Research Prioritization Summary Report

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JSI Research & Training Institute, Inc. (JSI) • Helen Keller International (HKI) • International Food Policy Research Institute (IFPRI) • Save the Children (SC) • The Manoff Group (TMG)

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OVERVIEW

Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) 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. At the intersection of the USG's two flagship foreign assistance initiatives, Feed the Future and the Global Health Initiative, SPRING works across sectors–including health, agriculture, social protection, and economic growth–to facilitate the development of country-led nutrition strategies and to provide technical support to ensure that quality programs are taken to scale in a manner that strengthens country capacity for the long term.

Comprised of partners with broad experience in nutrition programming, knowledge management, social and behavior change communication, monitoring and evaluation, and research, SPRING is managed by the John Snow Research and Training Institute, Inc. (JSI) and other partners include: the International Food Policy Research Institute (IFPRI), Helen Keller International (HKI), Save the Children (SC) and The Manoff Group (TMG). Working in focus countries generally based upon the Feed the Future criteria, the central objective of SPRING is the prevention of stunting and maternal and child anemia in the first 1,000 days of life. To date, SPRING field offices have opened in Bangladesh, Haiti, Nigeria, and Uganda.

IDENTIFYING RESEARCH PRIORITIES

For strategic planning, key areas of research for SPRING were purposefully identified and prioritized in order to define a learning agenda. This summary report documents the overall strategy and steps that were taken to formulate, order, and select the final research priorities.

SPRING outlined a three-stage process to identify research priorities:

Stage 1: Internal review and consultation with core staff to determine key areas of research

Stage 2: Review and consultation with members of Technical Advisory Groups (TAGs)

Stage 3: Comparison, ordering, and selection of priorities according to context and need

During ***Stage 1***, existing knowledge related to nutrition outcomes, effective interventions, successful programs, and ongoing research was surveyed by SPRING staff members to highlight any current knowledge gaps or key areas of interest. Areas of interest valuable for SPRING were conceptualized as technical focus areas or overarching research areas and prospective topics or potentially relevant questions were collected and organized based upon this framework.

During ***Stage 2***, Technical Advisory Groups (TAGs) were hosted to gather the input of external participants from various academic, programmatic, and institutional backgrounds in order to further refine and order the research priorities. Centered around four (4) technical focus areas, each small group discussion explored the status of research that is currently being conducted in the specific area or field, evidence gaps which should be addressed, and practical factors that may impact study feasibility

or influence research design. The resulting research questions were then ranked by TAG participants after discussing salient factors such as data availability, strengths or weaknesses of existing study tools, study duration, and budget constraints.

During ***Stage 3***, research priorities selected by the TAGs were collected and further examined by an internal group that included representatives from the SPRING senior management, technical, and strategic information teams. The goal was to streamline and select a limited number of research priorities considered most important for SPRING and its stakeholders. A total of seven (7) research questions were chosen to be further developed into brief concept notes offering a short introduction about study rationale and some discussion about potential methodology or approaches for investigation.

THEORETICAL FRAMEWORK

The technical focus areas determined to be most critical for SPRING centered on the following:

- Agriculture and Nutrition
- Nutrition Metrics and Monitoring
- Social and Behavior Change Communication (SBCC) for Nutrition
- Systems-Related or Delivery Systems Science

Overarching research areas included the analysis of multi-sectoral systems, the analysis of scale-up and sustainability, and operations research to document and strengthen program implementation and these areas were considered to span broadly across the four technical focus areas (figure below).

TECHNICAL FOCUS AREAS

Agriculture and Nutrition

Background and Rationale

Agricultural development programs have the potential to enhance nutrition through a series of inter-connected pathways, including the following ones (Iannotti 2009, 145):

1.) Increasing household food production and access to high-quality foods and diverse diets all year round,

2.) Increasing income through the sale of excess production,

3.) Lowering retail costs for food through increased agricultural production,

4.) Empowering women when programs specifically target women with appropriate technologies and interventions,

5.) Stimulating agricultural growth not only to increase income levels but also to ultimately reduce levels of national poverty.

