Cornerstone Meeting: Investing in Micronutrients—From Past Experiences to Current Challenges
A2Z/The USAID Micronutrient and Child Blindness Project

PROGRAM
Agenda, Abstracts and Panelists

Monday, June 13th, 2011
AED
1825 Connecticut Ave, NW
Washington, DC
Academy Hall, 8th Floor, South Building

1. Micronutrient Metrics
2. Program Integration and Innovation
3. Program Experiences and Challenges
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Meeting Background Information............................1
Exhibit Tables – Overview........................................2
Meeting Agenda..........................................................4
Abstracts............................................................................7
Panelists Biographical Information.................................20
Background

Since the 1970’s, USAID has had an important global leadership role in advancing the scientific foundation for the role that micronutrients play in the health of women and children and in helping to translate and integrate evidence-based findings into nutrition policies and programs. USAID has accomplished this through supporting key efficacy studies, convening experts groups, commissioning systematic reviews of evidence, supporting global and country level technical assistance focused on advancing the application of micronutrient interventions through multi-institutional technical teams such as IVACG, INACG, and the Micronutrient Forum, and time-limited projects such as VITAL, OMNI, MOST, A2Z, among others. Further, it has spearheaded periodical global meetings that bring together country level implementers, scientific experts and global partners to share new scientific evidence and program experience.

Recently, USAID has expanded its scale, scope and support to nutrition worldwide through major initiatives like Feed the Future (FTF), and Global Health Initiative (GHI), which together with other global efforts such as Scaling Up Nutrition and the “1000 Days”, are emphasizing the importance of nutrition to accomplish the Millennium Development Goals and so to contribute to the progress of humankind. The completion of A2Z, USAID’s most recent micronutrient project, in September 2011, presents an opportunity to systematically review USAID’s more than 30-year investment in micronutrient nutrition to inform how best to include micronutrient strategies and support within the platforms the new global initiatives in health, nutrition, and food security.

Objectives

1. Review and derive recommendations from past USAID investments in micronutrient that have implications for USAID’s future priorities and development assistance strategies in public health nutrition.

2. Highlight accomplishments and lessons-learned from current USAID-funded nutrition projects (i.e. A2Z, IYCN, FANTA, and M-CHIP) to global health through their Science-to-Policy-to-Program approaches, by examining ways micronutrient nutrition is integrated into a broader nutrition agenda.

3. Examine the role of science in shaping nutrient policies and ways to bridge the gap between research and application, and between knowing “what-to-do” and translating this knowledge into effective, sustainable country programs.

4. Provide a forum for multilateral and bilateral agencies, NGOs and country implementers to discuss best mechanisms and strategies for supporting country-led efforts to strengthen nutrient programs and their integration into broader initiatives and development efforts.

Expected Output

1. Meeting proceedings including a compilation of presentations, and a report synthesizing key discussion points and lessons learned from USAID—and other partners-funded nutrition projects with an emphasis on micronutrient components and projects.

2. Recommendations on priorities and strategies for the appropriate integration of micronutrient interventions into efforts and initiatives aimed to promote integrated approaches on human nutrition.

Target Audience

- USAID-Nutrition, Global Health, Feed the Future, Global Health Initiative
- Multilaterals with responsibilities in food and nutrition, such as FAO, WHO, WFP, UNICEF, and the World Bank
- NGOs and Contractors – Representatives from broader Maternal and Child Health, and Health System Strengthening—Abt Associates, Management Sciences for Health (MSH), Save the Children, Micronutrient Initiative (MI), PATH, Helen Keller International (HKI), Global Alliance for Improved Nutrition (GAIN), IMMPaCt/CDC, Sight and Life, and others
- Private sector involved in nutrition programs
- Universities/Schools of Nutrition and research institutes as IFPRI
**A2Z: The USAID Micronutrient and Child Blindness Project**

A2Z is USAID’s flagship vehicle to consolidate, build upon, and expand USAID’s leadership in micronutrients, child survival, and overall nutrition. The goal of A2Z is to increase the use of key micronutrient and blindness interventions to improve child and maternal health. The technical focus areas of the project are vitamin A supplementation for children under five and newborns, anemia reduction in pregnant women and children, and food fortification.

**Alive and Thrive (A&T)**

Alive & Thrive (A&T) is a 5-year initiative (2009-2013) to improve infant and young child nutrition by increasing rates of exclusive breastfeeding and improving complementary feeding practices. A&T aims to reach more than 16 million children under 2 years old in Bangladesh, Ethiopia, and Vietnam.

**FANTA-2**

FANTA-2 works to improve nutrition and food security policies, strategies and programs through technical support to the U.S. Agency for International Development (USAID) and its partners, including host country governments, international organizations and NGO implementing partners. Focus areas for technical assistance include maternal and child health and nutrition, HIV and other infectious diseases, food security and livelihood strengthening, and emergency and reconstruction. FANTA-2 develops and adapts approaches to support the design and quality implementation of field programs, while building on field experience to improve and expand the evidence base, methods and global standards for nutrition and food security programming. The project is funded by USAID and managed by the Bureau for Global Health (GH).

**The Global Alliance for Improved Nutrition (GAIN)**

The Global Alliance for Improved Nutrition (GAIN) is an alliance driven by the vision of a world without malnutrition. Created in 2002 at a Special Session of the UN General Assembly on Children, GAIN supports public-private partnerships to increase access to the missing nutrients in diets necessary for people, communities and economies to be stronger and healthier.

**Infant and Young Child Nutrition (IYCN)**

The Infant and Young Child Nutrition (IYCN) Project is the flagship project on infant and young child nutrition of the US Agency for International Development (USAID). Begun in 2006, the five-year project aims to improve nutrition for mothers, infants, and young children and prevent the transmission of HIV to infants and children. IYCN builds on 25 years of USAID leadership in maternal, infant, and young child nutrition. Our focus is on proven interventions that are effective during pregnancy through the first two years of life.

**The Maternal and Child Integrated Program (MCHIP)**

The Maternal and Child Health Integrated Program (MCHIP) is the USAID Bureau for Global Health flagship maternal, neonatal and child health (MNCH) program. MCHIP supports programming in maternal, newborn and child health, immunization, family planning, malaria and HIV/AIDS, and strongly encourages opportunities for integration. Cross-cutting technical areas include water, sanitation, hygiene, urban health and health systems strengthening.
The Micronutrient Initiative (MI)
The Micronutrient Initiative is an Ottawa-based, international not-for-profit organization dedicated to ensuring that the world’s most vulnerable - especially women and children - in developing countries get the vitamins and minerals they need to survive and thrive, through supplementation and food fortification programs. Its mission is to develop, implement and monitor innovative, cost effective and sustainable solutions for hidden hunger, in partnership with others. With Canadian support, the organization is reaching 500 million people annually in more than 70 countries with its child survival, child development and women’s health programs.

Project Healthy Children
A US-based non-profit founded in 2000, PHC consists of a small team of passionate professionals dedicated to combating micronutrient deficiencies. Working in close collaboration with governments, industry, and civil society across the world, PHC supports the design and implementation of comprehensive food fortification programs to achieve this goal.

Sight and Life
Sight and Life, a humanitarian not-for-profit initiative of DSM, works to combat all forms of micronutrient deficiency by working with global and local partners and leading universities to sustainably and significantly improve human nutrition and health.
### Session I

**Looking Back to Look Forward: Framing the Future of Micronutrient Interventions**  
*Moderator: Omar Dary, A2Z*

<table>
<thead>
<tr>
<th>Time</th>
<th>Activities</th>
<th>Presenters</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00</td>
<td>Greeting and welcome remarks</td>
<td>Nadra Franklin, A2Z</td>
</tr>
<tr>
<td>09:10</td>
<td>Opening Address: Yesterday, today, and tomorrow</td>
<td>Roy Miller, USAID-Bureau for Africa</td>
</tr>
<tr>
<td>09:30</td>
<td>Objectives and structure of the meeting</td>
<td>Omar Dary, A2Z</td>
</tr>
</tbody>
</table>

### Session II

**Concurrent Panels—Field Experiences from Country Programs: Tailoring Programs to Local Contexts to Improve Countries Ownership and Sustainability**

#### Session II-A

**Improving Micronutrient Status through Food-based interventions**  
*Addressing the challenge of micronutrient malnutrition: the food fortification story in Uganda, William Ssali, A2Z-Uganda*  
*Local achievements and advances attributable to the ECSA-USAID Regional Initiative – Carol Tom, A2Z-ECSA*  
*Building upon initial foundations of prior projects – Regina Moench-Pfanner, GAIN*  
*SIVIN: An example of a sustainable integrated nutrition surveillance system for food fortification and other nutrition interventions – Maria Elena Jefferds, CDC/IMMPaCt*  
*Critical reaction to presentations: Camila Chaparro, FANTA*  
*Comments and recommendations from the audience*  

**Moderator:** Regina Moench-Pfanner, GAIN  
**Rapporteur:** Lynnette Neufeld, MI

#### Session II-B

**Maternal Anemia Control and Prevention**  
*How to integrate maternal anemia reduction into malaria-control in an endemic country, Elizabeth Madraa, Uganda*  
*Community-based service delivery as an entry point for reducing maternal anemia in Nepal, Phil Harvey, Int’l Consultant*  
*Experiences and lessons-learned from the integrated program for maternal anemia reduction in India: Uttar Pradesh and Jharkhand, Prakash Kotecha, A2Z-India*  
*No product – no program: Strengthening pharmaceutical supplies to improve maternal health – findings from Uganda, Cambodia and India, Grace Adeya, MSH*  
*Critical reaction to presentations: Rae Galloway, M-CHIP*  
*Comments and recommendations from the audience*  

