

Strengthening Climate Information and Early Warning Systems in Cambodia to Support Climate Resilient Development and Adaptation to Climate Change

Cambodia Climate Change Alliance (CCCA) Innovation Project

Based Line and Endline Report

02/2022

I. Introduction

The project title is “Strengthening Climate Information and Early Warning System in Cambodia to Support Climate Resilient Development and Adaptation to Climate Change (EWS)”, which is referred to as “CCCA project”. The CCCA project aims to address the flood mitigation challenge, by producing evidence-based recommendations for the Royal Government of Cambodia. Furthermore, the project intends to reduce vulnerability of urban populations to climate change impacts, by ensuring they have access to an innovative and effective Urban Early Warning System. The project has been implemented by PIN, in cooperation with the National Committee for Disaster Management (NCDM), for the periods of 18 months and in Battambang province. Within the 18 months of project implementation, the project has provided technical support, new innovation, recommendation, and series of capacity building to PCDM and people in Battambang province.

II. Objectives

The aim of this survey was to measure indicators at the end of the CCCA project to determine the capacity of resilience of village chiefs, while comparing the results of the same indicators with those from the baseline study that was conducted at the start the project. The key focus of the endline is to understand the current capacity of resilience in the face of floods specifically, as well as climate change more generally, at the end of the project.

Reminder of the target indicator and current level of the indicator:

Target: 25% of participants involved in the vulnerability index FGDs report having greater resilience to climate change at the end of the project.

Endline: 92% of participants involved in the vulnerability index FGDs report having greater resilience to climate change at the end of the project.

III. Methodology

During the baseline, there were 42 village chiefs in Battambang involved in the Focus Group Discussions (FGD). For the endline, it was planned to interview the same respondents, all the 42 village chiefs, but it was not possible as some of the village chiefs were not available and could not attend the endline. During the FGD, 30 village chiefs were interviewed face-to-face and 6 village chiefs were interviewed through phone calls. There are 6 villages representatives that did not attend the online

session such as representatives from Bek Chan, Wat Kor, Toul Ta Ek, Phum Ratanak, Kab Kor Thmey, and Wat Romdoul village.

As for the baseline, participants were divided into two groups of 15 participants: one in the morning and one in the afternoon. To make sure they all understood clearly the questions, they were explained one by one, followed by the answers from participants.

In total, there are 10 questions, with the response measured on Likert scale from 1 to 10, with 1 being “strongly disagree” and 10 being “strongly agree”.

Table 1: Villages that attended the endline

Morning Session (in-person)	Afternoon Session (in-person)	Phone interview
13 Makara	Chamkar Samrong 1	Svay Por village
20 Ousakphea	Chamkar Samrong 2	Prek Mohatep village
Bek Chan Thmey	Phka Sla	Prek Taton Village
Kamakar	Sla Kaet	Chamkar Russey Village
Kampong Krabei	Anchanh	Romchek 4 Village
Lor Eth	Chrey Kaong	Sophi 2 Village
Num Kreab	Ou Char	
Ou Kjeay	Romcheck 2	
Ou Ta Kam 1	Romchek 1	
Ou Ta Kam 2	Romchek 5	
Ou Ta Kam 3	Romcheck 3	
Prek Preah Sdach	Damspei	
Sala Balat	Damnak Luong	
Sophi 1	Dang Kao Teap	
Wat Kor		
Wat Leap		

