

# PHI: BAGUIO CITY SMART FLOOD WARNING, INFORMATION AND MITIGATION SYSTEM

**MODULE 1 EVALUATION REPORT**  
TARGETED CAPACITY BUILDING PROGRAM TO ENHANCE  
DELIVERY OF A SUSTAINABLE FEWS

JUNE 2022



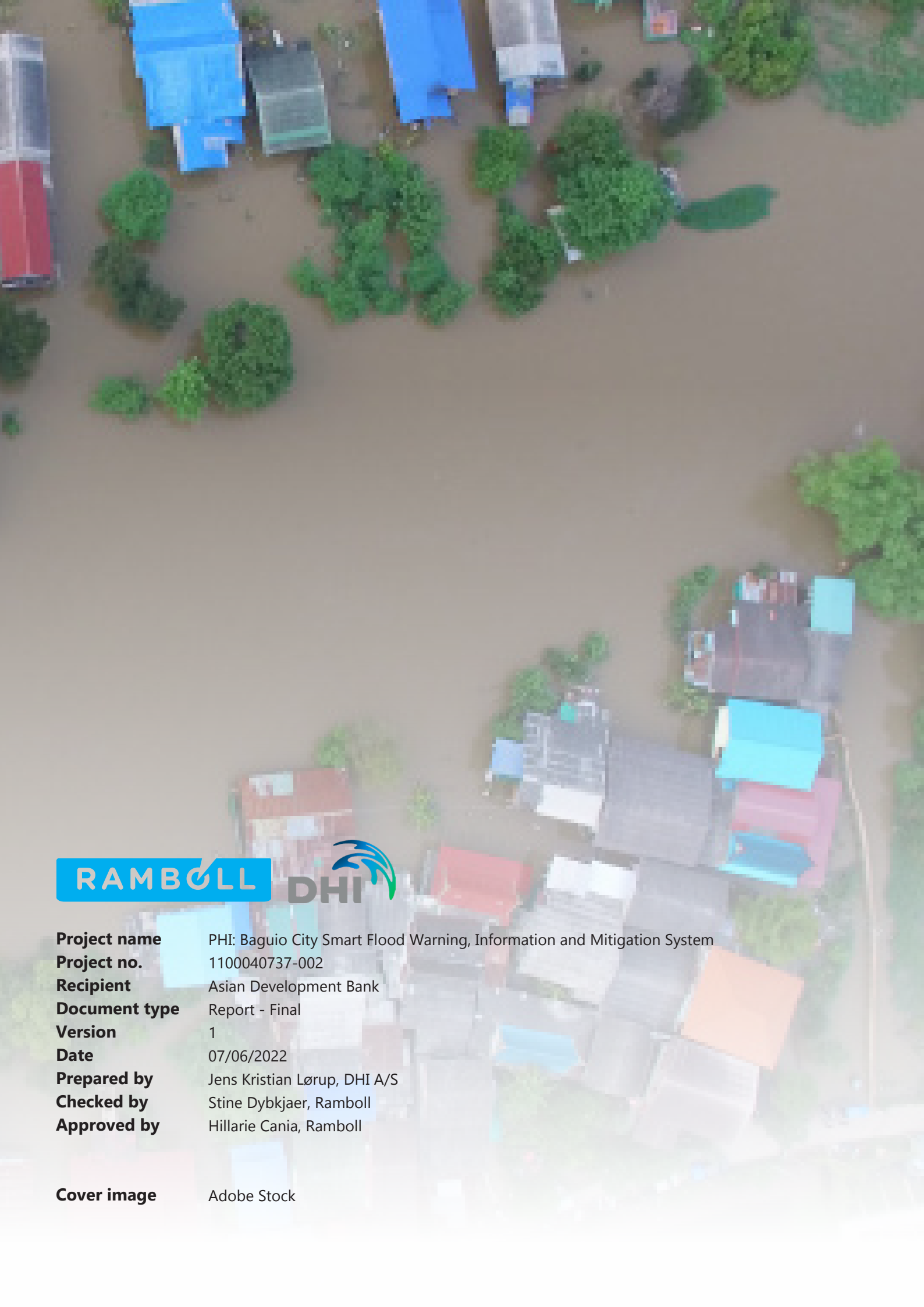
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# 1 BACKGROUND AND OBJECTIVE



## 1.1 BACKGROUND

In August 2020, the ASEAN Australia Smart Cities Trust Fund (AASCTF) Task Team (led by Ramboll) commenced work on the implementation of the “Baguio City Smart Flood Warning, Information and Mitigation System” pilot project. The development of the Flood Early Warning System (FEWS) under the pilot project is taking place in collaboration with Baguio Local Government Unit (LGU) and other key stakeholders to improve community disaster preparedness, raise awareness, and ensure local ownership. The FEWS is furthermore set to become an integral element within the overall vision of Baguio City to become a truly resilient, dynamic, and smart city.

The AASCTF was established in April 2019 as a single-donor trust fund supported by the Government of Australia, through its Department of Foreign Affairs and Trade (DFAT) and managed by the Asian Development Bank (ADB). The AASCTF aims to facilitate participating cities’ transformation to becoming more liveable, resilient and inclusive, while in the process identifying scalable best and next practices to be replicated across cities in Asia and the Pacific.