Implemented programs are diverse and agricultural approaches to improve human nutrition typically promote: home gardens or village farm models, bio fortified staple foods or crops, maintenance of aquaculture or small fisheries, dairy development, and animal source food at the household level. The evidence base to support the efficacy of these agriculture interventions appears incomplete and somewhat fragmented.

One important lesson learned from decades of experience, however, is that production-focused agriculture programs have not been successful at improving nutrition (Iannotti 2009, 149). In order to succeed, agricultural development programs must incorporate specific nutrition goals and interventions (such as nutrition-focused behavior change communications) and address the multiple needs of poor populations – for food, care, and health and other basic services. Among the new generation of agricultural programs, some have explicitly integrated nutrition goals, but few have been rigorously evaluated and carefully documented – especially with respect to operational issues, impact, and cost-effectiveness (Masset et al. 2012, d8222). Even fewer have been scaled-up; an exception is Helen Keller International's homestead food production program in Bangladesh (Iannotti 2009, 145). There is thus little empirical evidence regarding *what works* in leveraging agriculture for improved nutrition, *how* and *under what circumstances* such programs can generate the greatest benefits for the poor, and *how* they can be effectively *scaled-up* and *sustained beyond the project cycle.*

Research in this area may be carried out in SPRING countries where agricultural development programs with nutrition goals and interventions are being implemented and where funding is available for primary data collection. This program-relevant applied research would help improve the design, targeting, implementation, costing and evaluation of community-based integrated agriculture and nutrition programs.

Proposed Research:

- How should agriculture and nutrition programs aimed at improving maternal and child nutrition during the first 1,000 days be *targeted* and *designed* for greatest impact? What are the best targeting mechanisms and packages of nutrition, hygiene and health interventions that will ensure the greatest nutritional impact and cost-effectiveness of such programs?

- What is the best strategy (e.g. mass media campaigns, peer-to-peer approaches, etc.) for incorporating nutrition, hygiene and/or health *behavior change communication* interventions into agricultural programs? What characteristics are associated with greatest uptake of program inputs and a greater likelihood of adoption of recommended agriculture and nutrition practices?

- What are the impacts of integrated agriculture and nutrition programs on *women and gender dynamics*? More specifically, what are the impacts on: women's time, energy expenditure, health and nutrition; on women's access and control over income and assets; on women's access and control over nutritious foods; and on different dimensions of women's empowerment? What is women's ability and willingness to participate in agriculture activities during pregnancy and early postnatal period (if programs are targeting women and young children during the first 1,000 days)?

- What is the economic (and nutritional) tradeoff of growing crops for sale versus household consumption?

- What is the validity of food balance sheets in terms of food-based dietary guidelines and are countries producing enough? Using nationally representative food intake surveys/dietary data sets, do the balance sheets correlate with intake and if not, why not?

Nutrition Metrics and Monitoring

Background and Rationale

This technical area centers on the development and improvement of nutrition metrics and monitoring tools. The focus remains directly aligned with SPRING's objective to strengthen capacity by monitoring, evaluating, and conducting applied research which will in turn bolster the ability to understand, interpret, and use critical evidence. The emphasis will specifically be on metrics and practical measures that are most relevant for field-based programs, such as process metrics for monitoring program performance as well as indicators of change in the 1,000 days window that can inform providers about nutritional changes. Potential research questions may bear some overlap with the technical focus areas of SBCC for nutrition as well as health systems which represents a multi-sectoral approach to study nutrition scale-up.

Acknowledging that global health organizations and programs such as FANTA III, MCHIP, and WHO also conduct research related to nutrition metrics, the goal of research prioritization for SPRING is to avoid the duplication of valuable efforts. Therefore, the development of measures for food security and

dietary diversity was not considered to be a high research priority due to the ongoing efforts of colleagues who are actively pursuing investigation in this area.

Metrics research for SPRING would mainly focus on refining measures to capture change and process for SBCC interventions, testing and validating longitudinal data collection tools for qualitative case studies on scale up, and adapting or developing early warning metrics for non-communicable disease (NCD) risk during the 1,000 days period. Additional research projects may also include analysis using methods to improve the utility and application of in-country nutrition monitoring systems.

