

## CGIAR Research Program on Agriculture for Nutrition and Health (A4NH) Major Plan of Work and Budget for 2014

A4NH contributes to the CGIAR system level outcome: Improving Nutrition and Health. We have four IDOs, three of which are among the set of common IDOs:

1. Improved diet quality
2. Reduced exposure to causes of agriculture-associated disease (AAD)
3. Empowerment of women and poor communities
4. Better cross-sector policies, programs, and investments that enable improved nutrition and health outcomes

Value chains for enhanced nutrition, Biofortification and Integrated programs and policies focus primarily on improving diet quality while AAD focuses on reducing exposure to food-borne disease and disease due to agricultural risk factors. All four contribute to empowerment and enabling environment. Gender considerations are critical for nutrition and health impacts and are integrated across the portfolio, particularly well in the integrated programs and policies, and will be strengthened elsewhere.

The A4NH portfolio of research flagships and clusters is organized around the main pathways by which agriculture can enhance nutrition and health benefits or mitigate health risks. Two flagships focus on food-based nutrition solutions. Value chains for enhanced nutrition focuses on the supply and demand of nutrient-dense foods (animal source foods, vegetables, pulses and fruits). Its research clusters interact with partners in two different ways, assessment of value chains focuses on evidence, tools and approaches that can be applied by value chain actors more generally, while development of value chain pilot studies works with partners to consider mixes of technical and process innovations to enhance nutrition. Biofortification, the second flagship, focuses on the supply of key micronutrients through food staples. One research cluster, builds on the CGIAR strength of breeding staple food crops and the other two clusters add high-quality nutritional evaluation and operational research to accelerate delivery-at-scale. The third flagship, agriculture associated diseases, focuses on partnerships with public health in food safety and mitigating the risks of health risks associated with agriculture, either from intensification of livestock systems more irrigation or other risks. The food safety clusters have strong linkages with the value chain and biofortification flagships, through microbial risks and adulteration of perishable nutrient-dense foods or aflatoxins in staples. The fourth A4NH flagship, integrated programs and policies is directly designed to provide research outputs to support program implementers and policy makers and investors. Many of the evaluation frameworks, tools and approaches from this flagship support the others.

The research is at different stages of development. The most advanced is biofortification where 2014 is the first of a five-year delivery phase in which research will focus on operational research for delivery at scale in nine target countries. Value chains for enhanced nutrition is at the discovery phase with initial seed grants and establishing evaluation frameworks and methods. For AAD, research on emerging and endemic zoonoses is a mixture of discovery and proof of concept phases. There is great demand for food safety research and A4NH plans to accelerate the portfolio in this area over the next 3 years, building on pilot phase research in aflatoxin control and milk quality. For Integrated

programs and policies, cross-sectoral policy research is largely in the discovery phase. Work on evaluation of integrated programs is more advanced. We plan to examine with partners how the current proof-of-concept and pilot programs might be scaled out. Across the research portfolio, we will emphasize developing and using impact pathways and developing theories of change in 2014.

A4NH systematically promotes synergies between its different flagships through its three impact pathways – value chains, programs and policies and through its cross-cutting gender and evaluation research. The analysis of opportunities and risks in value chains links the value chain for enhanced nutrition, biofortification and agriculture-associated disease flagships. Operational research and evaluation of programs are shared across the biofortification, agriculture-associated diseases and integrated programs research. For the policy pathway, integrated programs and policies focuses on broader cross-sectoral policy process research that supports all four flagships and then individual flagship will develop more specific policy relevant knowledge and evidence. Integrated programs and policies has a strong evaluation and gender research capacity that supports other flagships. For example, gender and evaluation research from integrated programs and policies is supporting biofortification in the evaluation of delivery systems and their sustainability for orange-fleshed sweet potatoes including supporting a specific gender research component as part of the Gender and Agricultural Assets Program (GAAP). As described, there is considerable emphasis in developing more detailed theories of change for research in the different A4NH research clusters. These theories of change will allow A4NH to much more systematically and purposively develop synergies between different flagships and clusters in the A4NH portfolio.

### **Value Chains for Enhanced Nutrition**

The value chains for enhanced nutrition theme will grow in several areas. Research is focusing on whether interventions try to affect the supply of, demand for, or enhance the exchange of nutritious foods. We are developing a framework to systematize the monitoring and evaluation of value chains for nutrition interventions. Within the theme, gender research is critical as value chain development influences gender roles and power relations. We plan to launch new research with the Swedish Agricultural University (SLU) and the Humid Tropics CRP on gender and nutrition in the evolution of cassava value chains.

We will provide discovery or proof of concept results from five value chain seed grants for fruits, vegetable seeds, dried fish in complementary foods, social enterprise for fortified dairy-based porridge, and urban slum value chains. We will further work with business schools, NGOs, state government, social enterprises and private companies on enhancing pulse value chains in South Asia with the Grain Legumes CRP. There will be additional research to improve nutrition outcomes in agricultural systems with the three CGIAR system research programs and Forest, Trees and Agroforestry, building on research assessing diets from bio-diverse food sources.

### **Biofortification**

Biofortification research will continue breeding varieties and analyzing bioavailability, nutritional efficacy, acceptance, and markets. Greater emphasis will be placed on operational research to promote the role of biofortified crops and enhance delivery through adoption and consumption by farmers in target countries in Africa, South Asia and Latin America. Biofortified crops being delivered at scale will include iron pearl millet, zinc wheat and rice, provitamin A cassava and maize, and high

iron beans. A gender assessment will be completed in 2014, to guide the delivery phase to ensure biofortified crops reach male and female farmers and benefit male and female consumers. Impact pathways and theories of change are being developed to support monitoring, evaluation and learning.

### **Agriculture-Associated Diseases**

We will combine an evaluation of previous food safety research with a planning process with key partners looking to accelerate future research. One major area of food safety research is on aflatoxins, conducted jointly with the Maize and Grain Legume CRPs. In 2014, there will be significant pilot testing of biocontrol (Aflasafe) in a number of African countries. To enable aflatoxin control interventions, we will strengthen research on market and health risks and their influences on policy with the East African Community. In addition, the geographic focus of aflatoxins research will be expanded from Africa to South Asia through background studies and partner discussions. Our second area of food safety is for perishables. In 2014, food safety risk assessments for key livestock and fish value chains with the Livestock and Fish CRP will be released, including the testing of methodologies for identifying gender-sensitive strategies to reduce risks. Training activities will build capacity of food safety implementers to use risk-based approaches in both formal and informal markets. A book will summarize key lessons from assessing and improving food safety in informal value chains. Impact pathways and theories of change for food safety research will be developed and used to inform the planning of future research.

