Changing WASH Practices in Southwest Bangladesh– One Small Doable Action at a Time

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Abstract
The global USAID WASHplus Project successfully increased access to water, sanitation and hygiene by applying a comprehensive and innovative approach in hard-to-reach areas of southwest Bangladesh. Rather than promoting ideal water, sanitation and hygiene (WASH) infrastructure and behavioral improvements, households were encouraged to take 'small doable actions' – feasible yet effective improvements – that moved toward the ideal practice. Through taking this approach, the project met and surpassed all project targets before the end of the project period. Project implementers worked with community members to develop age-specific behaviors for safely disposing infant and child feces and also for patching leaky latrines that dump feces back into the environment.

Introduction
WASHplus/Bangladesh is a USAID-sponsored project led by the INGO FHI 360 with WaterAid/Bangladesh as lead implementation partner in collaboration with local government, partner NGOs and communities. The four-year program (2010- 2014) seeks to establish sustainable provision of safe water, improved sanitation, and hygiene (WASH) for just over a quarter million marginalized people living in Southwestern Bangladesh. In addition to stimulating increased access to water and sanitation, and strengthening local government and community management of WASH, the project seeks to integrate WASH into child nutrition programs to strengthen evidence-based integrated programming and support improved child growth. The targeted sub-districts were selected where access to water and sanitation is low, poverty is high, and WASH-related diseases such as diarrhea are widespread.

To achieve project goals, WASHplus applies comprehensive and innovative behavior change approaches described in this paper that aim to improve consistent and correct WASH practice, and thus not only improve WASH coverage but health, social and economic outcomes requiring consistent and correct WASH practice.

Background
Millions of poor and marginalized people in hard-to-reach areas [1]in rural Bangladesh are still deprived of their basic rights to safe drinking water and improved sanitation facilities. Despite the fact that access to WASH services has received global acceptance as a basic

[1] Areas having poor water and sanitation coverage due to adverse hydro-geological condition, having poor and inadequate communication network, and frequent occurrence of natural calamities which in turn results in higher rate of child mortality and accelerates the vicious cycle of poverty, are referred as hard-to-reach areas. (National Strategy for Water and Sanitation Hard to Reach Areas of Bangladesh)

human right, equitable and pro-poor WASH services are yet to be achieved in Bangladesh. The problem is exacerbated by resource limitations, disproportionate investment by government and donor communities in urban areas, extreme geographic and technological challenges, and institutional and capacity gaps, such as poor local governance. The gap between national policy and implementation at the local level has posed a challenge to successful WASH service delivery, particularly in the hard-to-reach Southwest region.

The project areas coincide with USAID target areas for improved nutrition programs, with the intent of integrating WASH and nutrition programming. Given that gastro-intestinal infection and diarrhea thwart the uptake of nutrients and perpetuate the cycle of under-nutrition and morbidity, access to WASH services will bolster ongoing efforts to reduce under-nutrition in the targeted subdistricts or *upazilas*. To address the great challenges found in the four *upazilas*, the project seeks to:

1. Reach poor and marginalized communities to increase and sustain access to safe water, sanitation and hygiene using locally appropriate technologies;
2. Build community and local government capacity to operate and maintain water and sanitation facilities, demand increased allocation and pro-poor targeting of national and local government funds, and community contributions to ensure sustainability of project interventions and impact;
3. Strengthen coordinated WASH-nutrition programming in Bangladesh; and
4. Strengthen collaboration between government, the private sector and civil society in the WASH sector.

National WASH Context

According to the World Bank Environmental Country Assistance Strategy (2006), the cost of the current water and sanitation challenges in Bangladesh is an estimated USD $800 million per year including both direct and indirect health costs. The Water and Sanitation Program (WSP) of the World Bank found the annual economic impact of inadequate sanitation in Bangladesh is estimated at BDT 295,500 million, equivalent to USD $4,230 million or 6.3 % of the GDP. (Bakarat 2010) At the same time, the World Health Organization (WHO) reports the return on investment in Bangladesh WASH programs is 5:1, implying a significant economic benefit to investing in WASH programming.

