

WASH and Climate Change

Power Point Presentation Slide Note for Participants
December, 2024





Material and Learning Application

This training manual has been developed by the Environment and Public Health Organization (ENPHO) under the “Optimizing the Use of Capacity Building Materials: Triggering SDG 6 Achievement” project, with support from the Centre for Affordable Water and Sanitation Technology (CAWST). It is intended exclusively for training use. The content aims to explain concepts and highlight practices from both global and national contexts. ENPHO and the development team do not claim ownership of any materials referenced herein; all such content remains the intellectual property of their respective sources.

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1.

INTRODUCTION

This document, power point presentation with slide notes, is a supporting document for the trainers/presenter to conduct the “WASH and Climate Change” training. This is a compilation of all the slides to be presented in the training along with the notes for the trainer as of what to describe while presenting the particular slide.

2.

OBJECTIVE

The main objective of the document is to guide the content that a presenter would be discussing on each slide. To this, it also provides a preview of all the slides contained in the training along with the slide notes.

3.

HOW TO USE?

The document consists of slides from all sessions. Slide notes for each slide is presented just below the slide itself. The trainers or presenters can go through the notes and describe the slides as per the information provided in the slide notes.

For the effective use of the documents, a trainer or presenter is recommended to use simultaneously with the “Trainer Manual” with instructions.






SESSION 2

Rationale and Relation: WASH & Climate Change




Slide No. 1



Rationale and Relation: WASH and Climate Change


Resource Person



Slide No. 2


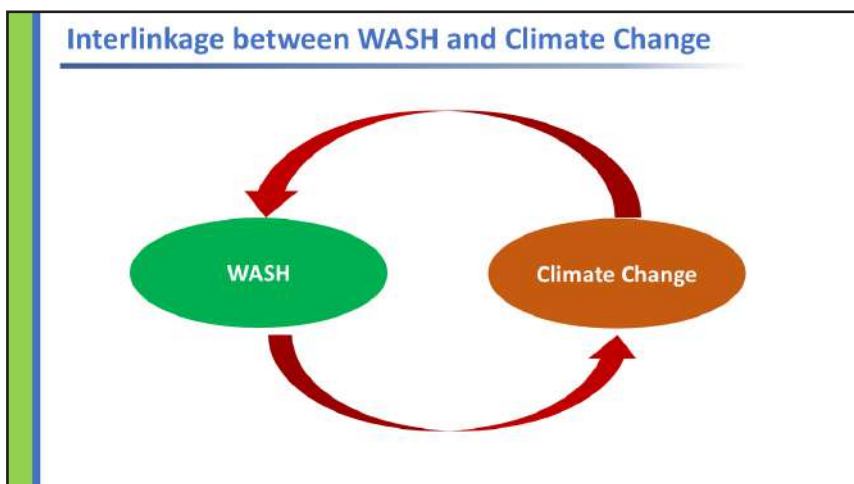
Learning Outcomes

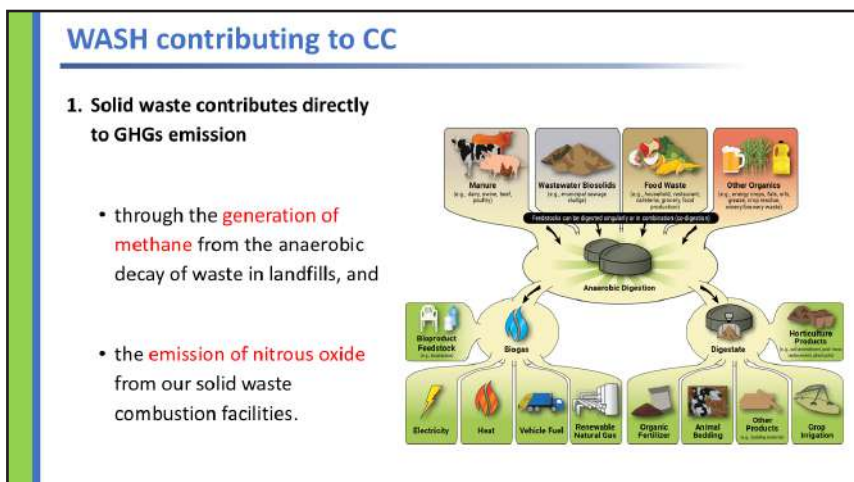
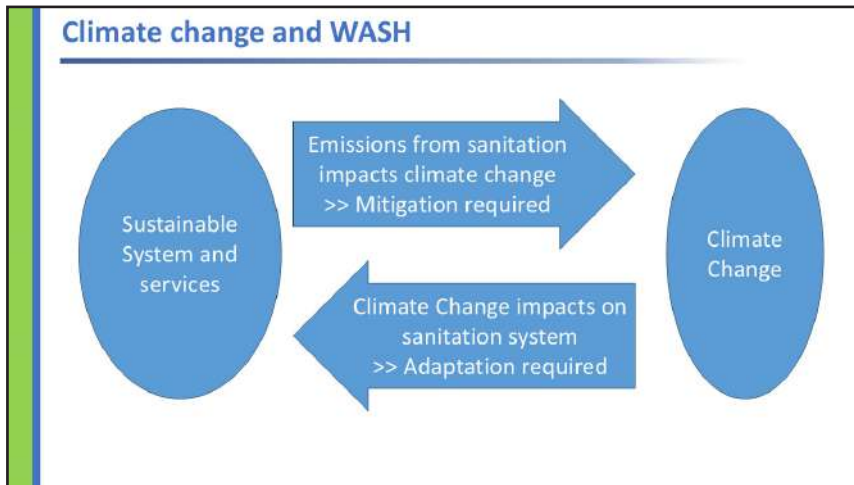
1. Interpret the rationale for climate change
2. Relate the interlinkage between WASH and Climate Change



Presentation Outline

- Interlinkage between WASH and Climate Change
- WASH contributing to CC
- Impact of CC in WASH

A stylized illustration of a person with an orange head and green body standing next to a whiteboard on a tripod stand. The whiteboard has several horizontal lines representing text. The person is pointing at the board with their right hand.



WASH contributing to CC

2. Through the release of potent greenhouse gases such as methane and nitrous oxide,

- wastewater accounts for about 1.57 per cent of global emissions,
- just below the climate harm caused by the global aviation industry.

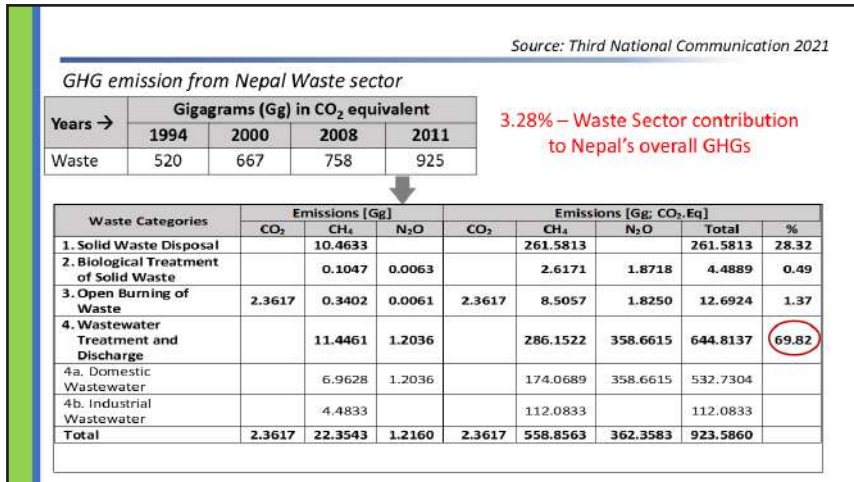


WASH contributing to CC

3. High consumption of water also directly/ indirectly contributes to CC

- as it increases the energy use and carbon emissions associated with water treatment and distribution, contributing to climate change.

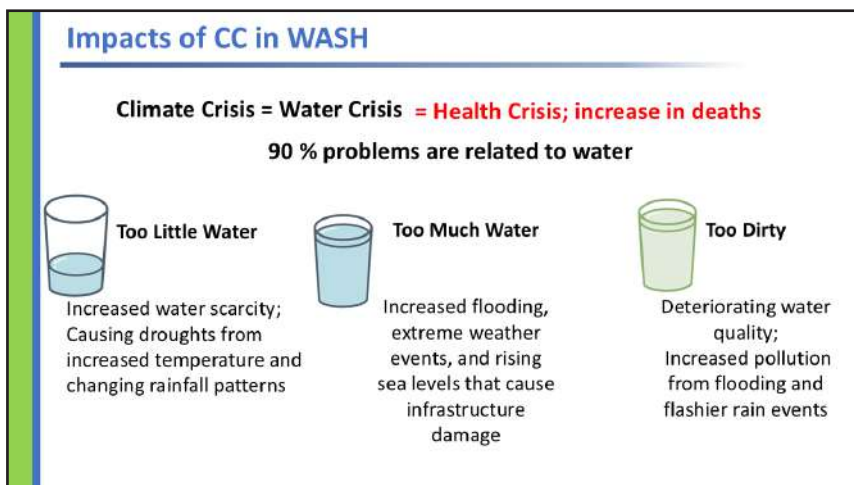
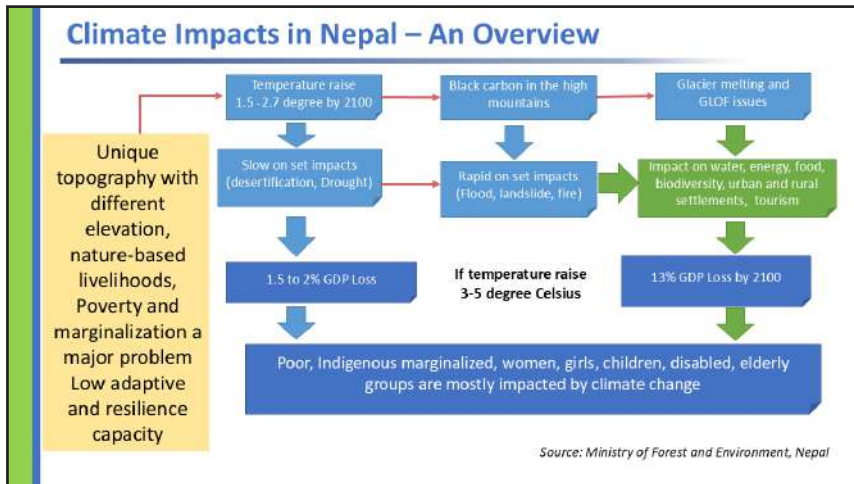




GHG – Green House Gases (methane, nitrous oxide, carbondioxide, ozone, chlorofluoro carbon, carbon monoxide, sulphur dioxide)



With fast paced and haphazard urbanization in many South Asian countries, both climate change impact and sanitation situation are foreseen to be aggravated tremendously in the immediate future




- Increased water insecurity and limited access to WASH due to climate impacts will also contribute to a health crisis, and an increase in the deaths
- In 2022, cholera was reported in 44 countries –[up by a quarter](#) on the previous year – and WHO estimates that one billion people are now at risk due to [the ongoing surge in infections](#).

Impacts of CC in WASH

Climate Crisis = Water Crisis = Health Crisis; increase in deaths

90 % problems are related to water

In 2022, cholera was reported in 44 countries – up by a quarter on the previous year – and WHO estimates that one billion people are now at risk due to the ongoing surge in infections



Too Dirty


Deteriorating water quality;
Increased pollution from flooding and flashier rain events

- Increased water insecurity and limited access to WASH due to climate impacts will also contribute to a health crisis, and an increase in the deaths
- In 2022, cholera was reported in 44 countries – up by a quarter on the previous year and WHO estimates that one billion people are now at risk due to the ongoing surge in infections.