In the area of epidemic and endemic AAD risks, molecular and epidemiological studies on risk modelling associated with systems change will continue for Rift Valley fever, linked to cost-benefit analysis of strategies to inform decision support to prevention and control policies. A new initiative with the Public Health Foundation of India will look at evolving AAD risks associated with zoonoses, especially in peri-urban livestock production. A major initiative will be synthesis of 10 years research on participatory epidemiology and recommendations for its application.

### **Integrated Programs and Policies**

Evaluations of integrated agriculture and nutrition education programs are being expanded to several African countries. In both Africa and South Asia, projects will seek to evaluate integrated strategies across agriculture, gender empowerment, nutrition education and social protection as well as strengthen agriculture and nutrition partnerships among program implementers. The development of impact pathways and theories of change for integrated programs will focus on understanding and documenting how program implementers become aware of and use evaluation findings in the design and implementation of development programs.

Policy research will expand using the Transform Nutrition and LANSAs platforms and engagement with national agriculture and nutrition teams to conduct strategy and policy reviews around agriculture and nutrition. Initiatives to strengthen policy-relevant knowledge and capacity include country-level case studies on options and approaches for effectively mainstreaming nutrition into agricultural policy and practice (3 studies in South Asia via LANSAs and 3 in eastern Africa, linking with CAADP). A “how to guide” will be developed for promoting the adoption of a coherent cross-sectoral policy framework for food and nutrition security, as well as a tool kit for understanding and

navigating nutrition-relevant policy processes. Policy research related to nutrition and biodiversity conservation and sustainability will be conducted.

### **Gender**

An inventory of gender research within A4NH will be completed in early 2014 which will allow us to better plan for synergies across research projects and strengthen gap areas. New initiatives in 2014 will be research on gender and nutrition-sensitive value chains, an assessment of gender for biofortification research and delivery, review of nutrition outcomes from Women's Empowerment in Agriculture studies and a review and studies on the implications of different demands on women's time on nutrition outcomes. Another area of emphasis will be a review of gender as part of the impact pathway and theory of change development, with particular emphasis in 2014 on biofortification and food safety.

Gender and nutrition is a strategic area of CGIAR research. In December 2013, A4NH convened an initial workshop with the gender and evaluation focal points of all other CRPs with nutrition IDOs. The workshop established common approaches to evaluating nutrition across CRPs, developed a common framework for considering gender in agriculture-nutrition impact pathways and theories of change and presented research methods for doing so. Plans were developed for subsequent CGIAR gender and nutrition research with an annual workshop to review and plan activities across CRP with nutrition IDOs.

### **Partnerships and Capacity Development**

A4NH will invest approximately \$2 million in non-CGIAR partnership development in 2014. Key partnership initiatives were initiated late in 2013 and will progress in 2014. These include collaborations with IFAD, FAO and the World Bank, value chain work with business schools, NGOs, social enterprises and the private sector, and agriculture-nutrition capacity development and policy work with national and regional partners.

Across the CGIAR, A4NH has an important role in strengthening nutrition across the agriculture portfolio. In addition to working with the evaluation leads in CRPs with nutrition outcomes, we are working to strengthen nutrition expertise for systems CRPs and, with SLU, the Africa-based CGIAR Centers working on value chains.

More globally, A4NH is working closely with LCIRAH (University of London) to launch an Agri-Nutrition-Health Academy in 2014. The academy will focus on enhancing learning in this new cross-sectoral research area and mentor the next generation of young scientists.

**Table 1 - Planned key activities for 2014 to produce IDOs and outputs, with associated planned budgets**

FOR REFERENCE ONLY Level as described by OCS	Level of organisation within the CRP	Description of planned key activities at each level of internal organisation	Expected results of planned key activities	Planned budget (\$ 000s)
Level 3: Theme, and Level 4: outcomes	Level n-1: Flagship Project	<b>Flagship 1. Value Chains for Enhance Nutrition</b> <b>Flagship 2. Biofortification</b> <b>Flagship 3. Agriculture Associated Diseases</b> <b>Flagship 4. Integrated Programs and Policies</b>	<b>Expected progress toward the CRP IDOs, and indicators of this progress</b>	<b>Budget per Flagship Project</b>
Level 3: Theme, and Level 4: outcomes	Level n-1: 1. Value Chains for Enhanced Nutrition	<i>This research area focuses on the IDO of improved diet quality for targeted undernourished populations through value chain interventions. Research results also contribute to the empowerment and enabling IDOs. Value chains considered vary from informal / local through dedicated public distribution chains to formal, global chains. Activities largely focus on tools and methods to support key value chains actors and enablers. These include other CGIAR research programs, private enterprises, development banks, governments, other food distribution organizations, farmer organizations and civil society. There are also pilot studies of value chain development for nutrient-rich foods and on public-private innovation research with business schools and private companies.</i>	<i>In 2014, results will be used to further partnerships with key private and public value chain actors. A4NH activities at CGIAR level provide support to the overall system in terms of nutrition expertise and evaluation. In 2014, we plan to establish partnerships with systems CRPs on improving diet quality in key systems locations. Main value chain collaborations with other CRPs are for nutrient rich foods (with Grain Legumes and Livestock and Fish) and with fruits (with Forest, Trees and Agroforestry). Collaboration with vegetable value chains are with AVRDC and private companies. It is expected that more standard metrics for diet quality and diversity will be adopted across the CGIAR, as well as more standard approaches to measuring improved nutrition-related outcomes resulting from changes in value chains.</i>	\$7.4 Million (\$4.4M from W1/2)
Level 5: outputs	Level n-2: Cluster of activities 1.1 Development of value-chains for	<i>The first cluster focuses on development of value chain pilot studies to increase the production or productivity of nutrient dense foods to improve diet quality, targeted at specific populations such as women and children</i>  <b>Locations:</b> Malawi, Mozambique, Cameroon, Cote d'Ivoire, Uganda,		\$3.7M