Current WASH and Nutrition Situation in Project Area

The project conducted a rigorous baseline evaluation (WASHplus 2014), using a cross-sectional, pre-post design, where quantitative and qualitative approaches are combined. Various data collection methods were employed in the study to gather information on different variables and themes. The quantitative sample was randomly selected from the target villages, with a total sample size just under 1500. The following highlights of baseline findings provide an overview of the intervention area:

Access to improved water is almost universal

- Almost all of the households have tube well as the main source of drinking water (98.9%). Only 1 percent use surface water in this regard.
- About 64 percent reported that less than 15 minutes is required to fetch water, followed by 31 percent required 15 to 30 minutes. On average about 14 minutes are required to fetch water from the nearest improved source to the household.

Despite almost universal access, households choose to use other inferior sources for household use other than drinking, including highly polluted pond and canal water for cooking, bathing and washing.

Sanitation

- Only about 10 percent of the surveyed households have access to improved sanitation facilities, i.e., water sealed pit latrine.
- 63% have pit latrine with slab (broken water seal)
- About 19% used a "hanging latrine" over the nearby canal or pond, following pit latrine without slab (4.5%) and remaining 4% defecate in open place or bushes.
- 32% of households reported that children defecate the household latrine, followed by 'putting or rinsing feces into household latrine' (16.8%) or 'throwing into a specific hole' (17.9%). However, one third of them (33.1%) report that they do not use a specific place disposal. Only 59% can be classified as safe disposal as defined by international standards.

Handwashing after defecation

- 33% have hand washing facilities inside or near to latrine (within 5 yards)
- 94% of these have water available in the place however the majority 82.6% have no soap

Handwashing before food preparation and feeding/eating

- One third of the households have hand washing stations at or near the area/ kitchen for preparing complementary foods for children undergoing weaning, while two thirds do not have.
- Among those who have, the majority do not have soap (87.2%)

Child Health, WASH and Nutrition

Under-nutrition is prevalent in Bangladesh, causing poor development and severe stunting in children (41% of children under are stunted nationally, 42% in project area [WASHplus 2014]). About 10 percent overall are wasted (<-2SD), 30 percent of them are malnourished or underweight (<-2SD) in baseline area measures, not notably different from national averages; and almost equal for girls and boys (30.6-30.3%).

Under-nutrition is a result of not only lack of access to food but also poor hygiene practices and inadequate access to and use of quality water and sanitation. The baseline statistics documenting poor handwashing and sanitation highlight the toll of this vicious cycle on young infants and children. This environment can also lead to the inability to fight

infections, leading to increased risk of acute respiratory infections (ARI), the number one cause of mortality among children under 5. By improving WASH practices, WASHplus aims to combat both diarrhea and ARI, contributing to decreasing rates of under 5 morbidity and mortality.

While limited access to nutrient-rich foods is one challenge to ensuring proper nutrition in mothers and children, poor quality of sanitation facilities and other means of fecal contamination contribute to the burden of under-nutrition in these regions. Poor hygiene practices create a cycle where children are more susceptible to diarrhea when exposed to fecal matter; feces are easily spread by caretakers do not wash their hands with soap prior to cooking and feeding the child. Children in these environments are more prone to diarrhea, which negatively affects their ability to eat and absorb necessary nutrients. Prevalence of diarrhea among children 0-59 months of the survey area during two weeks prior to the survey found 19.0%; there is no difference between boys and girls in this regard. The growth stunting affecting children under 2 is largely irreversible and affects not only physical growth, but also emotional and intellectual development. (Victora 2008) Therefore, WASHplus aims to integrate WASH into nutrition programs to break the cycle promote child growth and health, as well as family resiliency.

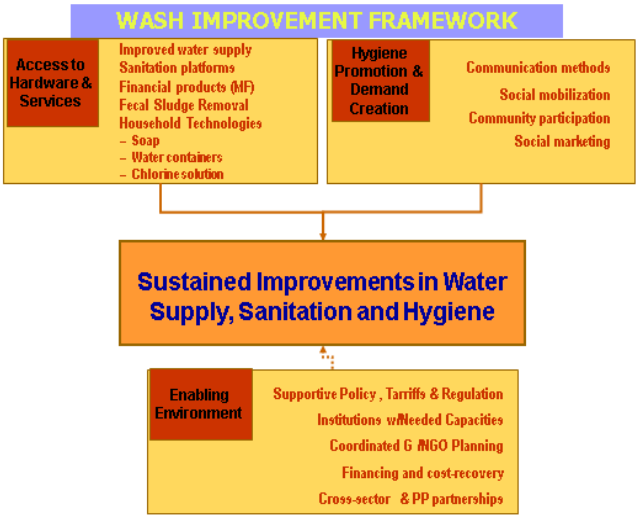
The WASHplus Project underlying theoretical framework