Proposed Research:

- What is the minimum set of criteria necessary for a country to be able to *implement* a successful scaled up nutrition program?
- What can we assess/measure to *monitor* implementation progress and which metrics can be universally applied across countries?
- What is the minimum set of criteria necessary for a country to be able to *sustain* a successful scaled up nutrition program?
- How do outcome and process measures need to differ to accurately capture nutrition in nutrition-specific versus nutrition-sensitive programs?
- How do you measure integration/successful integration? Is the best approach using qualitative, quantitative, or mixed methods?
- How can you modify metrics of coverage to include the effectiveness of messaging? Or do separate measures of effectiveness need to be developed to capture this?
- What are the options for improving the availability, quality, and validity of nutrition monitoring systems at the community level? Is this cost-effective?

Social and Behavior Change Communication (SBCC) for Nutrition

Background and Rationale

Strengthening SBCC programs for achieving better nutrition (improved maternal, infant, and young child nutrition (MIYCN) and caregiving behaviors) during the first 1,000 days, is one of the unique cornerstones of the SPRING program. Well-designed formative research paired with rigorous ongoing impact evaluations is essential to an understanding of how to successfully plan, implement, and scale-up effective SBCC programs for the prevention and treatment of stunting and anemia. SBCC strategies represent the critical link between initiatives not only *within* the health sector but also *across* sectors that include health, agriculture, and water and sanitation.

Changing behaviors requires an understanding of the basic theories of behavior change, lessons learned from other programs or previous efforts, and a thorough understanding of the audience(s) and

context(s) within which a project is working (Aboud 2012, 589). Therefore, the SPRING SBCC-related research agenda needs to be carefully defined and the current list of potential SPRING SBCC research topics seeks to:

1) identify or appropriately refine relevant target audience(s),
2) provide contextual insight to choose and optimize delivery systems,
3) better understand the barriers and facilitators of behavior change,
4) further explore known or unforeseen contributors that are influential and important for successful MIYCN and caregiving SBCC-related interventions, and
5) define the key elements for scale-up in the design of future strategies and approaches, including the role of new technologies.

Data collection, whether primary or secondary, as part of SPRING country work or as unique research endeavors under the SPRING core mandate, will be guided by an appropriate theoretical framework (or logic model) for each setting. This will help to ensure that results will contribute to building the evidence base for future programming and application on a broader scale. Knowledge gained from these efforts is intended to inform SPRING and its global partners.

Proposed Research:

- Is the integration of MIYCN programming with other programs (e.g. agriculture, maternal and child health (MCH), water, sanitation, and hygiene (WASH), social protection, reproductive health/family planning, HIV/Prevention of Mother to Child Transmission (PMTCT)/infant feeding) feasible, effective, and synergistic in the promotion and adoption of improved MIYCN-related behaviors? What are the drivers (conditions needed) and inhibitors for the integration of MIYCN programming across sectors?

- What is the capacity of providers (e.g. community health workers, agriculture extension workers) to add MIYCN content into an existing portfolio of behavior promoting activities, b.) What is the optimal packaging of content (e.g. counseling tools, job aids, program messages) and c.) What is the effectiveness of enhanced approaches (e.g. enabling technologies*, mhealth, supportive supervision) that aim to improve counseling for MIYCN and/or the integration of MIYCN into other programs?

- Measure/determine change in social norms related to specific nutrition practice/behavior, and the effect of changes in social norms on nutrition practices/behaviors.

** Enabling technologies- examples include a child feeding bowl for measuring proper portions, new cell phone-related counseling algorithms, counseling content (written, audio, or visual), short message service (SMS) messages to mothers or healthcare workers, improved counseling tools and other job*

aids, provision of improved stoves, and water filter systems and/or tippytaps for hand washing that could affect water safety and hygiene related to food preparation.

Systems-Related or Delivery Systems Science

Background and Rationale

The goal of this focus area is to expand the knowledge base for effective delivery of nutrition services and to critically examine high impact nutrition interventions carried out at scale specifically from an implementation or a systems lens.

