

## Key messages:

- In 2009, 89 percent of households in Madagascar surveyed reported unsafe disposal of the feces of their youngest child under age three.
- Even among households with improved toilets or latrines, 20 percent reported unsafe child feces disposal behavior.
- Unsafe child feces disposal is more prevalent among households that defecate in the open, those in rural areas, those that are poorer, and those with younger children.<sup>1</sup>

## OVERVIEW

Safe disposal of children's feces is as essential as the safe disposal of adults' feces. This brief provides an overview of the available data on child feces disposal in Madagascar and concludes with ideas to strengthen safe disposal practices, based on emerging good practice.

The Joint Monitoring Programme for Water Supply and Sanitation (JMP) tracks progress toward the Millennium Development Goal 7 target to halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation. The JMP standardized definition for an improved sanitation facility is one that hygienically separates human excreta from human contact.<sup>2</sup>

According to the latest JMP report, only 14 percent of Madagascar's population had access to improved sanitation in 2012.<sup>3</sup> This means that 19.2 million individuals in Madagascar lacked improved sanitation in 2012; of these, 8.6 million practice open defecation. However, these estimates are based on the household's primary sanitation facility, and may overlook the sanitation practices of young children. In many cases, children may not be able to use an improved toilet or latrine—because of their age and stage of physical development or the safety concerns of their caregivers—even if their household has access to one.

## SUMMARY OF CHILD FECES DISPOSAL DATA

In 2009, less than a half (38 percent) of households surveyed in Madagascar reported that the feces of their youngest child under age three were safely disposed. Only 2 percent of households reported that their youngest child's feces were disposed of into an improved sanitation facility, according to 2009 Madagascar DHS (see Figure 1). This low percentage of households reporting improved child feces disposal suggests that children under age three have worse sanitation than the country's broader population, where 17 percent use improved sanitation.



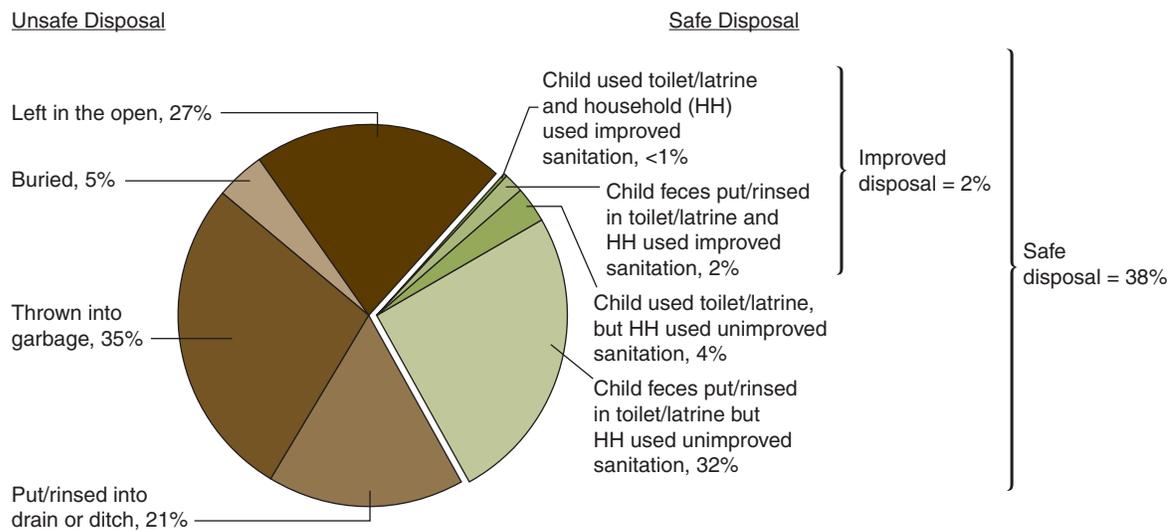
In Madagascar, households lacking improved sanitation, those in rural areas, and poorer households—as well as households with younger children—have a higher prevalence of unsafe disposal of children's feces. Between 2004 and 2009, reported safe disposal of children's feces increased in both urban and rural areas (see Figure 2). However, households in urban areas remain substantially more likely to use safe feces disposal than rural households.

