ENPHO
Creating Eco Societies

CAWST
Centre for Affordable Water and Sanitation Technology

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 presener 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

ENPHO
Creating Eco Societies

Slide No. 2

Learning Outcomes

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

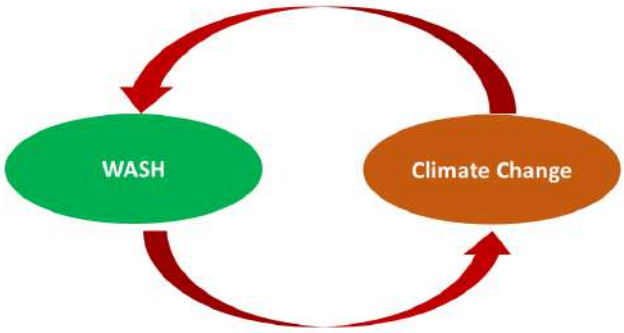
Slide No. 3

Presentation Outline

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

Slide No. 4

Interlinkage between WASH and Climate Change



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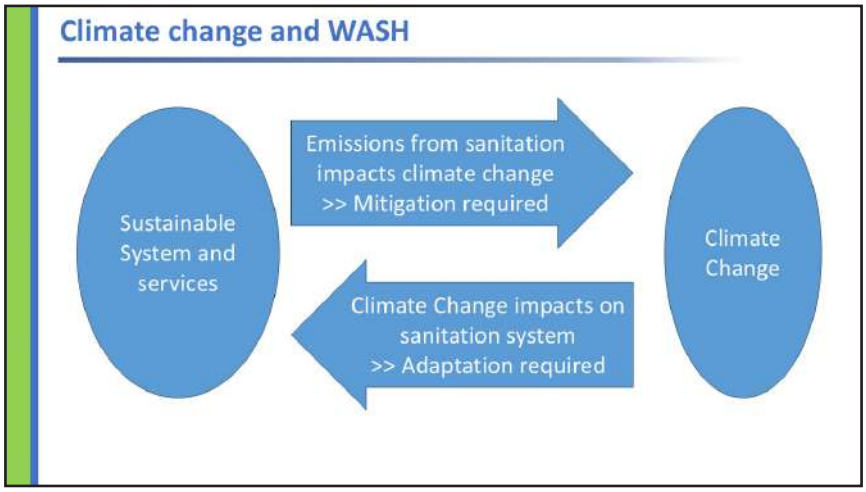

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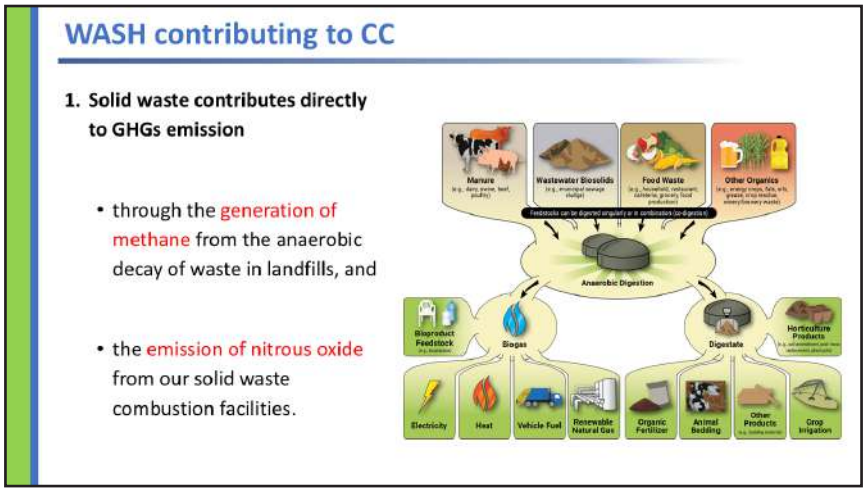


Slide No.-7

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.

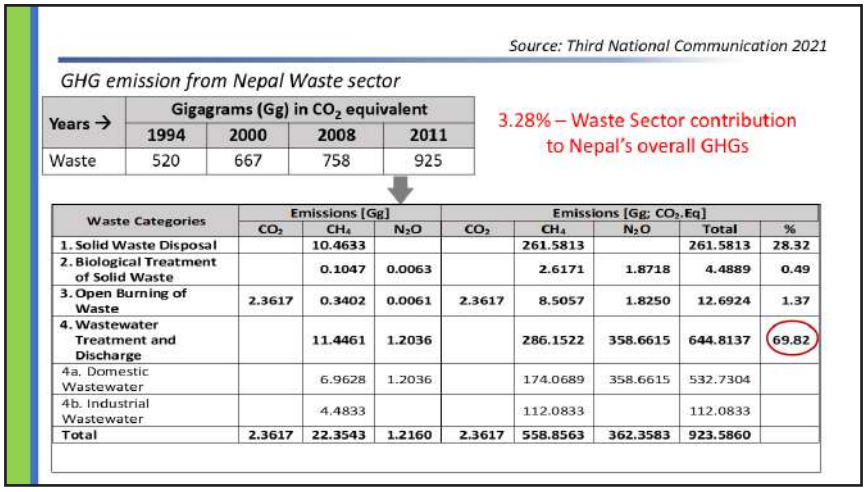
Slide No.-8

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.

Slide No. 9



Source: Third National Communication 2021

GHG emission from Nepal Waste sector

Years →	Gigagrams (Gg) in CO_2 equivalent			
	1994	2000	2008	2011
Waste	520	667	758	925

3.28% – Waste Sector contribution to Nepal's overall GHGs

Waste Categories	Emissions [Gg]			Emissions [Gg; CO_2.Eq]				
	CO_2	CH_4	N_2O	CO_2	CH_4	N_2O	Total	%
1. Solid Waste Disposal		10.4633			261.5813		261.5813	28.32
2. Biological Treatment of Solid Waste		0.1047	0.0063		2.6171	1.8718	4.4889	0.49
3. Open Burning of Waste	2.3617	0.3402	0.0061	2.3617	8.5057	1.8250	12.6924	1.37
4. Wastewater Treatment and Discharge		11.4461	1.2036		286.1522	358.6615	644.8137	69.82
4a. Domestic Wastewater		6.9628	1.2036		174.0689	358.6615	532.7304	
4b. Industrial Wastewater		4.4833			112.0833		112.0833	
Total	2.3617	22.3543	1.2160	2.3617	558.8563	362.3583	923.5860	

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

Slide No.10

Climate change and Sanitation

Green house gas emission from containment system

Green house gas emission from desludging and transportation of faecal sludge for disposal

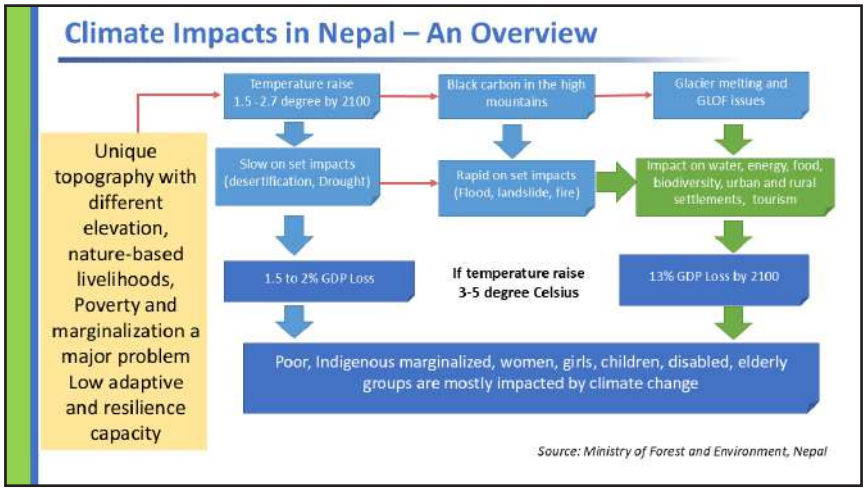
Green house gas emission from haphazard disposal of fecal sludge

CO_2 CO_2 CO_2

70% Nepal Waste sector's GHG emission is associated with the wastewater management (TNC,2020)

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

Slide No. 11



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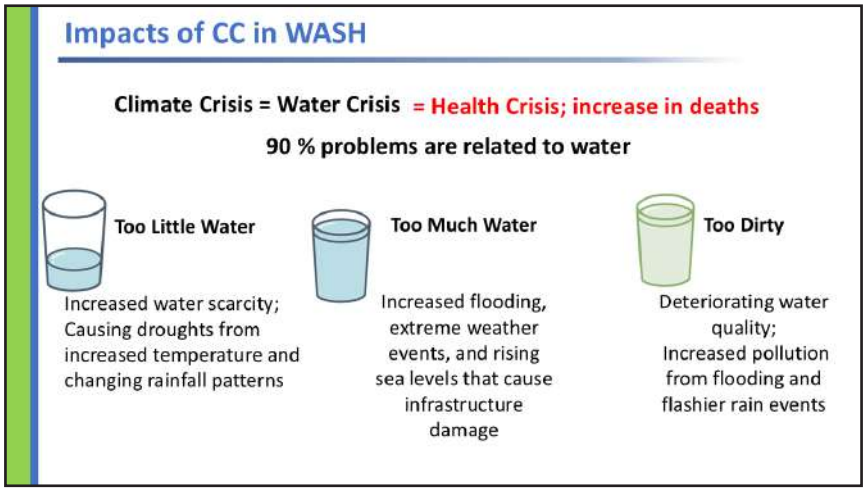
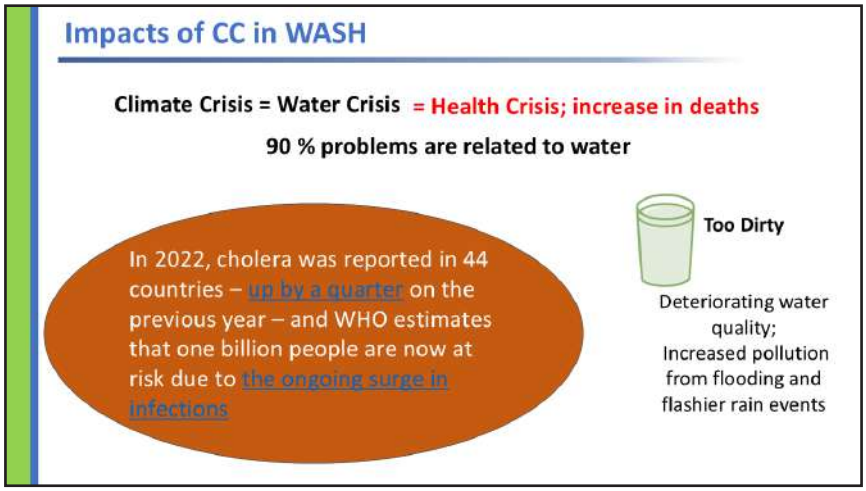


- Increased water insecurity and limited access to WASH due to climate impacts will also contribute to a health crisis, and an increase in the deaths
- In 2022, cholera was reported in 44 countries –up by a quarter on the previous year – and WHO estimates that one billion people are now at risk due to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

Slide No.. 13



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- 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.

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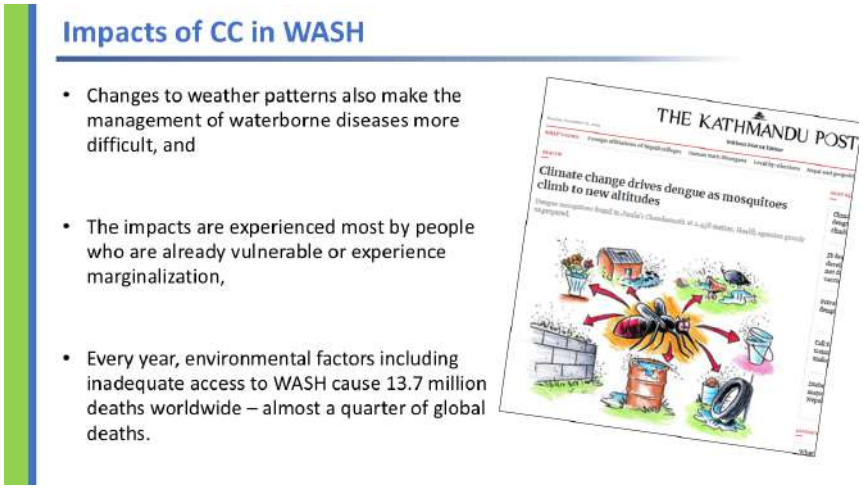

Changes to weather patterns also make the management of waterborne diseases more difficult, and the impacts are experienced most by people who are already vulnerable or experience marginalisation, such as those living in informal settlements and underserved rural areas, and women and girls who face greater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

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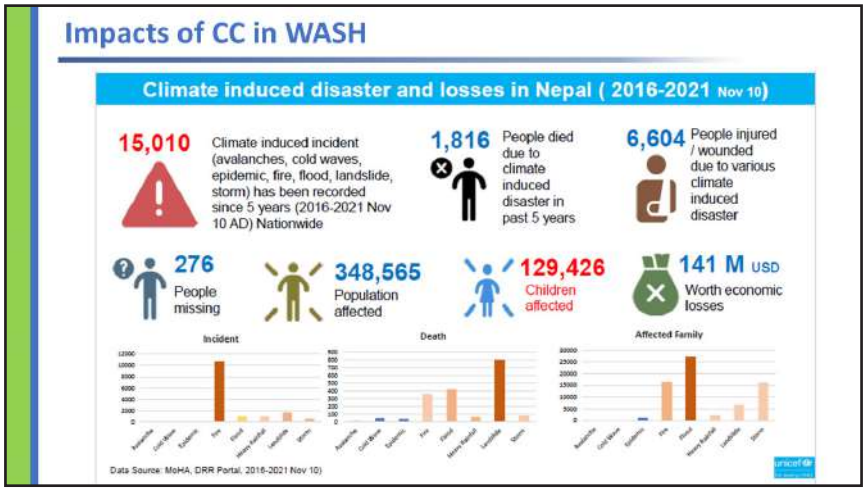

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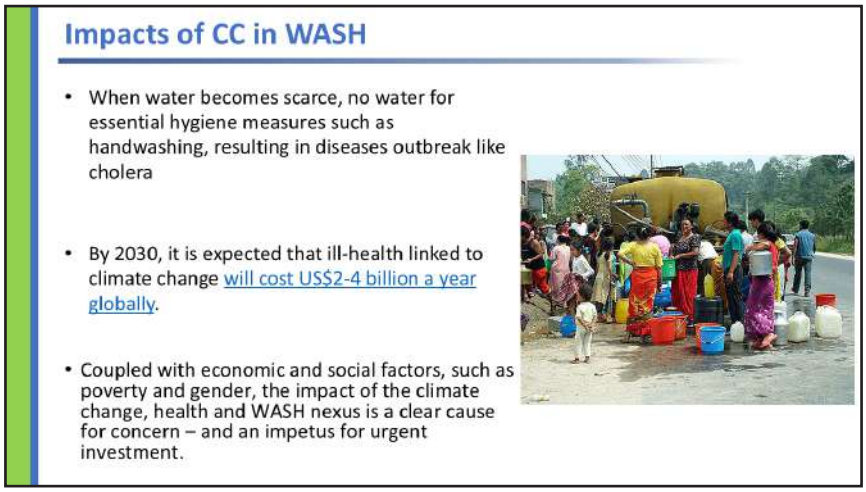

