

CONSEQUENCES OF JAGGERY PROCESSING: BAGASSE DUST HAZARDS



THEME: MSMEs & SMALL BUSINESSES



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STAKEHOLDER

MR. BASAVARAJ
OWNER - SAMPPAHALLI FARM JAGGERY PRODUCTION UNIT,
MANDYA

Core Issue

The jaggery production process at **Samppahalli Farm** uses **sugarcane bagasse** both as fuel and as feedstock for a 27-ft rotary dryer. During operation, bagasse falls onto a conveyor belt and enters the dryer, which uses hot smoke from bagasse combustion for drying. As the dryer rotates, the bagasse breaks into pieces: the larger chunks are

collected and fed back for combustion, while the fine particles escape through the chimney with smoke. This combination of smoke and fine dust disperses into nearby residential areas, settling on rooftops, contaminating water tanks, and entering homes—leading to severe community concerns over health, hygiene, and environmental impact.

Constraints

- Fine dust generated during bagasse drying is not fully captured by existing chimney or exhaust systems
- High-temperature smoke used for drying complicates filtration and dust-trapping methods.
- Nearby residential proximity increases the spread and visibility of pollution.
- Lack of dust management infrastructure (e.g., cyclonic separators, scrubbers, filters).
- No established monitoring mechanism for emissions and particulate matter in rural jaggery units.

Context

Mandya district is a major hub of sugarcane and jaggery production, with traditional processing units operating close to villages. While jaggery is an important local industry, practices such as bagasse drying and combustion generate significant emissions. Communities living near Samppahalli Farm face repeated cleaning routines, contaminated water supplies, and long-term fears of respiratory illnesses, especially among children. The challenge lies in balancing the economic importance of jaggery production with environmentally safe and socially acceptable practices.



Groundwork to be considered

- Detailed assessment of dust and smoke emissions from bagasse drying units.
- Identification of health risks and structural impacts reported by residents.
- Documentation of frequency and intensity of dust deposition in nearby homes.
- Study of current practices in jaggery units across the region for benchmarking.
- Engagement with affected residents to map concerns and patterns of exposure.

Existing Systems

- Rotary dryer using bagasse combustion smoke as heat source.
- Conveyor system recycling larger bagasse particles back to combustion.
- An L-shaped bent pipe fitted between the dryer and the chimney, intended to reduce dust particle velocity before smoke release.
- Despite this, fine dust continues to escape through the chimney along with smoke, settling on nearby homes and surroundings.
- Households adopt defensive measures such as closing windows and frequent cleaning, but these remain inadequate.
- Community concerns are raised informally, without structured accountability or regulatory mechanisms.

Additional Stakeholder

- T. Dinesh, Joint Director, District Industries Centre (DIC), Mandya
- Somey Gowda, Alemane Association Head, Mandya