In order to see improvements in health, social and economic well-being of families in the project districts, the WASHplus activity aims to increase the consistent and correct practice of a suite of WASH behaviors including:

- safe and hygienic disposal of feces, including infant feces,
- consistent and correct handwashing at critical junctures, particularly after defecation and before food preparation and feeding/eating,
- safe handling and storage of household water; and
- menstrual hygiene

Our strategy for increasing the practice of WASH behaviors is both theory-based and grounded in established best practice. Rather than embracing one particular theory of behavior change, the WASHplus strategy is constructed around the USAID WASH Improvement Framework (EHP 2004), which posits that in order to realize sustained behavior change or WASH improvement, three key domains must be engaged:

1. Access to hardware and services, such as water supply, soap, sanitation products, and financial 'products' like loans
2. An 'enabled environment', that includes a supportive policy environment, institutions with the needed capacities, coordinated government and non-governmental organizational planning and



3. Hygiene promotion and demand creation, that includes social mobilization, community participation, CLTS, social marketing and behavior change communication.

Therefore, the WASHplus strategy addresses increased access to necessary products and services, a supportive 'enabling environment' with key policies, government and civil society with the essential skills to plan, manage and support WASH; and finally promotion and demand creation through CLTS social mobilization, sanitation marketing, and promotion. This directly corresponds to our project objectives.

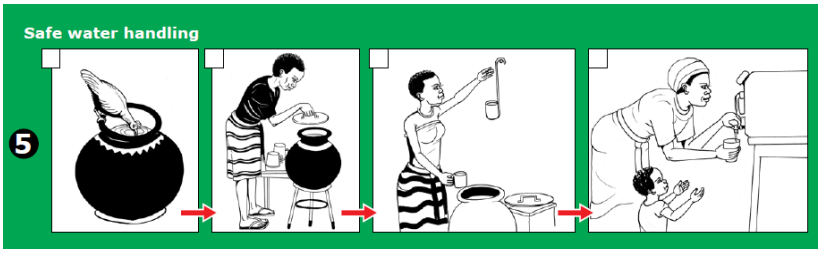
To improve WASH practices, increasing knowledge and awareness is necessary, but not sufficient. A host of other factors are also critical to the performance or non-performance of our focal WASH practices. The design of the overall WASHplus activity in Southwest Bangladesh aims to increase access to water, hygienic sanitation, and hygiene behavior; to strengthen local government capacity to plan, manage, implement and evaluate WASH hardware and software activities; to stimulate formal and informal community institutions like mosque and civil society to reinforce social norms that are supportive of WASH. These social norms are the unwritten rules that guide individuals to 'do' or 'not do' certain behaviors; they remind us what is 'expected', what people import to us think that we 'should do'. In general, the cross cutting factors most influential in WASH behaviors include: perception of risk (of fecal contamination, of NOT washing hands), skills, access to key "enabling" products, self-efficacy (the sense that individuals and/or communities can do something to make things better), key knowledge, and social norms.

Improving WASH practices… one small doable action at a time

The WASHplus behavior change strategy also is built around the evidence that people can rarely go from current practice to ideal practice, for example, from sedentary lifestyle to five aerobic exercise sessions a week, or from open defecation to consistent use of a VIP latrine. Based on this understanding, WASHplus incorporates what we've named a ***'small doable action' approach*** to changing WASH practices. Rather than setting the behavioral objectives of WASHplus as the ideal WASH practices (e.g. put children in diapers; wash hands of all family members at all 7 critical junctions with running water and soap), we identify a continuum of behaviors that leads from unacceptable to ideal. Small doable actions are behaviors that are deemed 'feasible' to perform in resource constrained settings, from the householder point of view; and effective at the individual and public health levels. Behaviors that meet these two criteria – feasible and effective – are considered 'small doable actions' and including in the 'menu of options' for WASH behavioral improvement.

These small doable actions are then 'negotiated' with householders, rather than focusing on educating households to adopt ideal practices or 'promoting' without dialogue. The process of 'negotiation' involves a community agent such as an 'outreach worker' assessing current practice, and problem solving with householders to commit to trying an improved WASH practice. This approach contrasts with predominant hygiene promotion that assumes households aren't practicing ideal practices because they are unaware, and that through awareness raising and education, ideal practices will be catalyzed. In the Bangladesh program, these behaviors are 'negotiated' in group sessions in courtyards, in tea stalls, at households and other venues.

