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IMPROVING ACCESS AND SUSTAINABILITY****Horizontal challenges: WASH and nutrition integration***R. Bery, J. Rosenbaum & J. Annis (USA)***BRIEFING PAPER 2196**

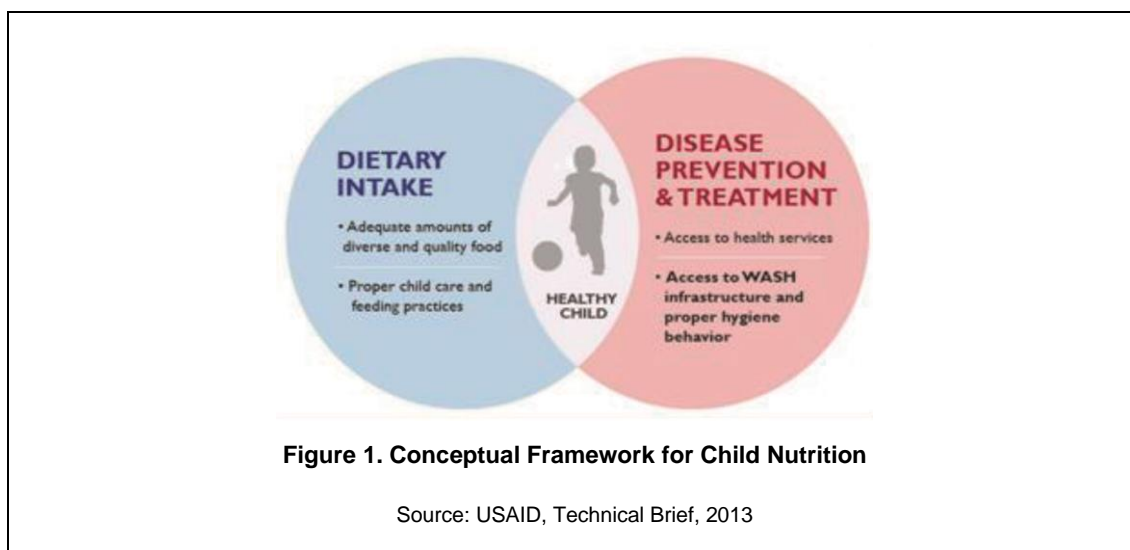
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*Vertical development programming is not delivering the results or progress that countries need to develop and thrive. At the household level, undernutrition in all its forms is estimated to contribute to 3.1 million child deaths each year. Collaboration among sectors such as WASH, nutrition, and health is necessary and recognised but is only beginning and as in all integration efforts, presents challenges. Recent emphasis on integrative and comprehensive approaches has the implicit hypothesis that by integrating we can make headway and perhaps achieve cost efficiencies as well. Yet evidence is still scant, this paper begins to document several modalities for integrated WASH programming, using experiences in two countries, Mali and Uganda to highlight the challenges we have encountered to integration while trying to make programming more horizontal and true to life.*

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**Introduction and background**

Undernutrition is the underlying cause of 35 percent of child deaths each year (Liu, 2012). The term covers the three primary anthropometric measures: stunting, which is low height for age; wasting, which is low weight for height; and underweight, which is low weight for age. Despite decades of targeted and comprehensive nutrition-specific interventions, the persistent presence of undernutrition globally has renewed focus on underlying causes that go beyond lack of nutrients (Bhutta, 2008).



A poor health environment with inadequate access to clean water and unsafe sanitation and hygiene practices increases the risk of enteric diseases that indirectly cause undernutrition (UNICEF, 2013; Engle 1992). New research is underway to further document and expand the evidence base for the connection

between water, sanitation and hygiene (WASH) and undernutrition (Humphrey, 2012). Existing research suggests three key pathways by which substandard WASH access and practice contribute to undernutrition:

### **1. Repeated bouts of diarrhoea**

A vicious cycle exists between diarrhoea and undernutrition: children with diarrhoea eat less and are less able to absorb the nutrients from their food; malnourished children are more susceptible to diarrhoea when exposed to faecal material from their environment.

