

RESILIENT HOUSING FOR ALL

Project for the Support for
Improving Living Environment and
Disaster Prevention Capacity in Cambodia



ព្រះបរមរាជវាំង



From
the People of Japan

UN HABITAT
FOR A BETTER URBAN FUTURE

OVER 5,000 FAMILIES DISPLACED AS **FLOODS** HIT 5 PROVINCES IN 2018

Cambodia is one of the world's most vulnerable countries to natural disasters and has suffered repeatedly from floods, storms and strong winds which have caused the loss of lives and destruction of livelihoods.

In 2018, due to the heavy rainfall from Tropical Storm SON-TINH, the Sepa-Nam Noi dam in Lao PDR collapsed affecting 62,317 households. The massive floods

caused 16 deaths and forced 5,398 households to evacuate in the five downstream provinces in Cambodia.

The rural poor communities near the Mekong river had suffered the destruction of their houses. Many families were forced to evacuate their homes to the temporary shelters with no sufficient food and access to clean water and sanitation.



“

It was 2018 when massive floods occurred in this area. I evacuated my home to a safer area with my family. My home was gone by the floods into the river. Someone told me it was around 1 o'clock at midnight. I didn't know what to do. I couldn't do anything but just feel powerless. I was crying as I lost my place to live.

Ms. Yok Ammey
Housewife. Family of 5







2,148 FAMILIES EVACUATED BY FLOODS IN **TBOUNG KHMUM**

According to the Humanitarian Response Forum (HRF) Report, out of total 5,072 families evacuated by the 2018 floods, Tboung Khmum had the greatest number of evacuated families (2,148 households), and none of them

received shelter kits. Among other provinces affected by the flooding, there were the most emergent and substantial needs for rebuilding and rehabilitating houses in Tboung Khmum.

Photo credit: Ravin Chhin





JAPAN SUPPORTS **DISASTER RISK REDUCTION** IN CAMBODIA

On 6 March 2019, the Government of Japan and UN-Habitat exchanged notes on a grant aid agreement for implementation of the “Project for Improving Living Environment and Disaster Prevention Capacity in Cambodia” to support recovery and strengthen resilience of populations affected by floods. The project aimed to complete the reconstruction and rehabilitation of 202 houses with 1,098 people and benefit nearly 10,000 people through several activities related to disaster risk reduction (DRR).





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H.E. Ambassador Masahiro Mikami
Embassy of Japan in Cambodia

In Japan water related disasters occur every year and cause a lot of human and economic damage. As a country which has experienced many flood disasters, we know that the reconstruction carried out after a disaster is very important.

In my opinion, reconstruction doesn't mean rebuilding robust infrastructure that will never be damaged by future flood disasters. Natural disasters can always exceed our expectations. So, it is important not to try and design infrastructure that offers “100%” protection from future flood disasters because there is no “100%” when it comes to natural disasters. Instead, we must develop and prioritize systems that protect human lives and facilitate fast reconstruction in the event of a natural disaster. From this perspective, we were very impressed by this project's “Community

ownership” approach to reconstruction with the participation of local people and materials. This is the reason our government decided to support this project.

I would like to see the people in the seven communities will acquire skills and knowledge that will enable them to continue to build more resilient communities. I hope, if a disaster occurs again, that residents will be able to evacuate on their own, and after the disaster, they will help each other and work together to reconstruct quickly using their own skills and materials. I also hope members of the communities will share their experiences of disasters with their children and pass on the reconstruction know-hows that they have gained so that future generations can be prepared in the event of a disaster.