IV. Results

4.1. Background of respondents

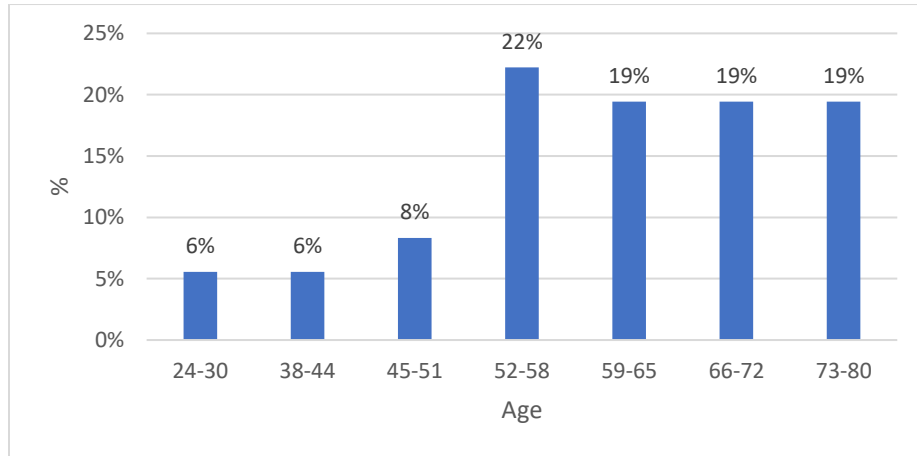


Figure 1: Age of respondents (n=36)

Figure 1 shows the age range of all the 36 respondents who were interviewed in the endline survey. It was found that the majority of the respondents are 52 years old or older, with the age range 52-58 years being the most frequent (22%) and 24-30 years being the least frequent (6%).

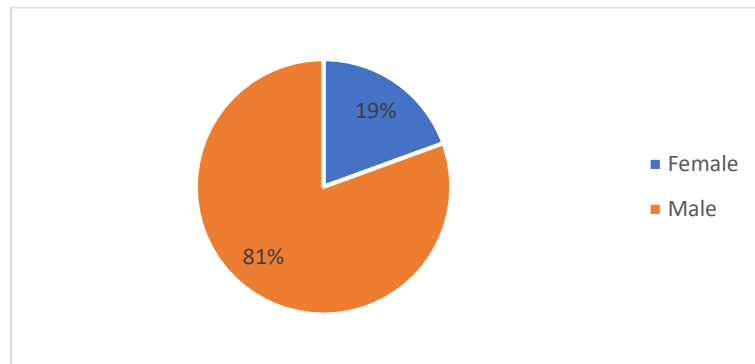


Figure 2: Gender of respondents

As seen in the chart above, out of 36 respondents who were interviewed, 19% were female and the majority (81%) were male.

4.2. Resilience Score

N	Questions
1	Do you think that you and other members of your village can identify dangers from floods and develop plans to deal with them?
2	Do you think that the location of your village is in danger of impacts from flooding?

3	Do you think that you can explain dangers from floods to other members of your community and teach them about how to cope with disasters?
4	Do you think that, in case of flooding, the methods used to inform people are effective enough to reach most people in your community?
5	Do you think that you know about the best emergency actions to take in the case of flooding?