## 1.2 TARGETED CAPACITY BUILDING PROGRAM

In an effort to further solidify and enhance program effectiveness and sustainability (beyond the completion of the pilot project in December 2022), an additional component, comprising a year-long “Targeted Capacity Building Program to Enhance Delivery of a Sustainable FEWS” was added, effective from end-December 2021.

The main objective of the targeted capacity building program is to garner increased confidence in the ability of the project intervention to foster long-term sustainability of the established FEWS by securing the required local capacity for operating and utilising the FEWS as an active risk mitigation instrument beyond the timeframe of the pilot project.

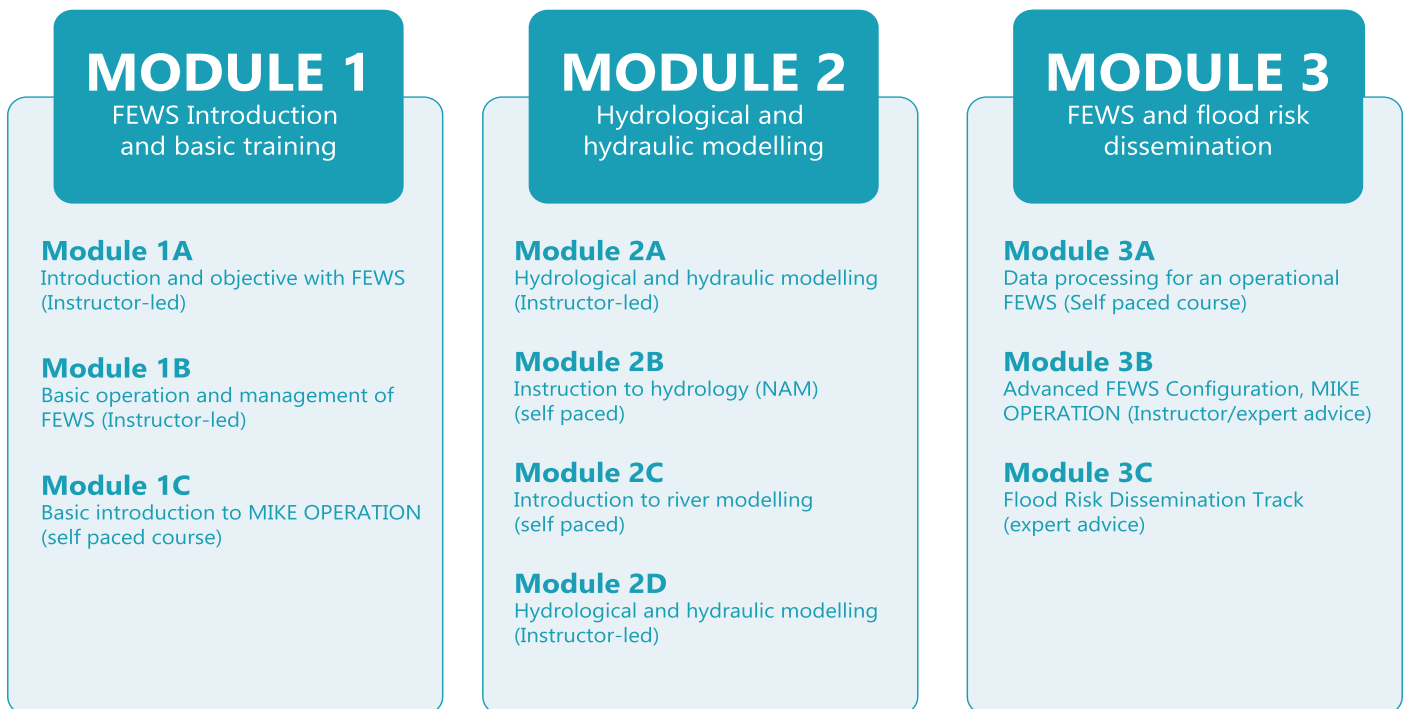
The targeted training and capacity building program consists of the following key elements:

1. **3-module training program:** This component is led by DHI and supported by Ramboll. It focuses on giving the participants in the training program a general understanding of Flood Early Warning Systems and training in the different types of DHI software used in the specific FEWS being implemented under the “Baguio City Smart Flood Warning, Information and Mitigation System” pilot project. The training program is carried out as online (self-paced, instructor-led, and expert advice) modules based on the ACADEMY by DHI eLearning platform.
2. **On-the-job (OTJ) training:** This is led by Ramboll and includes specific hands-on training and support related to the Baguio flood models and the specific FEWS developed by Ramboll in collaboration with the LGU.

A total of eleven (11) professionals have been selected to participate in the training and capacity building program following nomination from the LGU. Five (5) staff members from the LGU have been selected for participation in the program, and they will constitute the “core group,” who will have the main responsibility for operation and maintenance of the FEWS. A “peer group” consisting of six (6) persons outside of the LGU has also been selected for the program. The peer group participants come from local public institutions which include 3 participants from 2 universities, 1 from PAGASA, 1 from DOST-CAR, 1 from the District Engineering Office (BCDEO), and their main role will be to support the core group.