Below is a pictorial representation from a Ugandan job aid of small doable actions related to safe water handling. The first picture is an 'unacceptable' current practice of uncovered water



with animals and flies accessing the container, followed by the "menu of options" that move toward an ideal practice (in this context) of a covered jerry can with a spigot raised off the floor.

Applying the SDA approach to hardware and infrastructure

WASHplus works globally with local government and communities to increase access to WASH through rehabilitation and installation of water and sanitation infrastructure. However, there are often improvements for improving existing infrastructure solidly in the 'domain' of households, communities or schools, such as re-hanging doors, stabilizing or raising sanitation platforms, patching leaky latrines, hanging tippy tap handwashing stations, etc. These small improvements also fall into the category of 'small doable actions' that can improve WASH and address the environmental or 'supply' factors influencing improved WASH. Therefore, while WASHplus works with local governments and communities on major water and sanitation infrastructure, we will also be encouraging 'small doable' improvements in hardware as they influence WASH practice.

Small Doable Actions Address Unique Behavioural Challenges

While WASHplus aims to improve the entire 'suite' of WASH behaviors in our activities in Southwest Bangladesh, particular focus is placed on the following behaviors based on an assessment of current practice, available baseline and other epidemiologic data, environmental and social factors.

Safe and hygienic disposal of human feces

As demonstrated in baseline measures, many Southwest villages have high levels of latrine coverage and use, but these latrines either intentionally or inadvertently leak into the surrounding ponds, canals or other parts of the surrounding environment. As with many sanitation activities, WASHplus incorporated CLTS-like 'triggering' to engage communities in the process of examining their current situation and engaging them commit to ending UNHYGIENIC defecation practices and engage in hygiene practices. In the case of our intervention areas, very little open defecation takes place, rather fixed point defecation in latrines that leak feces into the environment. *See photo example.* Our challenge is to trigger actions that end unsafe fixed point defecation, either fixing leaky latrines -- by patching leaky rings, upgrading systems, or a range of small doable actions that we are in the process of developing with local communities.

*Pictured: **At left**, an offset pit latrine discharging into the household pond. **At right**, a 'hanging latrine empties directly into the canal below.*

To promote small doable actions to improve leaky latrines, a 'catalogue' of safe, hygienic and feasible improvements was developed, to clear show a range of options, including costs, and common 'pros and cons' of each option to guide decision making. The catalogue is used by outreach workers as a visual aid during household visits and at focused outreach to men at tea stalls. The catalogue includes different designs of latrine that provide solution to the geo-physical characteristics of the Southwestern coastal parts. The designs include raised plinth and sand envelopment around the pit to confine feces within the pit and to reduce pathogen transmission to the environment. The improvements are retrofitted in the traditional single and twin offset pit latrine design. Sanitation marketing, now often 'twinned' with CLTS under the 'total sanitation' or CLTSplus umbrella, is a part of the WASHplus project model. Local entrepreneurs are being trained in marketing appropriate sanitation products (many in the 'catalogue'), and coordinating with local triggering efforts to ensure a smooth supply-chain of necessary materials, allowing marketers to reach out to householders with sanitation options and financing they desire. This coordination of supply, demand, coordinated planning and training to address sustainable WASH improvement illustrates the use of the WASH Improvement Framework as an innovative and comprehensive behavior change tool.

Using Small Doable Actions to Address Nutrition and WASH Integration

To integrate WASH and nutrition programming, WASHplus works to site water and sanitation infrastructure in areas where we overlap with USAID nutrition projects, areas of high undernutrition and vulnerability. At the same time, we work to integrate a very defined behavioural focus on handwashing before food preparation and infant feeding, and safe disposal of infant faeces to specifically address faecal contamination of under two year olds as complementary foods are being introduced. The most rapid decline in growth (yielding the highest rates of growth stunting) are documented in this window of vulnerability, indicating high rates of contaminated food and water. (KK Saha et al 2009).