	<p><i>improved production or productivity of nutritious products</i></p>	<p>Nigeria, Tanzania, Kenya, Rwanda, Peru, Bangladesh, Zambia, Swaziland.</p> <p><b>Methods:</b> Impact evaluation, nutrition assessment, market and uptake analysis</p> <p><b>Gender research dimension:</b> Development of value chains for better nutrition include women as both potentially as producers, improving incomes, and/or as consumers, helping to improve maternal and child nutritional status. (See <b>bold</b> for projects specifically target women).</p> <p><b>Objectives:</b></p>		
		<p>1. Create opportunities to expand the production or increase the productivity of nutritious foods.</p>	<p><u>Outputs:</u></p> <p>Develop manual on nutrition training with a focus on complementary feeding and diversifying diets through locally available resources.</p> <p><b>Fish-based food products for women and complementary feeding developed and acceptance potential demand analysed in Bangladesh.</b></p> <p><u>Outcomes:</u></p> <p>Capacity built for extension workers, women’s groups, and other actors around raising awareness and use of orange flesh sweet potato and vegetables in Bangladesh.</p> <p>Private vegetable seed partners in Bangladesh use value chain interventions to improve diet diversity</p>	

			among women of child-bearing age and children.	
		2. Improve the post-harvest handling of nutritious foods.	<p><u>Outputs:</u></p> <p>Results in Kenya and Western Africa value chain analysis for neglected indigenous fruit species, new post-harvest and value-adding techniques along the fruit value chain, fruit tree diversity and consumption, and subsequent influence on diet diversity. Focus fruits include mango and baobab.</p> <p>Analysis of fruit tree value chain focussing on processing: such as, nutrient losses along the mango value chain (storage, drying, juice, and jam)</p> <p>Quality assurance tools developed to monitor and maintain value chains for cassava and potato products in Eastern and Central Africa</p>	
		3. Assess diet quality benefits and test feasibility or sustainability of nutritious food value chains, focusing on key target populations	<p><u>Outputs:</u></p> <p>Design and initiate a pilot program to develop and test nutrition education, nutrient-dense food production and value chains with government, NGOs and social enterprises <b>through women' self-help groups</b> in Orissa.</p> <p>Promote the informal dairy value chain through production of Thiakry – an iron-fortified porridge product consumed by school children. Research will evaluate an incentivized approach used with producers, <b>typically women are involved in dairy activities, to produce this product.</b></p>	

			<p><u>Outcome:</u></p> <p>Knowledge and capacity of milk marketing company and local communities enhanced so they can develop systems for enhancing milk collection and income and improve nutrition of children.</p>	
		<p>4. Analyze alternative methods of supplying high-value crops to markets, including public distribution and informal food systems</p>	<p><u>Outputs:</u></p> <p>Analysis of dietary intake and contribution of local biodiversity, socio-economic status, food security and nutrition status (house hold Level) for the short dry and lean season in Benin.</p> <p>Assess alternative mechanisms for improving nutrition and food safety in Home-Grown School Feed Programs in Mali, Ghana and Kenya through market. <b>Project will link to stakeholders including women’s groups.</b></p>	
	<p><i>1.2 Assessing the entire value chain with a nutritional lens and stimulating demand for nutritious products</i></p>	<p><i>The second cluster of activities combines work developing tools, methods and analysis for partners to improve nutritional quality across a range of value chain activities, and examines catalysts for the demand of nutritious products. Gender dimensions of value chain research are critical and are being strengthened and integrated into different projects. Additional gender research investments are also planned in 2014.</i></p> <p><b>Locations:</b> Regional (South Asia and Africa) including specific studies in Bangladesh, Uganda, Tanzania, Benin, and Kenya</p> <p><b>Methods:</b> Case Studies, diet analysis, lab-in-the-field experiments</p>		<p>\$3.7M</p>



		<p><b>Gender research dimension:</b> Assessing how informal value chains both affect the nutrition status of women and how women can become involved along the entire chain from production to processing to consumption. (See bolded results).</p> <p><b>Objectives:</b></p>		
		<p>1. Develop an overall typology and analytic framework for assessing opportunities to improve the nutritional quality across a variety of value chains including:</p> <ol style="list-style-type: none"> <li>a. Identify constraints to supply and demand in value-chains.</li> <li>b. Assessment of value chain arrangements for nutritious foods.</li> <li>c. Analyze impacts of interventions on food consumption and diet quality</li> </ol>	<p><u>Outputs:</u></p> <p>Typology of value chains for high nutrient quality foods.</p> <p>Report assessing the impacts of efforts to enhance access to nutritious foods through in-depth analysis of the Grameen Danone social enterprise for nutritious yoghurt</p>	
		<p>2. Understanding the diet quality and diversity where it is not well understood; when informal food systems are important to diet or in priority agro-ecosystems. These goals will be met with system CRPs and other partners.</p>	<p><u>Outputs:</u></p> <p>Development of multi-Center cross-CRP “Nutrition Sensitive Landscape” research plan.</p> <p>Manual on nutrition training with a focus on complementary feeding and diversifying diets through locally available resources.</p> <p>Analysis of food consumption and nutritional content of locally-processed food products using cassava, maize, cowpea and soybean.</p>	

		3. Analysis of messaging or other factors that could improve demand for nutritious foods among targeted populations	<u>Outputs:</u> Assessment of technical, business and social innovation across a range of pulse value-chain interventions in India.  Lab-in-the-field experiments conducted in Bangladesh to assess messaging around under-utilized nutritious crops	
<b>All other levels in OCS</b>				

<b>FOR REFERENCE ONLY Level as described by OCS</b>	<b>Level of organisation within the CRP</b>	<b>Description of planned key activities at each level of internal organisation</b>	<b>Expected results of planned key activities</b>	<b>Planned budget (\$ 000s)</b>
<b>Level 3: Theme, and Level 4: outcomes</b>	<b>Level n-1: 2. Biofortification</b>	<i>The second research area, biofortification, focuses on improving diet quality through food based solutions for essential micronutrients. This research area is relatively mature and builds on past and current (with CRPs breeding for food staples) CGIAR breeding research and the completed discovery and development phases of the HarvestPlus program. 2014 is the first year of a 5-year delivery phase, focusing on adaptive research into how proven biofortified staples can be delivered at scale. There are 3 clusters of activities, each focusing on activities for a critical stakeholder / partner group. The first is varietal development with a view to mainstreaming the breeding of high micronutrient varieties in multi-dimensional crop breeding of food crops in low-income countries and populations. The second is nutritional efficacy testing so that</i>	<i>Within the context of improved diet quality, this research area focuses on improving levels of internationally recognized micronutrients that are deficient and can be increased in plants (iron, zinc and vitamin A precursors). In 2014 delivery activities will be planned and partnerships established in 9 target countries (Nigeria, DRC, Rwanda, Uganda, Zambia, Ethiopia, India, Pakistan and Bangladesh). By the end of 2014, the target is to have 5 million farmers adopt “proven” biofortified varieties, moving toward 50 million by the end of the 5 year delivery phase in 2018.  While gender disaggregated results were important in nutritional efficacy studies, gender was not systematically analysed across the biofortification research portfolio in previous phases. A</i>	Budget per theme \$43 Million (\$11.8 M from W1/2

