



## Promoting Community Resilience through Increasing Adaptive Capacity to Climate Change in Battambang Province, Cambodia



*Pictures: bill board, pilot farmers, water tank, and group discussion activities in five target villages (photo: consultant)*

### Project Final Evaluation Report

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## ACRONYM

CC	: Climate Change
CCCA	: Cambodia Climate Change Alliance
CBO	: Community Based Organization
CNDM	: Committee National Disaster Management
DRR	: Disaster Risk Reduction
MOSVY	: Ministry of Social Affairs Veteran and Youth Rehabilitation
OPA	: Older people association
PDA	: Province Department of Agriculture
PPID	: Provincial Planning Investment Department
PDoSVY	: Provincial Department of Social Affair Veteran and Youth Rehabilitation
RGC	: Royal Government of Cambodia
VRA	: Vulnerable Reduction Assessment

## SUMMARY

The project “*Promoting Community Resilience through Increasing Adaptive Climate Change in Battambang Province*” is funded by the Cambodian Climate Change Alliance (CCCA) and was implemented by HelpAge Cambodia country office for a period of 15 months.

This project aims to demonstrate climate change adaptation and management in five villages and to build awareness of Disaster Risk Reduction management and practices in 35 communities, in Aek Phnom District, Battambang Province. This action concerns the capacity building of Older People Associations (OPAs) in rural villages vulnerable to the effects of climate change for the purpose of demonstrating community resilience in the areas of livelihoods, water resources management, and climate change awareness and preparedness. The project expects five outcomes. The Project Officer is taken charge by Mr. Long Laen.

The project evaluation identified the following outcomes and results.

- The project has successfully completed within the agreed timeframe and resources.
- The interventions are aligned with national development policy on climate change and livelihood improvement.
- The project is strongly relevant to the community situation and fully responded to the needs of the targeted households.
- The project recipients included 25% women head of household.
- Community members in the project areas have improved understanding of climate change adaptation/disaster risk reduction. The project baseline identified 72% of the respondents with some knowledge of the issue against to 93% in the end line monitoring. In addition, the score from the Vulnerability Reduction Assessment (VRA) showed an encouraging improvement from 4.38 to 3.00<sup>1</sup> (32% increased).
- The project recipients and community members in the project coverage areas have understanding about climate change adaptation and resilient agriculture practices. The project selected 121 farmers have demonstrated farming practices resilient to flood and drought; In addition they are able to disseminate the knowledge and peer coach other farmers.
- Similar way, access to safe drinking water is improved through community education and the installation of rain water catchment storages locally designed, proven adapted to flood and drought and are age and children friendly. The respondents through the project period monitoring and through the evaluation did not report any increase of water borne diseases especially during the last flash flood.

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<sup>1</sup> VRA scale 1 is positive and 5 is negative

- In order to manage and coordinate climate change adaptation and disaster risk reduction activities in the project communities, HelpAge has facilitated the establishment through elections process of OPAs sub-committee leaders in each target village. The OPAs sub-committee leaders have received information about climate change adaptation/ DRR. They are also trained in basic management and leadership, in the participation process in the commune investment plan (CIP) and in developing community application for the local fund.
- Billboards, posters and other hard inputs support by the project have CCCA logo in all project villages.

On the question of sustainability, the mechanism Older People Association (OPA) is well designed and has the capacity to ensure the continuity of the actions beyond the project life. OPAs sub-committee leaders are taken charge of managing activities in relation to climate change will keep functioning beyond the project life. Furthermore, the OPAs have gained good support from the local authorities and government agencies at sub-national level. The OPAs have developed a good relationship with the Provincial Planning Investment Division (PPID) which can provide them with necessary technical support in effectively engaging in the local planning and developing community local fund application to address climate change effects in their community. The PPID has as well facilitated the OPAs participation in the Committee of Disaster Management at all levels at the sub national level.

With regards to the lessons learned, the evaluation exercise acknowledges that the Older People Association (OPA) is an effective mechanism with capacity to ensure sustainability of the actions beyond the project life.

The following recommendations should be considered for future alike project.

- Advise the OPAs to have a work plan beyond the project life to encourage 121 trained farmers.
  - To continue sharing their knowledge to other farmers and to keep coaching farming practices adapted to potential flood and drought. In this manner, HelpAge will help to build up and nurture a pool of local expertise.
  - To join existing mechanisms (farmer associations/groups or training services) to maintain and upgrade their expertise in practicing farming adapted to climate change.
- Advise the OPAs to have a work plan for the sub-committee leaders on climate change to keep engaging with the sub-national network of the Provincial Committee on Disaster Management, to mainstream the community disaster plan in the Commune Investment Plan and to develop application for the local fund.

# 1. Background

HelpAge international recently localised as HelpAge Cambodia has worked in Cambodia since 1992 and has directly supported the establishment of Older People's Associations (OPAs) in 120 rural villages in Battambang and Banteay Meanchey provinces. The OPAs have turned out to be highly successful and participatory actors in local development. OPAs are self-managed community organizations with several functions: (1) mobilizing mutual assistance among members; (2) contributing to overall village development and leadership; (3) ensuring external resources are well targeted to the most vulnerable; (4) referring cases of need for outside assistance; and increasingly serving as (5) a platform for excluded community members to voice their needs, gain better access to services and engage actively with commune councils and other local agencies. OPAs are based on the premise that not all older people are dependent and helpless, and they can contribute to community development, meet each other's needs, and use their respected position to act as a bridge among groups or resolve disputes. These OPAs are intergenerational in that they engage younger people as OPA members or supporters and channel benefits to entire households.

HelpAge Cambodia has succeeded with the OPAs to design and develop a mechanism with multifunctional roles so that they address needs that community members identify, including livelihood support, health care, home care, social interaction, and linkage with existing services. In 2012, HelpAge also took the first steps towards establishing federations of several OPAs. These federations have several functions: to represent OPA members to higher level stakeholders; to serve as a source of information about local NGOs and older people's concerns; and to provide assistance and mentoring from stronger to weaker OPAs. While still a new concept, federations of OPAs have the opportunity to gradually expand the democratic representation of older people and serve as a mechanism for social accountability. Unique among Southeast Asian countries, the Cambodia government has approved national guidelines for establishing OPAs and has proposed to the ASEAN secretariat to host a regional conference to promote the role OPAs in ASEAN.

The project "Promoting Community Resilience through Increasing Adaptive Climate Change in Battambang Province" proposed to use the OPA mechanism to channel and manage the activities. The project disseminated information about CC/DRR in 35 communities, in Aek Phnum District, Battambang Province and demonstrated climate change adaptation activities in only 5 piloted communities in the same district.

The intervention in the 5 piloted communities focused on resilient-building strategies at the community level, in the areas of livelihoods, water resources management, awareness and preparedness. The project expected five results:

1. Capacity of Older People Association to coordinate Disaster Risk Reduction (DRR) and climate change management at the community level;
2. Livelihoods of target communities are improved through better understanding and utilization of adaptive and resilient agricultural practices;
3. Health is improved in the target communities through increased knowledge and inputs for climate change management of community water resources;

4. Adaptive capacity in the 35 villages is increased through greater climate change knowledge and strengthened collaboration between community, local authorities, and government service providers at the sub-national level;
5. CCCA visibility is established, and project implementation progress and evaluation findings are known among climate change key stakeholders in Battambang.

## 2. Objectives of the Evaluation

### 2.1. Purpose

The purpose of this evaluation is to evaluate the impacts of the project's interventions. The evaluation looks as well at the management, capacity for delivery, stakeholders' relationship, ownership and sustainability. Key lessons learned will be highlighted as recommendations for project expansion or future climate change related project.

### 2.2. Objectives

The project evaluation covered the following objectives:

- Assess the relevance of the project with the priority needs of the target groups;
- Examine the progress towards the project outcomes and impacts, the resilience of the community members when facing flood or drought;
- Assess the ownership and sustainability of the project stakeholders especially the relevance of the mechanism Older People's Associations;
- Identify challenges, lessons learned, and share recommendations on opportunities for improvements in the areas of project design, participation, management, ownership and sustainability.

## 3. Methodology

The evaluation was conducted in the five project piloted villages, Bak Amrek, Bak Roteh, Daun Ent Samnang Snoar and Sdey Leu of the communes of Preaek Loung and Samroang Knong, Aek Phnum District.

The evaluation applied mixed qualitative and quantitative methods including:

- a) A desk review of key project documents comprising of the project guideline and manual, the project logical framework, project periodic monitoring reports, project quarterly reports, and the internal monitoring database.
- b) Series of discussions with relevant project stakeholders ranging from representatives from the provincial technical departments of rural development, agriculture, CCCA network members, and HelpAge International staffs. The discussions with the key stakeholders aimed at collecting comprehensive views on the project approach and effectiveness.
- c) Focus group discussions with the leaders of the OPA committees and sub-committees on climate change, with the village chiefs, and commune councillors. The focus group looked at the effectiveness of the OPA structure, at the OPA's competence in managing climate change related activities and through the vulnerability reduction exercise, looked at as well at the OPA leaders' capacity in adapting to the effect of climate change.
- d) Household and individual survey to collect information on the utilization of the project inputs and changes in the livelihood of the households.
- e) Case studies to particularly record good practices among the project recipients. The consultant has the help of the project staffs to recruit two members of the OPAs and



recipients of the project in the training of agriculture practices resilient to climate change.

For the qualitative interview, voice was recorded and transcribed from the audio to text and categorized by group of idea. On the quantitative interview, notably the household and individual the data was entered into the EpiData programme and exported to STATA and excel for statistical analysis.

## 4. Main Findings

The survey respondents were recruited among the members of the Older People Association of the 5 project piloted villages.

Table 01 indicates the sampling participants surveyed in each village.

Table 01: survey's respondents by village

Name of village	Number of respondents	Percent
Bak Amrek	16	12.03%
Bak Roteh	45	33.83%
Daun Ent	27	20.30%
Samnang Snaor	25	18.80%
Sdey Leu	20	15.04%
Total	133	100%

Table 02 gives the mean age of the respondents. The mean age is 53 years old. The minimum age of the respondents is 19 years old and the maximum age is 81 years old.

Table 02: respondents mean age

Total Number of respondents	Mean	Std. Dev.	Min	Max
133	53.27	12.69	19	81

Chart 1 indicated the break down by sex of the respondents: 39% of the respondents are male against 61% female (chart01).