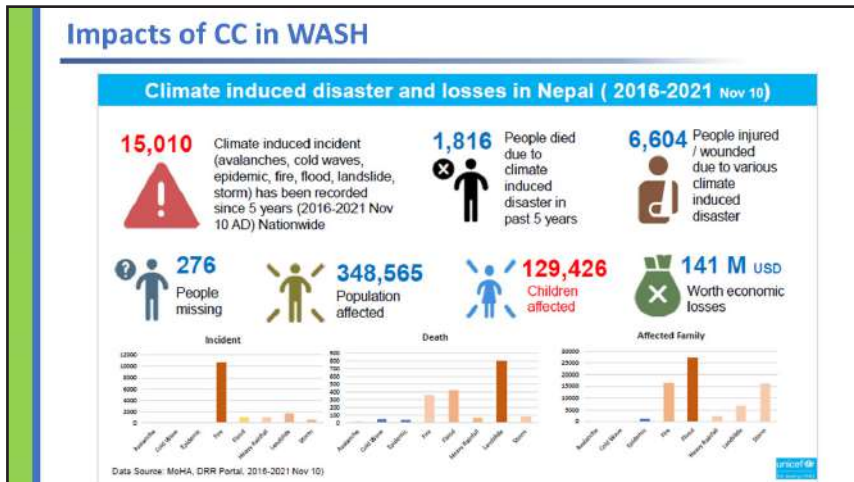
When water becomes scarce, it can rarely be spared for essential hygiene measures such as handwashing, and where the bacterium that causes cholera is present, the absence of effective hygiene measures creates the perfect conditions for the disease to spread.

Impacts of CC in WASH

- Changes to weather patterns also make the management of waterborne diseases more difficult, and
- The impacts are experienced most by people who are already vulnerable or experience marginalization,
- Every year, environmental factors including inadequate access to WASH cause 13.7 million deaths worldwide – almost a quarter of global deaths.



Changes to weather patterns also make the management of waterborne diseases more difficult, and the impacts are experienced most by people who are already vulnerable or experience marginalisation, such as those living in informal settlements and underserved rural areas, and women and girls who face greater exposure to infectious diseases through a combination of social and economic factors, both at home and in the health workforce.



Impacts of CC in WASH

- When water becomes scarce, no water for essential hygiene measures such as handwashing, resulting in diseases outbreak like cholera
- By 2030, it is expected that ill-health linked to climate change will cost US\$2-4 billion a year globally.
- Coupled with economic and social factors, such as poverty and gender, the impact of the climate change, health and WASH nexus is a clear cause for concern – and an impetus for urgent investment.

Impacts of CC in WASH

- Coupled with economic and social factors,
 - such as poverty and gender,
- The impact of the climate change,
- Health and WASH nexus is a clear cause for concern –
- **An impetus for urgent investment.**

Thank you!
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SESSION 3

Climate Change: The Concept






Climate Change: The Concept

Resource Person




Learning Outcomes

1. Explain the concept of Climate Change (CC).
2. Associate key terminologies related to climate change
3. Discuss the myths related to climate change




Presentation Outline

- Weather vs Climate
- Terminologies on CC
- Facts and Myths on Climate Change



Weather Vs. Climate



Results for **Kathmandu** [Use precise location](#)

23 °C | 73° F
Precipitation: 0%
Humidity: 55%
Wind: 15 km/h

Weather: Friday 14:00
Mostly sunny

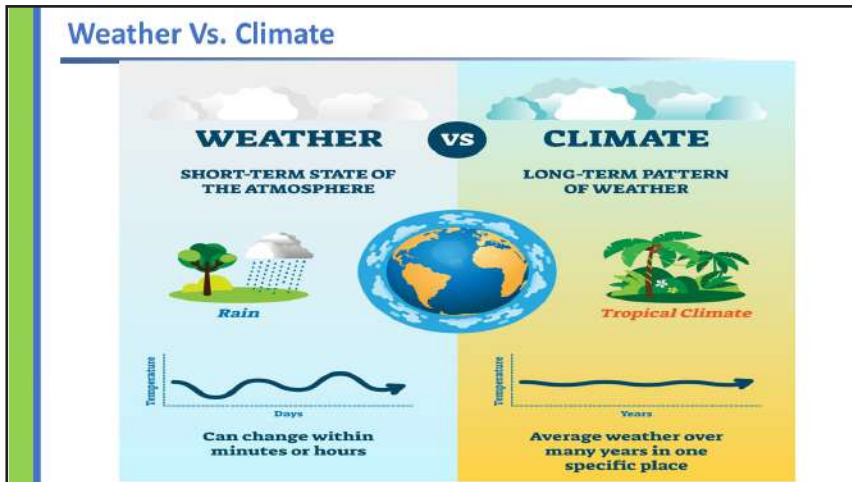
Temperature Precipitation Wind

Time	Temperature	Precipitation	Wind
15:00	23°	0%	15 km/h
16:00	23°	0%	15 km/h
17:00	22°	0%	15 km/h
18:00	22°	0%	15 km/h
19:00	22°	0%	15 km/h
20:00	21°	0%	15 km/h
21:00	20°	0%	15 km/h
22:00	20°	0%	15 km/h

Forecast for the next 7 days:

Day	Temperature	Precipitation
Fri	23° - 15°	0%
Sat	23° - 12°	0%
Sun	22° - 11°	0%
Mon	22° - 11°	0%
Tue	22° - 11°	0%
Wed	21° - 11°	0%
Thu	20° - 11°	0%
Fri	20° - 10°	0%

Human activity in the industrial age, and particularly during the last century, is significantly altering our planet's climate through the release of harmful greenhouse gases



Green House Gases (GHGs)

- Greenhouse gases are gases that trap heat from the sun in our planet's atmosphere, keeping it warm.
- The main greenhouse gases released by human activities are **carbon dioxide**, **methane**, **nitrous oxide**, and **fluorinated gases** used for cooling and refrigeration
- Carbon dioxide** is the primary greenhouse gas resulting from human activities, particularly from **burning fossil fuels**, **deforestation**, and **changing the way land is used**.

The greenhouse house gas effect

Sun's Radiation

CO₂, NO₂, SO₂, O₃, CH₄, Fluorinated gases

To prevent catastrophic climate change, the world's governments must work together to significantly reduce greenhouse gas emissions now and in the coming decades and keep global warming below the dangerous threshold of 1.5°C.

Global Warming Vs. Climate Change	
Global Warming	Climate Change (CC)
<ul style="list-style-type: none"> It is an increase in the Earth's average surface temperature Occurs when the concentration of greenhouse gases in the atmosphere increases. These gases absorb more solar radiation and trap more heat, thus causing the planet to get hotter. 	<ul style="list-style-type: none"> Refers to the long-term changes in the Earth's climate that are warming the atmosphere, ocean and land. CC is affecting the balance of ecosystems that support life and biodiversity, and impacting health. It also causes more extreme weather events as a result of ocean warming, melting of glaciers, and loss of ice sheets.

Example: When you insert air to the football it expands (similar to solar radiation insert in earth and earth is heated)

When you try to insert air to the football beyond its limit it tries to burst (similarly more GHGs in the earth's surface the earth gets more heat)

Tipping Point

- It is a **threshold** after which certain changes caused by global warming and climate change become irreversible,
- Even if future interventions are successful in driving down average global temperatures.
- These changes may lead to abrupt and dangerous impacts with very serious implications for the future of humanity and our planet.

RAISING THE ALARM

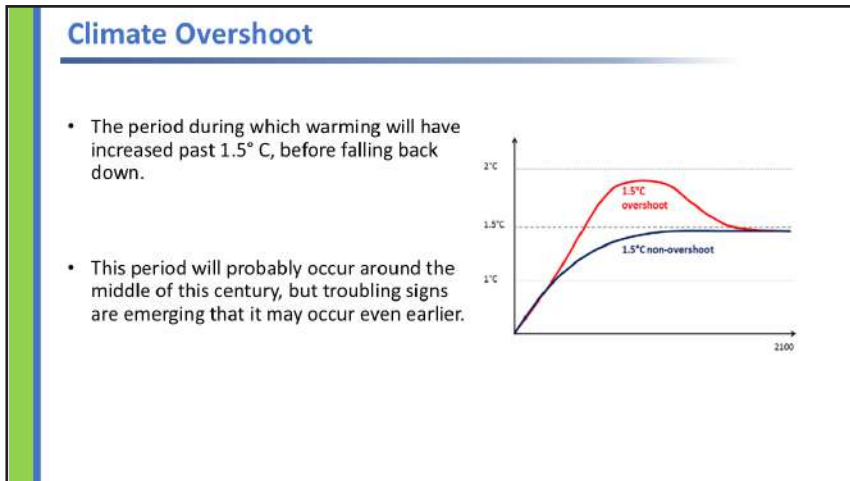
Evidence that tipping points are under way has mounted in the past decade. Domino effects have also been proposed.

● Tipping points
— Connectivity

A. Amazon rainforest Frequent droughts	D. Boreal forest Fires and pests changing	H. Permafrost Thawing
B. Arctic sea ice Reduction in area	F. Coral reefs Large-scale die-offs	I. West Antarctic ice sheet Ice loss accelerating
C. Atlantic circulation In slowdown since 1990s	G. Greenland ice sheet Ice loss accelerating	J. Wilkes Basin, East Antarctica Ice loss accelerating

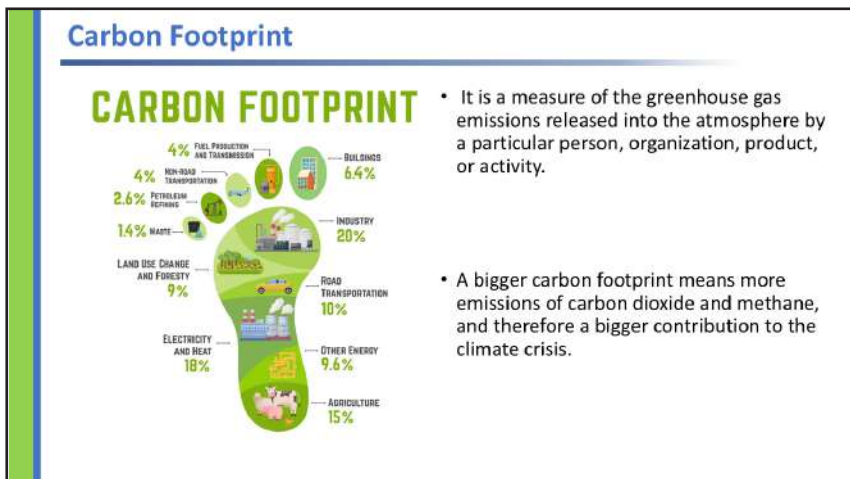
© Nature

Including weather extremes and hazards, ocean acidification and sea-level rise, loss of biodiversity, food and water insecurity, health risks, economic disruption, displacement, and even violent conflict.



Climate overshoot is when the global temperature temporarily exceeds the 1.5°C threshold set by the Paris Agreement:

- Explanation:** The Paris Agreement established 1.5°C as the long-term limit for global warming above pre-industrial temperatures. However, the Intergovernmental Panel on Climate Change (IPCC) says that it's likely that the world will temporarily exceed this threshold.




Long term strategies

Under the Paris Agreement, countries are invited to communicate long-term strategies (LTS) for emissions reductions that envision a whole-of-society transformation over several decades, usually up to 2050. LTS documents align to the long-term objectives of limiting global warming and achieving net-zero by 2050.