**Moderator:** Deborah Armbruster, USAID  
**Rapporteur:** Jose O. Mora, International Consultant

#### Session II-C

**Micronutrients for Infants and Children**  
*Sustaining a decade of high vitamin A supplementation coverage in Tanzania, Christina Nyhus Dhillon, HKI-Tanzania*  
*The child anemia reductionp package in India: An example of “The First 1,000 Days” approach in action, Zo Ramobeloson, A2Z*  
*Insights improving dietary diversity for young children: Excerpts from TIPs research in Rwanda, Malawi and Ethiopia, Marcia Griffiths, The Manoff Group, IYCN Project*  
*Pilot for testing delivery mechanisms for newborn vitamin A supplementation (NBVAS) in Bangladesh, Zeba Mahmud, MI-Bangladesh*  
*Critical reaction to presentations: Parul Christian, JHU*  
*Comments and recommendations from the audience*  

**Moderator:** Tom Schaetzel, IYCN Project  
**Rapporteur:** Parul Christian, JHU
| Session II Continuation | Technical reports of the Concurrent Sessions  
*Moderator: Carol Tom, A2Z-ECSA* |
|-------------------------|---------------------------------------------------------------------------------|
| **13:00 – 14:00**       | Improving Micronutrient Status through Food-based interventions  
- Maternal Anemia Control and Prevention  
- Micronutrient Interventions in Infants and Children  
*Laura Birx, USAID*** |
| **17:15 – 17:35**       | Next Steps  
*Laura Birx, USAID*** |

| Session III | Translating Science to Policies and Effective Country-led Programs: Closing the Know-Do Gap  
*Moderator: Klaus Kraemer, Sight and Life* |
|-------------|---------------------------------------------------------------------------------|
| **14:00 – 14:10** | The role of science in shaping future micronutrient policies and programs  
*Klaus Kraemer, Sight and Life*** |
| **14:10 – 14:20** | Promoting national ownership of the nutrition agenda: Lessons from the experiences of maternal and newborn survival promotion  
*Jeremy Shiffman, American University*** |
| **14:20 – 14:30** | Strengthening program implementation through M&E  
*Rafael Flores-Ayala, IMMPaCt/CDC*** |
| **14:30 – 14:40** | Critical reaction by country colleagues to the presentations  
*Elizabeth Madraa, Uganda  
Zeba Mahmoud, MI-Bangladesh*** |
| **14:40 – 15:00** | Discussion prompted by moderator of the session  
*All panelists*** |
| **15:00 – 15:25** | Open to plenary comments and Q&A  
*Plenary*** |
| **15:25 – 15:30** | Brief summary  
*Klaus Kraemer*** |

| Session IV | A comprehensive view: Matching country needs and realities with international perspectives and ideals  
*Moderator: Emorn Wasantwisut, Mahidol University, Thailand* |
|-------------|---------------------------------------------------------------------------------|
| **16:00 – 16:25** | Country perspective on policies, programs, and international assistance in nutrition: A multidisciplinary panel initiated with 6 minute perspectives:  
1. Actions at the Policy Level – Taking policy for anemia control as an example  
2. Public sector at the implementation level: Uganda’s experience  
3. International cooperation in the Philippines: Challenges and prospects  
*Prakash Kotecha, A2Z-India  
William Ssali, A2Z-Uganda  
Corazon Barba, A2Z-Philippines*** |
| **16:25 – 16:35** | Critical reaction to the presentations from an international perspective  
*James Levinson*** |
| **16:35 – 16:45** | Discussion prompted by moderator of the session.  
*All panelists*** |
| **16:45 – 17:00** | Plenary comments and Q&A  
*Plenary*** |
| **17:00 – 17:15** | Nutrient deficiencies and program excesses  
*Frances Davidson*** |

Session V | Next Steps |
|-----------|------------|
| **17:15 – 17:35** | A USAID response and way forward  
*Laura Birx, USAID*** |
| **17:35 – 17:45** | Closing remarks  
*Nadra Franklin, A2Z*** |

**17:45 – 19:30** | Closing Reception and exhibit viewing |
| SESSION I | Yesterday, Today, and Tomorrow ........................................................................................................ 7 |
| SESSION II-A | Looking Back to Look Forward: Lessons from USAID Investments in Reducing Micronutrient Deficiencies ........................................ 7 |
|             | Worldwide Impacts of USAID Investments in Reducing Vitamin and Mineral Deficiencies: Future Opportunities and Key Challenges ..................... 8 |
| SESSION II-B | Addressing the Challenge of Micronutrient Malnutrition: The Food Fortification Story in Uganda ........................................................................... 9 |
|             | Local Achievements and Advances Attributable to the ECSA-USAID Regional Initiative ............................................................................. 10 |
|             | Building upon Initial Foundations of Prior Projects ................................................................................... 10 |
|             | SIVIN: An Example of a Sustainable Integrated Nutrition Surveillance System for Food Fortification and Other Nutrition Interventions ........................................ 11 |
| SESSION II-C | Community-based Service Delivery as an Entry Point for Reducing Maternal Anemia in Nepal ........................................................................ 12 |
|             | Experiences and Lessons-learned from the Integrated Program for Maternal Anemia Reduction in Two States of Uttar Pradesh and Jharkhand .................... 13 |
| SESSION III | Sustaining a Decade of High Vitamin A Supplementation Coverage in Tanzania ............................................. 14 |
|             | The Child Anemia Reduction Package (CARP) in India: An Example of “The First 1,000 Days” Approach in Action ..................................................... 14 |
|             | Insights for Improving Dietary Diversity for Young Children: Excerpts from TIPs Research in Rwanda, Malawi and Ethiopia ........................................... 15 |
|             | Pilot for Testing Delivery Mechanisms for Newborn Vitamin A Supplementation (NBVAS) in Bangladesh ........................................................................ 17 |
| SESSION IV  | Technical Reports of the Concurrent Sessions ......................................................................................... 17 |
| SESSION V   | The Role of Science in Shaping Micronutrient Policies and Programs ............................................................ 17 |
|             | Promoting National Ownership of the Nutrition Agenda: Lessons from the Experiences of Maternal and Newborn Survival Promotion .................... 18 |
|             | India: Actions at the Policy Level – Taking Policy for Anemia Control as an Example .............................................. 18 |
|             | Public Sector at the Implementation Level: Uganda’s Experience ........................................................................ 19 |
|             | International Cooperation in the Philippines: Challenges and Prospects ......................................................... 19 |
|             | Nutrient Deficiencies and Program Excesses ................................................................................................. 20 |
|             | A USAID Response and a Way Forward ...................................................................................................... 20 |
TITLE: Yesterday, Today, and Tomorrow  
Roy Miller

Back when the dinosaurs walked the earth (the late 70s), nutrition interventions included supplementary feeding, growth monitoring, nutrition education, breastfeeding promotion, and home gardens. By and large, these interventions failed to have an impact on the nutritional status of children. The Kottar Social Services Society in Southern India stopped growth monitoring because the lack of improvement in nutritional status served as a disincentive to participation in other parts of their program. The talked about success of the Iringa project that ended in 1988 was short-lived as shown by the DHS in Tanzania in the early 90s where Iringa had some of the worst child survival indicators in the country.

Today we have further advanced in our use of the above interventions, improved targeting of children, nutrition education has gone beyond the five basic food groups, and the emphasis now is on exclusive breastfeeding and proper introduction of complementary foods. Together with these interventions, we have added a focus and use of micronutrient specific interventions, and these are packaged as the Essential Nutrition Actions. Coverage and status for selected micronutrients have improved, but stunting and anemia levels remain as distressing as ever. The burst of attention around the use of plumpy-nut to rehabilitate malnourished children is evidence of our failure to make inroads into the problem of preventing malnutrition.

I would like to urge this group to consider a couple of factors in need of serious thought. The first is nutrition surveillance and the use of nutrition data to give communities a real and measurable goal. The second is the creation of “value chains” that end up with affordable, high quality complementary foods.

TITLE: Looking Back to Look Forward: Lessons from USAID Investments in Reducing Micronutrient Deficiencies  
Rolf Klemm

Secretary Kissinger’s 1974 speech at the first World Food Conference catalyzed USAID’s leadership and investments in preventing micronutrient deficiencies. For almost 40 years, USAID’s investments and leadership in this area have led to the discovery, development and deployment of key micronutrient interventions that have improved child survival and the nutritional well-being of women and children. USAID’s investments in research have led to a strong evidence base and scientific consensus that (1) improving vitamin A status in preschool children reduces their mortality risk by ~23%, (2) providing zinc supplements to children with diarrhea can reduce the duration of an acute and persistent diarrhea, (3) providing iron and folic acid to women during pregnancy can reduce the risk of anemia in pregnancy. USAID’s investments in the formation of expert groups such as IVACG, INACG and MF have stimulated research and provided data necessary for policy decisions, and provided technical guidance to policy makers and program managers through state-of-the-art publications, task force reports and policy statements. The biennial meetings of these consultative groups have provided a unique platform for researchers, policy makers and program implementers to share scientific and programmatic evidence, building
capacity of young public health professionals in high-need countries and facilitating the uptake of new evidence into policies and programs. Finally, USAID’s investments in a series of micronutrient leadership and technical assistance projects (VITAL, OMNI, MOST, A2Z) have enabled the programming learning experiences needed to deliver food fortification and micronutrient supplementation programs at scale and to build the local capacity necessary for country ownership of them.

