness raising session on house maintenance were organized. For half a day, PE&D explained in each community about house components, what to check regularly and exchanged with the community on some tips to protect and prevent from hazards. On annexes 4 and 5 are the agenda of the training conducted and the material shared with attendees. This session was provided to anyone and not only the CHRK beneficiaries.

3. Methodology to conduct renovations



From the step 1 to the step 6 it usually takes a month.

 STEP 0: IDENTIFICATION OF THE BENEFICIARIES
Average duration: 2 months
Deliverables: <ul style="list-style-type: none"> household prioritization list – annex 7 map of the community – annex 8
Description: <p>The first step is to identify and prioritized the substandard/dangerous habitations, based on a quick evaluation presented on annex 6. This assessment is led by the community itself, the PASSA group members and community leader, and assisted by PE&D. It relies on the observation of the materials type the house is made of, and their conditions. This assessment is renewed each year of the project.</p> <p>Once the houses prioritized, PE&D team meets the households marked as 1st priority in order to present them the CHRK concept and to ask them if they are interested in getting and finance it. If a household is not interested in being renovated, the team is then meeting the 2nd priority houses.</p>
Focus points: Availability of PASSA members
Best practices: Communities were divided in smaller parts that the PASSA group could be divided in smaller groups in order to conduct several assessments at the same time, as they perform it on their free time.



STEP 1: FEASIBILITY STUDY

Average duration: 4 to 5 houses per day

- Deliverables:**
- feasibility study form filled – annex 9
 - house owner agreement – annex 10
 - agreement between house owner and skill labor – annex 11

Description: Once the beneficiaries spotted, a further investigation is conducted to identify which parts of the house needs to be renovated and to prioritize them. Awareness on shelter safety is made at that same time to explain prioritization of the work to be done.

Furthermore, the renovation work foreseen has to be approved by the house owner if the beneficiary is a renter. A small agreement is signed to record if the house owner agrees with the prioritized parts to be renovated.

If a construction worker is needed to perform the renovation, an agreement between him and house owner is set with PE&D help to fix the price.

If house owner and PE&D team member do not reach an agreement on the work to be done, considering what has been prioritized in feasibility study and considering house owner wills, PE&D would not go further in the renovation process.

- Focus points:**
- Availability of the beneficiary, house owner and, if needed, skill labor
 - Last minute retraction from beneficiary

- Best practices:**
- Family introduction by someone from the team who already know them
 - It is good to conduct the feasibility study with both husband and wife, it ensures they won't change their mind on the renovation work to be done
 - CHRK beneficiaries are divided into steps – usually 6 to 8 houses per step - according to their location in order to group the work and materials purchase to reduce delivery fees. Thus in one community, there is usually two to three steps of renovation.



STEP 2: BILL OF QUANTITIES

Deliverables: • BoQ signed – annex 12

Description: As a result of the feasibility study and the discussion, a list of materials to be bought along with the total cost is presented to the house owner.

Focus points: • Availability of the house owner

Best practices: • each BoQ are concatenated in a global one to get the total number of materials to be purchased for this renovation step



STEP 3: MATERIALS PURCHASE AND DELIVERY

Deliverables: • Materials delivery receipt – annex 13

Description: Materials are purchased to the preferred suppliers and delivered to the beneficiaries. There is almost no difference between real price and the estimation made. When the beneficiary receives the materials, he signs a receipt summarizing materials units and price, as a proof of the budget spent and the argent they gave.

Focus points: • Availability of the beneficiary

Best practices: • Purchasing: pass by the supplier one or two days before the planned delivery to ensure the command was treated. Quality check at the shop: PE&D team select the materials to be bought.
• Delivery: two PE&D team members are needed to conduct properly the materials repartition among beneficiaries. Beneficiaries should be included if available, as they could pick-up and chose by themselves the materials.



STEP 4: MONITORING OF THE RENOVATION WORK

Average duration: 2 to 3 weeks

Description: Then the construction work can start. One PE&D team member would monitor the renovation work. The beneficiary pays directly the construction worker, PE&D would refund the amount during evaluation.

Focus points: Some do not start the renovation work right after, as it depends on the availability of skill labor and beneficiaries.

**STEP 5: EVALUATION OF THE RENOVATION WORK**

Average duration: Evaluation of all houses of a step in half a day

Deliverables: Evaluation form signed – annex 14

Description: When the renovation is done, a member from PE&D team goes visit the new house. He evaluates how the work was done, if some adjustments remain to be done, the satisfaction of the beneficiary and any other concern he would share.

Focus points: • Availability of the beneficiary

4. First year results

In the first year of the project, 35 houses were renovated in four different communities. 22 out of the 35 beneficiaries took a micro-loan from Chamroeun MFI, which corresponds to 63%.

The community-driven approach engaged lead to community capacity building on construction, house maintenance and even loan management.

During the first year of project, it has happened that some families could not afford their part of the materials renovation. Then it has been decided that PASSA group should established a list of prioritized houses that could request the renovation for free considering their situation. At the time this report was written, these lists are still being produced by the PASSA groups.

Furthermore, increasing the PE&D contribution per house repair kit for year 2 is being considered. In fact, some houses needed 295\$ of materials to be well renovated and a construction worker to do the renovation. Nevertheless, the household was not able to afford the construction worker fee, so the renovation was not conducted. PE&D is then considering to increase its contribution part to 250\$. The CHRK budget would be 350\$ in total, so 55\$ more which is usually the average construction worker fee.

