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TOPS Review of Promising Practices in Food for Peace Development Food Assistance Projects

March 2014

The Technical and Operational Performance Support (TOPS) program is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents of this report do not necessarily reflect the views of USAID or the United States Government.

The TOPS Program. 2014. *TOPS Review of Promising Practices in Food For Peace Development Food Assistance Projects.* Washington, DC: TOPS Program.

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Table of Contents:

ACRONYMS

ADRA	Adventist Development and Relief Agency
ANRM	Agriculture and Natural Resource Management
ANC	Antenatal Care
BASICS	Basic Support for Institutionalizing Child Survival
BRRI	Bangladesh Rice Research Institute
CIP	International Potato Center
CHD	Comprehensive Homestead Development
CHW	Community Health Worker
CMAM	Community Management of Acute Malnutrition
CRS	Catholic Relief Services
DHS	Demographic Health Survey
ECCD	Early Child Care for Development
EKATA	Empowerment, Knowledge and Transformative Action
FAFSA-2	Second Food Aid and Food Security Assessment
FANTA	Food and Nutrition Technical Assistance Project
FE	Final Evaluation
FFP	USAID Office of Food for Peace
FFS	Farmer Field School
FFW	Food for Work
FH	Food for the Hungry
FSN	Food Security and Nutrition
GINA	Gender Informed Nutrition and Agriculture Project
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome
IFA	Iron-Folic Acid
IFPRI	International Food Policy Research Institute
IMCI	Integrated Management of Childhood Illness
IPM	Integrated Pest Management
IYCF	Infant and Young Child Feeding
MCN	Maternal and Child Nutrition
M&E	Monitoring and Evaluation
MOH	Ministry of Health
OICI	Opportunities Industrialization Centers International
PCI	Project Concern International
PVO	Private Voluntary Organization
SAG	Secretariat of Agriculture and Cattle
SBC	Social and Behavioral Change

ACRONYMS

SC	Save the Children
SHOUHARDO	Strengthening Household Ability to Respond to Development Opportunities
SPRING	Strengthening Partnerships, Results and Innovations in Nutrition Globally Project
SUN	Scaling Up Nutrition movement
TAG	Technical Assistance Group
TOPS	Technical and Operational Performance Support Program funded by FFP
USAID	United States Agency for International Development
WASH	Water, Sanitation and Hygiene
WV	World Vision

I. BACKGROUND INFORMATION

The TOPS Program team of technical specialists has undertaken a review of final evaluation reports from Food for Peace-funded development food assistance projects (formerly referred to as Multi-Year Assistance Projects or Development Assistance Projects) in order to identify promising practices in effective food security programming. The TOPS team hopes this will serve as a basis for ***discussion*** among the food security community and lead to ***consensus*** on promising practices to promote, further ***identification of additional promising practices***, and further ***field-testing and/or documentation*** of promising practices to establish a robust evidence base.

The review has included those final evaluation reports readily available at that time, either through the USAID Development Experience Clearinghouse or through partners and collaborators of the TOPS Program. The focus of the review was on projects whose final evaluation was conducted between FY2006 and FY2010, a period of approximately eight to nine years of implementation. The final evaluation reports reviewed represent projects implemented in a total of fourteen countries (ten in Sub-Saharan Africa, three in the Latin America and Caribbean region and one in Southeast Asia). The final evaluation reports also represented implementation of twenty-seven projects implemented by Private Voluntary Organizations (PVOs) alone, with formal partners or in a consortium. A list of the final evaluation reports reviewed can be found in Annex A.

METHODOLOGY

The methodology used by the TOPS Program to select the promising practices that are presented in this paper was as follows:

- Each technical specialist on the TOPS team read each of the final evaluation reports from the twenty-seven projects listed in Annex A and prepared notes on project achievements and narrative text that referred to potential promising practices. These notes were shared among the team.

- Any final evaluation report in which there was any over-arching concern expressed about the overall quality of project evaluation, implementation or management was eliminated from further review.

- The TOPS team prepared a chart listing key achievements in the higher-level indicators of child stunting or household income, along with other impact or intermediate-level outcome indicators, such as household dietary diversity, improved infant and young child feeding practices, and improved agricultural practices and production.

- Projects which did not include child stunting as an indicator were then set aside for further review at a later date. (Note that the TOPS Program considers the process of identifying promising practices to be ongoing through the life of the TOPS program, in collaboration with the community of practitioners. See more on this below.)

- The team then selected fourteen projects that demonstrated a measurable reduction in child stunting from baseline to final evaluation, along with improvements in many intermediate-level impact and outcome indicators. The team then repeated a review of these final evaluation

reports and developed a list of promising practices that included (a) a project implementation practice reflecting project effort beyond a typical package of implementation activities, and/or (b) a well-defined project implementation practice based on an implied theory of change.
- The draft list was discussed by the TOPS team, with consensus on the final list of promising practices contained in this document.

The criteria used to identify specific promising practices included the following:

- Improvements reported for intermediate-level indicators, as would be expected if there was a probable causal link between the practice and the reduction in stunting achieved;
- Promising practices highlighted by those who conducted the final evaluation, with specific mention in the final evaluation report;
- Narrative text in the final evaluation report highlighting a practice based on project results and comments from project beneficiaries during focus groups conducted during final evaluation;
- Documentation of special monitoring efforts conducted by the project;
- Identification of information in the final evaluation reports that concurs with the extensive field expertise of each TOPS technical specialist in their relevant area, including agriculture, gender, monitoring and evaluation, nutrition, and social and behavioral change;
- Alignment with state-of-the-art practices or the latest findings of the academic research community (e.g. the benefits of a focus on the first 1,000 days of a child's life).

This first report only includes promising practices identified within the maternal and child nutrition (MCN) component or the agriculture and natural resource management (ANRM) component of food security programming, along with a limited number of promising practices that reflect integration of components, such as family planning. Cross-cutting aspects related to gender or to social and behavioral change (SBC) are discussed within the sections on MCN, ANRM or integration, as relevant.

Promising practices in water, sanitation and hygiene (WASH) are not included in this first paper, although these topics are of interest to the food security community and will be a focus of TOPS follow-on efforts to this first report. As noted above in the description of the methodology of this review, promising practices from projects that did not evaluate the status of child stunting but achieved positive impact in other important impact indicators will also be further reviewed as part of TOPS follow on efforts to this first report.

NEXT STEPS

This review is not intended to be viewed as comprehensive nor conclusive. It is intended as a starting point for further community comment and input. The TOPS Program was unable to obtain from public sources the final evaluation reports for all FFP-funded projects that were evaluated between FY2006 and FY2010.

The TOPS team has chosen to refer to the practices noted in this report as "promising" practices, rather than as "best practices" because, as noted in the second Food Aid and Food Security Assessment (FAFSA-2) report[1], the final evaluation reports do not always include analysis of causal effects or attribution. However, in TOPS' role as a facilitator of participatory dialogue within the food security community, this paper is considered to provide a strong starting point to identify promising practices on which to build consensus among practitioners, technical specialists and other stakeholders.

This first report is intended as a living document to which the food security community can contribute through collaborative efforts with the TOPS Program.

PVOs are welcome to put forward any final evaluation, special study or documentation of a FFP -funded development food assistance project that highlights a promising practice for inclusion in this living document, to be followed then by further discussion and dissemination within the food security community. PVOs and other stakeholders are also strongly encouraged to submit a concept note to the TOPS Small Grants program for any potential promising practice they would like to field-test and document, or for tested promising practices that only need further documentation to be disseminated.[2]

It should also be noted that this review is intended to provide information that is complementary to, rather than duplicative of, the findings from the FAFSA-2 report and the ongoing multi-year study by Tufts University of exit strategies and processes put in place in Bolivia, Honduras, India and Kenya by Food for Peace development food assistance programs.[3] The focus of this review of final evaluations by the TOPS team was to identify programmatic details that may contribute to the success of broader approaches.

Readers are welcome to obtain the final evaluation reports through the USAID Development Experience Clearinghouse for more detailed information on any project referred to in this report and listed in Annex A. The TOPS Program will follow this report with meetings open to the food security community and further discussion within the relevant FSN Network task forces, to provide opportunities for a deeper understanding and discussion of these promising practices. Updates on planned activities will be provided through the FSN Network bi-weekly newsletter (subscribe at bit.ly/ fsnnetworknews).

[1] http://www.fantaproject.org/research/fafsa-2

[2] http://www.fsnnetwork.org/document/tops-small-grants-programs-implementers.

[3] http://www.fantaproject.org/research/exit-strategies-title-II

II. MATERNAL AND CHILD NUTRITION

The promising practices in maternal and child nutrition interventions in food security programs that were identified from review of final evaluation reports might be considered "extra efforts" within recognized activities to promote maternal and child and nutrition, or innovative project actions that increased a focus on maternal and child nutrition specifically. As noted in Section I, Background Information, the promising practices that follow have been identified from projects that achieved a reduction in stunting. An underlying assumption is that any project that achieves a reduction in stunting is also likely to have had good quality and consistent implementation of the recommended basic package of maternal and child health promotion activities that is well-known and recognized within the food security community.