Major challenges, however, still remain. With respect to micronutrient interventions with known efficacy, more needs to be learned about (1) the “donorship to ownership” transition; (2) effective and sustainable delivery of new products (e.g. micronutrient powders, lipid nutrient supplements), (3) incentive programs to support behavior change and improved access, availability and utilization of nutrient dense and diverse diets for pregnant women and young children, and (4) how to foster public-private partnerships that result in reaching those most in need with affordable and acceptable products, and (5) how to link with other sectors (e.g. agriculture) to improve the diversity and quality of diets. With respect to other micronutrients (e.g. vitamin K, D, selenium) and long-term effects of micronutrient deficiencies, research investments are needed to contribute new discoveries to inform future programs.
fortification and bio-fortification to increased micronutrient intakes, the consultative groups (IVACG, INACG, Micronutrient Forum) to share and learn new knowledge etc. Since micronutrient-integration to large scale programs is integral to the country efforts towards achieving the MDGs, the time has come for USAID to continue to reap the benefits of the earlier investments and to sustain its global leadership in this field.

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**TITLE:** Addressing the Challenge of Micronutrient Malnutrition: The Food Fortification Story in Uganda

William Ssali

The Ugandan Ministry of Health (MOH) has responded to vitamin A and other micronutrient deficiencies prevalent in the country since the early 1990’s. These deficiencies manifested in disability, severe anemia, poor growth, and weakened immune systems amongst the population. Mandatory salt iodization and vitamin A supplementation for pre-school-aged children were introduced in the 1990’s, and although they have shown to be useful, they were insufficient to address the profound degree of micronutrient deficiencies in the population at large, but more specifically and acutely in children under five years-old and pregnant mothers. Based on the realization that essential vitamins and minerals needed to be incorporated into the daily diet of the population, the MOH began promoting food fortification as a national strategy for reducing micronutrient deficiencies since those early years. Guided by the collaborative leadership of the National Working Group on Food Fortification (NGWFF) – which consists of government ministries, private sector industries and development partners – the government of Uganda worked with the food industry to create a program for the delivery of vitamin A through fortified vegetable oil. This program, advertised through logos, billboards, and radio advertisements, had the potential to reach almost every household in the country based on what the government knew about food consumption patterns. Critical to the success of this program were the partnerships formed between the MOH and the two major oil manufacturers in the country, who engaged in fortification efforts and supplied nearly 85% of the national oil demand. With a third company soon to be fortifying 100% of its product, more than 90 percent of the cooking oil available in Uganda will be fortified.

This availability of fortified oil in the market augments the importance of other public health and nutrition interventions. Along with engaging the private sector, Uganda has placed a strong emphasis on consumer protection through the implementation of suitable regulations, and inspection of fortified foods at factories, retail stores and importation sites. This effort includes improvement of food sampling and laboratory testing facilities, which have become models in the region. Despite the success achieved under a voluntary program, Uganda is now considering making oil fortification mandatory to ensure that the progress reached thus far is not put in jeopardy by risks associated with importation of unfortified oil on the market.
**Background:** The ECSA Health Ministers Conference recognized the potential of food fortification as a public health intervention to prevent and control micronutrient deficiencies in the ECSA region and passed a Resolution in 2002. This resolution directed its Secretariat to fast-track the implementation of food fortification in member countries. With technical and financial support from USAID/MOST, ECSA initiated a Regional Food Fortification Program with the objective of fortifying commonly consumed foods—oil and sugar with vitamin A, maize and wheat flour with vitamin A, iron, zinc, and six vitamins of the complex B, and ensure universal salt iodation was attained in all countries. USAID/A2Z continued the work from 2006 to date. Five technical working groups were constituted to develop guidelines to assist in start up of programs: i) Regulations, Standards and Food Control; ii) Laboratory Strengthening and Network; iii) Technical and Trade Support; iv) Coordination, Resource Mobilization and Advocacy; and v) Monitoring and Evaluation.

**Achievements:** A series of practical, implementation-focused guidelines were designed and established. These include standards on fortification levels; food control manuals and a laboratory manual on testing methods, which are currently been used by industry and inspectors at factory, commercial and import levels for quality assurance, control, inspection and monitoring; a Laboratory Proficiency Testing scheme among five ECSA countries was established through which testing capabilities of food control laboratories have been improved; and food processing industries with the capacity to fortify in the region have been identified and are been targeted to join national fortification efforts. Advocacy tools including a website were developed and technical and financial resources mobilized. Capacity of government regulatory authorities has been built through trainings to regulate and monitor the national programs thus creating a resource pool and network of food fortification experts throughout the region. Closer ties among institutions within countries and among the countries have been established and strong relationships built locally and regionally.

**Lessons learned:** A regional approach reduces duplication of efforts, and harnesses available resources in development of standardized implementation and monitoring tools and guidelines that can easily be adopted thus saving on national resources and facilitating trade within the countries. It provides an opportunity for peer review and assessment among member countries and institutions within the countries which supplements national level advocacy. Programs that support country-led plans and priorities are more effective and sustainable.
**TITLE: Building upon Initial Foundations of Prior Projects**

Regina Moench-Pfanner

USAID, through MOST and A2Z, has supported food fortification in low and middle income countries. Governments have prioritized food fortification in the nutrition agenda and engaged in partnership projects to produce fortified foods. Standards on fortification practices and fortification levels have been set, including the overage necessary to compensate for losses during processing, storage and cooking. These initiatives have built awareness of food fortification and a positive environment which has led to the scale-up of fortification at the national level with the support of additional donors such as GAIN.

However, countries have struggled to enforce legislation and to ensure adequate food fortification practices, as enforcement mechanisms have not been fully developed and implemented during pilot phases. Legislation and international standards, such as the WHO FAO guidelines on wheat and maize flour fortification, have not been harmonized.

The food crisis is creating additional challenges. When in crisis, poor populations choose diets to satisfy energy needs with less variety and quality, increasing the risk of multiple micronutrient deficiencies. Today food price fluctuations are negatively impacting producers’ margins which can and have led to disengagement in fortification by the private sector. It is crucial to continue food fortification efforts and provide innovative solutions for producers to purchase high quality premix at a competitive cost through mechanisms such as GAIN’s premix facility. Governments should think about integrated fortification strategies and focus on innovative products that are widely consumed. Legislation needs to be established in a way that it can be adapted to newest research findings.

USAID’s food fortification initiatives have played an important role in creating platforms to address micronutrient deficiencies and needs to continue focusing on regional strategies so as to ensure best practices and better compliance at all levels. GAIN takes interventions to scale and appreciates partners and donors contribution to leverage resources to optimize impact.

**TITLE: SIVIN: An Example of a Sustainable Integrated Nutrition Surveillance System for Food Fortification and Other Nutrition Interventions**

Maria Elena Jefferds

In 2000 the Nicaraguan Ministry of Health (MOH) in conjunction with international partners, including USAID/MOST, MI, UNICEF, INCAP/PAHO, and CDC, designed and implemented an integrated surveillance system for nutrition interventions (SIVIN). The system provides nationally representative intervention process and biological impact data annually, and regionally representative data every four years. The system consolidates existing sources of surveillance data and collects household level data on food fortification, micronutrient supplementation, breastfeeding and growth monitoring programs. The household level data involves continuous population based cross-sectional surveys collected throughout the year, which results in a nationally representative sample every year. By integrating the system to focus on all national nutrition interventions, the country has access to timely, high quality, and low cost data to meet various program needs. The Nicaraguan government and international partners worked collaboratively to support the development and institutionalization of the system within the MOH, and SIVIN continues 10 years later.
Background: Maternal anemia in Nepal has long been recognized as a major public health problem. As in many countries, a policy supporting universal iron and folic acid supplementation (IFA) of pregnant and post-partum women has existed for a long time, but this intervention was not delivered effectively. The Micronutrient Initiative led other donors in supporting the Government of Nepal design, implement and scale up a national effort to reduce maternal anemia.

The program: A national cadre of 50,000 female community health volunteers (FCHVs) was mobilized through their participation in the Nepal vitamin A supplementation program. In 1997 operations research in two districts showed that FCHVs could deliver IFA to the target groups with high coverage and compliance. Combining evidence on causes of anemia, with programming experiences in Nepal and other countries, the iron intensification program was tailored to fit the Nepal context. Intestinal worms were identified as an important cause of anemia and so deworming medicine was included in the intervention package. The program ensured supply and enhanced the packaging of IFA, encouraged early registration at antenatal (ANC) clinics and community and family support for both FCHVs and women, trained FCHVs in counseling, created demand for IFA, and monitored program activities and compliance. The program was scaled up systematically from five districts in 2003 to cover 70 of Nepal's 75 districts in 2011. Regular surveys of coverage and compliance were undertaken.

Results: Between 2001 and 2009 ANC attendance in Nepal improved from 49% to 87%, the proportion of pregnant women consuming any IFA increased from 23% to 81%, and coverage with deworming medicine increased from near zero to 60%. The prevalence of anemia in women decreased substantially in Nepal between 1998 and 2006, but at this time data are not available to attribute, with scientific rigor, this decrease to the iron intensification program.

