



**RESEARCH
PROGRAM ON
Agriculture for
Nutrition
and Health**

Led by IFPRI

**2019
PLAN OF WORK AND BUDGET**



A4NH is led by the International Food Policy Research Institute and managed by six additional partners: Bioversity International, the International Center for Tropical Agriculture, the International Institute of Tropical Agriculture, the International Livestock Research Institute, the London School of Hygiene and Tropical Medicine, and Wageningen University and Research.

Our five flagships are led by: Wageningen University and Research (Flagship 1); HarvestPlus (Flagship 2); International Livestock Research Institute (Flagship 3); International Food Policy Research Institute (Flagship 4); and International Livestock Research Institute and the London School of Hygiene and Tropical Medicine (Flagship 5).



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A4NH Plan of Work and Budget for 2019

Submitted to the System Management Office on January 15, 2019

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1 Adjustments/Changes to our Theories of Change

At CRP level, A4NH's results framework remains unchanged from our [Full Proposal for Phase II](#). The results framework (Figure 1.2 in the Full Proposal) describes our impact pathways, reflecting the different ways in which A4NH research activities and outputs, including knowledge, technologies, capacity, and stakeholder engagement, contribute to outcomes in food systems. In some cases, A4NH research provides value chain actors with technologies and capacity to enhance and protect the nutritional content of foods, while mitigating key food safety risks (agri-food value chains pathway). We also provide evidence and tools to development implementers to increase the effectiveness of their nutrition- and health-sensitive agricultural programming (development programs pathway). Finally, we support governments and donors to provide an enabling environment and create better-informed, better-targeted, and better-implemented policies (policies pathway). Value chains, policies and programs are key components of the food system, and while we seek to have impact through individual pathways, it is always with an eye toward how the changes in the pathway(s) will influence the system as a whole. The three food system pathways are mutually reinforcing, with the policy pathway underlying and sustaining the other two.

As part of our learning agenda, each flagship reassesses the evidence and assumptions in its theory of change and makes minor adjustments. Where theories of change for specific impact pathways were missing or not yet fully developed, flagships have added or improved upon these. In most cases, these new and/or improved impact pathways are synonymous with a cluster of activity within the flagship. The current set of theories of change for A4NH have been compiled into a single document and posted to our [website](#). In Section 2, some flagships elaborate on cases where they will be reexamining their theories of change in 2019.

In the 2018 Plan of Work and Budget, we described the additional 2022 outcomes that were added by Flagship 1 (Food Systems for Healthier Diets) and Flagship 5 (Improving Human Health). Nearly all A4NH flagships have made minor revisions to the wording of their 2022 outcomes since the proposal, which have been included in footnotes with Table 2A (Planned Milestones) here in the 2019 Plan of Work and Budget. With increased emphasis on annual milestones and in response to the additional guidance provided with the 2019 Plan of Work and Budget, A4NH added several new milestones and re-worded several others. This was a positive result of an A4NH-wide initiative to improve our milestones, so they are more useful in communicating incremental progress along our impact pathways to external audiences.

2 Plans and Expected Progress Towards Outcomes

In 2019, the focus of **Flagship 1 (Food System for Healthier Diets)** will be to identify, with stakeholders, entry points for food system intervention in each focus country (Bangladesh, Ethiopia, Nigeria, and Viet Nam), based on food systems reviews, analysis of dietary gaps, and foresight analysis. Together with stakeholders in each country, we will address research gaps regarding the understanding of food environments, the role of youth in food systems, global and locally applicable diet quality indices, the role of processed foods in food systems and diets, and rural-urban linkages and governance in (informal) urban food systems. To better assess food system sustainability, 'source to sink' footprints will be documented along the life cycle of key foods in Ethiopia and Viet Nam.

Based on the diagnosis and foresight results, activities to design, implement and evaluate food systems interventions that would promote healthier diets in different settings will continue, with focus on aspects of production, supply, food environment and consumer demand relevant to nutritious foods like fruits, vegetables, fish, poultry, and pulses. Experiences will be reflected in a conceptual paper on

innovations and then applied to develop tools for designing further interventions and innovations. Special attention will be given to public-private partnerships following strategies developed in collaboration with the Global Alliance for Improved Nutrition (GAIN) in Bangladesh, Ethiopia and Nigeria.