IMPROVED PRACTICES EARLY IN THE FIRST 1,000 DAYS

The 1,000 Days initiative, in support of the Scaling Up Nutrition (SUN) movement, refers to the time from the start of a mother's pregnancy until a child is two years old. Research indicates that adequate nutrition during this time period is crucial to a child's development. Children suffering from under-nutrition face physical stunting, mental impairment, higher susceptibility to disease, increased risk of mortality, poorer performance in school, and lower future incomes.[4] It is important to ensure optimal nutrition, alongside good health practices, from the earliest days of conception[5], so that the potential benefit of good care in the first 1,000 days of a child's life can be maximized.

Antenatal and postnatal care

In development food assistance projects implemented by ADRA, CARE, Food for the Hungry and Save the Children in Bolivia from FY2002 to FY2008, all of the PVOs included an emphasis on promoting early and complete antenatal care. In addition, Food for the Hungry and Save the Children also promoted and tracked the percentage of women accessing antenatal care services during the **first trimester of pregnancy** and found this to increase approximately 30 percentage points from baseline to final evaluation. ADRA monitored the percentage of pregnant women who had their first prenatal visit before their fifth month of pregnancy, the typical month at which many pregnant women previously sought care. This increased from 71.9% at baseline to 80.8% at final evaluation. With this consortium project supporting the efforts of the Ministry of Health to encourage the use of available services for antenatal care, the final evaluation results of the ADRA, Food for the Hungry and Save the Children projects exceeded the overall improvement in rural areas at the national level (the Demographic Health Survey in 2008[6] reported 53% of women in rural areas having accessed antenatal care services before four months of pregnancy).

Final evaluation of the CARE *Shouhardo*[7] Project in Bangladesh (FY2005-FY2010) particularly noted the high level of effort the project put towards identifying women **in the early stages of**

[4] Alive & Thrive Technical Brief Issue No.2, September 2010.

[5] Research also shows the importance of maternal nutrition prior to conception.

[6] Bolivia Demographic and Health Survey 2008; National Institute of Statistics, Ministry of Health and Sports and the Health Reform Program, with technical assistance from MEASURE DHS/Macro International 2009.

[7] Amity or friendship in Bangla.

pregnancy to promote early access to antenatal care and completion of the recommended number of antenatal care visits**.** The final evaluation conducted showed the percentage of women with at least three antenatal care visits[8] to have increased from 16.4% at baseline to 58.6% at final evaluation. The most recent Demographic Health Survey (DHS) in Bangladesh in 2011[9], two years after the household survey for final evaluation of the project, found only 32.0% of women in all rural areas throughout the country to have had three or more antenatal care visits.

Development food assistance projects with maternal-child health and nutrition (MCHN) components usually collaborate with national ministries of health in the promotion of the use of antenatal care services. A recent comparative review from DHS data on the use of maternal health services[10] identified late use of antenatal care (ANC) services to be a significant obstacle to optimal care during pregnancy in almost all countries and particularly in the Sub-Saharan Africa region and Southeast Asia, with potential negative effects for birth outcomes. Most mothers initially access ANC services later than the first trimester of pregnancy. By putting extra emphasis on the importance of ANC as early as possible during pregnancy, the reduction in stunting among children measured in the final evaluations of the FFP-funded projects mentioned above may reflect benefits from improved growth early in the intrauterine phase of development.

In the development food assistance project implemented by Save the Children in Nicaragua from FY2002 to FY2008, improvements in the use of ANC services were achieved and the project also dedicated additional efforts to support of post-partum care, with 95% of all mothers found to have had at least one **post-partum check-up** at final evaluation.

Iron-folic acid supplementation

The US Global Health Initiative includes the reduction of maternal mortality by 30% among eight global health targets across assisted countries (http://www.ghi.gov/). The reduction of maternal anemia is one strategy to achieve this goal. Although Food for Peace development food assistance projects vary in the level of effort focused on **supplementation with iron-folic acid** (IFA) tablets during pregnancy, most include promotion of the importance of IFA as part of a package of recommendations regarding the use of available antenatal care services. Few include IFA indicators in their Implementation Performance Tracking Table -- partly because integrated development food assistance projects have a large number of indicators to track and partly because these projects do not intervene in supply chain issues, which are often one of the key constraints. However, among members of the consortium project in Nicaragua noted above, ADRA began to look more closely at this and included an indicator during the final evaluation and found that 91.0% of women had received IFA tablets during their last pregnancy.

The CARE *Shouhardo* Project in Bangladesh (FY2005-FY2010), mentioned above for an emphasis on early and complete antenatal care, also measured the percentage of women stating they

[8] There have been on-going changes in the measurement of optimal antenatal care. The most recent recommended indicator for antenatal care is "the percentage of mothers of children age 0-23 months who attended four or more antenatal care visits during their most recent pregnancy " (MEASURE Demographic and Health Surveys; http://www.measuredhs.com/).

[9] Bangladesh Demographic and Health Survey 2011; National Institute of Population Research and Training, Mitra and Associates, and ICF International, 2013: Dhaka, Bangladesh and Calverton, Maryland, USA.

[10] Wang, Wenjuan, Soumya Alva, Shanxiao Wang, and Alfredo Fort. 2011. Levels and Trends in the Use of Maternal Health Services in Developing Countries. DHS Comparative Reports No.26. Calverton, Maryland, USA:ICF Macro.

took IFA tablets during pregnancy, demonstrating a remarkable increase from 28.0% at baseline to 84.0% at final evaluation. In addition, they found that 54.0% of women took IFA tablets for at least 3-4 months or more. A recent analysis of data from the 2011 DHS in Ethiopia by the SPRING Project traced the "falter points" at which pregnant women do not reach the goal of taking greater than or equal to 180 IFA tablets during pregnancy.[11] Among 8,751 women pregnant within the previous five years, only 1,333 received any IFA through an antenatal care visit. However, similar analysis of data from Malawi showed that 12,068 of 13,776 pregnant women received IFA through antenatal care. A negligible number of women in either country had taken 180 or more IFA tablets.

Maternal diet and food consumption

Maternal nutrition and food consumption during pregnancy is also an important aspect relevant for both maternal and newborn nutritional status. Over the past decade, many FFP-funded projects have included activities to better understand cultural beliefs and possible barriers to consumption of nutritious foods during pregnancy. PVOs have also responded to new insights into the role of husbands and other persons of influence on maternal and child nutrition: "There is growing recognition that in order to bring about sustained enhancements in household-level nutrition practices, there is a need to adopt a wider approach that involves other influential household actors, including senior women, or *grandmothers*, and *men*." [12] (See more on child nutrition under the section below on *Persons Who Influence Infant and Young Child Feeding*.)

It is worth noting that several of the projects which have achieved a reduction in stunting have included special efforts to **promote improvements in women's diet by reaching out to men and other community members**. The *Uganda Food Security Initiative Project* implemented by Africare (FY2002-FY2006) provided support for radio messages on the importance of women's nutrition and demonstrated an increase in the average dietary diversity score both at the household level (from 4.3 at baseline to 6.3 at final evaluation) and specifically among women (4.2 to 6.2) and among children (4.0 to 6.4).

As part of mutually reinforcing strategies to improve care during pregnancy and to promote gender equity within the CARE project in Bangladesh (FY2005-FY2010), key messages included a focus on **improved maternal nutrition during pregnancy** and emphasis on the need for **additional rest** during at least the last months of pregnancy. Final evaluation found a much higher percentage of women to have eaten more food than usual during the last pregnancy (from 6.4% at baseline to 53.7% at final evaluation) and almost double the number to have taken more daytime rest than usual during the last pregnancy (from 25.2% at baseline to 45.9% at final evaluation).

[11] SPRING – Strengthening Partnerships, Results and Innovations in Nutrition Globally – is a five year USAID-funded cooperative agreement to strengthen global and country efforts to scale up high-impact nutrition practices and policies and improve maternal and child nutrition outcomes; http://www.spring-nutrition.org/.

[12] The roles and influence of grandmothers and men: evidence supporting a family-focused approach to optimal nutrition for infant and young children, by Judi Aubel of The Grandmother Project for the IYCN Project implemented by PATH in collaboration with CARE, The Manoff Group and University Research Co., LLC.

PERSONS WHO INFLUENCE INFANT AND YOUNG CHILD FEEDING

As noted above, PVOs recognize that, besides the primary caregiver (usually the mother), many other people in the household and in the community influence caregivers' choices for infant and young child feeding practices.