Households practicing open defecation reported the highest level of unsafe child feces disposal, at 87 percent (see Figure 3). For these households practicing open defecation (i.e., they do not use a latrine),

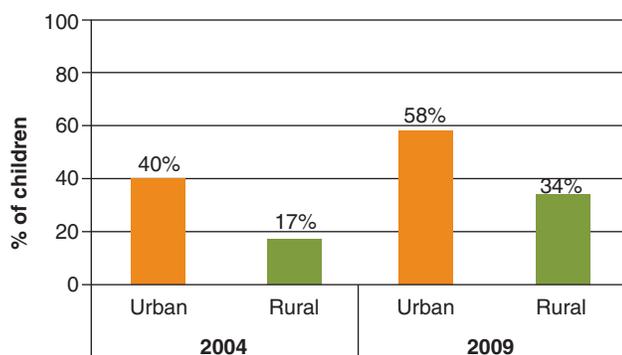
### What Is “Safe Disposal” of a Child's Feces?

The safest way to dispose of a child's feces is to help the child use a toilet or latrine or, for very young children, to put or rinse their feces into a toilet or latrine. For the purposes of this brief, these disposal methods are referred to as “safe,” whereas other methods are considered “unsafe.” By definition, “safe disposal” is only possible where there is access to a toilet or latrine. When a child's feces is put or rinsed into an “improved” toilet or latrine, this is termed “improved child feces disposal.”

**FIGURE 1 Safe disposal prevalence is relatively low, and the prevalence of improved disposal is negligible. In 2009, 27 percent of households left their child's feces in the open.** Percentage of households reporting each feces disposal practice for their youngest child under age three, Madagascar, 2009.



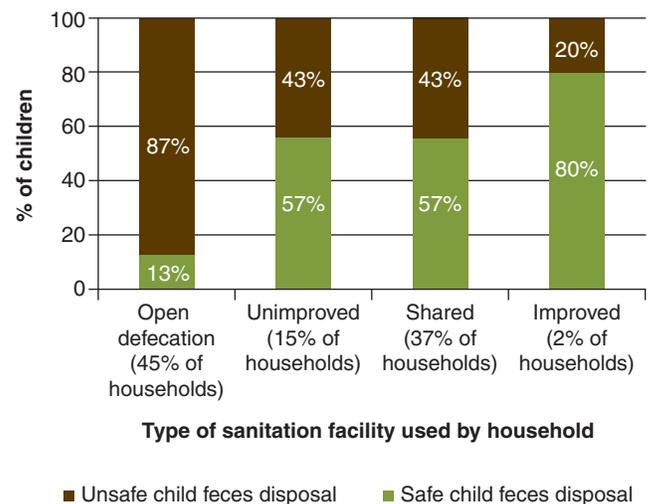
**FIGURE 2 The prevalence of safe child feces disposal has increased over time, but there is still a substantial disparity in urban compared to rural areas.** Percentage of households reporting safe feces disposal for their youngest child under age three, by urban and rural residence, Madagascar, 2004<sup>4</sup> and 2009.



13 percent report using safe feces disposal for their children. It is possible, but not probable, that households that do not use a latrine themselves deposit their children's feces into a latrine (see notes on self-reported data in the "Data Sources" section).

A slight shift in safe disposal practices is also seen as children grow: children are increasingly likely to use a toilet/latrine themselves, or have their feces put or rinsed into one (see Figure 4). Interestingly, the use of a toilet/latrine steadily increases until peaking at age three (12 percent). The low prevalence of safe disposal of feces for children at four years old is due in part to the large amount of missing data for this age category. This may simply reflect that caregivers are no longer as involved and thus aware of where their older children defecate. At these young ages, the behavior of the child's caregiver is critical to dispose of the feces safely and shape the child's toilet training.