As preparations began for this TAG, the Sackler Institute for Nutrition Science at the New York Academy of Sciences, in collaboration with the World Health Organization (WHO) initiated a similar process to identify key research topics and to define a global research agenda for nutrition science (NYAS 2012). After consultation with a multi-disciplinary group of experts, the Sackler Institute highlighted, "*The Delivery of Nutrition Interventions,"* as one of the focus areas and due to the considerable overlap and concurrent timing of this initiative to target delivery science and operational gaps, SPRING opted to postpone this TAG meeting.

After a consultation period that closed on August 13, 2012, the Sackler Institute identified the following as the highest ranking research topics for this focus area (Erica Oakley, e-mail message, August 20, 2012):

- Research on implementation and impact pathways to improve agriculture-nutrition programs.
- Research on optimal IYC feeding delivery systems and processes.

RESEARCH PRIORITIES

The final research priorities for SPRING selected at the conclusion of Stage 3 included:

1) What is the best SBCC strategy (e.g. standard peer-to-peer approaches, participatory videos) for incorporating nutrition, hygiene, and/or health interventions into agricultural programs? What is the optimal packaging of content and how can effectiveness of messaging be measured at various steps?

2) Are ***enhanced*** approaches (e.g. enabling technologies, mhealth, supportive supervision) more effective than traditional approaches for MIYCN counseling or the integration of MIYCN into other programs?

3) How do you measure ***integration*** using qualitative, quantitative, or mixed methods and is the integration of MIYCN programming with other programs such as agriculture, WASH, HIV/PMTCT) feasible, effective, and synergistic in the promotion and adoption of MIYCN-related behaviors?

4) What is the ***capacity*** of providers (e.g. community health worker, agriculture extension workers) to add MIYCN content into an existing portfolio of behavior promoting activities?

5) What are the minimum criteria necessary for a country to be able to ***implement*** a successful scaled-up nutrition program? How can implementation progress be monitored and what are the minimum criteria necessary for a country to be able to ***sustain*** a successful scaled-up nutrition program?

6) How could farmers change their cropping systems to improve the nutrient content of the crops they produce to improve the vitamin A, iron and zinc nutrient intake levels of their families?

7) How comparable are the nutrient intake estimates of the FAO Food Balance Sheets, Household Consumption and Expenditures Analyses and 24 Hour Recall surveys in terms of how they assess the availability of key nutrients in a country? If they are found to reach different conclusions or markedly different estimates, what accounts for their differences?

These research priorities are being developed into brief concept notes to present the general background and rationale for the work and potential approaches or methodology that may be used to address these key questions. These concept notes will be further expanded into research proposals or protocols depending upon donor preferences, the future availability of funding opportunities, and country-specific conditions.

REFERENCES

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APPENDICES

1. Stage 2- Agriculture and Nutrition TAG

a) List of TAG Participants

b) Discussion Questions

2. Stage 2- Nutrition Metrics and Monitoring TAG

a) List of TAG Participants

b) Discussion Questions

3. Stage 2- SBCC for Nutrition TAG

a) List of TAG Participants

b) Discussion Questions

4. Stage 2- Systems-Related or Delivery Systems Science TAG

a) Discussion Questions

5. Stage 3- Final Research Prioritization

a) List of Participants

b) Discussion Questions

APPENDIX 1.

TAG Meeting: **Prioritization of SPRING Research Activities**

Convened by: Strategic Information Team

Date: June 19th, 2012

Technical Focus Area: Nutrition and Agriculture

Role	Name	Affiliation	Availability	Notes
SPRING SI Lead	Victoria B. Chou	SPRING	Attended	
SPRING Technical Lead	Tom Schaetzel	The Manoff Group	Attended	
SPRING DC Core	Carolyn Hart Aaron Hawkins Sascha Lamstein Anu Narayan Tim Williams Antonia Wolff	SPRING	Attended	
SPRING Session Support	Kristina Beall Kristen Kappos	SPRING	Attended	
Participants	Sarah Blanding	USAID/GH	Attended	On-site
	Kenneth Brown	UC-Davis	Attended	On-site
	Marcia Griffiths	The Manoff Group	Attended (1st session)	On-site
	Anna Herforth	World Bank	Attended	On-site
	Beverly McIntyre	HKI	Attended	On-site
	Victoria Quinn	HKI	Attended (10-11:30 AM)	Telecon
	Marie Ruel	IFPRI	Attended	On-site
	Newal Sherif	USAID/GH	Attended	On-site