Involving the community

The final evaluation of the development food assistance projects implemented by ADRA, CARE, Food for the Hungry and Save the Children in Bolivia from FY2002 to FY2008 noted that all PVOs disseminated messages through multiple channels. The vehicle for their key social and behavior change (SBC) strategy was through women's groups, but they also included activities for **community mobilization** through local leaders to increase awareness among leaders and among men of child undernutrition. Existing traditional community meetings can be an excellent opportunity to efficiently reach out to men and harness their influence on household food purchase. In the community meetings in the consortium project in Bolivia a key message was to promote the purchase of nutritious foods for children. Save the Children also had Community Health and Nutrition Volunteers present summary bar graphs [13] of the number of children with and without expected weight gain during periodic community meetings convened by community leaders. This resulted in increased **support from community leaders and from fathers/husbands** for a focus on improved child nutrition.

An additional unique contribution to national efforts to improve child nutritional status was found in the project in Nicaragua implemented by ADRA from FY2002 to FY2008. ADRA provided assistance to the Ministry of Health's information system and then used this data to conduct community sessions to **analyze the nutrition situation**.

Involving men at the household level

In the above-mentioned ADRA project in Nicaragua, sessions to train Community Health Volunteers on **home financial administration** techniques were included and these skills were transferred to households during home visits to those children with unsatisfactory weight gain per results of regular growth monitoring. The final evaluation noted that this technique enabled households to make adequate decisions in the use of their finances and to give priority to alimentary needs over other needs. [14]

In the projects implemented by ADRA, CARE, Food for the Hungry and Save the Children in Bolivia from FY2002 to FY2008, the final evaluation showed a sizeable increase in household real income between 2002 and 2008. Although the link between this outcome, food consumption by targeted children, and reductions in stunting was not specifically assessed, in interviews with project beneficiaries during final evaluation the evaluators found project participants to consistently mention that the income generating activities had enabled them to improve their diets, along with housing

[13] Note that data is presented to the community in a summary or tabulated manner to protect confidentiality and avoid any possible sense of embarrassment for any poor household. The focus of the discussion is on the "community's" situation.

[14] The final evaluation did not provide any data for household dietary diversity or consumption by women and children; however, the report did note that the project reached over 100% of all output targets for agricultural production and that household income had continuously increased over the life of the project, reaching an average of USD 3,600 by final evaluation.

improvements, (which can also affect the health status of children). The evaluators also identified as note-worthy specific educational components developed by ADRA and Food for the Hungry that were directed at **helping families better plan how to use their cash resources**. For Food for the Hungry, this component was developed as a result of a **rapid formative investigation** study in one municipality that showed that families were not using their increased incomes to purchase more nutrient-rich foods.

CHANGING BEHAVIORS FOR INFANT AND YOUNG CHILD FEEDING

Optimal complementary feeding consists of several key components, including the age at which complementary food is introduced to the infant, the frequency with which the child is fed during the day, and the quantity of food and quality of food (density of nutrients, variety of macro- and micronutrients).

From IYCF recommendations to feasible actions

Final evaluation of the projects implemented by ADRA, Save the Children and World Vision in Honduras (FY2005-FY2009) found all three PVOs to demonstrate a large increase in the percentage of caregivers introducing complementary foods at 6-8 months[15] (average baseline value 34.1%, average at final evaluation 77.0%). In qualitative focus group interviews with mothers during final evaluation, mothers mentioned concrete and **small doable actions** for improving complementary feeding practices, with the most frequent comments being that children should be fed porridge that is "thick not thin" and by "spoonful after spoonful". They also noted that infants and young children need fruits and vegetables that contain "a lot of vitamin A" and were able to name locally available fruits and vegetables high in vitamin A.

In the above-mentioned projects in Honduras, all three PVOs also included a focus on **active/ responsive feeding practices** that can improve the dynamic of the relationship between the mother and child during feeding to increase child food consumption while also increasing the mother's awareness of the quantity of food a child is consuming.

Final evaluation of the development food assistance projects implemented by ADRA, CARE, Food for the Hungry and Save the Children in Bolivia (FY2002-FY2008) also noted that ADRA had included **early childhood stimulation** activities from the start of its program and that the other PVOs added these activities to their programs. In the development food assistance project implemented by Save the Children in Nicaragua (FY2002- FY2008), support was provided for Community Children's Centers in which weekly sessions with mothers included a focus on hygiene, health and nutrition, along with early childhood stimulation activities for children under two years old. In the 2013 Lancet series on maternal and child nutrition, it was noted that poor nutrition coincides with inadequate stimulation during early childhood development and suggests interventions to promote home stimulation and learning opportunities are needed to ensure longer term gains in human capital. [16]

[15] Note that the Minimum Acceptable Diet indicator was not widely in use at that time.

[16] The Lancet Maternal and Child Nutrition Series, 2013.

Developing a social and behavioral change (SBC) strategy

In the projects implemented by ADRA, CARE, Food for the Hungry and Save the Children in Bolivia (FY2002-FY2008), in line with recommendations from the midterm evaluation, the four PVOs each conducted a form of **positive deviance inquiry** to identify factors that motivate parents to change behaviors. Food for the Hungry, in addition, had conducted some **barrier analysis** [17] in the target area prior to this project and staff were able to draw upon this information to refine messages. One key finding was that, although at baseline parents did not recognize undernutrition as a problem, they quickly responded to messages that emphasized the contribution of good nutrition to future scholastic performance. The partners also took the opportunity provided by formative investigation to revisit social and behavior change strategies and select critical messages to promote while **limiting the total number of messages** being disseminated to project beneficiaries, another recommendation from the midterm evaluation. For example, Save the Children identified and promoted ways in which mothers working in the fields for much of the day could prepare portable and nutritious foods for the children that were accompanying them.

Food for the Hungry also developed and used a **framework for organizing messages and educational activities by season** for multiple purposes: (a) so that the ability for household participation relevant to the burden of agricultural activities was taken into account, and (b) so that messages were transmitted at teachable moments relevant to the epidemiologic cycle of common childhood diseases throughout the year.

It was noted that all partners used **multiple channels for disseminating messages** on recommended maternal and child health and nutrition practices, including activities targeted to men, home visits, and the production of recipe booklets. All partners provided specific training to community volunteers in **counseling and negotiation skills** for health and nutrition behavior change communication and distributed materials which volunteers could use to develop and sustain these skills. This careful attention to behavior change strategies not only contributed to the reductions achieved in stunting but also increased child protection from infant mortality, with an average twenty-six percentage points increase in the percentage of children under six months of age being exclusively breastfed from baseline to final evaluation, with final results ranging from 84% to 93%.

Determining what can motivate behavior change is an essential part of developing infant and young child feeding and maternal nutrition SBC strategies. Final evaluation of the OIC International *ENHANCE* [18] *Project* in Ghana (FY2004-FY2009) noted that within the promotion of all key infant and young child feeding practices, the project included a strong and specific focus on improving practices for immediate and exclusive breastfeeding within one hour of childbirth. Besides promoting the many benefits to the child of immediate exclusive breastfeeding, the project also emphasized the potential benefit to the mother of reduced bleeding after delivery with immediate breastfeeding. Immediate exclusive breastfeeding increased from 28.1% at baseline to 69.3% at final evaluation, assisting those newborns to get optimal nutrition during that important early phase within the 1,000 days period.

[17] A Practical Guide to Conducting Barrier Analysis: http://www.coregroup.org/resources/404-a-practical-guide-to-conducting-a-barrier-analysis.

[18] "Enhancement of Household Agriculture, Nutrition, Risk Reduction, and Community Empowerment".

BUILDING ON OTHER USAID AND NATIONAL EFFORTS

Some of the positive impact found in the projects implemented by ADRA, CARE, Food for the Hungry and Save the Children in Bolivia (FY2002-FY2008) could possibly be attributed to **project collaboration and support for national efforts to improve child nutritional status**. The introduction by the national government of the Zero Malnutrition strategy resulted in an increased focus on nutrition in the materials used by Ministry of Health staff for training and service provision through the integrated management of childhood illness approach at clinical and community levels. All four PVOs in the consortium project provided support for additional training in nutrition within the Integrated Management of Childhood Illness (IMCI) approach for more than 550 Ministry of Health staff within 28 municipalities.[19] In particular, they included specific and separate training sessions on recommended breastfeeding and complementary feeding practices, along with training in skills for communication and education at the community outreach level. The consortium partners also provided similar training to 1,350 community volunteers, thus ensuring the **harmonization of messages and recommendations of optimal IYCF practices between the institutional and community levels**.

In the projects implemented by ADRA, Save the Children and World Vision in Honduras (FY2005-FY2009), all partners had **very close coordination with the Ministry of Health** in support of national efforts for community-level action to improve maternal and child health and nutrition.