### 1.3 THE 3-MODULE TRAINING PROGRAM

The structure and content of the 3-module training program is described in detail in the “Scoping and Training Course Design Report”. The program consists of three modules, which are sub-divided into a total number of 10 sub-modules (cf. Figure 1.1). This evaluation report covers the three sub-modules in Module 1 (FEWS introduction and basic training), which were facilitated between 22 March and 29 April 2022, and consisted of two instructor-led sub-modules (1a & 1b) and one self-paced course (1c).



**Figure 1.1** Illustration of the structure of the training program with three training modules and the underlying 10 sub-modules. Four of the sub-modules are self-paced, while the remaining sub-modules are instructor-led or based on expert advice.

### 1.4 ASSESSMENT OF THE CAPACITY OF PARTICIPANTS PRIOR TO THE START OF THE TRAINING

Prior to the commencement of the training program, all eleven (11) participants were interviewed to garner a proper understanding of their educational and professional backgrounds, as well as existing skills and experience related to the training modules in order to tailor and adapt the program to the trainees’ capacity.

The baseline assessment of selected participants’ capacity is presented in the “Scoping and Training Course Design Report”. The main conclusions, which should be kept in mind when evaluating the progress and effectiveness of the program, are summarized below:

1. **None of the LGU core group members have an educational background in hydrology, hydraulics and modelling**, and their knowledge in these areas was found to be generally very limited. They all have a BSc, but none of them with an educational background in water resources. Instead, two have a BSc in Nursing, two have a BSc in IT/Computer Science and one has a BSc in Civil Engineering.



2. Due to the limited knowledge of the core group on the relevant topics, the training modules need to be supplemented with substantial on-the-job (OTJ) **training to further equip the nominees with the necessary hands-on experience and skills required to sustainably operate the FEWS, especially for those who will be responsible for the different aspects of the system.** During the OTJ training it is advisable to include the peer group members when feasible to ensure their ability to support the core group members longer-term.
3. **Among both core and peer group a solid knowledge base and experience within procurement, installation, maintenance and troubleshooting of hardware is present.** Hence, it is foreseen that with respect to these aspects of the FEWS, participants are already well-equipped.
4. **Participants knowledge of DHI software is limited to non-existent.**
5. Some of the nominees have programming experience, however **none of the core group members have experience in Python programming** and the knowledge and experience of Python programming is furthermore limited among the peer group members.

## 1.5 COURSE MONITORING AND EVALUATION

To ensure that the content, the technical level, and the format of the training are suitable for the participants, the lead trainers of DHI and Ramboll are engaged in continuous dialogue with the participants to ensure that the training program meets expectations and is adapted to the wishes and suggestions from the participants. Accordingly, participant feedback is actively encouraged and addressed constructively in all training and knowledge exchange sessions through open dialogue and discussion. Furthermore, for Module 1 participants were asked to complete both a Quiz and an Evaluation Survey at the end of each sub-module in accordance with the work plan:

1. **Quiz:** The purpose of each sub-module quiz is to assess the degree of learning and enable timely stocktaking of the participants' incremental capacity improvements throughout the learning journey. Such assessments, among other things, allow the trainers to better appreciate on the one hand whether the pace of learning is appropriate and on the other hand if the technical level of presented content requires any adjustment/course correction. The quizzes furthermore provide an opportunity to identify critical knowledge gaps among participants, thereby informing appropriate adjustments and enhancements to fill said knowledge gaps within the upcoming training modules.
2. **Evaluation Survey:** The main purpose of the evaluation survey in Module 1 was to assess the degree to which the training program met the participants' expectations. The questions in the evaluation survey related to the degree of satisfaction with the content and technical level of the sessions, the technical capability of the instructors, and the format of the training. Furthermore, participants are asked to provide suggestions for further improvement of the training sessions, after which necessary adaptation actions have been identified and actioned as appropriate. Moving forward, participants will continue to be asked to assess their emerging level of knowledge within program related topics allowing for an assessment of program effectiveness when compared to baseline knowledge prior to the training program commencement.

## 1.6 DECISION GATES

The training program has two (2) **Decision Gates**. A decision gate is a point in the process, where the criteria related to the specific decision gate need to be met in order to continue and/or modify the training program. The first decision gate (DG1) was endorsed on March 25th, 2022, following the conclusion of nominee candidate interviews and receipt of signed commitment letters from all selected participants.