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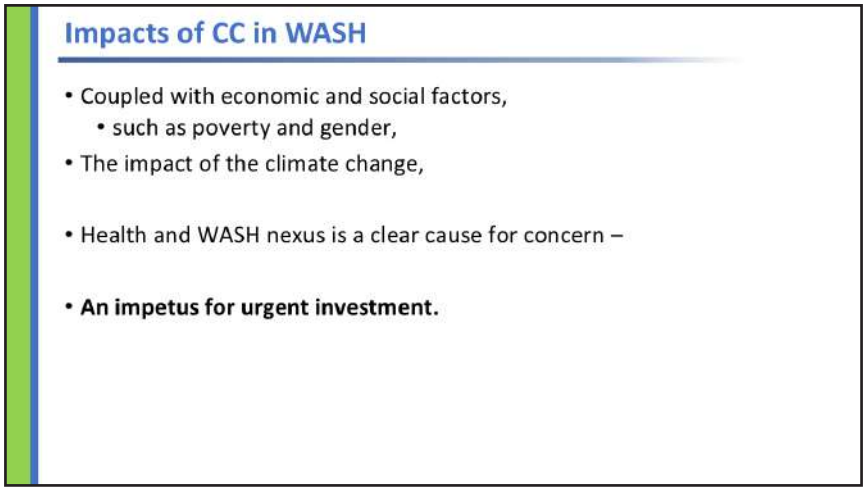
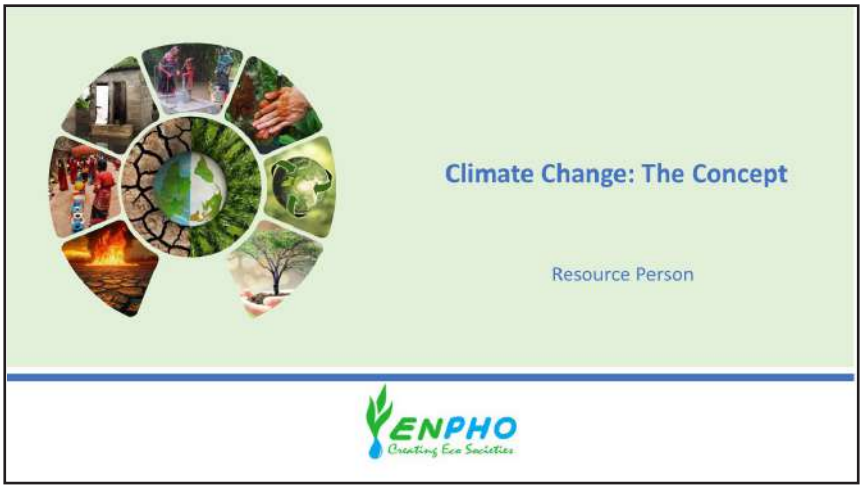


Slide No.18

SESSION 3

Climate Change: The Concept

Slide No. 1



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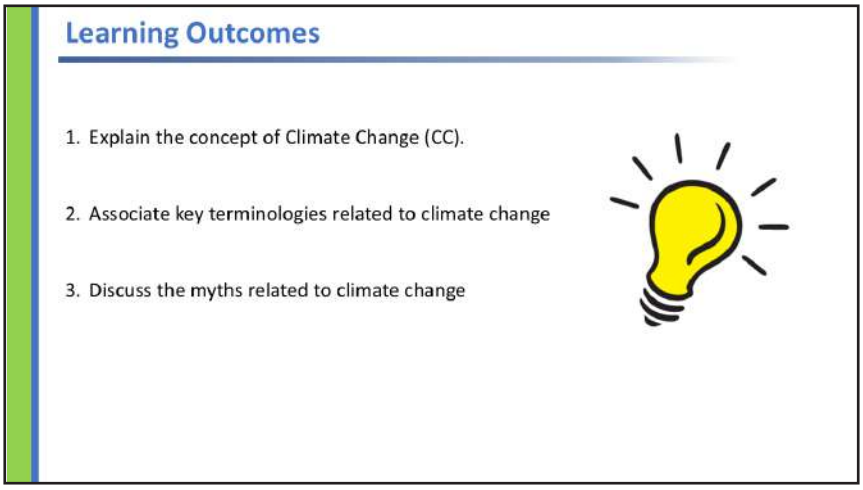

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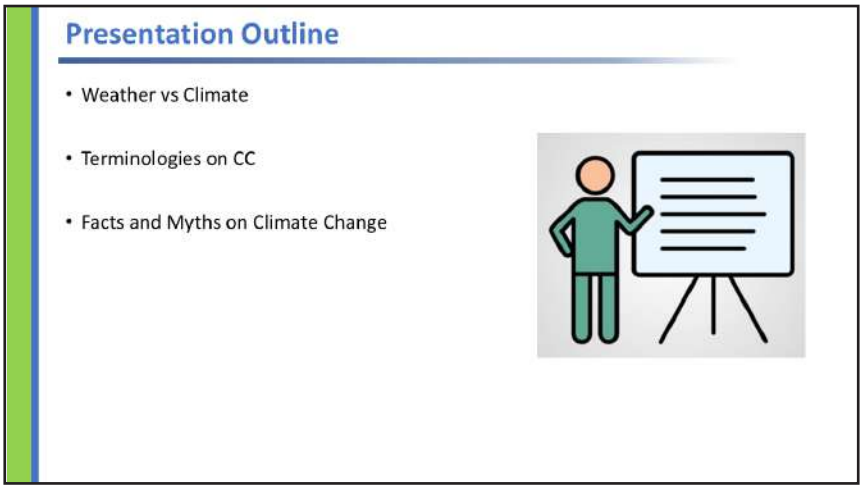

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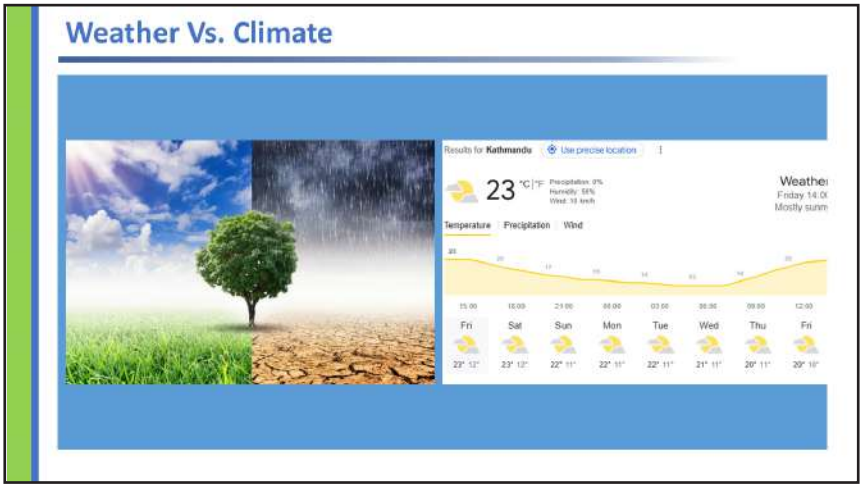
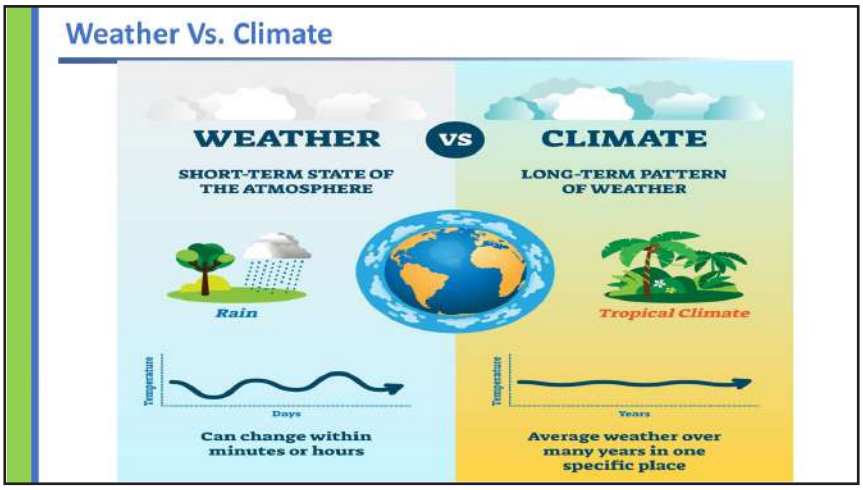


Human activity in the industrial age, and particularly during the last century, is significantly altering our planet's climate through the release of harmful greenhouse gases

Slide No.5



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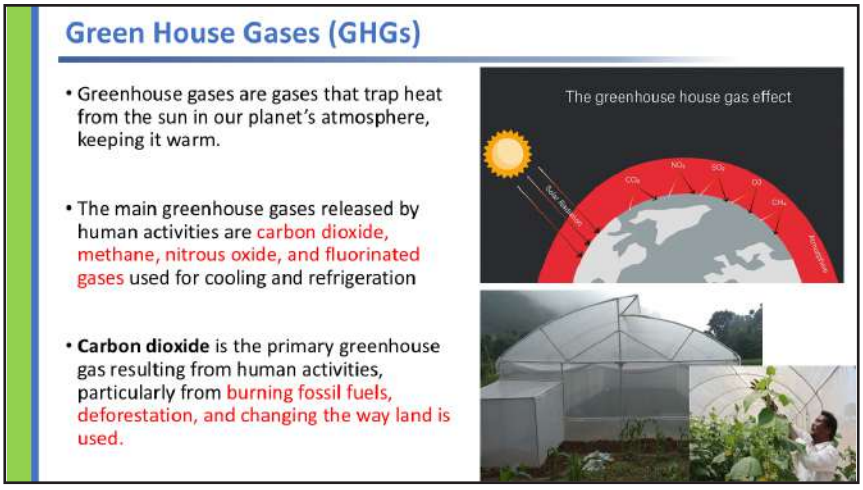


To prevent catastrophic climate change, the world's governments must work together to significantly reduce greenhouse gas emissions now and in the coming decades and keep global warming below the dangerous threshold of 1.5°C.

Slide No.7

Global Warming Vs. Climate Change

Global Warming	Climate Change (CC)
• 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.	• 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 it limit it tries to burst (similarly more GHGs in the earth surface the earth get more heat)

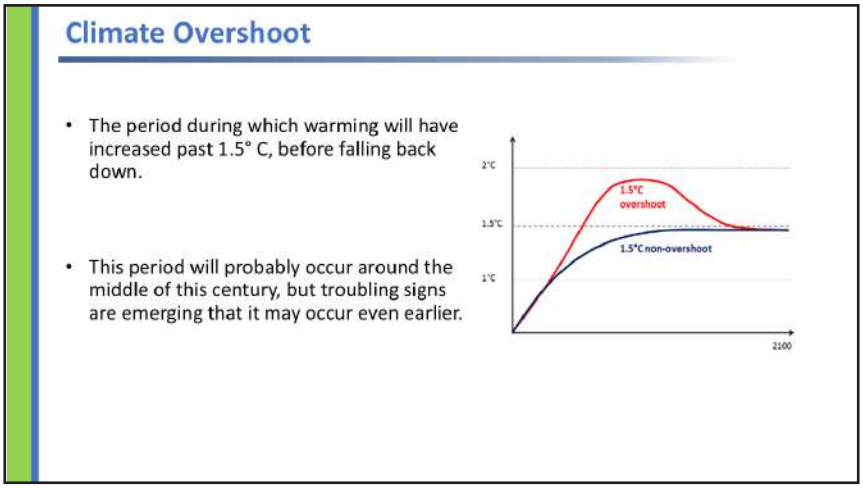
Slide No.8

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.

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.

Slide No. 9



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.

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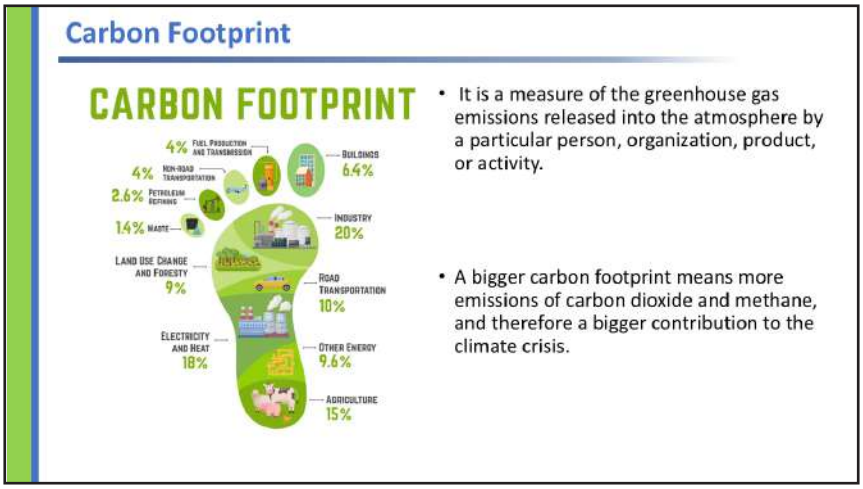

Long term strategies

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.

