

The Need for Climate-Responsive PPEs for Sanitation Workers: Insights from Odisha's Successful Garima Intervention

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Sanitation workers work tirelessly day and night in ensuring public health, come rainstorm or heatwave and harsh conditions worsened by climate change.

PPE, though crucial, it often fails to meet the unique demands posed by such environmental challenges thereby significantly heighten the occupational hazards.



1 Issues in availability and usage of PPEs

- Addressing environmental challenges to withstand extreme weather conditions
- Providing PPE tailored to the individuals size and job role specific needs to ensure comfort and functionality.
- Ensuring Gender-inclusive designs to meet ergonomic needs, especially for female sanitation workers.
- Timely replacement based on the nature and demand of work.
- Quality assurance to prevent use of damaged PPEs.

This mismatch not only compromises safety but also exacerbates occupational hazards, emphasizing the urgent need for climate-responsive PPE solutions.

1.1 Challenges posed by Climate on PPE Design and Usage

	Intensifying heatwaves with temperatures exceeding 40°C	Increased risk of heat exhaustion, dehydration, and reduced physical endurance during work
	Heavy rainfall during the monsoon leads to significant waterlogging	Greater exposure to contaminated waste, heightened vulnerability to waterborne diseases, & difficult working conditions.
	High humidity levels of approximately 75% in coastal areas	Amplifies discomfort, dehydration, and fatigue, making physical labor more strenuous
	Frequent cyclones cause hazardous conditions during cleanup operations.	Increased risks of injuries and exposure to debris, contaminated water, and infectious materials during post-disaster work.

2 Visiblizing the Invisible : The first step to providing PPEs

~1,65,000 workers recognized across:

Garima_Odisha	SWDS_Tamil Nadu	NAMASTE_Pan India
~8,900 115 ULBs covered	~95,000 649 ULBs covered	~62,000 4800+ ULBs covered

Odisha's "Garima" Scheme, is a pioneering initiative aimed at enhancing the safety, dignity, and welfare of sanitation workers, serves as a model framework for also tackling issues of providing appropriate PPEs. The state's comprehensive approach to PPE provision under Garima demonstrates the potential for integrating climate responsiveness into sanitation safety programs.

2.1 Job roles considered across three schemes

Emptying of septic tank	Sewerage network maintenance	Drain cleaning	O&M of Wastewater treatment plant	O&M of Community & Public Toilets
Job roles surveyed under NAMASTE Scheme		Job roles surveyed under Garima & SWDS Schemes		



3 Systematic Change for PPE Procurement

a.) PPE assessment study to identify needs of sanitation workers

CSWs provided feedback on PPE comfort, durability, and performance after testing different sets for 3 days.



b.) Round table on defining job role specific and gender-inclusive PPE Standards for sanitation workers

Roundtable conference with state officials, manufacturers, suppliers, and sanitation experts.



c.) Standardizing PPE quality through state level empanelment of vendors

Suppliers were finalized for quality, climate adaptability, durability, and affordability. Odisha institutionalized this process to ensure PPE meets state standards and ensured region specific rates were defined with Technical Committees at each ULBs reviewing the PPE procurement



d.) Strengthening training, monitoring and feedback mechanisms

CSWs received practical training on PPE use, maintenance, and disposal. A feedback system and pilot monitoring by PSSOs via UMC's EMS help guide procurement and policy updates.