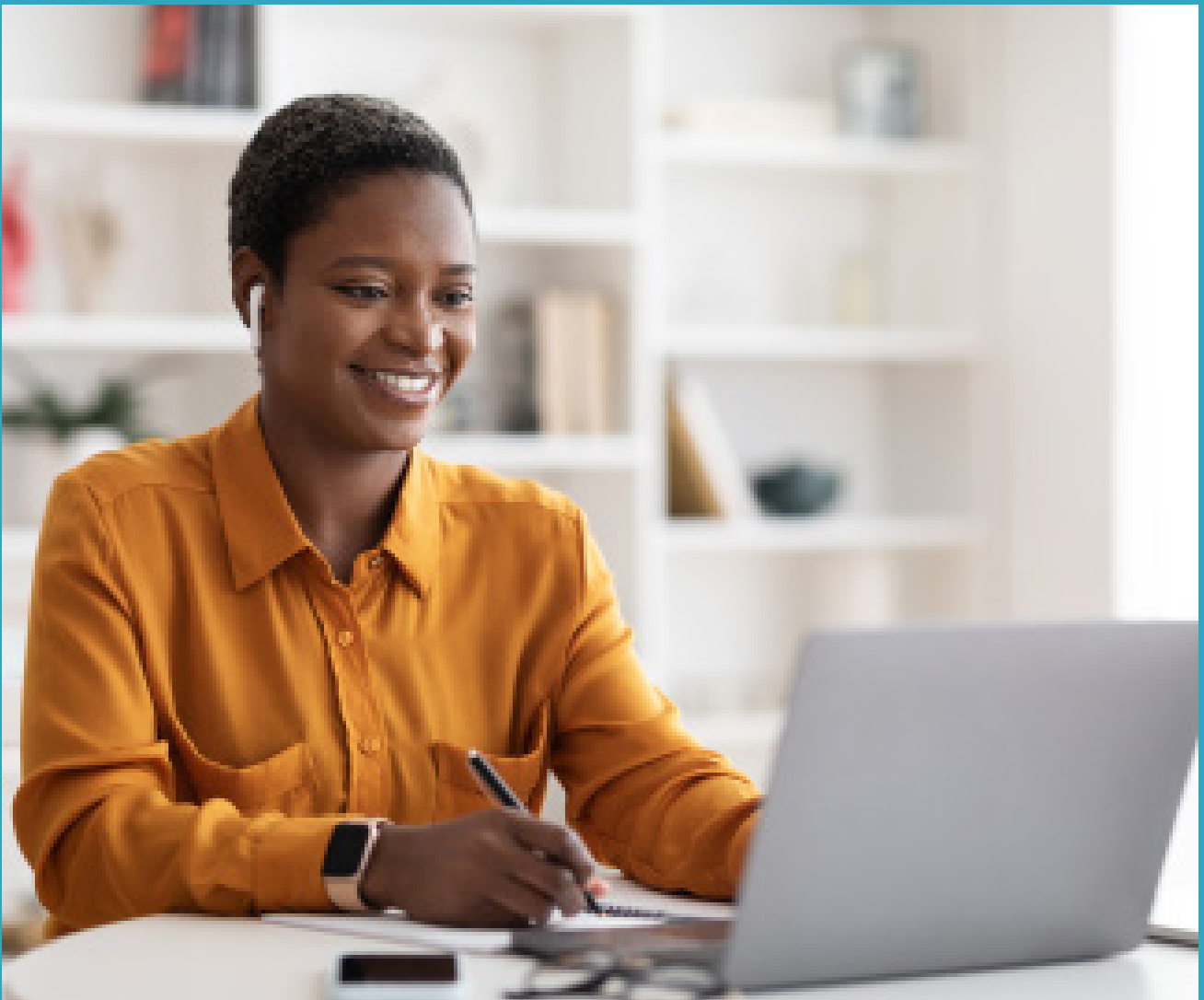
The second decision gate (DG2) is at the end of Stage 2 when training Modules 1 and 2 are completed. Proceeding with subsequent training in Stage 3 of the program requires that the criteria for DG2 is satisfied. Both Module 1 and 2 Evaluation Reports will feed into a Midway Program Effectiveness Assessment workshop which will constitute the basis for the Go/No Go decision by the ADB. Subsequent to DG2 an assessment of individual and collective level of learning, changes to the subsequent training program, trainee line-up, and delivery mechanism will be discussed and agreed upon.

## 1.7 OBJECTIVE OF THE REPORT

This report presents the outcomes of the monitoring and evaluation of Module 1 of the Targeted Capacity Building Program, as well as preliminary reflections on observations made to date related to program effectiveness. Furthermore, the report summarizes key learnings and next steps.



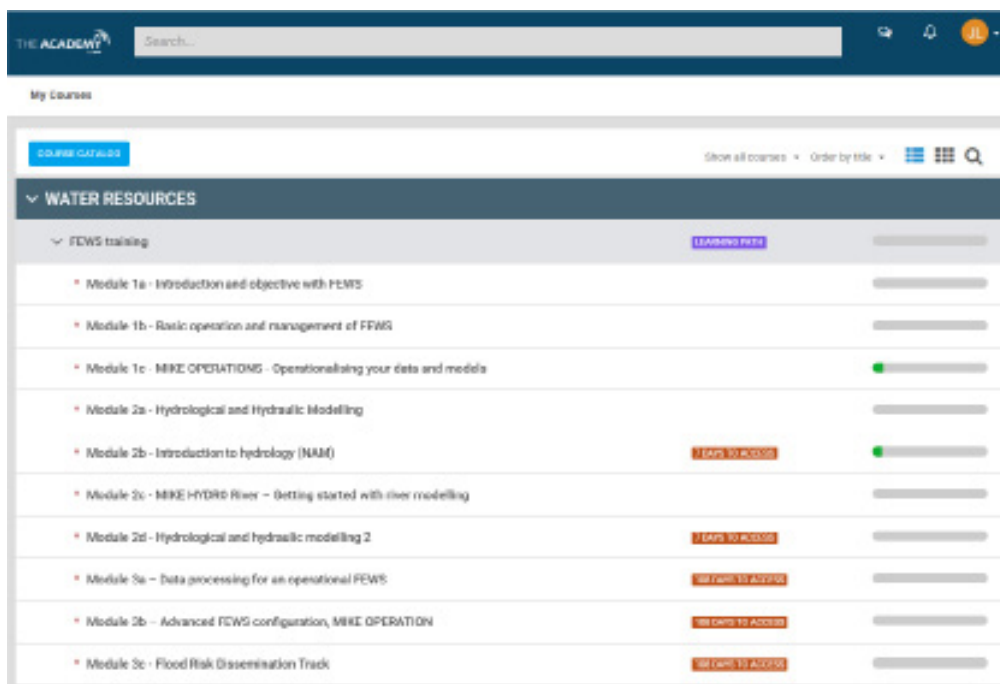
## 2 THE ACADEMY BY DHI E-LEARNING PLATFORM