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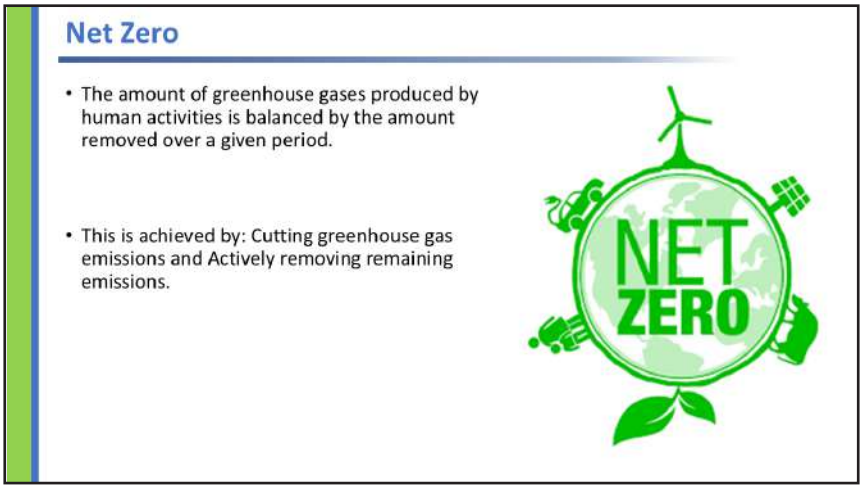

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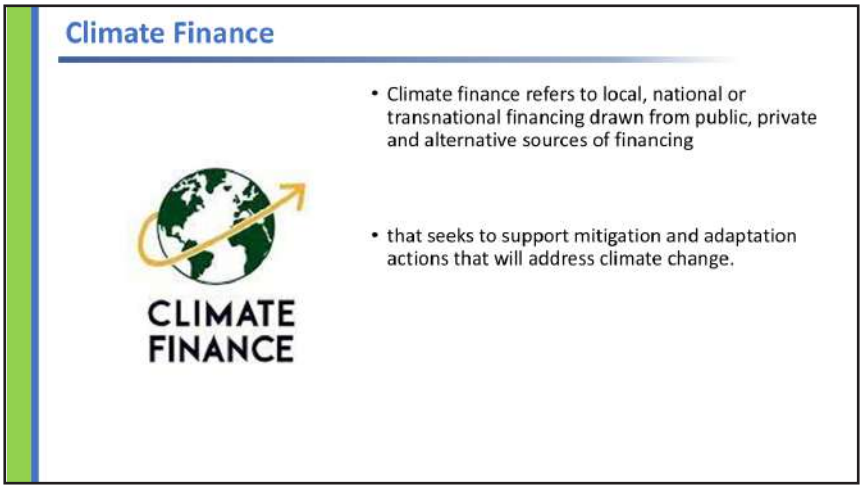

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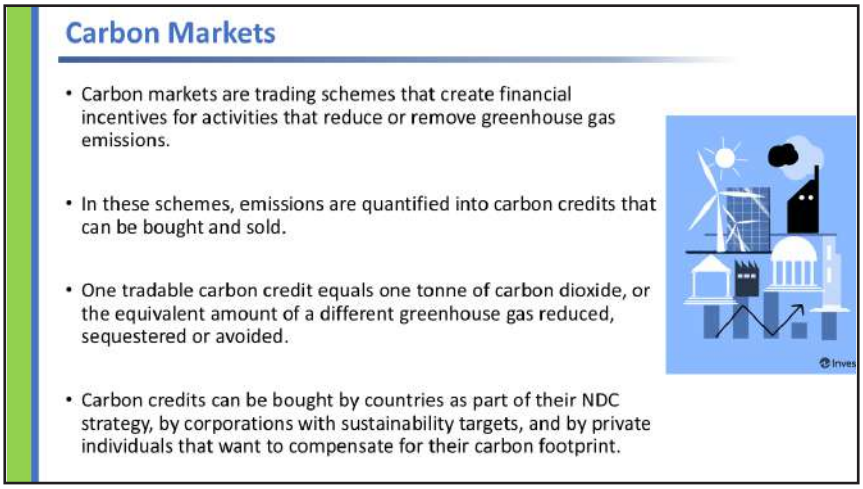
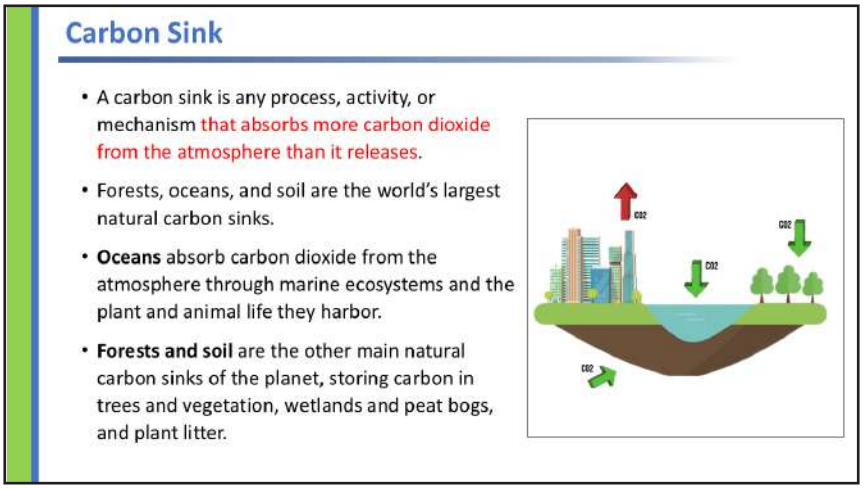


Today, human activity, like burning fossil fuels and deforestation, causes more carbon to be released into the atmosphere than the Earth's natural carbon sinks can absorb, leading to global warming and climate change. Human activities and climate change are also causing the degradation of these natural 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.

Slide No. 14



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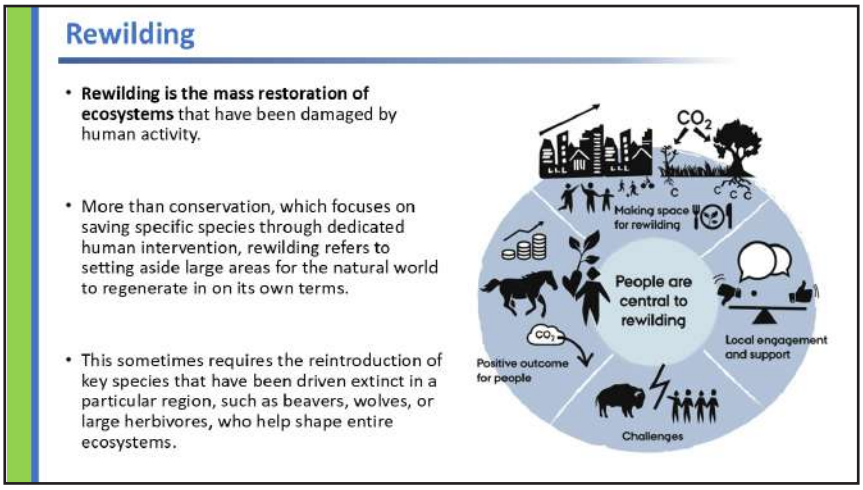
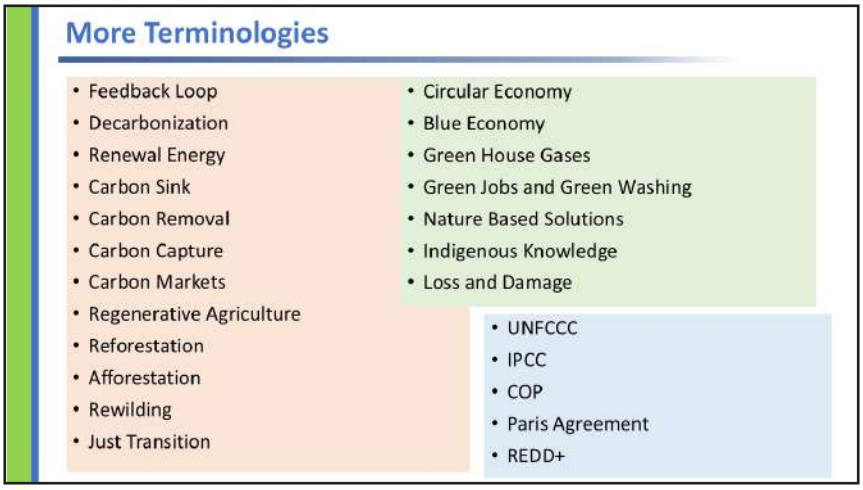


Rewilding can help combat climate change by removing more carbon dioxide from the atmosphere through healthy natural processes such as natural woodland regeneration. It also helps prevent species extinction by creating nature-rich habitats that allow wildlife to adapt to climate change and migrate as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

Slide No. 16



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)

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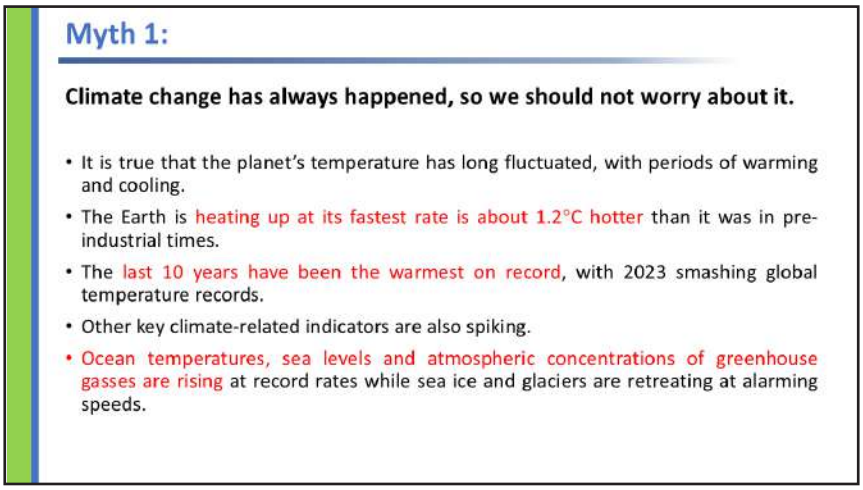

Climate change has always happened, so we should not worry about it.

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.

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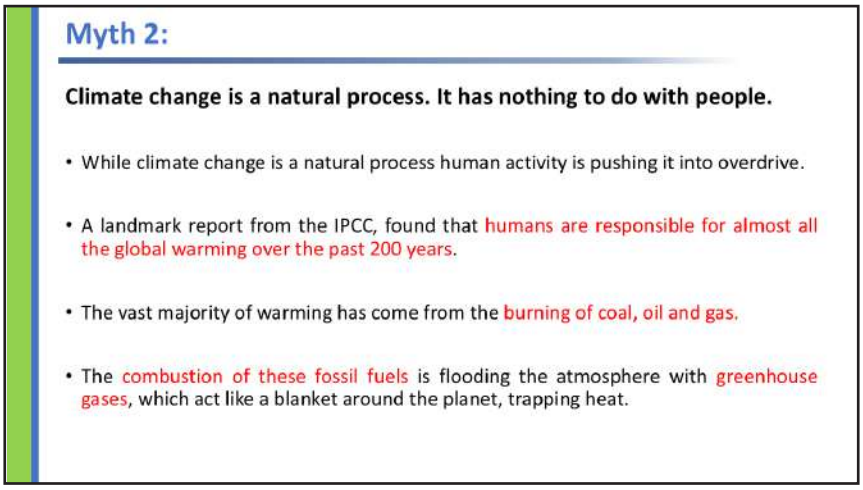

By measuring everything from ice cores to tree rings, scientists have been able to track concentrations of greenhouse gases. Carbon dioxide levels are at their highest in 2 million years, while two other greenhouse gases, methane and nitrous oxide, are at their highest in 800,000 years.

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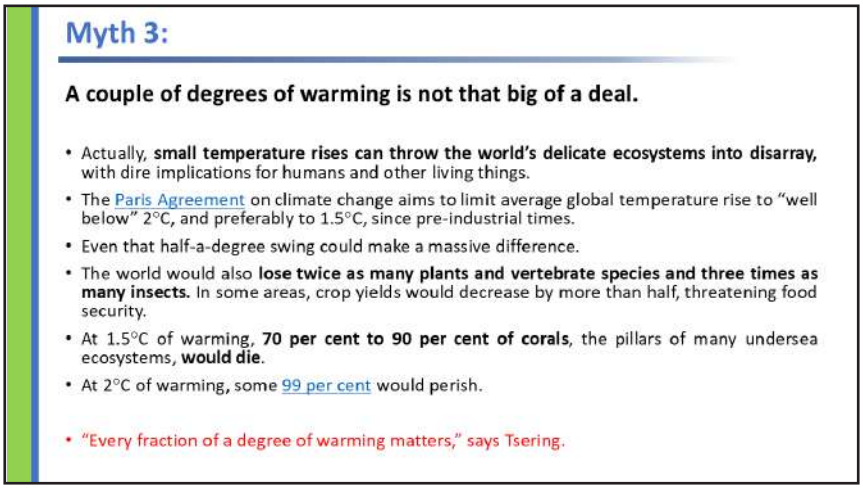
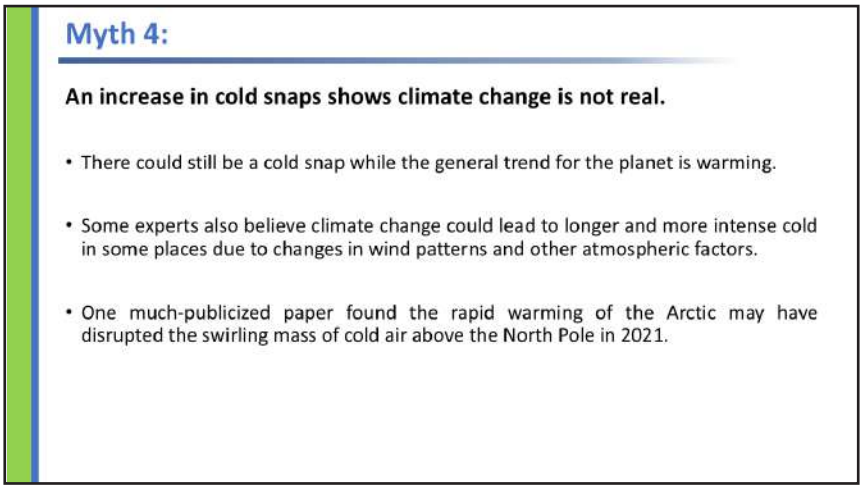


Even that half-a-degree swing could make a massive difference. The IPCC found that at 2°C of warming, more than 2 billion people would regularly be exposed to extreme heat than they would at 1.5°C. The world would also lose twice as many plants and vertebrate species and three times as many insects. 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.

Slide No. 22



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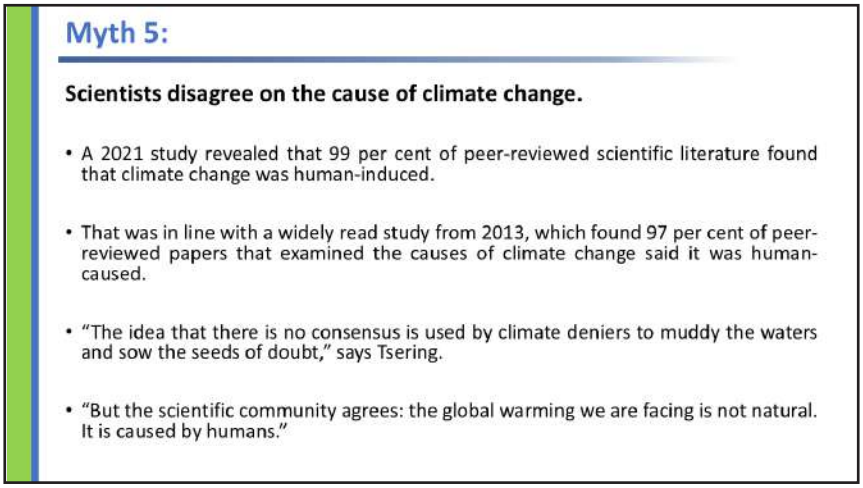

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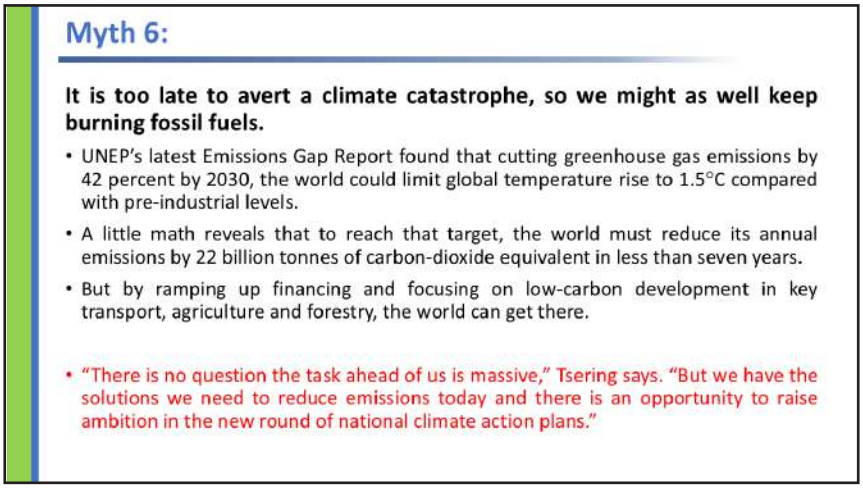

While the situation is dire, there is still a narrow window for humanity to avoid the worst of climate change.