In 2019, engagement with policy and decision makers, will receive more emphasis. Research methods will include participatory scenario activities, analysis of consumer behavior linked to food transformation and retail policies, and assessments of multi-stakeholder platforms. A food system policy analysis framework and initial studies will be developed with IFPRI country strategy support programs in Bangladesh, Ethiopia, and Nigeria. Initial results will contribute to a cross-country learning framework that can be used by national stakeholders to systematically include research results and lessons into on-going decision making.

In **Flagship 2 (Biofortification)**, HarvestPlus has successfully completed its third phase, which was externally evaluated in 2018. Now, HarvestPlus will pivot towards research that will enable wider and more sustained access to biofortified commodities, a strategic process described in the [CGIAR Five-Year Biofortification Strategy for 2019-2023](#) which is part of the CGIAR System Three-Year Business Plan for 2019-2021. The aim will be to support delivery at scale (Pillar 1, HarvestPlus' role in A4NH) including showing how micronutrient breeding can be increasingly mainstreamed by CGIAR breeding centers (Pillar 2) and improved crop varieties scaled at national and international levels by delivery partners (Pillars 3 and 4).

- Launch of the [Biofortification Prioritization Index 2.0 \(BPI 2.0\)](#) tool for prioritization of biofortification investments;
- Partnership with CIP's orange fleshed sweet potato program to align the theories of change from HarvestPlus and CIP to generate a single theory of change for biofortification and to share tools/lessons learnt, indicators and metrics of success and tools for measuring these (W1/W2 funds from A4NH are being allocated to support these activities);
- New partnership with GAIN to extend the biofortification theory of change (developed with CIP) and framework to include commercialization/scale up activities for biofortified crops in six countries;
- Publication of adoption (outcome) study for zinc rice in Bangladesh, and of effectiveness (adoption [outcome] and nutrition impact) study for iron beans in Guatemala;
- Publication of various lessons learnt documents including those on developing and implementing gender-sensitive and equitable delivery models, capacity building, and public and private sector engagements; and
- Finalization of the tool and documentation on estimating the number of households (and people) reached with biofortified crops.

Within **Flagship 3 (Food Safety)**, under the Evidence that Counts cluster of activity, two special editions will be published covering food safety and dairy, the 2018 special edition on leveraging value chains for health outcomes will be disseminated, more than 20 chapters on food security and sustainability for an Elsevier encyclopedia will be completed, and two high-level publications in *The Lancet* are planned. There will be widespread dissemination of the 2018 food safety report led by the World Bank and launch of the report led by the Global Food Safety Partnership (GFSP), co-authored by A4NH. Several pilot-scale experimental and observational studies will be underway regarding management of food pathogens, aflatoxins and antimicrobial residues. Situational analyses of food safety in Bangladesh, Tanzania and Kenya will be completed and shared.

Major projects to evaluate interventions to improve food safety in wet markets will continue in Cambodia, Kenya, Viet Nam and India and three new projects will be launched in Ethiopia and Kenya. These will evaluate the core hypothesis: improving food safety in wet markets requires three elements (i) effective consumer demand; (ii) capacity building and incentivizing value chain actors; and (iii) an enabling regulatory environment. We will be supporting the development of the first Food Safety Index to be implemented by the African Union, which will obligate member states to report on improved accountability for food safety. We will also contribute to a plan for the first [Global Burden of Animal Diseases program](#).

The Aflatoxin Mitigation cluster of activity will release the final report from [AgResults](#), a business-led approach to Aflasafe promotion, which will include key findings on impact and sustainability. Aflasafe will be registered in Mozambique, Malawi and Tanzania and licensed to the private sector in Ghana, Mozambique, Kenya and Tanzania. Efficacy trials will be conducted in Mali, Rwanda, and Pakistan. The Senegal plant for production of Aflasafe will be operational, and farmer uptake will be supported in four countries through the use of demonstration trials. A synthesis paper on aflatoxins will be prepared by all three managing partners in Flagship 3: IFPRI, IITA and ILRI.

Using W1/W2 funds, a food safety scientist will be recruited in 2019 who will support learning across clusters of activities and managing partner institutions and validation of the flagship's theory of change.