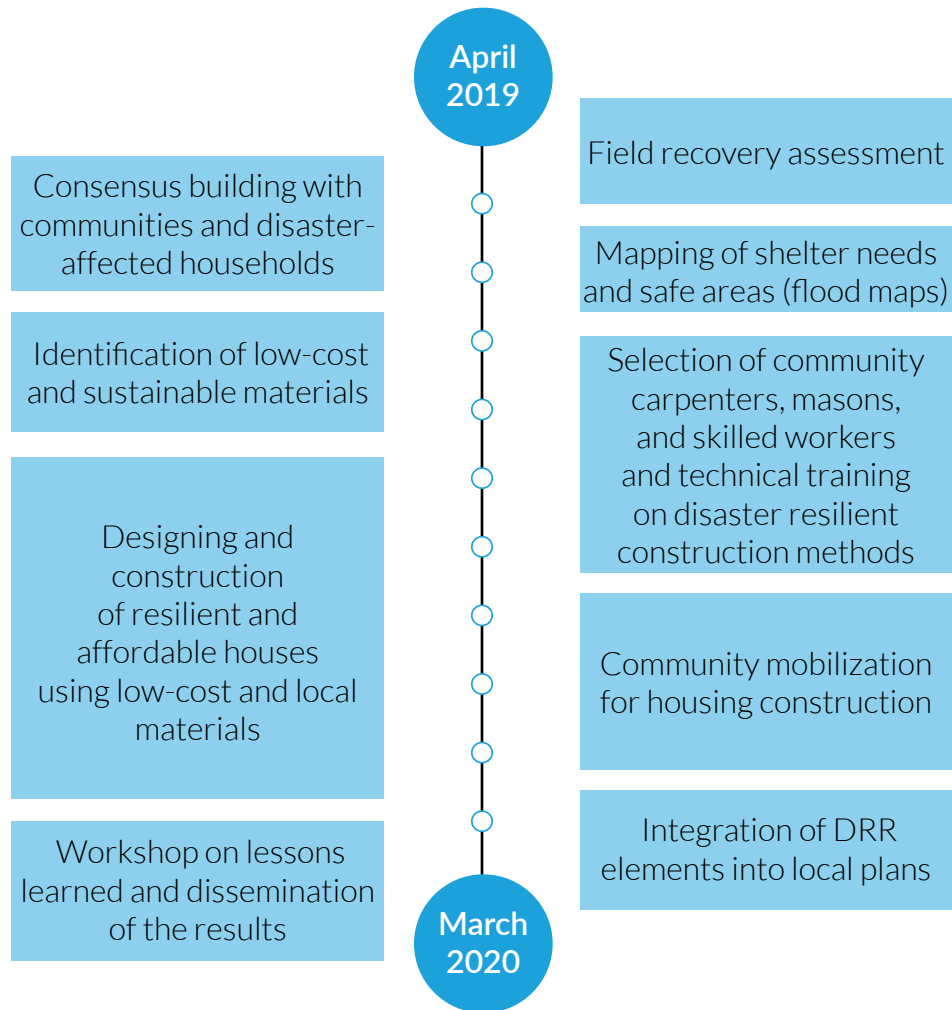
RESILIENT DEVELOPMENT HAS HIGH ADDED VALUE

Leading the country into a more resilient development path has high added value: disaster-proofed physical infrastructure and housing, for instance, will be less damaged during the next hazard, leading to a structural reduction of damage costs and economic loss (which was US\$356 million for the 2013 floods) associated with recurring disasters.

The same is true for the poor: only when their lives, property and livelihoods are not adversely affected by recurring disasters (leading to recurring costs and debts), they will have a chance to escape from poverty.



PROJET ACTIVITIES AT A GLANCE





PEOPLE'S PROCESS PROMOTES COMMUNITY OWNERSHIP

UN-Habitat has been taking a unique approach called “People’s Process” that involves the participation of the community members in housing reconstruction and the use of their knowledge and skills and promotes community ownership.

The People’s Process brings about a paradigm shift moving from a model of control by authorities to one of support to people — this is done through a participatory community development methodology built around 5 steps.





202 FAMILIES WITH 1,098 PEOPLE DIRECTLY SUPPORTED

	Community	Village & Commune	HHs	Pop			Reconstruction				Rehabilitation			
							HHs	Pop			HHs	Pop		
				M	F	Total		M	F	Total		M	F	Total
1	Preak Toch Tonle Bet	Preak Toch village, Tonle Bet Commune	413	753	718	1,471	14	46	44	90	20	50	48	98
2	Preak Toch Chiro Ti Muoy	Preak Toch village, Chiro Ti muoy Commune	362	572	654	1,226	15	47	46	93	16	53	43	96
3	Roka Thom	Rokar Thom village, Chiro Ti mouy Commune	216	388	391	779	14	36	43	79	15	38	37	75
4	Vihear Khrum	Vihear Khrom village, Boeung Proul Commune	211	463	520	983	16	40	43	83	1	1	4	5
5	Toulkampot Ty Mouy and Bey	Kampot Ty mou and Bey village, Boeng Pruol Commune	389	716	671	1,387	20	48	69	117	0	0	0	0
6	Bout Sla Snap	Bout Sla Snap village, Peam Chileang Commune	164	394	397	791	18	52	59	111	7	18	18	36
7	Briam Damlieng	Briam Damlieng village, Peam Chilieng Commune	336	676	657	1,333	7	19	22	41	39	79	95	174
Total			2,091	3,962	4,008	7,970	104	288	326	614	98	239	245	484

HHs = households, Pop = population, M = Male, F = Female



COMMUNITY BUILDING IN FOUR COMMUNES

After having the inclusive dialogue with all stakeholders through a series of meetings and workshops, the project team identified the target locations in Tboung Khmum District.