Final evaluation of the above-mentioned development food assistance projects in Bolivia also noted that the PVOs had benefited from being able to adopt counseling and education materials and posters that had been developed by the **USAID-funded LINKAGES Project**, which had fully tested the materials in Bolivia. Similarly, in the above-mentioned development food assistance projects in Honduras, all PVOs benefited from the extensive collaboration between various USAID projects and the Ministry of Health to develop communication skills and support materials for community nutrition volunteer activities, such as the **BASICS Project**. The PVOs had also developed behavior change communication plans early in the project cycle, with training on the BEHAVE Framework [20] provided by the **FANTA Project**.

[19] It should also be noted that the consortium was highly successful in leveraging government resources totaling over USD 10 million through collaboration at the municipal level.

[20] http://www.fhi360.org/communication-and-social-marketing/social-marketing-and-behavior-change-training

LINKING WITH ACADEMIC RESEARCH INSTITUTIONS

The Save the Children *Jibon o Jibika* [21] *Project* in Bangladesh (FY2005-FY2010) provides a good example of a project linking with an academic institution to conduct useful operational research to contribute to the body of evidence for any promising practice. A team from the **Feinstein International Center at Tufts University** conducted a prospective cohort study to examine the effectiveness and feasibility of adding the diagnosis and treatment of severe acute malnutrition to the community case management package delivered by Community Health Workers (CHWs) at the village level in one of the project target areas in Bangladesh. This study not only contributed to the evidence base for the Community Management of Acute Malnutrition (CMAM) approach, but also assisted project staff in examining the quality of care delivered by CHWs and using this information to strengthen CHW capacities.

The *Uganda Food Security Initiative Project*, implemented by Africare (FY2002-2006) and mentioned previously for supporting radio messages on the importance of good nutrition for women, obtained these radio spots from **Makarere University** which had developed these through the Gender Informed Nutrition and Agriculture (GINA) Project. The project also drew upon materials promoting the nutritional benefits of orange-fleshed sweet potatoes from **International Potato Center** (CIP). As the development of these type of materials requires specialized skills, the collaboration with these institutions was a cost-effective practice for the project.

[21] "Life and livelihoods" in Bangla.

III. AGRICULTURE AND NATURAL RESOURCE MANAGEMENT

The promising practices highlighted in this section do not represent a comprehensive list of all promising practices within agriculture and natural resource management (ANRM) programming. As noted in Section I, Background Information, the promising practices that follow have been identified from FFP-funded development food assistance projects that achieved a reduction in stunting. Only those promising practices that were discussed in detail or linked to improvements in additional higher-level or intermediate-level indicators are highlighted here. The practices identified are generally in line with the wider ANRM literature, but perhaps serve to confirm, or provide additional practical details. The promising practices are described under overarching themes (transfer of knowledge, market-focused programming, and diversifying production) and more specific activities that showed impact (micro-irrigation, livestock shelter, examples of local coping strategies, and a short discussion on credit).

EFFECTIVE TRANSFER OF KNOWLEDGE

A considerable component of any development food assistance project is the transfer of knowledge; all of the projects reviewed incorporated some level of agriculture or marketing knowledge transfer. The effective transfer of knowledge incorporates not only the training itself, the different forms it can take, and the different technologies transferred, but also a link to the provision of inputs and long term sustainable access. When combined, these elements can have a significant impact on income, dietary diversity and food self-provisioning.

While it is difficult to separate out the specific impact of an individual activity, because it is often the basket of activities that contributes to significant change, examples of **attributing knowledge transfer to improvements in income and nutrition indicators** were highlighted in some project evaluations. Farmers interviewed during the evaluation of the CARE *Shouhardo* Project in Bangladesh (FY2005-FY2010) partly attributed the increase in months of food self-provisioning (from 5.2 at baseline to 7.5 months at final evaluation) to increases in rice production and field crop production (as well as homestead gardening and animal rearing activities), with much of these increases related to enhanced knowledge activities. Similarly, the change in dietary diversity (from 5.1 to 5.9), and associated change in food groups being consumed by poor and extremely poor households, was attributed to increased rice and field crop production, which reduced the need to purchase rice in the market, and savings in costs due to adoption of organic fertilizer and integrated pest management (IPM), which reduced the cost of purchasing artificial fertilizer and pesticides.

The OIC International *ENHANCE Project* in Ghana (FY2004-FY2009) achieved a significant increase in food security, with almost 50% of households reporting a reduction in 'hungry months' when compared to baseline. Participants cited that much of this resulted from higher yields, increased income and better production which in turn resulted from training and improved access to inputs, and post-harvest handling and storage losses (training and mud silos). The number of months of food insecurity also decreased significantly with over half (52%) of households reporting they were food secure year-round, and vulnerable households that reported suffering year-round insecurity reduced by 15.8 percentage points.

Training content

Many projects focus on **production-related knowledge transfer** with great success, as was found with the development food assistance projects implemented by ADRA, Save the Children and World Vision in Honduras (FY2005-FY2009). In these projects, Save the Children and ADRA achieved increases of 29% and 180% respectively in yields of maize, and increases of 40% and 77% respectively for beans, predominantly linked to the promotion of technology packages which included a variety of practices for sustainable agriculture, soil conservation and appropriate use of natural resources.

In addition to production-related knowledge, the projects implemented by ADRA, CARE, Food for the Hungry and Save the Children in Bolivia (FY2002-FY2008) delivered training on **post-harvest technologies and practices** with significant positive impact on losses. The OIC International *ENHANCE Project* in Ghana (FY2004-FY2009) also conducted similar training with similar success.

All four of the above-mentioned PVOs with development food assistance projects in Bolivia found that farmers better respond to market needs and add value to their products leading to higher prices after receiving training on post-harvest technologies and practices e.g., when and how products should be harvested, dried, packed, shipped, and presented and on their size, color or shape, together with help with designs and marketing packaging. By the end of the project, Food for the Hungry had exceeded their target for adoption of recommended post-harvest practices. Field visits confirmed this success, with farmers interviewed knowledgeable and able to talk about the information and technology packages that Food for the Hungry had been disseminating. According to final survey, the technologies with the highest adoption rates included: the use of improved seed (100%), post-harvest practices such as product selection and classification (99%) and the use of the prices information system (96%).

Similarly the OIC International *ENHANCE Project* in Ghana (FY2004-FY2009) met and exceeded its goal of reducing post-harvest handling and storage losses for households to 5% through the provision of training in post-harvest handling of cereals and yam, training of selected community members in the construction of the silos, inventory credit, and management of goods in storage together with some provision of mud silos. Maize spoilage decreased to 3.7%, a decline of 10.2 percentage points. Spoilage during storage decreased for all products surveyed. During the qualitative survey, farmer focus groups confirmed that losses in storage had been reduced to 'virtually zero' through proper post-harvest handling and storage in the mud silos.

The post-harvest training and grain storage silo support by Project Concern International's development food assistance project in Nicaragua (FY2002-FY2008) saw similar results: a post-harvest loss of basic grains of 0.85%, much better than the target of 5%.

In the development food assistance projects implemented by ADRA, CARE, Food for the Hungry and Save the Children in Bolivia (FY2002-FY2008), all partners found that **business training** for farmers is critical to long term development. Of particular importance is information on costs and benefits of their activities as this can help farmers improve their ability to negotiate with buyers and to increase their competiveness and profitability. This required hiring staff with hands-on business and marketing experience to allow a focus on business development and growth for the farmers.

Combining knowledge transfer with provision of inputs and sustainable access to inputs

In addition to knowledge transfer, a majority of development food assistance projects provide inputs (e.g., seeds, fertilizers and tools) either through grants, seed banks, input credit or seed multiplication plots. For example, the OIC International *ENHANCE Project* in Ghana (FY2004-FY2009) devoted 30% of its technical assistance to the distribution of seeds and fertilizers, in addition to the 45% devoted to training (the remaining percentage being apportioned to credit and 'other').

It is critical to project impact and sustainability that inputs are provided strategically and used to leverage other activities. To enhance the impact of input provision, and to address issues of sustainability, the CARE *Shouhardo* Project in Bangladesh (FY2005-FY2010) clearly linked the importance of **combining input provision with associated trainings and assurance of long term access to the inputs**. The project provided improved seed varieties to select farmers along with technical training in farming methods to maximize productivity and reduce costs, for example through the use of organic fertilizers and integrated pest management (IPM). Farmers attributed productivity gains to: a) improved seed quality; b) improved techniques, such as optimum fertilizer use; c) improved cropping methods (e.g. planting in rows, seed spacing, intercropping); and d) improved linkages with reputable seed dealers and government agricultural officers to ensure continued agricultural advice on demand. In 2008/09 the project linked with the Bangladesh Rice Research Institute (BRRI) to test yields of new high-yielding rice variety for the *boro* [22] season that could be harvested earlier, thereby reducing farmers' risks to early flooding. An initial 38 farmers achieved average yields of 6.8 tons/hectare by harvesting in approximately 141 days, compared with 160-165 days for traditional *boro* varieties. CARE paired the seed input support with extensive technical support provided by BRRI to ensure effective results from the pilot intervention.