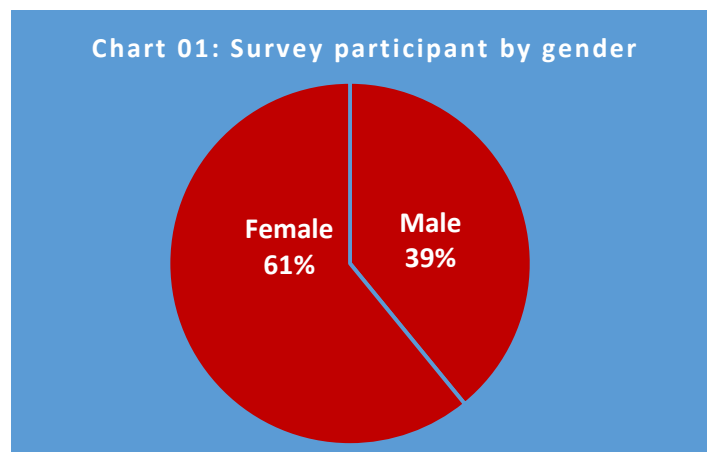


Chart 02 indicates the respondent relates to head of households. The final evaluation has included 54% of women as house wife follow by 38% of husbands. So, almost of respondents are head of households. The survey has include key persons of the households.

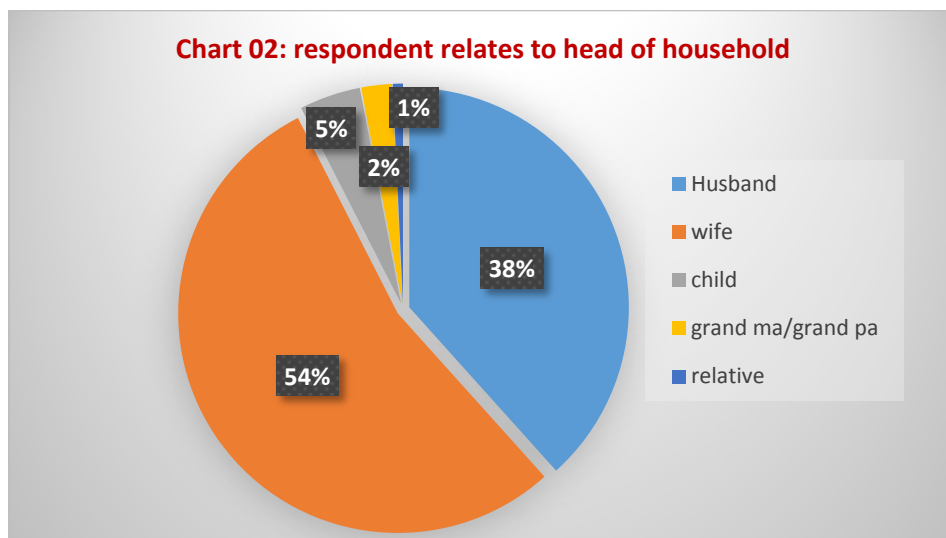


Chart 03 indicated that among the total respondents, 25% are women head of household. Households headed by women are more at risks facing food and income insecurity more than households with both spouses together or headed by male. The evaluation confirmed that the project is inclusive of vulnerable households.

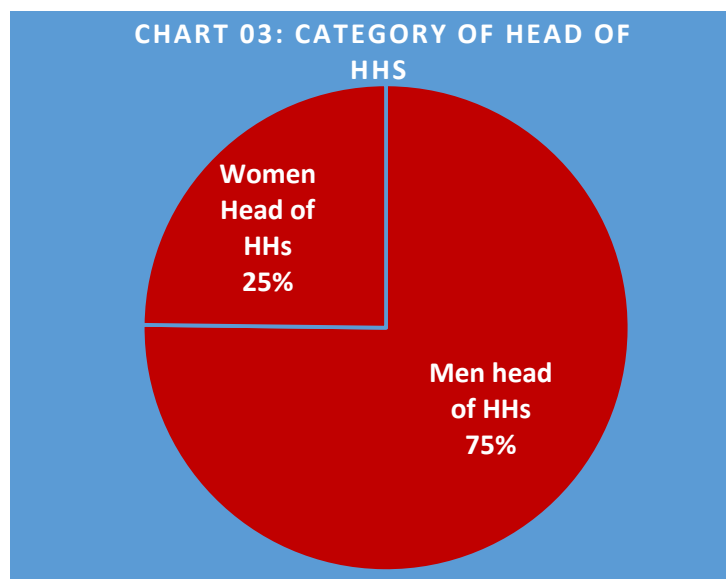
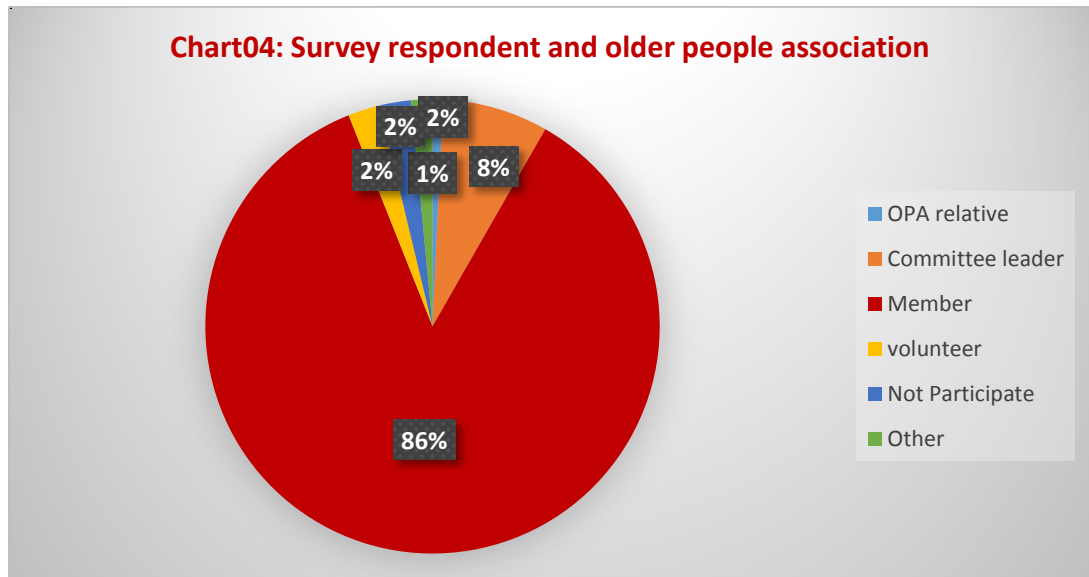


Chart 04 indicates only 3% of the respondents are not older people association members, while almost of them relates to OPA such as committee, members, and relative. According to the project were promise to work with existing community base organization (CBO) as well as OPA that established by HelpAge International Cambodia.



The photo below showed the OPAs sub-committee leaders on climate change participating to the focus group discussion and taking the vulnerability reduction assessment (VRA) exercise.



Picture 01: Focus Group Discussion Activities in Bak Rotesih Village (Photo: consultant)

#### 4.1. Relevance

The evaluation found that the project has high relevance with the selected areas, the community situation, and older people's needs, is gender sensitive and is aligned with the national development policy on climate change adaption. The project is piloted in two communes of Aek Phnum District located along the river Sangkae and close to the lake Tonle Sap. Villages located along the river but downstream, like Daun Ent, Bak Roteh, Bak Amrek are prone to floods and are frequently affected with water over spilling from the river bed or from the Tonle Sap lake. Villages that are located at the upper stream of the Sangkae River are rather experiencing drought and shortage of water supply for drinking and for agriculture activities. The project therefore covers areas that are vulnerable and regularly affected by flood and drought.

The project recipients are largely older people and small farmers. The participation of women in the project is also significant. It should be noted that 25%<sup>2</sup> of the beneficiaries are women head of households. The project therefore has the participation of the right community groups. The project also responded to the communities' needs with interventions ranging from climate change adaptive agriculture technique, rain water catchment storage adapted to flood and drought, participation on CC/DRR preparedness and planning and in local planning in the commune investment plan. The project activities are channeled and are effectively managed by the Older People's Associations, notably by the OPA sub-committee on climate change and disaster risk reduction.

As a note and recommendations, since women head of households are quite significant in the community, HelpAge should explore and assess their specific problems and needs in relation to the effect of floods and drought and design activities that are adapted to these specific needs.

#### 4.2. Efficiencies

Because the cost analysis was not part of this evaluation, the analysis is limited to the project scope. The project has duration of 15 months from January 2013 to March 2014 which is short for the implementation of the project activities and for achieving results. Nevertheless, the project has delivered satisfied results. The size of the project communities and the scope of the work are manageable and the planned resources are effectively deployed during the period of the implementation. According to the desk review and analysis of the information, there is no sign of financial resources being wasted or ineffectively used.

#### 4.3. Effectiveness

The implementation of the project is in line with the objectives and significant results are achieved. The development of the capacity of community based organizations to coordinate DRR and climate change management at the community level is completed. Each OPA in the piloted villages is equipped with 3 OPA subcommittee leaders in charge of managing climate change related activities. The OPA subcommittee leaders on climate change have received orientation and information on climate change, are trained in basic management, leadership and effective participation in the local planning and are associated in the implementation of all project activities.

Refer to table 03, the project had worked with older people association to formulate the climate change committee in which has three members. OPA member and sub-committee reported, the committee has been built capacity to coordinate disaster risk reduction activities in the village for such as learning about the change of climate, adaptation technical, and information board of flooding alarming.

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<sup>2</sup> Chart number 03 marital status of respondent

Table 03: Comparison of base line and end line survey under result1

Indicators	Baseline	End line
Capacity and role of the committee leaders in facilitating institutional coordination and mobilizing sub-national institutions.	No formed OPA sub-committee leaders to manage CC/DRR related activities	Older People Association sub-committee leaders for CC/DRR are established in each of the project piloted villages. Each sub-committee on CC/DRR has 3 elected members. All subcommittee members are trained in general management, leadership, climate change concept, planning, and in developing community application for the local fund for the commune investment plan. The sub-committee leaders have collaborated with the commune councillors to access social development fund and they have developed good relationship with PPID and PCDM.

