

**Participatory Human Rights Advancement Society
Participated the Survey on “Sanitation Odor Survey”
conducted by Duke University, USA & University of Colorado,
USA from 25 June 2015 to 22 March 2016**

Marc Deshusses and Kathy Jooss On behalf of Duke University Durham, North Carolina, USA & Karl Linden on behalf of University of Colorado Boulder, USA conducted a survey on Sanitation Odor Survey. Responses gathered from June 25, 2015 through March 22, 2016. Final Stakeholder Odor Report was published on 21 October 2016. Total respondents (n) = 258. Respondents were heavily weighted toward solution providers (47%), on-site researchers (39%) and sanitation technology developers (36%). 31% of respondents described themselves as users. Most respondents identified with multiple roles.

Sanitation Systems Described (in brief)

The toilets described were spread somewhat evenly across urban (34%), peri-urban (29%) and rural (37%) settings. More private toilets (single or multiple family use, 48%) were cited by far compared to any other category.

Sanitation systems in 57 different countries were described. The top three countries accounted for only 23% of all systems; they were India (40 systems), Kenya (32) and Uganda (20).

Sanitation systems were profiled in terms of six subcomponents or stages in the sanitation value chain: the location of defecation (here the terms ‘toilet’ and ‘latrine’ were used interchangeably), on-site containment, waste transport, waste processing, application of treated byproducts, and the release of untreated waste. Systems are made up of anywhere between one and all six of these components.

Key Outcomes from the survey (in brief):

- 94% of respondents felt malodor was an important barrier to toilet adoption.
- Issues presented as needing more research and development were diverse. The need for simple, low cost, water efficient solutions was a common

theme. Better chemical products for cleaning and odor control, a better understanding of the factors contributing to odor, and better ways to measure odor were also common.

- 51% of participants felt that some progress has been made in addressing sanitation malodor. 28% felt that no progress has been made at all. Only 3% (5 respondents) felt that most odor issues have been resolved.
- The impact of sanitation odor was varied, with 235 respondents identifying 606 effects. The top three responses were (1) odor attracts flies and other bugs (42% of the responses), (2) users are forced to endure the unpleasant odor (also 42% of the responses), and (3) individuals choose open defecation instead (36%). This question was asked with regard to sanitation odor in general and not linked to any specific source of that odor.
- For toilets specifically, numerous factors play a role in the degree of odor, but cleaning and maintenance had the strongest influence according to survey results.
- Odor at the location of defecation itself (at the toilet) was ranked fourth among system components for very bad or unbearable odor (27%). Odor associated with the release of untreated waste was ranked as the most severe (51% very bad or unbearable), followed by transportation of waste (38%), then processing of waste (31%).
- Eliminating the release of untreated waste into the environment would

Simultaneously address the source of the most severe sanitation related malodor.