		<i>biofortification is adopted as appropriate in public health nutrition. The third is in establishing delivery programs at scale with key national and regional actors.</i>	<i>comprehensive review of gender in biofortification will be completed in 2014 and will guide consideration of gender in the adaptive research for scaling out as well as inform mainstreaming of micronutrients in breeding programs and nutritional assessments.</i>	
<b>Level 5: outputs</b>	<b>Level n-2: Cluster of activities</b> <i>2.1 High-yielding micronutrient enhanced varieties made available to NARES and implementing partners in target countries</i>	<i>In the next 5 years, the cluster of breeding activities will seek to strengthen breeding programs in target countries that include the inclusion of high levels of target micronutrients. This will include improved breeding methods using new tools as well as methods to test and select for micronutrient levels.</i>		\$28 Million
		<p><b>Location:</b> Nigeria, DRC, Rwanda, Uganda, Zambia, Ethiopia, India, Pakistan and Bangladesh)</p> <p><b>Methods:</b></p> <ul style="list-style-type: none"> <li>• “Next generation” high-throughput breeding methods</li> <li>• Quality analysis/proficiency tests in NARS labs</li> <li>• XRF equipment installed and staff trained</li> </ul> <p><b>Gender Research:</b> Being reviewed</p> <p><b>Objectives:</b></p>		
		1. Improve availability of high-micronutrient staple crops in target countries through breeding	<u>Output:</u> 30 micronutrient profiles of selected biofortified sweet potato and potato clones grown in 3 environments in Peru.	
		2. Increase adoption of high micronutrient varieties by target partners	<u>Output:</u> Vitamin A cassava development and enabling technologies – full target clones in GxE testing in	

			Nigeria and DRC; rapid screening technologies implemented with National Agriculture Research Systems (NARS)	
		3. Develop, verify and establish methods in target countries	<u>Output:</u> High iron pearl millet and zinc wheat development – pearl millet hybrids identified for commercialization; zinc wheat test marketed and best lines selected for commercialization and release; full target lines in GxE testing	
	2.2 Nutrition and health communities promote biofortified crops of demonstrated nutritional efficacy	<p><i>This research cluster focuses on evaluation of bioavailability and efficacy of biofortified foods in improving micronutrient levels as well as nutritional analysis of micronutrient levels and diet quality in target countries and populations.</i></p> <p><b>Location:</b> India, Bangladesh, Nigeria, Zambia, Rwanda</p> <p><b>Methods:</b> Efficacy trials, bioavailability testing.</p> <p><b>Gender research dimension:</b> All data disaggregated for gender and focus on women’s’ role in household food consumption and nutrition-related outcomes.</p> <p><b>Objectives:</b></p>		\$4.3 Million

		<p>1. High-nutrient varieties have proven bioavailability:</p> <ul style="list-style-type: none"> <li>a. Zinc wheat in India</li> <li>b. Zinc rice in Bangladesh</li> </ul>	<p><u>Outputs:</u></p> <p>A study on iron absorption of low phytate beans. This 8-week absorption study among iron-deficient university volunteers at Iowa State University tests the hypothesis that iron absorption regulation adapts over time to high phytate diets.</p> <p>Zinc rice absorption study in Bangladesh – scheduled to take place in early 2014 with preschool age children</p>	
		<p>2. High-nutrient varieties have proven nutritional efficacy:</p> <ul style="list-style-type: none"> <li>a. Zinc wheat in India</li> <li>b. Provitamin A cassava in Nigeria</li> <li>c. Provitamin A maize in Zambia</li> <li>d. High iron beans in Rwanda</li> </ul>	<p><u>Outputs:</u></p> <p>Zinc rice efficacy study in Bangladesh – scheduled to begin in mid-2014, may focus on adult women and/or preschool children (design has not yet been finalized)</p> <p>Cassava efficacy trial in Nigeria – scheduled to begin in 2014 with preschool age children (6-59 months)</p> <p>Efficacy of high zinc wheat consumption in India – One study in peri urban slums in New Delhi. The same wheat variety was used to produce high zinc and low zinc grain using agronomic management techniques. The 6-month feeding trial by Johns Hopkins University (New Delhi) will include 3000 children under 3 years and 3000 women divided equally in intervention and control groups. The ETH-Zurich study in Bangalore to explore the efficacy of the same products in young school children is scheduled to begin feeding in June 2014.</p>	

			<p><u>Outcome:</u></p> <p><b>Changed dietary and nutrition status of women and children in DRC &amp; Rwanda in relation to release of high iron beans.</b></p>	
	<p><i>2.3 Delivery programs establish progress in which farmers adopt and consumers eat biofortified varieties in target countries</i></p>	<p><i>This research cluster focuses on adaptive research and promotion activities for the delivery of biofortified varieties at scale in target countries, including monitoring, evaluating and learning from target county experiences.</i></p> <p><b>Location:</b> Nigeria, West Africa, Uganda, Kenya, Guatemala, LAC region.</p> <p><b>Methods:</b> Dietary assessment, impact assessment, market analysis</p> <p><b>Gender research dimension:</b> A gender assessment will develop tools to help identify gender issues, how to increase impact through examining gender constraints and opportunities along the impact pathway, recommendations for applying what has been learned, identify a set of indicators to monitor the effect of addressing gender issues on outcomes and impact, and guidelines for expanding, replicating what has been learned. (Target countries: Zambia, Nigeria, Rwanda and Uganda)</p> <p><b>Objectives:</b></p>		<p><i>\$10.8 Million</i></p>

		<p>1. Biofortified varieties are incorporated into distribution systems for seeds / planting materials</p>	<p><u>Outputs:</u></p> <p>Impact assessment report for Biofortified Brazil (Food Basket) – assess contents of crops and foods that will be used for 2015 efficacy trial</p> <p>Breeding work continues in Guatemala, Nicaragua, and Haiti</p> <p>Bolivia – dietary assessment report is completed to determine target staple crops.</p>	
		<p>2. Prove effectiveness for provitamin A cassava and iron beans</p>	<p><u>Outputs</u></p> <p>Effectiveness study of vitamin A cassava – background research completed, target area identified (likely Nigeria or elsewhere in west Africa), RFP developed, and primary partners identified</p> <p>Effectiveness study of iron beans – background research completed, target area identified (likely in Uganda or Kenya, and Guatemala), RFP developed, and primary partners identified</p>	
		<p>3. Food processors adopt biofortified varieties</p>	<p><u>Outcome:</u></p> <p>Nicaragua –pilot school lunch program project incorporates improved rice, beans and maize.</p>	