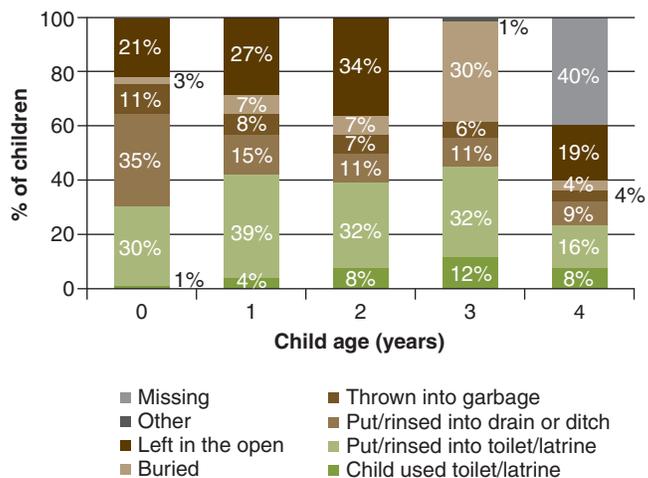
**FIGURE 3 Even among households with improved sanitation, only 80 percent reported safe child feces disposal.** Reported feces disposal practice for households' youngest child under age three, by household sanitation facility type, Madagascar, 2009.



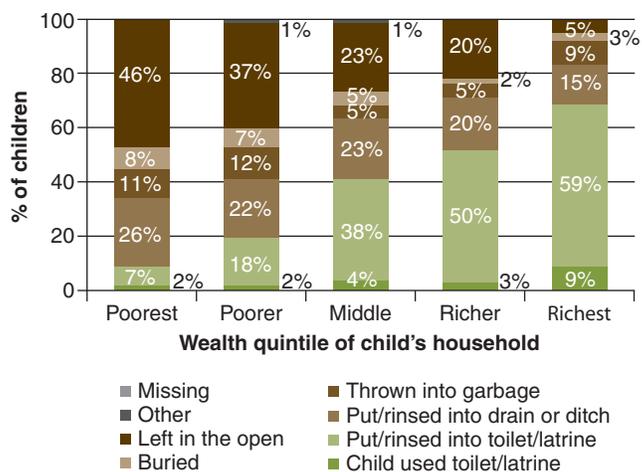
Safe disposal differs widely across the wealth asset quintiles.<sup>5</sup> The poorest quintile of households is substantially less likely than the richer and richest households to report safe child feces disposal—only 9 percent of the poorest quintile reports safe disposal (see Figure 5). Children's feces from 46 percent of the poorest households were left in the open—the equivalent to open defecation. Looking at overall sanitation facility coverage for households with children under age three in Madagascar: only 1 percent of the poorest households reported use of a toilet/latrine compared to 94 percent of the richest quintile. This is an important factor in child feces disposal: by definition, safe disposal is only possible when there is access to a toilet/latrine.

**FIGURE 4 Child feces disposal behaviors differ slightly across child age groups: open defecation peaks significantly for children aged 36–47 months.**

*Reported feces disposal practice for children of different ages, Madagascar, 2009.*



**FIGURE 5 Safe child feces disposal increases substantially with increasing wealth, and is very low in the poorest households.** *Reported feces disposal practice for households' youngest child under age three, by household wealth quintile, Madagascar, 2009.*



Behind this national-level data, there is wide variation in child feces disposal practices, with a greater prevalence of unsafe practices among households without access to improved sanitation, in rural areas, and those that are poorer. For example, unsafe disposal in rural areas and among the poorest 40 percent of households is worse than among children overall. Although this brief only focuses on one socioeconomic indicator at a time, applying multiple lenses would show even greater extremes of disparity—with the poorest rural households with the youngest children and no sanitation facility likely reporting the greatest prevalence of unsafe disposal.