Conclusions: The iron intensification program resulted in substantial increases in proportions of pregnant women attending ANC, consuming IFA, and taking deworming medicine. These successes resulted from increased awareness of and concern for anemia in the health system and in communities, improved supplies of IFA (including packaging) and deworming medicine, effective distribution of and counselling for IFA by FCHVs, and monitoring of pregnant and postpartum women. The mobilization of FCHVs in supporting this program is considered the most critical factor in its success. DHS data currently being collected will allow quantification of the impact of the program on the prevalence of maternal anemia.
Objective: A2Z’s technical assistance in India aimed to improve the implementation and impact of the comprehensive maternal anemia intervention package including early and complete ANC registration, iron and folic acid supplementation (IFAS), deworming, improved diet and advice for malaria prevention.

Background: Maternal anemia rates have remained >50% in India for decades. Critics argue that maternal IFAS programs rarely impact upon anemia prevalence because women have limited access to antenatal care (ANC), health workers have low motivation and poor interpersonal skills, supplies are erratic, and women lack understanding or motivation about the use of IFAS.

Methods: The A2Z project implemented in Uttar Pradesh (UP) and Jharkhand states of India. A situational analysis guided the design of technical support activities to address implementation short-falls such as stockouts, low ANC registration rates, weak demand and use of services and poor IFAS compliance. A2Z supported the Government in monitoring the performance of the program using monthly clinic and household visits through households and annual mini-surveys. We evaluated program impact using a pre-post cross-sectional survey in 2008 and 2011.

Results: Performance monitoring data and endline study show improved ANC utilization, better awareness by the pregnant mothers and improved skills of the auxiliary nurse midwives (ANM) and Aanganwadi workers (AWW). Tools such as job aids for ANM and Medical Officers and self assessment forms for AWW strengthened the skills of frontline workers and medical officers in early registration of pregnant mothers, improved the counselling skills for IFAS and ensured timely follow up as evidenced by the improved ANC coverage and IFAS rates. ANC registration improved from 36% at the baseline to 86% in the endline. Final results from mini-surveys shows a reduction in anemia prevalence among pregnant women of 22% (from 72% to 50% in Uttar Pradesh) with a corresponding increase in IFAS coverage from 24% to 78%. Results from Jharkhand showed similar improvements in process indicators but showed a reduction of anemia prevalence by 2% only.

Conclusions: Maternal anemia has received low priority despite its magnitude and severe health risks. Strategies that address specific capacity and systems weaknesses, as well as on site supportive supervision and mentoring of front line workers and creating demand contribute to improved program performance and impact. Strengthening counseling skills and performance monitoring practices are crucial components for anemia control and needs further improvement. Anemia remains a serious but silent morbidity.

Implication: There is a need to increase the priority given to maternal anemia interventions within routine ANC, emphasizing critical operational components such as assuring supplies, training frontline providers to counsel on compliance, and monitoring coverage. Future projects and programs need to adopt a “package” of interventions that address different causes of maternal anemia corresponding to the contextual situations in different countries. Assessing frontline workers’ own level of anemia can be an innovative motivation.
Twice yearly vitamin A supplementation to children <5 has been shown to reduce the risk of child mortality by 23%. In Tanzania, biannual vitamin A supplementation (VAS) has been sustained at coverage rates over 90% since 2001 and remains a critical child survival intervention. Sustainability of the national VAS program has been a key approach of the A2Z project in Tanzania.

After direct support of VAS shifted to basket funding, A2Z/HKI began implementing VAS advocacy meetings in late 2007/early 2008 intended to influence district health management teams around critical times during the budget planning cycle. A planning and budgeting tool was developed to assist districts to systematically plan and budget for successful VA programs, and to justify proposed fund allocations within council planning teams. In 2009, all districts budgeted for VAS with more than 95% of functioning districts sustaining budget levels.

A2Z/HKI monitors district annual budgets and expenditures for the biannual VAS events, to monitor and ensure that funding is sustained. Advocacy tools, including lives saved fact sheets, posters and job aids have been developed and shared with districts to ensure continued awareness on the importance of vitamin A for child survival.

In FY2010, on mainland Tanzania, central government funding began providing support for regional level supportive supervision for health programs. In response to this A2Z/HKI began work to train regional level health management team members to conduct supportive supervision for VAS at the district and health facility levels.

Despite sustained district ownership of VAS in the decentralized system, post event coverage survey results indicate that coverage rates for VAS may be on the decline. Renewed efforts need to be made to raise awareness of VAS among caretakers.

Objective: To test the feasibility of providing a package of child anemia control services in the Jharkhand and Uttar Pradesh (UP) states in India.

Design: Population-based, cross-sectional cluster surveys among mothers of children 6-23 months in intervention blocks Murhu (Jharkhand) and Gyanpur (UP) and in control blocks Manika (Jharkhand) and Handia (Uttar Pradesh).

Method: A feasibility study of child anemia control services was conducted in the Murhu and Gyanpur blocks between May 2008 and December 2009. During the study, the Department of Health and Integrated Child Development Scheme/A2Z project team conducted two rounds of surveys: a baseline survey in January 2008 and an endline survey in January 2010 among mothers of children aged 6-23 months. The key indicators were: child anemia prevalence, consumption of IFA syrup >=2 times in
the past week, consumption of deworming medicine during the last six months, and introduction of complementary foods at the age of six months. These indicators were compared for differences using the chi2 test and difference-in-difference estimator method.

**Key findings:** Child anemia prevalence decreased over the two-year period in the two intervention blocks (from 80% to 69% in Murhu, and 95% to 85% in Byanpur) and in one of the two control blocks (from 94% to 85% in Manika) (p = 0.00). The prevalence in the second control block (Handia, Uttar Pradesh) decreased from 88% to 86% but this was not statistically significant (p = 0.28). There was a significant difference in consumption of IFA syrup in the two intervention blocks, improving from 1% to 63% in Murhu, and from 2% to 62% in Gyanpur (p = 0.00). In the control blocks, IFA syrup consumption remained as low as 5%. There was no significant difference over the two-year period in consumption of deworming medicine or introduction of complementary foods at six months of age in the intervention and control blocks.

**Conclusion:** In India, it is feasible to use a child anemia reduction package to improve child anemia prevalence, compliance with taking IFA syrup, and to strengthen deworming policy. Strengthening of community involvement is needed to ensure that all mothers and caretakers of young children know more about the importance and benefits of deworming medicines and young child feeding practices. Integrating distribution of supplies into the existing supply management system ensures the availability of and improves access to IFA syrup and deworming medicines at the community level.

**TITeL: Insights for Improving Dietary Diversity for Young Children:**

**Excerpts from TIPs Research in Rwanda, Malawi and Ethiopia.**

Marcia Griffiths

The diets of young children (aged 6-23 months) in resource-constrained settings are usually calorie deficient and, as was the case in Malawi, barely meet 20% of the requirement for nutrients like iron, calcium, and vitamin A. Although cost and lack of availability are very often cited as reasons why nutrient-dense foods are not given to young children in these environments, when specific recommendations to increase fruit, vegetable, and animal-source foods in young children’s diets were tested using the Trials of Improved Practices (TIPS) method in Rwanda, Malawi, and Ethiopia, it was shown that caregivers can and will make significant dietary changes if they have specific options for doing so.

In Rwanda, dietary changes made as a result of TIPS recommendations resulted, on average, in two “new” nutrient-rich foods being added to young children’s diets and slightly more food being included in each serving. Specifically, families added either groundnut paste or ground small fish to porridge, and learned improved preparation and serving of common family foods such as fish, beans, and amaranth greens.

Similarly, Malawian families were able to narrow the gap in calories (improvement was, on average, +160 kcal/day) and micronutrients using local foods that were often already being prepared for other members of the family. Carbohydrate-only porridges were enriched with groundnut paste or fish powder and green vegetables. A prior overwhelming use of sweet drinks and snacks, particularly for children 13-24 months, shifted dramatically thanks to the substitution of seasonal fruit, sweet potato, and groundnut porridge.
Focusing on simple but specific “special” preparations and “special” foods (e.g., egg or fish powder) for babies 6-11 months and on specific substitutions for toddlers 12-23 months was doable and usually sustainable, even if only 4 times a week instead of everyday. Caregivers’ motivation came from the almost immediate desirable behavioral change in their children, whom they reported as being less fussy, more satisfied, and better sleepers.

Simple, but specific “special” preparations for the babies 6-11 months, and the addition of “special” foods like egg or fish powder, or specific substitutions of foods for the toddlers 12-23 months were feasible and usually sustainable by caregivers, even if only 4 times a week rather than every day. Caregivers’ motivation came from the almost immediate desirable behavioral change in their children who they report as being less fussy, more satisfied and better sleepers.

### Objective
The key objective of this pilot was to test different models for delivering newborn vitamin A supplementation (NBVAS) within existing public sector health services with recommendations for scale up by the Government of Bangladesh.

### Background and Rationale
A new role for newborn vitamin A supplementation (NBVAS) has been shown to reduce early infant mortality which involves supplementing infants within 48 hours after birth with a single, large oral dose of VA (50,000 IU). Meta-analysis of three successful field trials in South Asia stimulated the Government to introduce NBVAS in Bangladesh.

### Methodology
Two models of dosing the newborn are being tried out in six sub-districts each by the Revitalization of Community Health Care Initiative and Directorate General of Family Planning of the Ministry of Health and Family Welfare in Bangladesh. In the “Mother-Dosing” model, pregnant women are provided with a VA capsule during an antenatal care visit and counseled on dosing the newborn within 48 hours of birth. In the “Health Worker-Dosing” model, the worker doses the newborn during a post-birth visit within 48 hours of birth. To date, a formative research study was completed and used as input to the design of the dosing models, training of health workers was completed and communication materials have been developed. The monitoring system includes modifying the government health MIS to incorporate dosing of newborns with VA as well as regular on-going surveys of recently delivered women and health workers. The evaluation design is a pre-post design in the project areas. The baseline survey was undertaken in December 2010-January 2011 and the dosing of the newborns commenced in January 2011 and will continue till June 2011. The endline survey for the project is scheduled for July 2010.

