



# Climate Resilient Water, Sanitation and Hygiene relevant to Gram Panchayats

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# What is Climate Change?

- Climate change refers to long-term shifts in temperatures and weather patterns.
- These shifts may be natural, such as through variations in the solar cycle.
- However, since the 1800s, human activities have been the main driver of climate change, primarily due to burning fossil fuels like coal, oil and gas.

# Impact of Climate Change on WASH Sector

Climate Effect	Hazard	Impact on WASH Sector
Decrease in Precipitation	Drought	Reduced water supply, reduced flow in rivers, increased pollution, Challenge to hygiene practices
Increase in Precipitation	Flooding	Inundation/ Pollution of wells, inaccessibility of water sources, flooding of sanitation systems, waterborne diseases
Increase in temperatures	Heatwaves	Severe shortage of water, increased concentration of pollutants
Increase in temperatures	Melting of ice	Sea level raise, seasonality of water availability
Sea-level raise	Flooding Saline intrusion	Reduced availability of safe drinking water, inundation of WASH infrastructure, Pipe corrosion and damage or failure from seawater intrusion



# Impact of Climate Change on WASH Sector

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- Projections indicate warming by the end of the 21st century of between 0.3 and 5°Celsius [IPCC (2013)]
- With a 2°C global temperature rise, up to 10 million more people could be affected by coastal flooding each year. [Stern (2007)]
- With a 4°C temperature rise, a 50% decrease in water availability could occur. [Stern (2007)]
- In developing countries, the incidence of diarrhoea is expected to increase by around 5% for every 1°C increase in temperature. [Campbell-Lendrum and Woodruff (2007)]





# The Challenge

- Lack of integration of climate resilient water and sanitation features into **day-to-day planning**
- Absence of **localization of SDGs** in Panchayati Raj Institutions
- Limited alignment between different **village-level plans** (GPDP/ VAP/ VDMP/ WSP)
- **Lack of convergent action** by all district-level departments





# The Opportunity

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- **Ministry of Panchayati Raj (MoPR) is committed to achieve the SDGs** through the Rashtriya Gram Swaraj Abhiyan (RGSA) Scheme.
- Among the 17 SDGs, MoPR has identified **nine goals**.
- These include:
  - Goal 6 (Clean Water and Sanitation)
  - Goal 13 (Climate Action)



# Climate Resilient Water Supply

- Source sustainability: Rainwater Harvesting, Water Conservation, Groundwater recharge, reviving traditional water bodies, afforestation
- Rational use: Drinking water-budgeting
- Recycling: Basic treatment and reuse of greywater
- Water Infrastructure
  - Using high-quality HDPE PE100 pipes in the water network extension 2
  - Elevate water-tank base and relocate the potable tanks
  - Elevate water pump-station above design flood-level
  - Extend well-casing and vents above flood-water elevation, waterproof well caps
  - Raise platform of tube wells/ handpumps/ tap in low-lying areas
- Train PRI members and village level committees in:
  - major and minor repairs towards PWS
  - construction of soak pits and RWH structure

# Climate Resilient Sanitation

- Raising the plinth height of toilet super-structure beyond 600 mm (~2 feet) in flood-prone areas
- Raising the leach-pit lining from 600mm to 900mm above ground level
- Plastering the pit-lining above the ground level, both internal and external to ensure that leachate does not leak into the soil surface
- Use of the J-hook for the proper joining of roofing panels to steel frames for cyclone resilience
- Rural pan with a steep slope is required to facilitate easy drainage and cleaning with little water (1 to 1.5 litres)
- Train youth and local masons in making minor modification to the sanitation system to make it climate resilient





Thank You