



Government of Nepal
Ministry of Water Supply and Sanitation
Department of Water Supply and Sewerage
National Water Supply and Sanitation Training Centre

Facilitator's Guide on Climate Change and WASH

Final Draft

Publisher

Government of Nepal
Ministry of Drinking Water Supply and Sanitation
Department of Water Supply and Sewerage
National Water Supply and Sanitation Training Centre
Nagarkot, Bhaktapur
Nepal

Copy rights©

Government of Nepal, National Water Supply and Sanitation Training Centre (NWSSTC), 2017

Citation

GoN, National Water Supply and Sanitation Training Centre (2017), Facilitator's Guide on Climate Change and WASH, Bhaktapur, Nepal

Supported by:

World Health Organization (WHO) "Building adaptation to Climate Change in health in least developed countries through resilient water sanitation and hygiene (WASH) in Nepal"

Contributors:**Department of Drinking Water Supply and Sewerage**

Mr. Kabindra Bikram Karki, Chief, National Water Supply and Sanitation Training Centre (NWSSTC)
Mr. Kiran Darnal, Chief, Climate Change Section, Department of Water Supply and Sewerage (DWSS)
Mr. Kamal Adhikari, Senior Sociologist, Department of Water Supply and Sewerage (DWSS)

World Health Organization (WHO)

Mr. Raja Ram Shrestha, National Professional Officer,
WHO Country Office

**Rupantaran Nepal and Manual Development Team**

Mr. Sohan Lal Shrestha, Chief Executive Officer, Rupantaran Nepal
Mr. BalBahadur Shahi, Team Leader,
Dr. Bandana Pradhan, Public Health Expert
Mr. GyaneshBajracharya, WASH Expert
Mr. NamindraDahal, Climatologist
Dr. BhimsenDevkota, Public Health Expert
Mr. Nimesh Regmi, Editor



Preface and acknowledgement

Climate Change is now a deep global concern. Climate change causes erratic rainfall and increase in temperature due to anthropogenic activities by emission of greenhouse gases. These have resulted in decrease in agriculture productivity, drying of water sources, increase in incidents of floods and droughts and outburst of various pests and diseases.

Human health is intimately related to climate, which has a wide range of health impacts by playing a key role in the ecology of many infectious diseases. In addition, heat waves, floods, storms, fires and droughts already cause death, physical and psychological disease and injury. Scant availability and bad quality of water damage personal hygiene and health by increasing the frequency and spread of diarrheal diseases. Likewise, increasing droughts is exacerbating malnutrition and associated disorders. In this context, Government of Nepal (GoN) is undertaking various initiations with top priority by formulating different CC related policies and plan in order to responding the issues. In this regard, sensitization and awareness on climate change, its impact on water sources and public health and relevant adaptation technologies/measures are key steps to move forward.

World Health Organization (WHO) has been implementing a project "Building adaptation to Climate Change in health in least developed countries through resilient water sanitation and hygiene (WASH) in Nepal. Under support of this project and guidance and supervision of Department of Drinking Water Supply and Sewerage and National Water Supply and Sanitation Training Centre, Training Manuals are prepared on **Climate Change and WASH** sector to enhance knowledge and skills through delivery of training events at different scales and levels.

During the course of preparation of these manuals different professional from various organizations have contributed. We would like to extend thanks for peer reviewer Mr. Kabindra Bikram Karki, Chief, National Water Supply and Sanitation Training Centre (NWSSTC), Mr. Kiran Darnal, Chief, Climate Change Section, Department of Water Supply and Sewerage (DWSS), Mr. Kamal Adhikari, Senior Sociologist, Department of Water Supply and Sewerage (DWSS), In this line, we would like to thank to Raja Ram Shrestha, National Professional Officer, WHO Country Office who played a key role in coordination and facilitated in providing technical inputs to this assignment. Likewise, our heartfelt thanks go to Mr. Sohan Lal Shrestha, Mr. Bal Bahadur Shahi, Dr. Bandana Pradhan, Mr. Gyanesh Bajracharya, Mr. Namindra Dahal, Dr. Bhimsen Devkota and Mr. Nimesh Regmi, the experts from Rupantaran Nepal, the service provider, who provided their high efforts, field experiences and expertise to develop these manuals. Last but not least, we would like to request to all readers and users of these manuals for suggestions to modify and update for the betterment to use in future effectively.

**National Water Supply and Sanitation Training Centre,
Nagarkot, Bhaktapur
Nepal**

Acronyms

CC	Climate Change
CCA	Climate Change Adaptation
DWSS	Department of Water Supply and Sewerage
GoN	Government of Nepal
MoPE	Ministry of Population and Environment
MoSTE	Ministry of Science Technology and Environment
NAP	National Adaptation Plan
NAPA	National Adaptation Programme of Action
NWSSTC	National Water Supply and Sanitation Training Centre
RN	Rupantaran Nepal
VA	Vulnerability Assessment
WASH	Water, Sanitation and hygiene
WHO	World Health Organization

Table of Contents

Acronyms	4
1. Introduction of the Trainer's Manual	7
1.1 Objectives of the training	7
1.2 Overall training content	7
1.3 Manual Users	8
1.4 Target Audience of the Training	9
1.5 Training Design	9
1.6 Training Methodology	9
1.7 Training Schedule	10
2. Introduction of participatory methods of training workshop	11
2.2. Group Discussion	11
2.1.1 Buzz Group Discussion:	11
2.1.2 Fish Bowl:	12
2.1.3 Snow Balling:	12
2.1.4 Syndicate:	12
2.1.5 Small Group Discussion:	12
2.2. Other selected methods	12
2.2.1 Brainstorming:	12
2.2.2 Expert Questioning:	13
2.2.3 Photo language and Poster Discussion:	13
2.2.4 Role play	13
2.2.5 Question and Answer	14
2.2.6 Improved Lecture	14
2.2.7 Game Method	14
3. Uses and rules of training materials and training aid	14
3.1 Using Meta-card	15
3.2 Using New-print or Brown Paper	15
3.3 Flip Chart	15
3.4 Power Point Presentation	15
4. Things to be remembered while preparing for the training	16

4.1 Preparing for the Training	16
4.2 During the training	17
4.3 After Training	17
5. Receive feedback from audiences/ Participants	17
5.1 Tips for presenting and facilitating trainings	17
6. Session Plan of Each Training Session	19
Session-1: Opening of the training.....	19
Session-2: Fundamental Concept of Climate Change.....	24
Session-3: Impact of Climate Chang in WASH	26
Session-4: Initiatives in Climate Change and WASH Sector and Health	28
Session-5: Concept of Coping, Adaptation and Resilience	30
Session-6: Concept of climate vulnerability functions	32
Session-7: Identification of current and future climate vulnerability on WASH Sector	37
Session-8: Exploration of adaptation measures for WASH in different Scenario	39
Session-9: Integration of Climate Change in Project Planning	41
Session-10: Concept of Monitoring& Evaluation and Developing Monitoring Framework.....	43
Session-11: Training Reflection and Closing Ceremony	46
5. References	48

1. Introduction of the Trainer's Manual

This facilitator's guide is prepared for the facilitators/trainers of the Climate Change and WASH training targeted towards District Engineers (DE) from GoN's Department of Water Supply and Sanitation (DWSS). The key objective of the trainer's manual is to guide the facilitators/trainers to deploy training techniques according to session plan, prepare appropriate training materials and presentation as well as evaluate the overall performance of the participants prior to and post training.

1.1 Objectives of the training

The overall objective of the training program is to strengthen capacity the District Engineers on climate change and WASH. After the completion of the training, the participants will be able to:

- ❖ Describe climate science, climate change risks and challenges, their impacts and vulnerability of the systems and communities with particular focus on the WASH Sector
- ❖ Apply and interpret climate change related national policies , strategies, frameworks, guidelines planning, implementation and monitoring of WASH Schemes
- ❖ Greater knowledge and skills in understanding and applying tools for climate vulnerability assessment and identification, prioritization and selection of adaptation measures for WASH Schemes
- ❖ Better abilities to integrate and mainstreaming climate change risks management in water supply and sanitation schemes
- ❖ Monitor and very effectiveness of implementation of climate change adaptation measures in water supply schemes

1.2 Overall training content

In achieving the objectives of the training, the training contents are divided into three sections. Section One covers the conceptual framework of climate vulnerability and resilience of the systems and communities, fundamental concept and functions of climate systems, and the impact of climate variability, extremes and uncertainty in WASH Sector and initiatives taken to manage climate change risks in the WASH sector at local, national and international level.

In section two, the training focuses on conducting vulnerability assessment for identifying current and future climate change risks as well as hazards and potential climate change adaptation measures and preparing climate resilient water schemes.

Section three highlights integration and mainstreaming of CCA risks management in project cycle and the concept of monitoring the implementation of adaptation measures and the effectiveness of integrating adaptation measures within the project.