Flagship 4 (Supporting Policies, Programs and Enabling Action through Research [SPEAR]) will continue to strengthen the evidence base on multisectoral solutions for improving nutrition and health, with an emphasis on agri-food systems. Evaluations of several agriculture-nutrition programs are on-going (Table 2B). SPEAR has developed many collaborations, including a partnership with the World Food Programme (WFP) to ensure their approach to enhancing program nutrition-sensitivity is evidence-based and innovative. Through this partnership, [Unlocking WFP's Potential: Guidance for Nutrition-Sensitive Programs](#) was developed in 2017. Funds from W1/W2 will be used to conduct a baseline that will enable a future evaluation of WFP's Food Assistance for Assets program in Zimbabwe. The results will be used to improve WFP's nutrition-sensitive programming while informing the larger evidence base.

In 2019, in support of nutrition policy and programming in West Africa, several research outputs from the Transform Nutrition West Africa initiative will be published and disseminated. SPEAR will also begin recently-funded activities related to priority topics set forth in the proposal: adolescent nutrition, nutrition in urban settings, and the double burden of malnutrition. In two cities in Burkina Faso, researchers will map and characterize the food environment to which adolescents are exposed and assess its impact on their dietary intake. Research from high-income countries has indicated that adolescents can accurately self-report their dietary intake; this will be validated in a low-income setting in Burkina Faso by comparing the 24-hour dietary recall method to weighed observations. Using W1/W2 funds, SPEAR will start new work on 'Stories of Challenge' - applying a similar, mixed methods, country-focused approach as has been used for [Stories of Change](#) - to understand the drivers and potential responses to the double burden of malnutrition in 4-5 countries.

Following diagnostic work and the first Functional Capacity Retreat organized jointly with the Scaling Up Nutrition (SUN) Movement Secretariat, Nutrition International, PATH and MQ-SUN, for SUN and Comprehensive Africa Agriculture Development Programme (CAADP) focal points a self-evaluation tool will be developed and tested in 2019.

Flagship 5 (Improving Human Health) will expand its program substantially in 2019, as activities in LSHTM and ILRI are ramped up, a new antimicrobial resistance (AMR) initiative is launched, and new partnerships are formed around externally funded projects. Fieldwork with Africa Rice will begin in West Africa on building disease management strategies into rice intensification programs, while in East Africa, work with national partners on disease surveillance will be expanded. A synoptic review of the impact of changes in agricultural landscapes on disease will establish areas for future work. Research on zoonotic diseases will progress strategies for control of cysticercosis, brucellosis, Rift Valley Fever and other diseases. Flagship work on surveillance and on diagnostics for zoonoses will move into evaluation of interventions and deeper engagement with national program and policy makers. New research will incorporate gender and equity analysis, and there will be a particular focus on climate change dimensions of agriculture-disease interactions. Work on AMR will be substantially expanded in Africa and Asia, supported by a new program of funding. An AMR research leader will be appointed, using W1/W2 funds, and new research on antimicrobial use, transmission dynamics and interventions to reduce use in livestock systems will be initiated. Evidence on agricultural drivers of vector resistance in West Africa will be used to develop inter-sectoral dialogues, while we will continue more generally to organize and facilitate new meetings of public health and agriculture researchers to develop integrated approaches. Lastly, we will convene stakeholder workshops to review existing knowledge on occupational health in the food system, including impacts of pesticide use, and develop methodologies on how this issue can be studied under Flagship 5 as part of a larger portfolio of work focusing on the health of farmers and others in the food system.

Cross Cutting Activities. A critical role of A4NH in the CGIAR is to foster improved understanding of the quality of diets being consumed and how food supply can improve diet quality. Our proposal ([Annex 3.6](#)) described how we would look at gender-sensitive approaches and options that can both improve food chains through research on food safety, biofortification, and multi-chain food system innovations that can be aligned with value chain research in the agri-food system CRPs. Towards these objectives, A4NH will convene two regional partnership meetings in the first quarter of 2019 to foster collaborations between Flagship 1 and other CRPs and Centers and between CGIAR researchers and the existing nutrition and public health communities partnering with A4NH.