Use of tippy taps as a small doable action increasing handwashing with soap, emphasizing handwashing before food preparation and feeding

To reduce food contamination, a range of nutrition and WASH partners have honed in on promoting handwashing before food preparation and child feeding. Handwashing literature now shows that presence of a fixed handwashing station increases the likelihood of handwashing (Luby et al 2009), therefore WASHplus and other USAID nutrition actors include a focus on introducing tippy tap handwashing stations near to food preparation areas as one small doable action negotiated with households. This implies introduction of a second tippy tap into the household, one by the latrine and another near the food area, a behaviour that has not explicitly been promoted in many WASH interventions. This is done through and alongside household and group outreach to improve handwashing skills and strengthen social norms around handwashing at this particular junction. Placement of a tippy tap

facilitates handwashing when flowing water is not readily available, and also serves as a reminder to wash, which has been shown in other health areas to be a key determinant of practice. (Neal 2012) In Bangladesh, though water is hardly scarce, its convenient presence facilitates handwashing, particularly with *running* water and soap.

Small doable actions to increase safe disposal of child feces

Although the impact of poor sanitation on children under five is often measured, little is known about what happens to the feces of under 5s. Most sanitation interventions target adults and school-aged children, ignoring the role that infant feces plays as a disease vector.

A reanalysis of Bangladesh DHS/MICS data by UNICEF and World Bank Water & Sanitation Program shows only 22% of caregivers reported safely disposing of infant feces, and only 11% into an improved sanitation facility. Poor, rural and younger children are most at risk for unsafe disposal and its associated impacts. (Rand et al 2015)

To pioneer programming that aims at changing caretaker perception of 'harmless child poo' and most importantly the related infant and child feces disposal practices, WASHplus worked with district government counterparts and other development partners in Southwest Bangladesh to closely examine current feces disposal practices by age cohort – the lap child (newborn to six month), the 6-12 month crawling child, 12 month – 3 year 'toddlers" and 3-5 year old "young children"; considering toilet training as well as caretaker practices. Bearing in mind current practice, WASHplus developed a menu of 'small doable actions', feasible yet effective feces management practices by age cohort to promote to caretakers as alternatives to current practice. Enabling technologies such as child potties (commodes), use of household tools like agricultural hoes and modifications to latrines to make them 'child-friendly', are an essential element of SDAs to improve the safe disposal of infant and young child feces, along with other 'doable behaviors' around safe disposal of child feces when defecation happens out of the latrine.

These SDAs are then 'negotiated' during household visits and group sessions, also addressing skills and social norms needed to improve these specific WASH practices. Again, the elements of the WASH Improvement Framework (products, enabling environment and promotion) are all coordinated to yield improved practice and outcome.

ILLUSTRATIVE SMALL DOABLE ACTIONS FOR SAFE DISPOSAL OF CHILD FECES

Age Cohort	Current Pooing and Cleaning Practices	Possible SDAs to Promote
Crawling baby (under 1 year)	When caretaker knows infant is about to poop, she stands the infant up to poop on ground Then uses paper or leaves to transfer into ditch	Let child poop where he/she poops then: Use the trowel/hoe, take it to the latrine Socialize child to potty training Sit the child on the potty (even when not pooping)
Young child 3-6 years	Children often with older siblings or on their own Poops anywhere Caretaker cleans up when she sees or when cleaning the courtyard Throw in ditch, anywhere out of sight, or in household garbage	Train child to use latrine Make latrine more "child-friendly" - Control smell with ash and regular cleaning - Pour sufficient water to flush feces - Clean slab at least weekly or when feces are visible - Arrange doorway or superstructure for light - Install handrails to increase stability/security - Make a seat placed over the hole - Accompany child, keep door open, and communicate with child while pooping (congratulate or reward them) - Install a child-friendly footrest in the latrine - Make a latrine with smaller hole to reduce fear

The various small doable actions are all tied together by a unifying theme, Poo's Final Address, to reinforce that where an infant or young child may defecate, it is the caretakers' responsibility to get the feces into the latrine (using the hoe, potty, etc.).

Results

The WASH behaviour change approach described above yielded positive results beyond project targets. Through the combination of social mobilization through CLTS-like approaches twinned with sanitation marketing and assistance to the hard-core poor, a total of 154,729 people gained access to improved sanitation facilities, 175% of the project target. Six hundred fifty three communities were certified open defecation free, surpassing project targets as well.