Net Zero


- The amount of greenhouse gases produced by human activities is balanced by the amount removed over a given period.
- This is achieved by: Cutting greenhouse gas emissions and Actively removing remaining emissions.

A green circular graphic with a globe in the center. The words "NET ZERO" are written in large, bold, green capital letters across the globe. Surrounding the globe are various green icons: a wind turbine at the top, a solar panel at the top right, a leaf at the bottom right, and a recycling symbol at the bottom left.

Long term strategies

Under the Paris Agreement, countries are invited to communicate long-term strategies (LTS) for emissions reductions that envision a whole-of-society transformation over several decades, usually up to 2050. LTS documents align to the long-term objectives of limiting global warming and achieving net-zero by 2050.

Climate Finance

A graphic featuring a globe with a yellow arrow curving around it, pointing upwards and to the right. Below the globe, the words "CLIMATE FINANCE" are written in bold, black capital letters.

- Climate finance refers to local, national or transnational financing drawn from public, private and alternative sources of financing
- that seeks to support mitigation and adaptation actions that will address climate change.

Long term strategies

Under the Paris Agreement, countries are invited to communicate long-term strategies (LTS) for emissions reductions that envision a whole-of-society transformation over several decades, usually up to 2050. LTS documents align to the long-term objectives of limiting global warming and achieving net-zero by 2050.

Carbon Markets

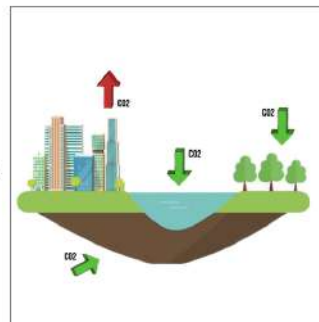
- Carbon markets are trading schemes that create financial incentives for activities that reduce or remove greenhouse gas emissions.
- In these schemes, emissions are quantified into carbon credits that can be bought and sold.
- One tradable carbon credit equals one tonne of carbon dioxide, or the equivalent amount of a different greenhouse gas reduced, sequestered or avoided.
- Carbon credits can be bought by countries as part of their NDC strategy, by corporations with sustainability targets, and by private individuals that want to compensate for their carbon footprint.



Today, human activity, like burning fossil fuels and deforestation, causes more carbon to be released into the atmosphere than the Earth's natural carbon sinks can absorb, leading to global warming and climate change. Human activities and climate change are also causing the degradation of these natural carbon sinks, threatening the release of the carbon they store back into the atmosphere. Therefore, protecting carbon sinks and expanding their capability to absorb carbon and store it long-term is a key strategy for tackling climate change and stabilizing the climate.

Carbon Sink

- A carbon sink is any process, activity, or mechanism **that absorbs more carbon dioxide from the atmosphere than it releases.**
- Forests, oceans, and soil are the world's largest natural carbon sinks.
- **Oceans** absorb carbon dioxide from the atmosphere through marine ecosystems and the plant and animal life they harbor.
- **Forests and soil** are the other main natural carbon sinks of the planet, storing carbon in trees and vegetation, wetlands and peat bogs, and plant litter.



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Rewilding

- **Rewilding is the mass restoration of ecosystems** that have been damaged by human activity.
- More than conservation, which focuses on saving specific species through dedicated human intervention, rewilding refers to setting aside large areas for the natural world to regenerate in on its own terms.
- This sometimes requires the reintroduction of key species that have been driven extinct in a particular region, such as beavers, wolves, or large herbivores, who help shape entire ecosystems.

Rewilding can help combat climate change by removing more carbon dioxide from the atmosphere through healthy natural processes such as natural woodland regeneration. It also helps prevent species extinction by creating nature-rich habitats that allow wildlife to adapt to climate change and migrate as warming intensifies.

More Terminologies

<ul style="list-style-type: none"> • Feedback Loop • Decarbonization • Renewal Energy • Carbon Sink • Carbon Removal • Carbon Capture • Carbon Markets • Regenerative Agriculture • Reforestation • Afforestation • Rewilding • Just Transition 	<ul style="list-style-type: none"> • Circular Economy • Blue Economy • Green House Gases • Green Jobs and Green Washing • Nature Based Solutions • Indigenous Knowledge • Loss and Damage
	<ul style="list-style-type: none"> • UNFCCC • IPCC • COP • Paris Agreement • REDD+

Slide No. 17

Facts and Myths

Reference:

<https://www.unep.org/news-and-stories/story/debunking-eight-common-myths-about-climate-change#:~:text=Experts%20say%20that%20is%20a,myths%20to%20make%20their%20point.>

Slide No. 18

“Most of the world rightly acknowledges that climate change is real. But in many places, misinformation is delaying the action that is so vital to countering what is one of the greatest challenges facing humanity.”



Dechen Tsering
Acting Director of the Climate Change Division
United Nations Environment Programme (UNEP)

Myth 1:

Climate change has always happened, so we should not worry about it.

- It is true that the planet's temperature has long fluctuated, with periods of warming and cooling.
- The Earth is **heating up at its fastest rate is about 1.2°C hotter** than it was in pre-industrial times.
- The **last 10 years have been the warmest on record**, with 2023 smashing global temperature records.
- Other key climate-related indicators are also spiking.
- **Ocean temperatures, sea levels and atmospheric concentrations of greenhouse gasses are rising** at record rates while sea ice and glaciers are retreating at alarming speeds.

Climate change has always happened, so we should not worry about it.

It is true that the planet's temperature has long fluctuated, with periods of warming and cooling.

But since the last ice age 10,000 years ago, the climate has been relatively stable, which scientists say has been crucial to the development of human civilization.

That stability is now faltering. The Earth is heating up at its fastest rate in at least 2,000 years and is about 1.2°C hotter than it was in pre-industrial times. The last 10 years have been the warmest on record, with 2023 smashing global temperature records.

Other key climate-related indicators are also spiking. Ocean temperatures, sea levels and atmospheric concentrations of greenhouse gasses are rising at record rates while sea ice and glaciers are retreating at alarming speeds.

Slide No.20

Myth 2:

Climate change is a natural process. It has nothing to do with people.

- While climate change is a natural process human activity is pushing it into overdrive.
- A landmark report from the IPCC, found that **humans are responsible for almost all the global warming over the past 200 years.**
- The vast majority of warming has come from the **burning of coal, oil and gas.**
- The **combustion of these fossil fuels** is flooding the atmosphere with **greenhouse gases**, which act like a blanket around the planet, trapping heat.

By measuring everything from ice cores to tree rings, scientists have been able to track concentrations of greenhouse gases. Carbon dioxide levels are at their highest in 2 million years, while two other greenhouse gases, methane and nitrous oxide, are at their highest in 800,000 years.

Myth 3:

A couple of degrees of warming is not that big of a deal.

- Actually, **small temperature rises can throw the world's delicate ecosystems into disarray**, with dire implications for humans and other living things.
 - The [Paris Agreement](#) on climate change aims to limit average global temperature rise to "well below" 2°C, and preferably to 1.5°C, since pre-industrial times.
 - Even that half-a-degree swing could make a massive difference.
 - The world would also **lose twice as many plants and vertebrate species and three times as many insects**. In some areas, crop yields would decrease by more than half, threatening food security.
 - At 1.5°C of warming, **70 per cent to 90 per cent of corals**, the pillars of many undersea ecosystems, **would die**.
 - At 2°C of warming, some [99 per cent](#) would perish.
- "Every fraction of a degree of warming matters," says Tsering.

Even that half-a-degree swing could make a massive difference. [The IPCC found](#) that at 2°C of warming, more than 2 billion people would regularly be exposed to extreme heat than they would at 1.5°C. The world would also lose twice as many plants and vertebrate species and three times as many insects. In some areas, crop yields would decrease by more than half, threatening food security.

At 1.5°C of warming, 70 per cent to 90 per cent of corals, the pillars of many undersea ecosystems, would die.

At 2°C of warming, some [99 per cent](#) would perish. Their disappearance would likely lead to the loss of other marine species, many of which are a critical source of protein for coastal communities.

Myth 4:

An increase in cold snaps shows climate change is not real.

- There could still be a cold snap while the general trend for the planet is warming.
- Some experts also believe climate change could lead to longer and more intense cold in some places due to changes in wind patterns and other atmospheric factors.
- One much-publicized paper found the rapid warming of the Arctic may have disrupted the swirling mass of cold air above the North Pole in 2021.

Myth 5:

Scientists disagree on the cause of climate change.

- A 2021 study revealed that 99 per cent of peer-reviewed scientific literature found that climate change was human-induced.
- That was in line with a widely read study from 2013, which found 97 per cent of peer-reviewed papers that examined the causes of climate change said it was human-caused.
- “The idea that there is no consensus is used by climate deniers to muddy the waters and sow the seeds of doubt,” says Tsering.
- “But the scientific community agrees: the global warming we are facing is not natural. It is caused by humans.”

Myth 6:

It is too late to avert a climate catastrophe, so we might as well keep burning fossil fuels.

- UNEP’s latest Emissions Gap Report found that cutting greenhouse gas emissions by 42 percent by 2030, the world could limit global temperature rise to 1.5°C compared with pre-industrial levels.
- A little math reveals that to reach that target, the world must reduce its annual emissions by 22 billion tonnes of carbon-dioxide equivalent in less than seven years.
- But by ramping up financing and focusing on low-carbon development in key transport, agriculture and forestry, the world can get there.
- “There is no question the task ahead of us is massive,” Tsering says. “But we have the solutions we need to reduce emissions today and there is an opportunity to raise ambition in the new round of national climate action plans.”

While the situation is dire, there is still a narrow window for humanity to avoid the worst of climate change.

That might seem like a lot. But by ramping up financing and focusing on low-carbon development in [key transport](#), agriculture and forestry, the world can get there.

Myth 7:

Climate models are unreliable.

- Climate skeptics have long argued that the **computer models** used to project climate change **are unreliable** at best and completely inaccurate at worst.
- But the IPCC, the world's leading scientific authority on climate change, says that over decades of development, these models have consistently provided "**a robust and unambiguous picture**" of planetary warming.
- Meanwhile, a 2020 study by the University of California showed that global warming models were largely accurate.
- The study looked at 17 models that were generated between 1970 and 2007 and found 14 of them closely matched observations.

Myth 8:


We do not need to worry about lowering greenhouse gas emissions. Humanity is inventive; we can just adapt to climate change.

- Some countries and communities can adapt to rising temperatures, lower precipitation and the other impacts of climate change.
- **But many cannot.**



Facts:

- Climate action can help alleviate the underlying drivers of conflict and fragility. For example, access to renewable energy can be a lifeline which supports clean water, light, warmth, and sustenance, as well as basic and emergency services.
- In 2022, renewable sources provided 29 percent of global electricity. With the right investments, electricity from renewable sources could provide 65 percent of the world's total electricity supply by 2030.
- Currently, only 7.2 percent of used materials are cycled back into our economies after use. This has a significant burden on the environment and contributes to the climate, biodiversity, and pollution crises. As a result, we currently need about 1.7 Earths to deliver on all the world's resource demands.



Climate action can help alleviate the underlying drivers of conflict and fragility. For example, access to renewable energy can be a lifeline which supports clean water, light, warmth, and sustenance, as well as basic and emergency services. It also powers local economic development, while setting countries on a sustainable development pathway to recovery.

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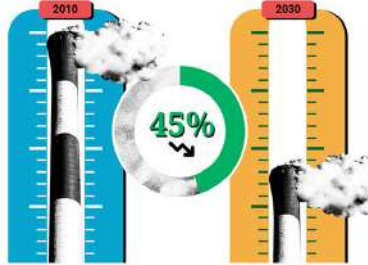
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Many studies and reports show that investments in climate action can yield results that dramatically outweigh the upfront costs. One [study by the World Bank](#) shows that an investment of US\$1 can yield, on average, \$4 in benefits.