## 2. THE ACADEMY BY DHI E-LEARNING PLATFORM

The Targeted Capacity Building Program is delivered fully virtually/online, with all training modules and course materials hosted on the ACADEMY by DHI eLearning Platform, which is based on the enterprise learning management system solution, eFront.

The eLearning Platform is now fully operational, and the participants have thus far reported that they are both happy and confident in using the Platform. An overview of the 10 sub-modules as they appear in the eLearning Platform is seen in Figure 2.1



**Figure 2.1.** The sub-modules as displayed on the eLearning Platform.

For the **self-paced** courses, the complete course including software, data and information, videos with instructions, assignments and evaluations can be accessed from the Platform. When initiating a self-paced course, the trainees will see an overview of the different sessions in the course. They will have to complete all the activities in order to pass a course. The activities could e.g., consist of i) learning through a video, ii) reading a text, iii) completing a specific assignment, iv) taking a test, or v) responding to a survey.

The Platform is also utilised in support of the instructor-led courses. The participants can find pre-reading material, PowerPoint presentations, recordings from the live training sessions so they can re-watch at any time should they wish. Furthermore, the quizzes and evaluations are themselves embedded within the eLearning Platform.

Thus, the key advantages of the ACADEMY eLearning Platform are:

1. ALL course material can be found on the eLearning Platform. This minimizes the number of emails with course content making it much easier for participants to track module preparation, content, and recordings.
2. Participants can easily, at any time, go back and redo exercises, re-watch live training sessions or other video files, and can furthermore re-read the repository of literature and course readings provided.

# 3 MONITORING AND EVALUATION



## 3.1 COURSE EVALUATION

### 3.1.1 TRAINING FORMAT

Module 1 consisted of three sub-modules as specified in Table 3.1 below along with the corresponding indication of specific sessions ran for each sub-module. Module 1 was implemented in full in accordance with the work plan shared with participants ahead of the program kick-off.

**Table 3.1 Summary of the sub-modules and sessions conducted in Module 1**

Sub-module	Sessions	Date concluded
1a: Introduction to and objective of FEWS (Instructor-led course)	S1: Introduction to flood management and FEWS	22/03/2022
	S2: Presentation of operational FEWS use cases	24/03/2022
1b: Basic operation of an FEWS (Data, models, forecast and results) (Instructor-led course)	S1: General introduction to FEWS	31/03/2022
	S2: Key components of an FEWS (data, models, forecast and results)	05/04/2022
	S3: Introduction to MIKE OPERATIONS	07/04/2022
	S4: Operation and management of FEWS	08/04/2022
1c: Basic introduction to MIKE OPERATIONS (Self-paced course)	S1: Introduction to the self-paced course	19/04/2022
	S2: Q&A session 1	20/04/2022
	S3: Q&A session 2	27/04/2022

The first two sub-modules (Module 1a & Module 1b) were instructor-led courses providing the participants with a general introduction to flood management and FEWS, the key components of FEWS, operation and management including an introduction to and demonstration of MIKE OPERATIONS. The third sub-module (Module 1c) was a self-paced course on MIKE OPERATIONS. The instructor-led sessions consisted of a combination of 1) Introductions to the specific subject matter, 2) examples of FEWS applications around the world, 3) Demos of DHI software / FEWS set-up, 4) Group work in breakout rooms, and 5) presentations by participants, as illustrated in Table 3.2.

**Table 3.2 Summary of the different teaching formats applied in the three sub-modules in Module 1.**

Type of learning format	Module 1a	Module 1b	Module 1c
Introduction to the subjects (mainly PPT presentations)	X	X	
Examples of FEWS applications around the world	X	X	
Demo of software / FEWS systems	X	X	
Group work in breakout rooms		X	
Presentations by participants		X	
Self-paced course with Q/A sessions			X
Q/A sessions			X

The two sessions in Module 1a focused on providing the participants with an introduction to the subject. Module 1b included group work in all sessions and also included a presentation by one of the participants on flooding in Baguio, as well as presentations from participants on group work results. Module 1c was a self-paced course on MIKE OPERATIONS comprising an introduction to the course and two Q&A sessions during the two weeks allocated to the participants to go through the course.