Chart 05 shows that people have increased information and knowledge on Climate Change. The percentage of people aware of CC/DRR has increased from 72% in baseline survey to 93% at the end line survey. People have developed better understanding of CC/DRR through their participation to the project activities especially during the trainings and meetings. Furthermore, the OPA sub-committee leaders on climate change, the OPA members, and the local authorities reported that they are able to practice agriculture techniques adapted to flood and drought and that that feel more prepared for disaster risk reduction<sup>3</sup>

Chart 05: People able to describe about climate change

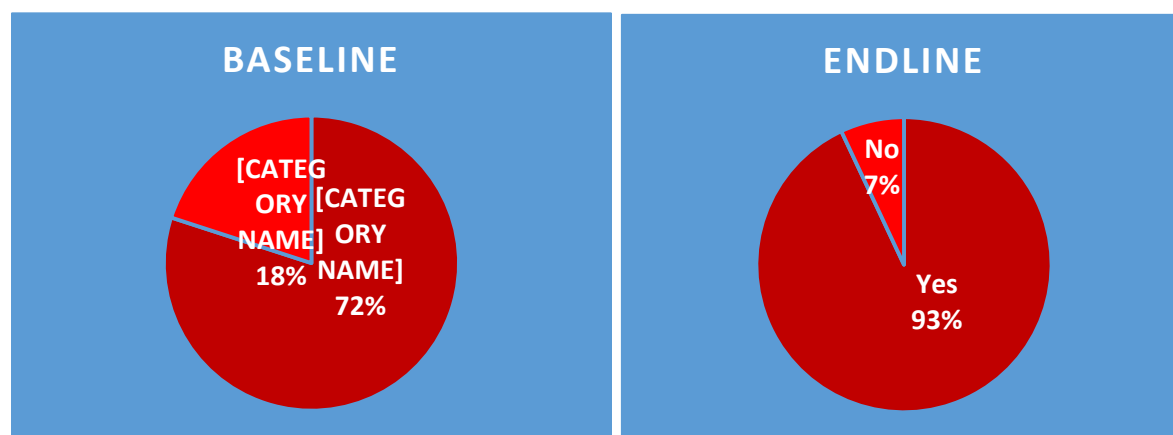


Chart 06 provides a breakdown by sex of people aware of climate change and DRR. While the gaps between male and female respondents are quite visible with male respondents more informed, women respondents have demonstrated increased understanding from 66% at the baseline to 94% at the end line survey. The project has a good participation from women which helps them to grasp new knowledge and to catch up with men.

<sup>3</sup> Focus group discussion with sub-committee from two villages at Sdei Leu, and three villages at Bak Roteh Pagoda

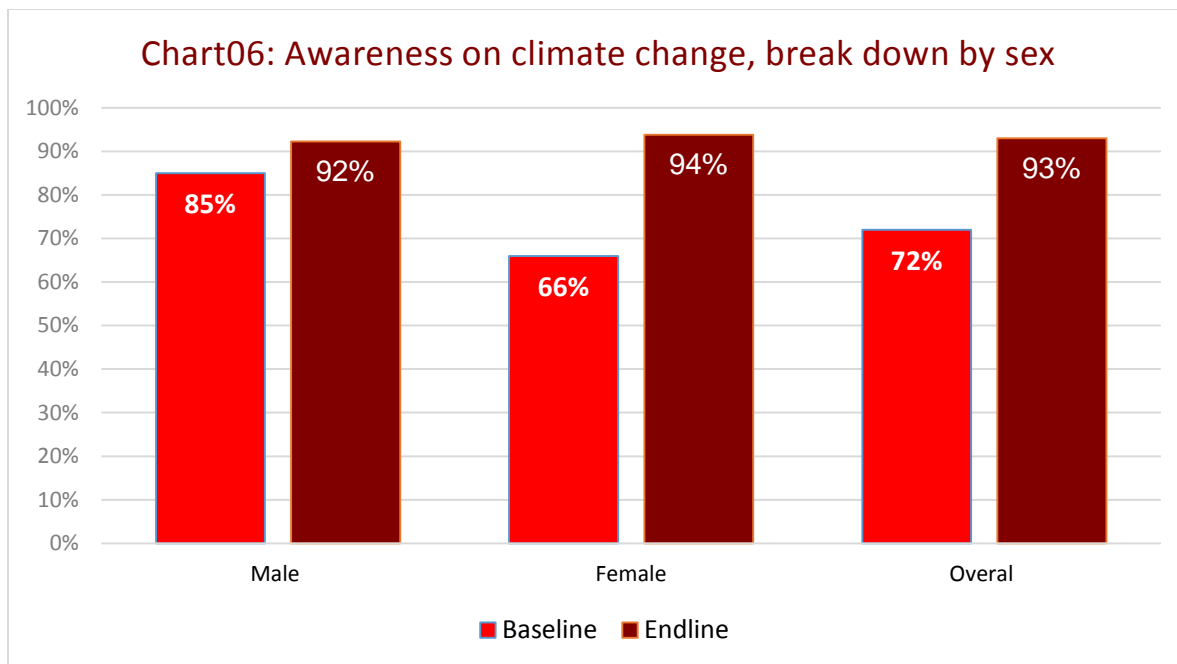


Chart 07 indicates the following: during the baseline the respondents said they have learned about climate change through the media mainly through TV/Radio (64%), but at the end line survey the respondents reported that they have learned about climate change and disaster risk reduction more through the OPA leaders (64%) followed by TV/Radio (29%). Therefore, the dissemination of CC/DRR information has not only reached the communities but the OPAs have done a good information/communication work.

Chart 07: Communication means for people to have information on climate change

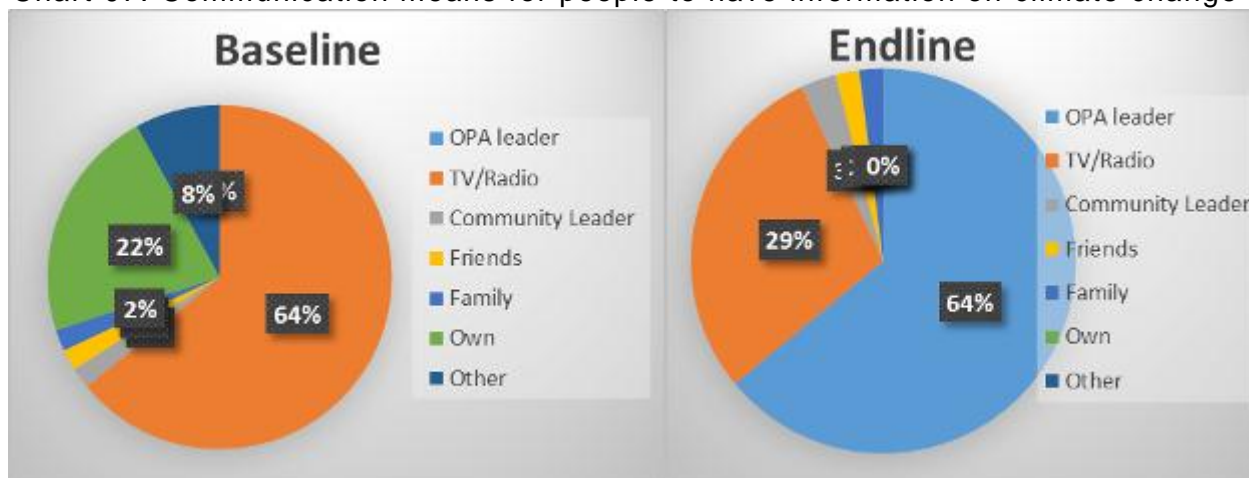


Chart 08, nearly all the respondents reported encountered and experiencing flooding in their villages in the recent years. Most respondents reported the flood in the 2013 affected more members in the community than the flood in 2012. 17% of the respondents score the flooding in 2013 as very serious, while 50% rather serious.

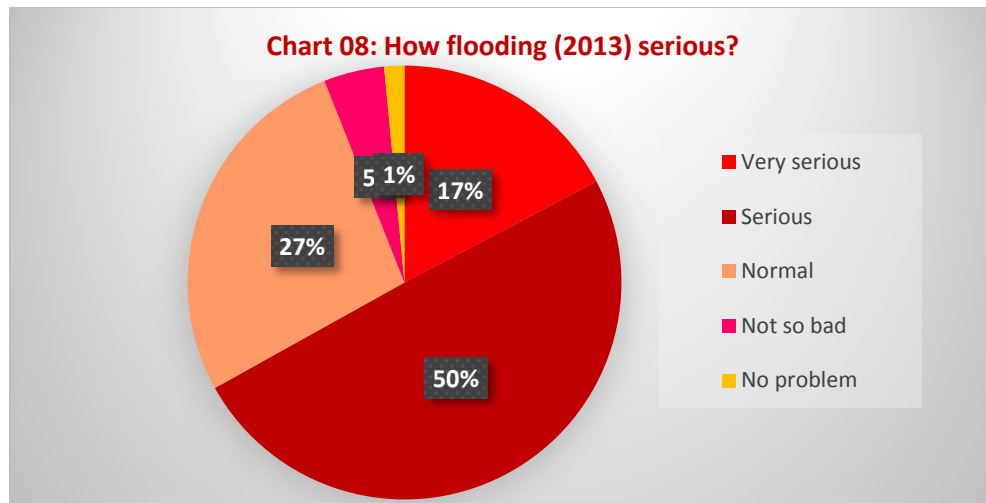


Chart 09 shows that 92% of the households were affected by the flood. 37% of the respondents said it was very serious, against 55% assessing the flood as serious.

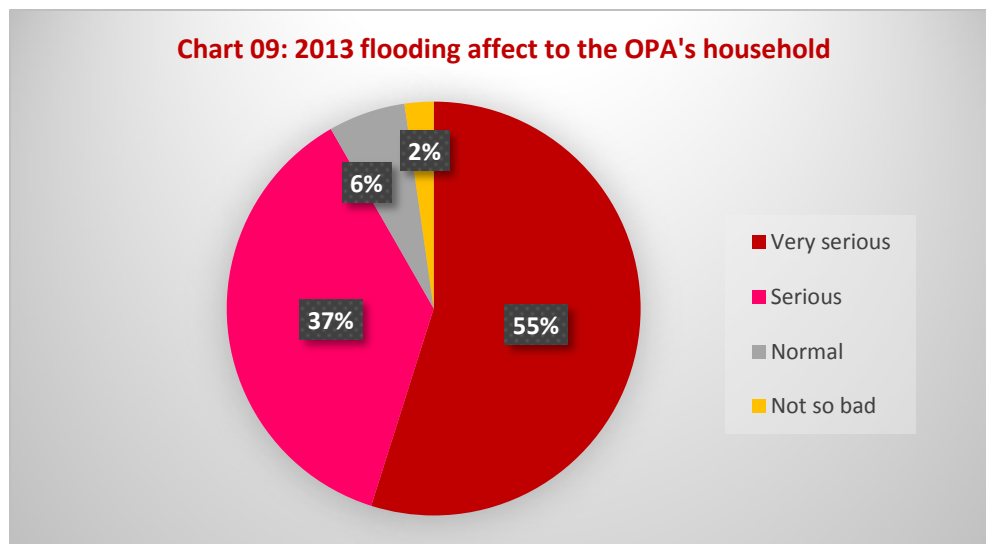
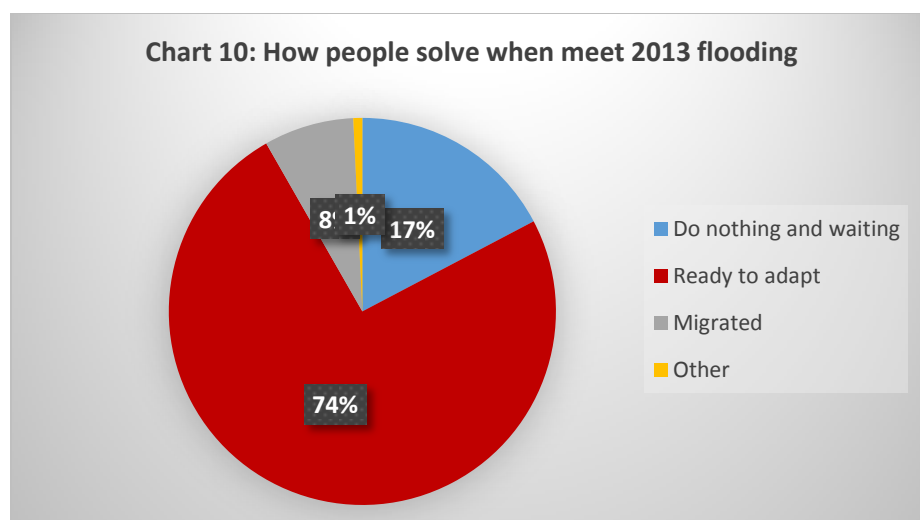