### **2. Intestinal worm infection and malaria**

Though intestinal worms such as hookworm and roundworm can cause a range of diseases, they contribute significantly to malnutrition, as does malaria. Worms affect nutritional status by inducing intestinal bleeding, competing for nutrients, and like malaria, causing frequent anaemia. Poor environmental hygiene including open defecation propagates these vectors (WHO, 2014).

### **3. Environmental enteric dysfunction hypothesis**

Environmental enteric dysfunction (EED) also called environmental enteropathy is a chronic disease of the intestines caused by constant faecal-oral contamination. The intestinal villi flatten, thus reducing their capacity for nutrient absorption, and the small intestinal lining becomes chronically inflamed. In addition, EED is marked by increased gut permeability leading to a disturbed gut immune function. Thus it is hypothesised that a body experiencing EED does not absorb nutrients because it is too busy fighting off diseases (Korp and Petri, 2012). EED may help explain why purely nutritional interventions have failed to reduce undernutrition in many contexts over the long term (Humphrey, 2009; Ngure et al, 2014). If confirmed EED suggests implications for adding a new range of prevention and programming options to the traditional “F Diagram” vectors; measures to block child consumption of animal-particularly poultry-faeces, and/or animal restraints, more attention to hygiene related to food and around nappy/potty wash sites, or perhaps more hygiene around standpipes used for multiple purposes.

Development programming is often vertical which means that a programme focuses on a single issue, such as water and sanitation or nutrition. The purpose is to target resources and maximize returns on investments that can be easily measured by defined goals and objectives. However, this does not foster comprehensive approaches or solutions to more complex problems and promotes competition for scarce funding resources. Horizontal programming, on the other hand, provides a more integrated approach to programming that mirrors people’s lives, but is difficult to measure and demonstrate so donors are reluctant to support such integration that cannot be proven to improve results.

## **Project context and overview**

### **WASHplus experience with WASH–Nutrition integration**

Since 2010 WASHplus has engaged both at the global and the country level to stimulate the conversation and improve programming around integrating WASH into nutrition programming and to share experiences and approaches to integrating these two sectors. Momentum is growing within the development community for WASH-nutrition integration that addresses both intermediate and underlying causes of malnutrition. Indeed, WASH is now squarely embedded into USAID’s 10-year nutrition strategy. Globally, WASHplus has published a brief on WASH and nutrition and worked with USAID, WHO and UNICEF to develop and publish a how to document on WASH and nutrition (forthcoming 2015). The project facilitates conversations and knowledge sharing on WASH and nutrition integration with stakeholders in the donor and multilateral communities through webinars, blogging, maintaining a virtual community of practice, and convening side events at international conferences.

In addition to the global activities, WASHplus integrates WASH and nutrition at different levels and through different programming platforms in three countries: Bangladesh, Mali and Uganda. As possible, WASHplus reviews and strengthens WASH within national nutrition policy and guidelines, surveys, curriculum and capacity building documents. WASHplus uses a behaviour change approach called Small Doable Actions (SDAs) to implement integrated WASH and nutrition activities at different levels and through different entry points in three countries, two of which are discussed here: Mali and Uganda.

### Small doable actions

A small doable action is a behaviour that, when practiced consistently and correctly, will lead to household and public health improvement. It is considered feasible by the householder, from his/her point of view, considering the current practice, the available resources, and the particular social context. Although the behaviour may not be an “ideal practice,” a broader number of households will likely adopt it because it is considered “feasible” within the local context. This approach also has the potential to lead to further improvements in the behaviour, when/if resources become available.