Some verbatim during evaluation step show beneficiaries' satisfaction:

"We are very grateful to PE&D as our home is now more comfortable", Ms So Neun, Daeum Chan

"Thank you, now we are not afraid of rain and rainy season", Ms Pheng Davy, Daeum Chan

Annex 1: Typical house design



Figure 4: Wall kit

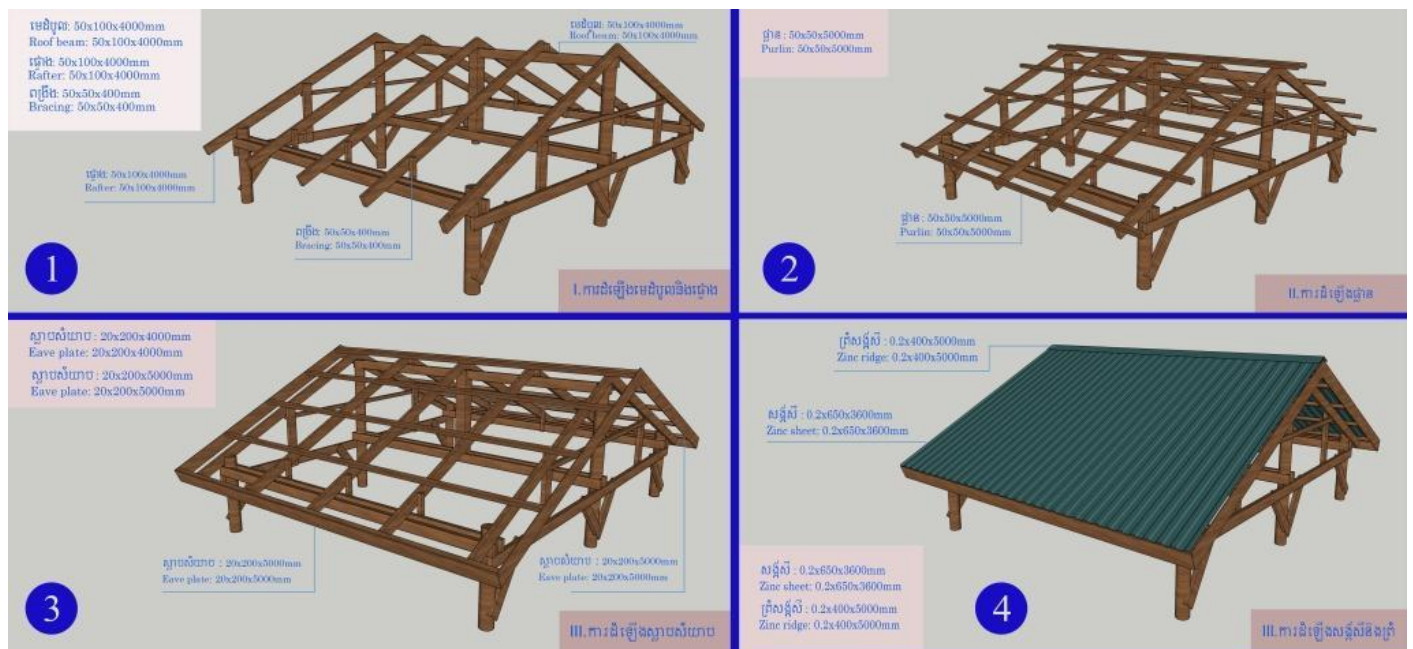


Figure 5: Roof kit

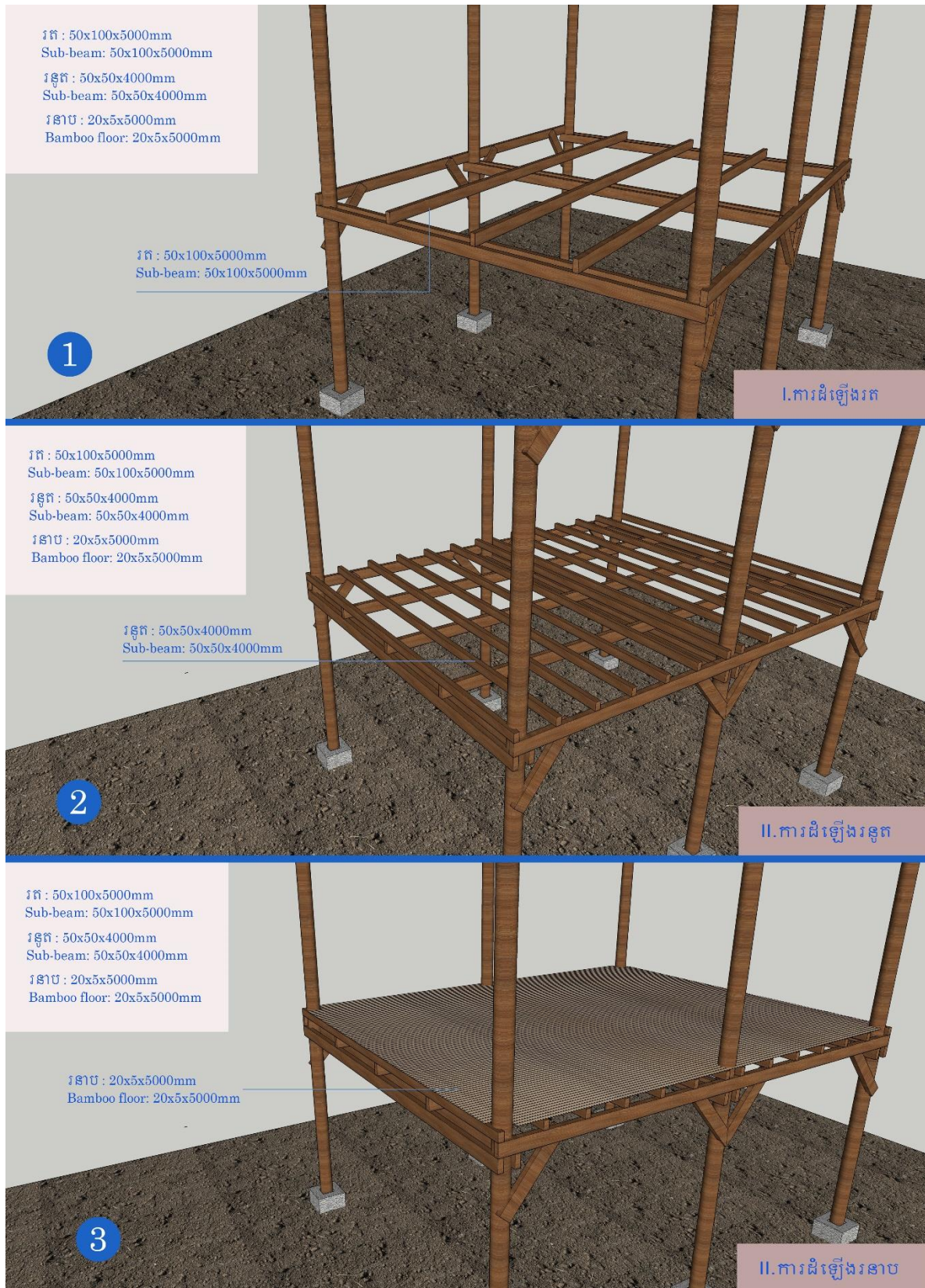


Figure 6: roof kit

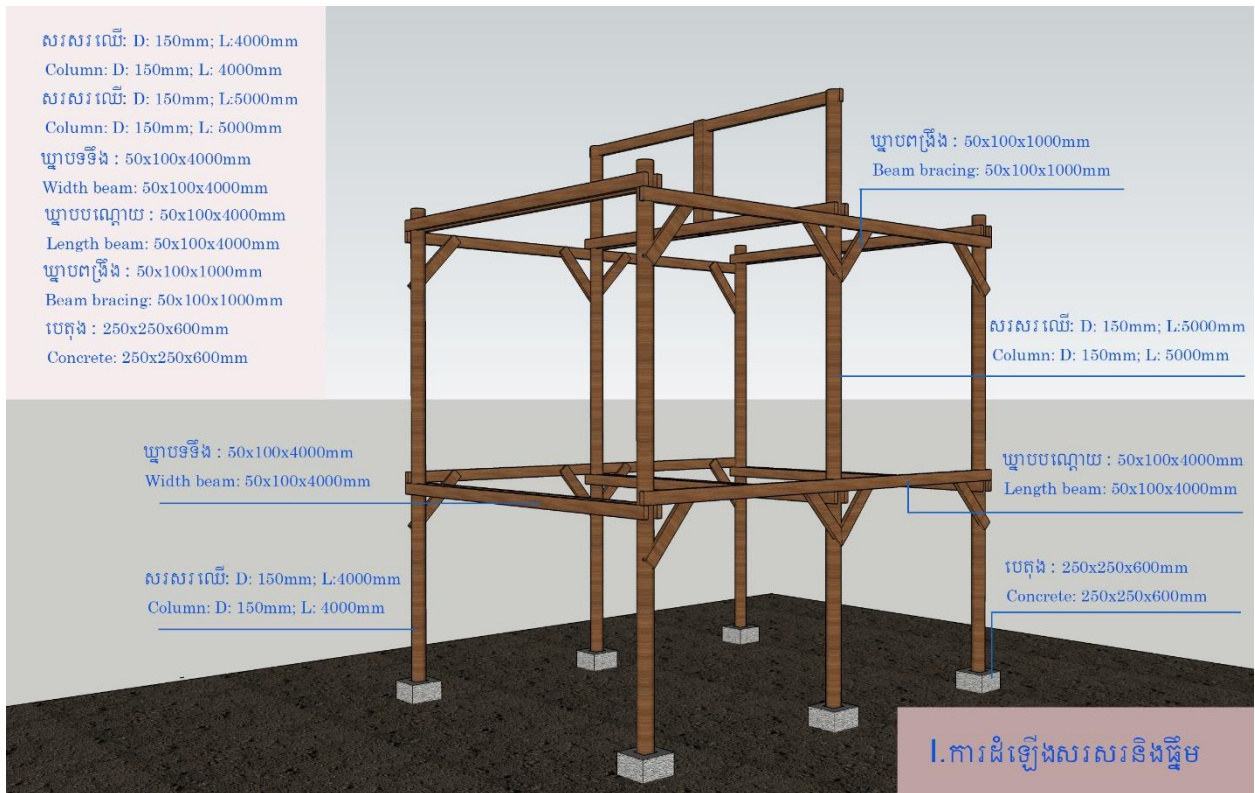


Figure 7: Structure and beam kit

Annex 2: Agenda of the construction training provided on December 2018

Date: December 25-28th

Number of attendees: 16 to 21 people per community

Material provided: a booklet summarizing what have been presented during training

Agenda:

Morning	8:30 - 8h:45	8:45 - 9:30		9:30 -12:00
	Introduction of the day Icebreaker	Presentation of the housing repair kit		Morning break
12:00 - 13:30 Lunch break				
Afternoon	13:30 - 14:00	14:00 - 15:30	15:30 - 16:00	16:00 - 17:00
	Presentation of tools for feasibility study	Practice: the group divide in small groups and realize the feasibility study on real houses	Restitution of feasibility studies	Introduction to masonry course Distribution of the masonry document Sharing knowledge from participants on masonry

Annex 3: Feedback on the construction training provided on December 2018

Feedback about the construction training:

+ (Good points)	- (Bad points)
<ul style="list-style-type: none"> • The content, materials and activities are well-prepared • Trainers (Borin and Sambath) express themselves clearly and are knowledgeable • The beneficiaries expressed their satisfaction after the training • Energizers are appreciated and help the people to have a good time, and to re-focus • Snacks are appreciated • This training helps the people in the community to meet each other (especially in DC) 	<ul style="list-style-type: none"> • Not enough participation from the learners • The schedule is not respected enough, and people arrive too late • Field visit was not followed-up properly (day 1 only, good during day 2) • Some contents quite hard to understand (like the tables in masonry presentation)

Recommendations to improve the training:

Start of the day:

- Agenda of the day: explain the topics and activities that they will do, at the beginning of the day. Agree together on the schedule with the participants. If the agenda is shared, discussed, and agreed with the beneficiaries, we have more chances for people to be there on time.
- Get the list of participants and also the list of skilled workers only
- Ask everyone to introduce himself, name, occupation and to give more details about the occupation: what skills? how many years of experience? What kind of construction site? What locations? As well, the trainer needs to introduce more about himself like Borin did yesterday and provide a contact number. All these questions will help us to know more about the construction workers (skills, experience), and also help the people in the community to know more about each other