The Training Schedule is presented in Table-1

Table 1 Session outline of the training Climate Change and WASH

Session Code	Day I	Time	Facilitators/ Trainers
Session-1	<ul style="list-style-type: none"> • Participants registration • Opening of the Training • Introduction • Expectations and norms setting • Training objectives • Pre-test 	120 Minutes	
Session-2	2.1 Fundamental concept of climate change	75 Minutes	
Session-3	2.2 Impact of Climate Change in WASH	75 Minutes	
Session-4	Initiatives in Climate Change and WASH Sector and Public health	75 Minutes	
	Recap and Evaluation of Day I	15 Minutes	
Day II	Climate Setting and recapitulation of day I	15 minutes	
Session 5	Concept of Coping Adaptation and resilience	60 Minutes	
Session 6	Concept of climate vulnerability , risks assessment and climate change adaptation	90 minutes	
Session-7	Identification of current and future Climate Change vulnerability on WASH sector and WASH schemes	90 Minutes	
Session-8	Exploration of adaptation measures in different scenarios to make climate resilient schemes (WASH)	90 Minutes	
	Recap and Evaluation of Day II	15 Minutes	
Day III	Climate Setting and recapitulation of day II	15 minutes	
Session 9	Integration Climate Change in Project planning cycle	60 Minutes	
Session 10	Concept of Monitoring and developing monitoring framework	60 Minutes	
Session 11	Training Reflection and Closing Ceremony	60 Minutes	

1.3 Manual Users

This guide is intended for facilitators of the climate change and WASH training to district engineers of GoN's Department of Water Supply and Sewerage (DWSS). More specifically, this guide can be used as a supporting material for delivering sessions on conceptual frameworks and understanding climate change adaptation, vulnerability and risks assessment, sectoral resilient planning and mainstreaming, integration of climate change risk management and monitoring of the effectiveness of climate change adaptation measures. This manual can be used by:

- ❖ Facilitators / Trainers of National Water Supply and Sanitation Training Centre (NWSSTC)

- ❖ Trainer's and professionals of regional and national level Non-Government Organizations, private sectors and Networks, who are directly involved in CC and WASH sectors

1.4 Target Audience of the Training

The target audience of the training is district engineers of GoN's Department of Water and Sewerage especially engaged in designing, implementation and monitoring of water and sanitation scheme in Nepal. Hence, the training manual is also intended for the same group of participants to raise awareness and sensitize climate change risks and its management while designing, implementation and monitoring of Water and Sanitation Schemes. The agencies mandated with WASH sectors and with plans to sensitize on climate change, environment and resources distribution are other clients of the guide.

About 20-25 engineers from the WASH sector with uniform representation in terms of gender, geography and professionals experiences are an appropriate and ample number of participants for the training.

Suggested selection criteria of participants and facilitator:

Participant selection criteria's

Participants will be from engineering background mainly working in WASH sector. They need to be interested in capacity building activities, committed and dedicated to work with local communities. Having good facilitation skills in delivering training sessions, learning attitude and field experiences are other criteria to be selected as participants for the training.

Facilitator Selection Criteria's

Facilitator needs to be ToT (Training of Trainers) holder having good facilitation skills and knowledgeable and skillful in subject matters of Climate Change and WASH sector. They need to have experiences of field situation and activities carried out in the field by communities. In addition she/he should have good experiences in facilitating participatory training process and techniques.

1.5 Training Design

The training is designed based on a participatory approach and adult learning principles. Therefore it is suggested that the training should be conducted with prime focus on the participants in a manner that deploys the process of supporting mutual conversation/interaction, creating ownership amongst participants and enhancing experiential learning. Variety of training methodologies and techniques have been included in the handbook for encouraging active engagement of the participants, freedom of expression of their views and sharing of their experiences. Likewise the training is designed ensuring and following "Adult Learning Principles" and it is expected that participants are able to learn through learning by doing practice and reflect their learning according to their experiences.

1.6 Training Methodology

In order to follow the adult learning principles a variety of training methodologies are included according to the learning objectives of each session. Participatory training methodologies such as group work and presentation, brief lecture, brainstorming, case studies, buzz group discussion, action learning, gallery walk, video /animation show and case study based practical exercise are included in the trainer's manuals.

1.7 Training Schedule

The training is ideally designed for 2.5 days; however it can be tailored depending on specific contexts. If the training is to be organized as residential, the participants should be advised to arrive at the training on the previous day and leave on the following day of the training completion. This ideal scenario has been designed on past experience of the training being disturbed by people coming in late the first day or leaving early in the last day.

Rest of the Facilitator Guide provides session descriptions for guiding the trainers/ facilitators through the training. Each session guide has the following standardized format:

Table 2 : Outline of each Session

Title	Title of each session
Session Objectives	What the session is aiming to achieve
Key Messages	Dissemination of key message from the session
Training Methods	Training methodologies deployed in each session
Training Materials	Power point slides, handouts and other materials needed for each session
Timing	Estimated time needed for the session
Steps/ session activity	Step by step guidance on how to run the session
Monitoring and evaluation of session	Standards Questions to assess the learning of the session

2. Introduction of participatory methods of training workshop

Variety of training methods can be used by the trainer for a successful training and/or workshop. Such methods should always be guided by the objectives of each session. Some of such extensively used training methods are presented below:

2.2. Group Discussion

Group discussion is a popular method with most of the trainers because of its adaptability and wider application. It can be used as a stand alone or in combination of other training methods. It can be arranged in the form of a whole group sitting together or by dividing a larger group into small sub groups. The group discussion aims at a structure but exchanges knowledge, ideas and perception among participants on any subject matter, issues etc. It induces high level of participation by enhancing involvement of the group in the learning process. Generally, group discussion proceeds in 4-stages- 1. Setting of groups; 2.Planning of group discussion; 3.Preparation of Group Report and 4. Presentation and Consolidation of the Group Reports

Stages of Group Work /Discussion	Trainer Roles
Setting of Groups	<ul style="list-style-type: none">• Set-out the objective of the group task to be intended to achieve• Set-out sub group based on the objectives of tasks• Group can be formulated in different ways e.g. distributing different colours of chocolates or cards etc. Therefore, it is advised to prepare such materials in advance.
Planning of group discussion	<ul style="list-style-type: none">• Prepare guideline, checklist or question for group discussion• Explain/clarify the task. Observe group discussion and provide support to groups if they are confused.• Create enabling and interesting environment to understand and accept the tasks• Arrange appropriate places for conducting groups discussion
Preparation of group report	<ul style="list-style-type: none">• Give clear structure for the group report presentation in line with objectives• Alert the group about the time
Presentation and consolidation of the group report	<ul style="list-style-type: none">• Arrange presentation in a logical and sequential order• Facilitate and critically analyse the task as well as encourage groups to put forward their questions• Consolidate the overall presentation in line with session objectives

The group discussion can be performed in different settings and form to achieve the intended objectives of the tasks. Few forms of group's discussions are presented as follows.

2.1.1 Buzz Group Discussion:

Buzz group is the smallest form of group discussion. Usually two participants sit together and discuss on a topic/question for a short duration of time. It is named Buzz Group discussion due to its pleasant and humming sound from people discussing in their particular groups. The groups may come-up with different answers. Each group presents or answers on one option initially. All the answers are recorded in news prints or the groups are asked to pin their answers in the soft board (if they have written in cards). Likewise second round of collection and recording of the answers continues. Finally, a common understanding is developed by following other group method

2.1.2 Fish Bowl:

5-6 participants are requested to volunteers to sit in a circle at the centre of the training hall so that remaining participants can observe and listen the group's discussion. The facilitator/ trainer floats questions or issues and allows the group to discuss or present their ideas, prospective on issues or questions. Initially, group outside the circle observes and provides inputs when they are included in the inner circle. Finally, participants of inner circle are requested to present their conclusion based on the questions. The facilitator/ trainer can also add his/her observation if group has not been notified and consolidates the findings based on the discussion questions. In this discussion, group members are asked to move rotationally in and out of the inner circle resembling to the movement when fish are kept in a bigger bowl, hence it is named as **Fish Bowl method**.

2.1.3 Snow Balling:

Snow balling is a very effective group discussion method for materializing or summarizing ideas of individual participants through a discussion. The process begins by generating individual ideas, thoughts or views, which is shared with another person so as to generate the latter person's thoughts, ideas and views. Furthermore each pair shares their ideas and views with another pair in a group of four (4). Likewise this group of 4 will meet and share with another group of 4 and same process continues. It can continue upto groups of 8, 16, or it can be decided by the facilitator/trainers. Finally, all groups or small groups present their views, ideas and thoughts, which is consolidated by the facilitator/trainer based on the objectives of the session. This method helps to strengthen individual views and build on to become a common view of the group just like a snow ball, which grows bigger when it rolls through the snow.