To keep global warming below 1.5°C, the world's governments need to ensure that all greenhouse gas emissions peak by 2025, and reach net zero in the second half of this century. The IPCC has recommended to reduce CO₂ emissions globally by 45% before 2030 (compared to 2010 levels) and reach net zero by mid-century.

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Thank you!
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SESSION 4

Global and National Advances for Climate Interventions




Slide No.1



Global and National Advances for Climate Interventions

Resource Person



Slide No.2

Before Starting ...

Learning Outcomes


- List various advances for CC at global level
- State national initiatives relating to CC in WASH



Presentation Outline

- Intergovernmental Panel on Climate Change
- Impacts of IPCC
- Kyoto Protocol
- Paris Agreement
- COP 28
- UNFCCC





- Intergovernmental Panel on Climate Change : a corner-stone of climate science
- Established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) in 1988
- IPCC is an international body composed of hundreds of leading scientists from 195 countries.
- It aims to **provide a scientific view on climate change and its potential environmental and socioeconomic impacts.**

At the global level, knowledge on climate change and its impacts is monitored by the Intergovernmental Panel on Climate Change (IPCC), which was created in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP).

Thousands of scientists voluntarily contribute to the work of the IPCC in order to provide it with up-to-date scientific, technical and socio-economic knowledge on climate change.


FS Characterization: Physical Parameters

Temperature


- Commonly higher than that of wastewater due to biological activity
- Optimum temperature for bacterial activity is in the range of 25°C to 35°C
- High temperature (>40° or visible fumes in sample) indicates presence of industrial effluents

Color

- Determines freshness
- Black or dark brown = old FS
- Yellow/greenish = fresh FS



Yellowish/ Greenish



Black

Source: FSM Training, CDD Society

TSU – Technical Support Unit

IPCC- Role

1. Assessment of Scientific Evidence

- Primary function is to assess the scientific literature on climate change.
- It convenes working groups of experts to review and evaluate existing research,
- synthesizing the findings into comprehensive reports.

2. Policy Relevance

1. The IPCC's reports are designed to be policy-relevant.
2. They provide policymakers with clear and concise information about the scientific basis of climate change, its impacts, and potential future risks.

IPCC- Role

3. Consensus Building

- The IPCC fosters consensus among scientists from diverse backgrounds and disciplines.
- By convening experts and facilitating open discussions, the IPCC helps to build a shared understanding of climate science.

4. Policy Influence

- The IPCC's reports have had a profound impact on climate policy.
- They have provided the scientific foundation for international agreements such as the Paris Agreement and
- have influenced national climate policies around the world.

Reports of IPCC

- The IPCC has published several key reports that have shaped our understanding of climate change
- **Assessment Reports**
 - Provide a comprehensive overview of climate science, including the causes of climate change, its impacts, and potential future risks.
- **Special Reports**
 - Focus on specific topics, such as the physical science basis of climate change, the impacts of climate change on oceans and cryosphere, and the risks associated with 1.5°C global warming.
- **Methodology Reports**
 - Provide guidance on the methods used to assess climate change and its impacts.

Five evaluation reports have been published to date, the fifth of which was issued in 2014, and the next report is scheduled for 2022. The IPCC also publishes special interim reports.

Role of IPCC

- The IPCC has been instrumental in raising awareness of climate change and driving international action to address this global challenge.
- Its reports have provided the scientific evidence needed to inform policymakers and the public about the risks of climate change and the need for urgent action.

In summary,

- the IPCC plays a crucial role in assessing the scientific basis of climate change and its impacts.
- Its reports provide policymakers with the information they need to make informed decisions about climate mitigation and adaptation.
- Through its efforts, the IPCC has helped to shape the global response to climate change.

There are a number of international events and agreements that draw on the work of the IPCC and combine to form a climate action framework:

Impact of IPCC

- The report published by IPCC in 1990, gave a broad overview of climate change science and the [scientific consensus to date](#).
- It discussed uncertainties and provided evidence of warming.
- It said that greenhouse gases are increasing in the atmosphere because of human activity, which is resulting in more warming of the [Earth's](#) surface.
- The report led to the establishment of the United Nations Framework Convention on Climate Change (UNFCCC).

Discussion




3 groups

5-7 minutes

- Group 1: Role of IPCC
- Group 2: Reports of IPCC
- Group 3: Impact of IPCC
- Refer to the documents and present their discussion (may use slide at same time),
- wrap up by facilitator

Kyoto Protocol



The Kyoto Protocol

[kyō-(jō) 'prō-ta-jō]

An international agreement that called for industrialized nations to significantly reduce their greenhouse gas emissions.

Investopedia

Adopted in Kyoto, Japan, on 11 December 1997

- **Binding Emission Targets**
 - The Kyoto Protocol established legally binding emission reduction targets for developed countries.
- **First Commitments**
 - The first commitment period for the Kyoto Protocol ran from **2008-2012**, and the second commitment period ran from **2013-2020**.
- **Clean Development Mechanism (CDM)**
 - The Kyoto Protocol introduced the CDM, which allows **developed countries to earn carbon credits by investing in emission reduction projects in developing countries**

The Kyoto protocol implemented the objective of the UNFCCC to reduce the onset of global warming by reducing greenhouse gas concentrations in the atmosphere to a level that prevents dangerous human interference with the Earth's climate system.

Paris Agreement

THE AGREEMENT: BY THE NUMBERS

195 countries adopted the Paris Agreement at the 21st Conference of the Parties in December.

At the core of the Agreement:



We must keep global temperature rise this century to well below 2° Celsius
(that's 3.6° Fahrenheit).

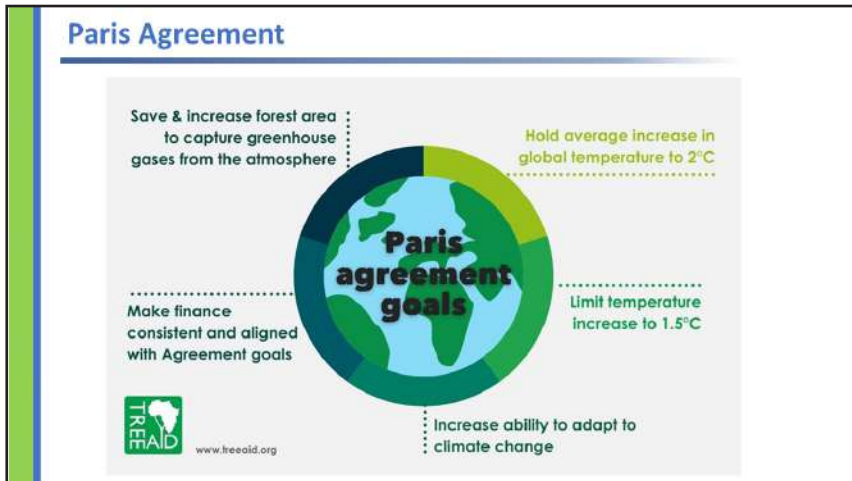


189 countries representing more than 99% of global emissions have submitted their intended Nationally Determined Contributions. These NDCs make up the heart of the Paris Agreement.



Countries must review and re-assess these pledges **every 5 years**, with "global stocktaking" starting in **2023**. Countries can't lower their targets - in fact, they are encouraged to raise their ambition and level of commitment with time.

Nationally Determined Contributions (NDCs): Each country submits its own NDCs outlining its intended nationally determined contributions to reducing greenhouse gas emissions. These contributions are voluntary but should represent a country's "highest possible ambition."



Paris Agreement

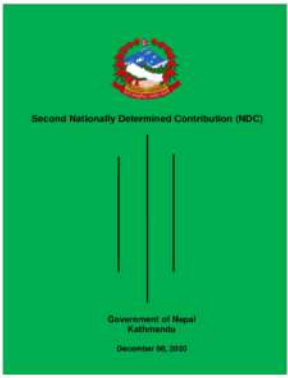
Key Goals and Commitments

- Global Temperature Limit
 - The agreement sets a long-term goal of keeping global temperature increase well below 2°C above pre-industrial levels and pursuing efforts to limit it to 1.5°C.
- Nationally Determined Contributions (NDCs)
 - Each country submits its own NDCs in which each country sets out its national mitigation and adaptation commitments
 - Countries are encouraged to submit updated and more ambitious contributions every 5 years

Nationally Determined Contributions (NDCs): Each country submits its own NDCs outlining its intended nationally determined contributions to reducing greenhouse gas emissions. These contributions are voluntary but should represent a country's "highest possible ambition."

Nationally Determined Contribution (NDC), Nepal

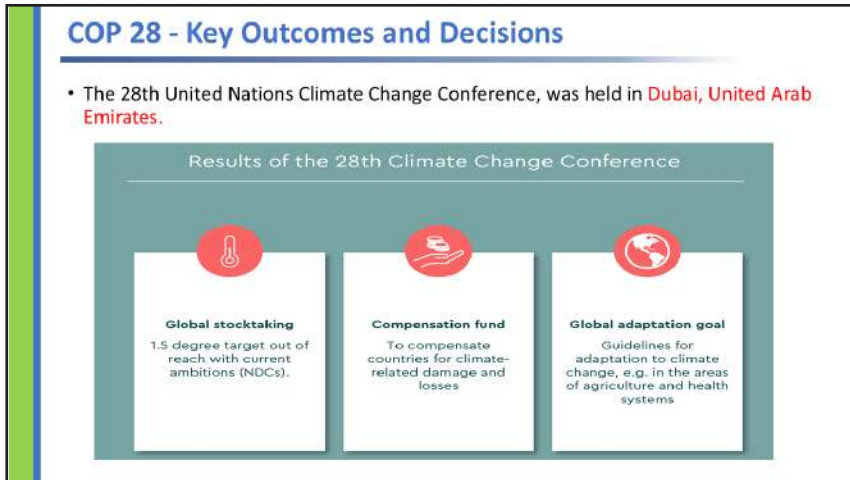
- Second Nationally Determined Contribution (NDC), Nepal
- The Government of Nepal hereby presents its **enhanced NDC under the Paris Agreement for the period 2021-2030**,
- following Articles 4.2 and 4.11 of the Paris Agreement, and Decision 1/CP.21 paragraph 23 and 24, and other relevant provisions of the Paris Agreement.
- The NDC takes into account the principle of common but differentiated responsibilities and respective capabilities, in light of national circumstances.



Paris Agreement

- **Global Stocktake**
 - Every five years, countries will conduct a global stocktake to assess collective progress towards achieving the agreement's goals. This process will inform future NDCs and enhance ambition over time.
- **Loss and Damage**
 - The Paris Agreement recognizes the importance of addressing loss and damage associated with climate change impacts, particularly for vulnerable countries.
 - By recognizing the need for enhanced international cooperation to address this issue.
- **Climate Finance**
 - Developed countries committed to providing climate finance to developing countries to help them mitigate and adapt to climate change


While the Paris Agreement does not establish a formal mechanism for providing financial compensation for loss and damage, it provides a framework for addressing this issue and encourages international cooperation. The establishment of the Loss and Damage Fund at COP 28 in Dubai represents a significant step forward in addressing this critical issue.



The 28th Conference of the Parties (COP 28) to the United Nations Framework Convention on Climate Change (UNFCCC), held in Dubai, UAE, from November 30 to December 13, 2023, marked a significant milestone in global climate action. The headline outcome of the conference was an agreement to “transition away from fossil fuels” as part of the global stocktake, the first COP text to mention a global shift away from using fossil fuels.