### Programme context and approach in Mali and Uganda

The 24-month programme in Mali was designed from the outset as an integrated WASH and nutrition programme. District officials from the Ministry of Health identified the 180 intervention communities as areas with high rates of stunting and extremely low incidence of toilet use. WASHplus is using its SDA approach to negotiate improved integrated WASH and nutrition practices to mothers with infants. Working through community health workers, WASHplus promotes an integrated set of feasible actions drawing on themes from WASH and nutrition:

- handwashing with soap emphasizing before preparing food and before feeding a child
- safe disposal of infant faeces using potties made from locally available gourds
- safe water treatment and storage emphasizing preparing children’s food with treated water
- exclusive breastfeeding for the first six months
- complementary feeding from 6-24 months

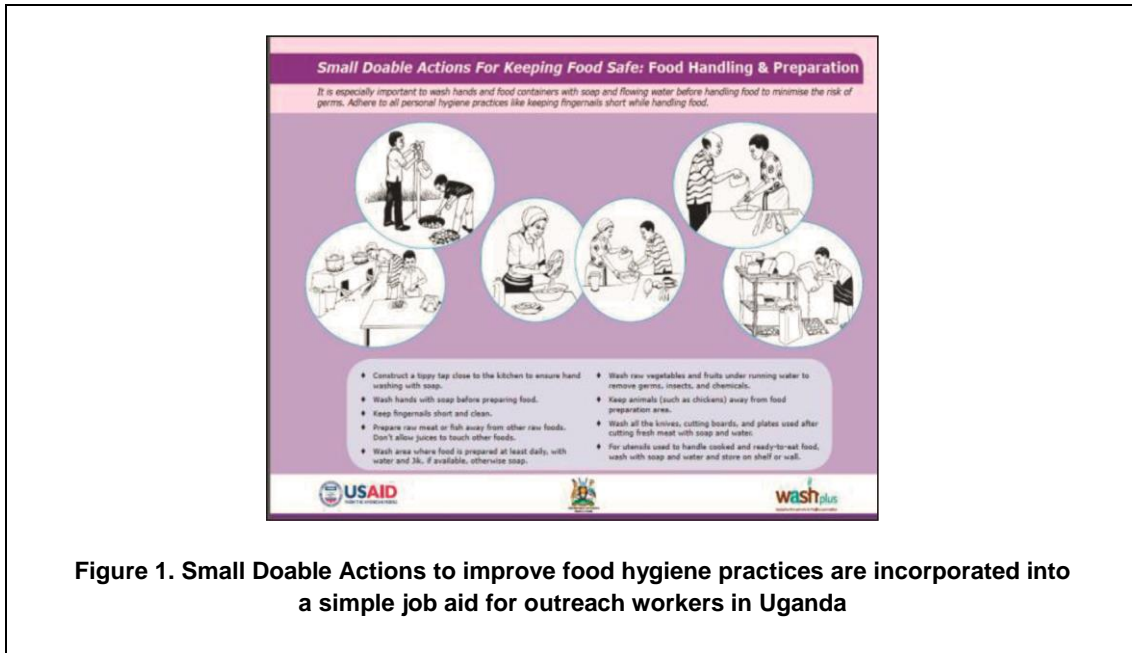
Other activities include community-led total sanitation (CLTS) that includes training masons in latrine construction for particular soil types and involving these masons in the triggering process. The project also rehabilitates some community water supplies to improve water quality. Further, community health workers screen and refer malnourished children to government rehabilitation services and organise nutrition/cooking demonstrations for men and women in small group settings to promote nutritious recipes for complementary food prepared with locally available ingredients. The District offices of the Ministry of Health in Mopti oversee the project coordination. Learning from this pilot activity in the three districts has generated dialogue and interest in integrated programming at regional and national levels.