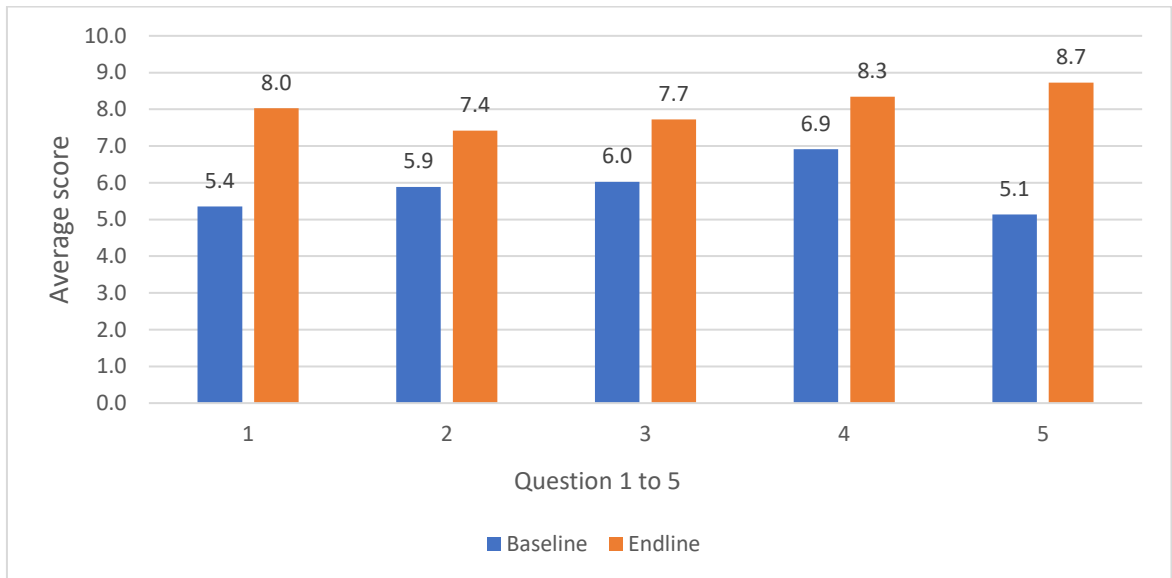


Figure 3: Average score among all the 36 participants, for survey question 1 to question 5

In total, there are 36 respondents included in the calculation of the average score in each question. Overall, endline scores are higher than baseline scores. Notably, question 1 and 5 show the most improvement. This means that participants can better identify dangers from floods and develop plans to deal with them. The reasons behind the high improvement of this capacity are respondents can better access information from EWS 1294, the speaker and phone call, information from Battambang Municipality, and received many training from PIN staffs.

Furthermore, participants can also better know about the best emergency actions to take in the case of flooding. As reported in the endline, the reasons for this capacity improvement, are all participants knowing well about the best emergency actions to take in the case of flooding such as preparing necessary stuffs, food, medicine, boat, and evacuate to the safe site areas. For example, when they got phone call from EWS 1294 or hear information from speaker, they come to inform their villagers and request the boat and some materials from BTB municipality to move people from the dangerous zone to stay in the safe place like in the pagoda or school. It is important to note that during the 18 months of the project implementation, there were series of training provided to all village chiefs in Battambang including the best emergency actions to be taken.

N	Questions
6	Do you think you are capable of coordinating and explaining plans to deal with floods to other villagers?
7	Do you think that, in case of disaster, you and other members of the community have enough access to the necessary tools to deal with the impacts of this disaster?
8	Do you think that you need more support to deal with floods, like support from humanitarian NGOs or the government?
9	Do you think that your community can go back to a normal life quickly, including working, in a short period after flooding?
10	Do you think that your village can deal with future disasters in a way to protect women, children, and older people?