Once farmers had the opportunity to test improved seed and techniques, and observed resulting productivity gains when compared with local varieties of seed purchased in nearby markets, they were linked with reputable seed dealers who had agents in nearby towns to ensure longer term access to those same inputs. Despite the increased cost of seed, the benefits of better germination rates outweighed those costs, thus the interests of both the private seed dealers (to maintain quality) and farmers (to purchase) was maintained. The project resulted in farmer group's jointly purchasing high quality seed, thus ensuring longer term access to those improved inputs.

Long term knowledge and technology transfer

Sustainability of knowledge transfer is critical to ensure continued knowledge gain and future continual development. The development food assistance projects implemented by ADRA, CARE, Food for the Hungry and Save the Children in Bolivia (FY2002-FY2008) **phased the provision of training directly by the project, with the provision of technical assistance to help strengthen local service providers** participating in relevant value chains. They found this critical for sustainability, and an effective complementary activity to input provision.

The CARE *Shouhardo* Project in Bangladesh (FY2005-FY2010) linked farmers with government agricultural officers during training events; those linkages continued beyond the project, with farmers being provided with their contact numbers. Whenever concerns over pests or other agricultural problems would arise, farmers could contact the officer by mobile phone for advice or follow-up.

[22] *Boro* season is the main cropping season in Bangladesh from October to March.

In addition, in the development food assistance projects implemented by ADRA, CARE, Food for the Hungry and Save the Children in Bolivia (FY2002-FY2008), all of the PVOs incorporated the production of **high quality training materials**, designed with key messages and pictures. This strategy was found to increase and extend the learning process contributing to the sustainability strategy -- particularly when incorporated into local service provision, as well as early project activities.

Use of farmer field schools to transfer knowledge

In the projects implemented by ADRA, CARE, Food for the Hungry and Save the Children in Bolivia (FY2002-FY2008), each of the PVOs tried different methods of knowledge transfer in the beginning of their projects. ADRA organized its farmers into Technical Assistance Groups (TAGs), whose members become members of the Agricultural Services Centers; CARE and Save the Children experimented with farmers' schools (*escuelas del campo*); Food for the Hungry established its own demonstration farms where it tested and adopted new technologies. By the end of the development food assistance project period, however, all PVOs found that it was more effective to identify and select promising technologies and practices through **on-farm validations and demonstration plots on lead farmer's fields** as a basis for their technology transfer programs. Agricultural surveys showed that adoption rates rose dramatically in the first several years of the project, peaking at 80% for ADRA, and 70% for Save the Children. This was confirmed by evaluation field visits.

In the development food assistance projects implemented by ADRA, Save the Children and World Vision in Honduras (FY2005-FY2009), the PVOs found that the strategy of promoting new techniques of sustainable agricultural and crop diversification though the **Farmer Field School (FFS) methodology** and groups of Model Farmers functioned to practically test new skills and disseminate new knowledge. One hundred and twenty Field Schools were established which trained 775 Model Farmers and other farmers in the community developed demonstration plots to test new crops and agricultural practices. Exchange visits between Field School participants in different communities were also facilitated. Farmers noted that they learned about crop diversification (discussed in the next section) from the farmer field schools, which had an impact on household dietary consumption. To support these activities, each of the PVOs coordinated with municipal government to facilitate the use of the subsidy from the Secretariat of Agriculture and Cattle (*SAG*) provided to small producers, including some supplies of improved seeds (maize and beans) and fertilizer donated by the Secretariat of Agriculture. Towards the end of the project, this activity was transferred to liaison producers, supported by local municipalities to enhance sustainability.

An East African study by IFPRI[23] found that "FFSs were shown to be especially beneficial to women, people with low literacy levels, and farmers with medium-size land holdings." The study also found an 80% increase in the value of crops produced per acre for farmers in Kenya who attended the FFS compared to farmers who did not attend the FFS.

As the title implies, Farmer Field School (FFS) are a means of providing training to farmers in which they learn by doing. Each participating community hosts a small demonstration plot[24] on his or her land, where new techniques and materials are demonstrated with consistent extension support.

[23] Kristin Davis, K., Nkonya, E., Kato, E., Mekonnen, D. A., Odendo, M., Miiro, R., and Nkuba, J., (2010). Impact of Farmer Field Schools on Agricultural Productivity and Poverty in East Africa. IFPRI Discussion Paper 00992.

[24] The term "demonstration plot" is sometimes replaced by "technical observation plot" or TOP.

Neighboring farmers participate as observers and contributors, i.e., FFS students. Through the low-risk experience of a trial plot, neighboring farmers can learn the techniques and decide whether to adopt and expand them on their own land. The effects can be amplified through cross-visits between new groups of trainees and more experienced groups. In addition to agronomy, a FFS can include training in farm management, literacy, financial services, and a number of related topics. This method has the benefits of covering an entire production cycle from land preparation to harvest; minimizing disruption to farmers' lives; not requiring per diems; using farmers as trainers for other farmers; and the authenticity of typical on-farm conditions.

MARKET-ORIENTED FOCUS

The final evaluation reports for the development food assistance projects implemented by ADRA, Project Concern International and Save the Children in Nicaragua (FY2002-FY2008) highlighted that one of the most important lessons learned during the life of these projects was the importance of **commercial, market-oriented production** in order to increase incomes. Key elements included: choosing crops based on the results of market surveys, identifying industrial clients and signing production contracts, collective marketing assisted by current market price information, technical production advice, adoption of productive technologies such as drip irrigation and hybrid seeds, the formation of profitable producer enterprises, and the development of the entire value chain simultaneously. This strategy led to results that were both durable and significant in scale; for example, between 2002 and 2007, the average income of the beneficiaries increased from 1,816 USD to 3,670 USD in the Project Concern International target area.

Similarly, income generation was successful for the PVOs implementing development food assistance projects in Bolivia (ADRA, CARE, Food for the Hungry and Save the Children) from FY2002 to FY2008 because a **market-oriented demand driven approach** was incorporated into the projects. This included facilitating and encouraging market linkages, which resulted in increases in product sales and incomes, providing incentives for farmer interest in technology transfer and other project elements such as **group formation**. The PVOs also used outside experts to help to understand marketing potentials and high value products and get the project moving from the beginning while staffing the project. They also hired **strong technical teams with marketing as well as agricultural production knowledge**.

The impact of the market focus can clearly be seen through individual member success after introducing this approach within the project timeframe. The value of the products that Food for the Hungry clients were able to sell through their producer associations and/or forward contracts increased from 21,000 USD in 2004 to 71,000 USD in 2005 and continued to increase until the end of the project in 2008. The value of the products that Save the Children clients sold through their producer associations and/or forward contracts similarly increased dramatically after the change, increasing from 0 USD in 2004 to 83,000 USD the following year. The impact of this is evident in the household income data. Incomes, which had changed little in the first years of the project, almost quadrupled in the three years after Save the Children recast its program to give it a much stronger market orientation. For CARE, incomes that had changed little in the first few years of the project, more than tripled[25] in the three years after the change in focus. The value of sales made through forward contracts and producers' associations, increased from 28,000 USD in 2005 to 194,000 USD in 2006.

[25] This was still double when taking into account inflation caused by the rapid increase in process, particular food prices, in international markets.

The roles that CARE played varied by specific value chain depending on the interests and capacities of the other service providers active in the chain. CARE also learned that it could be more effective if it focused on the bottlenecks in a chain and **tailored its technical assistance to help solve these value chain bottlenecks**. Sometimes CARE staff provided assistance, and in other cases, it contracted with other individuals and organizations, but it also learned that providing qualified and specialized technical assistance was important to achieving quality products and increasing sales.

Helping farmers understand markets and market linkages

Within the market-driven strategy, all of the development food assistance projects implemented by ADRA, CARE, Food for the Hungry and Save the Children in Bolivia (FY2002-FY2008) encouraged farmer clients to pay more attention to markets and market demand, and facilitated their **participation in fairs, market surveys and business round tables or networking forums at the national and regional level**. This helped them to obtain and understand market information, promote products, develop contacts with potential buyers developing longer term relationships, and facilitate signing of concrete agreements with the private sector and other business linkages. It also helped farmers increase their knowledge about the requirements of different markets helping them better understand the importance of product quality and make them more willing to change their behavior and try new ideas. Facilitating personal contacts between clients and key buyers and other actors in the value chain and building trust were critical to this success. Food for the Hungry, like the other PVOs with development food assistance projects, actively involved its client farmers in local, regional and national fairs, market surveys and business networking forums. In Bolivia, participation in these events has proved to be an effective way of gathering up-to-date market information, making contacts with potential buyers and developing longer-term relationships.