During the training:

- Stimulate regularly participation from the people, foster sharing and discussion
- Before masonry course, start by asking people what they know about masonry and to share it. Then, improve the knowledge by presenting some parts of the documents. Explain that they have the whole document to read later, and that they can contact the trainer for further information or questions, because there is not enough time to go clearly in details through all the document
- When we start the afternoon, ask the people what they studied and learnt in the morning
- Be careful about the sitting of the people, always try to get the people be close

End of training:

- Assess the satisfaction of the people and what we can improve
- Ask their complementary needs of training

Annex 4: Agenda of the house maintenance construction awareness provided on June 2019

Date: June 20th-21st-25th-26th

Number of attendees: around 4 in each community

Material provided: a booklet summarizing what have been presented during training

Agenda:

	8:00 - 8h:15	8:15 - 9:15	9:15-9:30	9h30-11:15	11:15-11:30
Morning	Introduction and presentation of the course schedule	Explanation on house parts, house maintenance and improvement practices	Break	Continuation of the explanation	Summarize the results and close the session

Annex 5: Feedback on the house maintenance construction awareness provided on June 2019

Feedback on the 2 first sessions:

The sessions went well because the community was interested in the topic. Borin explanation were good and well-understood. Snacks were appreciated. There was a lot of attendees for each session, around 40.

Recommendation to improve:

- Use more pictures in the presentation material because some community members could not read or write
- And put one picture per slide in the presentation in order to better show the examples
- Ask the attendees to participate by fostering sharing and discussion when presenting a point or a picture in order to collect their best practices too
- Conduct twice per year house maintenance awareness session in order to broaden the range of attendees

Annex 6: Criteria to prioritize houses for renovation

លក្ខណៈវិនិច្ឆ័យផ្ទះ ដែលត្រូវជួសជុល / Criterias for prioritizing house

1.ប្រភេទសម្ភារៈ: Type of Material		Score ពិន្ទុ
ដំបូល Roof	ស្លឹកត្នោត ស្បូវ តង់ ធាងដូង Tatch palm leaf tent	1
	ឫស្សី សន្លឹកស័ង្កសី Bamboo CGI	2
	ហ្វីប្រ ក្បឿង Fibro sheet Tiles	3
ជញ្ជាំង Wall	ស្លឹកត្នោត ស្បូវ តង់ ធាងដូង Tatch palm leaf tent	1
	ក្ដារ ស័ង្កសី ឫស្សី Wood CGI Sheet	2
	ក្ដីដី Brick	3
សរសេរ Pillar	ឈើ ទំហំ តូចៗ Small size wood pillar	1
	ឈើ ទំហំ ធំ Big size wood pillar	2
	ជើងតាង Concret pillar	3
កម្រាល Floor	ផ្ទាល់ដី ឫស្សី Ground Bamboo	1
	ក្ដារ Wood	2
	ចាក់សាប ស៊ីម៉ង់ រៀបតដ្ឋកាញ់ Concrete slap quality flooring material	3
2.គុណភាព		
ខូចខាតលើសពី ៥០% Broken part over 50%		1
ខូចខាត៣៥%Broken part at least 35%		2
ខូចខាត១០%Broken part at least 10%		3
3.ចំណាត់ថ្នាក់អាទិភាព/Priority		ពិន្ទុសរុបTotal Scoring
អាទិភាពទី១/1st Priority		4 - 14
អាទិភាពទី២/2nd Priority		15-25
អាទិភាពទី៣/3rd Priority		26-36