2.1.4 Syndicate:

In a syndicate method, one small group upon completion of its assigned task visits other groups, shares their group findings and learns what others have done. This process applies to all the other groups as well. After all the groups have completed, they sit together to update and refine the findings. This method is very effective to develop common understanding among all participants in different issues in a short duration of time

2.1.5 Small Group Discussion:

In general, a process where different small groups of participants, assigned with different tasks are given an opportunity to share their results with all other groups. This develops a common understanding on the issues of the discussion assigned to these groups. Sub-groups can be formulated in equal number of participants in each group so that each group has an equal footing. Finally, facilitation allows questioning for clarity or challenges to the groups and the presenting group gets an opportunity to address and clarify the given question.

2.2. Other selected methods

2.2.1 Brainstorming:

Brainstorming is the most common methods in a training process. In principle, brainstorming must undergo 4 basic rules: BONE. BONE stands for 1. Brainstorming 2. Organizing 3. Naming and 4. Evaluating. But most of the trainers use one step/rule- brainstorming by putting questions or showing picture, poster etc. In this method all participants are engaged in the training process.

B-Brainstorming: collect view, ideas and thoughts based on question; participants paste their responses in the white board/ soft board so that the entire group can see them.

O-Organizing: Same Views or ideas are clustered will be clustered in different place with consent from the participants. This task can be done by engaging one/two participants.

N-Naming: Once clustering is complete, names are assigned to each cluster best representing the views or ideas mentioned therein.

E-Evaluating: Finally, analysis, assessment and evaluation is done followed by consolidation and conclusion of the session based on the objectives.

Photo of BONE Findings - Roles of Trainer

2.2.2 Expert Questioning:

Expert questioning is a very useful method to engage expert as an external resource person in a way by putting forth questions based on participant's needs and expectations. In this method, expert does not present but only responds to questions and concerns put forward by the participants. In general, external resource person are interested in power point presentations without addressing the participants' expectation and it becomes more attractive. In this method, participants can ask a maximum of 3 questions by writing in a meta-card. All cards are pinned to a pin board and the expert overviews either clustering similar questions/concerns together or responding one by one according to the allocated time. No cross questioning is entertained, however the expert should address all the questions. Finally, the trainer synthesizes overall finding based on the responses from the expert and closes the session with a vote of thanks to the expert.

2.2.3 Photo language and Poster Discussion:

Photo language is a simple yet effective method in a training programme for explaining and developing a common understanding. In this method, a set of photo, poster (Flex Poster) or an animation video can be used to clarify the subject matter. The trainer distributes a set of posters to the participants or hangs the poster in front or plays an animation documentary by multimedia. It is followed by discussing what the participants observed and collecting their views. Finally, the trainer clarifies/explains the subject matter according to its objectives, links its message and consolidates the sessions.

2.2.4 Role play

Role play is a very powerful training method to stimulate self-realization among the participants on the subject matter. Either a short/quick or series of role play can be used in the training based on the objectives of a session. For the role-play, guided questions or checklist is needed so that the participants can understand and act accordingly. In this method, the trainer assigns a group of participant for role-play, gives them the guideline and advice if necessary and provides them time for preparation. Participants conduct the role play; rest of the participants observe it carefully and note their observations. The role play can be continued if it has been designed in series. The trainer will consolidate the learning considering observation and views of the participants as well as linking with the subject matter and objectives of the session. In the role play, trainer should explain in the D-Role of role-play that means roles that played in role play and its title in play by participant should not to be used in outside training hall. *In the climate change adaptation training, sectoral impacts of climate change session can be delivered by using this method to create live and exclusive environment in the training.*

2.2.5 Question and Answer

Question and answer is a common method used in trainings for discussing on subject matter related issues or assessing the understanding level on a particular subject matter. To deploy issues, trainer should develop the questions and their expected answers while designing the session plan. Question and answer can be conducted in a number of ways and ORID method can be used for assessing the understanding on subject matter and reflecting learning.

O-Objective

R- Reflective

I-Interactive

D-Decision making

1. Question can be answered by using sense organs-
2. Question can be answered by using heart i.e. emotions
3. Question can be answered by using head i.e.
4. Questions on application or decision making can be answered by using hands

2.2.6 Improved Lecture

The lecture method is not so common in a participatory training process but nowadays it is being used as improved lecture. In this method, expert on relevant subject matter delivers lecture in such a way that it is not one way and is open to interaction and discussion. The trainer also encourages active participation during this method. In terms of cost, time and other resources, this method is cheaper and appropriate to address larger numbers of participants within a limited time.

2.2.7 Game Method

Games can be used in trainings either as an energizer or with focus on subject matter. It plays an important role in participatory training and supports to create enabling learning environment with fun and entertainment. In a training, game method is very useful to explain a subject matter, encourage broader thinking and breaking tradition/ beliefs as well. However, gender sensitiveness is an essential part to be considered by trainer while deploying this method. Any game should not be more than 20 minutes if it exceeds it can be boring and can drain participants' energy. This method follows the below mentioned steps and process:

1. The trainer clarifies the objectives and notifies the rules/ code of conduct and way for playing the game.
2. The trainer demonstrates the way of playing by directly engaging himself/herself to build a common understanding of the game.
3. The participants initiate the game by following the stated rules/ code of conducts and repeat it based on its nature and the length of time allocated.
4. The trainer facilitates the reflection process to collect observations, learnings, challenges from the participant in line with subject matter and objectives of the session.
5. Finally, the trainer consolidates the lesson and outcomes of the game linking with session and gives vote of thanks for their active participation in the game.

3. Uses and rules of training materials and training aid

Various educational and training support materials are used in the training. Materials such as manual, hand-outs, presentation materials are categorized as education materials whereas equipments, board, pin, cards, newsprint etc.

are regarded as training support materials. Certain rules and norms need to be followed while using training support materials to ensure its effectiveness and ensure visualization.

3.1 Using Meta-card

Meta-Card is a very common training support materials used extensively in trainings. Meta-Cards used normally are rectangular shaped with 4"by 9" dimension and come in different colours. But cards of different size, shape and colour can also be used, this increases attraction and visualisation. Following points need to be considered while using Meta-Cards:

1. One Card One Message/Idea/Thought
2. Use contrasting coloured permanent marker
3. Maximum 3 lines in One Card- Readable to furthest corner participants
4. Use push pin to pin them in soft board and place the cards newsprint to paste in white board

3.2 Using New-print or Brown Paper

News print / Brown Paper is one of the most commonly used training support materials. Newsprint is used to present points of subject matter while facilitating sessions and to take notes instead of white board. It is cheap and easily available in the market and is appropriate for group report presentation. A few points to be considered while using News Print are:

1. Font size should be 2"- Readable from 20 feet distance
2. Must use permanent marker and write in straight line. Use of different coloured markers in the same newsprint can increase visualization
3. Minimum 1" inch should be left in head and left hand side of the newsprint
4. Keep message in sequential and logical order
5. Use contrast colour for title and body text
6. Keep message in short, sweet and simple

3.3 Flip Chart

Flip chart is used in the same manner as a news print in training. Although it is more expensive than new print, it is easier to use. It can be used like a white board by fixing on a flip board. Ground rules for using Flip-Chart is similar to using news print.


3.4 Power Point Presentation

Microsoft's PowerPoint application is a powerful tool for creating multimedia presentations. Effective and attractive presentations can be created by using clip art, fancy fonts, animations, charts, graphics, sound, and an array of dazzling colour schemes. But trainers do not spend much time in preparing presentation in that manner. Nowadays Power Point presentation is very common and trainers think that in the absence of such presentations the trainings cannot be conducted effectively. Following key points need to be considered while designing and conducting a power point presentation:

1. Edit ruthlessly to the absolute essentials
2. Generally left-justify all text
3. Avoid lots of punctuations
4. Keep five or six points per slide- avoid over loaded text in a slide

5. Use no more than five or six words per line
6. Be consistent font wise and size wise (20-32) throughout the presentation
7. Use contrast colours- avoid light colour, text should be readable in training hall
8. Use visuals and pictures- Keep in mind that a picture can depict more than 1000 words
9. Keep simple animation wherever necessary- avoid unnecessary animation in presentation
10. Don't use fancy, background photos in slides- it can make a slide unreadable
11. Consider the following points from the box while speaking to a power point presentation:

Speaking to PowerPoint



- use Notes view if it helps
- beware tedious unnecessary embroidery of every bullet
- don't block the screen
- keep eye contact
- don't speak to the big screen
- face the audience using the computer screen as prompt

4. Things to be remembered while preparing for the training

4.1 Preparing for the Training

- Manage/ prepare all necessary training materials and ensure all logistical arrangement prior to the training.
- Make sure to update yourself on the latest developments and trends of climate change and WASH and update your presentation and materials accordingly prior to the training.
- Update presentation materials according to the local context by putting relevant picture, photo, cases, fact/figure etc for building ownership of the audience.
- Know your audience and participants by analyzing participants' profiles across gender, caste/ethnicity, educational background and experiences in climate change and WASH
- Manage training hall as per training environment and number of participants.
- It is encouraged to have a 'U' shaped seating arrangement if sufficient space is available in the training hall. Keep your materials on separate table kept on the side; it should be placed between you and the participants.
- Ensure and conduct a follow-up communication for inviting chief guest and/ or guests if you are planning to inaugurate the training formally. Prepare a separate schedule for the inauguration session.
- Prepare and manage necessary documents such as registration, forms and formats for logistic arrangement and payments and references materials for compliance according to the session plan.