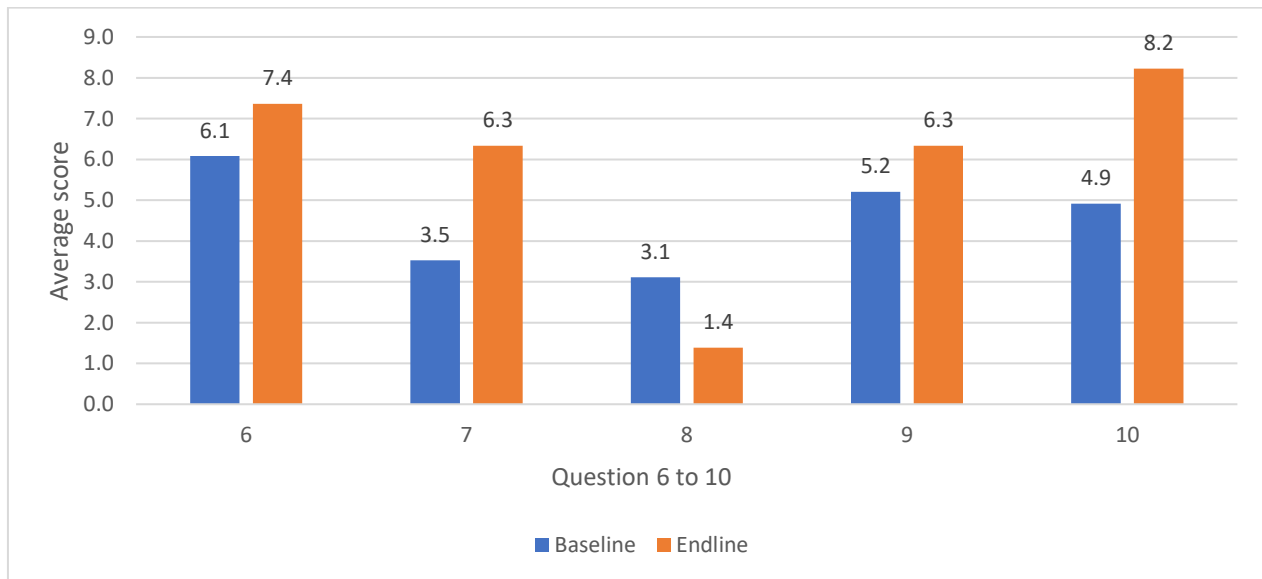


Figure 4: Average score question 6 to question 10

After comparing among all the 36 respondents, overall, endline scores are higher than baseline scores, except for question 8. For question 8, participants declared that they need more support than before to deal with floods, like support from humanitarian NGOs or the government. On the other side, question 7 and 10 show the best improvement. This means that in case of disaster, participants and other members of the community perceive that they have enough access to the necessary tools to deal with the impacts of this disaster. Moreover, participants reported that the necessary tools needed are EWS 1294 and Urban EWS-speaker, boats, bags, tires and raincoat, motorbike, medicines, food, and phone. Based on their experience, when they received the information from the speakers, they can prepare everything more or

less so it helps them deal with the disaster. For raincoat, when there is flooding, they can wear it to buy something they need as it was raining during the flooding. So, raincoat can prevent them from getting wet and falling sick. For motorbike, when flooding they need to travel to buy something they need for their families because motorbike is easy and faster. Further, when they have serious sickness or get injured due to flooding, they have motorcycle to go to the hospital.

Normally flooding (flash flood) comes with continuous heavy rain so they have to wear raincoat to avoid getting sick to do they job outside. Raincoat is probably not the most important tool but is necessary for them to work under the heavy rain which is very comment cause of flash flood in Cambodia. Motorbike is both important and necessary tool. Normally people take a boat to safe place or highland where they can take motorbike to buy necessary things fast or go to health center or hospital fast.

Furthermore, participants think their villages can better deal with future disasters in a way to protect women, children, and older people. Because all of respondents knew how to protect women, children and older and what they need. When there was flooding, in case of evacuation, they took a boat to transport women, children and older to the safe place and give advice how to protect themselves and provide medicines, foods, and always come to visit and take care them.