### Result
During the first four months of the program (January – April, 2011), 43.7 per cent of the newborns in the project areas have been dosed with VA. The coverage was higher in the health worker dosing model (48.2 per cent) compared with the mother-family member dosing model where the coverage was 38.8 per cent. Experience of the program has demonstrated that reaching the household of the newborn within 48 hours of birth is no longer considered as a serious impediment. Mobile
phones are the most preferred method of notifying the health worker of the birth of newborn. Very few adverse events were reported as a result of dosing. All of these events were self-limiting and not clearly attributable to VA dosing. Caregivers viewed the supplementation very positively and were comfortable in dosing the newborn themselves. The one day orientation training on NBVAS was effective and health workers were able to remember the important aspects of the program four months from training.

**Implications**
In addition to Nepal, Bangladesh is the second country in Asia where NBVAS is being piloted through the public health system. This experience of implementing this program demonstrates the feasibility of introducing this program into large scale public health programs in South Asia.
interventions across different population settings. The relevance, capability and opportunity for science to guide MN deficiency prevention policies and programs have never been greater if “evidence-based prevention” is to be taken seriously.

**TITLE:** Promoting National Ownership of the Nutrition Agenda: Lessons from the Experiences of Maternal and Newborn Survival Promotion  
Jeremy Shiffman

This presentation highlights several principles concerning how and why low-income countries come to pay attention to particular public health issues, and develops lessons for nutrition policy agenda-setting. It draws on research conducted by the presenter concerning why and how the issues of maternal or newborn survival did or did not come to be prioritized by nine countries: Bangladesh, Bolivia, Guatemala, Honduras, India, Indonesia, Malawi, Nepal and Nigeria. Among other factors, the presentation emphasizes the power of global agreements such as the MDGs, the role of political champions, the importance of clear policy alternatives, and the centrality of credible indicators.

**TITLE:** Strengthening Program Implementation through M&E  
Rafael Flores-Ayala

A comprehensive view: Matching country needs and realities with international perspectives and ideals  
SESSION IV

**TITLE:** India: Actions at the Policy Level – Taking Policy for Anemia Control as an Example  
Prakash Kotecha

India happens to be the first country in the world to initiate the national anemia prophylaxis program in early 1970s. Paradoxically however the program has not been able to reduce anemia to any noticeable level in most part of the country.

The paper discusses how morbidity is pushed away from the priorities due to competing priorities despite commitments by the Government at the planning level and setting goals for effective control for last three ‘five year plans’.

The paper then discusses how to approach policy makers to motivate them for the action taking in to focus what is important to them and sell the priority of the disease control in their language with their areas of priority to motivate and guide them for the action.

Thus focusing on economic aspects and improved cognitive function and possible improvement for education helps rather than focusing on maternal morbidity and mortality and effects on post partum hemorrhage due to anemia in pregnant mothers.
Malnutrition in general and *micronutrient malnutrition* in particular, has been a public health problem in Uganda for a long time. Way back in the early 1990s Ministry of Health (MOH) adopted a strategy of using a multipronged approach to address the subject. The strategy included supplementation, diet diversification, nutrition education and food fortification. The decision to adopt a multipronged approach was based on the realization that no single intervention could achieve the desired goal of significantly reducing micronutrient malnutrition, particularly among vulnerable groups. MOH also realized that due to national budgetary limitations, forming partnerships with non-government implementers was essential. Consequently a number of programs/projects have been implemented with partners such as A2Z, with a certain degree of success.

A major challenge arising from having multiple implementers of programs/projects is coordination. It is important that government has the capacity not only to monitor the implementation process but also to identify priorities, in the first place. Although government must set the agenda at all times, this has not been the case in some instances due to shortage of the necessary human resource. As a result some implementers have undertaken interventions based on their own agenda.

In order to address the shortcomings MOH institutes multidisciplinary/multisectoral bodies (Committees, Working Groups) to oversee programs/projects on its behalf. Such bodies are, invariably, chaired MOH personnel. Whenever possible, the Ministry also makes effort to include capacity building as part of the program/project implementation process.

**Background:** There are various international agencies working on nutrition supporting the national and local governments in the country. How the Philippine Government and the USAID Mission were able to establish a system for cooperation among partners and projects will be presented.

**Objective:** To discuss the country experience on initiatives for international cooperation by the Philippine Government and USAID Mission, including its challenges and prospects. Activities: The Department of Health (DOH) developed the Sector Development Approach for Health (SDAH) in 2007 where the DOH takes the lead in coordinating and managing donor support to align with government support to health programs. SDAH objectives are as follows: a) reduce transaction costs, b) reduce duplication of donor initiatives with each other and government programs, and c) ensure sustainability of health reforms. The SDAH will develop working agreements with the donors on joint planning and assessments, unified monitoring framework and tools, unified project management and develop a technical assistance map. On the micronutrient program, since 1993, the DOH established the National Micronutrient Action Team (NMAT) to provide directions in the implementation of the micronutrient program. It ceased to function following the dissolution of the Nutrition Service in 2000. In 2007, A2Z advocated for the organization of the Micronutrient Core Group with similar function as the NMAT with international partners as members with DOH and other nutrition agencies. Within USAID, it created Inter Cooperating
Agency (CA)-Technical Working Groups among its projects on health policy, health system strengthening, behavior change communication, public-private partnership, monitoring and evaluation, etc. to coordinate activities and provide support mechanisms among its CAs. These initiatives allowed for coordinated efforts on training, social mobilization, etc. and allowed nutrition to be surfaced in the MCH agenda. However, despite the above initiatives, challenges continue, such as, not all international agencies are members of SDAH, mirroring of convergence at the national level to the local level, project-based interventions have different timetables with institution-based change, lack of data for planning and evaluation, commitment of agencies to go thru the bureaucracy, need for mechanisms for complementation of TAs, tools and harmonization of messages, and awareness of the political system and cultural sensitivities, among others. Given the common direction and focus of the agencies, cooperation is likely to result in better nutritional outcomes in the Philippines.

**TITLE: Nutrient Deficiencies and Program Excesses**

Malnutrition deprives individuals and societies of the ability to realize their full potential. It is not a single nutrient deficiency issue, rather it is a multi-dimensional problem caused by a host of social, economic, political and cultural factors. A long term solution for the prevention and treatment of malnutrition clearly requires attention to the multi-faceted causes of the problem. However, experience has shown that while malnutrition is as much a social problem as it is a medical problem, deconstructing what appears to be an overwhelmingly complex situation into discrete units of programming can have substantial benefits to the population. In addition, success in addressing parts of the problem, e.g., micronutrient deficiencies, has resulted in increased appreciation, as expressed in political will and resources, for the importance and feasibility of preventing overall malnutrition through improved program options. Effective food and nutrition security programs include recognition of the role of related factors that affect nutritional status. Therefore, a sentinel indicator of success in these programs would include measurements over time of nutritional status, especially of the most vulnerable members.

**TITLE: A USAID Response and a Way Forward**

Reflecting on the day’s discussions, and in light of the evolving nutrition landscape, a quick presentation of USAID’s vision for the next five years for nutrition under the Global Health Initiative and Feed the Future, as well as how other initiatives and partnerships fit into the global goals for combating malnutrition.
Camila Chaparro is a Sr. Research Specialist at the Food and Nutrition Technical Assistance II Project (FANTA-2). At FANTA-2 she oversees effectiveness research in Bangladesh with lipid-based nutrient supplements, and provides support and technical assistance to FANTA-2’s activities in Guatemala and with specialized food products. Prior to joining FANTA-2 she was involved in the development, conduct, and analysis of population-based nutrition research in both international and domestic settings. Camila worked at the Pan American Health Organization, where she was involved in developing training and educational materials to promote the adoption of essential delivery care practices to improve maternal and infant nutrition. Other areas of prior research involvement include determining approaches for supporting early breastfeeding initiation, evaluating breastfeeding practices and barriers, assessing infant and child growth, and investigating strategies to prevent iron deficiency during infancy, such as delayed umbilical cord clamping. She holds a PhD in nutrition, with an emphasis in international nutrition, from the University of California, Davis, and a BA in biology from the University of Chicago.