Chart 10 indicated the following: 74% of the respondents reported better prepared for the flood in 2013. The 15 months project has equipped the community members with capacity to deal with the impact of flooding especially in preparedness for risk reduction.



According to the VRA exercise, people have improved their score from 4.30 in baseline to 3.00 at end of project. The VRA has set five levels of score (1-5). 1 is not vulnerable at all and 5 is highly very vulnerable. All respondents except women head of household reported better prepared in dealing with the flooding season.

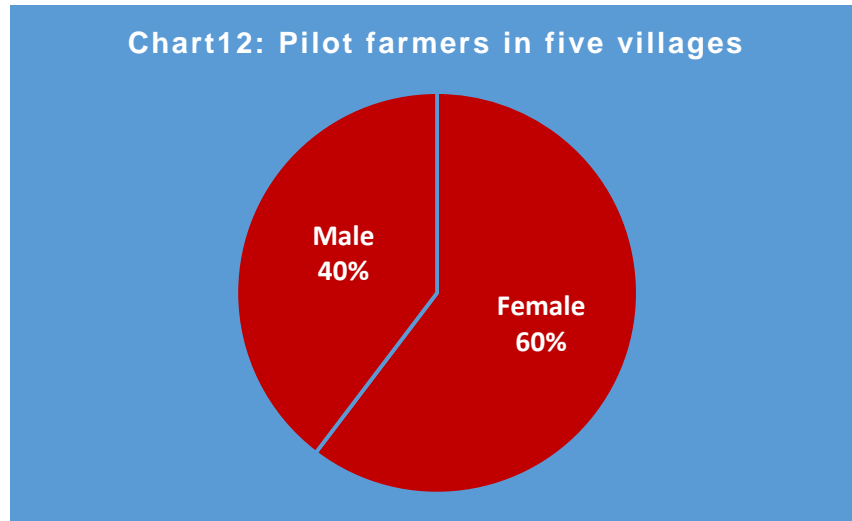
The project communities' members feel that the project has equipped them with capacity to cope with the regular flood and drought which their livelihood activities will not be seriously affected. Table 04 indicates the number of farmers and households equipped with tools and seeds for growing homesteads/crops resilient to flood and drought. The evaluation confirmed that the 121 trained farmers are the resource of Older People Association and have the capacity and expertise to share to other villages.

Table 04: Summary indicators comparison of baseline and end line under result02

Indicators	Baseline	End line
Number of farmer beneficiary households provided with tools and seeds who are growing homesteads/crops resilient climate change	N/A	121
Number of households that receive resilient rice and vegetable seeds using flood and drought resilient crops	N/A	121

Chart 12 indicated that the project has selected and recruited 121 farmers in the five target villages of which 60% female. Opportunities to participate in the project are provided to both men and women in the communities





Source: list of pilot farmers received resilient rice and vegetable seed and material

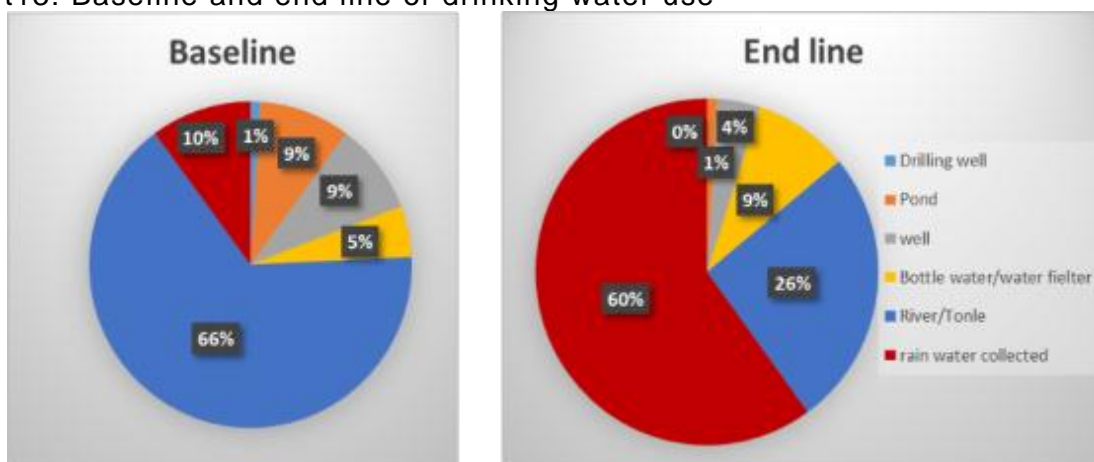
The photos below shows the label of demonstration farms and one project recipient taking care of the development of the vegetable.



Picture 01: Label of model home gardening, Samrong Snor village (Photo: consultant)

The project communities have improved health care practice through increased knowledge and inputs for climate change management and community resources. The project has supported the dissemination of health and hygiene information especially on the importance of using safe water. In addition the project has equipped the communities with rain water catchment storage and water filters increasing the communities' access the clean water. In photo 02, the earth tank could supply water to around 10 households for a period of nearly 7 months. Chart 03 indicates health improvement of the OPA members from drinking safer water. Before the project, community people (66%) used water from the river or Tonle. Now (26%) less are using water from the river or tonle. The number of households using rain water has increased from 10% to 60%.

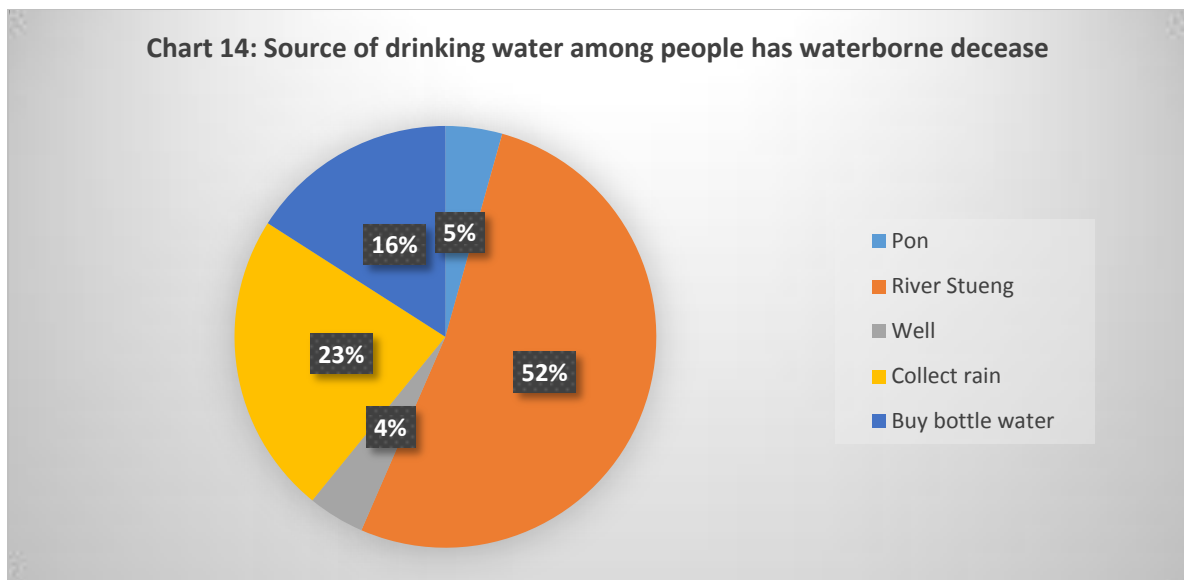
Chart13: Baseline and end line of drinking water use



Picture 02: Water filter and Water storage which support by the project, Kdei Lue Village ( Photo: consultant)

Chart 14 shows the shifting of practices of community people. Respondents who reported having waterborne diseases from using water from the river/stueng<sup>4</sup> have changed to use rain water collected and stored in the earth tank as in the photo in chart 13. Therefore, the project has changed the community negative practice to a better practice.

<sup>4</sup> Stueng mean River ( stueng Sangker)



The project has demonstrated very good collaboration with the provincial and local authorities and other key stakeholders to increase the communities' knowledge and capacity to adapt to the climate change. The project supported PCDM quarterly meeting with all stakeholders.



Picture 03: Dissemination workshop of the project in Battambang 28 March 14 (photo: consultant)

In table 06, the community members and leader has practical knowledge of climate change/ disaster risk reduction. The vulnerable reduction assessment exercise, indicated an encouraging score from 4.38 to 3.00 (score 1-5, 1 is positive and 5 is negative).

Table 06: Baseline and end line of knowledge and CC adaptive

Indicators	Baseline	End Line
Community members and leaders with practical knowledge of Climate Change/DRR knowledge.	4.38	3.00 VRA score improve 32%

In table 07: The project has promoted the visibility of the Cambodia Climate Change Alliance in the communities and among key stakeholders. According to evaluation findings 93% of the respondents reported knowing CCCA as main donor for this project. Similarly, almost all local authorities reported they have learned about climate change from the CCCA.