In June 2019, 8 villages in 4 communes conducted a “community establishment” resulting in the establishment of

7 communities. Each community elected representatives of its own village; they became members of the Community Development Committee (CDC).

The CDC consists of seven to eight members including the following positions: Chairman, Vice-chair, Treasurer, Housing Technical Adviser, Assistant Construction

Materials Management, Construction Coordinator, and Finance and Cashier Officer.

The elective with the highest votes was appointed as a Chairman and the second elective was appointed as a Vice-Chair. For the project, a total of 50 CDC members (28 females) were elected.





COMMUNITY MAPPING WITH ALL 7 COMMUNITIES

In June 2019, the project team conducted a community mapping exercise along with all 7 communities to map out geographical locations of all buildings and infrastructure in the

target area. The maps identified the important information including accurate community borders, geographical locations and conditions of houses, and the flood-affected area in 2018

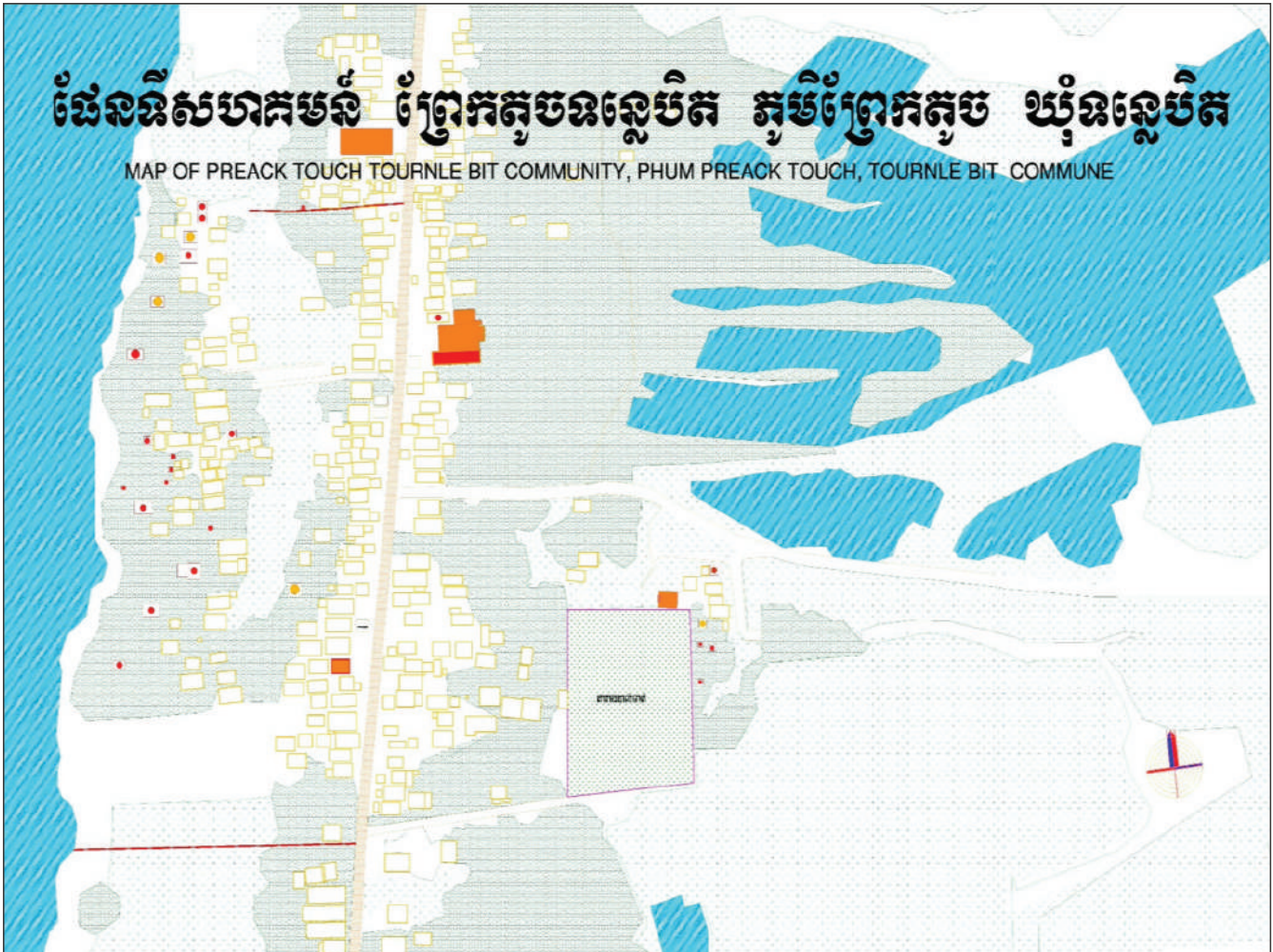
and a safer zone. The maps were officially verified by the local authorities. The project team further digitized all information collected preparing for the efficient project implementation.