Through the leadership of the Gender Equity and Empowerment (GEE) unit, A4NH will continue work on integrating equity into flagship research by conducting and completing two studies in 2019. One, on youth-specific aspects of food systems change, will be conducted by A4NH strategic partner, the Institute of Development Studies (IDS), along with Flagship 1. The second, a structured review of equity issues in agriculture, nutrition, and health research, will also be conducted by IDS, with Flagship 4. Throughout 2019, the second phase of the Gender, Agriculture, and Assets Project (GAAP2) participating projects will use the project-level Women's Empowerment in Agriculture Index ([pro-WEAI](#)) in their endline surveys and will analyze the data, validate the index, and estimate the impacts of their projects on empowerment. The GAAP2 team will also release guidance documents for computing the pro-WEAI. This tool helps agricultural developmental projects assess women's empowerment in a project setting, diagnose areas of women's disempowerment, design strategies to address deficiencies, and monitor project outcomes.

A CRP-commissioned external evaluation examining the impacts of research conducted by IFPRI from 2004-2016 on nutrition-sensitive agricultural programs, which started in 2018 will be completed, management response prepared, and results disseminated in 2019. This evaluation is being done by two external evaluators, managed jointly by the Monitoring Evaluation and Learning (MEL) unit and IFPRI's Impact Assessment team.

The [2019 Agriculture, Nutrition and Health Academy Week Conference](#) will be held in Hyderabad, India, from June 24-28. A4NH has co-invested with UK Aid, the Leverhulme Centre for Integrative Research on Agriculture and Health (LCIRAH), and the Innovative Methods and Metrics for Agriculture and Nutrition Actions (IMMANA) project to host this annual event for learning and sharing for a growing global research network. The event and the ANH Academy itself support future multi-disciplinary research leaders, in partnership with regional academic institutes and programs.

3_Financial Plan for the Coming Year, Including Use of W1/W2

Overall, we expect A4NH funding to be stable in 2019. We expect lower CGIAR Fund income (W1/W2) but will offset this with carryover funds and W3 and bilateral grants. CGIAR funding remains critical in 2019 for leveraging grants and initiating new research in the larger and more mature flagships. The percentage of CGIAR funding planned for 2019 relative to grant funding reflects the relative stage of research: Flagship 2 (Biofortification) is 90% grant funded; Flagship 4 (SPEAR) is 75% grant funded, with several large multi-year grants; and Flagship 3 (Food Safety) is about 50% grant funded. We expect grant funding to grow in food safety for perishable foods in informal markets and to remain relatively stable for aflatoxin mitigation. The new Phase II flagships continue to grow. Flagship 1 (Food Systems for Healthier Diets) grant funding will experience continued growth in 2019. Flagship 5 (Improving Human Health) grant funding is expected to grow slowly in 2019, but faster in 2020 and beyond.

As the research activities in Phase II are well underway, we took the opportunity to reflect and identify some new opportunities across the portfolio using \$2 million in carryover funding from Phase I. All flagships proposed new research opportunities, which were reviewed by the A4NH Independent Steering Committee and Planning and Management Committee. The selected opportunities are described in Section 2. Some reflect areas of emphasis in the CGIAR System 3-Year Business Plan (2019-2021), including new seed funding from A4NH for research on AMR and support to the evolving CGIAR biofortification strategy. A4NH will play an important role in the development of a CGIAR AMR hub based at ILRI.¹ A4NH will also invest in supporting common monitoring and evaluation methodologies across two major streams of biofortification grant funding from A4NH and CIP. Other areas of additional CGIAR funding investment in 2019 will include a partnership on nutrition-sensitive programs with WFP; an evolution of the ‘stories of change’ in nutrition approach to ‘stories of challenge’; and expanding food safety research to accelerate analyses of lessons learned and cross-project synthesis. In food systems, the initial emphasis on descriptive analyses and coordination with national planning and implementation will be supplemented by innovations for resource-smart urban food supply chains and anchoring food system innovations within national and sub-national food systems.

Work in the five A4NH focus countries (Bangladesh, Ethiopia, India, Nigeria, and Viet Nam) will continue with some additional investment in 2019 in gaps identified with national partners. CGIAR funding will also be used to support CGIAR partnerships: two convenings on linking CGIAR agri-food systems research into A4NH food systems for healthier diets. We are also exploring joint projects with the cereal CRPs on food processing, the first being a joint project with the CRP on Wheat.