4.2 During the training

- Be sure to inform the participants about what to expect in the schedule of the training and collect their expectations regarding their attendance.
- Encourage participation as much as possible to encourage thinking and reflection amongst all participants and boost confidence to share their experiences, knowledge and insights on the topic
- Be flexible as far as possible; e.g. if a group work is leading to greater differences then switch to facilitating plenary sessions to keep participants focused and gather consensus.
- Have equity in seating arrangements; if the participants sit on the floor, sit on the floor or stand.
- Be strict on time table and code of conducts. Training needs to be started and ended on time.
- Enforce mobile phones to be switched off or kept in vibration/meeting mode.
- Make the training interesting, refreshing and energizing by including subject matter related phrases, short stories, games, songs and experiences so that participants can relate to the subject matter.
- Promote and ensure active participation by using multiple and appropriate training methods such as group exercise, action learnings, games, simulations, case studies, role play etc.
- Be open and maintain a two way of communication channel throughout the training.
- Receive feedbacks from participants formally and informally for creating a learning and conducive environment

4.3 After Training

- Keep / manage all the training materials, equipment and supplementing materials in its place after the end of each session.
- Maintain records of evaluation, post-test questionnaires and review of the participants.

5. Receive feedback from audiences/ Participants

Feedbacks and suggestion from the audiences/participants are valuable assets to increase the effectiveness of trainings. It is also supportive to deliver a live training efficiently and effectively. It also gives opportunities for self-assessment to facilitators and collection of feedbacks for future reference on similar kinds of trainings. Therefore, facilitator should compile all the comments and suggestions received through formal evaluation, information discussion, observation and own reflection. A copy of the session should be provided to the organizers for record if the training is carried out in a different way. Additionally, a compilation of suggestions and comments in written form should also be provided to the organizers.

5.1 Tips for presenting and facilitating trainings

- Follow the **Process** mentioned in the sessions. The guidance is there to help you.
- Present the **Objectives** and **Main Messages** of each session as you start it and remember to make the links between the sessions.
- Whenever possible, distribute handouts at the end of each session so that participants focus their attention on the discussion and develop their own ideas, views, thoughts and prospective rather than on reading the handouts. But, if you are using the handouts as part of the session – then distribute them at the start and ensure that you refer to them during the session.
- Don't read from the flip chart with your back to the room and don't talk to the projector/LCD.
- Pay attention to all participants, not just the most vocal ones and be sensitive in gender, caste/ethnicity, disability

- At the end of each session, summarize the **Main Messages and evaluate** of the session by asking questions state in the manual.

6. Session Plan of Each Training Session

Preliminaries!!!

The preliminaries of the first day set the foundation for creating a learning environment and context setting. It includes formal opening remarks and creates a relaxed ambience through informal introductions. Responsibilities are also allocated to training participants/trainees in different aspects of the training by formulating co-management committee- coordinator, reporter and evaluator of each day. Finally; training approaches, methods, objectives and schedules are described and the expectation of the trainees' are explored.

Session-1: Opening of the training



Purpose:



At the end of the session, participants will be able to:

- Explain rationale, aim and objectives of training
- Familiarize with all participants and facilitators
- Rank own performance level in understanding of basic CC and WASH sector
- List out code of conducts for smooth and effective delivery of training



Timing

- 120 Minutes

 Training Methodologies	 Training Materials
<ul style="list-style-type: none">• Formal or participatory opening• Opening remarks• Introduction• Individual assessment• Preliminary discussion	<ul style="list-style-type: none">• Register• Opening banner• Meta cards for Introduction• Power point for objectives• Brown paper for code of conduct



Steps

Activity No 1: Training Inauguration

Time: 30 Minutes

- ❖ Ensure presence and registration of all the guests, participants and facilitators.

- ❖ Deliver a welcome note to all the participants from organisers and explain rationale and aim of the training.
- ❖ Request the Chief Guest for inaugural of the training by watering a Flower Pot and for clap from the guests and participants
- ❖ Deliver an opening remark by the Chief Guest elaborating the rationale and importance of the training and closure of the opening session

Activity No 2: Introduction

Time 30: Minutes

- ❖ Distribute A4 sized paper and Felt pen to all the participants and facilitator. Don't let them write until they are said to do so.
- ❖ Ask the participants and facilitators to draw a line diagram of palm in the provided paper and ask them to write the following things in each finger:
 - ❖ Name and permanent address- First Finger
 - ❖ Current responsibilities- Position in Representing organization- Second Finger
 - ❖ Experience on climate change in terms of years- Third Finger
 - ❖ Participants must do during training - Fourth Finger
 - ❖ Participant must not do during training- Last/ Fifth Finger
- Ask them to write a quotation/ slogan related to environment management and climate change in the middle of the palm and announce a prize for the best slogan/quotation
- ❖ Observe the progress of participants and support them if necessary
- ❖ Request all participants and facilitator to stand up and gather in a free space of training hall and ask them to exchange the A4 paper with other participants with a quick introduction amongst each other. Encourage participants to do so with as many participants as they can within the given time interval.
- ❖ Request all the participants to be seated. Start the introduction session by reading out the name and details from the A4 paper in your hand and request the person whose name was mentioned in the paper to read his/her A4 paper and so on until everybody in the hall has been introduced.
- ❖ The quotation written by each participant should be read out loud by two participants, who exchanged the paper.
- ❖ To do's and do not's written by participants should be used in preparation of the code of conduct. The facilitator should write it on a separate newsprint.

Activity No 3: Expectation Collection

Time: 20 minutes

- ❖ Let the participants think what they want to learn from training or discuss during training and ask them to write them on their note book.
- ❖ Ask them to share expectations with person aside to him/her, prioritise two expectations and write one expectation in one metacard/ post-its.

- ❖ Request all pairs to pin/paste all post-its/ meta-card on the soft board and cluster similar expectations in each group with support from the participants
- ❖ Facilitator has to clarify on expectations which can be covered and which cannot be covered. The expectations that are not directly relevant but complement the learning should be kept in Parking Lot, so that they can be addressed if the time allows.
- ❖ Share the objectives of the training and overall contents of the training and outline to be distributed.

Activity No 4: Co-management Committee Formulation

Time: 10 minutes

- ❖ Suggest the participants to select a coordinator, reporter team and social team amongst themselves (adopting participatory method) for smooth running of the training. Such selection should be on a rotational basis. Notify major responsibilities of coordinator, recap team and social team
- ❖ Finalise the code of conduct of the training by incorporating views of participants (do's or do not's) in the introduction exercise and present a time table of training.

Activity No 5: Pre Training Assessment

Time: 30 minutes

- ❖ Explain the rationale behind the pre-training assessment training and clarify that it is not a form of examination and let them know that the questions will assess facilitators at the end of the training.
- ❖ Distribute the objective of the questions to the participants and ask them to answer as per their knowledge, experience and understanding (Refer to Training Support Material-1).
- ❖ Collect all the completed questionnaires and try to analyse participants' views/perceptions and present the findings in illustration form as quick as possible and mount where participants are able to see it clearly.

Activity No 6: Summarization and Evaluation

Time: 10 minutes

- ❖ Evaluation of this opening session is not so important. However, facilitator may ask "how was the introductory session?"
- ❖ Summarise the outcomes of the session and inform that the next session will cover fundamental concept on climate change and conclude session-1.

Tips for Facilitators

- ✚ Facilitator should consult with organisers on whether the training is to be conducted formally or informally. At any case, do not spend too much time for the opening session of training.
- ✚ Formal inauguration of training can be carried out in a participatory way by involving all participants. This can also enhance ownership and participation.
- ✚ Manage sufficient quantity of meta-cards/post-its, brown papers, adhesives and masking tapes for the training.
- ✚ All materials such as registration, banner, pre-training assessment questionnaire, session schedule, time table and format of co-management team should be prepared in advance.