Carol Tom is the A2Z Resident Advisor at the East, Central and Southern Africa (ECSA) Health Community Secretariat in Arusha, Tanzania where she coordinates the regional food fortification program and provides technical assistance to the Food Security and Nutrition Program. Carol has extensive experience in designing, planning, implementation and monitoring of micronutrient programs especially food fortification. She has worked with countries of the East, Central and Southern Africa Region (Kenya, Tanzania, Rwanda, Ethiopia, Uganda, Malawi, Zambia, Zimbabwe, Lesotho and Swaziland) including the governments and food industries to design, plan and implement national food fortification programs. She has extensively worked in the area of food and agriculture for more than 10 years where she has been involved in formulation/review of policies, development of technical regulations and standards on food and agricultural products including quality control and assurance. She has assisted the ECSA Food Security and Nutrition in building strategic partnerships with organizations that favor and support the nutrition agenda in the region. Carol is a member of the WHO Nutrition Guidance Advisory Group where she provides technical expertise and independent advice in review and development of global guidelines on micronutrients.
Dr. Nyhus Dhillon is responsible for overseeing the technical initiatives of the USAID-funded project in Tanzania. An employee of A2Z’s subcontractor Helen Keller International (HKI), Dr. Nyhus Dhillon also coordinates the organization’s other nutrition programs in Tanzania and serves as the HKI’s Regional Vitamin A Supplementation M&E Advisor in Africa. Dr. Nyhus Dhillon has a Master’s in Public Health from Emory University and a PhD from Cornell University’s Division of Nutritional Sciences. Her experience in nutrition comes from various assignments in Nicaragua, Peru, Tanzania and India ranging from community-based nutrition education in Nicaragua to research examining the bioavailability of iron in the Indian diet. Prior to her work with A2Z/HKI, Dr Nyhus Dhillon managed a clinical trial in Tanzania which examined the impact of micronutrient supplementation on pregnancy outcomes. Her interests are in food-based nutrition approaches, monitoring and evaluation of nutrition programs, and operations research.

Dr. Barba is the Resident Advisor for A2Z: The USAID Micronutrient and Child Blindness Project. A nutritionist-dietitian, educator, manager, and researcher.

Dr. Barba provides technical assistance to the National Center for Disease Prevention and Control, Department of Health’s Micronutrient Program; has assisted in the development and dissemination of AO 2007-0045 on Zinc Supplementation and Reformulated ORS for Diarrhea Management Among Children and AO 2010-0010 on the Revision of the Micronutrient Guidelines. With A2Z, she is presently helping DOH in the development of the Micronutrient Supplementation Manual of Operations and extending technical assistance to the CHDs particularly in capacity building on MNCHN and on the Vitamin A Sustainability Assessment.

She is also a Professor Emeritus and former Director of the Institute of Human Nutrition and Food, University of the Philippines Los Banos and of the Food and Nutrition Research Institute of the Department of Science and Technology. Dr. Barba is a Scientific Director of the International Life Science Institute Southeast Asia Region and the past President of the Nutritionist-Dietitians’ Association of the Philippines (NDAP). She is a Fellow of the International Union of Nutritional Sciences and a recipient of the Asia-Pacific Clinical Nutrition Society award in 2006. She earned her master’s degree in Food Science from the University of Hawaii and a doctorate degree in Nutrition from Pennsylvania State University.
Deborah Armbruster is a nurse-midwife with a Master’s in Public Health and a fellow of the American College of Nurse-Midwives. She is currently with USAID as a Sr. Maternal and Newborn Health Advisor. She came to USAID from PATH where she was the director of the research project, the Oxytocin Initiative and from 2004-2009, she was the Director of the Prevention of Postpartum Hemorrhage Initiative (POPHI) project. She has over 25 years experience in safe motherhood and reproductive health programs in over 20 countries. She has been actively involved in the Safe Motherhood Initiative for over 15 years and is a founding member of the White Ribbon Alliance for Safe Motherhood.

Elizabeth Madraa is a medical doctor and graduate from the University of Thessaloniki, Greece. She is also a Public Health Specialist who graduated in International Public Health, from the University of Leeds, U.K., and holds a Post Graduate diploma in Human Nutrition from Cornell University. Dr. Madraa worked for the Uganda Government for over 30 years in various departments at the National Referral Hospital, Mulago. The longest was spent at the Child Health Nutrition and Rehabilitation Unit for nine years. She has served in a political position as a Presidential appointment in the Office of the Prime Minister of Uganda as Director of NGOs and AID Coordination before moving to the HIV/AIDS Control Programme where she served for 15 years as the National Programme Manager. From 2008 to 2010, she worked as Head of Nutrition in the Ministry of Health before moving to the Food Fortification Programme. Her international responsibilities included serving as WHO Technical Advisor to Stop TB, Development of Task Shifting, Guidelines for Human Resources, PMTCT Guidelines, African Vaccine Initiative Board, African Microbicide Committee, and the Society for Women and AIDS in Africa. She initiated several programs to improve women’s health in Africa and Uganda. Dr. Madraa is a Hubert Humphrey Fellow.
Emorn Wasantwisut (Udomkesmalee), PhD, is the Vice President for International Relations of Mahidol University as well as Senior Advisor and Former Director of the Institute of Nutrition, Mahidol University, Thailand. She holds a current position of Adjunct Associate Professor in the Department of International Health, Bloomberg School of Public Health, Johns Hopkins University. Dr. Wasantwisut holds a PhD in nutritional biochemistry and metabolism from Massachusetts Institute of Technology, Massachusetts, USA (1985). Her post-doctoral training was at the Vitamin and Mineral Nutrition Laboratory, Beltsville Human Nutrition Research Center, US Department of Agriculture, Beltsville, Maryland, USA (1987). In addition, she is the Co-Chairperson of the United Nations Systems Standing Committee on Nutrition-Working Group on Capacity Development and Past-Chairperson, Scientific Program Committee of the International Congress of Nutrition 2009. She is a member of WHO Nutrition Guidance Expert Advisory Group on Micronutrients; the International Zinc Nutrition Consultative Group (IZiNCG) Steering Committee; Scientific Advisory Council of the International Obesity Task Force (IOTF); the International Union of Nutritional Sciences (IUNS) Council; the Global Alliance for Improved Nutrition (GAIN) Partnership Council; and Editorial Board of Food and Nutrition Bulletin. Her research interests include micronutrient assessment, bioavailability and metabolism; micronutrient interaction especially of vitamin A and zinc or iron and zinc; and micronutrient and immune function.

Frances Davidson recently retired from United States Agency for International Development (USAID) where she worked for over 20 years, most recently as Health Science Specialist in the Global Health Bureau. Previously she served as Deputy and then Acting Director of the Office of Nutrition in the Bureau for Science and Technology.

She has been responsible for the development, introduction and evaluation of technologies, interventions, policies and system improvements to prevent nutritional deficiencies in food insecure populations; coordination with external partners, and global leadership in maternal and child health with special reference to nutrition.

Previously she was Assistant Professor in the Department of Community Medicine and International Health at Georgetown University School of Medicine where she lectured on international nutrition and designed and implemented research programs on domestic and international health subjects.

She holds PhD and MSc degrees in Human Nutrition and BA and MA degrees in anthropology.
F. James Levinson, Ph.D. is on the faculty of the SIT Graduate Institute and of the Friedman School of Nutrition at Tufts University. Earlier he served as Director of the International Food and Nutrition Center at Tufts, of the International Nutrition Planning Program at MIT, and of the Office of Nutrition of the U.S. Agency for International Development in Washington. In addition to his teaching, he has been actively involved in research and consulting activities for the World Bank, UNICEF, the Micronutrient Initiative, USAID, Save the Children (US) and the Global Alliance for Improved Nutrition (GAIN) for which he served as Chair of the Independent Review Panel. He worked closely with the World Bank-assisted Bangladesh Integrated Nutrition Project since its inception in the mid-1990s, with the Integrated Child Development Service programs in India and with similar programs in southern and eastern Africa. Levinson also has served as spiritual leader of Jewish synagogues in New England for the past 25 years.

Jeremy Shiffman is Associate Professor of Public Administration and Policy at American University. A political scientist by training, he researches the politics of health policy and administration in poor countries. He has a particular interest in health agenda-setting: why some issues receive priority while others are neglected. Among other topics, he has investigated maternal survival, newborn survival, family planning, donor funding for health and health systems reform. His research has been funded by the Gates, MacArthur and Rockefeller Foundations, among other organizations. His work has appeared in multiple journals, including The Lancet, The American Journal of Public Health, Social Science and Medicine, The British Journal of Obstetrics and Gynaecology and The Bulletin of the World Health Organization. Previously he was on the faculty of the Maxwell School of Syracuse University, where he received four teaching awards. Prior to working in academia he served as an executive with the international public relations firm Burson-Marsteller, and as a social worker, working with Vietnamese boat people. He received a BA summa cum laude from Yale University in philosophy, an MA from Johns Hopkins University in international relations, and a Ph.D. from the University of Michigan in political science.
Jose O. Mora. MD/MPH, Colombian National University Medical School, Bogota. Colombia. MSc in Nutrition and Epidemiology, Harvard School of Public Health, Boston.

**Experience:** Director of Nutrition Research Department, Colombian Institute of Nutrition, Bogota. Assistant Professor of Nutrition, Harvard School of Public Health, Boston, MA. Director, Graduate Nutrition Program, Javeriana University, Bogota. Colombia. Chairman, Department of Community Medicine, El Bosque Medical School, Bogota, Colombia. Senior Medical Nutritionist & Latin America Coordinator, USAID/DHHS International Nutrition Unit. Bethesda, MD. Senior Associate USAID/LAC HNS Project. Nutrition Advisor & Latin America Coordinator, USAID/VITAL. Arlington VA. Technical Advisor, USAID/ISTI IMPACT Project, Washington, DC. Micronutrient Policy Technical Advisor & Latin America Coordinator, USAID/OMNI Project. Arlington, VA. Senior Technical Advisor for Micronutrient Policy, USAID/ISTI MOST Project, Arlington, VA.

Retired since 2005.