¹ The proposed CGIAR participants in the AMR hub are: ILRI, IFPRI, IWMI, and WorldFish. Hub activities will contribute to both A4NH and the CRP on Livestock, with the CRPs on Fish and WLE potentially in the future.

Table 2A: Planned Milestones

FP	Mapped to Sub-DOs	2022 FP Outcomes	Milestones	Degree of Change since Proposal	Means of Verification	CGIAR Cross-Cutting Markers for the Milestone				Assessment of Risk to Achieve that Milestone	For Medium/High, the main risk:
						Gender	Youth	CapDev	ClimCh		
FP1	<ul style="list-style-type: none"> • CC Enhanced institutional capacity of partner research organizations • CC Increased capacity for innovations in partner research organizations 	Outcome 1.1 Partners and other CRPs incorporate nutrition, health and gender in agri-food value chains and food systems programs	Leverage points for improving diet quality and food system linkages, identified from 2017-18 food systems analyses and consultations, are used by focus country teams to identify gender sensitive interventions in Bangladesh, Ethiopia, Nigeria, and Viet Nam	Reworded from proposal	Research findings by (inter)national partners are presented in scientific conferences/country stakeholder meetings (e.g. ANH Academy, reports of country stakeholder workshops); reports from participatory scenario analysis workshops completed for at least two focus countries; nationally agreed upon technical recommendations for sustainable food-based dietary guidelines in Ethiopia; and review of program uptake for evidence	1	1	1	1	Low	
			Portfolio of methods and tools for food systems-diets diagnosis, foresight and scenario analysis is available for use by researchers from relevant CRPs and (local) research institutes	Reworded from proposal	Annual reporting from partners, citations in reports and publications; research reports of partners across the four focus countries integrated diet-related outcomes in the food systems foresight and scenario analysis; indicator compendium available in open access; methodology paper on dietary gap analysis published in peer-reviewed journal; briefs on dietary gap analysis for four key countries disseminated	1	1	1	1	Low	
FP1	<ul style="list-style-type: none"> • Increased availability of diverse nutrient-rich foods • Increased access to diverse 	Outcome 1.2 ² Partners, including value	Partners in the four focus countries, including value chain actors, are aware and	New	Workshop reports; online workshop summary; briefs on innovations	0	0	1	N/A	Low	

² For the 2018 POWB, one sub-IDO was removed ('diversified enterprise opportunities', linked to the IDO on 'increased incomes and employment' under SLO1) from Outcome 1.2. Flagship 1 was the only flagship contributing to this sub-IDO so this means A4NH does not contribute to this sub-IDO. One sub-IDO was added ('enhanced individual capacity in partner research organizations through training and exchange', linked to the cross-cutting IDO on 'national partners and beneficiaries enabled' under capacity development) for the fourth outcome that was added. Outcome 1.4 was added in 2018; all of its annual milestones are new since the proposal.

FP	Mapped to Sub-IDOs	2022 FP Outcomes	Milestones	Degree of Change since Proposal	Means of Verification	CGIAR Cross-Cutting Markers for the Milestone				Assessment of Risk to Achieve that Milestone	For Medium/High, the main risk:
						Gender	Youth	CapDev	ClimCh		
	nutrient-rich foods • Optimized consumption of diverse nutrient-rich foods	chain actors, use evidence from impact evaluations when making operational and investment decisions	have improved understanding of linkages between diets and value chain interventions in food system context, based on evidence provided.								
FP1	<ul style="list-style-type: none"> Increased availability of diverse nutrient-rich foods Increased access to diverse nutrient-rich foods Optimized consumption of diverse nutrient-rich foods CC Improved capacity of women and young people to participate in decision-making CC Enhanced institutional capacity of partner research organizations 	Outcome 1.3 Public-private partnerships formed to promote implementation of A4NH strategies for agri-food value chain/food system innovations	Guidance note on areas of focus for businesses to promote food systems for healthier diets (based on FP1 analyses) published online and disseminated in workshops with private sector partners in 2 of the 4 focus countries	New	Workshop reports and results from evaluation; online reports of the public-private partnership projects	0	0	1	0	Low	
FP1	<ul style="list-style-type: none"> CC Improved capacity of women and young people to participate in decision-making CC Conducive agricultural policy environment CC Enhanced institutional capacity of partner research organizations CC Enhanced individual capacity in partner research organizations through 	Outcome 1.4 ³ Key partners, stakeholders, and institutions (including national and local policy makers, private sector, consumer organizations, and other CRPs)	10 stakeholders engage in participatory scenario analysis in at least 2 focus countries	New	Program monitoring and reporting	1	1	1	1	Low	
			Key platforms for Healthier Diets identified, and collaborative activities started in at least 2 of the 4 focus countries	New	Program monitoring and reporting	0	0	1	0	Low	