Government of Nepal
Ministry of Water Supply and Sanitation
Department of Water Supply and Sewerage
National Water Supply and Sanitation Training Centre

Training on
Climate Change and Water Sanitation and Hygiene (WASH)
(Engineers)

PRE TRAINING ASSESSMENT

Tick mark in correct answer

1. Which is the physical component of Climate System?..
a. Atmosphere b. Lithosphere c. Cryosphere d. All of the above
2. Which green house gas is emission from production of modern solar panel and flat TV?
a. CO₂ b. CH₄ c. PFCs d. NF₃
3. What is the full form of IPCC?
a. International Panel of Climate Change
b. Intergovernmental Panel of Coordination Committee
c. Intergovernmental Panel on Climate Change
d. International Programme of Climate Change
4. Where will COP 24 be held in 2018?
a. France b. Bonn c. Poland d. Marrakech
5. When was Climate Change Policy approved by Government of Nepal?
a. 17 January, 2011 b. 15 December, 2010
c. 15 February, 2012 d. 3 March, 2009
6. Which is a correct formula to assess vulnerability according to FAR, IPCC?
a. $V = A \times E / S$ b. $V = S \times E / A$
c. $V = A \times S / E$ d. $V = A \times E \times S$
where V=Vulnerability, E=Exposure, S=Sensitivity and A=Adaptive Capacity

7. According to "Observed Climate Trend Analysis of Nepal" where has the significantly highest positive rainfall trend been observed?
 - a. Kaski
 - b. Syangja
 - c. Mustang
 - d. Baglung
8. What does INDC signify for?
 - a. International Development Corporation
 - b. Internally Determined Cooperation:
 - c. Intended Nationally Determined Contributions:
 - d. Internal Nepal Development Cooperation
9. Which health impact is observed due to climate hazard of flood?
 - a. Diarrhoea
 - b. Skin disease
 - c. Viral fever
 - d. All of the above:
10. Which is the additional cross cutting thematic sector as identified by NAP?
 - a. Tourism, Natural and Cultural Heritage:
 - b. Livelihoods and Governance
 - c. Climate Induced Disasters
 - d. Public health and WASH
11. What percentage of population will have access to basic water supplies according to Sustainable Development Goal in Nepal?
 - a. 100%
 - b. 99%
 - c. 95%
 - d. 90%
12. What is a parameter of physical category of drinking water quality standard?
 - a. Lead
 - b. Total Coliform
 - c. Turbidity
 - d. Total hardness
13. What is correct order of project steps?
 - a. Identification-Appraisal-Design-Implementation-Monitoring & Evaluation
 - b. Appraisal-Identification-Design-Implementation-Monitoring & Evaluation
 - c. Identification-Design-Implementation-Monitoring & Evaluation-Appraisal
 - d. Identification-Design-Appraisal-Implementation-Monitoring & Evaluation
14. When was Sanitation and Hygiene Master Plan issued by Government of Nepal?
 - a. 2065 BS
 - b. 2068 BS
 - c. 2070 BS
 - d. None of the above
15. How many districts of Nepal have been listed as highly vulnerable due to impacts of Climate Change?
 - a. 4
 - b. 9
 - c. 11
 - d. 15

Session-2: Fundamental Concept of Climate Change



Purpose:



At the end of the session, participants will be able to:

- Explain climate system and hydrologic cycle
- Explain green house effect, global warming and genesis of Climate Change
- List out Green House Gases
- Explain trend of climatic indicators (temperature and Rainfall pattern)



Timing

- 60 Minutes

 Training Methodologies	 Training Materials
<ul style="list-style-type: none">• Picture/poster presentation• Presentation and interaction• Buzz group,• Video show	<ul style="list-style-type: none">• Poster of Climate System and hydrologic cycle,• power-point presentation,• Video Clips



Steps

Activity No 1: Climate System

Time: 25 Minutes

- ❖ Explain the objectives and activities to be carried out during the session and key message of the session.
- ❖ Define climate and weather and its differences by presenting definitions with illustrative pictures.
- ❖ Present picture/poster, which demonstrate the climate system (*Reference Materials -4*) and explain the core elements of climate system
- ❖ Describe the global climate system, its functioning and determine factors of the climate of the particular site with the inputs from the participants.
- ❖ Explain that sunlight, heat, air, water and forests are needed for the climate system to become functional.
- ❖ Describe the anthropogenic activities, which are rapidly changing the concentration of elements- especially Green House Gases at atmosphere and which elements are forcing to change the climate system.

Activity No 2: Global Warming and GHGs

Time 30: Minutes

- ❖ Show a documentary that conceptualises global warming and climate system (5 Minutes of REDD documentary)
- ❖ Ask the following questions and receive answers/ views from few participants:
 - What do you understand by global warming?
 - What are the causes for global warming?
- ❖ Define and describe Green House Effect, Global Warming and types of GHGs by incorporating views from the participants,
- ❖ Justify that GHGs emission from human activities are the main cause of the global warming by presenting facts/figures of national and international reports using a power point presentation.
- ❖ Request participants to share their experiences related to global warming. Provide recent example of raising temperature and climate variability.
- ❖ Finally, conclude by mentioning that uncontrolled ratio of GHGs concentration in atmosphere will continue Global Warming, which will affect the environment, social and economic sectors and ultimately pose threat to the existence of human being.

Activity No 3: Summarization and Evaluation

Time: 5 minutes

- ❖ Summarise the activities of the session
- ❖ Ask the following questions to two or three participants for evaluation:
 - Explain the process of Climate System.
 - What do you understand by global warming?
 - What are the roles of global warming in Climate Change

Tips for Facilitators



Prepare all presentation materials with video clips. Check the font, equipment and power-point visibility from the last seat of the training hall.

Session-3: Impact of Climate Chang in WASH



Purpose:

At the end of the session, participants will be able to:

- Explain three key global impacts of climate change
- List out impacts on the system and communities in Nepal with focus on WASH and health



Timing

- 60 Minutes



Training Methodologies

- Picture/poster presentation
- Presentation and interaction
- Gallery Presentation



Training Materials

- Power point slides about global impact of climate change
- Power-point presentation with focusing impact on WASH,
- Video Clips/ Animation
- Different colored post-its/ meta-cards



Steps

Activity No 1: Effect and impact of Climate Change (Global and National) Time: 20 Minutes

- ❖ Share and explain the objectives of the session and link with session -1: climate and global warming.
- ❖ Describe the key impacts of climate change; increase in temperature, alternation in the precipitation and the sea level rise.
- ❖ Present and explain evidences of changing temperature and precipitation according to global and national fact and figures.
- ❖ Explain the effect of rise in temperature, changes in precipitation and the associated future risks with focus on water supply, sanitation and hygiene.
- ❖ Describe impacts of climate change on drinking water and sanitation system through picture, poster, case study through a power-point presentation

- ❖ Mention any opportunities brought about by climate change. Clarify strongly that CC opportunities are minimal and are not comparable to its adverse impacts.

Activity No 2: Effect and impact on system and communities

Time 35: Minutes

- ❖ Divide the participants according to climatic hazards- Drought, flood, landslide/inundation and melting of snow into four groups
- ❖ Tell each group to discuss on each scenario drought, flood/ inundation, land slide, melting of snow. Discussion points include: What are the impacts on health, drinking water and sanitation and which social groups- by gender, caste/ethnicity and age are mostly affected?
- ❖ Provide three different coloured- post-its/ meta-cards for group works and presentation preparation.
- ❖ Facilitate presentation according to Gallery-Walk methods and allow all groups to ask specific questions as well as comment on the presentation.
- ❖ Summarise the session highlighting key impacts of climate change on WASH and conclude the session by thanking them for their active participation.

Activity No 3: Summarization and Evaluation

Time: 5 minutes

- ❖ Summarise the activities of the session.
- ❖ Ask the following questions to two or three participants for evaluation:
 - What are the major changes that climate change has brought at the global level?
 - What are the sectoral impacts of climate change (WASH)?
 - Who are most affected by climate change?

Tips for Facilitators

- ✚ Make ready all presentation materials with video clips. Check the font, equipment and power-point visibility from the last seat of the training hall.
- ✚ Prepare materials for group discussion and space for gallery presentation.

Session-4: Initiatives in Climate Change and WASH Sector and Health



Purpose:

At the end of the session, participants will be able to:

- Explain at least 5 key national initiatives to respond to adverse impact of climate change particularly on WASH sector



Timing

- 60 Minutes



Training Methodologies

- Presentation and interaction
- Fish Bowl



Training Materials

- Power point slide about National initiatives as a response to climate change on the WASH sector



Steps

Activity No 1: Global Initiatives to respond climate change

Time: 20 Minutes

- ❖ Share and explain the objectives of the session and link with earlier sessions.
- ❖ Define and explain: Although climate change is a global issue, its impacts are being experienced at the local level therefore activities that help to reduce impact of CC should be implemented locally.
- ❖ Present and explain global initiatives to respond climate change issues in terms of Policy, Institutional arrangement and plan/programme- UNFCCC, IPCC, CoPs, CIF, GCF, LDC-fund, GEF, Kyoto Protocol through presentation materials.