Nutrition and Agriculture Discussion Questions

TARGETING, DESIGNING AND EVALUATING INTEGRATED AGRICULTURAL AND NUTRITION PROGRAMS:

- How should agriculture and nutrition programs aimed at improving maternal and child nutrition during the first 1,000 days be targeted and designed for greatest impact? What are the best targeting mechanisms and packages of nutrition, hygiene and health interventions that will ensure the greatest nutritional impact and cost-effectiveness of such programs?
- What are the impact pathways by which such programs would be expected to improve maternal and child nutrition?
- Which of these impact pathways are functioning better/worst in different environments? Where are the implementation bottlenecks and how can they be resolved?
- What is the best strategy (e.g. mass media campaigns, peer-to-peer approaches, etc.) for incorporating nutrition, hygiene and/or health behavior change communications interventions into agricultural programs? What characteristics are associated with greatest uptake of program inputs and a greater likelihood of adoption of recommended agriculture and nutrition practices?
- Using rigorous evaluation methods, what is the evidence that integrated agriculture and nutrition programs have an impact on nutrition outcomes (e.g. maternal and child food and nutrient intake, anthropometry, micronutrient status)? How is this impact achieved and at what cost?
- Under what circumstances are impacts greatest? Which types of communities, households, and individuals benefit the most? Where are the benefits greatest (in terms of region, agro-ecosystems, initial poverty and malnutrition levels, urban/rural areas)?
- What are the impacts of integrated agriculture and nutrition programs on women and gender dynamics, more specifically what are the impacts on: women's time, energy expenditure, health and nutrition; on women's access and control over income and assets; on women's access and control over nutritious foods; and on different dimensions of women's empowerment. What is women's ability and willingness to participate in agriculture activities during pregnancy and early postnatal period (if programs target women and young children during the first 1,000 days).

SCALE-UP AND SUSTAINABILITY:

- How can integrated agriculture and nutrition programs be adapted to different contexts, replicated in different -ecological zones and contexts and scaled up to increase coverage, reach and impact? What are the constraints and bottlenecks to scaling-up?
- How can agriculture and nutrition programs be designed and implemented to ensure their sustainability?

APPENDIX 2.

TAG Meeting: **Prioritization of SPRING Research Activities**

Convened by: Strategic Information Team

Date: June 19th, 2012

Technical Focus Area: Nutrition Metrics and Monitoring

Role	Name	Affiliation	Availability	Notes
SPRING SI Lead	Amanda Pomeroy	SPRING	Attended	
SPRING Technical Lead	Jack Fiedler	SPRING/IFPRI	Attended	
SPRING DC Core	Hana Nekatebeb Manisha Tharaney	SPRING	Attended	
SPRING Session Support	Samantha Clark	SPRING	Attended	
Participants	Sally Abbott	USAID/GH	Attended	On-site
	Sujata Bose	FANTA	Attended	On-site
	Elena Carbone	U Mass	Attended	Telecon
	Jennifer Coates	Tufts	Attended	On-site
	Megan Deitchler	FHI 360	Attended	On-site
	Karin Lapping	Save the Children	Attended	On-site
	PK Newby	Boston U	Attended	On-site
	Roshelle Payes	USAID/GH	Attended (2nd session)	On-site

Nutrition Metrics and Monitoring Discussion Questions

Questions SPRING has committed to answering in FY 2012 and FY 2013:

- How can we predict risk of NCDs in the 1,000 days period? What measures are available, and what are measures need to be developed to more accurately predict risk?
- What are the best methods of targeting/intervening in stunting that take into account risks of central weight gain/later metabolic disorder?
- What tools are available for accurately tracking progress in nutrition policy and governance at the national and subnational level? If none are available, what are necessary components of a new measure to be able to track this over time?
- What is the state of the art in longitudinal qualitative inquiry related to progress in scaling up nutrition programs? What gaps persist in accurately capturing change over time for scale up of nutrition and health systems?
- How valid are the current measures for tracking penetration and effectiveness of SBCC programming? If not valid what new measures would better capture these aspects of programming?