To initiate farmers into this market information and networking process, Food for the Hungry developed a **Participatory Market Research** method which had farmers assume the roles of buyers and sellers in order to familiarize themselves with the steps involved in assessing market opportunities and give them more confidence. Similarly, in the development food assistance projects implemented by ADRA, Save the Children and World Vision in Honduras (FY2005-FY2009), each PVO designed a simple participatory activity where the members of the small businesses investigated the market themselves. This change gave immediate and good results, identifying possibilities within reach of the participants, and at the same time strengthening their capacities in market analysis in a sustainable way.

In the development food assistance projects implemented by ADRA, CARE, Food for the Hungry and Save the Children in Bolivia (FY2002-FY2008), the PVOs also regularly provided **updated information on market prices** to the producers and small businesses. As part of formalized exit strategy plans, this activity was then taken over by local municipal farmer associations and the Agriculture Service Centers supported by ADRA. In the Save the Children development food assistance project in Nicaragua (FY2002-FY2008), they published a booklet titled *Guía de Comercialización Agrícola para Pequeños Productores*[26] , which contains lists of input suppliers and output buyers, as well as graphic illustrations of seasonal price fluctuations for a variety of horticultural crops. Producers used this booklet as a handy source of contacts for input supply and marketing of outputs.

[26] Guide to Agricultural Commercialization for Small Producers.

In the project implemented by ADRA in Bolivia from FY2002 to FY2008, they gave priority for up-to-date market information and **involving client farmers (association leaders in particular) in the collection and assessment of market information**, through involving them in quick market surveys, fairs and business networking, and placing considerable emphasis on identifying potential buyers and facilitating market linkages. ADRA's farmers visited the major markets in Bolivia, agro-industrial companies and exporters to obtain information on the demand for their products and the requirements of the market. Buyers, wholesalers as well as representatives from agro-industrial companies and exporters, were also encouraged to visit ADRA's program areas as part of its strategy to create and strengthen linkages between producers and buyers. ADRA paid for its clients to participate in these information gathering and marketing activities, but a part of its sustainability strategy was to convince the Department of Chuquisaca to provide support to these types of activities in the future out of its own budget.

Additionally, in the development food assistance projects implemented by ADRA, CARE, Food for the Hungry and Save the Children in Bolivia, members **linked producer associations to forward contracts with buyers**. The value of sales through forward contracts increased significantly from only 30,000 USD in 2002 to almost 1.6 million USD in 2008. ADRA, which had a market driven approach from the beginning, saw a significant increase in sales even in its first year (7,000 USD to 126,000 USD).

Many of the market linkage activities rely on **farmer organization** at some level. In Bolivia, ADRA found that farmers are more interested in getting organized once they see some real concrete financial benefits and then begin to see how further organization can help them expand and sustain benefits of producer associations. Therefore a better option might be to give priority to producing results first (increasing sales and income), and then follow that with technical assistance and help in organizing as the need becomes apparent to farmers. Working with farmer groups is essential to achieve economies of scale in extension and marketing.

DIVERSIFYING PRODUCTION SYSTEMS

Taking a market approach, and focusing on specific value chains, can have a significant impact on income. However, at the same time given the changes in climate and the potential for markets to shift, there is also a need for farmers, particularly poorer farmers, to **diversify production to increase their resilience and reduce risk**.

In the development food assistance projects implemented by ADRA, CARE, Food for the Hungry and Save the Children in Bolivia (FY2002-FY2008), each had a market-focused program, but each organization also had a diverse number of crops that each of the consortium members was supporting (e.g., ADRA included barley, broad beans, maize, garlic, grapes, onions, peas, peaches and plums). Although this makes market development projects harder because each crop and product needs to be understood from production through to marketing and consumption, this was necessary due to the nature of the program area having a number of different agro-ecological zones located in close proximity to each other. Thus the diversified nature of the portfolio of products made sense from a physical, as well as a risk management, point of view.

In the development food assistance projects implemented by ADRA, Save the Children and World Vision in Honduras (FY2005-FY2009), the PVOs made a market study of new crops and based on that made the decision to invest their efforts in a limited but diverse number of crops. This was done

so that they could offer a high level of technical assistance to crop diversification because there is a high level of risk for small producers in investing in planting unknown crops, and specialized technical assistance is needed during the first steps. This strategy provided good results in terms of increasing income from diversified production. The PVOs diversified agricultural production with new, non-traditional crops, to increase the quantity and quality of foods in the household, and to increase income. Both ADRA and Save the Children saw the percentage of producers with two or more new and non-traditional crops increase by around 45% between baseline and final evaluation. Participants consulted during the evaluation stated that a majority of the diversified production was consumed in the household. For example, increase in household consumption for roots, tubers and plantains ranged from 5 to 55% between baseline and final evaluation for all three PVOs (ADRA, SC and WV), with an increase in vegetables and leafy greens from 10%-65% (ADRA and SC).

Combining crop diversification and a specific focus on household nutrition, the CARE *Shouhardo* Project in Bangladesh (FY2005-FY2010) taught women and their families to intensively manage their homesteads through **Comprehensive Homestead Development (CHD)**. This maximized food production for home consumption, provided a surplus to generate additional income, and had a nutritional focus. CHD emphasized the production of different leafy greens, vegetables with red and yellow insides, and fruit with red and yellow insides. This was also linked to a small livestock program, where households were provided with ducks, chickens or goats along with technical support and links to agriculture and livestock officers, and the inclusion of paravet training for some.

Although the change in dietary diversity was not large (5.1 at baseline to 5.9 at final evaluation), the change in food groups being consumed by poor households changed notably: the percentage of households consuming vegetables with yellow or orange flesh increased from 6.5% to 52%; fruits with yellow or orange flesh from 2.2% to 30%; eggs 9% to 22%, and dairy products 9% to 21%.

MICRO-IRRIGATION

In the case of the development food assistance project implemented by ADRA in Honduras (FY2005-FY2009), the benefits from crop diversification described above, were largely due to ADRA partially funding **drip micro-irrigation systems** (small scale drip irrigation) and the use of micro-tunnels. In addition, all three PVOs implementing development food assistance projects (SC, ADRA and WV) carried out efforts to **protect and manage micro-watersheds** and community water sources, including the development of micro-watershed management plans. Activities included: the establishment of nurseries, reforestation (including reforestation plans developed in coordination with the Secretariat of Environment and Natural Resources, the Institute of Forest Conservation and the municipal government Environmental Management Units), security, fire barriers, educational campaigns and the organization of local committees. A large part of these activities received direct support as Food for Work (FFW) activities. Specifically for ADRA, these plans covered 35 communities and the micro-irrigation projects within those communities, thus farmers benefiting from micro-irrigation systems also participated in activities to protect and manage micro-watersheds. Although there is no impact data, the combination of watershed management plans, in conjunction with micro-irrigation projects suggests a good combination to address issues of natural resource management and sustainability.

Similarly, in the development food assistance project implemented by ADRA in Nicaragua (FY2002-FY2008), ADRA organized three irrigation districts around borehole wells, where water was pumped to vegetable growers. The growers paid 0.40 USD per cubic meter in consumption fees, which covered the costs of operation and maintenance of the pumps. The districts were owned and managed by a producer enterprise with 26 shareholders. The financial structure allowed the water supply system to function without project support, and supply irrigation water to producers who could not have individual wells on their property. Such a structure may well be suitable where the cost of individual wells would be prohibitive or impractical for individual farmers, and the finance structure ensures sustainability beyond the project.

The OIC International *ENHANCE Project* in Ghana (FY2004-FY2009) trained communities that had dams in micro-irrigation to support dry season vegetable farming. Results for the project showed that most households used the inputs to cultivate leafy vegetables which are scarce during the dry season. Communities reported high yields; their small plots produced sufficient quantity for both household consumption and sale. Households practicing dry season farming increased from 6.8% at baseline to 9.2% by the end of the project. Dry season production concentrated on vegetable production, which showed a healthy increase from 3.9% to 18.2% by the end of the program; dry season cereal production increased from 0.8% to 4%; legumes from 0.5% to 2.5%, and roots and tubers from 0.8% to 1.5%.

LIVESTOCK MANAGEMENT – SHELTER

The OIC International *ENHANCE Project* in Ghana (FY2004-FY2009) found great success with an approach to **improved livestock housing** within their livestock activities. Previously, the Ministry of Food and Agriculture and the Animal Research Institute had tried to introduce improved livestock practices, including livestock housing, to communities, but had little success. OIC International used a similar technology, but combined it with an approach that allowed farmers to appreciate the benefits of improved livestock management. Farmers were trained in animal feeding, health care, housing, manure collection and usage. At the same time, prototype housing was introduced and farmers began adopting it to shelter animals at night – often making their own modifications to the shelters. The results showed a 9.9 percentage point increase in households that keep their goats housed at night, and free-range grazing dropped by 17 percentage points. Similarly for sheep, number of households increased by 6.4 percentage points, and reduced grazing by 9.2 percentage points.