COP 28 - Key Outcomes and Decisions

- Global stocktake**
 - Progress assessment as the first global stocktake under the Paris agreement to **call on nations to transition away from fossil fuels**
- The stock-take highlighted the significant **ambition gap** between current emissions trajectories and the necessary **reductions to limit global warming to 1.5°C**.
- The agreement called for **increased ambition countries** to submit new or updated Nationally Determined Contributions (NDCs) well ahead of COP 30 in 2025, with a focus on enhancing ambition and addressing emissions gaps.




The 28th Conference of the Parties (COP 28) to the United Nations Framework Convention on Climate Change (UNFCCC), held in Dubai, UAE, from November 30 to December 13, 2023, marked a significant milestone in global climate action. The headline outcome of the conference was an agreement to “transition away from fossil fuels” as part of the global stocktake (PDF), the first COP text to mention a global shift away from using fossil fuels.

COP 28 - Key Outcomes and Decisions

Loss and Damage Fund

- The Loss and Damage Fund is a fund established at COP28 to help countries that are vulnerable to climate change.
- The fund was created to address the economic and non-economic losses and damages that countries face due to climate change.




“The 28th Conference of the Parties (COP 28) to the United Nations Framework Convention on Climate Change (UNFCCC), held in Dubai, UAE, from November 30 to December 13, 2023, marked a significant milestone in global climate action

COP 28 - Key Outcomes and Decisions

Transition Away from Fossil Fuels

- The transition away from fossil fuels is a global effort to reduce the use of fossil fuels and increase the use of renewable energy.
- The transition requires action on both the supply and demand sides of the fossil fuel value chain



The 28th Conference of the Parties (COP 28) to the United Nations Framework Convention on Climate Change (UNFCCC), held in Dubai, UAE, from November 30 to December 13, 2023, marked a significant milestone in global climate action.

Renewable energy and transitional fuels

A pledge signed by 118 countries to triple renewable energy capacity and double the global rate of energy efficiency by 2030.

“Transitional fuels” maintain energy security for the time being; This makes the use of climate-damaging liquefied petroleum gas acceptable (in developing countries).


“Transitional fuels” maintain energy security for the time being.

This makes the use of climate-damaging liquefied petroleum gas acceptable. This isn’t ideal, but in developing countries it is still a healthier and less polluting option for home cooking and heating than burning wood or other biomass.

COP 28 - Key Outcomes and Decisions

Adaptation and Resilience

- The agreement called for **enhanced adaptation action**, including strengthening early warning systems, protecting ecosystems, and developing climate-resilient infrastructure.
- There was a focus on promoting **climate-smart agriculture** practices to ensure food security and reduce vulnerability to climate change.




The image shows the COP28 logo, which features a stylized green tree growing out of a human hand. To the right of the tree, the text 'COP28' is written in large, bold letters, with 'UNITING THE WORLD TO TACKLE CLIMATE CHANGE' in smaller text below it.

Overall, COP 28 marked a significant step forward in global climate action. While the agreement did not achieve all the ambitious goals set out at the beginning of the conference, it represents a positive step towards addressing the urgent challenges posed by climate change.

COP 28 - Key Outcomes and Decisions

Just Transition

- The agreement **acknowledged the social and economic impacts** of the transition to a low-carbon economy and emphasized the need for a just transition that leaves no one behind.
- The decision called for providing **support to vulnerable communities** and workers affected by the transition, including through skills training and job creation programs.



The image shows a protestor holding a sign that reads 'END FOSSIL FUEL SAVE OUR PLANET AND OUR FUTURE'. In the background, a large banner for 'DUBAI 2023' is visible.

Overall, COP 28 marked a significant step forward in global climate action. While the agreement did not achieve all the ambitious goals set out at the beginning of the conference, it represents a positive step towards addressing the urgent challenges posed by climate change.

Other International Agreements Aligned with CC Adaptation

- The Sendai Framework for Disaster Risk Reduction (DRR) (2015-2030) calls for addressing climate change as one of the drivers of disaster risk (Article 13), and
- Shares a foundation of resilience building with the Paris Agreement.
- The process of developing policies and investing in climate adaption and
- DRR strategies have similar approaches, common challenges, and complementary advantages
- for governance, financing, information and data analysis, capacity development, and monitoring (UNDRR, 2021).

UNFCCC


- UNFCCC stands for United Nations Framework Convention on Climate Change
- It was adopted in 1992 at the Earth Summit in Rio de Janeiro.
- The objective of UNFCCC is to **stabilize greenhouse gas concentrations** in the atmosphere at a level that prevents dangerous human interference with the climate system.



Overall, the UNFCCC is a cornerstone of international efforts to address climate change. It provides a framework for global cooperation, sets ambitious goals, and supports countries in taking action to reduce greenhouse gas emissions and build resilience to the impacts of climate

UNFCCC

- It also states that "such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and enable economic development to proceed in a sustainable manner".



Overall, the UNFCCC is a cornerstone of international efforts to address climate change. It provides a framework for global cooperation, sets ambitious goals, and supports countries in taking action to reduce greenhouse gas emissions and build resilience to the impacts of climate change.

UNFCCC- Role

- The UNFCCC plays a central role in facilitating global cooperation on climate change.
- It provides a platform for countries to
 - negotiate agreements,
 - share information, and
 - build trust.
- The UNFCCC Secretariat, based in Bonn, Germany, supports the implementation of the treaty and its agreements.

Overall, the UNFCCC is a cornerstone of international efforts to address climate change. It provides a framework for global cooperation, sets ambitious goals, and supports countries in taking action to reduce greenhouse gas emissions and build resilience to the impacts of climate

Key Points about the UNFCCC

- **Global Treaty**
- **Climate Stabilization**
- **Framework for Cooperation**
- **Kyoto Protocol and Paris Agreement**



- **Global Treaty:** The UNFCCC is a legally binding international agreement that has been ratified by almost all countries in the world.
- **Climate Stabilization:** The treaty's ultimate goal is to prevent dangerous human-induced climate change by stabilizing greenhouse gas concentrations in the atmosphere.
- **Framework for Cooperation:** The UNFCCC provides a framework for international cooperation to address climate change, including through mitigation (reducing greenhouse gas emissions) and adaptation (adjusting to the impacts of climate change).


Kyoto Protocol and Paris Agreement

The UNFCCC has spawned several several important agreements, including the Kyoto Protocol (1997) and the Paris Agreement (2015).

Breaking slides

Nationally Determined Contributions (NDCs)

- NDCs, **are countries' self-defined national climate pledges** under the Paris Agreement,
- Detailing what they will do to **help meet the global goal** to pursue 1.5°C, **adapt to** climate impacts and **ensure sufficient finance** to support these efforts.
- NDCs represent **short- to medium-term plans** and are required to be **updated every five years** with increasingly higher ambition,
- These **voluntary national plans** outline each country's **intended contributions** to reducing greenhouse gas emissions and adapting to climate change.



NDCs represent short- to medium-term plans and are required to be updated every five years with increasingly higher ambition, based on each country's capabilities and capacities. Concrete progress is already being made towards achievement of the Paris Agreement, particularly in developing countries. For example, [pledges from African countries](#) are more robust than the global average in terms of explaining how targets will be achieved.

- NDCs represent **politically backed commitments by countries**.
- If used right, they could be our way out of tackling the world's current crises – not just the climate crisis, but other systemic problems like biodiversity loss and energy security as well.
- For more reference: https://youtu.be/_n2mXeP3wh4

Crucial instruments for countries to articulate their climate change commitments and targets under the Paris Agreement.

These voluntary national plans outline each country's intended contributions to reducing greenhouse gas emissions and adapting to climate change.


In Nepal ...in the past...

- **WASH sector focused more on Response**
- **Inaction within the WASH sector** was due to limited space it received under **the climate change agenda in Nepal**
- **Climate change was not treated as one of many sources of risk and uncertainty**, with the potential to impact WASH services delivery
- **Impacts on WASH services were also considered inadequately** and also only **from public health perspective** as one of the public health concerns
- **Projects defined in earlier NAP (2011)- only linked to Government regular program** but not from sector perspective

Existing climate and WASH established national and subnational priorities

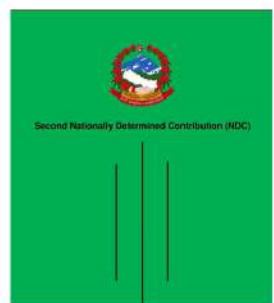
Key climate and WASH documents readily available

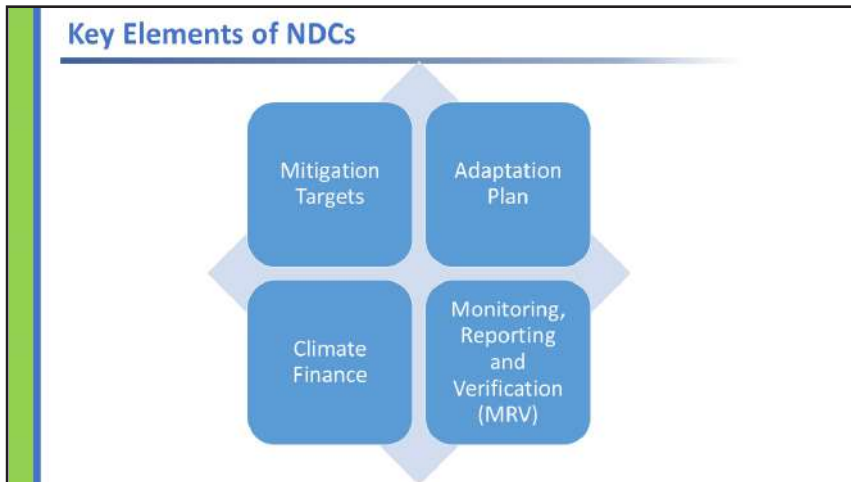
- National Communications to the UNFCCC
- Nationally Determined Contributions (NDCs)
- National Adaptation Plans (NAPs)
- Sector development Plan
- WASH Climate Rationale
- Joint Sector Review Report



Nationally Determined Contributions (NDCs)

- **Significance of NDCs**
 - NDCs are essential for achieving the Paris Agreement's goals and addressing the global climate crisis.
 - They provide a framework for countries to take action at the national level, while also contributing to global efforts to reduce greenhouse gas emissions and build resilience to climate change.
 - As countries continue to update and enhance their NDCs, it is expected that global ambition and action on climate change will continue to grow.

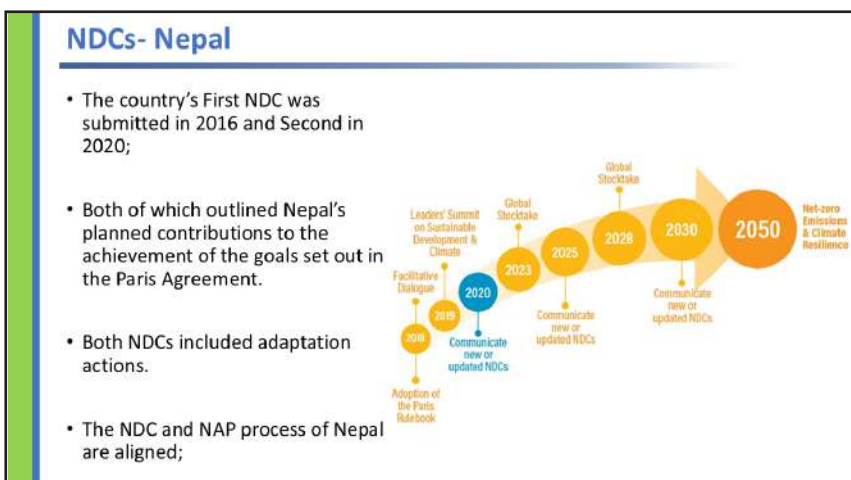




- **Mitigation Targets:** Countries set targets for reducing greenhouse gas emissions, often expressed in terms of emissions reductions compared to a baseline year.
- **Adaptation Plans:** Countries outline their plans for adapting to the impacts of climate change, such as building resilience to extreme weather events, protecting vulnerable communities, and conserving ecosystems.
- **Climate Finance:** Developed countries may include commitments to provide climate finance to support developing countries in their mitigation and adaptation efforts.