Other Potential Research Questions:

Nutrition Surveillance/Monitoring

- What is the most efficient method of collecting nutrition surveillance/monitoring data, to include who is using the data, when, and at what level of data quality?
- What are the options for improved nutrition monitoring systems at community level? Which is most cost effective?

SBCC Process Measurement

- Other than direct observation or administered surveys, what novel tools and methodologies can be developed and tested for evaluating the effectiveness or adoption of nutrition messages incorporated into community-based agricultural development programs?

Prospective Measurement of Nutrition Program Scale Up

- How do we assess/measure implementation progress and use metrics that may be universally applied across countries?
- What are the key scale-up elements and processes that should be measured for nutrition by the SPRING project?
- What methods of assessment would most efficiently capture scale-up process and milestones?

- How do we monitor and evaluate activities and processes that aim to influence scale up at the country level?

Feasibility and Use of HIES/HCES for Informing Nutrition Programming

- How useful and accurate are the standard measures in HIES surveys for nutrition assessment at the individual level? Is it viable to collect height, weight, and other anthropometric data in this type of survey?
- How can we track program participation through a tool such as the HIES? Is this the most important questions to be added to these tools?
- Is the absence of data on the intra-household distribution of food a surmountable issue to using HIES for dietary assessment? Can the Adult Consumption Equivalent (ACE) provide accurate enough information to deal with these issues and inform programming?

Other measurement issues related to NCDs in the first 1,000 days

- **…**

OTHER

- Which indicators of food and nutrition security are best suited for different purposes (targeting, global tracking, monitoring and evaluation)?

APPENDIX 3.

TAG Meeting: **Prioritization of SPRING Research Activities**

Convened by: Strategic Information Team

Date: July 31, 2012

Technical Focus Area: Social and Behavior Change Communication (SBCC)

Role	Name	Affiliation	Availability	Notes
SPRING SI Lead	Victoria Chou	SPRING	Attended	
SPRING Technical Lead	Peggy Koniz-Booher	SPRING	Attended	
SPRING Team Members	Agnes Guyon Sascha Lamstein Anu Narayan Tim Williams	SPRING	Attended	
SPRING Session Support	Kristina Beall	SPRING	Attended	
Participants	Sally Abbott	USAID	Attended	On-site (10 AM)
	Carmen Casanovas	WHO	Attended	Telecon
	Joy Del Rosso	Save the Children	Attended	On-site
	Marcia Griffiths	The Manoff Group	Attended	On-site
	Joan Jennings	Save the Children	Attended	On-site
	Mary Lung'aho	CARE/Consultant	Attended	On-site
	Stephanie Martin	PATH	Attended	On-site
	Roshelle Payes	USAID	Attended	On-site (1 PM)
	Julia Rosenbaum	WASHplus/fhi360	Attended	On-site
	Christiane Rudert	UNICEF	Attended	On-site
	Maryanne Stone-Jimenez	Consultant	Attended	On-site

Social and Behavior Change Communications (SBCC) Discussion Questions

COMPARING SBCC INTERVENTIONS:

- What is the evidence on the "appropriateness" and effectiveness of the integration of the promotion of MIYCN behaviors and care practices with or within other programs (including counseling messages), and its effect on promoting behavior change? Are there obvious synergies between sectors that we should focus on in promoting the key MIYCN and caregiving behaviors related to the first 1000 days? What sectors should we consider and when: agriculture, MCH, WASH, social protection, reproductive health/family planning, HIV/PMTCT/infant feeding? What are the drivers (conditions needed) to support integration of programs across sectors?
- How do we best tailor messages and determine which audiences to focus on, for greatest impact on both social change and individual or household behavior change? What information/understanding is essential in the design/development of messages, for adapting/tailoring messages, and for testing/evaluating different *messages*/*approaches*? What formative research techniques (or combination of techniques) are most effective and appropriate for designing regional or national programs to promote MIYCN and caregiving behaviors during the first 1000 days? (What investment in formative research is required?)
- How effective are social marketing (market-based) and/or incentive-based approaches for improving MIYCN and caregiving practices at the individual, household, and community levels? How can the impact of these approaches be measured and compared to each other, to other approaches and/or across levels?
- What are the most appropriate and cost effective ways in which counseling related to MIYCN and caregiving practices can be improved at the facility level? Can additional tools (define) enhance learning or promote greater retention when added to a "standard" facility delivery platform?
- What kind of linkages can be routinely made and reinforced between facility and community health programs (between facility and community health workers)? Can referral/counter referral systems be designed to support and promote behavior change, increasing the uptake of both facility and community services and adherence to counseling?
- What communication strategies/approaches and tools are most effective, focused on which audiences and with what investment of resources (human, training, supervision, monitoring and evaluation), at promoting exclusive breastfeeding, complementary feeding, and dietary diversity? (SPRING literature review is contributing to this answer.) Can the same approach be appropriately applied to support all three messages or how do the different delivery mechanisms compare? Is there a "dose-response" relationship between particular communications approaches and effective behavior change?
- What would motivate community health workers and/or agricultural workers to actively embrace the promotion of improved MIYCN and caregiving practices, and ensure the accuracy and effectiveness of both the messages and other support that is given to mothers and other family members?