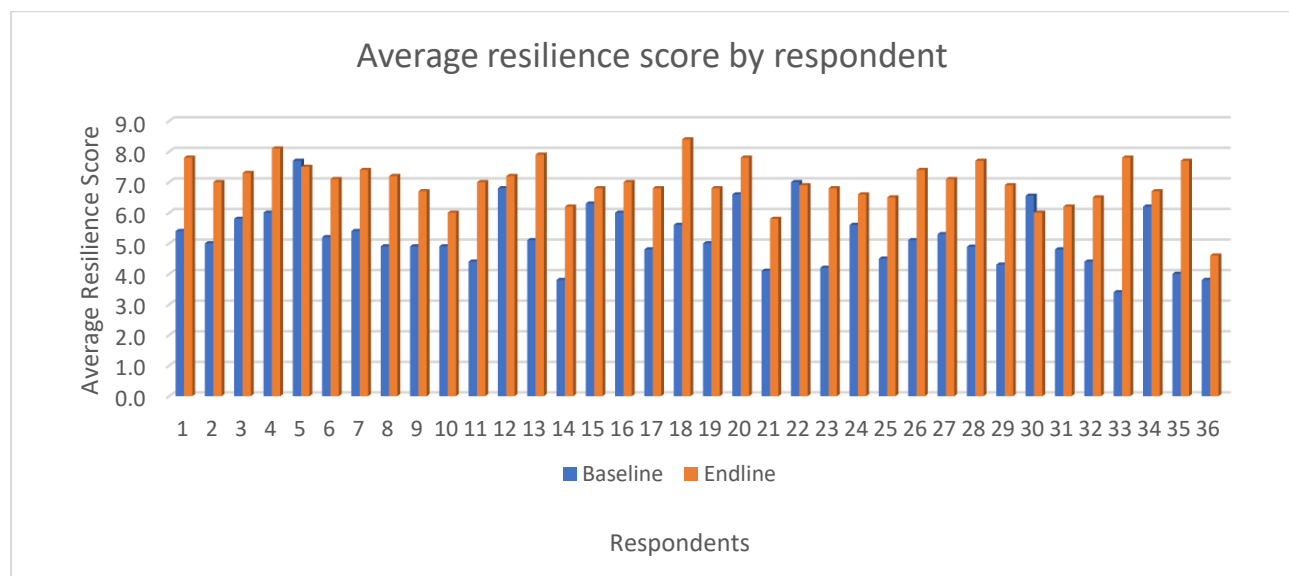


Figure 5: Average resilience score by respondent

From the results of endline 92% of participants (33 out of 36) have reported higher score in almost all of the questions, meaning that they have greater resilience to climate change at the end of the project. (target: 25%)

Results of the analysis of the 10 questions separately are presented in the graphs below.

1. Do you think that you and other members of your village can identify dangers from floods and develop plans to deal with them?

As shown in the figure 6, most of them increase their capacity to identify the flood and can develop the plan to deal with the danger from flooding. The reasons that they are able to identify and deal with the danger because they have access to EWS 1294, speaker, phone call, information from BTB Municipality, and received training form PIN.

The project brought some essential tools and practices around the early warning system such as speaker and EWS 1294 (briefly explain what is it), capacity building to commune council, Municipality, and people living nearby the speaker in Battambang city. According to the results of the endline, most of the respondents reported speaker

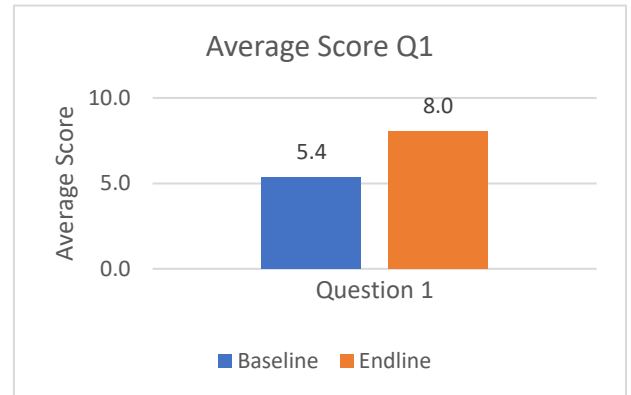


Figure 6: Average score of question 1

2. Do you think that the location of your village is in danger of impacts from flooding?

Most of them reported they are located in dangerous zone and impacted from the flood. They are living along Sangke river which is the lowland area impacted by floods every year. In the lowland area, the flood risk is high, as the flood stays long and go back slowly. However, few respondents reported they have experienced flooding, but low risk in their location which means low risk of damaging home or not having to move to another place, because their villages are located a bit far away from Sangke river.

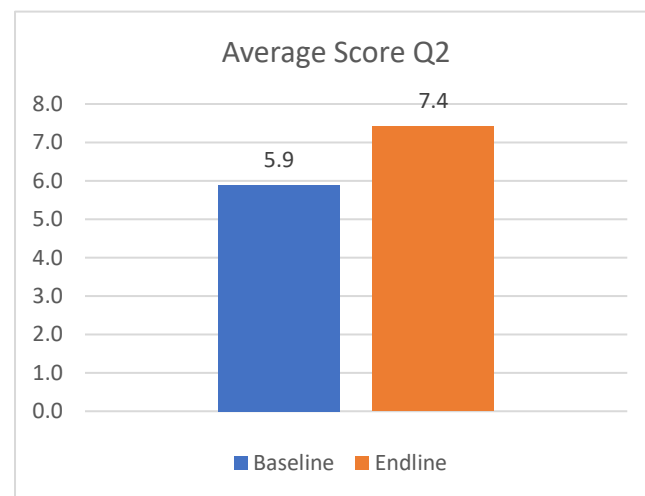


Figure 7: Average score of question 2

3. Do you think that you can explain dangers from floods to other members of your community and teach them about how to cope with disasters?