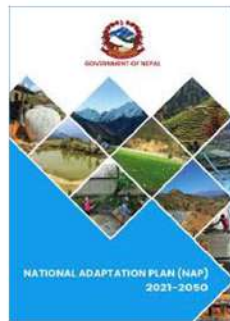
Monitoring, Reporting, and Verification (MRV):

Countries outline their plans for monitoring, reporting, and verifying their progress in implementing their NDCs.



National Adaptation Plans (NAPs)

- NAPs are comprehensive **medium and long-term strategies** that outline
 - how a nation will adapt to the changing climate and
 - reduce its vulnerability to climate-related risks.
- NAPs are also crucial because they enable countries to
 - systematically assess their vulnerability to climate change,
 - identify adaptation needs and
 - design effective strategies to build resilience.
- Notably, these plans link closely to NDCs and other national and sectoral policies and programs.



Often, countries will **focus** their NAPs on **key sectors** that contribute to their economy, food security and natural resources.

NAPs are a way for countries to prioritize their adaptation efforts, integrating climate considerations into their national policies and development plans, and mobilizing the required finance by supporting the development of effective financing strategies and directing investments.

Source: <https://climatepromise.undp.org/news-and-stories/what-climate-change-adaptation-and-why-it-crucial#:~:text=Climate%20change%20adaptation%20refers%20to,change%20like%20weather%20extremes%20and>

National Adaptation Plan- Nepal

- The **objectives** of NAP are:
 - To **reduce vulnerability** to the impacts of climate change, **by building adaptive capacity and resilience.**
 - To **facilitate the integration of climate change adaptation**, in a coherent manner, into relevant new and existing policies, programs and activities, in particular development planning processes and strategies, within all relevant sectors and at different levels, as appropriate (UNFCCC, 2012)
- The plan sets out long-term adaptation strategic goals to 2050, as well as medium-term priority programs to 2040 and short-term priority actions to 2030.

The Nepal NAP aims to achieve the objectives of the NAP process that have been agreed under the UNFCCC.

NAP- Nepal

Vision

- To **contribute to the socio-economic prosperity** of the nation by building a climate-resilient society
- and **reducing the risk of climate change impacts** on people and ecosystems through
- the **integration of adaptation** across sectors and levels of government.

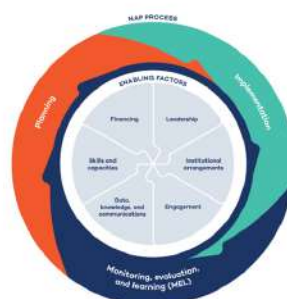


NAP- Nepal

Goals

The over-arching goals are informed by the National Climate Change Policy (NCCP) 2019, and the Nepal NAP aims to:

- **Build the adaptive capacity and resilience** of key natural, social, and economic sectors vulnerable to and at risk of climate change, and service providers.
- **Integrate climate change issues** into policies, strategies, plans, and programmes of all sectors and at local, provincial, and federal levels emphasizing Gender Equality, Social Inclusion, Livelihood and Governance (GESILG) concerns.
- **Ensure equitable resource mobilization and distribution** of resources for climate change adaptation through national and international financing, research, technology, and extension services related to climate change adaptation.



NAP- Nepal

- 9 Priority areas

1. Agriculture and Food Security (AFS)
2. **Forests, Biodiversity and Watershed Conservation (FBWC)**
3. **Water Resources and Energy (WRE)**
4. Rural and Urban Settlements (RUS)
5. Industry, Transport and Physical Infrastructure (ITPI)
6. Tourism, Natural and Cultural Heritage (TNCH)
7. **Health, Drinking Water and Sanitation (HDWS)**
8. **Disaster Risk Reduction and Management (DRRM)**
9. Gender Equality and Social Inclusion (GESI), Livelihood and Governance (GESILG)

Thank you!
धन्यवाद !

In Partnership of



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SESSION 5

Climate Actions in WASH



Slide No.1



Climate Action in WASH


Resource Person



Slide No. 2


Learning Outcomes

- Discuss climate action along with mission statement of SDG 13 and its targets
- Discuss examples of climate action related to WASH




Presentation Outline

- Climate Action (SDG 13)
- Mitigation
- Adaptation
- Resilience

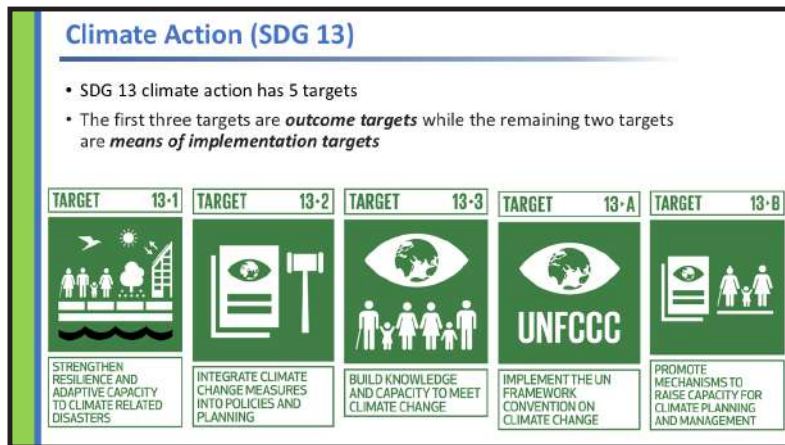
A stylized illustration of a person with an orange head and green body standing next to a white presentation board on a tripod stand. The board has several horizontal lines representing text.

Climate Action (SDG 13)

- **Climate action** refers to the efforts taken to address climate change.
- **Climate Action** was adopted by the United Nations General Assembly in 2015 as part of the SDGs.
- **SDG 13 is to limit and adapt to climate change.**
- SDG 13 goal: **"Take urgent action to combat climate change and its impacts"**
- SDG 13 provides a framework for addressing the crisis and building a more sustainable future.

The SDG 13 Climate Action icon, which is a green square with a white circle in the center containing a stylized Earth. The number '13' and the words 'CLIMATE ACTION' are written in white on the green background.

Now [climate scientists have concluded](#) that we must limit global warming to [1.5 degrees Celsius](#) by 2040 if we are to avoid a future in which everyday life around the world is marked by its worst, most devastating effects, hence the climate action. In summary, climate change is the problem, and climate action is the solution.



Target 13.1: Strengthen resilience and adaptive capacity to climate-related disasters (3 indicators)

Target 13.2: Integrate climate change measures into policy and planning (2 indicators)

Target 13.3: Build knowledge and capacity to meet climate change (2 indicators)

Target 13.a: Implement the UN Framework Convention on Climate Change

Target 13.b: Promote mechanisms to raise capacity for planning and management

Target 13.1 has 3 indicators.

- Indicator 13.1.1: “Number of deaths, missing people and directly affected people attributed to disasters per 100,000 population”
- Indicator 13.1.2: “Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015–2030”
- Indicator 13.1.3: “Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies”

Target 13.2 has two indicators:

- Indicator 13.2.1: “Number of countries with [nationally determined contributions](#), long-term strategies, [national adaptation plans](#), strategies as reported in adaptation communications and national communications”. [13]
- Indicator 13.2.2: “[Total greenhouse gas emissions per year](#)”

Target 13.3 has 2 indicators

- Indicator 13.3.1: “The extent to which (i) [global citizenship education](#) and (ii) education for [sustainable development](#) are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment”
- Indicator 13.3.2: “Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions”

Target 13.a has one indicator:


- Indicator 13.a is the “Amounts provided and mobilized in United States dollars per year in relation to the continued existing collective mobilization goal of the \$100 billion commitment through to 2025”.

Target 13.b has one indicator:

- Indicator 13.b.1 is the “Number of [least developed countries](#) and [small island developing states](#) with nationally determined contributions, long-term strategies, national adaptation plans, strategies as reported in adaptation communications and national communications”.

Climate Action (SDG 13)- Primary Rationale

- Urgent need to address the global climate crisis.
 - Scientific Consensus
 - Global Impacts
 - Interconnectedness
 - Equity and Justice
 - Urgency



Here are some key points that underpinned the discussion and rationale for SDG 13. These factors led to the recognition that climate change is a global challenge that requires urgent and coordinated action from all countries.

Urgent need to address the global climate crisis.

Scientific Consensus: The overwhelming consensus among scientists is that climate change is real, primarily caused by human activities, and has significant impacts on our planet.

Global Impacts: Climate change poses a serious threat to sustainable development, affecting areas such as food security, water availability, health, and economic growth.

Interconnectedness: Climate change is interconnected with other SDGs, making it a critical aspect of achieving sustainable development.

Equity and Justice: Climate change disproportionately affects vulnerable populations, particularly those in developing countries, raising concerns about social justice and equity.

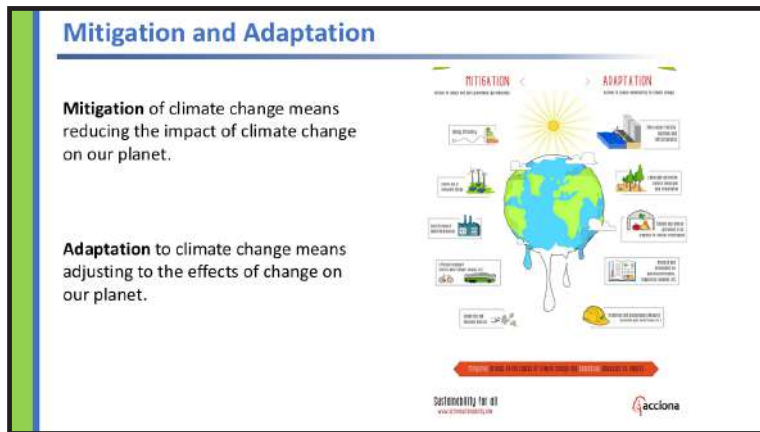
Urgency: The impacts of climate change are already being felt, and the window of opportunity to take effective action is closing rapidly

Climate Action

- Mitigation
- Adaptation
- Resilience



[Mitigation Adaptation and Climate Resilience](#)



Mitigation of climate change means reducing the impact of climate change on our planet.

It involves human intervention to reduce the concentration of greenhouse gases in the atmosphere.

This an essential step in reaching net-zero and keeping global temperature increase below 1.5°C.

Examples:

These are some of the **mitigation measures** that can be taken to **avoid the increase of pollutant emissions**:

- Practice Energy efficiency
- Greater use of renewable energy
- Electrification of industrial processes
- Efficient means of transport implementation: electric public transport, bicycle, shared cars ...
- Carbon tax and emissions markets

Adaptation to climate change means adjusting to the effects of change on our planet. It involves understanding the adverse effects of climate change and taking action to prepare for, adapt to and minimise those effects.

It might also refer taking advantage of benefits arising from climate change.

In short, it's adapting to a new reality.