Farmers reported that housing animals had prevented animal deaths (particularly by vehicles) and theft. Animals were healthier because they were fed crop residues as well as grazing. Feeding the animals in pens also meant that they became more aware of sick or missing animals sooner than before, with the results they could take more immediate action, and reduce deaths. Observing these differences meant that farmers who had previously thought their animals were hardy and could live outdoors without much care and attention, understood that providing proper food, shelter and care would produce much healthier animals, and thus higher prices. The mean amount from livestock sales increased: goats increased by GHc 14.6 (10 USD); sheep by GHc 7.6 (5 USD); guinea fowl by GHc 7 (4.76 USD), and chickens by GHc 3.3 (2.2 USD). Cattle showed the largest increase, at GHc 40.8 (28 USD). Farmers attributed the increased sale price to healthier animals as a result of the training.

Prior to the project, farmers did not gather animal droppings for use on their farms. They knew that manure could be used for fertilizer, but the practice of free range grazing made it impractical to gather animal droppings. With the introduction of livestock houses, farmers were able to collect manure and make compost fertilizer reducing cash expenditures on commercial fertilizer. In focus groups discussions, farmers commented that previously they used four bags of fertilizer on their farm, but now use only two bags and supplement that with compost. The introduction of animal houses has helped preserve assets as farmers do not have to sell livestock to purchase fertilizer.

LOCAL COPING STRATEGIES

Many development food assistance projects identify local coping strategies that can build resilience to changes in the local environment and climate. The CARE *Shouhardo* Project in Bangladesh (FY2005-FY2010) highlighted two technical practices which served as local solutions to overcome barriers to food security.

The **Koroch tree** is a local variety in Bangladesh that grows multiple trunks from one root source resulting in an extensive root system. Historically, the Koroch tree has been used along embankments to reduce soil erosion. In addition, the growth pattern of multiple trunks provides fuel wood without removing the entire tree and its root system. The CARE project discovered local communities using this practice when visiting the field, and then promoted the use of these trees to protect banks. This is a good example of a local coping strategy that can be capitalized upon to preserve the natural resource base and build community resilience to climate change. [27] Future projects should aim to identify similar local coping strategies for further dissemination.

The CARE project in Bangladesh also trained primarily women beneficiaries to build and sustain **floating gardens**. A floating garden is a vegetable garden that is built on top of flood waters, a canal, or a pond, using water hyacinth, bamboo and cow dung. This practice allowed households to grow vegetables during the monsoon season, providing income and dietary diversification during that normally unproductive time of year. Field crops seedlings can also be grown on the platform and transferred to the land when the monsoon waters recede, allowing an early harvest at a time when prices are high.

It was estimated that establishing a floating garden on a platform three feet by five feet cost 500 to 700 BDT (6.5 to 9 USD), plus labor, which resulted in an income of 2000 to 2500 BDT (26 to 32 USD) through the sale of harvest and seedlings, in addition to crops consumed at home. In addition to the early harvest and associated income, the evaluation highlighted that the floating gardens helped these farmers produce and consume enough vegetables during the monsoon season to contribute to the overall increased dietary diversity (5.1 at baseline to 5.9 at final evaluation) and particularly a change in food groups and associated food quality.

This technology is environmentally friendly, and although a new garden must be built each year, the residue from the garden can be used as fertilizer during the dry season. However, as ponds dry, the excessive nutrient matter may make water anoxic and affect fish populations. Prior to

[27] The Koroch tree is a local solution to a local problem in Bangladesh. This example demonstrates that there may be local coping strategies already present that can be promoted by a project to address larger issues. It is not suggested that the Koroch tree be planted outside of its natural environment.

initiating this practice, an environmental assessment should therefore be completed to ensure the garden does not pollute stagnant water.

CREDIT

Access to credit is important to enable expansion of businesses and value chains. Farmers need credit to be able to expand and up-grade their farming businesses e.g., crop production, herds and processing. In development food assistance projects, which usually target the more vulnerable communities, this may not be apparent in the very early stages of the project, but is required once a farmers' business begins to expand and become more complex. It may also be required to target actors higher up the value chain, removing constraints at other locations in the value chain and ultimately benefiting farmers.

Credit interventions can range from working with informal village savings and loans groups, to helping farmers develop loan applications and introducing them to credit institutions, to encouraging credit institutions to broaden geographic and client portfolios, possibly even establishing credit facilities in some instances, and options for value chain financing. Unsubsidized credit availability is an essential component of most sustainable agriculture activities.

Many of the projects incorporated elements of credit e.g., the CARE *Shouhardo* Project in Bangladesh (FY2005-FY2010), the development food assistance projects implemented by ADRA, Project Concern International and Save the Children in Nicaragua (FY2002-FY2008), and the projects implemented by ADRA, CARE, Food for the Hungry and Save the Children in Bolivia (FY2002-FY2008). However, while two examples are presented below, it was difficult to pull out specific promising practices from the project evaluation documents in relation to credit, either because the details were not included, the impact was not obvious, or the sustainability was in question. Given the importance of this topic in supporting small holder farmers and other value chain actors to enhance their opportunities, this topic will receive additional attention in further discussions and in any follow on reports to contribute to the evidence base.

In the development food assistance project in Bolivia (FY2002-FY2008), Save the Children partnered with a local NGO that was providing long-term credit in other areas and wanted to extend to rural areas where Save the Children was working. The NGO, SARTAWI, adapted its payment schedules based on analysis of unique situations with respect to sources and timings of repayment. It also analyzed risk and experimented with different ways of providing mutual protection, e.g. life insurance and equipment insurance. A specific focus included support to milk producers to purchase improved cows and upgrade their herds. Save the Children helped identify potential borrowers, SARTAWI provided the loans for the purchase of cows (effectively owning the cows until the loan was paid off) and provided information on the loan to a firm that purchased milk. This firm deducted the loan repayments from the payments made to farmers for their milk deliveries, and provided technical assistance to reduce risk. Although this system sounds promising and sustainable, there was no evidence of impact data.

With regard to **community savings groups**, CARE *Shouhardo* Project in Bangladesh (FY2005-FY2010) found that placing an emphasis on the use of bookkeeping methods that were equally transparent to non-literate and literate or numerate persons was important to avoid co-opting decision making within the groups and the resulting loss of savings.

IV. INTEGRATED ACTIVITIES

INTEGRATION OF GENDER

Over the past few years, USAID has increased the dialogue and focus on gender integration in development programming. The U.S. Government released an updated gender policy[28] in March 2012, which coincided with the launch of the Women's Empowerment in Agriculture Index.[29] The release of these two documents, in addition to others, signaled an increased interest by USAID to include stronger gender integration components in programming to aid in ensuring positive programmatic results. Prior to these efforts, organizations were not held accountable for implementing targeted gendered activities in FFP-funded development food assistance projects, nor were they responsible for reporting detailed gendered results and impacts.

Of the final evaluations reviewed, some provided descriptions and results of gender integration activities. Although rarely presented in a stand-alone section with gender-specific M&E data, evaluators shared measured results if they were part of the design or anecdotal information noted by evaluators and beneficiaries during the review process. It is possible that additional examples of strategies and practices were documented internal to organizations, but not shared with the wider food security community. The practices below are precursors to some of the more complex gender integration work seen in current development food assistance projects. These examples offer insight into basic interventions that can lead to more robust gender integration strategies in programming.

Recently, recommended programming strategies by USAID have emphasized interventions targeting a reduction in **women's time and labor burdens**. Several final evaluations offered examples of time and labor-saving technologies and techniques specifically targeting women. In some cases, benefits to men, boys, and girls were cited as well, although quantitative evidence directly linking interventions was not recorded or measured in most cases.

Numerous water and sanitation activities were discussed in the final evaluations as time and labor saving techniques and technologies. For example, activities in the CARE *Shouhardo* Project in Bangladesh (FY2005- FY2010) included the **installation of wells and water tanks**. This installation was undertaken through activities in a strategic objective aiming to strengthen livelihoods. An immediate result was the availability of cleaner water closer to homesteads. Over the long term, the infrastructure activities limited water-borne illnesses in addition to decreasing the time and labor burden to women. A similar example was provided in the final evaluation of the development food assistance projects implemented by ADRA, CARE, Food for the Hungry and Save the Children in Bolivia (FY2002-FY2008), with the installation of wells and other improvements for **access to safe water** by each of the PVOs . In some cases, walking times to fetch water were a minimum of one hour. Although specific quantitative data wasn't captured around the impact on women's time or household health, the evaluators noted the following:

[28] http://www.usaid.gov/sites/default/files/documents/1870/GenderEqualityPolicy.pdf.