Activity No 2: National and Sector focused responses

Time 30: Minutes

- ❖ Request 5 - 6 participants to volunteer and come to the front.
- ❖ Ask them to discuss about the efforts and initiatives taken by Nepal for addressing CC with focus on WASH sector and request other participants to listen and observe the conversation actively.
- ❖ Facilitators have to write down the outcomes of the discussion and interaction(in bulleted form) in meta-cards.

- ❖ Ask other participants to add on the discussion and summarise the outcomes of the discussion (in bulleted form).
National level efforts in terms of policy, mechanism and plan/ programme and practices:
 - Policy/Plan: Climate Change Policy, 2011, NAPA, 2010, LAPA, 2011, NAP- process, 2016,
 - Mechanism: Climate Change Management Division under MoPE, MCCICC,
 - Project/ Programme: Nepal Climate Change Support Programme, Adaptation for Small Holders in Hilly Areas, Pilot Programme for Climate resilience
- ❖ Give the participants opportunities to share their experiences and insights regarding the initiatives that are considered at the local level.
- ❖ Explain that Climate Change mitigation and adaptation are the key activities to address CC.

Activity No 3: Summarization and Evaluation

Time: 10 minutes

- ❖ Summarise the activities of the session and ask for question in case of confusion.
- ❖ Ask following questions to two or three participants for evaluation:
 - What are the effort being taken to address climate change at the global level
 - What are the key initiations carried out by Nepal?

Tips for Facilitators

- ✚ Prepare all presentation materials. Check the font, equipment and power-point visibility from the last seat of the training hall.
- ✚ Prepare materials for group discussion and space for fish bowl discussion.
- ✚ Be gender sensitive while selecting volunteers for fish bowl discussion.

Day II- Recapitulation

Session-5: Concept of Coping, Adaptation and Resilience



Purpose:

At the end of the session, participants will be able to:

- Define coping, adaptation and resilience



Timing

- 60 Minutes



Training Methodologies

- Animation show
- Power-point presentation



Training Materials

- Powerpoint presentation



Steps

Activity No 1: Defining Copping, Adaptation and Resilience

Time: 30Minutes

- ❖ Share and explain the objectives of the session and link with earlier sessions.
- ❖ Present definitions of coping, adaptation and resilience in context of climate change and climate induced disasters.
- ❖ Explain coping, adaptation and resilience through graphical presentations for clarity among the participants.
- ❖ Explain differences between coping and adaptation, similarities between resilience and adaptation with focus on adaptation.
- ❖ Show animation of the Climate Change and adaptation and receive reflection on the animation video from the participants.

Activity No 2: Adaptation Measures and Practice on WASH

Time 20: Minutes

- ❖ Present and explain types of adaptation relating them to participants' prospective. Present different climate change adaptation measures in Water, Sanitation and Hygiene.
- ❖ Request participants to share their experiences and case studies on WASH related measures for climate adaptive/resilient WASH schemes.



- ❖ Facilitator has to relate the shared example, cases and experiences with definitions of resilience, adaptation and coping.
- ❖ Finally, thank all participants for their active participation in the session.

Activity No 3: Summarization and Evaluation

Time: 10 minutes

- ❖ Summarise the activities of the session and collect questions seeking clarity.
- ❖ Ask following questions to two or three participants for evaluation:
 - What do coping, adaptation and resilience imply in the context of climate change and WASH?
 - What are the examples of adaptation measure for WASH?

Tips for Facilitators

-  Prepare all presentation materials. Check the font, equipment and power-point visibility from the last seat of the training hall.
-  Consider and be aware of the allocated time for the session.

Session-6: Concept of climate vulnerability functions



Purpose:

At the end of the session, participants will be able to:

- Describe climate vulnerabilities and its functions
- Practice vulnerability assessment of water supply schemes

Key word of the session: Exposure, Sensitivity and Adaptive capacity



Timing

- 90 Minutes



Training Methodologies

- Power-point presentation
- Action learning exercise
- Group exercise and presentation based on case study



Training Materials

- Powerpoint presentation on vulnerability functions
- Action learning Materials
- Case Study



Steps

Activity No 1: Defining vulnerability functions

Time:30 Minutes

- ❖ Share and explain the objectives of the session and link with earlier sessions.
- ❖ Define and explain with example the three major terminologies of Vulnerability Function- Exposure, sensitivity and adaptive capacity and present the definition of vulnerability according to IPCC and operational definition.
- ❖ With the help of the action learning method, define and discuss vulnerability function on the level of vulnerability, vulnerable groups, vulnerability of system and vulnerable area, guideline to act action learning exercise.
- ❖ Request participants to ask questions if he/she needs further clarification and explanation.

Activity No 2: Vulnerability Assessment Practice

Time 55: Minutes

- ❖ Divide participants into 3-different balanced groups (by number of Participant/gender) by adopting a participatory methodology (Fruit Salad methods/ chocolate game)

- ❖ Assign two groups to each area (Water and Sanitation. Provide them with case study and analysis and tell them to exercise following questions:
 - What is climate variability-**Climate Exposure**?
 - What are short/long term impacts (socio-economic, ecological impact) -**Climate Sensitivity**?
 - What is **climate adaptive capacity**?
 - What are the other non-climate factors/ stressors that influence vulnerability?
 - What is the status of vulnerability of water schemes?
- ❖ Allow some time for group discussion and interaction for bringing forth answers of the above questions. Provide different colour meta-cards/post-its for preparing presentation in bullet points, observe group interaction and support groups if they need help.
- ❖ Ask participants to paste their findings/ outcomes of group interaction on the wall/soft board for presentation and observation.
- ❖ Provide each group with 3-4 minutes for presentation, open discussion and reflection of the group work.
- ❖ Present indicators of exposure, sensitivity and adaptive capacity according to NAP vulnerabilities assessment framework.
- ❖ Finally, summarise key learning and consideration. Thank the participants for their active participation.

Activity No 3: Summarization and Evaluation

Time: 5 minutes

- ❖ Summarise the activities of the session and collect questions seeking clarity.
- ❖ Ask following questions to two or three participants for evaluation:
 - Ask one by one question-What does mean by exposure, sensitivity and adaptive capacity?
 - What are the indicators of exposure, sensitivity and adaptive capacity?

Tips for Facilitators

- ✚ Read and review the action learning methodology and prepare the materials and illustrations to action learning method in advance.
- ✚ Prepare all presentation materials related to exposure, sensitivity and adaptive capacity.
- ✚ Prepare hard copies of the case study for group exercise, necessary cards and colour markers in advance.
- ✚ Consider and be aware on time allocated for the session.

Case study 1 : Flood Impacts in Saptari district, Tarai

Heavy monsoon rainfalls of this year (2017) causing landslides and floods displaced thousands of people and killed dozens of them across different parts of Nepal. One of the victims was Sita Devi Rajbanshi family of Saptari district. She was mother of 11 family members and her younger son was working in Qatar. At 35 years of age, Urmila Rajbanshi, one of three daughters-in-law in the Rajbanshi family had already three daughters and expecting a fourth child. She was checking a water pump in front of her partially submerged house due to the monsoon flood in the month of August, this year. All the drinking water sources were contaminated, even though they did not adopt any measures at point of use to make drinking water safe. The rainfall continued, causing all the nearby rivers being swelled that intensified the problem of safe living. These intensified rainfall and flooding happened all of sudden. All the villagers including Sita Devi's family moved to the safer place for saving their life.



Urmila Rajbanshi checking water pump being partially submerged during flooding, Aug 2017

They could not eat adequate food as their stored grains got flooded and ruined. They did not get safe water for drinking. As their toilets were also flooded, they had to use nearby open places for defecation and urination, causing further pollution of flooded water.

The flood situation remained unchanged for few days and the flood water remained stagnant making favourable environment for vector breeding. During these days, Rajbanshi's two children got diarrhea and other two caught up with influenza like diseases. Sita Devi got high fever and sweating that might be suffering from malaria. Due to flooding, it was also not possible to visit the nearby health post. It was known that no rescue team reached there nor any mobile health camp was set up.

Case study 2: Landslide Impacts in Dhading

More than 200 households in Katunje village of Dhading district faced shortage of drinking water after the landslide destroyed its drinking water project. Drinking water shortage was also held in other villages such as Bhogateni, Guthi bazaar, Chhedgaun and Ghormu. These villages experienced this type of heavy rainfall for the first time.



Landslide hit the households and drinking water sources, Katunje village, Dhading, 2017

The drinking water project was constructed by the initiation of retired Indian army personnel. According to the local people, the landslide swept away the project's water source and reserve tank.

With the lack of drinking water system, the villagers were forced to drink unhygienic water, according to Bheshraj Nepal, the Headmaster of the Kundaladevi Secondary School. Due to the consumption of contaminated water, and poor sanitation and hygienic condition, the diarrheal incidence increased slowly and after two weeks diarrheal outbreak took place. The schools and the government offices were closed mainly because of the outbreak of the disease.