Most of respondents can explain dangers from floods to other members of their community and teach them about how to cope with disasters. In practice, they always directly tell people in the villages about the dangers and tell them to be well prepared when the flood goes back. → is it a good practice? To go door-to-door during floods? (good practice for project is to provide training how to cope with disasters and new technologies to villages chiefs, then village chiefs will teach their villagers to register EWS 1294 and prepare to listen the information from speaker in case flooding. (in Cambodia, comment practice of village chiefs always go door to door to inform something).

In the answer, most of them reported that they are also waiting to hear the phone call from EWS 1294 to know about the danger before the flood occurs. It becomes easier to prepare everything for preventing the danger from flooding as well as to cope with the disasters.

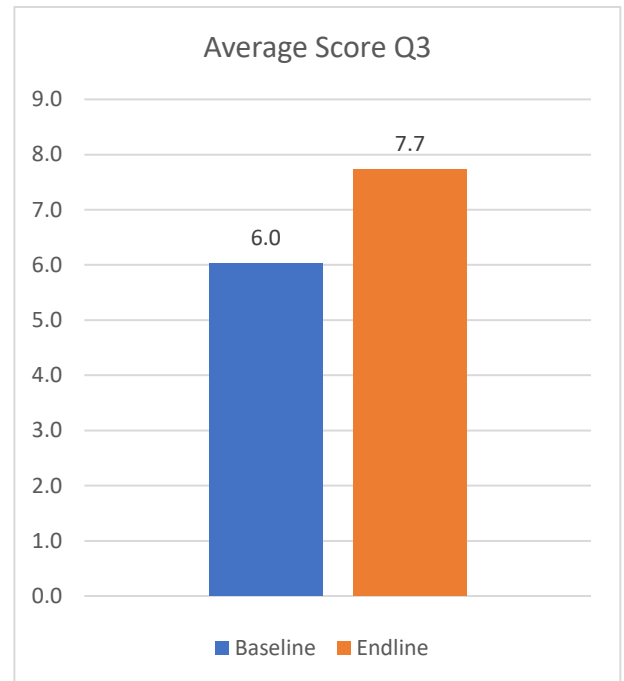
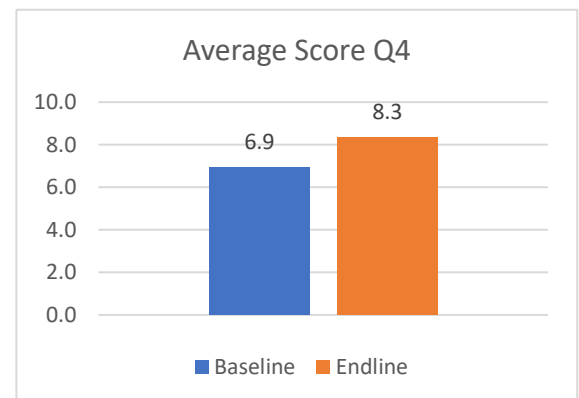


Figure 8: Average score question 3

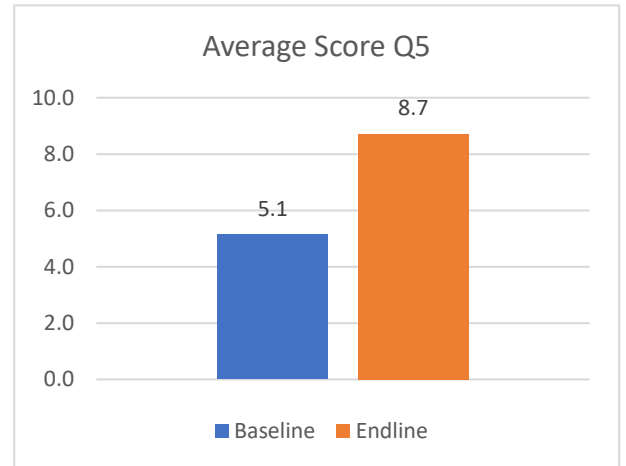
4. Do you think that, in case of flooding, the methods used to inform people are effective enough to reach most people in your community?

The methods used to inform people are better to reach more people in their community. Before the project started, villages chiefs used direct phone call to people, walked directly from home to home to inform the community, and shared information among neighbors to spread out. After the project started, they were still using previous methods such as phone calls, but there are also new methods such as direct dissemination, using EWS 1294, listening to the speaker, and social media which are more effective and faster to reach more people in their community.