Keith P. West, Jr., Dr.P.H., R.D. is the inaugural George G. Graham Professor of Infant and Child Nutrition and Director of the Program and Center for Human Nutrition within the Department of International Health at The Johns Hopkins Bloomberg School of Public Health in Baltimore, Maryland. Dr. West has worked in international nutrition for 35 years, concentrating on the prevention of vitamin A and other micronutrient deficiencies and their health consequences in children and women of reproductive age. He has worked extensively in Bangladesh, Nepal and Indonesia where he founded large, population-based, collaborative nutrition research projects. He is a Registered Dietitian and a former officer in the US Army Medical Specialist Corps. He earned his Master’s and Doctoral Degrees in Public Health at Johns Hopkins University. Professor West was the 2007 recipient of the American Society of Nutrition’s International Nutrition Prize and has published over 170 scientific articles, reviews and chapters, including a book on “Vitamin A Deficiency: Health, Survival, and Vision” he coauthored with Alfred Sommer in 1996.
Klaus Kraemer, Ph.D. is a Nutrition Scientist with over 25 years of experience in research, advocacy and communication in the field of health and safety of vitamins, minerals and carotenoids and other health ingredients. He is currently Director of Sight and Life (Sightandlife.org), a humanitarian initiative of DSM, committed to fighting hunger - malnutrition caused by micronutrient deficiencies which negatively affects human capital and economic growth in developing countries. Dr. Kraemer is editor of Sight and Life magazine, one of the most widely read scientific magazine on micronutrients and heath in the developing world. He serves on several professional societies dedicated to nutrition, vitamins, and antioxidants, is reviewer for a number of scientific journals, has published many peer-reviewed scientific articles, and co-edited 6 books. Recently he was appointed member of the BOND (Biomarkers of Nutrition for Development) Steering Committee and Flour Fortification Leaders Group.

Dr. Lynnette M. Neufeld is Chief Technical Advisor at the Micronutrient Initiative (MI) where she provides technical support for research, program monitoring and evaluation to MI’s programs globally. Before joining MI in 2009, Dr. Neufeld was Director of the Division of Nutritional Epidemiology at the National Institute of Public Health (INSP) in Mexico where her research focused on improving the effectiveness of interventions to promote the health, growth and development of children from disadvantaged populations. She continues an active research agenda, including lead researcher on the nutrition impact evaluations of the Oportunidades (Mexico) and Mi Familia Progresa (Guatemala) conditional cash transfer programs and projects managed by MI in Asia and Africa. She has worked extensively with the Health and Social Welfare Secretariats in Mexico to improve the design and implementation of the Oportunidades program. She has also provided extensive technical assistance to UNICEF, the World Food Program and other organizations on issues related to program design, implementation and evaluation. Dr. Neufeld is Advisor to the International Nutrition Council of the American Society of Nutrition and was President of the Research Ethics Commission at INSP from 2004 to 2008. She continues an active role in teaching and student advising through on-going collaborations at Emory and Cornell Universities and INSP in Mexico. Dr. Neufeld has a Doctoral and Master’s Degrees in International Nutrition from Cornell University and a Bachelor of Applied Human Nutrition from Guelph University in Guelph, Canada.
Marcia Griffiths is president of The Manoff Group, a company specializing in public health programs and social marketing. She holds degrees in anthropology and in nutritional science from the University of Wisconsin. She is known for her field work, technical expertise, and innovative programming in applied nutrition and social marketing. She began her career as Nutrition Coordinator for a primary health care program on Nicaragua’s east coast, and then joined Manoff International as director of technical assistance for Indonesia’s groundbreaking Nutrition Communication and Behavior Change Project. She later served as director of USAID’s Weaning Project, where she developed Trials of Improved Practices (TIPs), a participatory research method for “test marketing” child feeding practices for effectiveness and feasibility. Her experience incorporating behavioral issues in program design grew into Behavior-Centered Programming℠, a standardized approach to addressing social and behavior change. Drawing on her work in Indonesia, India and the DR, she developed an integrated child health and nutrition program model (community-based growth promotion, CBGP) to improve young child growth. CBGP has been adopted by over a dozen countries in Africa and Latin America. Marcia has published extensively, including the World Bank’s Promoting the Growth of Children: What Works, WHO’s IMCI Guide to Adapting the Food Box and the Mother’s Card and Designing by Dialogue: Consultative Research for Improving Young Child Feeding.

Maria Elena Jefferds, PhD is a Behavioral Scientist for the International Micronutrient Malnutrition Prevention and Control (IMMPaCt) Program in the Division of Nutrition, Physical Activity, and Obesity at the U.S. Centers for Disease Control and Prevention (CDC). Since joining CDC in 2001, Dr. Jefferds has worked on programmatic and scientific content related to international vitamin and mineral deficiencies and obesity prevention and control. Dr. Jefferds received a PhD in Medical Anthropology with a concentration in nutritional anthropology from Michigan State University in 2001.
Omar Dary

Omar has over 20 years of international experience in public health nutrition in more than 35 countries in Latin America, sub-Saharan Africa, the Middle East, Asia and Eastern Europe. His work has ranged from program design and planning, advocacy and policy formulation, legislation, quality control and enforcement, to monitoring, and evaluation.

He has served as a nutrition advisor for WHO, PAHO, FAO, IAEA, UNICEF, WFP, the Inter-American Development Bank, CDC, GAIN, MI, ILSI, SUSTAIN, and many other organizations, promoting and assisting nutrition programs in developing countries. He is currently the Food Fortification Specialist for A2Z: The USAID Micronutrient and Child Blindness Project.

Parul Christian

Parul Christian, is Professor in the Program in Human Nutrition, Department of International Health at the Bloomberg School of Public Health, Johns Hopkins University. Parul has a MSc. in Foods and Nutrition from India and Dr.PH from Johns Hopkins University. Parul has more than 15 years of experience in research focused on maternal and child nutrition and health and micronutrient deficiencies. She has produced seminal papers enhancing the understanding of the critical role of micronutrients in birth outcomes and maternal, neonatal, and child health and survival. She is also interested in examining long term impact of nutritional interventions in early life on survival, cognition and cardiometabolic risks later in life.
Phil Harvey received his PhD in international nutrition from Cornell University and then worked at the Nutrition Program at the University of Queensland in Australia for 10 years.

He returned to the US in 1998 and was engaged by Johns Hopkins University first as the Nutrition Advisor on the MOST Project, and then as Technical Director of the A2Z Project. He has worked on maternal anemia programs in Africa particularly in Uganda and Ghana, and in Asia, particularly in India, Cambodia, and Nepal.

Phil is currently working as an independent consultant in International Nutrition.

Prakash Kotecha is presently the India Country Representative for A2Z: The USAID Micronutrient and Child Blindness Project. A physician and expert in maternal and child anemia, he is responsible for overseeing the Delhi central office and A2Z programs in Uttar Pradesh and Jharkhand States. Prior to joining A2Z, he worked as Professor and Head, Department of Community Medicine at Medical College Vadodara for over 10 years. An epidemiologist with expertise in public health nutrition and research methodology, Dr. Kotecha worked extensively on adolescent anemia with UNICEF for Gujarat-India. He has been awarded Technical Cooperation Training Award in Epidemiology by British Government and has been Temporary Advisor to World Health Organization for Iron Deficiency Anemia. He has implemented anemia control strategies for UNICEF in Bangladesh and Bhutan. Dr. Kotecha serves on editorial board for the Indian Journal of Community Medicine and has written several publications in national and international journals in the field of nutrition, HIV, environment science, infectious diseases and maternal and child health. He has a Postgraduate degree in Community Medicine and Diploma in Public Health from M. S. University of Baroda, India, and a Masters in Community Health from London School of Hygiene and Tropical Medicine, London University, UK.
Rae Galloway has two degrees in nutrition: Bachelors of Science in Nutrition, Food Science and Dietetics from the University of California, Berkeley, and Masters of Science in Nutritional Sciences from University of Maryland, College Park. Ms. Galloway has over 25 years of experience in designing, implementing, supervising and evaluating nutrition projects in 30 countries in Africa, Asia, Central Asia, the Pacific and Latin America. Ms. Galloway started out her international career working in the South Pacific where she coordinated a regional nutrition and home gardens project in five countries for a U.S. non-governmental organization. Ms. Galloway has since worked for the World Bank for twelve years conducting economic and sector, writing nutrition strategies, and participating in project preparation and supervision of World Bank health, education, social protection, and agriculture projects. Ms. Galloway has also worked for USAID-funded global programs including the JSI-led MotherCare project (maternal health) and the multi-partner BASICS Project (child survival). Currently working for PATH, Ms. Galloway has worked as Technical Advisor on the PATH-led the Infant and Young Child Nutrition project, and is currently working as Technical Lead on nutrition for the Jhpiego-led Maternal and Child Health Integrated Program (MCHIP) and the Ethiopia Intrahealth-led Community-PMTCT project. Ms. Galloway has expertise in infant and young child feeding, maternal nutrition, agriculture approaches to improving nutrition, school health and nutrition, and micronutrient interventions, particularly iron deficiency anemia control.