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.

Slide No. 25

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.

Slide No. 26

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.**

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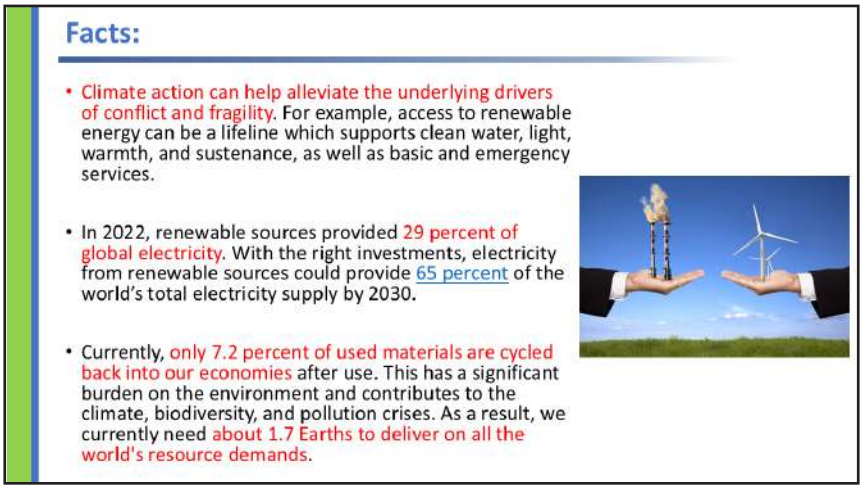

Climate action can help alleviate the underlying drivers of conflict and fragility. For example, access to renewable energy can be a lifeline which supports clean water, light, warmth, and sustenance, as well as basic and emergency services. It also powers local economic development, while setting countries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

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.

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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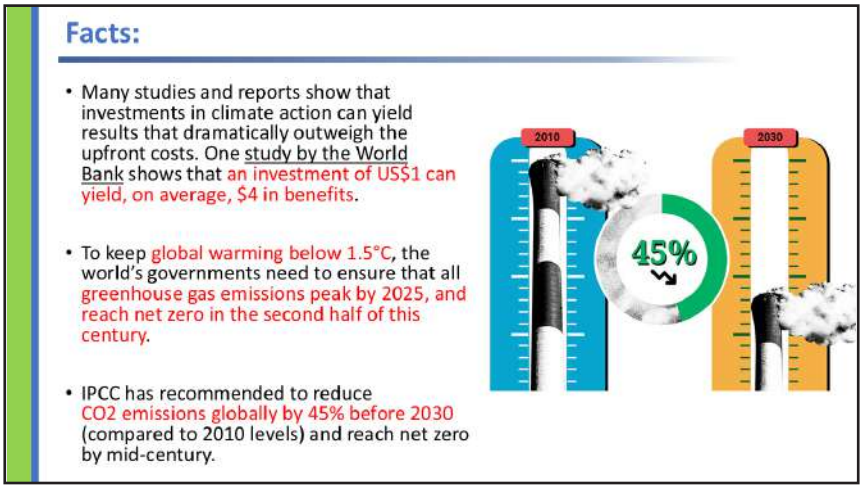

Climate action can help alleviate the underlying drivers of conflict and fragility. For example, access to renewable energy can be a lifeline which supports clean water, light, warmth, and sustenance, as well as basic and emergency services. It also powers local economic development, while setting countries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

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.

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.

Slide No. 29


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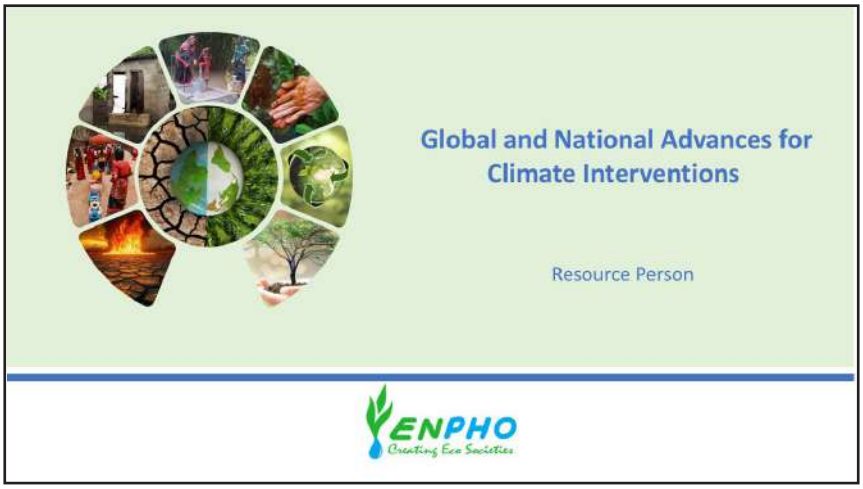
SESSION 4

Global and National Advances for Climate Interventions

Slide No.1



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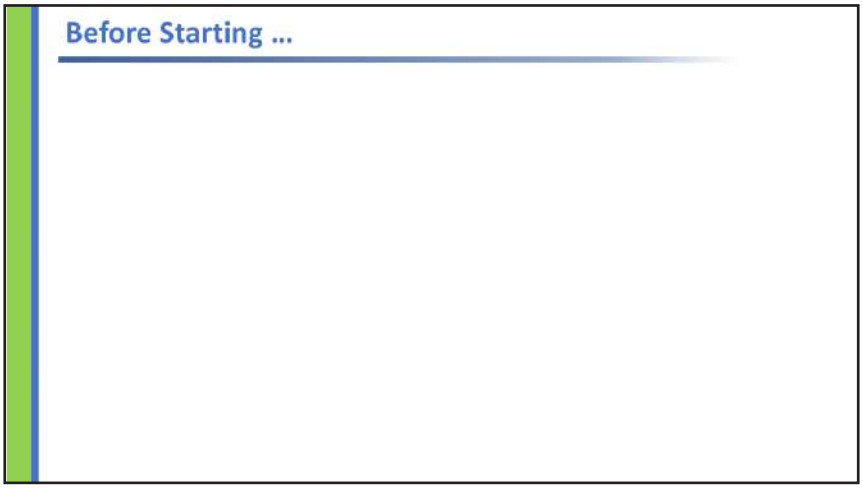


Slide No. 3

Learning Outcomes

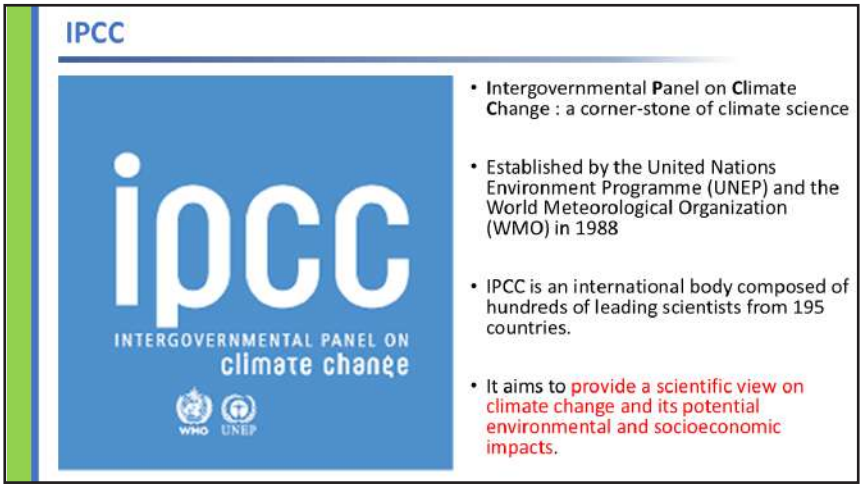
- List various advances for CC at global level
- State national initiatives relating to CC in WASH

Slide No. 4

Presentation Outline

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

Slide No. 5



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.

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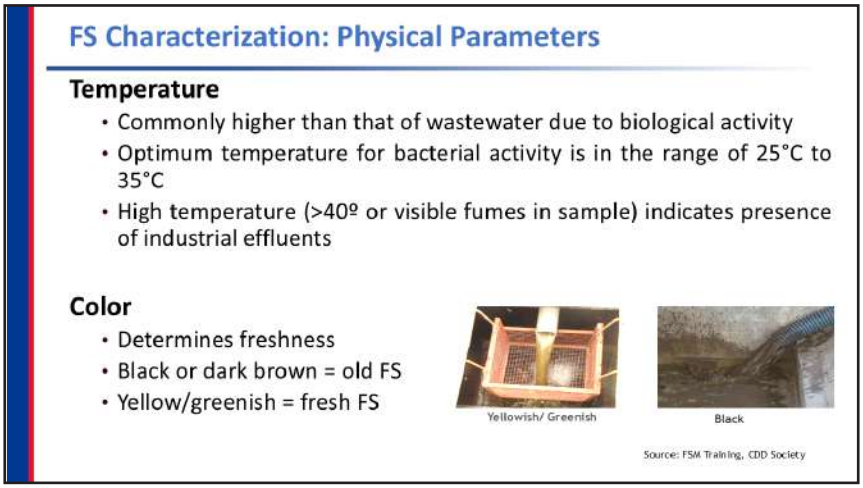

TSU – Technical Support Unit

Slide No. 7

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.

Slide No. 8

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.

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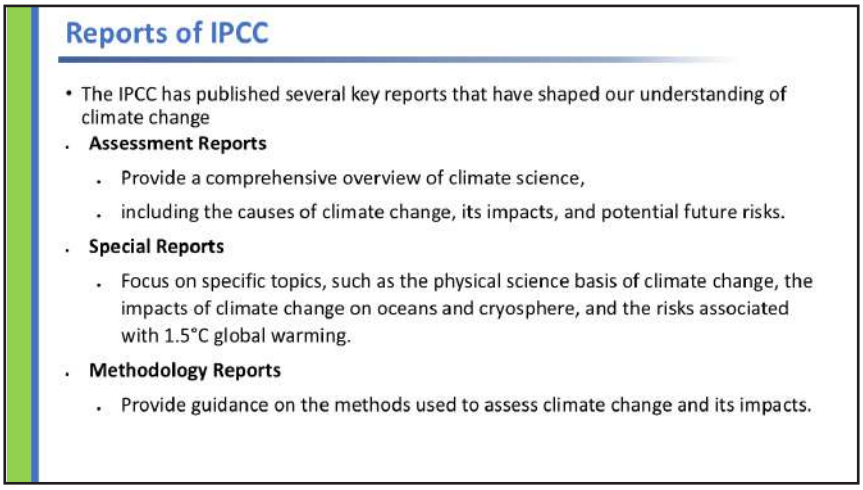
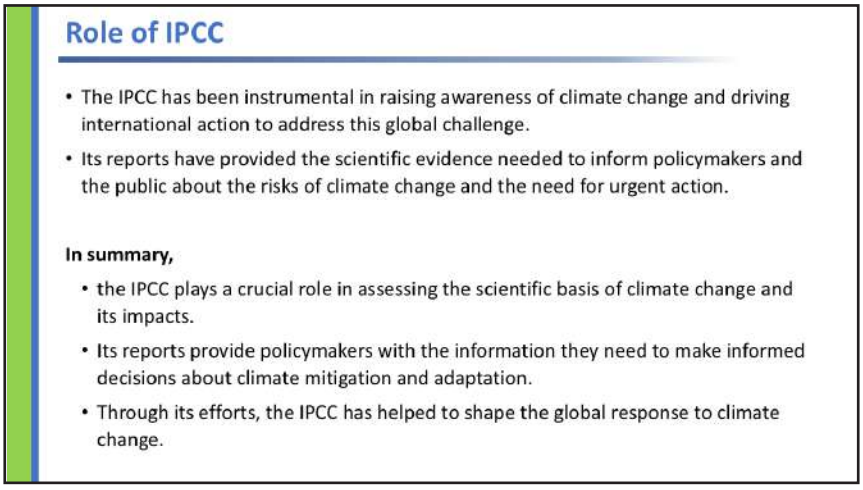


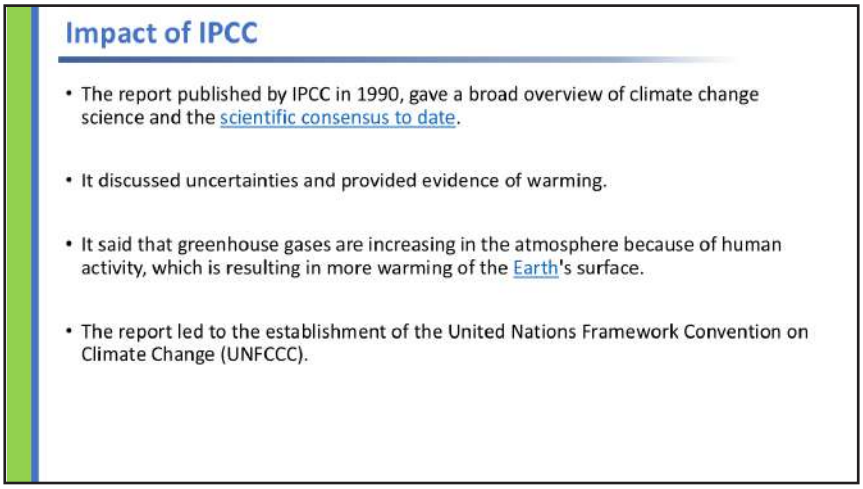
Five evaluation reports have been published to date, the fifth of which was issued in 2014, and the next report is scheduled for 2022. The IPCC also publishes special interim reports.