- ***NEW TECHNOLOGIES:***

- There is a growing interest in and emphasis on "innovation", and the use of new technologies to achieve more cost effective behavior change at scale.

- How effective are the mHealth and other new media strategies, models and tools (e.g. cell phone sms; personal digital assistants [PDAs] for counseling algorithms, personalized messages and/or demonstrations; participatory/human mediated video [Digital Green], etc.) compared to more "traditional" SBCC tools or approaches (use of printed counseling cards, take home brochures, job aids, radio campaigns, etc.) at promoting change in/improving the key behaviors (of both caregivers and health workers) related to MIYCN and care practices during the first 1000 days? What factors need to be considered when measuring the behavior impact, comparative costs, and feasibility of scale-up? What other questions should be asked?

- ***DELIVERY SYSTEMS - SCALE-UP, SUSTAINABILITY and MEASUREMENT:***

- What are the current challenges and/or anticipated obstacles to taking various "proven" SBCC-related strategies, interventions/approaches and tools to scale in a wider regional or national context? What are the most appropriate methods for measuring both impact and coverage (scale) of counseling and other elements of programming?
- How sustainable are the changes in key behaviors that we are promoting (among caregivers and health workers) through various communications interventions/ approaches and tools? What makes an intervention/approach or tool more effective in promoting sustained change? How do we monitor and measure changes in key behaviors, the sustainability of that/those behavior change(s), and over what period of time?
- Which SBCC approaches have been able to bring about (and measure) changes in both individual behaviors, but also social behaviors or societal norms related to MIYCN and care practices during the first 1000 days? How do we measure social change? How can we monitor and measure gradual shifts or changes in prevailing household, community and societal norms?

APPENDIX 4.

Systems-Related or Delivery Systems Science Discussion Questions

- How does a community go about successfully building a coalition or partnership around nutrition- what are some of the factors that are critical to have a successful advocacy around nutrition?
- What is the capacity (skills, knowledge, number) of mid-level nutrition workers to scale-up nutrition locally (at sub-national levels)? What is minimum capacity needed to scale up intervention X at that subnational level?
- What is the capacity (skills, knowledge, number) of nutrition planners and implementers at sub-national levels (district and regions)? How do they affect success or sustainability of programming?
- How have countries previously integrated nutrition into sectors such as agriculture, water, sanitation, and hygiene, and social protection? What are the drivers of successful integration across multiple contexts?
- How have programs previously approached integrating agriculture, water, sanitation, and hygiene, and social protection into community based nutrition programming? What are the drivers of successful integration at the community level?
- How does a community go about successfully building a coalition or partnership around nutrition- what are some of the factors that are critical for successful advocacy related to nutrition?
- Who has access to high-impact nutrition interventions in Country X? Of those, who is utilizing these services? What accounts for the difference in access and utilization?

APPENDIX 5.