[29] http://www.ifpri.org/publication/womens-empowerment-agriculture-index

> "In all the communities visited, there were many sincere expressions of gratitude from the participants, community leaders and municipal government authorities as they remembered how they lived before they constructed the systems and how they live now. Many indicated that they used to drink water from unprotected sources including wells, drainage canals or small seasonal rivers. In Charamoco, people used to drink water from the Rocha River which contains waste water and sewage from the city of Cochabamba."

The final evaluation of the *Uganda Food Security Initiative Project* implemented by Africare (FY2002-FY2006) also noted that project activities to build water tanks enabled households to use their time to engage in more productive activities, after previously having had to spend two to three hours every day fetching water.

In the examples above, the activities were described as stand-alone examples but showed the potential for creating positive impacts for entire households beyond saving time and reducing labor. Noted but not measured impacts included increased time for children to devote to schoolwork, nutrition benefits for children still being breastfed, improved health for all household members, and additional time for men to contribute to productive activities in the household. In the CARE *Shouhardo* Project, these links were more intentional. Improvements to water and sanitation, brought about through community-inclusive planning and construction, contributed to positive health impacts and additional benefits as discussed below. As additional examples of integrated gender interventions and their measured impacts come to light, it is expected that their identified impacts will be more complex.

As described above, stand-alone gender activities can lead to broader household changes in which the **status of women is improved**. Final evaluation of the OIC International *ENHANCE Project* in Ghana (FY2004 to FY2009) discussed the positive impacts of women's groups formed to increase income generation activities. There were noted improvements in group dynamics, business practices, and technical aspects such as post-harvest processing. As a result, women began earning additional income, which led to gains in decision making.

Interventions designed to create a larger impact on households and communities often require more complex strategies and **monitoring and evaluation to demonstrate results**. This appears to be especially true for attaining positive gender impacts. Two such cases were cited in Bangladesh. The final evaluation report of the Save the Children *Jibon o Jibika Project* in Bangladesh (FY2005-FY2010) discussed home garden activities, group marketing schemes, and the active role of community health volunteers unintentionally giving female beneficiaries a greater degree of decision-making and improved status within the household. Each of the afore-mentioned activities had their own impacts: (1) increased income for women, (2) reduced price bias addressed, and (3) increased involvement and support from husbands with productive and reproductive activities, including greater mobility. Evidence of impact was provided anecdotally along with stand-alone data sets documenting the results of activities designed to empower women.

Final evaluation of the CARE *Shouhardo* Project in Bangladesh (FY2005 - FY2010) showed overlapping strategies and activities aimed at empowering girls and women, while not disempowering men and boys. Evaluators were able to conclude from quantitative data (primarily baseline and final evaluation scores from a tool designed to measure women's decision-making power in their households) that a positive association existed between the project interventions and women's empowerment. Over the course of the program, women's participation increased. Increases were also observed in income earned by women and their freedom of movement.

Most of these changes were observed among women participating in groups called Empowerment, Knowledge and Transformative Action (EKATA) groups. However, other groups that didn't focus exclusively on women also played a role in such changes. Although intentional links to female empowerment may not have been made in between groups, evidence in the final evaluation shows group activities were leveraged by other group activities, indicating an increased sense of improved status. Smith, *et al*. (2011), also noted the role of Early Child Care for Development (ECCD) interventions which involved preschools that introduced a learning process, flow of information, and preparation for formal schooling traditionally denied to girls. Alongside ECCD, the project promoted Parent Teacher Associations to facilitate participation of women in the formal educational structure and the education of their daughters.[30] Smith, *et al.*(2011) also remarked:

> "Together, the three interventions had a broad range of goals: increasing women's decision making power at household and community levels, reducing gender-based violence, raising awareness of educational entitlements for women and girls, building women's leadership, advocacy, and literacy skills, and consciousness building around important social issues, including dowry, early marriage, divorce, and violence against women."

CARE's strategy involving a rights-based livelihoods approach coupled with stronger data collection of gender indicators demonstrates that programs food security programs can include focused gender components that leverage other activities for targeted impact. This deeper level of gender integration has documented demonstrated results. With USAID's strengthened efforts on gender integration and a marked increase in gender activities within food security programming, additional strategies will emerge within the coming years.

In the final evaluation report of the development food assistance projects implemented in Honduras from FY2005 to FY2009, it was noted that Save the Children had intentionally included a greater **percentage of females among the staff** responsible for the implementation of the maternal and child health and nutrition component of the food security program, with the expectation that women would have an advantage as peers promoting changes in mothers' infant and young child feeding practices. The project achieved sizeable improvements in key nutrition indicators, including exclusive breastfeeding (from 26.7% at baseline to 51.2% at final evaluation) and the introduction of complementary feeding at 6 to 8 months of age (from 37.3% at baseline to 82.8% at final evaluation).

[30] As described in Smith, L. C., Kahn, F., Frankenberger, T. R. and Wadud, A. (2011), Admissible Evidence in the Court of Development Evaluation? The Impact of CARE's SHOUHARDO Project on Child Stunting in Bangladesh. IDS Working Papers, 2011. http://www.ids.ac.uk/files/dmfile/wp376.pdf

In the development food assistance project implemented in Nicaragua from FY2002 to FY2008, Project Concern International tried to achieve **gender balance in the recruitment of Community Health Volunteers** with the expectation of being able to have peers of both sexes to influence both parents for improvements in maternal and child health and nutrition practices. They achieved a balance of 44% male and 56% female and were able to surpass project output targets for male involvement in various community level integrated child health and nutrition activities.

INTEGRATION OF FAMILY PLANNING IN FOOD SECURITY PROGRAMMING

Access to family planning services can enable families to appropriately time and space their children and thereby impact the overall nutrition context of the family according to resource availability. Appropriate child spacing intervals also allowed the mother's body to replenish nutrient stores. Timing of the next pregnancy can also eliminate one of the common obstacles to continued breastfeeding of at least up to 24 months of age of the last child born, an important contribution to child nutrition.

In the development food assistance projects implemented by ADRA and by Save the Children in both Nicaragua (FY2002 to FY2008) and Honduras (FY2005 to FY2009), each PVO continued to promote birth spacing and support community volunteers that had been trained through previous projects specifically focused on family planning in the same geographic area. At final evaluation in Nicaragua, 75.0% of women in ADRA's target area were using modern family planning methods, while in Honduras, final evaluation in the Save the Children target area demonstrated an increase from 16.9% to 41.5%.

V. MOVING FORWARD

This document contains the promising practices that the TOPS technical specialists were able to identify from a review of final evaluation reports (FY2006 to FY2010) from FFP-funded development food assistance projects – a strong starting point for discussion and consensus among practitioners. As noted previously, this report is considered a living document to which the food security community can contribute through collaborative efforts with the TOPS Program.

The TOPS team will continue to look for documented promising practices to add to this living document through review of existing documentation through Food for Peace and other sources, and through consultation with members of the Food Security and Nutrition Network. In addition, the TOPS Program actively encourages PVOs implementing food security projects to:

- Submit documentation of promising practices to the TOPS Program: info@fsnnetwork.org
- Apply for a TOPS Small Grant to field-test and document innovative promising practices or to document existing successful practices to share with the food security community: (http://www.fsnnetwork.org/document/tops-small-grants-programs-implementers)

From these sources, the TOPS Program will periodically issue additional reports on promising practices and convene the food security community for participatory dialogue to build consensus on effective practices that result in positive impact for program beneficiaries. Notification of these reports and meetings will be provided through the FSN Network bi-weekly newsletter (subscribe at bit.ly/fsnnetworknews).

ANNEX A: List of Documents Reviewed

FE2006	ACDI/VOCA in Uganda
FE2006	Adventist Development Relief Agency (ADRA) in Ghana
FE2006	Africare in Uganda
FE2006	Consortium led by CARE with Africare, Catholic Relief Services (CRS) and World Vision in Sierra Leone
FE2006	CRS in Uganda
FE2006	CRS in Rwanda
FE2007	Consortium led by CRS with CARE and World Vision in Zambia
FE2008	ADRA in Bolivia
FE2008	CARE in Bolivia
FE2008	Food for the Hungry in Bolivia
FE2008	Save the Children in Bolivia
FE2008	ADRA in Nicaragua
FE2008	CRS in Nicaragua
FE2008	Project Concern International in Nicaragua
FE2008	Save the Children in Nicaragua
FE2009	ADRA in Guinea
FE2009	CARE in Bangladesh
FE2009	Consortium led by CARE and CRS with Africare, the Catholic Development Commission of Malawi, Emmanuel International, Save the Children, the Salvation Army, and World Vision in Malawi
FE2009	OIC International in Ghana
FE2009	Save the Children in Bangladesh
FE2009	ADRA in Honduras
FE2009	Save the Children in Honduras
FE2009	World Vision in Honduras
FE2010	ADRA in partnership with Africare in the Democratic Republic of the Congo (DRC)
FE2010	CARE in Kenya
FE2010	CRS in Liberia
FE2010	Food for the Hungry in the Democratic Republic of the Congo (DRC)