ផែនទីសហគមន៍ ព្រែកតូចទន្លេបិត ភូមិព្រែកតូច ឃុំទន្លេបិត

MAP OF PREACK TOUCH TOURNLE BIT COMMUNITY, PHUM PREACK TOUCH, TOURNLE BIT COMMUNE



កំណត់សំគាល់

Legend

- | | | | | | |
|---------------------------------|------------------------------|------------------|---------------|----------------|----------------|
| ផ្ទះក្នុងសហគមន៍ | Hose in Community | តំបន់រុក្ខជាតិធំ | Tree | វិហារ | Pagoda / Most |
| ផ្ទះ | House | មន្ទីរពេទ្យ | Mekong River | ម្រាមដី | Farm |
| ផ្ទះដែលមានរចនាសម្ព័ន្ធគ្រប់គ្រង | Very poor structure of House | ផ្លូវបេតុង | Concrete Road | រោង | Open Shed |
| ផ្ទះដែលមានរចនាសម្ព័ន្ធគ្រប់គ្រង | Poor structure of House | ផ្លូវលំ | Path | ព្រំប្រទល់ភូមិ | Village Border |
| សាលារៀន | School | តារាងបាល់ទះ | Sport Shed | | |
| រោងតុបលក់កំរាម | Shop | ប្រដាប់ | Toilet | | |

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Our Community Development Committee has 7 members. We're working together to build a stronger community and are also sharing our tasks and responsibilities together.

Now, everyone is open-minded. We talk openly and make sure that we fully understand the project activities. Previously, we didn't really know each other, so we weren't open with each other. We're now united. We're growing together.

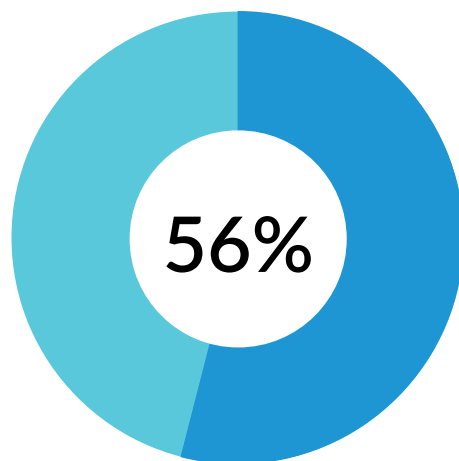
Ms. El Aminas
Vice-Chair of the Prek Toch
Community Development
Committee



WOMEN'S EMPOWERMENT PROMOTED BY THE PROJECT

Women have an extremely important role to play in the process of post-disaster recovery and in community mobilisation for advancing housing construction. In the 7 communities established across 4 Communes

of Tboung Khmum District, 56 % of the members of the Community Development Committees (CDCs) were women. In this way, gender equality was promoted throughout the project.



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In each community, the number of women as members of the Community Development Committee (CDC) is from 3 to 4. Women have the same ability as men do. We also have both male and female team leaders of the construction workers.

We've chosen more women than men in the CDCs (56%) because women are one of the most vulnerable groups (in the disaster recovery process), and women know their own needs more than men do. Thus, we've chosen women to help women.

Despite having the same ability as men, women had rarely been empowered in the area previously. So in the communities, we needed to have women empowered as long as they have the ability to take part in the community activities.

Ms. Keang Makara
Deputy Governor
Tboung Khmum District



RESILIENT & AFFORDABLE HOUSING DESIGN FOR DISASTER-PRONE AREAS

In July 2019, the project team organized the consultation meetings with the communities on housing design options which incorporated adaptive capacities for natural disasters and climate change impacts, particularly

floods and strong winds. The proposed housing designs focused on using sustainable and affordable materials, and local construction knowledge and skills. The target communities selected one of the proposed

designs that has a concrete foundation with stilts on the ground floor. The housing design uses bamboos and woods for walls and flooring that are locally procurable and allow for good air ventilation.