Examples:

In terms of **adaptation measures**, there are several actions that help **reducing vulnerability to the consequences of climate change**:

- More secure facility locations and infrastructures
- Landscape restoration (natural landscape) and reforestation
- Flexible and diverse cultivation to be prepared for natural catastrophes
- Research and development on possible catastrophes, temperature behavior, etc.
- Preventive and precautionary measures (evacuation plans, health issues, etc.)

Mitigation- Examples

- It includes all actions which remove or reduce greenhouse gas emissions, including:
 - transitioning to low carbon sources of energy;
 - using emerging technologies to reduce or remove carbon dioxide from the atmosphere;
 - protecting natural carbon sinks, such as forests and oceans, which remove carbon dioxide from the atmosphere; and
 - behaviour change to reduce our collective carbon footprint, such as using locally sourced materials and changing the way we travel.

Adaptation- Examples

- Examples of adaptation action include:
 - constructing defences against sea level rise;
 - taking action to protect buildings and infrastructure from slow and rapid onset weather events;
 - diversifying crops in farming and food production to reflect the warmer, colder or wetter conditions; and
 - behaviour change to adjust to the effects of climate change, such as reducing food waste.

Resilience

- Resilience to climate change means preparing for the impacts of climate change and building capacity to recover quickly from those impacts.
- Climate change resilience describes the ability and capacity to foresee and manage the adverse effects of climate.

Building Climate Resilience

Mitigation
Reducing greenhouse gas emissions to slow climate change

- Energy efficiency
- Clean energy
- Sustainable transportation

Adaptation
Managing risks of climate change impacts

- Education
- Collaboration
- Policy
- Infrastructure Upgrades
- Flood Protection
- Hazard Mitigation Planning

It's often conflated with adaptation, and whilst it is related it is distinct. Whilst adaptation is the process of “adjust[ing] to the actual or expected climate and its effects”, resilience is the actual capacity to prepare for these effects, particularly the capacity to ‘bounce back’ from dangerous climate-related events.

Resilience- Examples

- Examples to increase climate resilience:
 - development of early warning systems to predict and monitor hazardous events including extreme weather events;
 - increasing green spaces in urban areas to increase flood absorption capacity; and
 - planting trees to help manage extreme heat in urban areas.

Thank you!
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SESSION 6

Sanitation System and Latrine





Sanitation System and Latrine

Resource Person



Sanitation

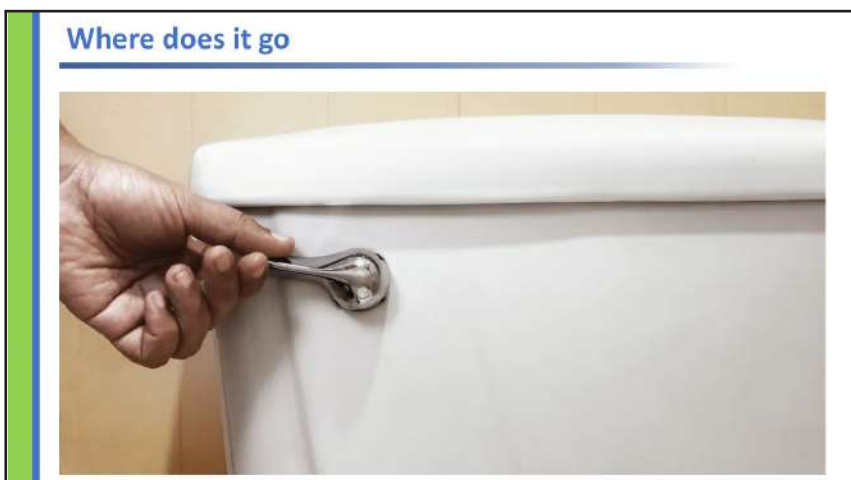
Sanitation is the hygienic means of promoting health through prevention of human contact with the hazard of wastes as well as the treatment and proper disposal of waste, sewage or wastewater.



Slide No.3



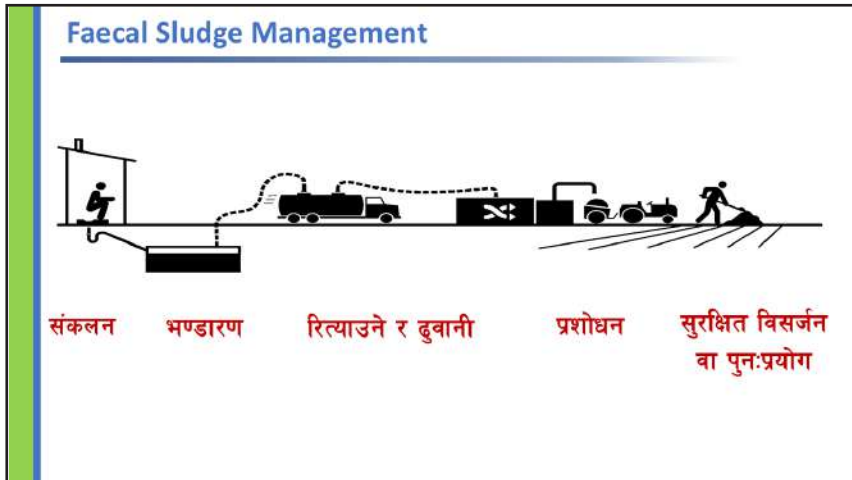
Slide No.4





Any significant difference?





Slide No. 9



Slide No. 10

Thank you!
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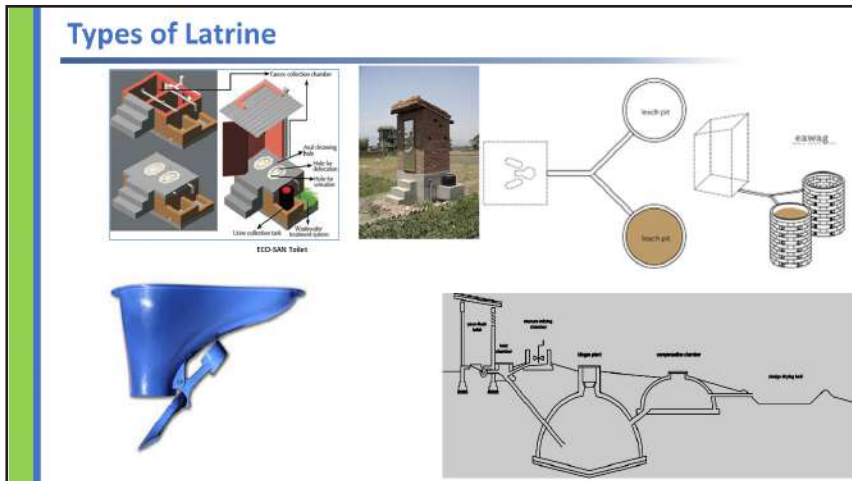
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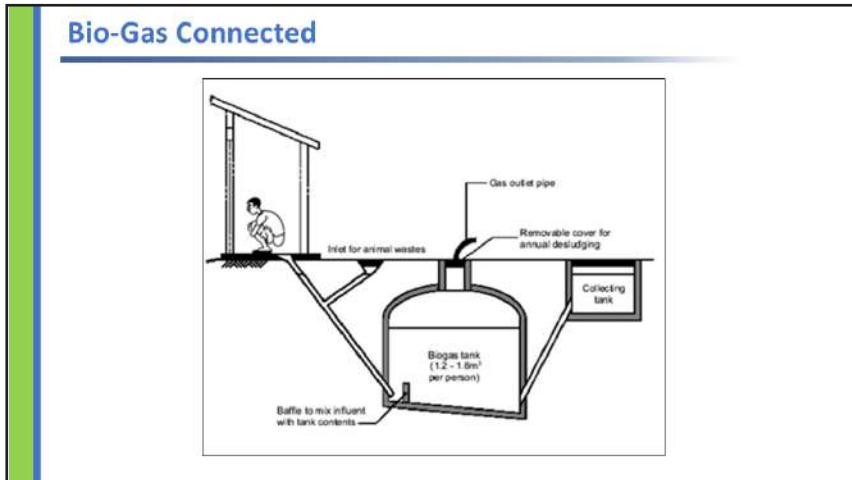


Types of latrines that could be of help during the climate crisis



Eco-San toilet are one of the good option of toilet for the water scarce area as this toilet does not use water to flush, instead turns waste into compost, leaving no space for creation of GHGs, contributing to CC.

These types of toilet is also good for flood prone area where the holding tanks are above the ground level.



This type of toilet produces methane gas, which is then used as alternative source of energy, again leaving no space for emission of GHGs in the atmosphere.



This too is an option for the omission of GHGs from the decomposition of fecal sludge. As the waste is collected in a chamber and is not opened till the whole process of decomposition, leaving no space for GHG emission.



A technology suitable for the water scarce areas, as this does not need water to flush, as this is designed with unique technique.



SESSION 12

Planning and Implementation



Slide No. 1



Planning and Implementation

Resource Person




Slide No. 2

Before Starting ...

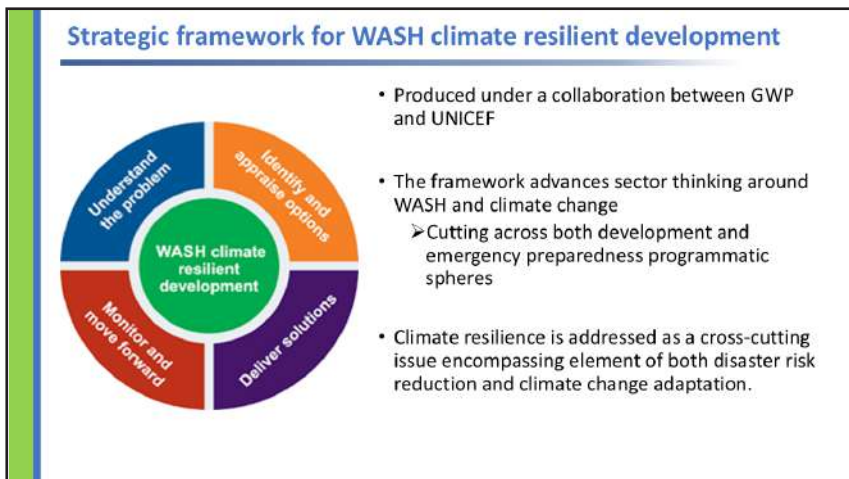
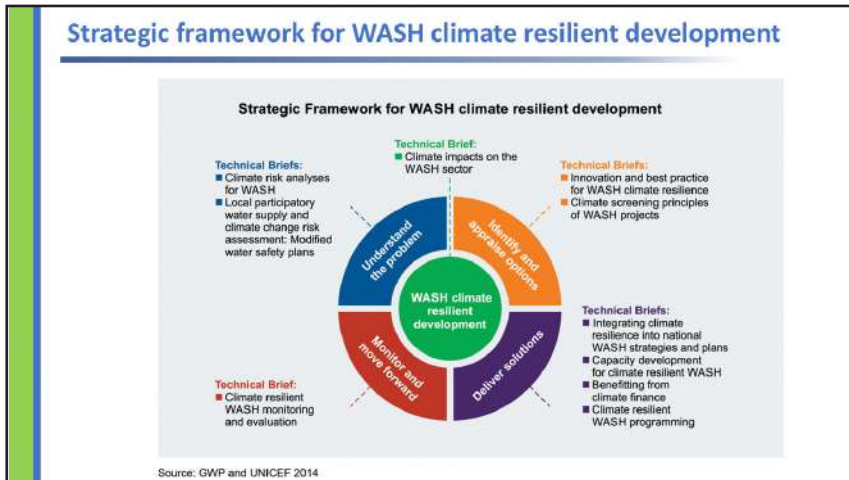
Learning Outcomes