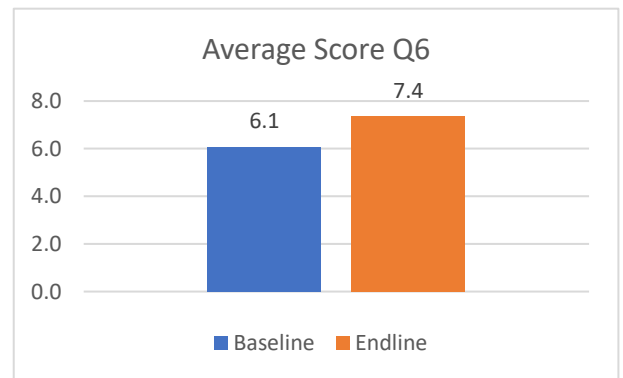
5. Do you think that you know about the best emergency actions to take in the case of flooding?

Most of respondents knew well about the best emergency actions to take in the case of flooding. All the best emergency they knew, they put into the real practice. The project activities have trained them about the preparation and the best emergency in case of flooding. For example, when they got phone call from EWS 1294 or hear information from speaker, they come to inform their villagers and request the boat and some support from BTB municipality to move people from the dangerous zone to stay in the safe place like in the pagoda or school.



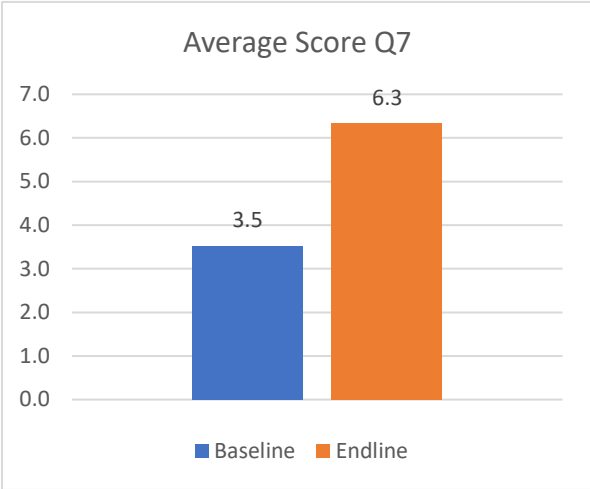
6. Do you think you are capable of coordinating and explaining plans to deal with floods to other villagers?

Respondents think that they are capable of coordinating and explaining plans to deal with floods to other villagers because they received many trainings from the project to increase their knowledge and capacity especially with the early warning system both EWS 1294 and the Urban EWS-speaker that make them more confident to manage the plan for dealing with floods in other villagers.



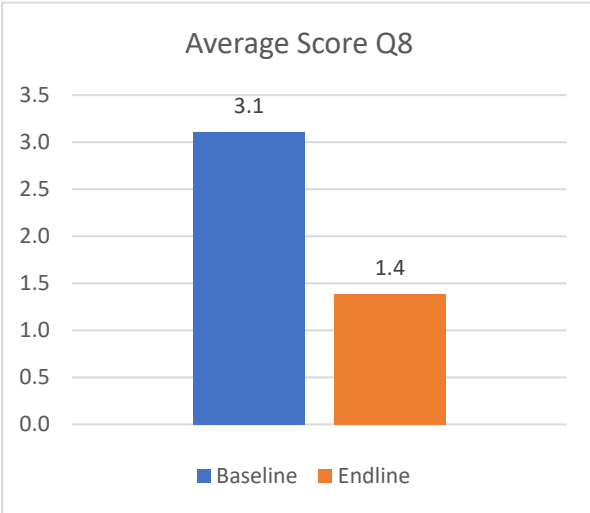
7. Do you think that, in case of disaster, you and other members of the community have enough access to the necessary tools to deal with the impacts of this disaster?