Table 07: Summary of CCCA visibility

Indicator	Baseline	End Line
Key stakeholders in Battambang province are aware of CCCA activities and the project	N/A	93% of stakeholders are aware of CCCA

Community people are also aware of the CCCA through the project sign boards installed by the project in the target villages. The sign boards are located in areas with frequent public movement.



Picture 04: sign board display the project information and CCCA, Kdie Leu Village (photo: consultant)

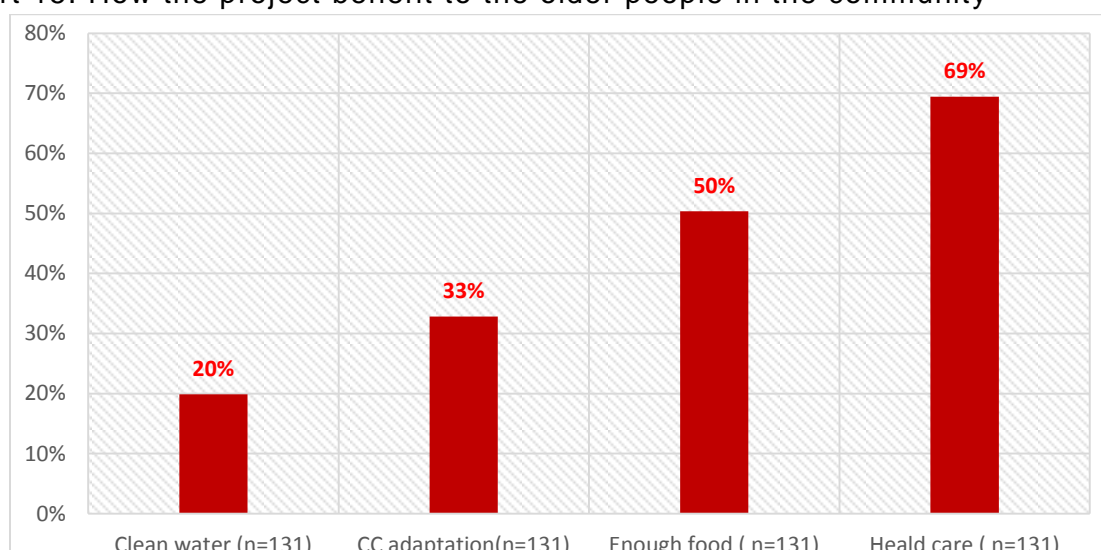


#### 4.4. Impact

The period of the evaluation is just at the end of the project cycle so too early to evaluate in depth impact. However, the evaluation could describe the trend towards the impact. The project recipients' satisfaction is measured and the overall response is very encouraging. Relevant government sub-national institutions have increased awareness and knowledge on CC/DRR and are effectively working with the project communities as closely associated to the implementation of the project. The provincial governor office is very supportive of the project activities and closely followed the implementation progress. As a result the project lessons learned are integrated in the local development policy. Furthermore, farmers trained in agriculture practices resilient to climate change have reported increased in the production yields and an increased of the income of the household. In addition, community members accessing clean water reported decreased of waterborne diseases.

Chart 15 indicates the level of satisfaction of project recipients by project activity. 20% of beneficiaries reported that they have benefited from the access to clean water, 33% climate change adaption, 50% increased food security, and 69% reported great satisfaction with the health care service.

Chart 15: How the project benefit to the older people in the community



#### 4.5. Sustainability

The continuity of the project actions beyond the project cycle can be ensured by the Older People Associations. The OPAs have the capacity to manage community development activities and they have built up solid relationship and support with the local and provincial authorities.

Furthermore, the OPAs have experienced in developing climate change adaptation activities and integrating the action into the commune investment plan for funding support. The sub-committee were trained and coached by PPID and can call on PPID for any further support beyond the project life.

According to the discussion with the farmers supported by the project, as a result of the training and application of the new techniques and practice they have better productivity especially the home garden vegetables. These outcomes will encourage the farmers to continue applying the agricultural methods for supporting their livelihood.

#### 4.6. Ownership

HelpAge international Cambodia closely worked with several stakeholders especially with relevant sub national government institutions, the provincial planning investment department, and the provincial department of agriculture, the provincial department of social affairs veterans and youth rehabilitation, the provincial department of rural development, the provincial health department to ensure that institutional knowledge and ownership stay with these stakeholders. The project has very strong participation from the project communities especially from the Older People's Associations. The OPA is an effective mechanism to ensure the continuity of the actions beyond the project life. At the same time, OPAs have proved they can effectively work with the local authorities such as village chief and commune councilors. The management of activities and decision making were entirely led by the OPAs with close involvement of the commune councilors. Progress implementation progress is regularly reported the governor office and MoSVY.

#### 4.7. Case studies

##### a. Case study of Om Kem Kerm and her husband

Om Kem Kerm and her husband, Om Chhoeut Chhuoy, are members of the OPA since 2009. Om Kem Kerm was elected to be leader of CC/DRR subcommittee of the OPA in her village in the year of 2013 facilitated by the project climate change implemented by HelpAge. As a member of the subcommittee leaders, she has the opportunities to participate in several trainings facilitated by the project including CC/DRR, in water sanitation and resilient agricultural practice.

The OPA members and the local authorities have agreed to place the earth tank rain in her compound so she can ensure the maintenance and the access to other OPA members. She reported since the whole household has access to clean and safe water they experience less health problems linked with waterborne diseases. This situation is also applicable to the other households accessing the water from the tank.



Picture 06: Water storage of 4000L capacity

*“Since we are equipped with the rain water storage, less diarrhea cases were reported. Water from this earth tank is accessible to all, we can share with one another”, said Om Kerm. We have also received water sanitation training. The trainers strongly focused the information on the risks of using unclean water and how to avoid any waterborne related diseases. The water storage is very practical and can supply us with clean water for so many months.*

Om Kem Kerm has as well joined the training delivered by the provincial agriculture extension staff and CIRD on applying agriculture and farming practices adapted to climate change.

Through the training she has realized how climate change if not addressed can badly affect the livelihood. She noticed the irregularity of the rainy and dry seasons. Recent and repetitive flash floods and prolonged drought has affected and sometimes damage her farming efforts and products. Thus, she appreciates that HelpAge has piloted this project adaptation to climate change in her community.

*Om Khem: "What I have learnt from the project is not only new but important and invaluable for me and my family. For instance, my farming methods have totally changed. Since I am applying new farming techniques for growing vegetables using appropriate seeds selection, less water, less land and safe from the potential flood I can see better results. I have better yields with cucumbers, corns, long bean, green broccoli, so on and so far. Actually, while the products from the garden are for my family consumption, I often have surplus vegetables which I can sell from time to time in the market. My family can make better income. The money earned from the sale of the vegetables is used to buy meat from time to time or other important essential items".*



*Picture 05: Planting green broccoli in the bottles*

Because of her curiosity and opened mind, Om Khem has effectively and successfully applied the new knowledge and practices demonstrated during the training. No one expect her home garden turned out to be a model home gardening for CC adaptation trainings. Even nearby villagers came to visit her place.



Picture 07: 7 day old of 45-day Long Bean

*"Many people, both members and non-members of OPA came to see me to learn how I apply so effectively the trained techniques and growing successfully these crops. They want to follow my steps. They usually come to visit my home garden and they have endless questions about the techniques of growing. I am always happy to share my experiences. I am also very happy for this recognition from the community members. And I am very proud when people come to see and praise the vertical garden, growing green broccoli in the bottle," happily said Om Kerm.*

Om Khem also owns a plot of rice fields. Before joining the project, she always planted traditional wet season rice seeds. However, the traditional rice seeds need a lot of care as not resistant to flood which occurred more frequently. Om Khem has participated in the training on climate change adaptive crops. Since she has applied tried new rice seeds flood-resilient and has applied the new farming techniques, she has seen improvement in the rice production. But Om Khem is not fully satisfied as she has to as well nurture crops during the dry season which last longer from season to season. She said other farmers shared the same concerns. She and other farmers hope they can experience other new methods and adapted crops drought-resilient.



Picture 08: Short-term or dry-rice field

*"Actually, short-term rice can help to fulfill the immediate needs for my family for rice after any big flood damaging the traditional rice crops. But one problem is followed by another problem. Alike other farmers I am now very concerned about the proliferation pests, especially mice. I am afraid our crops will be ruined if we cannot face this problem. Previously, 5 rai could give me about 30 sacks of rice paddies. But the last flood I was able to harvest only 9 sacks. Now that we have experienced new practices we are facing another problem", said Om. Khem* Despite the difficulties and challenges, Om Khem said she will not give up and she will try to find other possible ways to deal with the drought and mice. Om Khem has positive mind and thinking. She said this is adaptation!



Om Khem suggested replicate the same training to other farmers who did not have chance to join the same sessions.

## **b. Case study of Lok Ta Nherb Kok and Lok Yeay Man Aean**

Lok Ta Nherb Kok, 79, and Lok Yeay Man Aean, 84, are living in Samroang Snor village, Samroang Knong Commune, Aek Phnum District, Battambang Province. Both older persons have joined the Older People Association in their village in 2001. Lok Ta and Lok Yeay have no children. They do not own any land or rice field crop. The village authorities have authorized them to temporally stay on a small piece of land in the village. Lok Ta and Lok Yeay are taking care a few mango trees that are on the land they are living and are growing a small home garden. They both sustain their living from selling fruits and vegetables from their piece of land combined with neighbors' donation and the support from the OPA.

They use the water from the pond at the back of their house for drinking and other domestic purposes, the pond is 10 meters away from the house, Lok Ta Nherb Kok is charged to collect daily the water. The pond is always filled with water even during the dry season. However the water is not safe as the surrounding is dirty and no one ever think about clearing and cleaning the water source. In dry season, the pond is full of tiny insects and in the wet season it is filled with water coming from the latrines. Regularly Lok Ta has to filter all the dirt and insect before boiling the water for the household drinking. Lok Ta complained that with advance ageing he has increased difficulties to perform these regular and strenuous tasks. Lok Ta and Lok Yeay reported that they have from time to time bad diarrhea because of the water.



Picture 09: Pond 10m-behind his house

The project has equipped the household of Lok Ta and Lok Yeay with one ceramic water filter bucket and with one earth tank accessible to all households in the neighborhood. Both Lok Ta and Lok Yeay are so relieved and happy about this change in their daily life. They both have participated in the training about Climate Change adaptation and water sanitation. Lok Ta is a little more aware about using clean water and applying basic hygiene to prevent from waterborne diseases. The water storage and water filler are very age friendly use and helpful for older people as Lok Ta and Lok Yeay.