Annex 7: Houses prioritization made on year 1 of the project

ល.រ No	កូដ House code	ឈ្មោះគ្រួសារ Name	លេខផ្ទះ House No	ភេទ Sex	ម្ចាស់ផ្ទះ Owner	កាតព្វកិច្ចសម្រេចលើការប្រើប្រាស់ផ្ទះ												កូដ សរុប Grand Total (Wall+Roof+Pillars+Floor)	ចំណាត់ថ្នាក់ Grade	ផ្សេងៗ Other	ចូលរួមបំណែង		
						ជញ្ជាំងWall			ដំបូលRoof			សរសៃ Pillars			ក្របខ្នាតFloor								
						ប្រភេទ Type	គុណភាព Quality	សរុប Total	ប្រភេទ Type	គុណភាព Quality	សរុប Total	ប្រភេទ Type	គុណភាព Quality	សរុប Total	ប្រភេទ Type	គុណភាព Quality	សរុប Total						
1	DCA3	ជីវ មួយ	Chiv Muoy	ស្រី	ដើមទាំង	2	1	2	2	1	2	1	1	1	3	3	9	14	1st Priority	មេម៉ាយ	0	1	
2	DCC1	ហ៊ឹម សំរាង	Khim Sam Arang	ស្រី	ដើមទាំង	1	1	1	1	1	1	2	1	2	1	1	1	5	1st Priority	ផ្ទះបង់បង់បង់បង់បង់បង់	1	0	
3	DC2	ម៉ៅ ណិប	Mao Nib	ស្រី	ដើមទាំង	2	1	2	2	1	2	1	1	1	1	1	1	6	1st Priority	ប្រាក់ប្រាក់ប្រាក់ប្រាក់	1	0	
4	DOC9	ថន ស៊ីណាត	Thorn Sinath	ស្រី	ដើមទាំង	2	1	2	2	1	2	1	1	1	2	1	2	7	1st Priority		1	0	
5	DOC10	យស សាងហ៊ុន	Yos Sang Houer	ស្រី	ដើមទាំង	1	1	1	2	2	4	1	1	1	1	1	1	7	1st Priority		1	0	
6	DCB8	ប៉េច ចំណាន	Pech Chamnan	ស្រី	ដើមទាំង	2	2	4	2	2	4	2	2	4	2	2	4	16	2nd Priority	ផ្ទះបង់បង់បង់បង់បង់	1	0	
7	DOA17	ជុំ ឆៅ	Chum Nov	ស្រី	ដើមទាំង	2	1	2	2	2	4	1	1	1	1	1	1	8	1st Priority		0	1	
8	DOB10	សុខ ហុង	Sok Hong	ស្រី	ដើមទាំង	1	1	1	2	1	2	1	1	1	1	2	2	4	8	1st Priority		0	1
9	DOB7	ប៉េង ដាវី	Peng Davy	ស្រី	ដើមទាំង	2	1	2	2	2	4	3	2	6	2	1	2	14	1st Priority	PASSA	0	1	
10	DOB5	ថាង សុខន	Thaong Sokhorn	ស្រី	ដើមទាំង	2	1	2	2	2	4	2	1	2	2	1	2	10	1st Priority	មេម៉ាយ (ផ្ទះបង់បង់បង់បង់)	1	0	
11	DOA20	ជិន សៅ	Chin Sao	ស្រី	ដើមទាំង	1	1	1	1	1	1	1	1	1	1	1	1	4	1st Priority	ផ្ទៃអង្គច្រើន	1	0	
12	DOA6	ហាន វណ្ណ	Hean Vanny	ស្រី	ដើមទាំង	2	1	2	2	2	4	1	1	1	1	1	1	8	1st Priority	ម្ចាស់ផ្ទះផ្ទុយ	0	1	
13	DOC3	ជ្រុំ ជ្រុំ	Prum Choeun	ស្រី	ដើមទាំង	2	1	2	2	1	2	1	1	1	2	1	2	7	1st Priority		0	1	
14	3PTK42	កៃ រ៉ូម	Kai Rom	ស្រី	ប្រែកប្រែក	1	1	1	1	1	1	1	1	1	1	1	2	5	1st Priority	មេម៉ាយ	1	0	
15	3PTK34	យ៉ង ជ្រុំ	Yang Choeun	ស្រី	ប្រែកប្រែក	1	1	1	2	1	2	1	1	1	2	1	2	6	1st Priority	PASSA	1	0	
16	3PTK66	រ៉ូម កុសល	Rorn Kosal	ស្រី	ប្រែកប្រែក	2	1	2	2	2	4	1	1	1	2	2	4	11	1st Priority		1	0	
17	3PTK44	នួន រ៉ូម	Nuon Roeun	ស្រី	ប្រែកប្រែក	2	1	2	2	1	2	1	2	2	2	2	4	10	1st Priority	PASSA	1	0	
18	3PTK10	ចិន រ៉ូម	Choen Vann	ស្រី	ប្រែកប្រែក	1	1	1	2	2	4	1	1	1	2	1	2	8	1st Priority	ផ្ទះបង់បង់បង់បង់	0	1	
19	3PTK55	សេង សំរាង	Seng Sam Art	ស្រី	ប្រែកប្រែក	2	2	4	2	2	4	1	1	1	2	2	4	13	1st Priority		1	0	
20	3PTK27	នួន លាង	Nou Leang	ស្រី	ប្រែកប្រែក	2	1	2	2	2	4	1	2	2	2	2	4	12	1st Priority	PASSA	1	0	
21	3PTK51	រ៉េង សុភី	Kheng Sophy	ស្រី	ប្រែកប្រែក	2	2	4	2	3	6	1	1	1	2	2	4	15	2nd Priority		1	0	
22	3PTK26	លាង ឌីណា	Lors Dina	ស្រី	ប្រែកប្រែក	2	2	4	2	3	6	2	2	4	2	2	4	18	2nd Priority		1	0	
23	3PTK52	រ៉េង សម្បជ័យ	Kheng Samphors	ស្រី	ប្រែកប្រែក	2	2	4	2	2	4	1	1	1	2	2	4	13	1st Priority		1	0	
24	3PTK22	រ៉ូម ស្រីឡាប	Roeun Srey Lab	ស្រី	ប្រែកប្រែក	2	1	2	2	3	6	1	1	1	2	3	6	15	2nd Priority	ផ្ទះបង់បង់បង់បង់	1	0	
25	PTB1	សុខ ឆីត	Suon Nget	ស្រី	ប្រែកប្រែក	1	1	1	2	1	2	1	1	1	2	1	2	6	1st Priority		1	0	
26	PTB2	លុំ ម៉ៅ	Chhum Mary	ស្រី	ប្រែកប្រែក	2	1	2	2	1	2	1	1	1	1	1	1	6	1st Priority		1	0	
27	PTB11	រ៉េង ឈុន	Men Ponlork	ស្រី	ប្រែកប្រែក	1	1	1	2	1	2	1	1	1	1	2	2	6	1st Priority	PASSA	1	0	
28	PTA33	សាង ចិន	Seab Chenda	ស្រី	ប្រែកប្រែក	2	1	2	2	2	4	1	1	1	1	1	1	8	1st Priority		1	0	
29	PTB3	គុំ សុខា	Um Sokha	ស្រី	ប្រែកប្រែក	2	1	2	2	2	4	1	1	1	2	2	4	9	1st Priority		1	0	
30	PTB4	សុន ស	Suon Sar	ស្រី	ប្រែកប្រែក	1	1	1	2	1	2	1	1	1	2	1	2	6	1st Priority		1	0	
31	PTB5	ហាន ឆីម	Hean Ngim	ស្រី	ប្រែកប្រែក	2	2	4	2	1	2	1	1	1	1	1	1	8	1st Priority	មេម៉ាយ	1	0	
32	PTC9	រ៉េង បាងណា	Ven Phanna	ស្រី	ប្រែកប្រែក	2	1	2	2	1	2	1	2	2	2	1	2	8	1st Priority	មេម៉ាយ (នៅលើដីបង់ប្អូន)	1	0	
33	PTB8	នួន ស្រីនី	Nuon Srey Nich	ស្រី	ប្រែកប្រែក	2	1	2	2	2	4	1	2	2	1	1	1	9	1st Priority	មេម៉ាយ	1	0	
34	PTA29	ឆាម តូច	Cheam Touch	ស្រី	ប្រែកប្រែក	2	2	4	2	1	2	1	1	1	1	1	1	8	1st Priority		1	0	
35	PTA18	ជូន ឆី	Chou Ny	ស្រី	ប្រែកប្រែក	2	2	4	2	2	4	1	1	1	1	1	1	10	1st Priority		1	0	
36	PTB9	ហេង ថន	Heng Thorn	ស្រី	ប្រែកប្រែក	2	1	2	2	1	2	1	1	1	2	2	4	9	1st Priority		1	0	
37	PTG1	ផង់ភាន	Phang Ean	ស្រី	ប្រែកប្រែក	1	1	1	1	1	1	1	1	1	1	1	1	4	1st Priority	ផ្ទះប្រោមខ្លាំង	1	0	
38	PTB13	បាង សុវណ្ណ	Chan Sovan	ស្រី	ប្រែកប្រែក	2	1	2	2	2	4	1	1	1	1	1	1	8	1st Priority	មេម៉ាយ	0	1	
39	PTB16	លីម អូន	Lim Oun	ស្រី	ប្រែកប្រែក	2	1	2	2	1	2	1	2	2	2	2	4	10	1st Priority		0	1	
40	PTB7	ប៉ាក់ ឆេង	Pak Rich	ស្រី	ប្រែកប្រែក	2	1	2	2	1	2	1	1	1	1	1	1	6	1st Priority		1	0	
41	PTA23	វណ្ណ ម៉ាត	Vann March	ស្រី	ប្រែកប្រែក	2	1	2	2	3	6	1	1	1	1	1	1	10	1st Priority	ផ្ទះទាម	1	0	
42	PTA27	សាន ឈុន	San Khorn	ស្រី	ប្រែកប្រែក	2	1	2	2	2	4	1	2	2	1	2	2	10	1st Priority		1	0	
43	PTK3	ម៉ាក់ ឡូឡូ	Mak Lonh	ស្រី	ប្រែកប្រែក	1	1	1	2	2	4	1	1	1	1	2	2	8	1st Priority		1	0	
44	PTK29	ទីម សុខុម	Tim Sokhom	ស្រី	ប្រែកប្រែក	2	2	4	2	1	2	1	1	1	2	2	4	11	1st Priority	ផ្ទះលិចទឹក	1	0	
45	PTK28	ទីម ភារម្យ	Tim Phearom	ស្រី	ប្រែកប្រែក	2	2	4	2	2	4	1	2	2	1	2	2	12	1st Priority	ផ្ទះលិចទឹក	1	0	
46	PTK30	សុន រតនា	Suon Ratana	ស្រី	ប្រែកប្រែក	2	1	2	2	1	2	2	2	4	2	2	4	12	1st Priority	ផ្ទះលិចទឹក	1	0	
47	PTK1	តែម ភារុន	Tem Phasun	ស្រី	ប្រែកប្រែក	2	3	6	2	3	6	2	3	6	1	1	1	19	2nd Priority	ផ្ទះថ្មល	0	1	
48	PTK27	ហេង បារម្យ	Penh Daravy	ស្រី	ប្រែកប្រែក	2	1	2	2	2	4	1	1	1	2	3	6	13	1st Priority	ផ្ទះលិចទឹក	1	0	
49	PTK42	មាស វណ្ណ	Meas Vannak	ស្រី	ប្រែកប្រែក	2	2	4	2	3	6	2	2	4	1	1	1	15	2nd Priority		1	0	
50	PTK4	លាង ផល	Leang Phal	ស្រី	ប្រែកប្រែក	1	1	1	2	3	6	1	1	1	2	2	4	12	1st Priority		1	0	