Slide No. 10



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:

Slide No. 11



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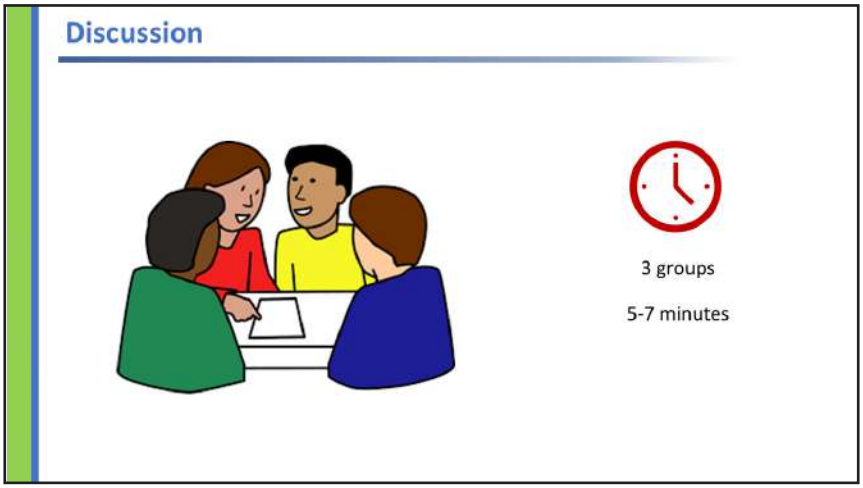
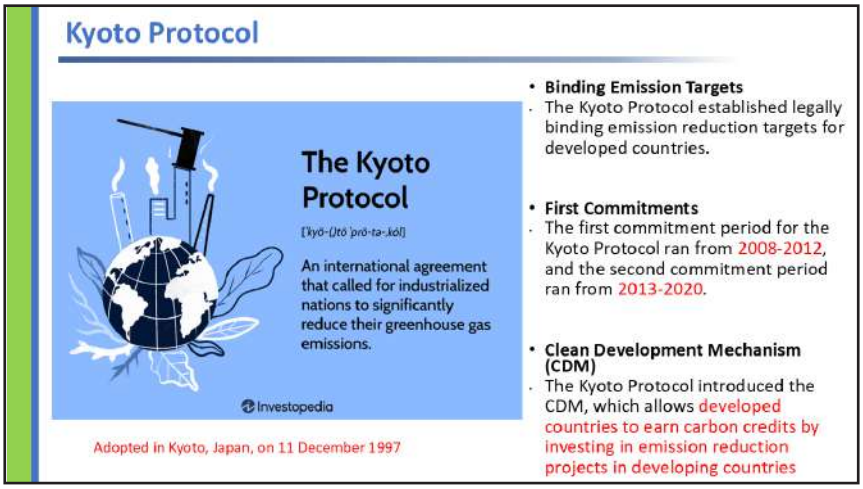


- Group 1: Role of IPCC
- Group 2: Reports of IPCC
- Group 3: Impact of IPCC
- Refer to the documents and present their discussion (may use slide at same time),
- wrap up by facilitator

Slide No.13



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.

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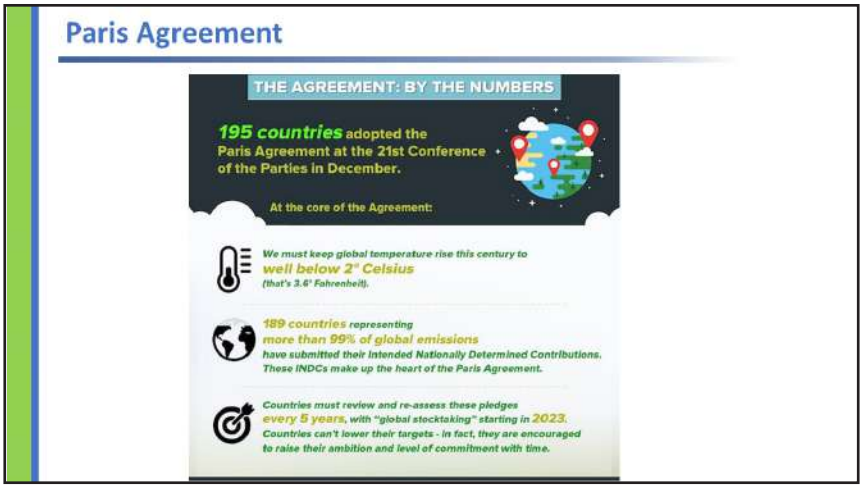

Nationally Determined Contributions (NDCs): Each country submits its own NDCs outlining its intended nationally determined contributions to reducing greenhouse gas emissions. These contributions are voluntary but should represent a country's "highest possible ambition."

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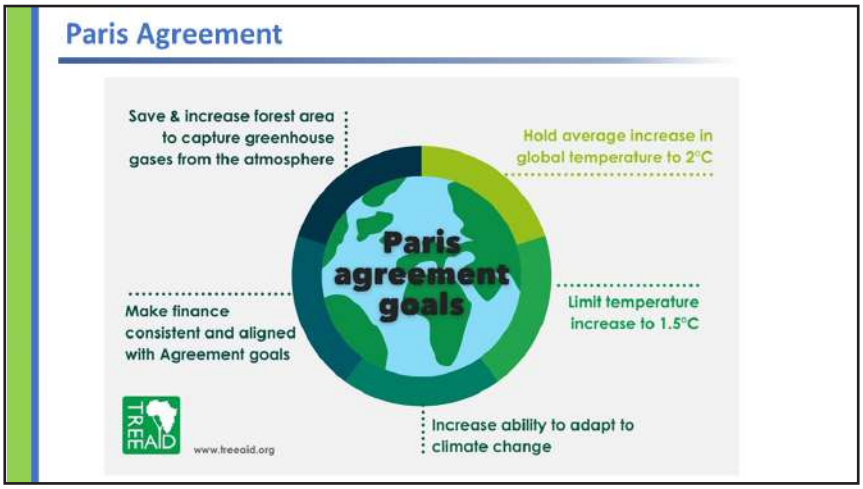

Slide No.16

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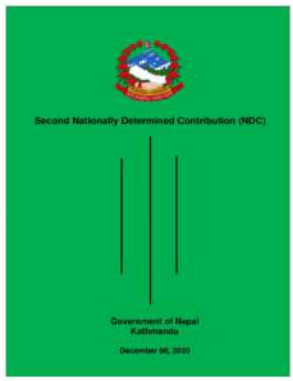
Slide No. 17

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.



Slide No. 18

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.

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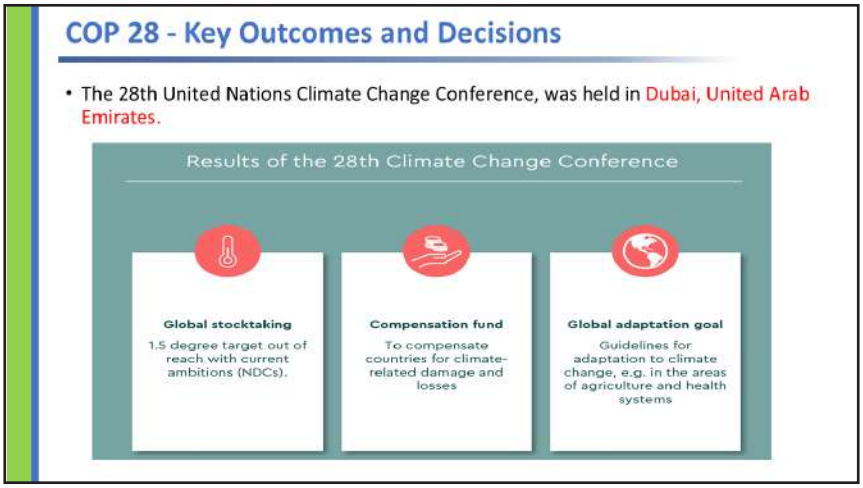

The 28th Conference of the Parties (COP 28) to the United Nations Framework Convention on Climate Change (UNFCCC), held in Dubai, UAE, from November 30 to December 13, 2023, marked a significant milestone in global climate action.
The headline outcome of the conference was an agreement to "transition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

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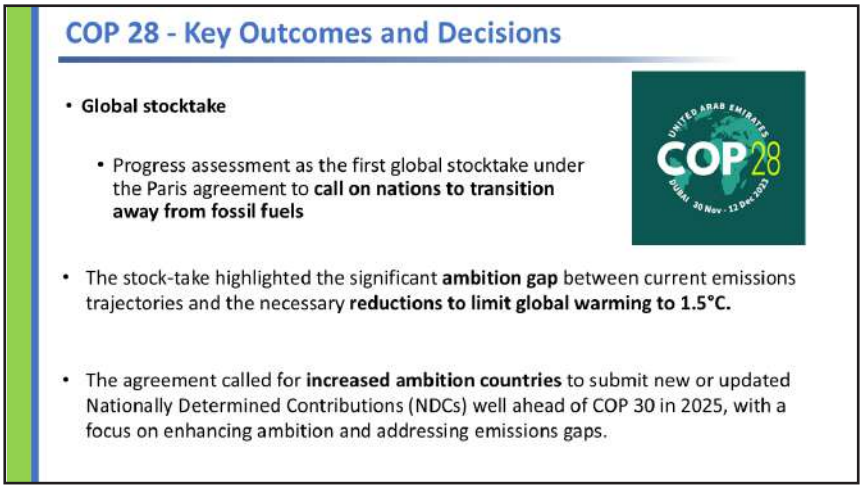

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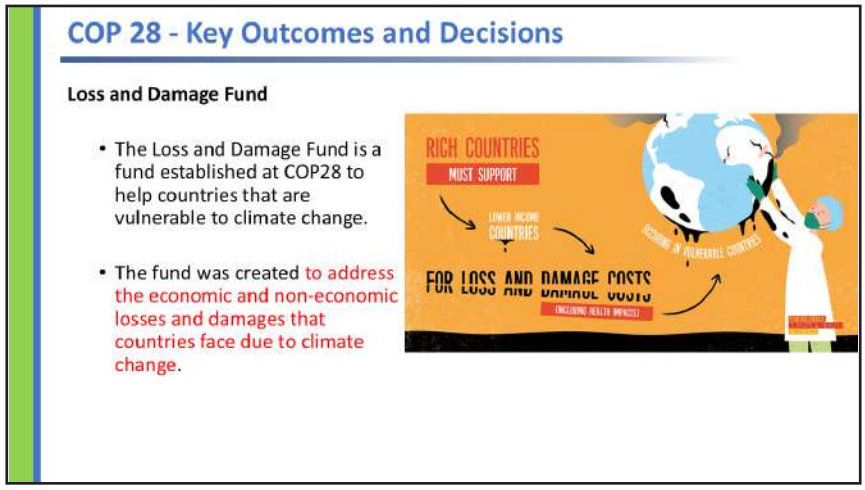

"The 28th Conference of the Parties (COP 28) to the United Nations Framework Convention on Climate Change (UNFCCC), held in Dubai, UAE, from November 30 to December 13, 2023, marked a significant milestone in lobal climate action

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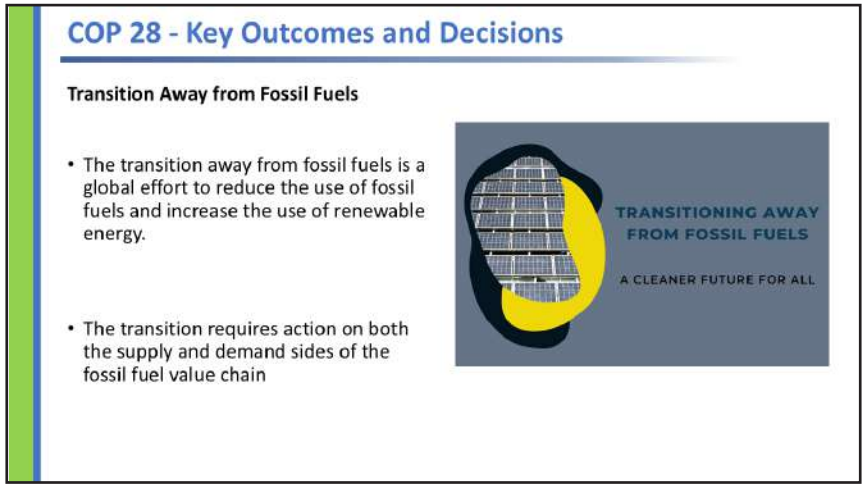

The 28th Conference of the Parties (COP 28) to the United Nations Framework Convention on Climate Change (UNFCCC), held in Dubai, UAE, from November 30 to December 13, 2023, marked a significant milestone in global climate action.

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.

Slide No. 23

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.

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.

Slide No. 24

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.

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.

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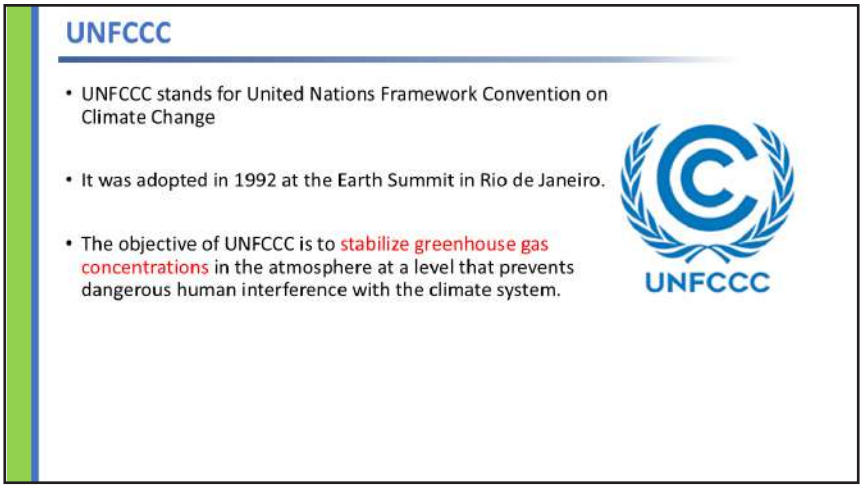

Overall, the UNFCCC is a cornerstone of international efforts to address climate change. It provides a framework for global cooperation, sets ambitious goals, and supports countries in taking action to reduce greenhouse gas emissions and build resilience to the impacts of climate

Slide No. 27

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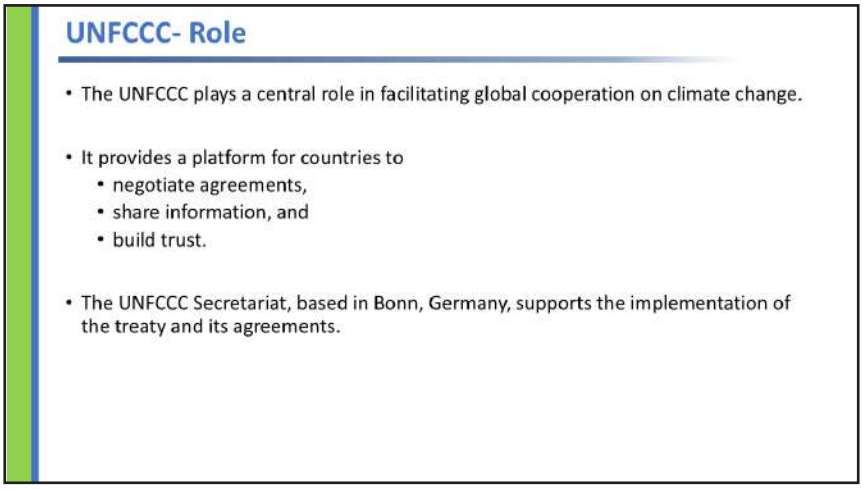

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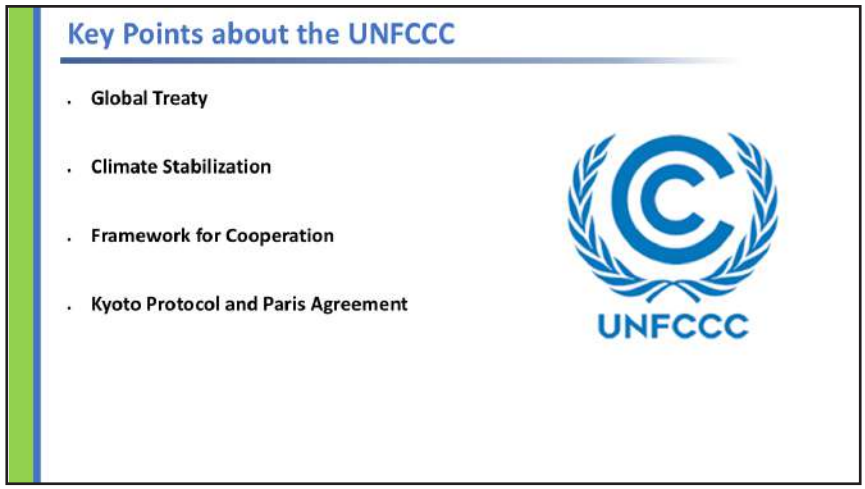

- **Global Treaty**: The UNFCCC is a legally binding international agreement that has been ratified by almost all countries in the world.
- **Climate Stabilization:** The treaty's ultimate goal is to prevent dangerous human-induced climate change by stabilizing greenhouse gas concentrations in the atmosphere.
- **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).