Picture 10: Lok Ta and Lok Yeay with Water storage

“I never thought that we will ever get such attention. This water storage is very useful for me and my wife. I have access to clean water every day and I do not need to collect water from the pond at the back of my house. Since I use the water from the earth me and my wife we never get diarrhea even once. Moreover, the earth tank has a tap very convenient for my age. I just walk down my house and there I can get the water. It is very easy for old people like us”, said Lok Ta Nherb Kok. “I do not need to spend much time to boil water like before because I have water filtering container now”, he added.



Picture 11: Water filtering container

#### **4.8. Lesson Learn**

The use of Older People Associations for channeling and managing the project actions is a good approach and it ensures the project sustainability. The OPA sub-committee leaders on climate change will stay with the OPAs even beyond the project period. The OPAs are recognized as important mechanism and actors in poverty reduction by local authorities and government agencies at sub-national.

The engagement of the OPAs with PPID and PCDM was another good approach for an effective community participation in integrated climate change adaptation/disaster risk reduction into the social development fund of commune investment plan.

### **5. Conclusion**

In conclusion, the project has successfully in 15 months completed the implementation and has achieved all the expected results. The project is very relevant to the community situation and responds to the community needs. The interventions are aligned with national development policy of climate change and of poverty reduction. The training of selected farmers on agriculture practices resilient to climate change adaptation has achieved promising results and has positive echo from other villages that were not under the pilot project. Similar way, access to clean and safe water was improved through WASH education and the installation of rain water storage and the distribution of ceramic water filters to vulnerable households with older member. OPAs sub-committee leaders in charge of coordinating and managing climate change adaptation and disaster risk reduction activities have demonstrated good performance, CCCA visibility is also ensured and CCCA support is acknowledged by all project stakeholders and community people.

### **6. Recommendation**

The following are recommendations for the next steps to take and for future climate change adaptation project design

- The project has developed local expertise with 121 farmers trained in agriculture practices resilient to climate change. These farmers should be encouraged to share their knowledge and experiences to other farmers in the village.
- The 121 trained farmers should be encouraged to form an association of local experts specialized in agriculture practices resilient to climate change.
- The 121 trained farmers should be encouraged to connect with other farmer groups in Battambang Province to consolidate their skills and to build up new skills.
- The OPA sub-committee leaders for climate change should be encouraged beyond the project to actively participate in the CIP.

## Annexes: Data Collection Tools

### Tool1: Questionnaire Commune Councilor and village Chief

កម្រងសំណួរសម្រាប់ក្រុមប្រឹក្សាឃុំ និងប្រធានភូមិ

#### អត្តសញ្ញាណកម្ម IDENTIFICATION

Q1. ឈ្មោះអ្នកឆ្លើយបទសំភាសន៍ Name: _____	Q4. លេខទូរស័ព្ទ Tel: (+855)_____
Q2. ខេត្ត Province: _____	Q5. ស្រុក District: _____
Q3. ឃុំ Commune: _____	Q8. ឈ្មោះអ្នកសំភាសន៍ Name of Interviewer _____

Q7. កាលបរិច្ឆេទសំភាសន៍ Date of interview  __ _ _ _ _	ហត្ថលេខា Signed
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សេចក្តីណែនាំ:

ជំរាបសួរ ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ\_\_\_\_\_ខ្ញុំធ្វើការជាមួយអង្គការជួយចាស់ជរាភក្តិជា ដែលជាអង្គការមានបទពិសោធន៍បង្កើតសមាគមន៍មនុស្សចាស់នៅកម្ពុជា។ យើងខ្ញុំចង់សិក្សាអំពីស្ថានភាពមនុស្សក្នុងសហគមន៍របស់អ្នក។ ដើម្បីសិក្សារៀនសូត្រពីវិធីនេះយើងខ្ញុំសូមសួរនូវសំណួរ មួយចំនួនដូចខាងក្រោមដោយសុំអនុញ្ញាតពេលវេលាពីអ្នកចំនួន២០នាទី។ ការចូលរួមឆ្លើយសំណួររបស់អ្នកគឺរក្សាដោយសំងាត់ និងដោយ ស្ម័គ្រចិត្ត។ បើអ្នកយល់ព្រមឆ្លើយសំណួរ អ្នកក៏អាចបដិសេធ ឬក៏ឈប់ឆ្លើយសំណួរក៏បាន។ រាល់ចំណេះដឹងរបស់អ្នកនឹង ជួយដល់យើងខ្ញុំក្នុងការអភិវឌ្ឍន៍នូវការគាំពារមនុស្សក្នុងប្រទេសកម្ពុជា។ ជាងនេះទៅទៀត នឹងជួយដល់ការបង្កើតនូវចំណេះដឹង ដែលអ្នកនឹងរៀនពីវិធីដ៏មានតំលៃដើម្បីគាំពារមនុស្សចាស់ក្នុងសហគមន៍របស់អ្នក។សូមគិតថានេះមិនមែនជាការស្វែងរកចំណេះដឹងខុសត្រូវឡើយ។ តើអ្នកមានសំណួរអ្វីទេ? បើគ្មានសំណួរសូមអនុញ្ញាតិឲ្យសួរ?

ហត្ថលេខា: \_\_\_\_\_ ថ្ងៃទីខែឆ្នាំ: \_\_\_\_\_

សំណួរ

សំណួរទី១ សូមអ្នកនិយាយអំពីការយល់ដឹងរបស់អ្នកអំពីការបំប្លែងអាកាសធាតុ និងការបន្ស៊ាំ?

Q 1: Please describe your understanding about climate change and adaptation?

សំណួរទី២ សូមរាប់រាប់អំពី ស្ថានភាព និងការផ្លាស់ប្តូរអាកាសធាតុក្នុងតំបន់របស់អ្នក?

Q 2: Please describe the history of climate change in your location? (The villages that participant come from)

សំណួរទី៣ តើបំប្លែងអាកាសធាតុមានផលប៉ះពាល់អ្វីខ្លះដល់ ការចិញ្ចឹមជីវិតក្នុងសហគមន៍ ជាពិសេស មនុស្ស មានវ័យចំណាស់?

Q 3: How climate change affect to the community livelihood, especially older people?

សំណួរទី៤ តើ ប្រជាជនមានរៀនយ៉ាងដូចម្តេចអំពី ការបំប្លែងអាកាសធាតុ និងការបន្ស៊ាំ? ដូចជា ការដាំដុះ ទឹក ស្អាត។ល។

Q 4: How you do you see your community learning about climate change and adaption with their livelihood? Agriculture, Water?

សំណួរទី៥ សូមអ្នករៀបរាប់អំពីការការ ដាក់បញ្ចូល សមកម្មភាព បន្ស៊ាំ និងការបំប្លែងអាកាសធាតុទៅនឹងផែនការ វិនិយោគឃុំ?

Q 5: Please describe how CCCA activities integrated into CIP?

សំណួរទី៦ តើមូលហេតុអ្វីដែលនាំអោយដាក់បញ្ចូលសមកម្មភាព បន្ស៊ាំ និងការបំប្លែងអាកាសធាតុទៅនឹងផែនការ វិនិយោគឃុំ បានជោគជ័យ? តើមានភាពងាយស្រួលនិងលំបាកអ្វីខ្លះ?

Q 6: What are the key successful integrating CCCA in CIP? And what are ease and challenges?

សំណួរទី៧ សូមអ្នករៀបរាប់អំពី ថាតើអ្នកបានស្គាល់ គំរោង សមកម្មភាព បន្ស៊ាំ និងការបំប្លែងអាកាសធាតុ យ៉ាង ដូចម្តេច?

Q 7: Please describe the visibility of CCCA?

សំណួរទី៨ សូមអ្នករៀបរាប់អំពីការយល់ឃើញរបស់អ្នក ថាតើសមកម្មភាពបន្ស៊ាំ និងការបំប្លែងអាកាសធាតុនិង មានភាពយូរអង្វែងយ៉ាងដូចម្តេច?

Q 8: For you observation, please describe the longevity of CCCA committee in your villages?

សំណួរទី១០ តើអ្នកមានអនុសាសន៍អ្វីដើម្បីកែលំអការអនុវត្តន៍គំរោងគាំពារមនុស្សដោយកាន់តែប្រសើរឡើងថែមទៀត?

Q 9: Could you please comment for HAI improvement?

បញ្ចប់បទសំភាសន៍ END INTERVIEW

សូមថ្លែងអំណរគុណដល់អ្នកដែលបានចំណាយពេលវេលាចូលរួមបទសំភាសន៍នេះ។

Thank respondent for taking the time to be interviewed.

Tool2: CCCA Project Questionnaire\_HH

កម្រងសំណួរសម្រាប់ខ្នងផ្ទះ

១ អត្តសញ្ញាណកម្ម IDENTIFICATION

Q2. Battambang	Aek Phnum District
Commune:  1. Preak Loung  2. Samroang Khnong	Village :  1. Bak Amrek  2. Bak Roteh  3. Daun Ent  4. Samrong Snor  5. Sdey Leu
កាលបរិច្ឆេទសំភាសន៍: __/__/__	ឈ្មោះអ្នកសំភាសន៍: _____

សេចក្តីណែនាំ:

ជំរាបសួរ ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ:\_\_\_\_\_ខ្ញុំធ្វើការជាមួយអង្គការជួយចាស់ជរាភក្តិជា ដែលជាអង្គការមានបទពិសោធន៍បង្កើតសមាគមន៍មនុស្សចាស់នៅកម្ពុជា។ យើងខ្ញុំចង់សិក្សាអំពីស្ថានភាពមនុស្សក្នុងសហគមន៍របស់អ្នក។ ដើម្បីសិក្សារៀនសូត្រពីវិធីនេះយើងខ្ញុំសូមសួរនូវសំណួរ មួយចំនួនដូចខាងក្រោមដោយសុំអនុញ្ញាតពេលវេលាពីអ្នកចំនួន២០នាទី។ ការចូលរួមឆ្លើយសំណួររបស់អ្នកគឺរក្សាដោយសំងាត់ និងដោយ ស្ម័គ្រចិត្ត។ បើអ្នកយល់ព្រមឆ្លើយសំណួរ អ្នកក៏អាចបដិសេធ ឬក៏ឈប់ឆ្លើយសំណួរក៏បាន។ រាល់ចំណេះដឹងរបស់អ្នកនឹង ជួយដល់យើងខ្ញុំក្នុងការអភិវឌ្ឍន៍នូវការគាំពារមនុស្សក្នុងប្រទេសកម្ពុជា។ ជាងនេះទៅទៀត នឹងជួយដល់ការបង្កើតនូវចំណេះដឹង ដែលអ្នកនឹងរៀនពីវិធីដ៏មានតំលៃដើម្បីគាំពារមនុស្សចាស់ក្នុងសហគមន៍របស់អ្នក។សូមគិតថានេះមិនមែនជាការស្វែងរកចំណេះដឹងខុសត្រូវឡើយ។ តើអ្នកមានសំណួរអ្វីទេ? បើគ្មានសំណួរសូមអនុញ្ញាតិឲ្យសួរ?

