Near Real-Time Monitoring of Extreme Weather Events and Impacts on Waste Pickers' Cooperatives - NRTM

Women in Informal Employment: Globalizing and Organizing

Climate & Waste Pickers Bulletin No.6 — **March, 2026**

Belo Horizonte - Minas Gerais

Extreme Weather Event:
Torrential Rain
Period: March 6-7, 2026

Monitored Waste Pickers Organization:

COOPESOL LESTE
Cooperativa Solidária dos Trabalhadores e Grupos Produtivos da Região Leste

Context

The summer period in Belo Horizonte is characterized by frequent rainfall. In 2026, **accumulated rainfall exceeded expectations**, with February **recording** twice the historical average and March maintaining a trend of intense events, culminating in the episode on March 7.

Between March 6 and 7, according to the **National Institute of Meteorology (INMET)**, 111.2 mm of rainfall was recorded, equivalent to **62% of the expected** monthly volume concentrated within a few hours. In this context, a torrential rain event occurred, accompanied by strong winds. It had initially been forecast as light rain but intensified rapidly.

At **Coopesol Leste**, the event caused **water infiltration** in the warehouse, with water entering through the upper structure and **cracks in the wall** near the silo, affecting sorting and storage areas. Activities were **temporarily interrupted** due to electrical risks and unsafe working conditions, in addition to impacts on material quality, collection logistics, and increased physical effort for workers.

Characteristics of the Monitored Organization

Year founded
2003

28
Number of waste pickers

57%
Women

79%
are black or mixed-race.

60 tons/month
Average monthly production

R$ 65,000 per month
Average monthly revenue
approximately US$ 12,700 per month

R$ 700 per month
Average monthly income per worker
approximately US$ 135 per month
which is roughly equivalent to one quarter of the Brazilian minimum wage

Provided warehouse
Mansory structure with metal sheet roofing

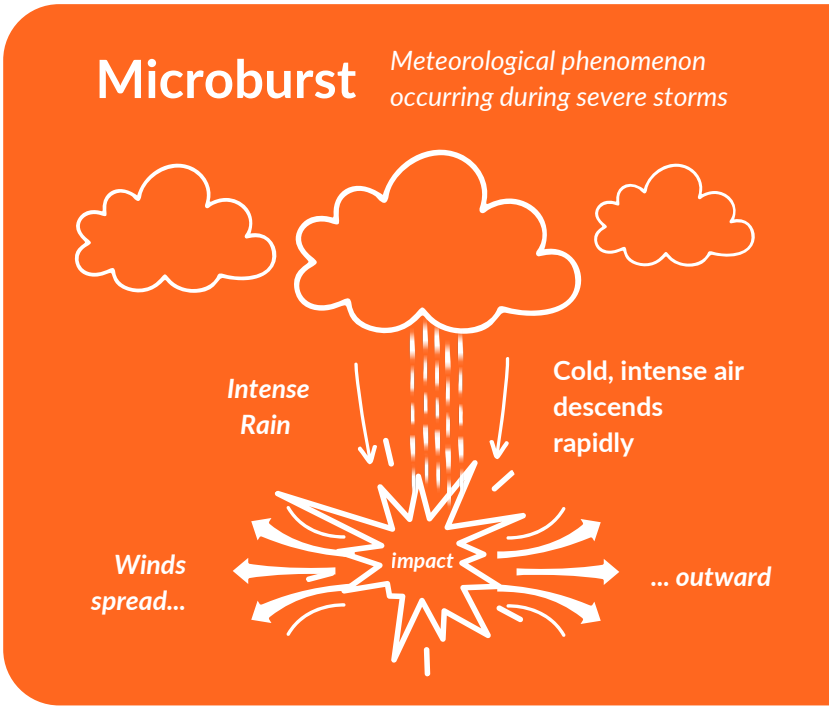
The occurrence of **intense and concentrated rainfall** in Belo Horizonte highlighted the **structural vulnerability** of Coopesol Leste. More than half of the expected monthly rainfall fell within a few hours, and the warehouse was not prepared.