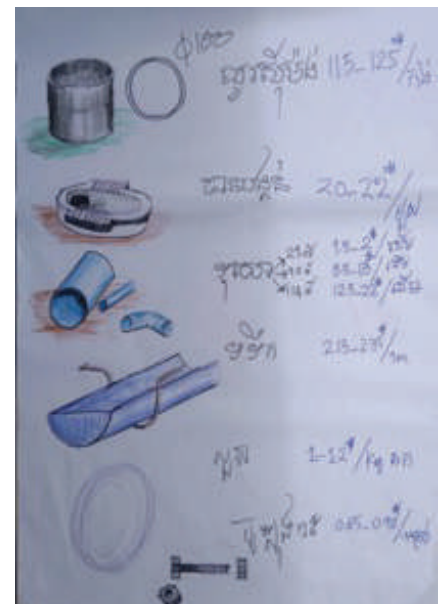
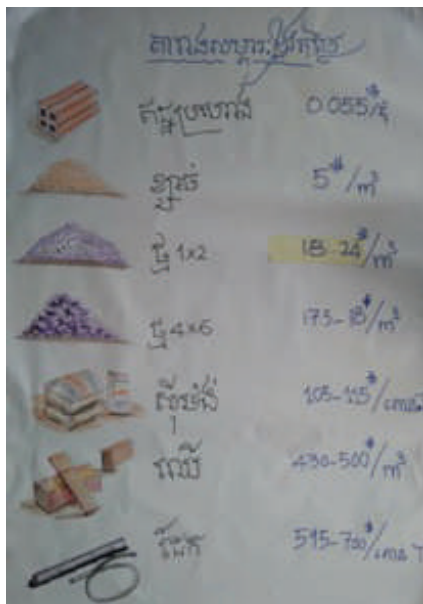


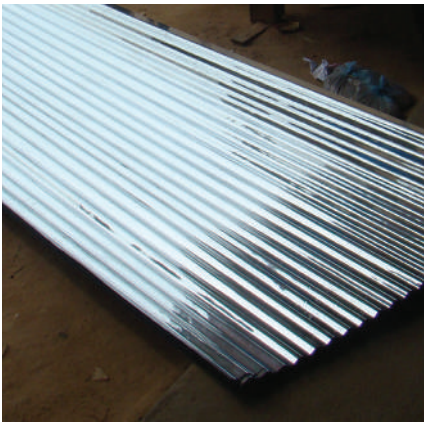




LOW-COST & LOCAL MATERIALS FOR BUILDING RESILIENT & AFFORDABLE HOUSING

To procure all construction materials at an affordable price, the project team conducted a price survey and assessment of local suppliers. With a comparison and careful review, the project team calculated the estimated cost of building a resilient and affordable house.





TECHNICAL TRAINING & CONSTRUCTION MANUAL

The project team developed a training manual that instructs on how to build resilient and affordable houses using local, low-cost, and sustainable materials. By using many photos

and illustrations, the manual was made easy for all community members to understand. In October 2019, the project team organized a two-day workshop in Tboung Khmum. Day 1 cultivated

knowledge of the community members through presentations, discussions and indoor exercises. Day 2 provided a more practical exercise to the practitioners to acquire useful construction skills.





COMMUNITY MOBILISATION & HOUSING CONSTRUCTION

The groundbreaking was held in November 2019 in all 7 communities. The project team provided various kinds of technical support to the community members and construction workers over the

course of the construction period. While monitoring the progress made, the project team conducted on-the-job training sessions at each construction site as many times as required for community members

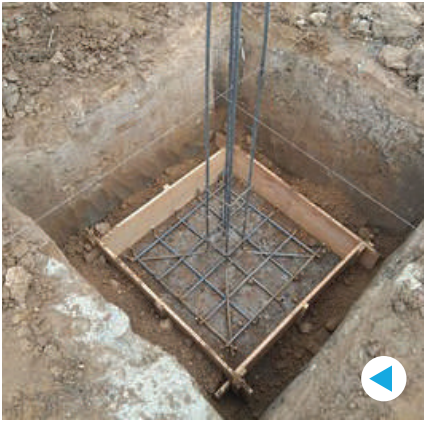
and construction workers. The communities selected and contracted a total of 172 construction workers from 33 groups. They were all trained in resilient and affordable housing construction through the project.