		<p>4. Increase number and availability of food products incorporating biofortified varieties</p> <ul style="list-style-type: none"> <li>- New products with beans, rice, and maize for Guatemala</li> <li>- Maize products for Colombia, Mexico, and Brazil</li> </ul>	<p><u>Output:</u></p> <p>Development of biofortified food products – Continue development of products in Brazil and Colombia, begin product development in Mexico in partnership with CIMMYT and Monterrey Tech</p>	
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Level 3: Theme, and Level 4: outcomes	Level n-1: 3. Agriculture-Associated Diseases	<p>These research focus on the IDO for reduced exposure to human disease associated with agriculture.</p> <p>The rationale for this research area is based on the reality that agriculture-associated diseases (AAD) sicken and kill millions of the poor, yet the multiple burdens of AAD are not fully understood. Successful assessment and management of AAD requires inputs from agriculture research; agricultural research which is informed by socioeconomic, gender, and ecological thinking.</p>	<p>Activities in Theme 3 help us describe <b>systems and priorities</b>, which can be used to inform AAD policies, programs and research; improve our <b>understanding of disease</b> through epidemiology and socio-economics to inform the prevention and control of AAD in effective, equitable and sustainable ways; and build capacity for <b>risk management</b> by sharing evidence on innovation and risk- based and ag-based management for priority AAD.</p>	\$12.3 Million (\$5.3M from W1/2)
Level 5: outputs	<p>Level n-2: Cluster of activities<sup>1</sup></p> <p>3.1 Improve food safety through aflatoxin prevention and treatment methods.</p>	<p><i>This research focuses on understanding and responding to the effects of aflatoxins, a key food safety issue in staple crops.</i></p> <p><b>Locations:</b> India, Kenya, Malawi, Mali, Nigeria, Rwanda, Senegal, Zambia</p>		\$5.6 Million

<sup>1</sup> Clusters of activities are designed by the CRP and there should be around 5 Clusters per Flagship



		<p><b>Methods:</b> Prevalence surveys, impact assessments, RCTs, consumer acceptance studies,</p> <p><b>Gender research dimension:</b> Gender disaggregated data and specific role of women in aflatoxin management technologies and knowledge dissemination.</p> <p><b>Objectives:</b></p>		
		<p>1. Assess aflatoxin contamination in key crops including livestock feed and level of aflatoxin exposure in foods consumed by humans and livestock</p>	<p><u>Output:</u> Results on targeted aflatoxin prevalence and impact studies published and used for prioritizing work across 7 African countries and in India.</p>	
		<p>2. Identify intervention opportunities and their costs, and evaluate interventions for reducing health and market risks</p>	<p><u>Outputs:</u> Publications on managing market-based risks of aflatoxins released: willingness to pay for aflatoxin-safe milk in Nairobi and consumer acceptance of labelled aflatoxin-safe maize in eastern Kenya</p> <p>Report published on results of RCT of alternative interventions to reduce aflatoxins in groundnuts</p> <p>Report published on cost-benefit analysis to identify intervention methods with best returns in reducing levels of aflatoxins in maize and cassava value chains in Rwanda</p>	
		<p>3. Scale out interventions in different agro ecosystems</p>	<p><u>Output:</u> <b>In Nigeria: biocontrol and improved production technologies to manage aflatoxin contamination tested and evaluated with 5000 farmers of which 50% are women.</b></p>	

			<p><u>Outcomes:</u></p> <p>Analysis with local business partners to identify opportunities for increased adoption of Aflasafe™ through scaling out initiatives in Nigeria</p> <p>Efficacy of Aflasafe™ KE01 in Kenya documented and partners supported to submit and efficacy and safety dossier to Pest Control Products Board for registration of Aflasafe™ KE01</p> <p>Demonstration-scale Aflasafe™ factory fully operational to manufacture Aflasafe™ for distribution through commercial partners to farmers in Nigeria</p>	
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		<p>4. Coordinate aflatoxin activities across the CGIAR</p>	<p><u>Output:</u></p> <p>Consultation workshop on aflatoxin research for development in South Asia held in India; featured studies include: aflatoxin in the maize value chain and implications for the poultry sector, aflatoxin’s impact on maize and groundnut feed trade, and assessment of aflatoxin-contaminated food’s impact on human health; status of aflatoxin research will be used to prepare a roadmap for setting a research agenda in the region and inform development of A4NH theory of change and impact pathways for this research area</p> <p>Three cross CRP (A4NH, Maize and Grain Legumes) working groups (evidence, diagnostics, and population biology) established to improve cross-CRP collaboration and develop a cohesive theory of change and impact pathways for this research area</p> <p>Position papers on aflatoxin-related issues developed and revised with the East African Community (EAC).</p> <p><u>Outcome:</u></p> <p>Aflatoxin position papers agreed by the East African Community and used by them in consultations with stakeholders.</p>	
	<p>3.2 Improve methods for food safety of perishable high-value products.</p>	<p><i>This research looks at food safety issues associated with foods that are high value and highly nutritious.</i></p> <p><b>Locations:</b> Egypt, Ethiopia, India, Kenya, Senegal, Tanzania, Uganda, Vietnam</p> <p><b>Methods:</b></p>		<p>\$4.2 Million</p>

		<p>Surveillance, participatory methods, nutritional assessments,</p> <p><b>Gender research dimension:</b> Rapid integrated assessment (RIA) is designed with a specific focus on maternal and child food safety and nutrition</p> <p><b>Objectives:</b></p>		
		<p>1. Improve detection and reporting of food borne disease (FBD) in high-value product value chains</p>	<p><u>Output:</u></p> <p>Results on food safety and adulteration in the dairy value chain published and disseminated to policy makers in India</p> <p><u>Outcome:</u></p> <p>Policy engagement with supporting evidence for global food safety groups such as the WHO Foodborne Disease Burden Epidemiology Reference Group (FERG), FAO, and World Organization for Animal Health (OIE)</p>	
		<p>2. Develop frameworks and approaches to improve management of FBD in high-value product value chains</p>	<p><u>Outputs:</u></p> <p>Collection of case studies reflecting multi-year research on food safety in informal markets - <i>Safe Food, Fair Food</i> – released as a book and promoted at multiple stakeholder events</p> <p><b>Paper on gender dimensions of multi-year research on food safety in informal markets published in <i>Ecohealth</i> special issue</b></p>	
		<p>3. Evaluate approaches to manage FBD in high-value</p>	<p><u>Outputs:</u></p>	