## What Is the Impact of Unsafe Disposal of Children's Feces?

There is widespread belief that the feces of infants and young children are not harmful, but this is untrue. In fact, there is evidence that children's feces could be more risky than adults' feces, due to a higher prevalence of diarrhea and pathogens—such as hepatitis A, rotavirus, and *E. coli*—in children than in adults.<sup>6</sup> Therefore, children's feces should be treated with the same concern as adults' feces, using safe disposal methods that ensure separation from human contact and household contamination.

In particular, the unsafe disposal of children's feces may be an important contaminant in household environments, posing a high risk of exposure to young infants.<sup>7</sup> Poor sanitation can result in substantial health impacts in children, including a higher prevalence of diarrheal disease, intestinal worms, enteropathy, malnutrition, and death. According to the World Health Organization (WHO), most diarrheal deaths in the world (88 percent) are caused by unsafe water, sanitation, or hygiene. More than 99 percent of these deaths are in developing countries, and about eight in every 10 deaths are children.<sup>8</sup> Diarrhea obliges households to spend significant sums on medicine, transportation, health facility fees, and more, and can mean lost work, wages, and productivity among working household members.<sup>9</sup> Stunting and worm infestation can reduce children's intellectual capacity, which affects productivity later in life. The WHO estimates that the average IQ loss per worm infection is around 3.75 points.<sup>10</sup>



**An example of UNICEF-developed counseling cards, for use in feeding centers**

## IDEAS FOR CONSIDERATION

In Madagascar, the national Community Led Total Sanitation (CLTS) program being implemented by the Government of Madagascar with the support of various development partners, does include messages on safe child feces disposal during the CLTS triggering process. However, there is room to strengthen this component. There are few other interventions in Madagascar aimed at the safe disposal

of children's feces during the first years of life. In general, sanitation for children under age three has been a neglected area of policy and program intervention.

Given the relatively few programs focusing on children's sanitation in Madagascar and globally, there is not a strong evidence base of effective strategies for increasing the safe disposal of children's feces. Significant knowledge gaps must be filled before comprehensive, practical evidence-based policy and program guidance will be available. Nevertheless, organizations and governments interested in improving the management of children's feces could consider:

- Conducting formative research to understand the behavioral drivers and barriers to safe child feces disposal
- Strengthening efforts to change the behavior of caregivers through programs that encourage cleaning children after defecation, potty training children, and using appropriate methods to transport feces to a toilet/latrine as well as handwashing with soap after fecal contact and before preparing food or feeding a child
- Exploring opportunities to integrate child sanitation into existing interventions that target caregivers of young children, such as including key messages in antenatal/newborn care materials and infant and young child feeding guidance provided to parents, ensuring that midwives' training, as well as early childhood development materials and preschool programs, include information on safe child feces disposal
- Partnering with the private sector to improve feces management tools, such as potties, diapers, tools for retrofitting latrines for child use, and scoopers
- Improving the enabling environment for management of children's feces, by including specific child feces related criteria in open defecation free (ODF) verification protocols and in national sanitation policies, strategies, or monitoring mechanisms.

## DATA SOURCES

Unless otherwise specified, all analysis in this brief is based on child feces disposal behavior self-reported by the child's mother or caregiver in the 2009 Madagascar Demographic and Health Survey (DHS) 6, which is the latest Multiple Indicator Cluster Survey (MICS) or DHS available for Madagascar that records child feces disposal behaviors.

The MICS and DHS collect data in a generally harmonized manner and hence are the basis for this country profile series. However, whereas the DHS collects data on the youngest child under age five living with the mother for each household, the MICS collects data on all children under age three who live with the respondent (mother or caretaker). To maximize comparability, we restricted all analysis to children under age three in all figures, except Figure 4.