### 3.1.2 ACTIVE PARTICIPATION

All eleven (11) participants participated in all of the instructor-led sessions (Module 1a & Module 1b) and all the participants have completed the self-paced course (Module 1c). Furthermore, there has also been 100% participation in all quizzes and evaluations. To ensure proper planning and blocking of requisite time within their work week to accommodate the trainings, the participants were provided with confirmed dates and times for all Module 1 and Module 2 sessions prior to the kick-off of the first session in March 2022. Furthermore, they received the Teams/Zoom invitations well in advance, and all sessions have been placed from 15.00-17.00 PHST, allowing participants to plan for and prioritize the training sessions.

Utilizing breakout rooms in Zoom for the group work thus far has worked very well. Participants were not only very active during these sessions but also were effective in providing answers to the questions they were asked to discuss. It worked well with a chairperson guiding the groups in the breakout rooms and sharing her/his screen. The participants, through the dialogue sessions and the evaluation surveys, have indicated that they have thus far enjoyed the group work. Furthermore, a key output of the group work is that the participants get to know each other, build trust, and find out how they can work together to support one another within and beyond the frame of the project. A WhatsApp group has been created which has also helped the group of participants to become closer and more open in their ways of communicating. All this is important for the long-term sustainability and optimal operation and the management of the FEWS.

As the program has progressed and the participants have gotten to know one another and the instructors on a more personal level, it has been observed that they have become more open-minded, asked more questions, and put forward their opinions more freely.



### 3.1.3 PARTICIPANT FEEDBACK

In addition to the feedback dialogue with the participants during the sessions, the participants were asked to fill out an evaluation form after each of the three modules to provide feedback on the specific sub-modules, thereby ensuring continuous identification of adaptation actions to further improve the training program and ensure that the expectations of participants' are met (cf. Section 1.5). The results of the sub-module evaluations are presented in Table 3.3, Table 3.4 and Table 3.5 for Modules 1a, 1b and 1c, respectively. As it can be seen from the three tables, the feedback has been very positive. For all questions, except two, the average scores range between 4 and 5 in all three sub-modules, i.e. responses range from agree to strongly agree that the courses have provided a better understanding of the subjects, that the sub-module trainings have met their expectations, etc. The scores were particularly high on their assessment of the instructors' qualifications and the course presentations depth/quality.

The format of Module 1a was lecture-style, and while most participants strongly agreed that this format was good, 3 participants disagreed. A lot of information needed to be covered in the first sessions which is the main reason behind facilitating more lecture-style sessions in Module 1a. The feedback underlined that adaptation of the delivery format was necessary with one participant suggesting more interactivity.

Accordingly, from Module 1b onwards (as was indeed the original intention in any case) the sessions became more interactive with presentations from participants and utilization of break-out rooms for topic discussions on specific questions related to the module content. Evaluations/participant feedback with regard to the format of the subsequent sub-modules was indeed very positive indicating that the actions taken to adapt the sessions improved the participants' degree of satisfaction with the training format.

As evident from Table 3.5, the question "Module 1c met my expectations" is scoring 3.91 (out of 5.00) which is slightly lower than similar questions for Module 1a and Module 1b with very high scores of 4.27 and 4.00, respectively. Module 1c was a self-paced course (the first of the program), whereas Module 1a and Module 1b were instructor-led. This change in module format might have affected the degree of satisfaction slightly, as the participants were highly satisfied with the instructor-led format. The self-paced modules are based on a series of videos that the trainees can watch at their own pace and supplemented by virtual Q&A sessions with experts. The videos for Module 1c are of longer duration, which might have affected the overall satisfaction with the module. The participants expressed that the videos were too long as described in Appendix A. This feedback has been considered in the preparation of Module 2 which comprises significantly shorter videos.

In the evaluation survey the participants also had the opportunity to provide specific suggestions on e.g., how to improve the instructor-led modules, improve the group discussions, etc. These suggestions and subsequent adaptation actions are outlined in Appendix A. One of the suggestions was to move from Teams to Zoom meetings, a suggestion that was swiftly implemented with all sessions migrating to Zoom. There were also suggestions to mix the groups during group work and encourage participation from all group members. This has been implemented by mixing the groups from session to session and to having different participants chairing the sessions. As the participants get more and more familiar with the subjects and get a common reference from the sessions, the participation will also inevitably increase.

**Table 3.3** Summary of the course evaluation after Module 1a. The possible scores: 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly agree. Grey cells indicate open questions with participant responses further detailed in Appendix A.

No	Question	Average score
1	The two sessions in Module 1a provided me with a good introduction to floods and FEWS	4.36
2	I will be able to use and apply the knowledge and skills that I have learned in the first two sessions in Module 1a in my future learning and professional activities	4.27
3	The format of these first two session with the focus on presentations was good for the introduction to floods and FEWS	3.36
4	The first two session met my expectations	4.27
5	If your expectations to Module 1a were not met, could you please elaborate?	
6	Do you have any suggestions for improvement?	

**Table 3.4** Summary of the course evaluation after Module 1b. The possible scores: 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly agree. Grey cells indicate open questions with participant responses further detailed in Appendix A.