Stage 3: Final Prioritization of SPRING Research Activities

August 21, 2012

Role	Name	Availability
SPRING SI Lead	Victoria Chou	On-site
SPRING Team Members	Jack Fiedler	On-site
	Carolyn Hart	On-site
	Peggy Koniz-Booher	On-site
	Anu Narayan	Telecon
	Manisha Tharaney	On-site
	Tim Williams	Telecon

Stage 3 Final Research Prioritization Discussion Questions

Nutrition-Agriculture

1. How should agriculture and nutrition programs aimed at improving maternal and child nutrition during the first 1,000 days be *targeted* and *designed* for greatest impact? What are the best targeting mechanisms and packages of nutrition, hygiene and health interventions that will ensure the greatest nutritional impact and cost-effectiveness of such programs?

2. What is the best strategy (e.g. mass media campaigns, peer-to-peer approaches, etc.) for incorporating nutrition, hygiene and/or health *behavior change communication* interventions into agricultural programs? What characteristics are associated with greatest uptake of program inputs and a greater likelihood of adoption of recommended agriculture and nutrition practices?

3. What are the impacts of integrated agriculture and nutrition programs on *women and gender dynamics*? More specifically, what are the impacts on: women's time, energy expenditure, health and nutrition; on women's access and control over income and assets; on women's access and control over nutritious foods; and on different dimensions of women's empowerment? What is women's ability and willingness to participate in agriculture activities during pregnancy and early postnatal period (if programs are targeting women and young children during the first 1,000 days)?

4. What is the economic (and nutritional) tradeoff of growing crops for sale versus household consumption?

5. What is the validity of food balance sheets in terms of food-based dietary guidelines and are countries producing enough? Using nationally representative food intake surveys/dietary data sets, do the balance sheets correlate with intake and if not, why not?

Nutrition Metrics and Monitoring

6. What are the minimum criteria necessary for a country to be able to ***implement*** a successful scaled-up nutrition program? (12 votes)

7. What can we assess or measure to study implementation progress and are there metrics that can be applied across countries? (8 votes-tied)

8. What are the minimum criteria necessary for a country to be able to ***sustain*** a successful scaled-up nutrition program? (8 votes-tied)

9. How do outcome and process measures need to differ to accurately capture nutrition in nutrition-specific versus nutrition-sensitive programs? (8 votes-tied)

10. How can you modify the metrics of coverage to include the effectiveness of messaging? Are separate measures of effectiveness needed to capture this (7 votes-tied)

11. How do you measure integration or successful integration? Is the best approach using qualitative, quantitative or mixed methods? (7 votes-tied)

12. What are the options for improving the validity, availability and quality of nutrition monitoring systems at the community level? Cost-effectiveness? (6 votes)

Social and Behavior Change Communication

13. Is the integration of MIYCN programming with other programs (e.g. agriculture, MCH, WASH, social protection, reproductive health/family planning, HIV/PMTCT/infant feeding) feasible, effective, and synergistic in the promotion and adoption of improved MIYCN-related behaviors? What are the drivers (conditions needed) and inhibitors for the integration of MIYCN programming across sectors?

Potential methods: comparative case studies, qualitative, desk review (What is known about the "benefit" of integration?), link to case studies on scale-up.

14. a.) What is the capacity of providers (e.g. community health workers, agriculture extension workers) to add MIYCN content into an existing portfolio of behavior promoting activities, b.) What is the optimal packaging of content (e.g. counseling tools, job aids, program messages) and c.) What is the effectiveness of enhanced approaches (e.g. enabling technologies*, mhealth, supportive supervision) that aim to improve counseling for MIYCN and/or the integration of MIYCN into other programs?

Potential methods: a) provider survey/ provider focus group discussions (FGDs); b) client exit interviews and/or FGDs/ provider survey/ provider FGDs; c) client exit interviews and/or FGDs/ provider survey/ provider FGDs; household survey.

15. Measure/determine change in social norms related to specific nutrition practice/behavior, and the effect of changes in social norms on nutrition practices/behaviors.

*Potential methods: Lower priority for core research—build into country impact studies where feasible.**

Enabling technologies- examples include a child feeding bowl for measuring proper portions; new cell phone-related counseling algorithms, counseling content (written, audio, or visual); and SMS messages to mothers or healthcare workers; improved counseling tools and other job aids; provision of improved stoves, water filter systems and/or tippytaps for hand washing that could affect water safety and hygiene related to food preparation.