Rafael Flores-Ayala is the Team Leader of the International Micronutrient Malnutrition Prevention and Control (IMMPaCt) Program at the U.S. Centers for Disease Control and Prevention (CDC) since February 2008. Previously he was a Research Associate Professor at the Rollins School of Public Health, Emory University (2001-2008). Dr. Flores served in distinguished positions at the International Food Policy Research Institute (IFPRI) and the Institute of Nutrition of Central America and Panama (INCAP). He has extensive experience in the development of international randomized clinical and group trials and epidemiologic studies in: nutrition and human capital formation, nutrition and growth, impact of micronutrient interventions (Iron, Folic Acid, Vitamin A, DHA and Zinc) and consequences of early malnutrition. Dr. Flores has served as nutrition advisor for the World Health Organization, World Bank, Inter-American Development Bank, International Atomic Energy Agency, US Agency for International Development and many other organizations and governments, assisting nutrition programs on policy planning, implementation, monitoring and evaluation, and capacity building.
Regina Moench-Pfanner

Throughout my career, my focus has been on nutrition and health programming both in development and emergencies and on micronutrients and poverty alleviation programs. I have spent more than twenty years working in the field of relief assistance and international development. I am a Fulbright Scholar and hold a Doctorate in International Nutrition from the University of Bonn, Germany, and a Masters of Science from Michigan State University, USA. I have authored and contributed to several publications. Currently, I am the Director of Nutrition Programs at GAIN, coordinating all program implementation. Additionally I am a member of GAIN’s Executive Committee.

Prior to joining GAIN in 2005 I served as Regional Coordinator for Helen Keller International (HKI) in the Asia Pacific overseeing the development, implementation and quality management of HKI’s programs in public health and eye health. I began my career with the International Federation of the Red Cross and Red Crescent Societies (IFRC) and worked throughout Africa and Europe. I went on to become Head of Mission for the IFRC in Chad before moving on to provide technical consultancies in food and nutrition programs for a number of international organizations, including the World Health Organization (WHO), the United Nations High Commission for Refugees (UNHCR), and the World Food Programme (WFP). Besides Africa and the Asia Pacific, my experience also includes work in the Middle East, South America, and Europe.

Rolf Klemm

Dr. Klemm is a nutritional epidemiologist with >20 years of professional experience in international public health nutrition. He began his career as a Nutrition Promoter in the US Peace Corps (Philippines) where he obtained “hands-on” community-based experience in growth monitoring and supplementary feeding interventions. He completed his Master and Doctoral degrees from the Johns Hopkins Bloomberg School of Public Health (JHBSHP). He served as the Country Director for Helen Keller International (HKI) in the Philippines for a decade where he conducted studies on the prevalence of vitamin A deficiency and the impact of vitamin A fortification, complementary feeding and vitamin A fortification interventions. Dr. Klemm joined the faculty in the Program of Human Nutrition in the Dept of International Health in 1998 and currently serves as a principal and co-investigator on several large-scale community-based nutrition intervention trials being carried out in Pakistan (severe anemia treatment trial), Bangladesh (maternal and newborn infant supplementation trials) and Tanzania (zinc as adjuvant treatment for diarrhea). He has published extensively on micronutrient intervention studies, served as a member of the Steering and Program Committees of the Micronutrient Forum, and teaches classes in Food and Nutrition Policies, Nutrition Program Monitoring and Evaluation, and Micronutrient Deficiencies at the JHBSPH. He has served as the Technical Director for A2Z: The USAID Micronutrient and Child Blindness Project since September 2009.
Dr. Roy Miller has a Ph.D. from the University of Michigan in a somewhat unusual subject for nutrition and health professionals—urban and regional planning. His entry into the field of international nutrition came in 1977 as the statistical analyst for a USAID-funded project to analyze community-level nutrition programs. This was followed by several years evaluating nutrition programs for USAID, work that led to a five-year stint as the evaluation officer of the Italian funded Joint WHO/UNICEF Nutrition Support Program.

In 1988, Dr. Miller relocated to Washington DC to direct the Center for International Health Information, a USAID funded activity that tracked health funding for the agency and reported on the child survival program that began in 1985. His return to nutrition was with the Linkages project where he was the evaluation advisor for a couple of years before becoming the Project Director for MOST, the USAID Micronutrient Program, the predecessor to A2Z.

Now, he is in USAID’s Office of Sustainable Development in the Bureau for Africa where he spends some time working on nutrition, some on evaluation and an inordinate amount of time on budget planning, reporting and the myriad of other tasks characterizing the USAID of today.

Thomas Schaetzel is the Technical Director of the Infant and Young Child Nutrition (IYCN) Project, an initiative of the USAID Global Health Bureau implemented by PATH, in partnership with CARE USA, University Research Co., LLC, and The Manoff Group (Dr. Schaetzel’s employer). As Technical Director, he leads the project’s global technical leadership activities. He holds advanced degrees in applied nutrition, agriculture (agronomy), and theology, and has more than 20 years of domestic and international experience in nutrition, health, and agriculture. His primary areas of interest are community-based programming for improved infant/child nutrition, micronutrient interventions, maternal nutrition, agriculture and nutrition linkages, and monitoring and evaluation.
Dr. William Ssali is a leader in food fortification in Uganda and brings to A2Z extensive experience, including his role as coordinator of production and distribution of grain food fortification in the Uganda Ministry of Health. Trained as a Food Technologist (at Grimsby College of Technology and Loughborough University of Technology, U.K.) and over the last 35 years, Dr. Ssali has worked in public administration, advisory services, industry, teaching and examining postgraduate students, research, and consultancy. For over ten years, he was the Head of Food Science and Technology Research in the National Agricultural Research Organization (NARO). He has also been involved in food standards development, as the Chair of the Technical Committee for Food Standards (14 years) and Chair of the National Standards Council (4 years). Dr. Ssali has been involved with the Food Fortification Program (FFP) in Uganda, almost from the start. Nominated by NARO, he served as a representative on the National Working Group on Food Fortification (NWGFF) when it was formed in 2002 and has been its Vice-Chair since then.

In 2007, A2Z began implementing activities in the FFP. At the Food Biosciences Research Center (FBRC), Dr. Ssali supervised the part-time food fortification adviser. A2Z helped to strengthen the FBRC team to work with industries undertaking fortification. Among the initial activities the A2Z/FBRC team implemented was to conduct an industry assessment survey through which vital data pertaining to respective industries was collected and documented. A2Z also worked with the Uganda National Bureau of Standards (UNBS) to monitor the quality of fortified foods right from the factories to the retail outlets in urban and rural areas. Samples of fortified foods were collected and sent to the laboratory for analysis. The results were shared with NWGFF to inform its decisions, when the needs arose. As a result, nearly 90 percent of the vegetable oil and fat produced in the country is fortified with Vitamin A, and 40 percent of the wheat flour is fortified with multivitamins and minerals, according to the relevant Uganda Standard.
Dr. Zeba Mahmud is Director of the Micronutrient Initiative, Bangladesh and responsible for supporting national actions to eliminate micronutrient malnutrition by assisting in designing, managing and evaluating interventions for people at risk of vitamin and mineral deficiencies especially in the areas of salt iodization, micronutrient supplementation and food fortification. Previously working for BRAC, I was responsible for guiding activities in 34 Sub districts (9 m pop) of Bangladesh. I have skills in developing guidelines on monitoring, training and supervising field functionaries. I am well versed in strategy planning, data review and analysis in the fields of reproductive health, macro and micro nutrients, disease control and women sensitivity. I have played an important role during development of the Nutrition Plan of action, HPSP, and in developing, launching, budgeting and implementing the Bangladesh integrated Nutrition Project. Throughout my career I have published and presented a good number of papers in national and international seminars and workshops. Early in my career I used used my medical skills and knowledge in performing preventive and clinical services for the rural community. My basic education has been Master of Philosophy (MPhil) Nutrition, and Bachelor of Medicine and Surgery (MBBS). I have also received supplementary training in food fortification, program monitoring and evaluation; anthropology on health and health care and food and nutrition program management.

Jariseta Rambeloson Zo is the Monitoring and Evaluation Specialist, A2Z: The USAID Micronutrient and Child Blindness Project.
Dr. Rambeloson has worked for over 18 years in developing, managing, implementing, and advising health, nutrition and education training programs. He has widespread field experience in implementation and evaluation research, performance monitoring protocol development and implementation. He specializes in the development of systems for the management of training of trainers, in-service and pre-service training in service provision, counselling, professional staff supervision and evaluation, and development of information management systems.

Dr. Rambeloson has worked extensively throughout sub-Saharan Africa and Asia, including Benin, Comoros Island, India, Madagascar, Senegal, Swaziland, Uganda, Zambia on behalf of USAID, World Bank, UNICEF, various ministries of health and other international NGOs. His areas of interest include the development and strengthening of national nutrition policy, management and use of food consumption survey data for improving and strengthening food aids programs and food fortification interventions. He pioneered the integration of national nutrition and food security monitoring and evaluation framework in Madagascar and Benin. He has a PhD degree in Health Economy from the University of Paris IX Dauphine/Institut Scientifique et Technique de la Nutrition et de l’Alimentation/CNaM Paris France. He speaks fluent French and Malagasy.
Raj Kumar Pokharel is the Chief of the Nutrition Section, Child Health Division, Ministry of Health and Population of the Government of Nepal. Unfortunately, Raj Kumar was unable to travel to DC to present this program. Maharjan, the country director of Nepal’s Micronutrient Initiative program and the second author of the presentation, was also unable to travel to DC for this meeting.

In their absence, Phil Harvey will describe the Nepal program. Phil received his PhD in international nutrition from Cornell University and then worked at the Nutrition Program at the University of Queensland in Australia for 10 years. This university position incorporated a part time role with the Queensland State Government’s Department of Health.

He returned to the US in 1998 and was engaged by Johns Hopkins University first as the Nutrition Advisor on the MOST Project, and then until 2008 as Technical Director of the A2Z Project. He has worked on maternal anemia programs in Africa particularly in Uganda and Ghana, and in Asia, particularly in India, Cambodia, and Nepal.

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