Case study 3 : Heavy Rainfall Impacts in Pyuthan district, Western Nepal

Torrential rainfall for four days triggered landslides in the northern part of Pyuthan district on Monday night (August 21, 2017). Human casualties were reported in Rajwara VDC and Punja VDC, while bridges over the Gunchyang Khola linking Korche Ghat and Gorshang of Arkha VDC were swept away. The drinking water supply sources and the pipes were damaged. The floods also damaged 10KW micro hydel project at the Susaune Khola in Arkha. Several houses and the Gaumukhi Temple were also affected by floods. Severe damage to the water supply and sanitation infrastructure was also reported.



Torrential rainfall caused floods and triggered landslides in various places in Pyuthan

The flow of the local river was recorded at 4 am as 644.9 cubic metres per second. This was the highest reading after 13 years. The flow of water was 79.6 and 150 cubic metres per second at 2 am and 3 am respectively.

Thulabensi Bazaar was inundated by the penetration of the flooded river and the flood water gradually entered into Bagdula area forcing the locals to put in panic. Several infrastructures and private properties were inundated in Bijubar area.

Five persons including aged one-and-half-years to 40 of a single family were killed after a landslide hit their houses in Neta of Rajwara while two persons comprising one 6 years old daughter and a mother of 40 years of age of the same family were rescued from the neighbors and survived. Twenty houses and their families were affected by the devastating landslides. Due to the lack of safe and adequate water, and poor sanitation many people suffered from diarrheal diseases and most of the children also suffered from acute respiratory infection.

Session-7: Identification of current and future climate vulnerability on WASH Sector

Purpose:

At the end of the session, participants will be able to:

- Describe current trend and scenario of climate- temperature, precipitation and climate extremes
- List out climate extreme events and climate induced disaster which directly affect the WASH programme

Key word of the session: Climate Variability, climate trend and scenario



Timing

- 90 Minutes



Training Methodologies

- Case study
- Discussion and plenary presentation



Training Materials

- Powerpoint presentation on climate trend and scenario
- Case Study for group discussion and plenary presentation



Steps

Activity No 1: Current climate trend and future scenario

Time: 40 Minutes

- ❖ Share and explain the objectives of the session and link with earlier session-5.
- ❖ Present climate trends- patterns in climatic variables such as temperature and precipitation according to DHM.
- ❖ Present trend analysis of temperature and extremes indices with specific district examples and cases.
- ❖ Present trend analysis of precipitation- pre-monsoon, monsoon, post-monsoon and winter rain representing the physiographic regions.
- ❖ Present the status and trend of climate extreme events and climate induced disasters
- ❖ Present the future scenario of temperature and precipitation (Climate Projection)

Activity No 2: Listing climate extreme events and climate induced disasters Time 40 Minutes

- ❖ Provide Meta cards/ post-its to each participant and ask them to list out climate extremes events and climate induced disasters. Tell them to write **one message in one card**.
- ❖ Allow participants to paste their cards on the soft board placed in front of the training hall, cluster similar cards into one group, name of the clusters/groups and prepare a list of the climate extreme events and climate induced disasters accordingly.
- ❖ Ask question " Which climate induced disaster is very vital for WASH Programme and Why? Based on their answers, provide some of the indicators of exposure and sensitivity as well as adaptive capacity.

Activity No 3: Summarization and Evaluation

Time: 10 minutes

- ❖ Summarise the activities of the session and collect questions that seek clarity.
- ❖ Ask following questions to two or three participants for evaluation:
 - Ask one by one –How do you link this session with your own work in the WASH Programme?

Session-8: Exploration of adaptation measures for WASH in different Scenario



Purpose:

At the end of the session, participants will be able to:

- Use this tool to identify a range of options to adjust or improve water management under challenges and risk of changing climate

Key word of the session: Adaptation measures for water management



Timing

- 90 Minutes



Training Methodologies

- Power-point presentation
- Groups exercise and presentation based on case study



Training Materials

- Powerpoint presentation on Adaptation Measures
- Case Study
- Analysis tools



Steps

Activity No 1: Defining Adaptation Measures and strategies

Time: 20 Minutes

- ❖ Share and explain the objectives of the session and link with earlier sessions.
- ❖ Define adaptation measure and explain broad adaptation strategy that are considered in all types of adaptation.
- ❖ Provide specific examples of adaptation measures through illustration/presentation and request participants to share their experiences on adaptation measure with focus on WASH programme.

Activity No 2: Tools Introduction & practice to identify adaptation measures

Time: 55 Minutes

- ❖ Ask all participants to pick a piece of paper with climate hazard written on it. Make four groups and provide case study to each of the groups according to their group name.
- ❖ Show a sample tool by using Newsprint paper and explain each column of the tool. Explain each column with specific examples and analysis.
- ❖ Ask the groups to read the case study carefully, analyse and identify adaptation measures to specific WASH Programme in line with the tool and tell them to make as much visual as possible.

- ❖ Provide time for discussion and interaction to find out adaptation measures for specific condition and support groups if they need any assistance, explanation and clarification on tool and case study.
- ❖ Ask each group to present their findings to the wider group. Facilitate the question & answer session, and clarification of comments/contribution and their observation regarding adaptation measures identified by each group.
- ❖ Finally summarise and conclude the session.

Activity No 3: Summarization and Evaluation

Time: 5 minutes

- ❖ Ask the following questions to two or three participants for evaluation:
 - Ask one by one-What are the key adaptation measures for drought, landslide, flood and inundation?

Tips for Facilitators

- ✚ Prepare four case studies and format of the tool for group discussion and presentation for all four groups.
- ✚ Consider and be aware on the time allocated for the session.
- ✚ Assist each group to follow the expectation of the tool and deepen understanding of analysis and allocate station for group interaction and discussion within or outside the training hall and provide required materials

Climate Induced Hazard	Impact on Water supply and Sanitation System		Adaptation Options/Measures
	Direct	Indirect	
Drought	<ul style="list-style-type: none"> Reduced water availability 	<ul style="list-style-type: none"> Population movements to other areas, posing further stress on remaining water sources and use of unsafe sources 	Collection and storage of surface water runoff: <ul style="list-style-type: none"> Below ground tanks (i.e. cisterns) and excavations into which rainwater is directed from the ground surface Small reservoirs with earthen bunds or embankments to contain runoff or river flows Managed aquifer recharge: capturing and recharging excess runoff in the vicinity of a well or borehole

Session Supporting Material 1

Day III: Recapitulation

Session-9: Integration of Climate Change in Project Planning



Purpose:

At the end of the session, participants will be able to:

- Understand how to integrate adaptation in the various steps of the project cycle to avoid mal-adaptation

Key word of the session: Mal-adaptation, Integration and WASH Project Cycle



Timing

- 60 Minutes



Training Methodologies

- Power-point presentation
- Expert interview
- Group exercise and presentation based on case study



Training Materials

- Powerpoint presentation on WASH project cycle
- Meta card for questioning exercise
- Paper for consolidated learning



Steps

Activity No 1: Defining integration in project cycle of WASH

Time: 15 Minutes

- ❖ Share and explain the objectives of the session and link with earlier sessions. Explain rationale of the session with emphasis on Mal-Adaptation.
- ❖ Ask participants to share their experiences on- what are the steps undertaken while planning, implementation and monitoring & evaluation of the WASH scheme?
- ❖ Document participants' views and answers on meta cards/ post-its following the rule **One Card-One Message** and keep all cards/post-its in soft board/brown paper.
- ❖ Present a generic project cycle chart through PowerPoint presentation, reflect and co-relate with participants' views and experiences
- ❖ Briefly explain and analyse what exact activities are conducted in each steps of the project cycle of WASH

Activity No 2: Analysis of project cycle with integration of CCA

Time: 40 Minutes

- ❖ Introduce the expert with his/her bio/ profile and conduct a quick round up introduction among the participants. Share the approach/process of interaction/discussion about **expert interview**.
- ❖ Provide two meta-cards to each participant and ask them to write a concern/question on each card:"How to integrate climate change risk management in each steps of project cycle. Give some time for thinking and writing and tell them that there is no need to write their names on the card.
- ❖ Collect all meta cards, cluster similar concerns/questions on the soft board and clarify any confusion regarding the questions.
- ❖ Request the expert to respond the concerns and questions regarding Integration of CCA to minimise risks in different steps of WASH project cycle starting from Pre-feasibility to post monitoring.
- ❖ Facilitate if any question/concern has not been addressed.
- ❖ Summarise the outcomes and findings of the expert interview and close the session by thanking the participants and experts for their active participation

Activity No 3: Summarization and Evaluation

Time: 5 minutes

- ❖ Ask the following question to two or three participants for evaluation:
 - Ask one by one-What are the key steps of project planning and what considerations are needed to integrate climate change into the project cycle of WASH schemes.