BUILDING FOUNDATIONS: SURVEY, GROUND BEAMS & COLUMNS







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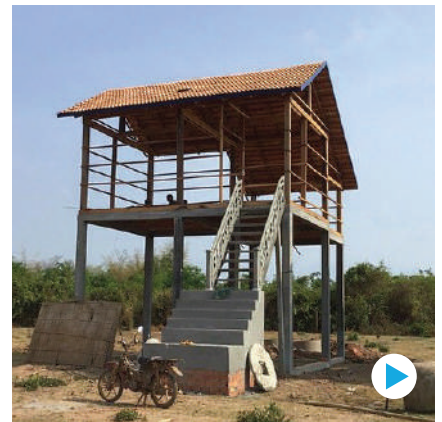
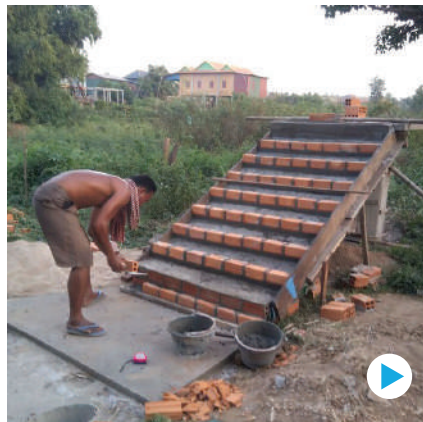
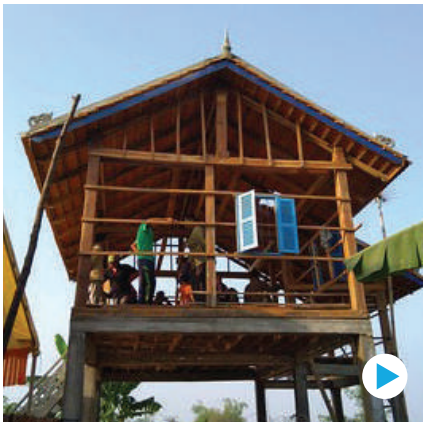
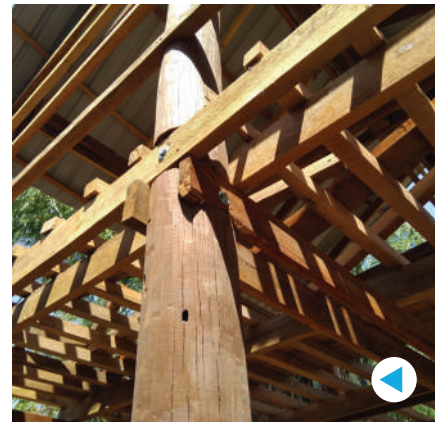
Since the beginning of the project, UN-Habitat’s housing expert has taught me many things that are different from what I had learned from my previous works. He taught me how to mix lime mortar, bend steel into pillars, and so on. Working here for me is meaningful as I can put what I’ve learned into practice. Following the (housing expert’s) advice step by step, I realized that the house I’m now reconstructing has been made stronger than it used to be.

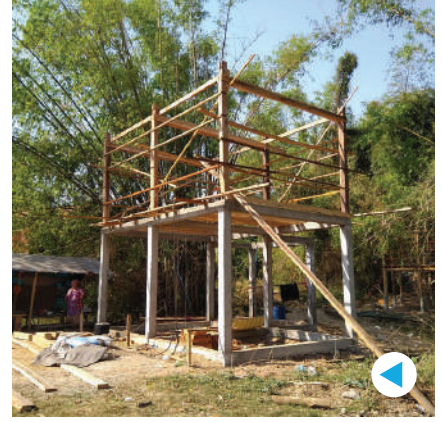
I’m also learning housing design from this project. Working with UN-Habitat here is completely different from my previous works. The project is very important. Neither floods nor strong winds can affect new houses. I’d like to apply my experience here to other construction works. I’ll make the most of my skills and knowledge acquired through this work to teach others too.

Mr. Ya Sari
Construction Worker



CONSTRUCTING UPPER STRUCTURE: BEAMS, COLUMNS, WALLS, ROOFS, TILES, STAIRS & DOORS







“

The houses that I had built ever before didn't really have strong foundations. But for this new house (that I've been involved in the construction), we dug a hole of 1 square meter deep in the ground to make sure that the foundation is fixed and sturdy. We also learned many techniques like bending steels. The house is made strong and resilient to strong winds and floods, so the family doesn't need to worry about disasters.

The construction manual provided by the project is very important. Reading through it with the housing layout elaborated, the points that I need to know and then put into practice are very clear. Before starting my work, I'm always reviewing the house design to avoid mistakes.

Mr. Hov Phally
Construction Worker





RECONSTRUCTION



REHABILITATION



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I was amazed to see how the communities in Tboung Khmum have actively worked together on the project by UN-Habitat Cambodia toward Build Back Better including the consensus-based selection process of rebuilding. I am expecting the gained skills and technical transfer here to be effectively multiplied to realize more resilient and sustainable communities in other areas.