1. Explain strategic framework for WASH climate resilient development
2. Draw WASH interventions in each quadrants of strategic framework

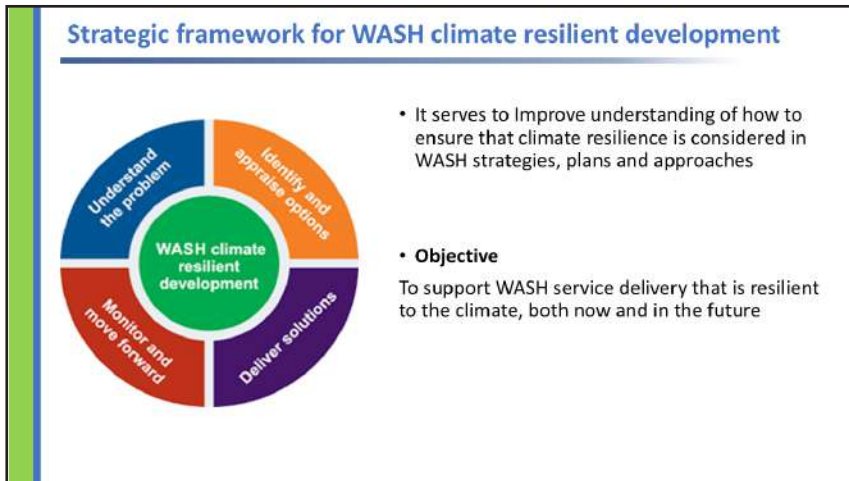


Presentation Outline

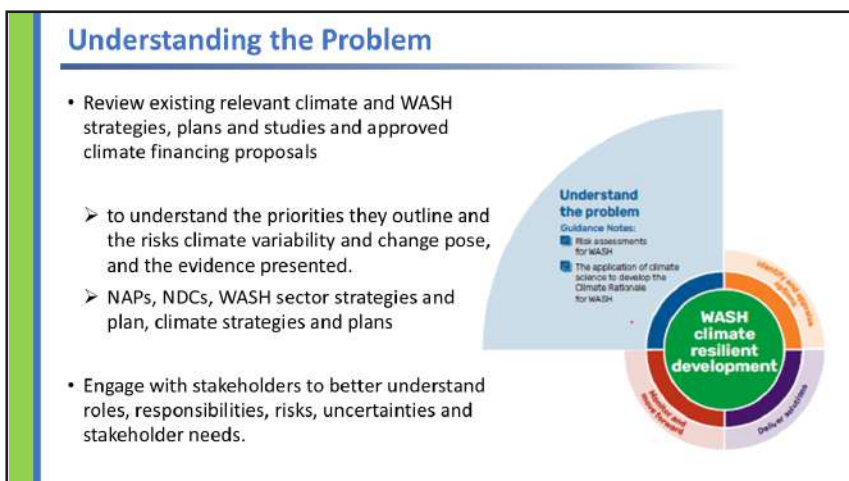
- Strategic framework for WASH climate resilient development
- Factors to consider in monitoring climate resilience
- Simplified Results Framework



It serves to set out the rationale and concepts for WASH climate resilient development, as well as
 Improve understanding of how to ensure that climate resilience is considered in WASH strategies, plans and approaches



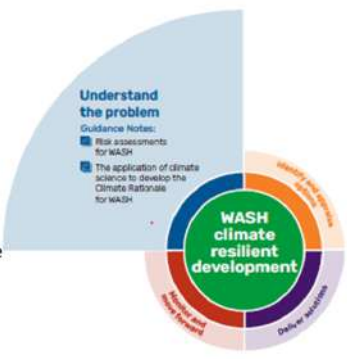
It serves to set out the rationale and concepts for WASH climate resilient development, as well as improve understanding of how to ensure that climate resilience is considered in WASH strategies, plans and approaches



This phase of the Framework covers the various elements that help to understand the enabling environment conducive to climate resilient WASH, as well as the risks climate change poses to WASH service delivery.

Understanding the Problem

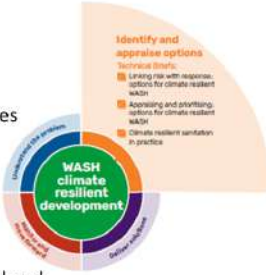
- Identify and understand climate hazards, vulnerabilities and exposure, and existing capacities to respond to these.
- Conduct a climate financing analysis
 - to understand what has been funded by whom
 - the types of projects that have accessed climate financing,
 - for an understanding of the potential to use climate finance as a co-financing option,
 - the gaps in the sector.



This phase of the Framework covers the various elements that help to understand the enabling environment conducive to climate resilient WASH, as well as the risks climate change poses to WASH service delivery.

Identify and Appraise Options

- The emphasis should be on finding options
 - that increase resilience to CC and
 - that offer a low carbon option
- Work with different groups of stakeholders
 - to identify alternative designs or management practices
 - that may enable them to better cope with climate variability and change.
- Screening to rank and prioritize options for different groups is an important step
 - to ensure the most appropriate ones are implemented and
 - do not make the situation worse for any given group of people.



Deliver Solutions


- Integration of options into key climate and WASH strategies and plans is important to ensure climate resilience in the WASH sector
- Effective institutional coordination across multi-level WASH governance structures which can influence or impact climate vulnerability and resilience.
- Carefully targeted programmes to strengthen the capacity of WASH professionals to address climate uncertainties.
- Develop sustainable financing and investment strategies.



- Integration of options into key climate and WASH strategies and plans is important to ensure climate resilience in the WASH sector benefit from established mechanisms and allocations for implementation.
- Effective institutional coordination across multi-level WASH governance structures will be required, as will the coordination with other sectors which can influence or impact climate vulnerability and resilience.
- Carefully targeted programmes to strengthen the capacity of WASH professionals to address short-, medium- and long-term climate uncertainties will be required at all levels.
- It is important to develop sustainable financing and investment strategies.

Monitor and Move Forward

- To scale-up CC mitigation and adaptation and increased resources from climate funds, evidence is important which reflect **implementation is contributing to an increase in climate resilience and reduced emissions.**
- Monitoring in WASH climate resilience requires **SMART indicators to assess progress towards specific targets and objectives.**
- Shared learning support to speed up and scale-up reliable and affordable responses to address climate risks.




In the context of scaling-up for climate change mitigation and adaptation and increased resources from climate funds, it is becoming increasingly important to provide evidence that implementation is contributing to an increase in climate resilience and reduced emissions.

Monitoring in the context of WASH climate resilience requires SMART indicators to assess progress towards specific targets and objectives.

Shared learning has the potential to speed up and scale-up reliable and affordable responses to address climate risks.

Factors to consider in monitoring climate resilience

- Predicting local climate changes and their effects is difficult.
- Data comparison is invalid when baselines and contexts shift.
- Generic indicators for monitoring resilience are lacking due to varying contexts.
- Resilience measures are complex and multi-sectoral, requiring modified monitoring approaches.
- Basic concept definitions and specialized terms can vary between agencies.



Uncertainty about how and when changes in climate will occur and what effects there will be, particularly at a local level.

Baselines shift and contexts change, meaning that comparison of data before and following the implementation of climate resilient development measures loses its validity.

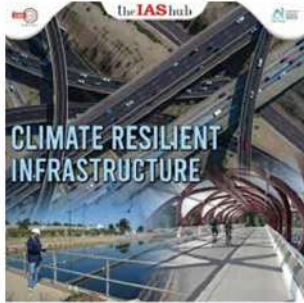
There is a lack of generic indicators that can be widely used in monitoring because resilience has to be grounded in the context, scale, sector and nature of the measure, all of which vary.

Monitoring and evaluation normally look to demonstrate the attribution of changes to a specific measure. However, resilience and the implementation of measures is complex and often multi-sectoral, meaning that a modified approach to monitoring is required.

Definitions of basic concepts may vary between agencies, while more specialised terms may only be well understood by one particular agency.

Simplified Results Framework

- **At the national level**
- **Sub-national level:** Monitor and manage water resources considering climate risks to WASH services and infrastructure.
- **Local/project level:** Identify climate-resilient WASH solutions to ensure resilient infrastructure, services, governance, and behavioral change.



Sub-national level: Monitor and manage water resources considering climate risks to WASH services and infrastructure.

Local/project level: Identify climate-resilient WASH solutions to ensure resilient infrastructure, services, governance, and behavioral change.

Simplified Results Framework

Outcome	WASH infrastructure, services and behaviors are sustainable, safe and resilient to climate related risks; WASH contributes to building community resilience to climate change, and a low carbon sector			
Intermediate Outcome	NATIONAL AND TRANSBOUNDARY	SUB-NATIONAL LEVEL AND WATERSHED LEVEL	LOCAL AND PROJECT LEVEL	
	An ENABLING ENVIRONMENT conducive to climate resilient WASH services and communities	Water resources are MONITORED and MANAGED through WRM considering climate risks to WASH Services, Infrastructures and community exposure	ACCESS to climate resilient WASH infrastructure and services	Climate resilient BEHAVIORAL CHANGE and GOVERNANCE at community and local level
Output	Strengthen WASH sector enabling environment	Build water resource monitoring and management capacity	Support climate smart infrastructure and technologies	Support institutional reform and behavior change

Strengthen WASH sector enabling environment

- 1.1 Knowledge of climate risks generated and shared
- 1.2 Climate risk informed policies, strategies, plans and programmes and WASH informed climate plans and strategies
- 1.3 Adequate budget and resources allocated
- 1.4 Gender-sensitive plans implemented and monitored
- 1.5 Inter-sectoral coordination strengthened with focus on health, food security and education sectors
- 1.6 Strengthened Early Warning Systems in place



Build water resource monitoring and management capacity

- 2.1 Water resource status and pressures understood (e.g. Water Atlas or a National Water Resources Management Plan)
- 2.2 Long-term monitoring systems implemented and maintained
- 2.3 Guidelines developed prioritizing gender-sensitive climate resilient WASH services and accounting for hydrological change
- 2.4 Agreed mechanisms implemented for resource development and adaptive management

Support climate smart infrastructure and technologies

- 3.1** Project design and implementation of WASH standards strengthened
- 3.2** Water storage enhanced and protected
- 3.3** Water supplies diversified (including multiple use schemes) where possible (and where resources permit)
- 3.4** Climate smart technologies (low and no-regrets options) for WASH investigated and implemented

Support institutional reform and behavior change

- 4.1** Capacities and resources of local government and local private sector to implement and monitor gender-sensitive resilient WASH programming strengthened
- 4.2** Awareness and capacity of communities to respond to shocks and stresses is enhanced
- 4.3** Local markets and supply chains extended and deepened to increase availability of climate resilient WASH Services and technologies
- 4.4** Early warning and response systems strengthened

Example of Implementation

- Country: India
- Project: Hourly drought predictions in India
- Funded by: Government of Maharashtra and UNICEF
- Description:
 - In Maharashtra, **groundwater is the main source of drinking water** in nearly 85 percent of rural areas, with populations depending heavily on **boreholes or wells** to meet their domestic water needs. However, with **more acute droughts** and **sharp seasonal reductions** in water levels, hundreds of thousands of **wells have run dry** in the past two decades.
 - To **mitigate the impact** of this, support has been provided to the Government of Maharashtra **to improve the processes for predicting droughts and water availability**.
 - **A model** that could predict the **probability of droughts** occurring in a particular year based on the start date of a monsoon was developed and tested in the Chandrapur district.

Among many examples of programmes and projects that seek to increase climate resilience in the WASH sector, here is an example of India which illustrate a way in which funds can be invested and how climate resilience can draw on a simple measure.

Thank you!
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