In case of disaster, respondents and other members of the community can better access the necessary tools to deal with the impacts of this disaster. The necessary tools they need to have access to are EWS 1294 and Urban EWS-speaker, motorbike, bicycle, phone, medicines, raincoats, and foods. They knew these necessary tools from the project trained, local authorities, TV, radio, and social media.



8. Do you think that you need more support to deal with floods, like support from humanitarian NGOs or the government?

For question 8, participants still need much more support than before to deal with floods, like support from humanitarian NGOs or the government. They are better than before but they think they still need support such as food, medicine, other necessary stuffs for flood preparation. More importantly, they need more speakers, technical tools and other capacity building training to support them for dealing with the floods.

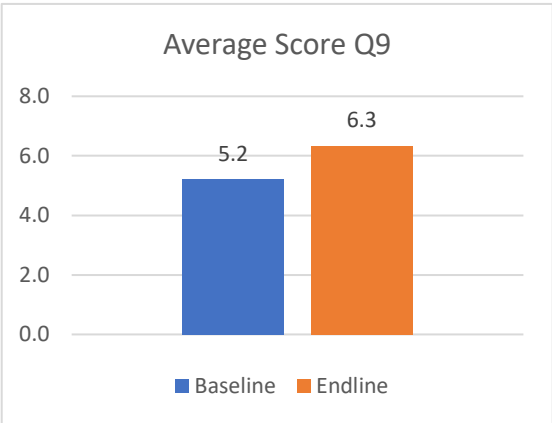


9. Do you think that your community can go back to a normal life quickly, including working, in a short period after flooding?

Respondents think that their community can better go back to a normal life after flooding, but not directly after floods, it might take some time. The factor that make their community a bit better to recover after floods are support from local government such as some assistance, as for instance repairing the road, and support from NGOs such as providing training.

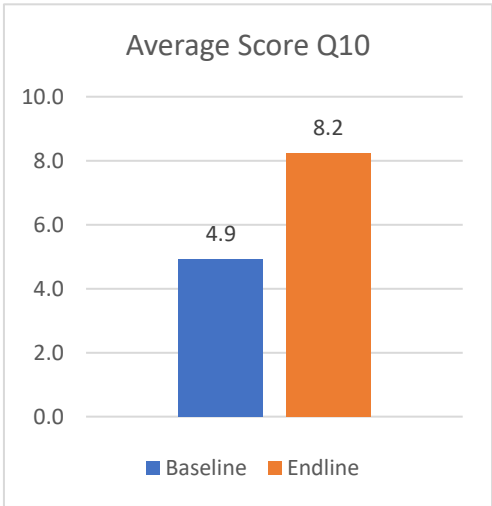
For the damages that their community can deal with to recover a quickly are destroyed replanting crops and broken small roads because these things are not beyond their capacity to do.

For the damages that their community cannot deal with to recover quickly are destroyed house, school, hospitals, clean water system, crops, and infrastructures such as highways, roads, bridges.



10. Do you think that your village can deal with future disasters in a way to protect women, children, and older people?

Respondents think that their village can deal with future disasters in a way to protect women, children, and older people. In the reason that, when they are informed of coming floods, they pay particular attention to vulnerable people and make sure that women, children and elderly people are receiving support / take actions in priority. But based on they reported in the endline, they cannot identify for the specific needs for women, children, and older people to deal with the disasters.



V. Summary and Conclusion

Overall, the project enhances resilience and capacity of the community to deal with floods by reducing vulnerability of urban populations to climate change impacts, and ensuring they have access to an innovative and effective Urban Early Warning System. There are clear improvements at the end of the project in most of the capacity to deal with floods and to reduce their vulnerability to floods, as compared to before the project started. Notably, the areas with the best improvement are (i) capacity to identify floods and develop the plan to deal with the danger from flooding, (ii) being well informed about the best emergency actions to take in the case of flooding, better access to the necessary tools to deal with the impacts of this disaster, (iii) receiving the tools needed to have access to EWS 1294 and Urban EWS-speaker, and (iv) capacity to deal with future disasters in a way to protect women, children, and older people.

Finally, the result of this activity exceeded the target objective: 92% of participants involved in the vulnerability index FGDs report having greater resilience to climate change at the end of the project, against 25% as per the target.