### Overall Integration Approach

- Work with development partners, government counterparts and any coalition of the willing
- Look for champions!
- Review and improve guidance on WASH within nutrition policies and guidelines – e.g. improve wording like “use clean water, apply hygienic practices”
- Review and improve capacity building materials and job aids
- Identify country-specific **Small Doable Actions** to help people improve WASH practices
- Form a Community of Practice with existing IPs for collaboration
- Co-locate WASH programs (especially infrastructure) in nutrition-sensitive areas
- Integrate 1-3 WASH indicators

In Uganda, the programme context was different from Mali. WASHplus worked through existing nutrition and food security programmes already operating in the county to introduce WASH components. Through the Government of Uganda’s Ministry of Health, WASHplus worked with development partners to strengthen WASH throughout all sections (e.g. modifying phrases of *practice hygiene* and *use clean water* to more specific and actionable guidance, and developed a WASH-specific component to the Nutrition, Assessment, Counseling and Support (NACS) modules that focuses on various vulnerable cohorts including

people living with HIV, infant and young children, etc. In addition, in collaboration with the Ministry of Health, the project developed a modular WASH-nutrition capacity-building training and offers both stand alone and integrated sessions ranging from hours to three days as opportunity allows and needs require. The module was implemented intensively in three districts in the southwest, among other applications at national, district and local levels.



**Figure 1. Small Doable Actions to improve food hygiene practices are incorporated into a simple job aid for outreach workers in Uganda**

Through a collaborative process with existing government nutrition programmes and development partner initiatives, WASHplus helped develop feasible actions for food hygiene within the rural Ugandan context, such as covering food, separating raw meats and vegetables, and reheating food until thoroughly steaming. These partners, in turn, support government outreach workers and community volunteers. Using discussion guides and traveling video, the partners integrate SDAs around food hygiene and handwashing as part of government and volunteer outreach worker activity. The geography and terrain of southwest Uganda present extreme challenges to regular access to sufficient quantities of any water, particularly quality water. Even without an extensive hardware component, WASHplus introduced the SDA approach to increase the use of rain water catchment into nutrition and food security programmes, which in turn could enable improved WASH practices like handwashing before cooking and feeding, after defecation, safe disposal of infant feces and other food hygiene measures described above.

## Results

Over the first 12 months of implementation in Mali, WASHplus achieved the following results: over 19,000 children screened for malnutrition with over 7,000 referred to community or district rehabilitation services; over 6,000 toilets constructed and 40 villages certified as open defecation free; almost 400 cooking/nutrition demonstrations conducted reaching 3,700 people.

The Uganda activities were not designed with a rigorous evaluation component, so the impact of WASHplus inputs and activities cannot be quantified and reported. Evaluations of collaborating partner projects are expected to show improved WASH practices (when WASH is included and measured in their surveys), such as increased hand washing with soap. Indeed, the very nature of integrated programming makes it difficult to attribute outcomes to a particular project. However, by building capacity of implementing partners and district focal and community resource personnel, WASH is being integrated into clinical nutrition assessment, home visits with householders of small children and families affected by HIV, and through community mobilisation campaigns. District Nutrition Coordination Committees are emphasising the importance of WASH and nutrition integration during the budgeting process, implementation, and supervision of district efforts to fight undernutrition. Collaborating NGOs have created the first-ever job aid promoting small doable actions for food hygiene, based on the World Health

Organisation's *Five Keys to Safer Food*. And other job aids highlight safe disposal of infant and animal/poultry faeces, which may be significant contributors of undernutrition and inhibitors of growth according to the growing evidence base (WASHplus, 2014).

## **Emerging lessons learned and challenges**

### **Planned vs. Opportunistic integration**

WASHplus and partners have made encouraging progress in integrating WASH components into nutrition programmes, however, the evidence to support particular approaches is still evolving. When an integrated programme is designed at the outset with indicators for both WASH and nutrition equally emphasised, results can be clearly targeted and measured. This is the case in Mali where complementary feeding and exclusive breastfeeding practices are tracked along with traditional WASH indicators (though it will be impossible to detect changes in the three anthropometric outcome measurements given the short project timeframe). In most nutrition programmes, as seen in Uganda, WASH is considered *after* the project's initial design. Incorporating WASH interventions midstream require projects to improvise by identifying strategic opportunities as they arise, often without the accompanying indicators or baseline measurements appropriate to those interventions. Without indicators or baseline metrics to track implementation and contribution to the wider intervention package, it is hard to quantify and justify the inclusion of WASH components. Finally, little evidence exists to indicate whether an integrated programme is more effective and efficient than two vertical programmes occurring concurrently in the same geographic region.

