Innovative Sanitation Solution for Informal Settlements In Quibdo, Colombia

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Innovative Sanitation Solution for Informal Settlements in Quibdó, Colombia
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Opportunity Statement
• More than 30K displaced to Quibdó due to guerilla violence and settled in informal settlements (89% of country's displaced population)
• 75% of population in Quibdó lack sanitation infrastructure creates dependence on the polluted Atrato River for drinking water, bathroom, bathing, and cleaning.
• 20 recorded children deaths in a period of three months

Proposed System Process
1. Collect human feces and urine from elevated water closets
2. Use human feces in biodigester to produce gas
3. Use in a community kitchen to cook meals for children
4. Make agricultural fertilizer with collected urine

Elevated Water Closet
• 10 Water Closets to satisfy 300 individuals
• Average person defecates 200 g per day and urinates 1.4 L per day
• Feces tank capacity: 12kg
• Urine tank capacity: 60 L

Waste Usage
Waste is converted into 0.5 L of methane gas and used for 2.5 hrs. of cooking in a community kitchen per day

Impact
• Safe and accessible toilet facilities for community members
• Reduce human waste contamination to Atrato River to prevent sicknesses related to contaminated water consumption
• Aid with malnutrition in community children
• Generate jobs for community members, specially women, to administrate and maintain water closet facilities and community kitchen
• Encourage an entrepreneurial movement to provide fertilizer from urine and remaining feces