No	Question	Average score
1	Module 1a and 1b together have given me a much better understanding of how a flood forecasting and early warning system works	4.09
2	I will be able to use and apply the knowledge and skills that I have learned in Module 1a and 1b in my future learning and professional activities	4.36
3	In Module 1b the training format was based on a combination of presentations, demos of software and group discussions in breakout rooms. I was happy with this way of conducting the training	4.09
4	Do you have any specific suggestions to improve the instructor-led modules in general?	
5	I was happy with the group discussions in the breakout rooms	4.09
6	Do you have any specific suggestions to improve the group discussions in the breakout rooms?	
7	Module 1b met my expectations	4.00
8	If your expectations were not met to Module 1b, could you then please elaborate?	
9	I felt that I could relate the general information about flood forecasting and early warning systems in Module 1b to the situation we have in Baguio	4.09
10	I was happy that we moved from using Teams to using ZOOM in Module 1b	4.36
11	The technical content of the modules was satisfactory	4.09
12	The instructors were well-qualified, and their technical knowledge was adequate	4.55
13	The presentations covered the subject well	4.36

**Table 3.5** Summary of the course evaluation based on Module 1c. The possible scores: 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly agree. Grey cells indicate open questions with participant responses further detailed in Appendix A

No	Question	Average score
1	The videos in Module 1c have given me a better understanding of the purpose and the functionalities of MIKE OPERATIONS in relation to FEWS	4.09
2	Module 1c met my expectations	3.91
3	If your expectations were not met, could you please elaborate?	
4	The technical content of the modules was satisfactory	4.09
5	The instructor was well-qualified, and the technical knowledge was adequate	4.27
6	The presentations covered the subject well	4.18
7	Many of the videos in this self-paced course on MIKE OPERATIONS are quite long. It would be a good idea to break the videos down to shorter videos with a length of 5-10 min.	4.18

## 3.2 THE QUIZZES

The purpose of the quiz at the end of each submodule is to find out how much the participants have learned. The results of the quizzes are shown in Table 3.6, Table 3.7 and Table 3.8, respectively.

Taking into consideration that many of the participants prior to the start of the course had no or limited educational background within hydrology, hydraulics and FEWS and none or limited experience with DHI software, it is very positive to see the high percentages of correct answers in all of the three Quizzes. Some of the questions were also a bit tricky, so the high percentage of correct answers is encouraging.

One of the questions where the percentage of correct answers was low was on the question "Which of these models is a hydraulic model? To this question many of the participants had answered MIKE OPERATIONS. However, given that the focus of Module 1 was indeed on MIKE OPERATIONS (MO) and as MO is used to display the results from the simulation of MIKE HYDRO River, so this could explain in part the confusion and why many participants had provided this incorrect answer. If we ask this question after they have carried out the MIKE HYDRO River self-paced course, the percentage of correct answers will probably be much higher. A list of the different type of comments and suggestions provided by the participants are shown in Appendix A.

It will be interesting to see how they will perform in Module 2 where they will have to sit with the MIKE HYDRO River software and carry out the self-paced courses on NAM/rainfall-runoff modelling and MIKE HYDRO River modelling.

**Table 3.6** Questions asked in the QUIZ for Module 1a and the respective percentage of correct answers.

No	Question	% Correct answers
1	What kind of measure is flood forecasting: 1) Non-structural measure, 2) Structural measure	73%
2	Where would you have the highest lead-time of the forecasts: 1) In the upper catchment, 2) In the middle of the catchment, 3) In the lower catchment	100%

**Table 3.7** Questions asked in the QUIZ for Module 1b and the respective percentage of correct answers.

No	Question	% Correct answers
1	Runoff from a catchment area may occur as different types of flow. Which of the following flow components are fastest? 1) Overland flow, 2) Interflow or 3) Baseflow	73%
2	Which of the following terms do you associate with the hydrological cycle (note there may be more than one correct answer)? 1) Overland flow, 2) Climate change, 3) Infiltration, 4) Hydropower, 5) Irrigation or 6) Baseflow	63%
3	Which of the following data types are required in real-time for flood forecasting (note there may be more than one correct answer)? 1) Rainfall, 2) Potential evaporation, 3) River water level and/or discharge, 4) Soil moisture, 5) Quantitative precipitation forecasts	75%
4	Under which of these conditions is the water content in the unsaturated zone lowest? 1) Saturation, 2) Field Capacity, 3) Wilting Point	64%
5	For what is data assimilation used? 1) Rainfall forecast, 2) To reduce the difference between simulated and measured discharge and/or water level, 3) To make inundation maps.	64%
6	Which one of the points below is NOT related to sending out flood warnings? 1) Radio, 2) TV, 3) Internet, 4) Social networks (Twitter, Facebook etc.), 5) Hydropower, 6) Mobile Apps.	100%
7	What was the highest recorded rainfall amount in 24 hrs during the severe Typhoon Lando in 2015? 1) 260.6 mm, 2) 85.8 mm, 3) 775.4 mm, 4) 454.0 mm	73%
8	How do you define Flood Hazard? 1) A measure of human life and assets located in a flood risk area, 2) A measure of a community resilience and its ability to anticipate, cope with and recover from the impact of flood events, 3) A measure of frequency and severity of floods.	64%
9	How do you define Flood Vulnerability? 1) A measure of human life and assets located in a flood risk area, 2) A measure of a community resilience and its ability to anticipate, cope with and recover from the impact of a flood events, 3) A measure of frequency and severity of floods.	82%
10	Which of these activities is NOT part of a Flood Risk Management Plan? 1) Data collection, 2) Flood plain risk management study, 3) Model calibration, 4) Implementation plan	73%
11	Which of these measures are structural flood risk reduction measures (note there may be more than one correct answer)? 1) Tide gates, 2) Flood forecasting system, 3) Pumps, 4) Levees, 5) Flood zoning	78%
12	Which of these models is a hydraulic model? 1) MIKE OPERATIONS, 2) NAM Model, 3) MIKE HYDRO River Model.	36%