### **One-way vs. Two-way integration**

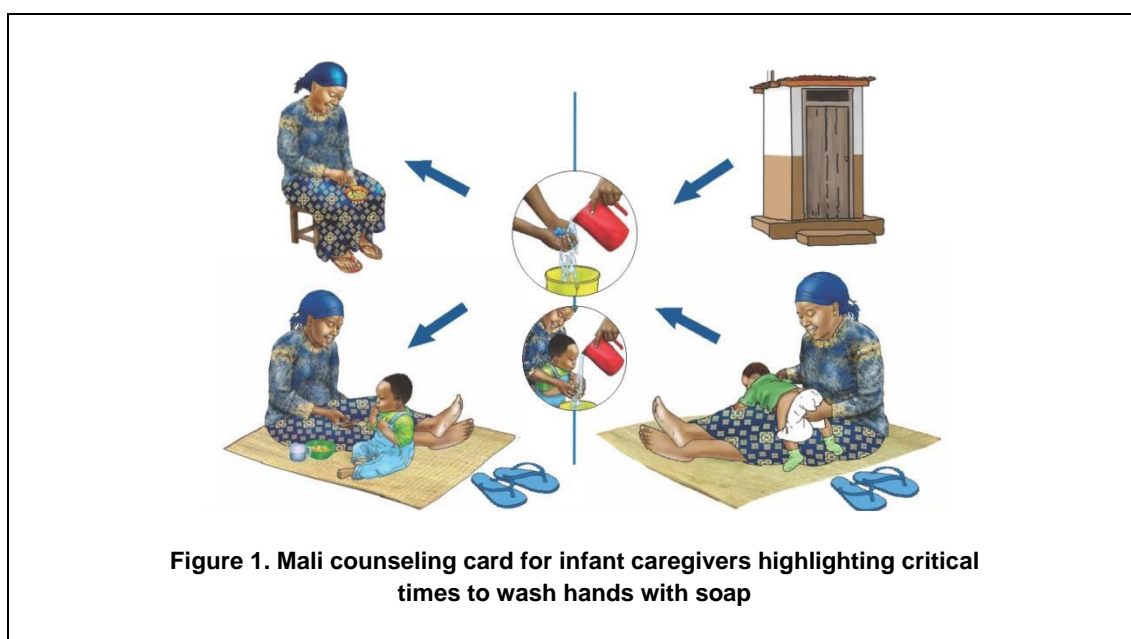
Many nutrition practitioners are beginning to grasp the vital contributions WASH can make to achieving nutrition outcomes, and some suggest that the integration should be two-way—where WASH managers integrate nutrition components and messages into WASH programmes. While this two-way approach seems most collaborative and reasonable, evidence supports one-way integration into nutrition. Emphasising behaviours and practices that improve nutrition is not necessary for achieving WASH goals; but infants and young children cannot grow well without adequate WASH access and practice. Often, water and sanitation engineers in public works or water ministries are focused on expanding access to infrastructure and are not and cannot be held accountable for measuring improved health outcomes. To date, the most appropriate WASH actions we have identified are to coordinate geographic co-location of WASH activities to increase access and practice of WASH in areas that are nutritionally vulnerable, rather than incorporate nutrition messaging into WASH outreach.