WATER, SANITATION & HANDWASHING STATIONS RESULTING FROM PROJECT ACTIVITIES			
Activities	**Project target**	**Achievement to date**	**Target achieved as %**
Number of open defecation free communities	512	653	127
Number of improved latrines constructed	20,266	30,929	152
Number of people gaining access to improved sanitation facilities	88,358	154,729	175
Number of hand washing devices installed by project	39,726	41,114	103
Number of new deep hand tube wells installed	670	670	100
Number of improved/ rehabilitated tube wells	19	19	100
Number of people gaining access to improved drinking water source	65,771	94,200	143

Not only did households install 'do it yourself' handwashing stations fashioned from cast off PVC water bottles, some innovated to make their own rudimentary running water supply, as pictured below, running tubing from raised clay pots to facilitate anal cleansing and handwashing within the latrines.

Disposing child feces in a household latrine

Rudimentary running water supply

Targets were surpassed, despite political and geographic challenges, in part because of project investment in capacity building as a sustainability strategy.

NUMBERS TRAINED AT HOUSEHOLD AND COMMUNITY LEVEL			
Activities	**Project target**	**Achievement to date**	**Target achieved as %**
Number of leadership and advocacy training conducted with community members	1,206	1,206	100
Number of people trained on O&M of water facilities	1,450	1,450	100
Number of community volunteers trained	386	386	100
Number of hygiene cycles (4 total sessions) conducted with mother groups	1,683	1,683	100

Conclusions and Lessons Learned

The comprehensive behaviour change approaches outlined in this paper that take into account both the complexities of human behaviour and the unique geographic challenges offer promising strategies for meeting the immense WASH challenges of Southwest rural Bangladesh precisely because they allow for local creativity and innovation, and address hardware as well as promotion.

Our lessons are just emerging, and already we have seen that the small doable action approach resonates with both outreach workers and communities, who willingly try to make small but significant change in their WASH practices. The approach resulted in meeting all project targets, achieving significant gains in previously hard-to-reach areas, and supported an atmosphere of innovation and independence in an area previously wrought with dependence on NGO giveaways.

Twinning of social mobilization with small scale sanitation entrepreneurship successfully addressed the geographic and economic challenges of the area, particularly when focused project inputs built both government and private capacity to deliver and sustain services. The small doable action approach reoriented communities from expecting donations from NGOs, to looking for solutions that were within their means. The small doable action focus on safe disposal of infant and child feces moved households towards truly open defecation free-status.

WASHplus approaches to integrate WASH into nutrition programming through a focus on young child feces and handwashing before cooking and feeding strengthens best practice programming, and offers new tools and approaches for adaptation throughout the region.

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References

Barkat, Abul. *Economic Impacts of Inadequate Sanitation in Bangladesh* (draft), Water and Sanitation Program, World Bank, July 2010.

EHP, *The Hygiene Improvement Framework: A Comprehensive Approach for Preventing Childhood Diarrhea*, Environmental Health Project, Joint Publication 8, May 2004.

Luby, S. P., A. K. Halder, C. Tronchet, S. Akhter, A. Bhuiya and R. B. Johnston, *Household characteristics associated with handwashing with soap in rural Bangladesh*, American Journal of Tropical Medicine and Hygiene, **81**(5): 882-887, 2009.

Neal, DT, W Wood, JS Labrecque P, Lally, *How do habits guide behaviour? Perceived and actual triggers of habits in daily life,* Journal of Experimental Social Psychology 48 (2), 492-498, 2012.

Rand, Emily Christensen, Libbet Loughan, and Louise, Reese, Heather Maule. 2015. *Management of Child Feces: Current Disposal Practices.* Washington, DC: World Bank Water Practice Water and Sanitation Program and United Nations Children's Fund (UNICEF).

Saha, Kuntal K.; Frongillo, Edward A.; Alam, *Use of the new World Health Organization child growth standards to describe longitudinal growth of breastfed rural Bangladeshi infants and young children*, Food and Nutrition Bulletin, Volume 30, Number 2, pp. 137-144(8), June 2009.

Victora CG, L Adair, C Fall, PC Hallal, R Martorell, L Richter, HS Sachdev, *Maternal and child undernutrition: Consequences for adult health and human capital*. Lancet 371, No. 9609: 340–357. doi.org/10.1016/S0140-6736(07)61692-4, 2008.

WASHplus, *Baseline Evaluation Report*, WASHplus Project, Washington DC, February 2014.

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