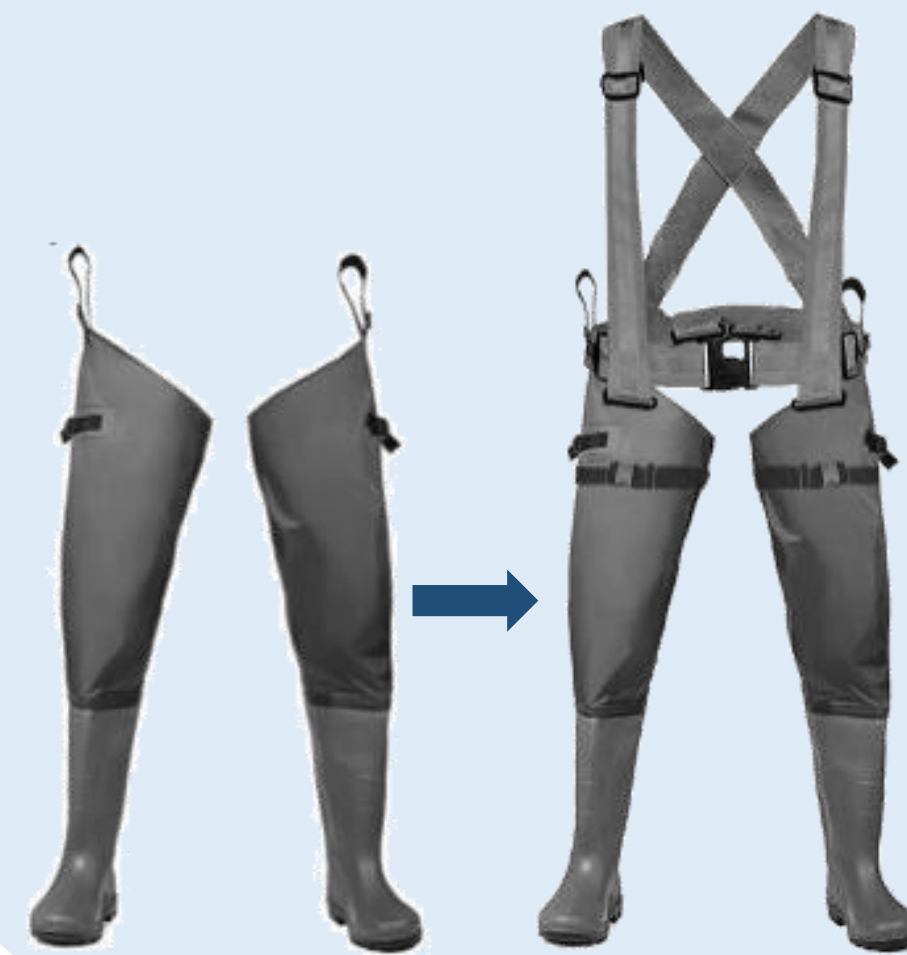
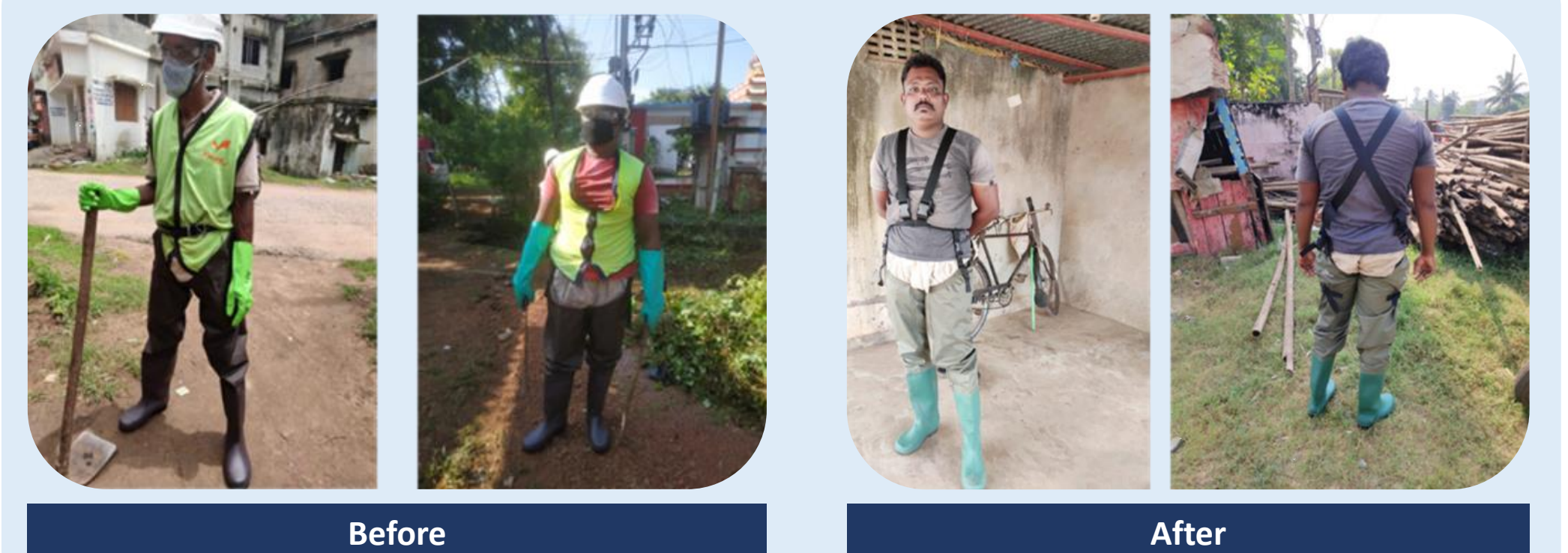
Decentralized procurement by ULBs from empaneled vendors ensures sanitation workers receive well-designed, climate-resilient PPE tailored to their comfort.

4 Learnings from Odisha for scale up

With the intensifying impacts of climate change PPEs should be

- Lightweight**
- Made of **Breathable materials** with integrated cooling technologies
- Durable waterproof fabrics** should be designed by combining a base material like cotton with a water-resistant coating
- Ergonomic designs** tailored to the needs of both male and female workers.

Modification in thigh waders for open drain cleaners



- Modifications were made to the design of waders based on feedback from workers to ensure a better fit and improved dexterity.
- The changes included the addition of a thigh belt, waist belt, and suspenders to provide a more secure and comfortable fit for users. The waist belt and suspenders also allowed the waders to be worn over any type of clothing.
- Upon modification, feedbacks were again taken from these workers. The users found them comfortable to wear and carry out their tasks.

Scan here for Sanitation related resources prepared by UMC

A film to encourage sanitation workers to use PPE	Khabar Rahe: A film for citizens awareness on safety of sanitation workers	Handbook for Sanitation workers on the use of PPE	Garima Scheme Guidelines
A film on Odisha Garima Scheme ensuring safety and dignity of sanitation workers	Turning Tides: A Journey Towards Safety and Dignity for Sanitation Workers in Urban India	Sanitation Worker's Handbook	IEC on the use of PPEs