Annex 8: Communities' households mapping



Annex 9: Feasibility study template

FEASIBILITY STUDIES OF HOUSE REPAIR

សិក្សាស្រាវជ្រាវការជួសជុលផ្ទះ

Project name: ឈ្មោះគម្រោង:	Civil Engineer: ស្ថាបត្យករ/វិស្វកម្មស្ថាបត្យកម្ម:	Date: ថ្ងៃ/ខែ/ឆ្នាំ:
Homeowner's name: ឈ្មោះម្ចាស់ផ្ទះ:	Tel: លេខទូរស័ព្ទ:	GPS: N.....E.....
Address: អាសយដ្ឋាន:		

I. General Information (ព័ត៌មានទូទៅ)

- Does the homeowner have the land title? What kind of land title?
តើម្ចាស់ផ្ទះមានប័ណ្ណសម្បទានដែរឬទេ? ប័ណ្ណប្រភេទអ្វី?
- Do the family members have any disabled people? What type of the disable?
តើក្នុងគ្រួសារមានសមាជិកមានជំងឺរាងកាយខូចខាតដែរឬទេ? ជំងឺប្រភេទអ្វី?
- Is there any road accessible? How many Km from the main road to the building site?
មានផ្លូវអាចចូលទៅកាន់ផ្ទះបានដែរឬទេ? ចំងាយប៉ុន្មាន គីឡូម៉ែត្រពីផ្លូវ ទៅកាន់កន្លែងសាងសង់?
- Is there any water sources accessible? How much is it in m³?
តើមានប្រភពទឹកណាដែលអាចចូលបាន? វាមានចំនួនប៉ុន្មាន ម៉ែត្រគីឡូម៉ែត្រ?
- Is there any electricity accessible? How much is it in Kwh?
មានប្រភពអគ្គិសនីសំរាប់ប្រើ? ត្រឹមប៉ុន្មានគីឡូវ៉ាត់ម៉ោង?
- Are there any construction suppliers near the building site? How far is it?
មានម្ចាស់ហាងសំរាប់ផ្គត់ផ្គង់ធាតុសាងសង់នៅជិតកន្លែងសាងសង់ដែរឬទេ? ចំងាយប៉ុន្មាន?
- Are there any natural disaster taken place? What are they? How often?
តើមានព្រហ្មទេវតាធម្មជាតិកើតឡើងដែរឬទេ? អ្វីដែលពួកគេជួប? ញឹកញាប់ទេ?

II. Technical Specifications សេចក្តីណែនាំបច្ចេកទេស

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- What type of house is it? ផ្ទះប្រភេទអ្វី?
- What is the house area? What about the width, length, and height? ផ្ទះទំហំប៉ុន្មាន ម៉ែត្រការ៉េ?
ទទឹងប៉ុន្មានម៉ែត្រ? បណ្តោយប៉ុន្មានម៉ែត្រ?