		<p>product value chains</p>	<p>Results from the RIA of five animal source food (ASF) value chains - Egypt (fish), Ethiopia (sheep and goats), Tanzania (dairy), Uganda (pigs), and Vietnam (pigs) – released as a series of papers with <b>one product developed specific to gender findings</b></p> <p>Evaluation of past food safety research and plans for accelerating this research area conducted and reported; theory of change and impact pathways developed</p> <p><u>Outcome:</u></p> <p>Experiences with the development and application of the RIA used to develop a methodology with WHO and FAO for identifying pilot interventions for food safety and nutrition, taking into account gender and equity in decision-making; pilot tests designed and implemented</p>	
	<p><i>3.3 Reduce risk of zoonotic and emerging infectious diseases (EID) associated with agriculture</i></p>	<p><i>This cluster looks at disease risks to humans in both intensifying and neglected agricultural systems.</i></p> <p><b>Locations:</b> Benin, Burkina Faso, Ghana, Kenya, Nigeria, Senegal, Sierra Leone, Tanzania, Togo, Zambia, Zimbabwe, Southeast Asia</p> <p><b>Methods:</b> Participatory epidemiology and appraisals, surveillance in animals and humans</p> <p><b>Gender research dimension:</b> Gender-disaggregated data on disease burden is</p>		<p><i>\$2.5 Million</i></p>

		<p>collected and reported</p> <p><b>Objectives:</b></p>		
		<p>1. Measure and map the multiple burdens of zoonoses and EID and their consequences.</p>	<p><u>Outputs:</u></p> <p>Reports and briefs disseminated on the relationship between livestock keeping, livestock health, emerging markets, poverty, and zoonoses in five countries in East and West Africa</p> <p>Report on contribution of Anopheles species in the transmission of malaria published with map of susceptibility of Anopheles species to insecticides for various agro-ecological zones in Benin and neighbouring countries</p> <p><u>Outcome:</u></p> <p>Updated maps of Rift Valley fever (RVF) in East Africa in combination with summary reports on better estimates of health and socio-economic impacts published and incorporated into decision-making systems used by veterinary and health services in Kenya.</p>	
		<p>2. Predict, prepare for, and prevent disease emergence from agro-ecosystems.</p>	<p><u>Output:</u></p> <p>Results of pathogen hunting and surveillance activities reported in papers on: genetic diversity of <i>Brucella</i> in Africa and emergence of Ebola in Uganda in response to rapidly intensifying pig farming</p>	

		<p>3. Improve control of zoonoses and EID by promoting approaches that are risk-based and oriented towards OneHealth/Ecohealth.</p>	<p><u>Output:</u></p> <p>Papers and briefs covering research on changes in knowledge, attitude and practices and cost and benefits of uptake of Ecohealth approaches in health service delivery in Southeast Asia disseminated to key stakeholders identified during the <i>EcoZD</i> project</p> <p><u>Outcome:</u></p> <p>National teams and Ecohealth Centers produce research outputs based on EcoZD approaches toward better health for people, animals and the environment and use these in their support to government policies and programs.</p>	
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FOR REFERENCE ONLY Level as described by OCS	Level of organisation within the CRP	Description of planned key activities at each level of internal organisation	Expected results of planned key activities	Planned budget (\$ 000s)
<p><b>Level 3: Theme, and Level 4: outcomes</b></p>	<p><b>Level n-1: 4. Integrated Programs and Policies</b></p>	<p><i>This research area provides high-quality evaluative research to support nutrition-sensitive development partners more broadly as well as nutrition-sensitive agriculture more specifically. Research is done collaboratively, usually within the programs of development partners including governments, international agencies, NGOs and development banks. Gender research is fully integrated into all research.</i></p>	<p><i>IDO, for improved diet quality, empowerment of women and poor communities and better cross-sectoral policies are served by this research. There is a solid portfolio of medium-term (2012-16) evaluative studies to provide evidence for development partners and investors at various stages of completion. In 2014 a new activity will be to assess the potential for how this research can catalyse at scale expanding efforts by a variety of development partners, investors and policy makers.</i></p>	<p>\$15.4 Million (\$4.6 M from W1/2)</p>

<b>Level 5: outputs</b>	<b>Level n-2: Cluster of activities</b> 4.1 Evaluation of nutrition-sensitive agriculture	<p><i>This research cluster focuses on evaluation of nutrition-sensitive agriculture interventions with development partners on the 1000 days target (pregnant women and children up to 2 years).</i></p> <p><b>Location:</b> Burkina Faso, India, Ghana, Uganda, Zambia, Mozambique, Malawi, and Swaziland</p> <p><b>Methods:</b> Secondary data analysis, nutritional assessments, impact evaluation</p> <p><b>Gender research dimension:</b> Analyses of women’s empowerment and gender inequities and associated impact on undernutrition.</p> <p><b>Objectives:</b></p>		\$4.4 Million
		<p>1. What is the impact of strengthening agriculture and nutrition linkages</p>	<p><u>Outcome:</u></p> <p>Helen Keller International and partners strengthen the Impact and sustainability of the Burkina Faso homestead food production program approach. This should have spill over effects for children born after the implementation of the program.</p>	
		<p>2. Strengthen partnerships, results and innovations to improve nutrition globally</p>	<p><u>Outcome:</u></p> <p>Framework and analysis of how development implementers take up and use research and evaluation results in their nutrition-sensitive development programing</p>	



		<p>3. How can agriculture practices be leveraged to improve nutrition outcomes.</p>	<p><u>Output:</u> Discussion Paper/Policy Note on role of seasonality in relation to agriculture-nutrition linkages in Uttar Pradesh, India.</p> <p><u>Outcome:</u> <b>50 women groups empowered to extend orange flesh sweet potato vines as vine multipliers, nursery owners and home gardeners.</b></p>	
	<p><i>4.2 Evaluation of broader nutrition-sensitive and direct nutrition development sectors</i></p>	<p><i>This research cluster focuses on evaluation of broader nutrition-sensitive development interventions with development partners on the 1000 days target (pregnant women and children up to 2 years).</i></p> <p><b>Locations:</b> Sub-Saharan Africa, Central Asia, Guatemala, Burundi, Rwanda</p> <p><b>Methods:</b> Program evaluation, bio-economic modelling, cost-effectiveness evaluation, vitamin A status</p> <p><b>Gender research dimension:</b> Program impact evaluations on maternal nutrition and health and child feeding/care practices.</p> <p><b>Objectives:</b></p>		<p><i>\$6 Million</i></p>