ហត្ថលេខា: \_\_\_\_\_ ថ្ងៃទីខែឆ្នាំ: \_\_\_\_\_

2. ព័ត៌មានផ្ទាល់ខ្លួន និងក្រុមគ្រួសារ		
2.1.	ឈ្មោះ Name	
2.2.	ភេទ Sex	1. បុរស Male 2. ស្រី Female
2.3.	អាយុ Age	____/____/
2.4.	ស្ថានភាពគ្រួសារ Marital Status	1. នៅលីវ Single 2. រៀបការ Married 3. បែកគ្នា Separate 4. លែងលះ Divorce 5. មេម៉ាយ/ពោះម៉ាយ Widow/Widower
2.5.	តើអ្នកមានទំនាក់ទំនងយ៉ាងដូចម្តេចជាមួយមេគ្រួសារ? Relationship with head of household	1. ប្តី Husband 2. ប្រពន្ធ Wife 3. កូន Child 4. ឪពុក ម្តាយ ឬឪពុក ម្តាយ ភ្នែក Grand Ma/Grand Pa 5. បង ឬប្អូន relative
2.6.	តើគ្រួសាររបស់អ្នកមានសមាជិកចំនួនប៉ុន្មាននាក់? Number of household members	ក្រោម ៥៥ Under 55 ប្រុស Male ____/____/ ស្រី Female ____/____/



		សរុប Total ____/____/ លើ ៥៥ Greater than 55 ប្រុស Male ____/____/ ស្រី Female ____/____/ សរុប Total ____/____/
3. សមាជិកភាព OPA		
3.1.	តើស្ថានភាពបច្ចុប្បន្នរបស់អ្នកនៅក្នុងសមាគមមនុស្សចាស់គឺជាអ្វី? What is your position with OPA?	1. OPA leader ប្រធាន សមាគមន៍ មនុស្សចាស់ 2. Committee leader ប្រធានគណៈកម្មា ធិកា 3. Member សមាជិក 4. Volunteer អ្នកស្ម័គ្រចិត្ត 5. Educator/ Conselor អ្នកអប់រំ/អ្នកផ្តល់ ប្រឹក្សា 6. Not participate មិនចូលរួម 7. Other ផ្សេងៗ (បញ្ជាក់).....
3.2.	តើពីមុនមកអ្នកធ្លាប់បានចូលរួមក្នុងវគ្គបណ្តុះបណ្តាលដែរឬទេ? Do you eve participate in any training?	1. Yes បាទ/ចាស 2. No ទេ
3.2.1.	ប្រសិនបើបាទ, តើអ្នកគិតថាខ្លួនទទួលបាននូវជំនាញថ្មីដែរឬទេ?	1. Yes បាទ/ចាស

	ហើយតើវាមានប្រយោជន៍ដែរឬទេ? If yes. Do you think you got new skill and benefit to you?	2. No ទេ
3.2.2.	តើអ្នកបានទទួលការបណ្តុះបណ្តាលប្រភេទអ្វីខ្លះ? What kind of training do you receive?  <div style="text-align: center;">(ចំណាយមានច្រើន)</div>	1. General Management ការងារគ្រប់គ្រង 2. Small Business អាជីវកម្មខ្នាតតូច 3. Agriculture កសិកម្ម 4. Relate to climate change ទាក់ទងនឹងបំប្លែងអាកាសធាតុ 5. Other ផ្សេងៗ .....
4.ការយល់ដឹងពីបំប្លែងអាកាសធាតុ/ ការត្រៀមខ្លួន		
4.1.	តើអ្នកធ្លាប់បានឮពីការប្រែប្រួលអាកាសធាតុដែរឬទេ? Do you ever hear about CCCA Project?	1. Yes បាទ/ចាស 2. No ទេ
	សំរាប់ចំណើយ បាទ/ចាស តែប៉ុណ្ណោះ If yes	
4.1.1.	បានឮពីអ្នកណាដែរ? Where do you hear about CCCA Project?	1. TV វិទ្យុ/ទូរទស្សន៍ 2. Family member ក្រុមគ្រួសារ 3. Friends មិត្តភក្តិ/អ្នកជិតខាង 4. Community leader ប្រធានសហគមន៍ 5. OPA Member សមាជិក OPA 6. Other ផ្សេងៗ (បញ្ជាក់).....

	<p>4.1.2. តើឆ្នាំមុនៗអ្នកបានមើលឃើញថាមានការប្រែប្រួលខ្លះ ដែរឬទេ?</p> <p>Last year, do you observe any change in your community?</p>	<p>1. No thing គ្មានទេ</p> <p>2. Flooding ទឹកជំនន់ច្រើន</p> <p>3. Dry រាំងស្ងួតច្រើន</p> <p>4. Storming ព្យុះច្រើន</p> <p>5. Other ផ្សេងៗ (បញ្ជាក់).....</p>
	<p>4.1.3. តើអ្នកធ្លាប់ទទួលបានការបណ្តុះបណ្តាលអំពីការប្រែប្រួលអាកាសធាតុ ឬក៏ការកាត់បន្ថយគ្រោះមហន្តរាយដែរឬទេ?</p> <p>Do you ever got a training on Climate Change and Disaster Reduction?</p>	<p>1. Yes បាទ/ចាស</p> <p>2. No ទេ</p>
4.2.	<p>តើអ្នកធ្លាប់ជួបប្រទះគ្រោះទឹកជំនន់ដែរឬទេ?</p> <p>Do you ever meet flooding?</p>	<p>1. Yes បាទ/ចាស</p> <p>2.No ទេ</p>
4.3	<p>ក្នុងពេលណា? ហើយឆ្នាំណា?</p> <p>When?</p>	_____
4.4.	<p>តើមានអ្វីកើតឡើងនៅពេលដែលមានទឹកជំនន់? តើវាមានសភាពធ្ងន់ធ្ងរ យ៉ាងដូចម្តេច?</p> <p>What happen and how the flooding serious?</p>	<p>1. Very serious ខ្លាំងណាស់</p> <p>2. Serious ខ្លាំង</p> <p>3. Normal មធ្យម</p> <p>4. Not so bad មានបញ្ហាខ្លះដែរ</p> <p>5. No problem មិនមានបញ្ហាទេ</p>
4.5.	<p>តើមានអ្វីកើតឡើង ប្រសិនបើទឹកជំនន់កើតឡើងពីរដង? តើមានប៉ះពាល់ដល់គ្រួសាររបស់អ្នក និងសហគមន៍យ៉ាងដូចម្តេច?</p>	<p>1. Very serious ខ្លាំងណាស់</p> <p>2. Serious ខ្លាំង</p> <p>3. Normal មធ្យម</p>

		<p>4. Not so bad មានបញ្ហាខ្លះដែរ</p> <p>5. No problem មិនមានបញ្ហាទេ</p>
4.6.	<p>តើអ្នកដោះស្រាយដោយរបៀបណា? តើអ្នក និងសហគមន៍មានមធ្យោបាយអ្វីសំរាប់គ្រប់គ្រងហេតុការណ៍នេះ?</p> <p>How you and your community solve the above flooding problem?</p>	<p>1. Do nothing and waiting for help មិនធ្វើអ្វីទាំងអស់ និង រង់ចាំគេមកជួយ</p> <p>2. Ready to adapt បានរៀបចំរួចជាស្រេចសំរាប់សម្របនិងបំរែបំរួលអាកាសធាតុ</p> <p>3. Migrated ផ្លាស់ទីលំនៅបន្ថែមអាត្មា និងធ្វើចំណាកស្រុក</p> <p>4. Other ផ្សេងៗ _____</p>
4.7.	<p>តើអ្នកមានទំនុកចិត្តយ៉ាងដូចម្តេចថា គម្រោងនឹងបន្តទៀត?</p> <p>How you expect that the CCCA Project continue?</p>	<p>1. Very serious ខ្លាំងណាស់</p> <p>2. Serious ខ្លាំង</p> <p>3. Normal មធ្យម</p> <p>4. Not so bad មានបញ្ហាខ្លះដែរ</p> <p>5. No problem មិនមានបញ្ហាទេ</p>
5. ការចិញ្ចឹមជីវិត Livelihood		
5.1.	<p>តើអ្នកធ្លាប់ទទួលបានគ្រាប់ពូជស្រូវ ដែលសម្របខ្លួននឹងការប្រែប្រួលអាកាសធាតុដែររឺទេ? Do you ever receive rice seed that adapt to climate change?</p>	<p>1. Yes បាទ/ចាស</p> <p>2. No ទេ</p>
	ប្រសិនបើឆ្លើយថា បាទ/ចាស	
	<p>5.1.1. បានមកពីអ្នកណា?</p> <p>From whom?</p>	<p>1. Family ក្រុមគ្រួសារ</p> <p>2. Friends មិត្តភក្តិ/ អ្នកជិតខាង</p> <p>3. Community leader ប្រធានសហគមន៍</p>

			4. OPA Leader សមាគមន៍មនុស្សចាស់ 5. Other ផ្សេងៗ (បញ្ជាក់).....
	5.1.2.	តើអ្នកដាំវាដែរឬទេ? Do you grow it?	1. Yes បាទ/ចាស 2. No ទេ ( រំលងទៅ 5.1.4 )
	5.1.3.	មូលហេតុអ្វីបានជាអ្នកដាំ? Why you grow it?	1. Don't know មិនដឹង 2. Adapt to the climate change សម្របនឹងទឹកជំនន់ ឬគ្រោះរាំងស្ងួត 3. They gave to me គេឲ្យមកខ្ញុំ 4. Other ផ្សេងៗ (បញ្ជាក់).....
	5.1.4.	ហេតុអ្វីបានជាអ្នកមិនមិនដាំ? Why don't you grow it?	1. Not the right time to grow ដាំមិន ទាន់ពេល 2. No land មិនមានដី 3. Migrated ចំណាកស្រុក 4. Other ផ្សេងៗ (បញ្ជាក់).....
5.2.	តើអ្នកធ្លាប់បានទទួលគ្រាប់ពូជបន្លែដែលសម្របខ្លួននឹងការប្រែប្រួល អាកាសធាតុដែរឬទេ? Do you ever receive vegetable seed for adapting to climate change?		1. Yes បាទ/ចាស 2. No ទេ
	ប្រសិនបើឆ្លើយថា បាទ/ចាស If yes,		
	5.2.1.	បានមកពីអ្នកណា? From whom?	1. Family member ក្រុមគ្រួសារ 2. Friends មិត្តភក្តិ/អ្នកជិតខាង