House components for repairing ផ្នែកផ្ទះសំរាប់ការជួសជុល	Section (mm) មុខកាត់ (មម)	Length(m) ប្រវែង (ម)	# of existing house components ចំនួនសរុបមុនធ្វើការជួសជុល	# of repaired house components needed ចំនួនដែលត្រូវការជួសជុល
Column សសរ				
Beams ធ្នឹម				
Wall stud រាងជញ្ជាំង				
Bracing ទំលាក់ប្រុង				
Wall (Zinc sheet/wood/Shera-board) ក្តារជញ្ជាំងគីត				
Windows បង្អួច				
Door ទ្វារ				
Roof beam ធ្នឹមរោងប្រល				
Rafter រោង				
Purlin រោងប្រល				
Roof bracing រាងជញ្ជាំងរោងប្រល				
Type of roof (Zinc sheet/Roof tile/Palm leaf) ប្រភេទក្រចក				
Stairs(Timber/Steel) ជណ្តើរ				

III. Sketching គូររូបបង្ហាញប្លង់ផ្ទះ

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Annex 10: House owner agreement on renovation work

<u>បង្កាន់ដៃទទួលប្រាក់/RECIEPT</u>		
ឈ្មោះ/Name.....ជា/Is.....		
អាសយដ្ឋាន/Addressលេខ/HouseN°.....ភូមិ/Village.....		
សង្កាត់/Sangkat.....ខណ្ឌ/District.....		
បានទទួលប្រាក់ពីអង្គការពិភពកុមារនិងអភិវឌ្ឍន៍ចំនួន/Had received money from PE&D amount		
សម្រាប់ថ្លៃ/For.....		
ធ្វើនៅ រាជធានីភ្នំពេញ ថ្ងៃទី.....ខែ.....ឆ្នាំ2019/Date		
តំណាងអង្គការពិភពកុមារ និង អភិវឌ្ឍន៍ PE&D	សាក្សី Witness	ស្នាមមេដៃភាគីម្ចាស់ផ្ទះ House Owner

Annex 11: House owner and skill labor agreement on price and work

បង្កាន់ដៃទទួលប្រាក់/RECIEPT

ឈ្មោះ/Name.....ជា/Is.....

អាសយដ្ឋាន/Addressលេខ/HouseNo.....ភូមិ/Village.....

សង្កាត់/Sangkat.....ខណ្ឌ/District.....

បានទទួលប្រាក់ពីភាគីម្ចាស់ផ្ទះឈ្មោះ/Had received money from house owner

ចំនួន/ Amount.....

សម្រាប់/For.....

.....

ធ្វើនៅ រាជធានីភ្នំពេញ ថ្ងៃទី.....ខែ.....ឆ្នាំ2019

ភាគីម្ចាស់ផ្ទះ:	សាក្សី	ស្នាមមេដៃភាគីជាងជួសជុលផ្ទះ:
House Owner	Witness	Skill Labor

Annex 12: Example of Bill of Quantities

ការប៉ាន់តម្លៃសំភារៈសាងសង់ (Bill of Quantities)

ឈ្មោះគម្រោង/ Project Name : HaLi Project				កាលបរិច្ឆេទ / Date : 9/ 05/ 2019			
ទីតាំង / Location : Phnom Penh				រៀបចំដោយ / Prepared by : Chau Borin			
ទំហំផ្ទះ / House Area : 6m x 7m				ត្រួតពិនិត្យដោយ / Reviewed by :			
ឈ្មោះម្ចាស់ផ្ទះ / Houseowner's Name : លោក ស៊ុន រតនា / Mr.Soun Rotna				យល់ព្រមដោយ / Approved by :			
ទូរស័ព្ទម្ចាស់ផ្ទះ / Houseowner's Tel : 095393606				អាសយដ្ឋាន / Address : Prek Takong1,Chak Angreloeu, Meanchey, Phnom Penh			
លេខកូដ / Cod Number : 1PTK30				ទូរស័ព្ទដៃប្រតិបត្តិការសាងសង់/ Construction supplier's Tell:			

N	ការងារនិងសំភារៈ Description	កត្តា Unit	បរិមាណ Quantity	តម្លៃសំភារៈ (\$) Material Cost (\$)	តម្លៃសំភារៈសរុប (\$) Total of Material Cost (\$)	តម្លៃពលកម្ម (\$) Labor Cost (\$)	ផ្សេងៗ Remarks
I. ការងារកែលម្អក្រដាស (flywood floor work)							
1	រតនៈ (មុខកាត់: 50x120mm; ប្រវែង 6m) Sub- beam (Section: 50x 120m; Length:6m)	ដើម Pcs	5	\$ 18.00	\$ 90.00		ឈើទាល
2	ដំបកគោល (ប្រវែង 80mm) Nail (Length: 80mm)	គីឡូ Kg	1	\$ 120	\$ 120		តម្លៃលក់រាយ
I. សរុបតម្លៃការងារកែលម្អក្រដាស (Total of flywood Floor Work)					\$ 91.20		
II. ការងារដំឡើងស្រទាប់ (Zinc Roof Work)							
3	ស្រទាប់ស្រទាប់ កំរាស់ 3.5ស៊ី (ទំហំ:1.08ម x 3.5m) Zinc sheet 0.35mm:Thick (Size:1.08m x 3.5m)	សន្លឹក Sheet	10	\$ 10.85	\$ 108.50		ស្រទាប់ស្រទាប់
4	ស្រទាប់ស្រទាប់ កំរាស់ 3.5ស៊ី (ទំហំ:1.08ម x 1.7m) Zinc sheet 0.35mm:Thick (Size:1.08m x 1.7m)	សន្លឹក Sheet	13	\$ 5.27	\$ 68.51		ស្រទាប់ស្រទាប់
5	ស្រទាប់ស្រទាប់ កំរាស់ 3.5ស៊ី (ទំហំ: 0.6m x 4.8m) Zinc ridge 0.35mm:Thick (Size: 0.6m x 4.8m)	សន្លឹក Sheet	1	\$ 10.56	\$ 10.56		ស្រទាប់ស្រទាប់
6	ផ្ទាំង (មុខកាត់: 50x50mm ; ប្រវែង 4m) Purlin (Section: 50x50mm; Length:4m)	ដើម Pcs	1	\$ 5.00	\$ 5.00		
7	ស្រទាប់ស្រទាប់ និងឈើ (ប្រវែង 4cm) Zinc screw (Length: 4cm)	ថង់ Bag	1	\$ 4.00	\$ 4.00		ស្រទាប់
8	ការបិទដំឡើងស្រទាប់ (ស្រទាប់ស្រទាប់) (Roof glue for zinc sheet)	ទីប Tube	1	\$ 1.50	\$ 1.50		
II. សរុបតម្លៃការងារដំឡើងស្រទាប់ (Total of Roof Work)					\$ 198.07		
III. សរុបតម្លៃសំភារៈ (Total of material)							\$ 289.27
IV. តម្លៃដឹកជញ្ជូន (Transportation fee)							\$ 5.00
V. សរុបតម្លៃពលកម្ម (Total of Labor fee)							\$ -
សរុបតម្លៃសំភារៈ ពលកម្ម និងការដឹកជញ្ជូន (Total of materials, labor cost and transportation fee): (III+IV+V)							\$ 294.27