### **Dissonance in and targeting and measurement**

Additional challenges to integration include “message overload” when increasing the scope and number of behavioural objectives of nutrition activities, stressing both outreach staff and the recipient households. Further an *apparent* conflict exists in site selection and targeting. Rural WASH interventions are often community-wide; health impacts derived from sanitation inputs require that communities are almost 100 percent open defecation free and water supply interventions are designed as communal facilities. Nutrition interventions, however, often seek to target the most vulnerable households – where children are the most at risk and in need of services. Furthermore, attribution of WASH-focused activities in reducing undernutrition is difficult. New research shows a correlation between open defecation free communities and reduced stunting rates, but relatively little is known about the effects of water and hygiene on nutrition outcome indicators. Detecting changes in growth patterns often require timeframes longer than typical WASH programmes and funding cycles.

## **Conclusion**

Interest to expand the integration of WASH into nutrition programmes will continue to grow over the next decade. Policy engagement is a vital step for integrating WASH and other interventions that impact on nutrition programmes. Having a national nutrition policy that recognises the importance of WASH for nutrition outcomes paves the way for developing integrated programming at all levels. Donors, governments and implementers must endorse and support an integrated approach. Staff in both sectors need skills and knowledge to provide effective implementation.



While enough evidence exists to support WASH and nutrition integration, more program level data are needed to demonstrate how WASH affects nutrition outcomes and determine which implementation modalities are most likely to lead to strong impact. Traditional WASH interventions focused on human excrement may need to be supplemented with new approaches to break the faecal-oral transmission cycle from animal feces, particularly in infants and young children. WASHplus is working to explore these programmatic approaches along with appropriate monitoring frameworks and we hope that our integration experiences in these countries will contribute to determining which of the WASH components has the most effect on undernutrition. WASHplus anticipates that the results from the integrated programming in Mali and Uganda will be validated and replicated in other countries. Indeed, country programmes in several countries are seeking to develop such horizontal programming that will continue to contribute to the evidence base for integration.

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### References

- Bhutta, Z.A., et al (2013). "Evidence-based Interventions for Improvement of Maternal and Child Nutrition: What Can be Done and at What Cost?" *Lancet* 382:452.
- Black, R.E., et al (2013). "Maternal and Child Undernutrition and Overweight in Low-income and Middle-income Countries." *Lancet* 382:427.
- Humphrey, J.H. (2009). "Child undernutrition, tropical enteropathy, toilets, and handwashing." *Lancet* 374(9694): 1032-1035.
- Humphrey J.H. (2012) SHINE Sanitation, Hygiene, Infant Nutrition Efficacy Project (trial in Zimbabwe). Study proposal. 2012. (<http://clinicaltrials.gov/show/NCT01824940>, accessed 27 April 2014).
- Korpe, P.S. and W. A. Petri, Jr. (2012). "Environmental enteropathy: critical implications of a poorly understood condition." *Trends Mol Med* 18(6): 328-336.
- Liu, L et al (2012). "Global, Regional and National Causes of Child Mortality: An Updated Systematic Analysis for 2010 with Time Trends since 2000." *Lancet* 379, 2151 – 2161.
- Ngure F.M., et al. (2014). "Water, sanitation, and hygiene (WASH), environmental enteropathy, nutrition, and early child development: making the links." *Ann N Y Acad Sci*.1308:118–28.
- UNICEF (2013). Improving child undernutrition: the achievable imperative for global progress. New York: United Nations Children's Fund; 2013

USAID (2013). *Water, Sanitation and Hygiene: Essential Components for Food Security. Technical Brief*. USAID, Washington, DC.

WASHplus (2014) *Improving WASH Behaviors to Reduce Diarrhea and Improve the Health and Resilience of Children, Families Affected by HIV/AIDS, and Other Vulnerable Populations: WASHplus Uganda End of Project Review*. FHI 360, Washington, DC.

World Health Organisation (2014). *Soil Transmitted Helminth Infections. Fact Sheet 366*. World Health Organisation, Geneva.

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