**Table 3.8** Questions asked in the QUIZ for Module 1c and the respective percentage of correct answers.

No	Question	% Correct answers
1	Is it possible to re-arrange the windows in MIKE Workbench (i.e. are the windows dockable)? 1) Yes, 2) No	91%
2	Is it possible to do data processing of time series data in MIKE Workbench? 1) No, 2) Yes	91%
3	How many thresholds can be defined in MIKE OPERATIONS? 1) 2, 2) 4 or 3) As many as the user specifies	91%
4	Where is the colour of the static layers in MIKE OPERATIONS changed? 1) in MIKE OPERATIONS, 2) in MIKE Workbench	64%
5	Which programming language is used in the Script Manager in MIKE Workbench? 1) VBA, 2) React or 3) IronPython	82%

# 4 CONCLUDING REMARKS



The main observations and conclusions from Module 1 are briefly summarized below:

1. The plan for delivery of Module 1, as outlined in the “Scoping and Training Course Design Report”, has been followed, and the sessions have been carried out on the precise dates and times as notified to the participants prior to the start of the first session.
2. There has been 100% participation in all the instructor-led sessions, the quizzes and evaluation surveys and all eleven (11) participants have also completed the self-paced course (Module 1c).
3. There has been a good learning curve – not least taking into consideration that most of the participants had a very limited educational background within hydrology, river hydraulics and hydrological and hydraulic modelling and none or very limited knowledge about MIKEByDHI software prior to the start of the training. The percentage of correct answers in the quizzes has been higher than expected.
4. The evaluation and discussions during the individual sessions have fostered a constructive dialogue between the participants and the instructor, and it has helped the project team to adapt to the specific need and wishes of the participants (e.g., moving from Microsoft Teams to Zoom meetings).
5. The training, and not least the group work done in the breakout rooms, has helped to establish a good rapport amongst the participants, clearing the way for a successful peer-to-peer learning journey. This peer-to-peer exchange is already evident as the participants are e.g., preferring to help each other with the self-paced courses as opposed to taking the easy road of contacting the instructors for help.
6. There has been a high level of satisfaction with the training program thus far - its format, content, qualification of instructors and technical level of trainings - which is reflected in the positive feedback expressed by participants in the evaluation surveys.
7. The Targeted Capacity Building Program, including this 3-module training program and OTJ training, is crucially important for the sustainability of the FEWS project. However, given the starting point of the participants it will be a challenge to bring them to the necessary professional level through completion of training to enable them to be fully responsible for the operation and maintenance of the FEWS system once the project is completed. Therefore, the project team together with ADB has already identified that there will be a need for a consolidation phase after the completion of the project in December 2022. Further details on the specifics of this consolidation phase and the extent of AASCTF support will be ironed out in the coming period, concluding at or before the completion of the current work program in Baguio.

## APPENDIX A: A LIST OF THE DIFFERENT TYPES OF COMMENTS AND SUGGESTIONS PROVIDED BY THE PARTICIPANTS

**Table A.1** List of the different types of questions and suggestions provided by the participants and actions taken where applicable.

No	Comments and/or suggestions by the participants	Possible actions taken
1	Suggest moving the platform from Teams to ZOOM	Meetings moved to ZOOM, so all meetings are now in ZOOM
2	More interactivity	From Module 1b, almost all sessions have included group work
3	Mix up members or fields from time to time	The groups composition has been changed from time to time
4	Encourage participation of all group members	Different persons have been selected to chair the groups. Expect more participation as participants become more and more comfortable with the subject.
5	Give more ample time for discussion	With group work it is always a challenge that the time is too short, as there also need to be sufficient time for instructors to teach new subjects. We feel we have found a good balance.
6	More examples and visual presentations	There has been a lot of examples of FEWS implementation around the world, we have had LGU staff presenting pictures and videos of floods in Baguio, so there has been a lot of this.
7	Video quality of presented videos were too low. Text hard to read.	This comment was for some of the videos in the MIKE OPERATIONS self-paced course. The course is a bit old, and the participants will get an opportunity to go through a new updated version of the course towards the end of June.





## **ABOUT THE ASEAN AUSTRALIA SMART CITIES TRUST FUND**

The ASEAN Australia Smart Cities Trust Fund (AASCTF) assists ASEAN cities in enhancing their planning systems, service delivery, and financial management by developing and testing appropriate digital urban solutions and systems. By working with cities, AASCTF facilitates their transformation to become more livable, resilient, and inclusive, while in the process identifying scalable best and next practices to be replicated across cities in Asia and the Pacific.