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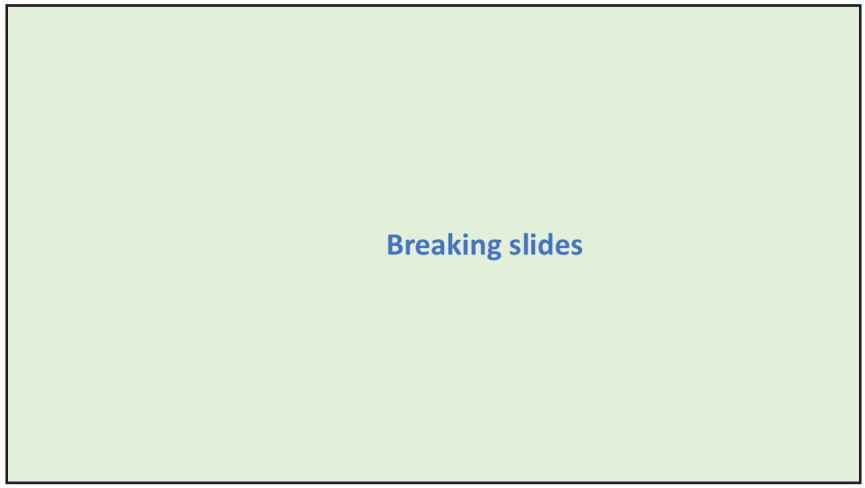

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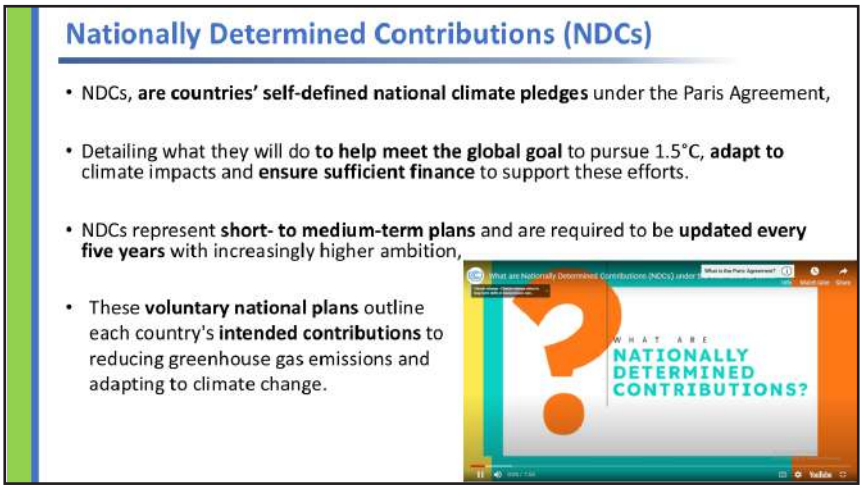

NDCs represent short- to medium-term plans and are required to be updated every five years with increasingly higher ambition, based on each country's capabilities and capacities.

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.

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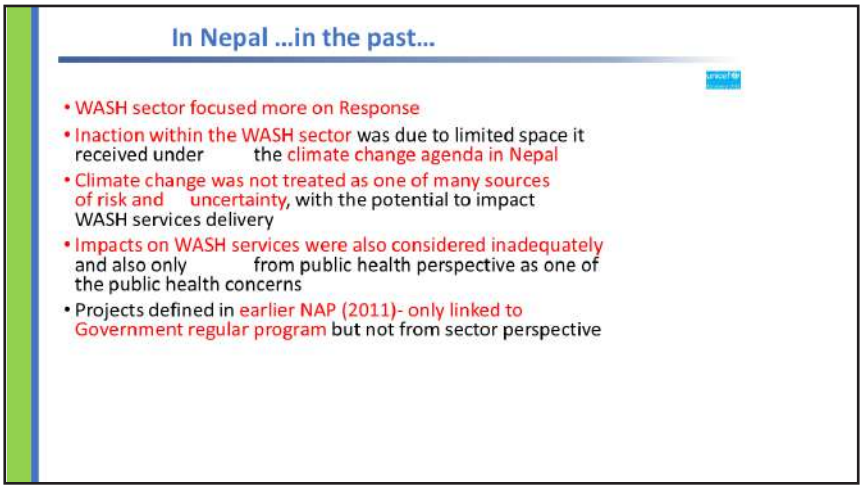

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Existing climate and WASH established national and subnational priorities

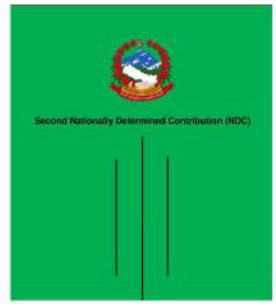
Key climate and WASH documents readily available

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

Slide No.34

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.



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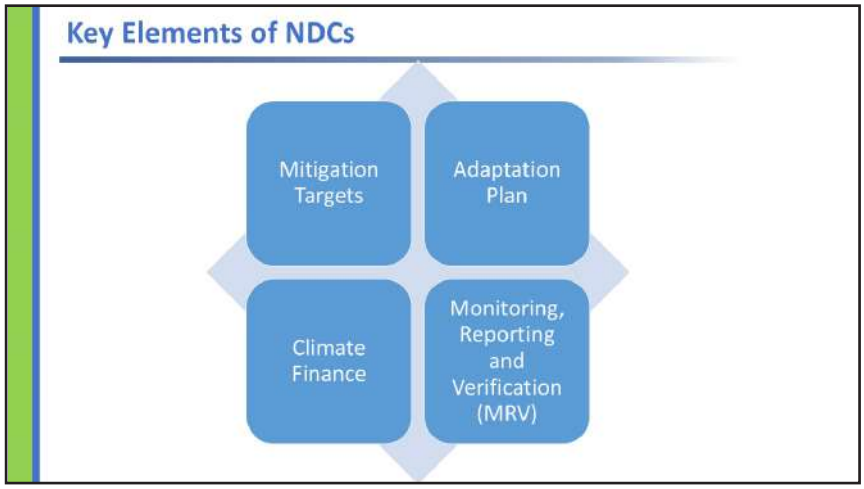

- **Mitigation Targets:** Countries set targets for reducing greenhouse gas emissions, often expressed in terms of emissions reductions compared to a baseline year.
- **Adaptation Plans:** Countries outline their plans for adapting to the impacts of climate change, such as building resilience to extreme 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.

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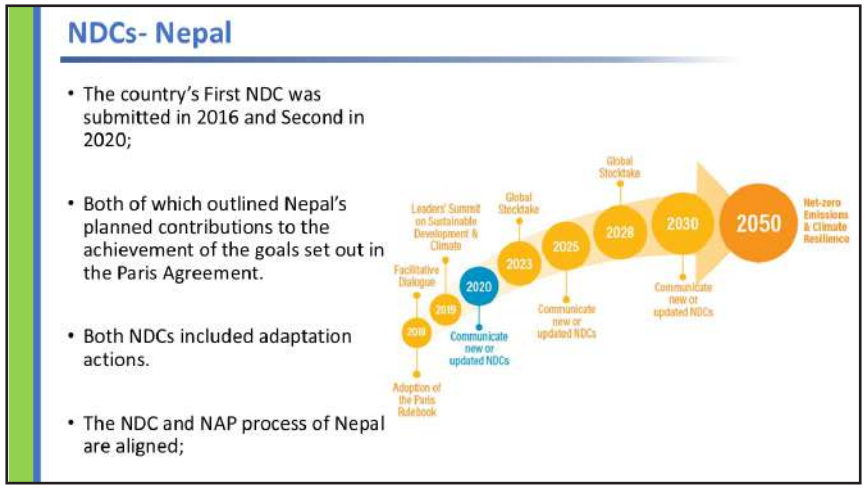
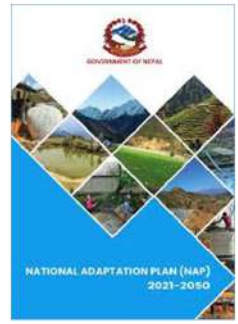


Slide No. 37

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

Slide No.38

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.

Slide No.39

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.

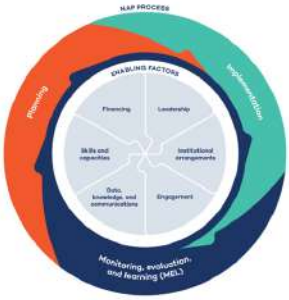
Slide No.40

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.



Slide No. 41

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)

Slide No.42

Thank you!
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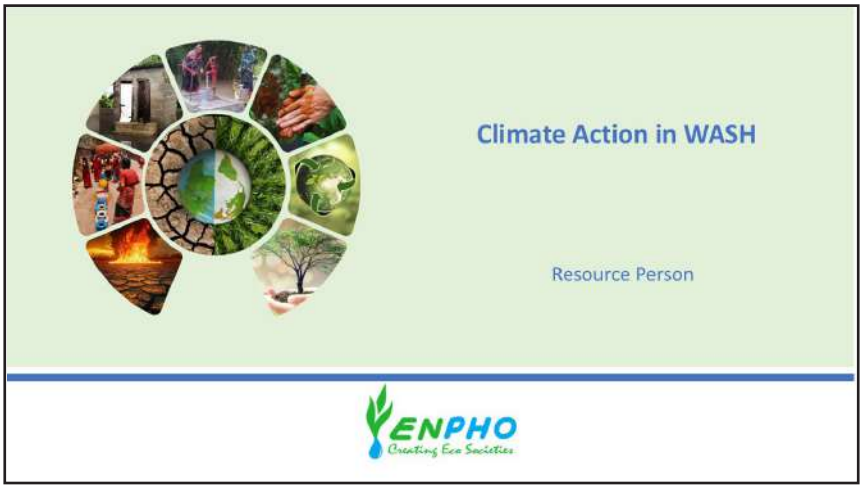
SESSION 5

Climate Actions in WASH

Slide No.1



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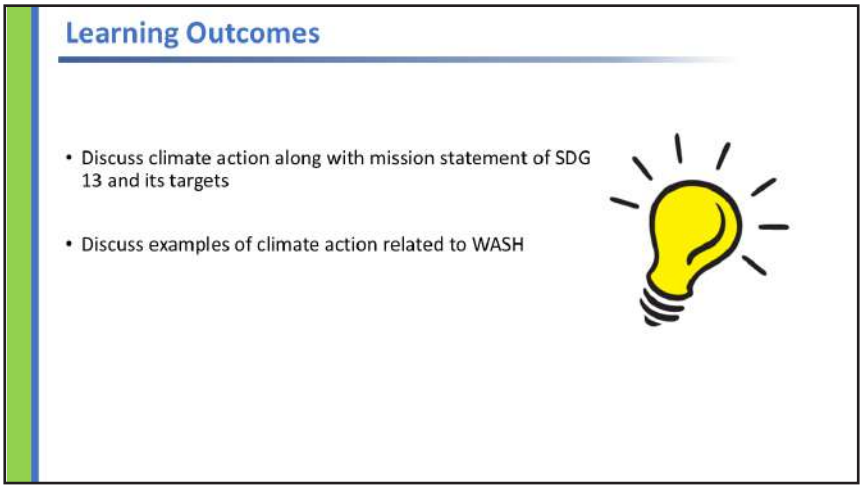

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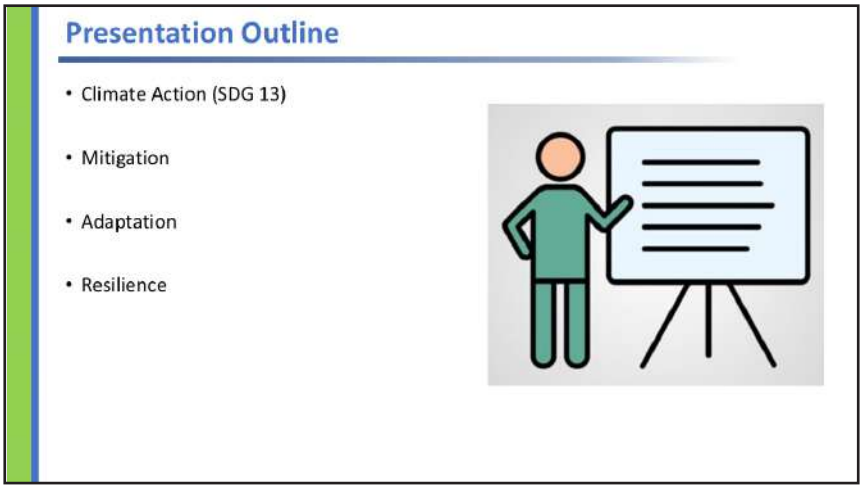