		<p>1. What is the impact of integrated approaches on infant and young child feeding</p>	<p><u>Output:</u></p> <p>Evaluation of social protection and direct nutrition interventions in Ethiopia and Bangladesh</p> <p>Final report on the Prevention of Malnutrition in Under-Two Approach (PM2A) operations research in Burundi. <b>PM2A focuses on prevention of malnutrition through a combination of maternal and child rations and behaviour change communication.</b></p> <p><u>Outcomes:</u></p> <p>Concern International and its local implementing partners use the process evaluation of the Realigning Agriculture and Nutrition (RAIN) project in Zambia to improve their agriculture interventions to increase availability and access to good-quality foods at household level and to optimise health through behaviour change communication on nutrition and health practices. Farmers have adopted and used orange flesh sweet potato in the Cohort for Vitamin A Study (linked to Mama SASHA).</p>	
		<p>2. How cost effective are these approaches</p>	<p><u>Outcome:</u></p> <p><b>Ante-natal care services in Rwanda use cost-effectiveness studies to improve and expand the delivery of orange-fleshed sweet potato to pregnant women in Rwanda.</b></p>	
		<p>3. Generate knowledge on program/sectoral impact pathways</p>	<p><u>Output:</u></p> <p>Three manuscripts produced: A framework for a suite of indicators and/or the composite index to measure sustainable diets; the process, results and outcomes of the Delphi method; and a bio-economic model for sustainable diets.</p>	

	<p>4.3 Enable cross-sector policy analysis, formulation and implementation</p>	<p><i>This research cluster focuses on improving understanding and generating evidence of how policy makers and investors can enable nutrition-sensitive development and influence relevant policy processes. It builds on partnership platforms in two target regions, South Asia (Leveraging Agriculture for Nutrition in South Asia (LANSA), Transform Nutrition and support to Scaling Up Nutrition (SUN)) and Africa (Transform Nutrition and support to strengthening nutrition in CAADP and SUN) and support other A4NH research areas in achieving their policy-related outcomes.</i></p> <p><b>Locations:</b> Bangladesh, India, Pakistan, Afghanistan, Ethiopia, Kenya, Uganda, Rwanda</p> <p><b>Methods:</b> Mapping exercises, political economy analyses, econometric analysis, capacity assessment, case studies.</p> <p><b>Gender research dimension:</b> Research on women’s empowerment, gender inequality and trends over time.</p> <p><b>Objectives:</b></p>		<p>\$5 million</p>
<p>1. Enabling environment: Generating knowledge, developing capacity and investigating approaches to cultivate and sustain enabling environments for leveraging agriculture for nutrition and health.</p>	<p><u>Outputs:</u></p> <p>Report on relative importance of agriculture and other sectors in determining child nutrition outcomes in South Asia</p> <p>Report on the relationships between income, agricultural production, diets, anthropometrics in Bangladesh</p>			

		<p>Analysis of DHS data on <b>the relationship between measures of how women’s empowerment and undernutrition has changed over time.</b></p> <p>Analysis of cross-country data to examine the <b>relationship between gender inequalities and undernutrition.</b></p> <p>“How-to guide” for developing cross-sectoral policy frameworks to guide investment in food and nutrition security (FAO collaboration)</p> <p>Paper on how enabling factors influence the relationship between agricultural production, productivity growth and nutritional outcomes in India</p> <p>Assessment of the status of nutrition leadership and institutional capability in Bangladesh, India, Kenya and Ethiopia.</p> <p>Report on how the policy environment towards sweet potato and orange-fleshed sweet potato has evolved in Rwanda.</p>	<p>Analysis of DHS data on <b>the relationship between measures of how women’s empowerment and undernutrition has changed over time.</b></p> <p>Analysis of cross-country data to examine the <b>relationship between gender inequalities and undernutrition.</b></p> <p>“How-to guide” for developing cross-sectoral policy frameworks to guide investment in food and nutrition security (FAO collaboration)</p> <p>Paper on how enabling factors influence the relationship between agricultural production, productivity growth and nutritional outcomes in India</p> <p>Assessment of the status of nutrition leadership and institutional capability in Bangladesh, India, Kenya and Ethiopia.</p> <p>Report on how the policy environment towards sweet potato and orange-fleshed sweet potato has evolved in Rwanda.</p>	
		<p>2. Agri-food policy: Identifying approaches to improve cross-sector knowledge, capacity and processes for strengthening the nutrition-sensitivity of agri-food policy.</p>	<p><u>Outputs:</u></p> <p>With the Policies, Institutions and Markets CRP – develop, validate and disseminate guidelines and lessons on how researchers can engage in and influence outcomes of cross-sector policy processes.</p> <p>Country policy case studies on approaches to leveraging agriculture for nutrition and health in 6</p>	

			<p>countries: Kenya, Ethiopia, Uganda, India, Pakistan and Bangladesh*(see below)</p> <p><u>Outcomes:</u></p> <p>Cross-sectoral national policy platforms for mainstreaming agricultural biodiversity into nutrition, health and education programmes in Brazil, Kenya, Sri Lanka, Turkey.</p> <p>System CRPs begin benchmarking the degree and type of nutrition and health mainstreaming in their programs and utilize common diet diversity indicators for monitoring.</p>	
		<p>3. Scaling-up impact: Learning how to scale up nutrition- and health-sensitive agri-food actions and approaches at the country-level.</p>	<p><u>Outputs:</u></p> <p>Evidence review “scaling up nutrition: what and how?” including an operational framework to guide future evaluations as well as to support design of scale up strategies</p> <p>Draft reports on 103 country level “stories of change” aimed at systematically documenting the drivers and processes behind successful country-level attempts to accelerate rates of stunting reduction via nutrition-specific and nutrition-sensitive interventions (including agri-food policy and programs). (Links with * above)</p>	

**Table 2 – Planned CRP gender research budget: expected gender research results and associated budget**

Level of organisation within the CRP	Expected Gender research results as described in Table 1	Planned gender research budget (\$ 000s)
<p><b>Level n-1: Flagship Projects that contribute to the CRP gender IDO and if relevant other IDOs that have a gender dimension</b></p> <p><i>Use one row per Flagship (same numbering system as in Table 1) and indicate for each Flagship the type of expenses concerned (e.g., capacity strengthening in gender research, collaboration with other CRPs,...) so it is clear there is no double counting with funds in the Clusters of activities below</i></p>	<p><i>Expected progress toward the CRP’s gender IDO and if relevant other IDOs that have gender equity dimension. Indicate, where relevant, the geographical areas of focus</i></p>	<p><i>Indicate the funds planned for gender research in each Flagship, which are <u>in addition</u> to the funds in the Clusters of activities. No double counting please.</i></p>
3. Agriculture Associated Diseases	Literature reviews (2) on gender issues in the impact pathways for aflatoxins and food safety of perishable, high-value products	\$40,000
<b>Cross-CRP gender activities</b>	Training and capacity building of national partners in the area of gender and nutrition led by Helen Keller International in partnership with A4NH	\$50,000
	<p>Commissioned papers (2) on “frontier” areas of gender in agriculture, nutrition, and health or case studies on possible topics:</p> <ul style="list-style-type: none"> <li>- Measuring women’s decision-making: indicator choice and survey design experiments from transfer evaluations in Ecuador, Uganda and Yemen</li> <li>- Cross-country paper on the women’s time use and nutrition using WEAI data (TBD)</li> <li>- Joint paper with LCIRAH on women’s time use and ANH (TBD)</li> </ul>	\$40,000
	Regional participatory cassava value chain maps focused on understanding the role of women in the expanding cassava value	\$200,000