Tips for Facilitators

- ✚ Explore and identify a potential expert to facilitate the integration of CC into WASH project cycle before the training event, discuss the methodology and share session objective with the expert.
- ✚ Prepare all required materials for the session including soft board, meta-card, marker and seating arrangement for the discussion and interaction session.
- ✚ Facilitator needs to prepare a few sample questions for the expert and brainstorm/discuss about other potential questions.

Session-10: Concept of Monitoring& Evaluation and Developing Monitoring Framework



Purpose:

At the end of the session, participants will be able to:

- Define monitoring and evaluation and evaluation framework
- List out the indicators of climate change resilient WASH scheme

Key word of the session:Monitoring and Evaluation, Resilient indicator



Timing

- 60 Minutes



Training Methodologies

- Power-point presentation
- Reflective and experiential learning



Training Materials

- Powerpoint presentationof monitoring and evaluation



Steps

Activity No 1: Defining monitoring and evaluation

Time: 15 Minutes

- ❖ Share and explain the objectives of the session and link with earlier sessions.
- ❖ Present the definition of monitoring and evaluation through PowerPoint presentation and explain the differences between monitoring and evaluation
- ❖ Discuss on the rational of the monitoring and evaluation is needed? and take view and prospective of few participant and elaborate rational of monitoring and evaluation with linking view of participant
- ❖ Present the result chain and elaborate the each element of the result chain and encourage participant to share their knowledge and experience on result chain.
- ❖ Explain the level of monitoring and evaluation and elaborate the **Control and Influence in Monitoring level.**

Activity No 2: Listing the resilient indicators of WASH scheme

Time: 25 Minutes

- ❖ Present the monitoring and evaluation framework (Material No :XX) and explain its core concept and contribution of adaptation measures in building adaptive capacity, managing risk and contributing to sustainable development
- ❖ Explain the challenges of monitoring and evaluation for adaptation as climate change is only one of the many stressors for sustainable development.
- ❖ Link analysis with explanation and ask participants about what would be the indicators of climate resilient WASH schemes and request them to write potential indicator on Meta Cards.
- ❖ Cluster all meta-cards according to following groups:
 - Managing Risks
 - Building adaptive Capacity
 - Contributing to sustainable development
- ❖ Present and briefly elaborate key indicators of adaptive capacity according to NAP vulnerability and risk assessment frameworks.
- ❖ Recap the session and its key learning and thank everybody for their active participation

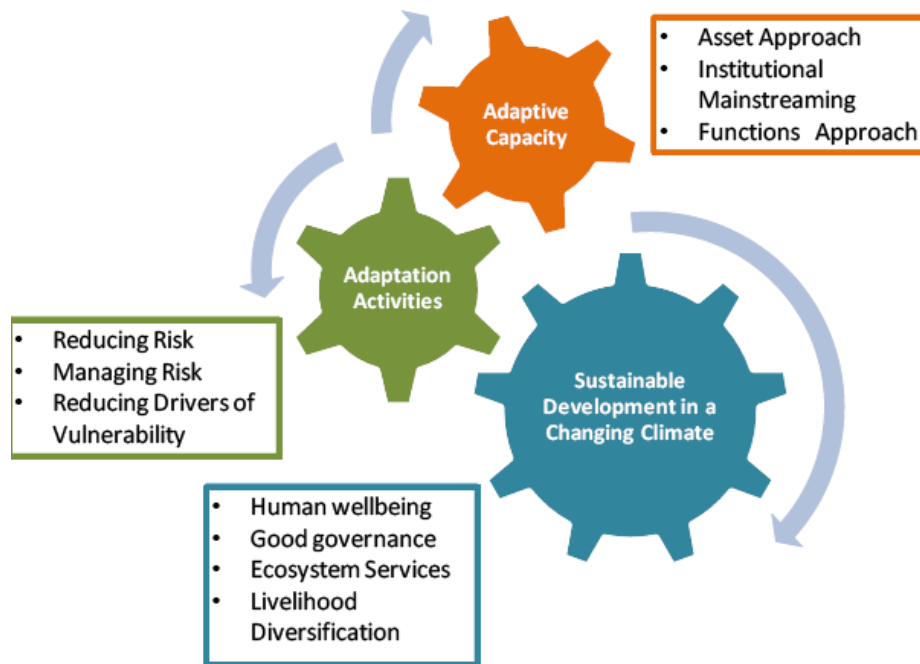
Activity No 3: Summarization and Evaluation

Time: 5 minutes

- ❖ Ask the following questions to two or three participants for evaluation:
 - Define the monitoring and evaluation
 - Give two differences between monitoring and evaluation
 - Give the key indicators of climate resilient water scheme

Tips for Facilitators

- ✚ Prepare and review the presentation materials before the formal session starts and update as necessary according to participants' level and exposure
- ✚ Prepare all required materials for the session including soft board, meta-card and markers.
- ✚ Prepare the list of indicators of climate resilient WASH schemes according to NAP vulnerability and risks assessment framework .



Session Supporting Material 2 Monitoring and Evaluation Framework (GIZ)

Session-11: Training Reflection and Closing Ceremony



Purpose:

At the end of the session, participants will be able to:

- Carry-out training reflection and evaluation of the training
- Close-up training events formally

Key word of the session: Training reflection and evaluation



Timing

- 60 Minutes



Training Methodologies

- Evaluation Wheel
- Reflective and experiential learning



Training Materials

- Material for evaluation wheel



Steps

Activity No 1: Recap of the training session

Time: 15 Minutes

- ❖ Share and explain the objectives of the session and link with earlier sessions.
- ❖ Select two volunteers for recap session in a participatory manner. Request them to head to the front of the hall and ask them to write the recap note on news print.
- ❖ Ask the remaining participants to recap the session title from the beginning to the end and encourage everyone's active participation.
- ❖ Remind the sessions if participants have missed any during the recap and finally ask the volunteers to read the points collected in the news print.
- ❖ Finally thank all participants, especially the two volunteer with claps.

Activity No 2: Evaluation and learning of the training

Time: 30 Minutes

- ❖ Present and explain the evaluation matrix, take home message and feedback box kept in different corner/ place of the training hall.





- ❖ Allow participants to do according to their individual experiences during the training and guide and support to participant if necessary
- ❖ Read and explain the outcome of evaluation matrix, statement of take home message and feedback box for future improvement.

Activity No 3: Closing Ceremony

Time: 15 minutes

- ❖ Ask following questions to two or three participants for evaluation:
 - Define monitoring and evaluation
 - Give two differences between monitoring and evaluation
 - Give the key indicators of climate resilient water scheme

Tips for Facilitators

-  Prepare a sheet of evaluation matrix, take home message exercise and feedback suggestions for the future.
-  Prepare a separate schedule in consultation with appropriate authority/ organizer if the closing ceremony becomes a formal session.
-  Ensure advance invitation and communication to the chief guest, guest and others as appropriate
-  Facilitator may need to arrange additional time to manage a formal session.

5. References

MoPE, 2017. Vulnerability and Risk Assessment Framework and Indicators for National Adaptation Plan (NAP) formulation process in Nepal. Ministry of Population and Environment (MoPE), Kathmandu, Nepal

MoPE, 2017. Synthesis of Stocktaking Report for National Adaptation Plan (NAP) formulation process in Nepal. Ministry of Population and Environment (MoPE), Kathmandu, Nepal

MoSTE, 2014 Climate Change and Community-based Adaptation Planning Training Facilitator, Ministry of Science, Technology and Environment, Kathmandu, Nepal

DHM, 2017. Observed Climate Trend Analysis in the Districts and Physiographic Region of Nepal (1971-2014), Department of Hydrology and Meteorology, Kathmandu

GIZ, 2011. Integrating climate change adaptation into development planning- Trainer Guides, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Bonn Germany

GIZ, 2011. Integrating climate change adaptation into development planning- Training Handout, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Bonn Germany

MoSTE, 2012 Community-based Vulnerability Assessment Tools and Methods, Ministry of Science, Technology and environment, Kathmandu, Nepal

UNICEF/GWP, 2014 WASH Climate Resilient Development- Technical Brief, United Nations Children's Fund (UNICEF)/Global Water Partnership, New York, United States of America

MoPE, 2017. Stock Taking Report on WASH and Public Health for National Adaptation Plan (NAP) formulation process in Nepal. Ministry of Population and Environment (MoPE), Kathmandu, Nepal

Government of Nepal

Ministry of Water Supply and Sanitation

Department of Water Supply and Sewerage

National Water Supply and Sanitation Training Centre

Nargarkot, Bhaktapur

Phone No :+977-1-4422013

Email: nwsstc@dwss.gov.np

Web site: nwsstc.gov.np