រៀបចំដោយ Prepare by ...	យល់ព្រមដោយ Agree by :...
ឯកភាពដោយ Approved by Manager :	

Annex 13: Materials delivery receipt

សំភារៈសាងសង់ (Materials)

ឈ្មោះគម្រោង / Project Name : HaLi Project				
ទីតាំង / Location : Phnom Penh				
ទំហំផ្ទះ / House Area : W:3.5mX:5.5m				
ឈ្មោះម្ចាស់ផ្ទះ / Houseowner's Name : Ms.Oum Sokha				
ទូរស័ព្ទម្ចាស់ផ្ទះ / Houseowner's Tel : 069 230 997				
ដៃប្តូរសំណង់ / Construction supplier :				
N	ការងារនិងសំភារៈ Description	កត្តា Unit	បរិមាណ Quantity	ផ្សេងៗ Remarks
1	មេជញ្ជាំង (មុខកាត់: 50x50mm; ប្រវែង 3.5m) Wall stud (Section: 50x50mm; Length: 3.5m)	ដើម Pcs	15	ឈើទាល
2	មេជញ្ជាំង (មុខកាត់: 50x50mm; ប្រវែង 5.5m) Wall stud (Section: 50x50mm; Length: 5.5m)	ដើម Pcs	5	ឈើទាល
3	ស្រទាប់ស្រទាប់ (ទំហំ: 0.65x 2m) Zinc sheet (Size: 0.65x 2m)	សន្លឹក Sheet	30	ស្រទាប់ស្រទាប់
4	ដែកគោល (ប្រវែង 80mm) Nail (Length: 80mm)	គីឡូ Kg	1	គម្រោងកំរោង
5	ដែកគោលម្នក (ប្រវែង 4cm) Zinc Nail (Length: 4cm)	គីឡូ Kg	2	គម្រោងកំរោង
6	បង្អួចព្រលឹម (ទំហំ 0.6មx0.75ម) Wooden door (Size: 0.6mX0.75m)	រូប set	1	ឈើទាល
7	រន្ធក្រាល (មុខកាត់: 50x100mm ; ប្រវែង 3m) Rafter (Section 50x100mm; Length: 3m)	ដើម Pcs	2	ឈើទាល
8	ស្រទាប់ស្រទាប់ (ទំហំ: 0.65x 3m ; កំរាស់ 0.12mm) Zinc sheet (Size: 0.65x 3m ; Thickness: 0.12mm)	សន្លឹក Sheet	21	ស្រទាប់ស្រទាប់
9	ការបិទដំបូលស្រទាប់ស្រទាប់ក្រាលដែកគោល (Roof glue for zinc sheet)	ទីប Tube	1	
ប្រគល់ជូន Provide by ...		ទទួលបាន Received by ...		

Annex 14: Construction evaluation template

ទំព័រការវាយតម្លៃ គម្រោង HaLI HALI PROJECT CONSTRUCTION EVALUATION FORM				
ឈ្មោះអ្នកវាយតម្លៃ:			កាលបរិច្ឆេទ:	
Evaluator's name :			Date :	
ឈ្មោះអ្នកទទួលបានផល:			លេខកូដផ្ទះ:	
Beneficiary's name :			House code :	
សំណួរ QUESTION	បាទ YES	ទេ NO	កំណត់សំគាល់/លំអិត REMARKS / DETAILS	
តើសម្ភារៈមានគុណភាពល្អ? Is materials quality good ?				
តើការជួសជុលកំពុងដំណើរការ? Is the repairing work done ?			ការបរិច្ឆេទនៃការជួសជុល: Date of repairing :	
តើការសាងសង់ត្រឹមត្រូវដែរឬទេ? Is the construction correct ?				
សសរ និង ឆ្នើម? Column and beam?				
ជញ្ជាំង? Wall?				
កំរាល? Floor?				
ដំបូល? Roof?				
តើសំណង់ត្រូវការកែតម្រូវខ្លះ? Does it need some adjustments ?				
ប្រសិនបើវាត្រូវបានធ្វើដោយជនជំនាញ តើការទូទាត់បានធ្វើរួច? If it was done by a skill labour, is the payment done ?				
តើអ្នកមានយោបល់ផ្សេង ដើម្បីចែករំលែកដែរឬទេ? Do you have other comments to share ?				
តើម្ចាស់ផ្ទះពេញចិត្តនឹងលទ្ធផលនេះដែរឬទេ? Are you satisfied by the improvement resulting from it ?				
ហត្ថលេខាអ្នកវាយតម្លៃ: Evaluator's signature :			ហត្ថលេខាអ្នកទទួលបានផល: Beneficiary's signature :	