			<p>3. Community Leader ប្រធានសហគមន៍</p> <p>4. OPA (សមាគមន៍មនុស្សចាស់)</p> <p>5. Other ផ្សេងៗ (បញ្ជាក់).....</p>
	5.2.2.	<p>តើអ្នកដាំវាដែរឬទេ?</p> <p>Do you grow it?</p>	<p>1. Yes បាទ/ចាស</p> <p>2. No ទេ (រំលងទៅ 5.2.4 )</p>
	5.2.3	<p>មូលហេតុអ្វីបានជាអ្នកដាំ?</p> <p>Why you grow it?</p>	<p>1. Don't know មិនដឹង</p> <p>2. Adapt to climate change សម្របនឹងទឹកជំនន់ ឬគ្រោះរាំងស្ងួត</p> <p>3. Some gave to me គេឲ្យមកខ្ញុំ</p> <p>4. Other ផ្សេងៗ (បញ្ជាក់)...</p>
	5.2.4.	<p>ហេតុអ្វីបានជាអ្នកមិនមិនដាំ?</p> <p>Why don't you grow?</p>	<p>1. Not the right time to grow ដាំមិនទាន់ពេល</p> <p>2. No land មិនមានដី</p> <p>3. Migrated ចំណាកស្រុក</p> <p>4. Other ផ្សេងៗ (បញ្ជាក់).....</p>
6. សុខភាព និងទឹក Health and water			
6.1.		<p>តើសព្វថ្ងៃសុខភាពរបស់អ្នក និងសមាជិកគ្រួសារ មានស្ថានភាពយ៉ាងម៉េចដែរ?</p> <p>How is you and your family member health condition?</p>	<p>1. Vey bad មិនល្អខ្លាំង</p> <p>2. Bad មិនល្អ</p> <p>3. Normal ធម្មតា</p>

		4. Good ល្អ 5. Very good ល្អណាស់
6.2.	តើបញ្ហាសុខភាពរបស់អ្នកនិងសមាជិកគ្រួសារ គឺជាអ្វី? What is you and your family health problem? <b>(ចំណាយមានច្រើន)</b>	1. Chronic diseases 2. Body pain 3. General weakness 4. Eyesight 5. Seasonal diseases (specify) 6. Others (specify)
6.3.	តើជាញឹកញាប់អ្នកនិងសមាជិកគ្រួសារ កើតជម្ងឺរាតត្បាតឬក៏គាច់ទឹកដែរឬទេ? Do you have frequently diarrhea or waterborne diseases?	1. Yes បាទ/ចាស 2. No ទេ
6.4.	តើអ្នកបានទឹកមកពីកន្លែងណាទទួលបាន? Where do you get drinking water from? <b>(ចំណាយអាចមានច្រើន)</b>	1. Pond 2. River (Stung) 3. Well 4. Collect from rain 5. River (Tonle) 6. Underground (hand pump) 7. Buy water 8. Others (specify)
6.5.	តើអ្នករងគ្រោះដោយសារទឹកជំនន់ក្រោយឆ្នាំ២០១១ ដែរឬទេ? Did you experience the flood recent year?	1. yes បាទ/ចាស 2. No ទេ
	6.5.1. កាលដែលមានទឹកជំនន់ តើអ្នកមានបញ្ហាសុខភាពដែរឬទេ? ហើយតើមួយណាចំបងជាងគេ? When flooding, do you have health problem?	0. No problem មិនមានបញ្ហាសុខភាពទេ 1. Diarrhoea ជំងឺរាតត្បាត

		Which is main decease?	2. Fever ជំងឺគ្រុនក្តៅ 3. Other ផ្សេងៗ (បញ្ជាក់).....
	6.5.2.	ពេលមានទឹកជំនន់តើអ្នកបានទឹកមកណាទទួលទាន? When flooding, what are your drinking water sources?  (ចំណាយអាចមានច្រើន)	1. Pond 2. River (Stung) 3. Well 4. Collect from rain 5. River (Tonle) 6. Underground (hand pump) 7. Buy water 8. Others (specify)
6.6	តើថ្មីៗនេះមានស្រះទឹកណាដែលខូចហើយត្រូវបានគេស្តារឡើងវិញនៅក្នុងភូមិរបស់អ្នក ដែរឬទេ? Recently, do you know the reconstruction pond?		1. Yes បាទ/ចាស 2. No ទេ ( រំលងទៅ ផ្នែកទី 7 )
	ប្រសិនបើឆ្លើយថា បាទ/ចាស If yes		
	6.6.1.	តើអ្នកគិតថាសហគមន៍ទទួលបានអត្ថប្រយោជន៍ពីស្រះដែលស្តារឡើងវិញដែរឬទេ? Do you think community got benefit from this reconstruction pond?	1. Yes បាទ/ចាស 2. No ទេ
	6.6.2.	តើអ្នកមើលឃើញពីភាពល្អប្រសើរដល់រូបអ្នក និងក្រុមគ្រួសារតាមរយៈស្រះដែលស្តារឡើងវិញដែរឬទេ? Does your HHs improvement through this reconstruction pond?	1. Yes បាទ 2. No ទេ
	ប្រសិនបើឆ្លើយថា បាទ/ចាស If yes		
	6.6.2.1.	តើមានភាពប្រសើរអ្វីខ្លះ?	1. Health Improvement សុខភាពល្អ



			What are improvement areas?	ប្រសើរ  2. Easy for water accessible ទទួលបានទឹកយ៉ាងងាយស្រួល  3. Health improvement and accessible to water សុខភាពល្អប្រសើរ និង ទទួលបានទឹកយ៉ាងងាយស្រួល  4. ផ្សេងៗ(បញ្ជាក់).....
7. ការយល់ដឹងពីគំរោង CCCA				
7.1.	តើពីមុនមកអ្នកធ្លាប់បានស្គាល់ពីសម្ព័ន្ធភាពប្រែប្រួល អាកាសធាតុ កម្ពុជាដែរឬទេ? Do you know CCCA Project		1. Yes បាទ/ចាស  2. No ទេ	
7.2.	តើមានគណៈកម្មាធិការប្រែប្រួលអាកាសធាតុនៅក្នុងសមាគម មនុស្ស ចាស់របស់អ្នកដែរឬទេ? Do you know CCCA committee in OPA?		1. Yes បាទ/ចាស  2. No ទេ	
	ប្រសិនបើឆ្លើយថា បាទ/ចាស If yes			
	7.2.1.	តើពេលខ្លះអ្នកចូលរួមនៅក្នុងគណៈកម្មាធិការនេះដែរឬទេ?  Do you attend CCCA activities in your village?	1. Yes បាទ/ចាស  2. No ទេ	
8	ជាសរុបតើ គ្រួសាររបស់អ្នកបានទទួលផលប្រយោជន៍អ្វីខ្លះពីគំរោង?  តើអ្នកឃើញថាគំរោង មានប្រយោជន៍អ្វីខ្លះដល់ មនុស្សចាស់ក្នុង គ្រួសាររបស់អ្នក?  In total, how your HHs got benefit from the CCCA Project? Especially older people?		1.Enough Food មានអាហារគ្រប់គ្រាន់  2.Health Care មានការថែទាំសុខភាព  3.Clean Water មានទឹកស្អាត  4.CC adaptation មានការរៀបចំទុកជា មុនពេលមានទុកជំនន់ និងរាំងស្ងួត  5.other ផ្សេងៗ_____	
8.1 មតិយោបល់បន្ថែម Other comment				

**បញ្ចប់បទសំភាសន៍** END INTERVIEW

**សូមថ្លែងអំណរគុណដល់អ្នកដែលបានចំណាយពេលចូលរួមបទសំភាសន៍នេះ។**

Thank respondent for taking the time to be interviewed.

### Tool3: Guide Question for Cases Studies

សំណួរទី១ សូមអ្នកនិយាយអំពីគ្រួសាររបស់អ្នក ?

Q 1: Information about HH

សំណួរទី២ សូមរាប់រាប់អំពី សមាជិកចូលរួមសមាគមន៍មនុស្សចាស់ ?

Q 2: Information about attending OPA

សំណួរទី៣ តើអ្នកបានចូលរួមសកម្មភាពគម្រោងបំប្លែងអាកាសធាតុ អ្វីខ្លះ ? តើអ្នកបានរៀនអ្វីពីការចូលរួមនោះ?

Q 3: What activities are you participate with the project of CCCA? Describe, how you learn from your participate in the project?

សំណួរទី៤ តើអ្នកមានរៀនយ៉ាងដូចម្តេចអំពី ការបំប្លែងអាកាសធាតុ និងការបន្ស៊ាំដូចជា ការដាំ កសិកម្ម ស្បៀង។ល។ដុះ ទី

Q 4: How you do you learn about climate change and adaption with their livelihood? Agriculture, Water?

សំណួរទី៥ សូមអ្នករៀបរាប់អំពី បំប្លែងអាកាសធាតុ ប៉ះពាល់ដល់ការរស់នៅរបស់គ្រួសាររបស់អ្នក យ៉ាងដូចម្តេច និងមនុស្ស ?

Q 5: Describe your learning about Climate Change impact to family livelihood and your older people?

សំណួរទី៦ សូមរៀបរាប់អំពីចំណុច ខ្លាំង ខ្សោយ ឱកាស និង ការគម្រោងគំហែង ក្នុងចូលរួមអនុវត្តបន្ស៊ាំទៅនឹងបំប្លែងអាកាសធាតុ ?

Q 6: What strength Weakness and opportunity of your learn and apply the CCA?

សំណួរទី៧ សូមអ្នករៀបរាប់អំពី ថាតើអ្នកបានស្គាល់ គំរោង សមកម្មភាព បន្ស៊ាំ និងការបំប្លែងអាកាសធាតុ យ៉ាងដូចម្តេច ?

Q 7: Please describe the visibility of CCCA?

សំណួរទី៨ សូមអ្នករៀបរាប់អំពីផែនការសំរាប់ពេលខាងមុខ របស់គ្រួសាររបស់អ្នកចំពោះបន្ស៊ាំ និងការបំប្លែងអាកាសធាតុ?

Q 8: What is your future plan for family with Climate Change Adaptation?

សំណួរទី១០ តើអ្នកមានអនុសាសន៍អ្វីដើម្បីកែលំអការអនុវត្តន៍គំរោងគាំពារមនុស្សអោយកាន់តែប្រសើរឡើងថែមទៀត ?

Q 9: Could you please comment for HAI improvement?