Ms. Ritsuko Yamazaki
Director, Policy Planning Office,
General Affairs Division, National
Spatial Planning and Regional
Policy Bureau, Ministry of Land,
Infrastructure, Transport and
Tourism (MLIT), Japan











RESILIENT HOUSES UNLEASH THE POTENTIAL OF **CHILDREN & YOUTH**

Children's health, educational advancement and overall well-being are deeply influenced by the quality of housing in which they live. Lack of adequate housing tends to have a profound impact on children due to their specific needs,

affecting their growth. Building resilient houses leads to protecting children and young people in the communities from the worst effect of adversity as well as unleashing their potential as change agents in the communities.





TRAINING ON **WATER, SANITATION & HYGIENE:** NEW KNOWLEDGE AND SKILLS

In January 2020, the project team conducted a series of training sessions on WASH (water, sanitation and hygiene) for the communities, teaching know-how of producing ring culverts and of building latrines at home. A total of 128 participants (including 52 women) consolidated their understanding of how to improve the situation of hygiene and sanitation by installing clean latrines.



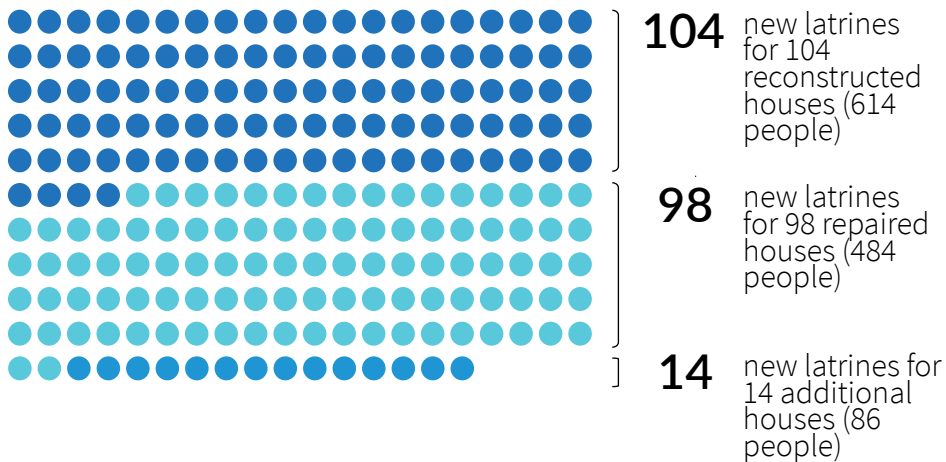


ENDING OPEN DEFECATION BY INSTALLING **CLEAN LATRINES** IN THE COMMUNITIES





216 LATRINES INSTALLED FOR IMPROVING LIVING ENVIRONMENT











**OLD HOUSES
BEFORE THE PROJECT**



BUILD BACK BETTER IN REHABILITATION & RECONSTRUCTION



Disaster impacted communities can be much better equipped to Build Back Better during the extended period of recovery, rehabilitation, and reconstruction when they have taken actions to strengthen recovery capacity and decision-making effectiveness prior to the onset of disaster. Recovery is most successful when the wide-ranging needs of communities, organizations, and individuals are addressed in the coordinated manner.

TECHNICAL GUIDANCE & MONITORING BY **GENERAL DEPARTMENT OF HOUSING**

The General Department of Housing (GDH) has worked hand-in-hand with the project team since the beginning of the project. Throughout the implementation phase (e.g. the project launch, field assessment, selection of beneficiaries, housing design, capacity building and house reconstruction), the GDH has provided technical guidance to the team and regularly monitored

the house reconstruction process. Furthermore, the GDH has closely cooperated with the housing officials under the

Ministry of Land Management, Urban Planning and Construction as well as Tboung Khmum Province.







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This resilient housing project in Tboung Khmum is the first-ever project in Cambodia to recover from the disaster and improve the livelihood at the same time through the Build Back Better approach. With the tripartite partnership among GDH, UN-Habitat, and the Government of Japan, we have successfully demonstrated this project; and this has been inspired us to scale up throughout the country. We would also like to consider introducing home-stays for tourists in this area, building on this project. I believe it will be a great journey for visitors to experience local culture, sustainable lifestyle, and disaster preparedness.

H.E BENGHONG SOCHEAT KHEMRO
Director General
General Department of Housing





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Since the start of the project, people who live in 4 communes have received a lot of direct and indirect benefits. For the direct benefit, 202 families are getting the fully reconstructed houses or repaired houses. Some construction workers had already knew how to build a house, but through technical training sessions by UN-Habitat, now they know how to build a resilient house that is adaptable to climate change impacts.