It is likely that self-reports overestimate safe disposal.<sup>11</sup> In Bangladesh, for example, although 22 percent of children reportedly either used a toilet/latrine or their feces were put or rinsed into the toilet/latrine (according to MICS 2006), a structured observation of behavior conducted under UNICEF's Sanitation, Hygiene Education and Water Supply in Bangladesh (SHEWA-B) program in 2007 found that only 9 percent of subjects disposed of children's feces into a toilet/specific pit.<sup>12</sup> Regardless of this issue, self-reports are currently regarded as the most efficient method for gauging safe disposal of children's feces.

## REFERENCES

<sup>1</sup> Institut National de la Statistique (INSTAT) and ICF Marco. 2010. *Enquête Démographique et de Santé de Madagascar 2008–2009*. Antananarivo,

Madagascar: INSTAT and ICF Marco. Please see the "Data Sources" section.

- <sup>2</sup> The JMP has established a set of standardized definitions to categorize improved sanitation, which are used to track progress toward Millennium Development Goal 7. However, these definitions are not always the same as those used by national governments. See *Progress on Drinking Water and Sanitation: Update 2014*.
- <sup>3</sup> WHO/UNICEF Joint Monitoring Programme, 2014. *Progress on Drinking Water and Sanitation: Update 2014*. Geneva: World Health Organization.
- <sup>4</sup> Institut National de la Statistique (INSTAT) and ICF Macro. 2010. *Enquête Démographique et de Santé de Madagascar 2008–2009*. Antananarivo, Madagascar: INSTAT and ICF Macro; and Institut National de la Statistique (INSTAT) and ICF Macro. 2005. *Enquête Démographique et de Santé de Madagascar 2003–2004*. Antananarivo, Madagascar: INSTAT and ICF Macro.
- <sup>5</sup> The wealth indices used to classify households into wealth quintiles include drinking water and sanitation variables.
- <sup>6</sup> Feachem, R., D. Bradley, H. Garelick, et al. 1983. *Sanitation and Disease: Health Aspects of Excreta and Wastewater Management*. World Bank Studies in Water Supply and Sanitation 3. Chichester, UK: John Wiley & Sons.
- <sup>7</sup> Gil, A., C. Lanata, E. Kleinau, and M. Penny. 2004. *Children's Feces Disposal Practices in Developing Countries and Interventions to Prevent Diarrheal Diseases: A Literature Review*. Strategic Report 11. Peru: Environmental Health Project (EHP).
- <sup>8</sup> WHO. 2009. *Global Health Risks: Mortality and Burden of Disease Attributable to Selected Major Risks*. Geneva: World Health Organization, 23.
- <sup>9</sup> Favin, M., G. Naimoli, and L. Sherburne. 2004. *Improving Health Through Behavior Change: A Process Guide on Hygiene Promotion*. Joint Publication 7. Washington, DC: Environmental Health Project (EHP).
- <sup>10</sup> WHO. 2005. *Report of the Third Global Meeting of the Partners for Parasite Control: Deworming for Health and Development*. Geneva: World Health Organization, 15.
- <sup>11</sup> Stanton, B., J. Clemens, K. Azis, and M. Rahamanr. 1987. "Twenty-Four-Hour Recall, Knowledge-Attitude-Practice Questionnaires and Direct Observations of Sanitary Practices: A Comparative Study." *Bulletin of the World Health Organization*. Geneva: World Health Organization.
- <sup>12</sup> Akhtaruzzaman, M. N., and S. N. Islam. 2011. *Nutrition, Health and Demographic Survey of Bangladesh—2011: A Preliminary Report*. Bangladesh: University of Dhaka, 19.

## NOTES

**We're interested in your thoughts. Have you found different evidence of what works through your own programming?** If you have thoughts to share, or know of a program that is encouraging the safe disposal of child feces, please contact WSP at [worldbankwater@worldbank.org](mailto:worldbankwater@worldbank.org) or UNICEF at [WASH@unicef.org](mailto:WASH@unicef.org) so that we can integrate your information into future program guidance.

## ACKNOWLEDGEMENTS

This brief was developed jointly by WSP and the United Nations Children's Fund (UNICEF) as part of a series of country profiles about sanitation for children under age three.

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