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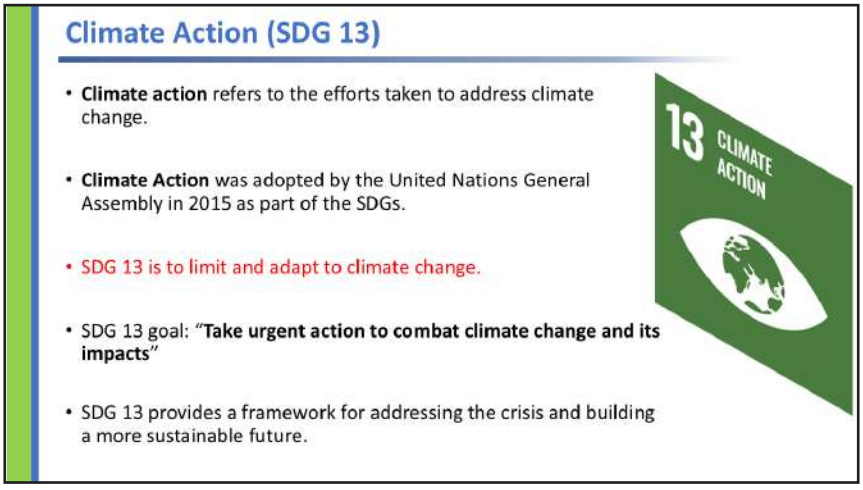

Now climate scientists have concluded that we must limit global warming to 1.5 degrees Celsius by 2040 if we are to avoid a future in which everyday life around the world is marked by its worst, most devastating effects, hence the climate action.
In summary, climate change is the problem, and climate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

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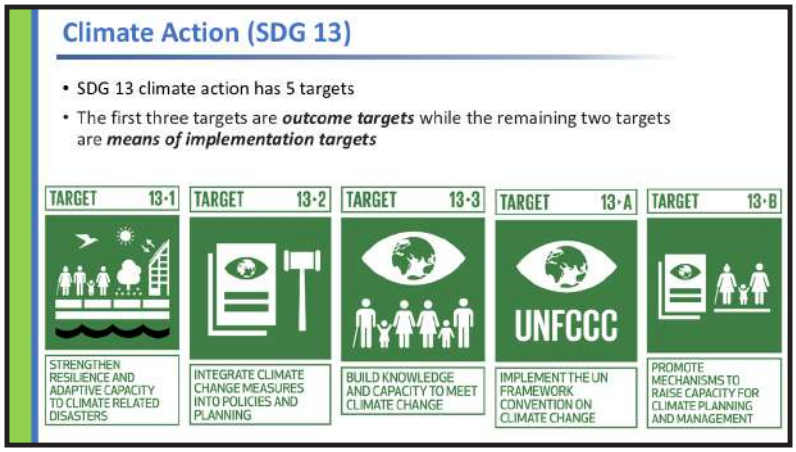

Target 13.1: Strengthen resilience and adaptive capacity to climate-related disasters (3 indicators)
Target 13.2: Integrate climate change measures into policy and planning (2 indicators)
Target 13.3: Build knowledge and capacity to meet climate change (2 indicators)
Target 13.a: Implement the UN Framework 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"

Target13.2 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".

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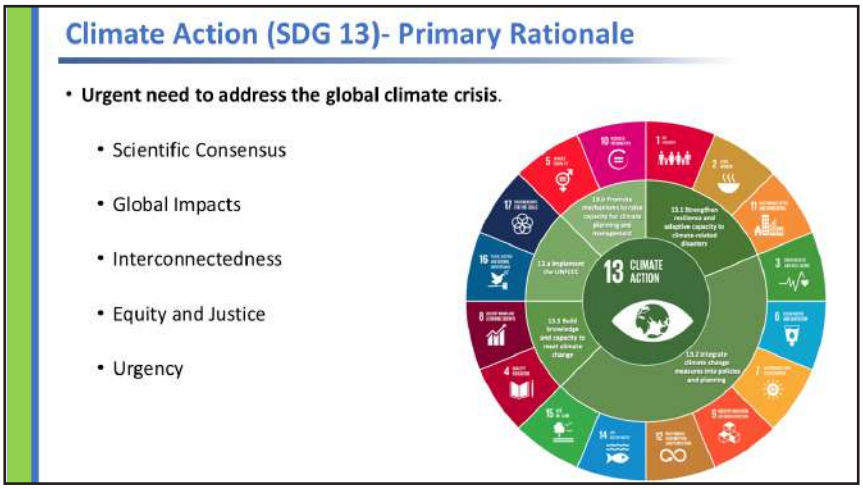

Here are some key points that underpinned the discussion and rationale for SDG 13. These factors led to the recognition that climate change is a global challenge that requires urgent and coordinated action from all countries.

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

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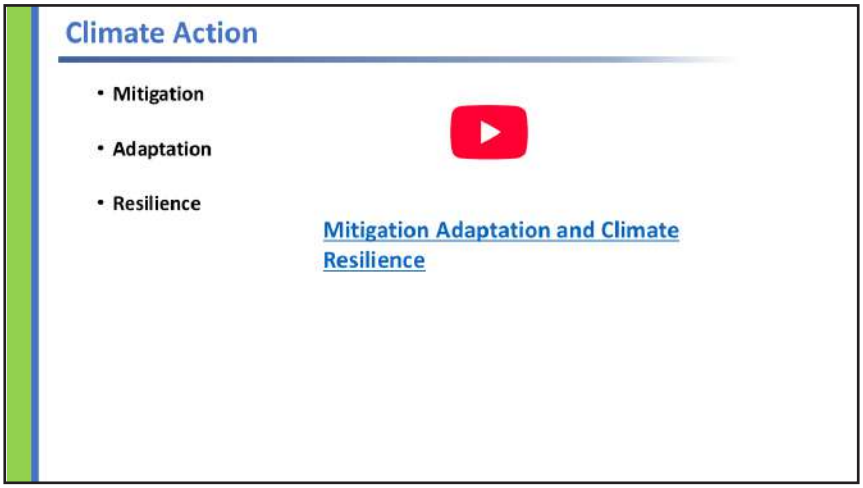

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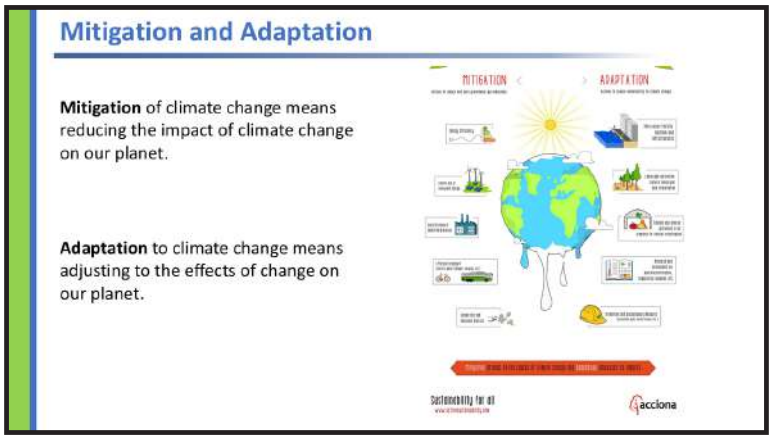


Mitigation of climate change means reducing the impact of climate change on our planet.

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.)

Slide No. 9

Mitigation- Examples

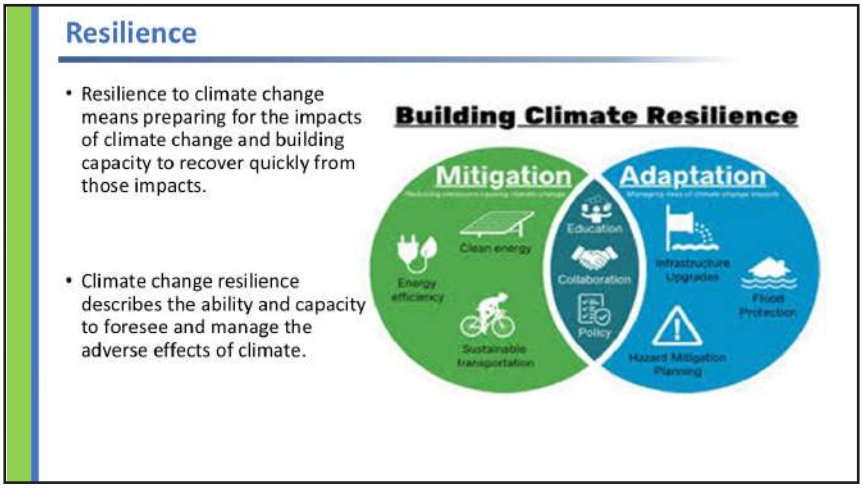
- It includes all actions which remove or reduce greenhouse gas emissions, including:
  - transitioning to low carbon sources of energy;
  - using emerging technologies to reduce or remove carbon dioxide from the atmosphere;
  - protecting natural carbon sinks, such as forests and oceans, which remove 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.

Slide No.-10

Adaptation- Examples

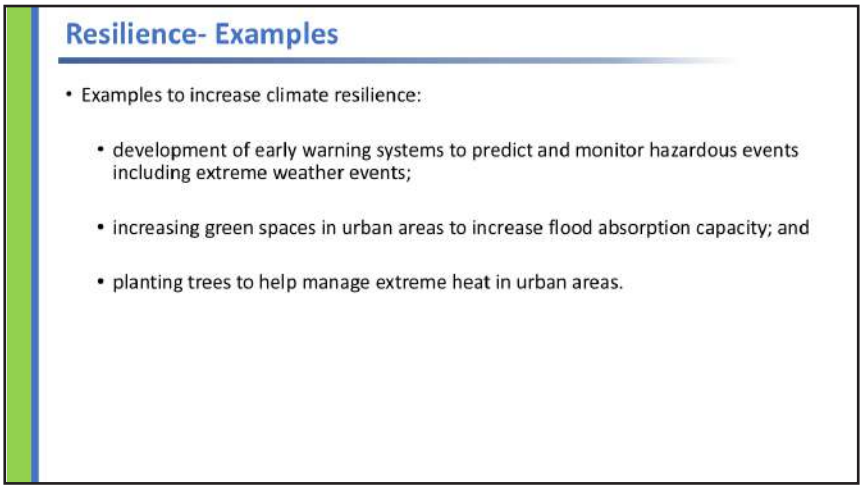
- Examples of adaptation action include:
  - constructing defences against sea level rise;
  - taking action to protect buildings and infrastructure from slow and rapid onset weather events;
  - diversifying crops in farming and food production to reflect the warmer, colder or wetter conditions; and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

Slide No. 11



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.

Slide No. 12



Slide No.13


Thank you!
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SESSION 6

Sanitation System and Latrine

Slide No.1

Sanitation System and Latrine

Resource Person

ENPHO
Creating Eco Societies

Slide No. 2

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

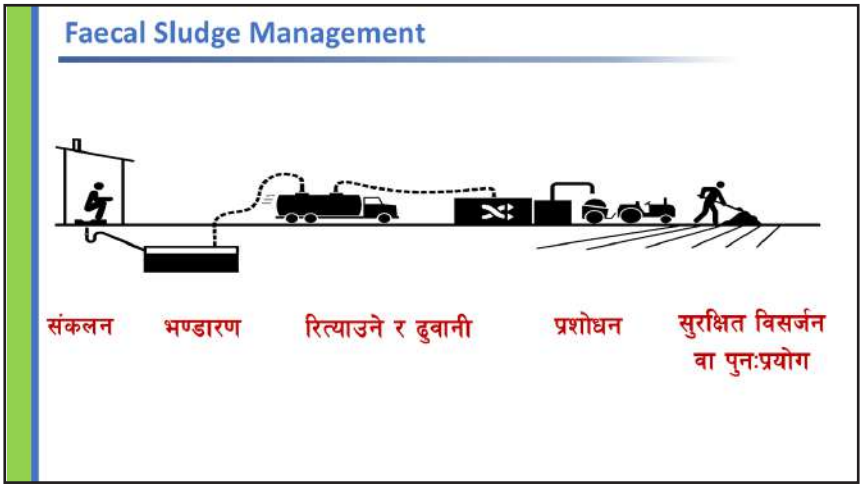
Slide No.4

Slide No.5

Any significant difference?

Slide No. 6

Slide No. 7



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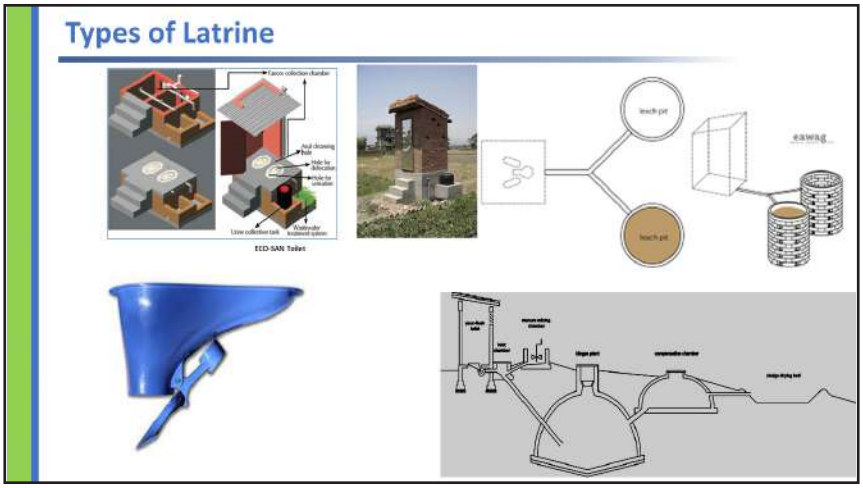
Slide No.11



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

Slide No. 12

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.

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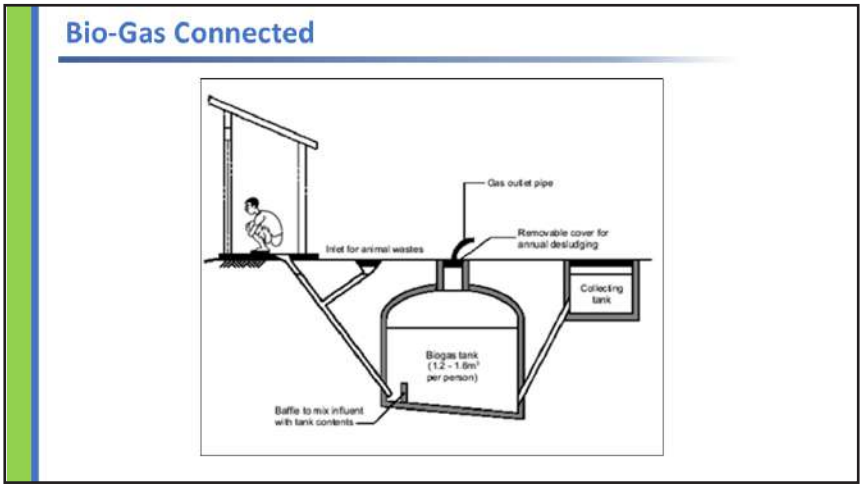


This type of toilet produces methane gas, which is then used as alternative source of energy, again leaving no space for emission of GHGs in the atmosphere.

Slide No. 14

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.