The 4 communes have also been supported by the project in establishing communities. When there's a problem, they now have their own community to consult with and can help each other. People in the villages, moreover, have received benefits from the capacity building opportunities on sanitation and hygiene. Clean toilets are installed in the new houses. So, they can avoid open defecation.

If this project would not have been implemented in the communes affected by the floods, the poor rural population would have continually been affected by floods over and over again. Thanks to the project, they could have built back their houses more resilient to disasters.

Mr. Seng Sokkhoeun
Governor of Tboung Khmum District



INTEGRATING DISASTER PREPAREDNESS INTO LOCAL PLANS

To enhance disaster prevention and management capacity of the local authorities, a training workshop on the integration of DRR elements into local planning was organized by UN-Habitat in collaboration with the General

Department of Housing (GDH) on 11 March 2020. At the one-day workshop, the participants discussed how housing-related policies and programmes and disaster risk reduction (DRR) can be strategically integrated into a

Commune Investment Plan (CIP). Around 70 participants were mainly from Commune Councils, Tboung Khmum District, Tboung Khmum Province, GDH, and relevant local NGOs.















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One day in 2018, when I stayed at my home, the storm hit this area with the heavy rain and strong winds and some parts of my house were blown away. The walls and roof tiles of my house fell apart, while a few more houses in my village were also destroyed. We then evacuated our home to a safer area but the life there was very tough. A tent as our temporary shelter was too hot to stay in.

I was really thankful when I first heard about the project rebuilding the damaged houses for flood-affected families. With other construction workers, I myself took part in the reconstruction work of my house as a labor force, while overseeing the entire building progress.

The house structure is now stronger than before. Even if strong winds blow, nothing would happen to my new house. In the rainy season, I wouldn't have to worry any longer. In addition, the living floor is high enough from the ground so that any floods wouldn't affect my assets any more.

Mr. Som Chan
Farmer. Family of 6





“

(Since the inception of this project) there have been a lot of changes. When we first established the community, we faced some problems. We discussed many things but couldn't really agree on anything. So we tried to find a better way; we first talked to only a few community members and then talked to all. Then we agreed to work together to do the project.

As we (community people) live in several different villages, we never knew each other before. But now, we're getting to know each other. We talk to each other, and borrow and exchange materials as well. Now, it is also easier for us to express opinions.

When we are in solidarity with others in the community, we can gain a lot of benefits. Together, we'll try to be well prepared for future disasters.

Ms. Duth Chhundy
Community member



IMPACT OF THE PROJECT



202
HOUSES

A total of 202 households with 1,098 people in the 7 communities have been supported with core shelters.



10,000
PEOPLE

Nearly 10,000 people in the 7 target communities have received benefit from the project activities, such as creating hazard maps, providing community development support and livelihood assistance.



172
WORKERS

172 carpenters and construction workers (of 33 groups) in the 7 target communities have been trained on resilient construction methods.



70
OFFICIALS

70 national and sub-national government officials have received benefit from capacity building opportunities on policy development skills of disaster risk management policies.





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Every year floods occur in Tboung Khmum along the Mekong river, and most of the population residing near the river are always forced to evacuate their villages to safer areas. The safer area along the Nation Road 7, however, belongs to private owners. By seeing difficulties of people, the Royal Government of Cambodia has started filling the land (around 10 hectare) along the Nation Road 7 to ensure that flood sufferers can stay safe in that space temporarily.

When floods are massive and prolonged, they significantly affect people's income and daily lives. But now, we have a cooperation with UN-Habitat. UN-Habitat has come to implement the project to rehabilitate and reconstruct new houses that are resilient to natural hazards and climate change impacts. The project aimed to build (the foundation part of the) houses higher than the water level in case of floods and stronger than they used to be.

Training sessions on resilient housing in rural areas conducted by UN-Habitat have been useful to the communities and the groups of construction workers. For example, they learned what kind of

equipment can adapt to the local climate. There's a good point of change that I can see; previously, we used wooden pillars which couldn't be durable in water. But now people use concrete pillars as a foundation with ground beams and beam reinforcements, and then they build a wooden upper structure on that. This architecture can adapt to the local climate and be more resilient to floods.

In the future, we would like to seek more support from UN-Habitat and continue this project. With resources to be provided by future projects, people in the communities and construction workers can cooperate and coordinate with each other to continue the construction process. By doing so, we will be able to help more people with resilient and affordable houses. Step by step, and together, we can help our people in need.

H.E. Hak Sokmakara
Deputy Governor of Tboung Khmum Province



Resilient Housing for All
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