	chains in Nigeria; work lead by SLU in partnership with A4NH with funding from FORMAS (Sweden) and A4NH.	
	Reports (2) on indicators for gender in each of the A4NH impact pathways (TBD) <ul style="list-style-type: none"> <li>- These are short summaries of “baseline” values of current indicators for target countries. It will draw from existing datasets and studies</li> </ul>	\$40,000
	Gender training event to build capacity for gender research and analysis in other CRPs that collaborate closely with A4NH	\$30,000
	Reports (2) on capacity building activities related to gender research and analysis in other CRPs and partners that collaborate closely with A4NH	\$40,000
	Online toolkits (2) for addressing gender in ANH programs and indicators for addressing gender in A4NH research	\$10,000
	Support to integration of gender in A4NH research projects	\$100,000
<p><b>Level n-2: Cluster of activities</b>  Use one row per relevant Cluster of activities  For instance:  Cluster of activities 1.3 (title)</p>	<p><b>Expected research outcomes and outputs that have a gender/equity dimension</b> (from Table 1).</p> <ul style="list-style-type: none"> <li>o Gender research outcome 1.3.a : (title)</li> <li>o Gender output 1.3.b: (title)</li> </ul> <p>.....</p>	<p>Indicate the funds planned for gender research in Cluster 1.3, to produce all the research outcomes and outputs listed for this Cluster</p> <p>NOTE – gender research is integrated in the A4NH research portfolio. To estimate gender research budgets we use the budget estimation method in the approved A4NH gender strategy</p>
1.1 Assessments of nutrition quality of value-chains	1.1.a: Alternative mechanisms for improving nutrition and food safety in Home-Grown School Feed Programs in Mali, Ghana and Kenya including linking to stakeholders including women’s groups. 1.1.a: Final paper on markets, determinants of nutrition and education, and food consumption analysis.	\$40,000
1.2 Development of value-chains to deliver better nutrition	1.2.a: Women in Bangladesh use fish-based foods for improved maternal and child nutrition.	\$35,000

	1.2.a: Fish-based food products for women and complementary feeding developed, marketed and acceptance analysed in Bangladesh	
<i>2.1 High-yielding micronutrient enhanced varieties made available to NARES and implementing partners in target countries</i>		\$50,000
<i>2.2 Nutrition and health communities promote biofortified crops of demonstrated nutritional efficacy</i>	2.2.a: Report on the dietary and nutrition status of women and children in DRC & Rwanda in relation to the release of high iron beans. 2.2.b: The dietary status of women and children are impacted by the release of high iron beans in target countries.	\$250,000
<i>2.3 Delivery programs establish progress in which farmers adopt and consumers eat biofortified varieties in target countries</i>	2.3.a: Gender approaches will improve adoption of biofortified crops and improve micronutrient status of women and children 2.3.a: Gender assessment will develop tools to help identify gender issues, show how to increase impact through examining gender constraints and opportunities, recommend how to apply lessons learned, identify a set of indicators to monitor the effect of addressing gender issues on outcomes and impact, and guidelines for expanding, replicating what has been learned. (Target countries: Zambia, Nigeria, Rwanda and Uganda)	\$400,000
<i>3.1 Improve food safety through aflatoxin prevention and treatment methods.</i>	3.1.a: Female farmers increase their knowledge and use of aflatoxin management technologies. 3.1.a: 1000 farmers trained on technologies to manage aflatoxin contamination – 50% female farmers.	\$200,000
<i>3.2 Improve methods for food safety of perishable high-value products.</i>	3.2.a: Gender issues are better understood in the area of food safety in informal markets. 3.2.a: Paper on gender dimensions of multi-year research on food safety in informal markets published in <i>Ecohealth</i> special issue 3.2.a: Better understanding of differences disaggregated by gender for ASF value chains.	\$500,000



	3.2.a: Paper specific to gender findings from the RIA of five animal source food (ASF) value chains - Egypt (fish), Ethiopia (sheep and goats), Tanzania (dairy), Uganda (pigs), and Vietnam (pigs)	
<i>3.3 Reduce risk of zoonotic and emerging infectious diseases (EID) associated with agriculture</i>	3.3.a: Difference in disease burden by gender is better understood. 3.3.b: Gender-disaggregated data on disease burden is collected and reported.	<i>\$200,000</i>
<i>4.1 Evaluation of nutrition-sensitive agriculture</i>	4.2.a: Improving the nutrition and empowerment of women through orange flesh sweet potato (OFSP) usage. 4.2.b: OFSP crops extended to vulnerable communities through USAID Democracy and Governance projects. (Target 200 women and children). Empower 50 women (who have survived trafficking) as OFSP vine nursery owners/growers.	<i>\$2,200,000</i>
<i>4.2 Evaluation of broader nutrition-sensitive and direct nutrition development sectors</i>	4.2.a: When women receive BCC and rations per the PM2A malnutrition in children is prevented. 4.2.a: Final report on the Prevention of Malnutrition in Under-Two Approach (PM2A) operations research in Burundi. PM2A focuses on prevention of malnutrition through a combination of maternal and child rations and behaviour change communication. 4.2.a: Report on cost-effectiveness of linking orange-fleshed sweet potato to ante-natal care services for pregnant women in Rwanda. 4.2.b: Linking OFSP to ante-natal care decreases health care costs.	<i>\$3,000,000</i>
<i>4.3 Enable nutrition-agriculture policy development</i>	4.1.a: Understanding the role of women's empowerment on undernutrition. 4.1.a: Analysis of DHS data on the relationship between measures of how women's empowerment and undernutrition has changed over time. 4.1.a: Understanding the role of gender inequality on undernutrition.	<i>\$2,500,000</i>

	4.1.a: Analysis of cross-country data to examine the relationship between gender inequalities and undernutrition.	
	<b>TOTAL GENDER BUDGET FOR THE CRP (SUM OF ALL CELLS ABOVE)</b> <b>\$9,950,000</b>	