Slide No. 15

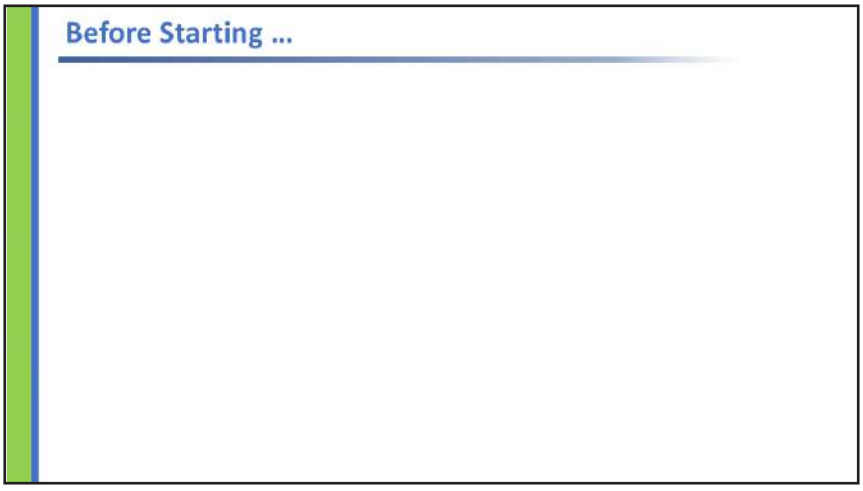
A technology suitable for the water scarce areas, as this does not need water to flush, as this is designed with unique technique.

SESSION 12

Planning and Implementation

Slide No. 1

Slide No. 2



Slide No. 3

Learning Outcomes

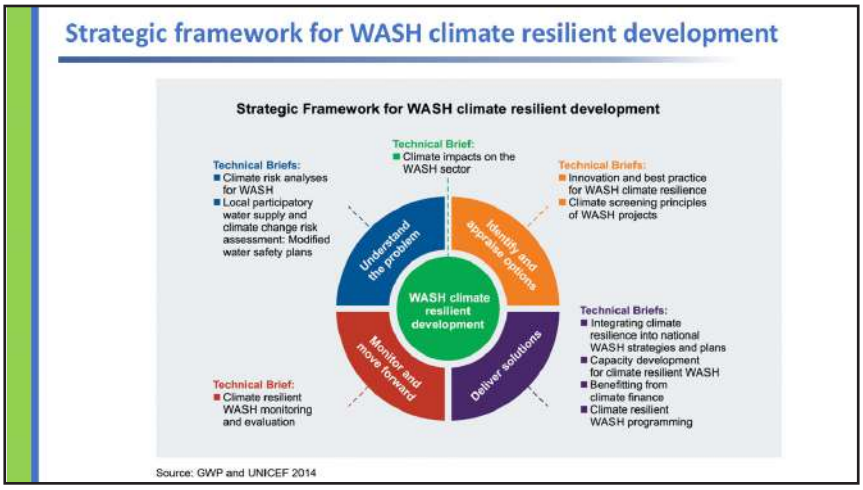
1. Explain strategic framework for WASH climate resilient development
2. Draw WASH interventions in each quadrants of strategic framework

Slide No. 4

Presentation Outline

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

Slide No. 5



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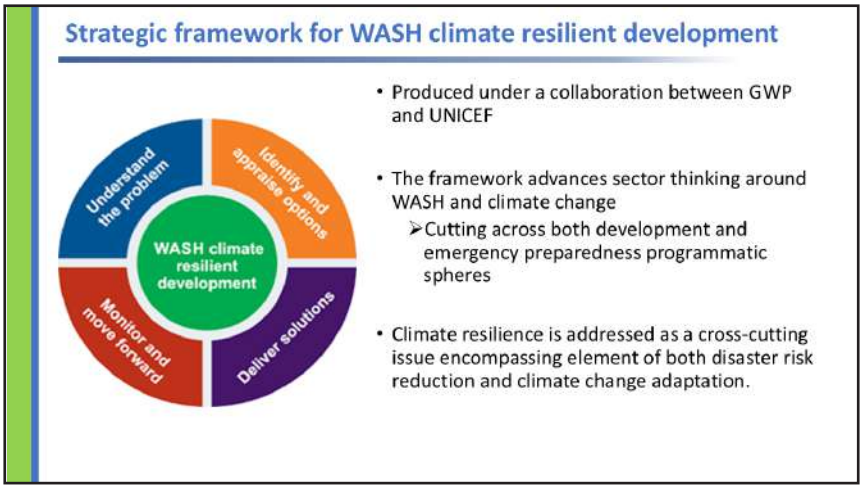
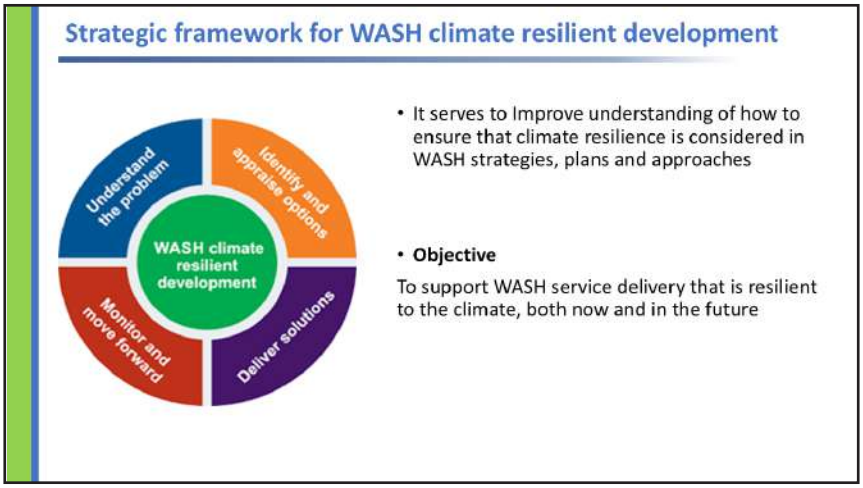


It serves to set out the rationale and concepts for WASH climate resilient development, as well as

Improve understanding of how to ensure that climate resilience is considered in WASH strategies, plans and approaches

Slide No. 7



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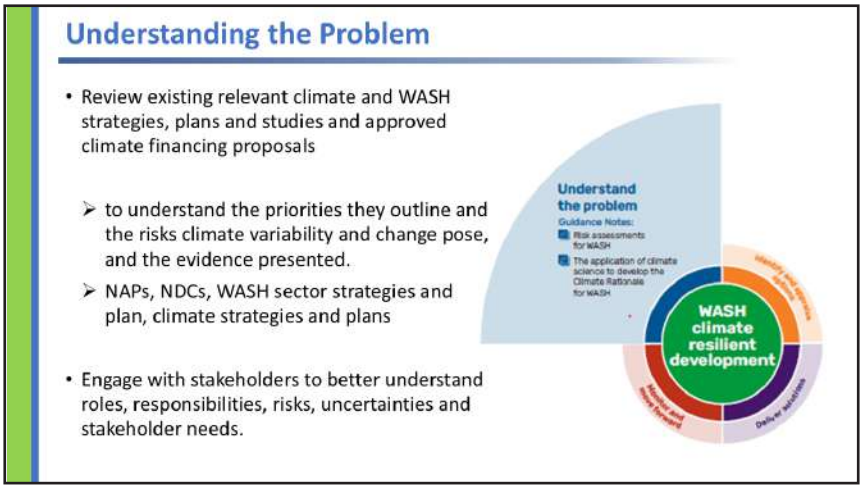

This phase of the Framework covers the various elements that help to understand the enabling environment conducive to climate resilient WASH, as well as the risks climate change poses to WASH service delivery.

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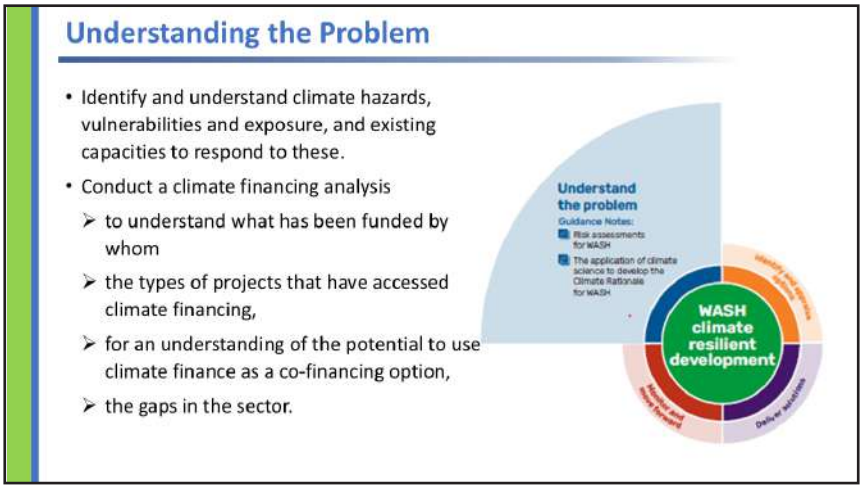
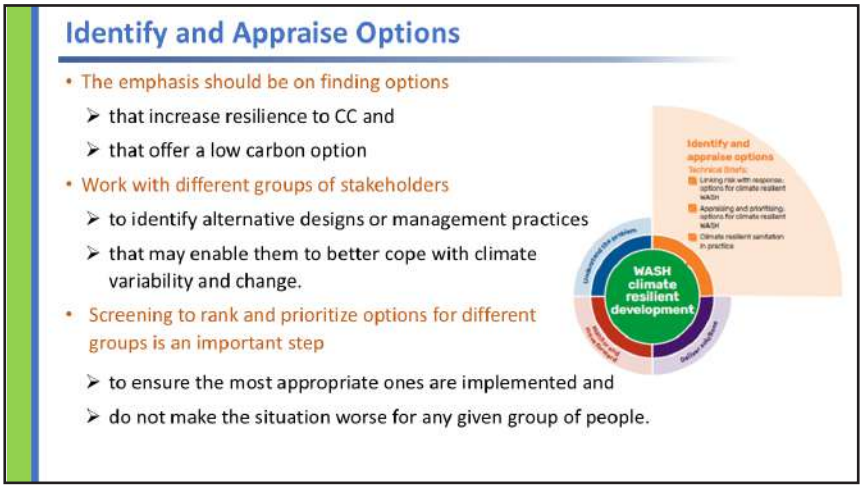


This phase of the Framework covers the various elements that help to understand the enabling environment conducive to climate resilient WASH, as well as the risks climate change poses to WASH service delivery.

Slide No. 10



Slide No. 11

- 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.

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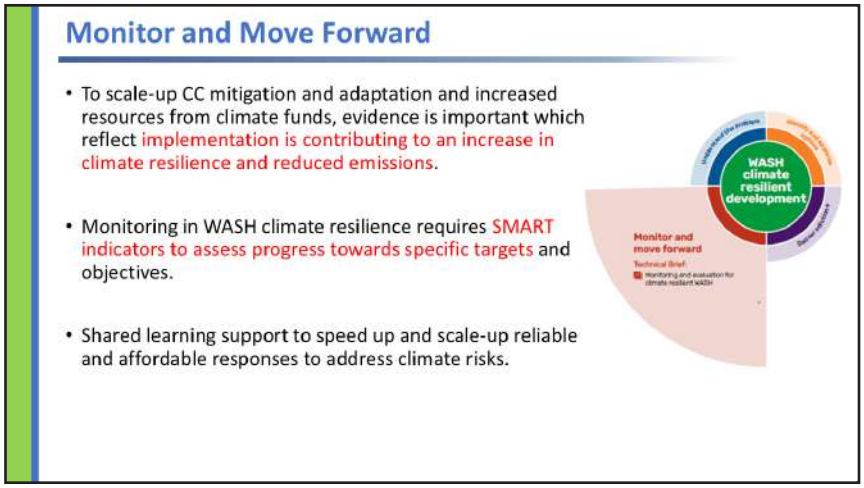
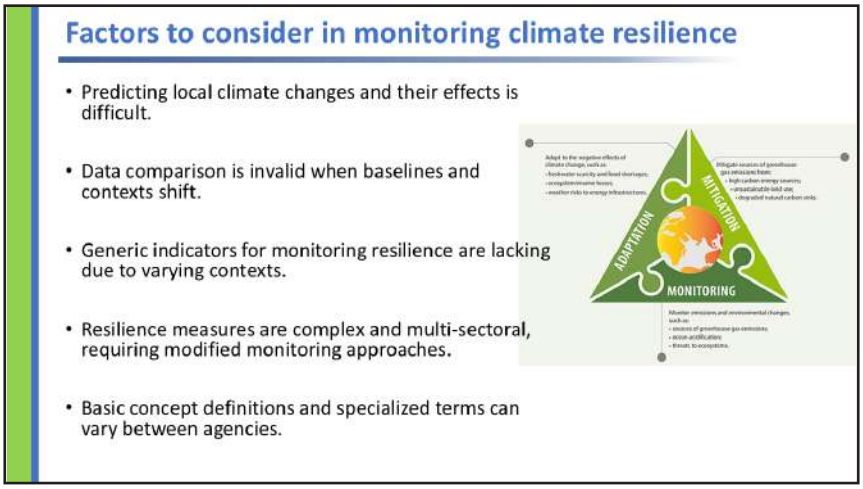


In the context of scaling-up for climate change mitigation and adaptation and increased resources from climate funds, it is becoming increasingly important to provide evidence that implementation is contributing to an increase in climate resilience and reduced emissions.

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.

Slide No. 13



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.

Slide No. 14

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.

Slide No.15

Simplified Results Framework

Outcome	WASH infrastructure, services and behaviors are sustainable, safe and resilient to cliate 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**

Slide No. 16

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

Slide No.-17

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

Slide No. 18

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

Slide No. 19

Support institutional reform and behavior change

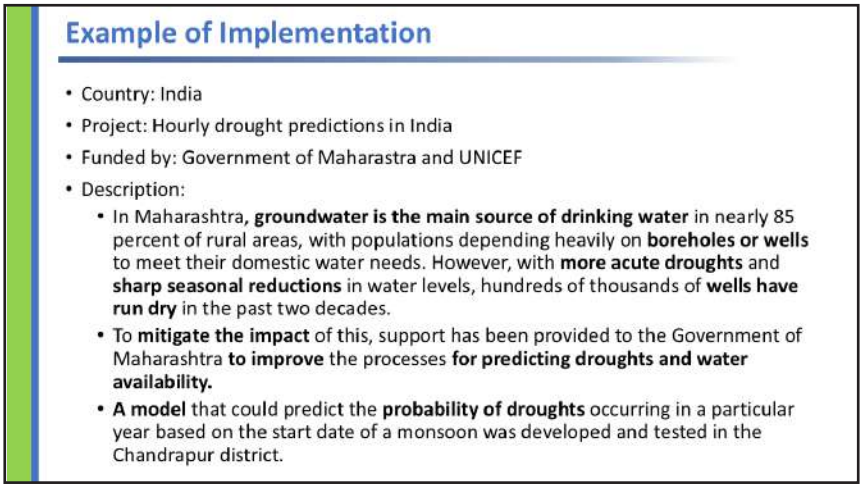
4.1 Capacities and resources of local government and local private sector to implement and monitor gender-sensitive resilient WASH programming strengthened

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

Slide No.20



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.

Slide No. 21

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