Belo Horizonte, Minas Gerais

Extreme Climate Event Indicator (ECEI):

The recorded event can be classified as an **extreme climate event** due to the intensity and abnormal concentration of precipitation within a short time interval. According to INMET, **111.2 mm in a few hours** represents **more than half of the monthly average,** indicating an occurrence outside the expected pattern.

This type of event may be associated with the phenomenon known as a ***microburst***, which consists of a strong downward flow of cold air from storm clouds that **spreads rapidly** upon reaching the ground, generating **strong wind** gusts and **concentrated rainfall** in a localized area. According to meteorological literature and definitions from institutions such as NOAA, microbursts are short-duration but high-intensity events capable of causing **significant infrastructure damage** and intensifying rainfall impacts.



Main Impacts on the Monitored Cooperative

Impacts on production

- Interruption of sorting activities during rainfall
- Logistical disruption and reduced operational efficiency
- Difficulty in collection due to intense rain and mobility constraints

Impacts on equipment

- Risk of damage and malfunction in electrical equipment (e.g., sorting conveyor)
- Suspension of equipment use due to electrical hazards

Impacts on commercialization

- Material quality compromised, especially cardboard and paper (soaked materials)
- Reduction in recyclables quality
- Loss of value in material sales

Impacts on workers' health and safety

- Electrical risks from water contact with equipment
- Risk of slips and falls
- Proliferation of vectors (mosquitoes)
- Absence due to respiratory illness
- Worsening of health conditions (e.g., high blood pressure)

Infraestructure and Climate Response

Coopesol Leste presents critical structural vulnerabilities that increase its exposure to extreme weather events, directly impacting operations and working conditions.

Critical Issue

The current infrastructure of Coopesol Leste does not withstand intense climate events

Without structural intervention or renovation, impacts are likely to repeat and worsen, increasing risks to worker safety, operational interruptions, and continuous economic losses.

Recurring structural infiltration

Water entering through the upper room and through an opening in a compromised wall, directly affecting the sorting and storage areas

Internal flooding of the warehouse

Formation of puddles that compromise the use of productive spaces and internal circulation

Compromise of support areas

the upper room became unusable, affecting operational functions (e.g., security guard space)

Structural risk

Presence of walls at risk of collapse, indicating building fragility

Floor degradation

Broken flooring hindering the movement of equipment and increasing operational risks

Damage to furniture and internal structures

Loss of items due to infiltration and humidity (e.g., mold)

From a climate response perspective, there is an absence of structured adaptation measures, such as efficient drainage systems, proper waterproofing, ventilation, and protection against extreme events.

Belo Horizonte, Minas Gerais

"My concern today is with the heavy rain coming. The warehouse keeps flooding, we have several cracks in the walls (...). My concern is that everything seems normal, but we don't know what's happening underground. It looks fine, but a tragedy could happen. Does something bad have to happen before action is taken?"

Statement by Vilma Estevam, President of Coopesol Leste, in the project monitoring group in March 2026

Indicators of Climate Response and Adaptation

Immediate response actions

Interruption of activities, shutdown of the sorting conveyor, and manual removal of bags to areas less exposed to water

- **Reduction of Losses and Damages:** Attempts to protect materials from moisture, although with recurring losses in the quality of recyclables, especially paper and cardboard
- **Contact with authorities:** Inspection carried out by a municipal engineer and Civil Defense, with issuance of a risk report sent to the responsible department, with no record of corrective actions implemented to date

Future measures

Expectation of structural renovation (roof maintenance and repairs), with no defined timeline

Risk perception and emergency actions

- No structured prevention or contingency plan; responses are reactive
- Recognition of risks related to rain, especially infiltration and electrical hazards

Waste pickers respond to the impacts, but lack the structural conditions to adapt

The Extreme Weather Events Monitoring project is developed by WIEGO with support from the Mãos Pro Futuro Program and aims to develop a monitoring system that links extreme climate events to impacts on workspaces, working conditions, and the livelihoods of waste pickers.

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