³ For the 2018 POWB, one sub-IDO was removed ('diversified enterprise opportunities', linked to the IDO on 'increased incomes and employment' under SLO1) from Outcome 1.2. Flagship 1 was the only flagship contributing to this sub-IDO so this means A4NH does not contribute to this sub-IDO. One sub-IDO was added ('enhanced individual capacity in partner research organizations through training and exchange', linked to the cross-cutting IDO on 'national partners and beneficiaries enabled' under capacity development) for the fourth outcome that was added. Outcome 1.4 was added in 2018; all of its annual milestones are new since the proposal.

FP	Mapped to Sub-DOs	2022 FP Outcomes	Milestones	Degree of Change since Proposal	Means of Verification	CGIAR Cross-Cutting Markers for the Milestone				Assessment of Risk to Achieve that Milestone	For Medium/High, the main risk:
						Gender	Youth	CapDev	ClimCh		
	training and exchange • CC Increased capacity for innovations in partner research organizations	are effectively implementing the evidence and lessons learned at scale in their food system related strategies and policy agenda									
FP2	• Increased availability of diverse nutrient-rich foods	Outcome 2.1 ⁴ High-yielding micronutrient enhanced varieties developed and released in priority countries	Three HarvestPlus Phase 1 ('target') countries release third-wave of at least five tier 1 crop varieties	Reworded from proposal	Head of crop development, annual reporting from CGIAR partners, NARS, and national release committees	1	1	1	1	Low	
FP2	• CC Increased capacity of partner organizations, as evidenced by rate of investments in agricultural research • CC Enhanced institutional capacity of partner research organizations	Outcome 2.2 Biofortification mainstreamed into CGIAR and NARS breeding efforts	Biofortification projects (target TBD) within CGIAR breeding centers are linked with CGIAR seed system capacity strengthening efforts	Reworded from proposal	Head of crop development, annual reporting from CGIAR partners	1	1	1	1	Medium	Partnership ⁵
			2.5% annual increase in mainstreaming as a percentage of total CGIAR Center efforts for target crop/agroecology	New	Head of crop development, annual reporting from CGIAR partners	1	1	1	1	Low	

⁴ For the 2018 POWB, slight changes to wording of Outcomes 2.1 and 2.3 to reflect terminology being used in the new HarvestPlus strategy (formerly referred to 'target' and 'expansion' countries, now it's 'priority' countries).

⁵ Risk that partners won't be able to deliver a key piece on time.

FP	Mapped to Sub-IDs	2022 FP Outcomes	Milestones	Degree of Change since Proposal	Means of Verification	CGIAR Cross-Cutting Markers for the Milestone				Assessment of Risk to Achieve that Milestone	For Medium/High, the main risk:
						Gender	Youth	CapDev	ClimCh		
FP2	<ul style="list-style-type: none"> • Closed yield gaps through improved agronomic and animal husbandry practices • Increased availability of diverse nutrient-rich foods 	Outcome 2.3 ⁶ High-yielding micronutrient enhanced varieties delivered at scale in priority countries	9 million households in HarvestPlus priority countries growing and consuming biofortified crops	Reworded from proposal	Head of M&E, Monitoring database and reports	1	1	1	1	Low	
FP2	<ul style="list-style-type: none"> • Increased access to diverse nutrient-rich foods • CC Improved capacity of women and young people to participate in decision-making • CC Increased capacity of partner organizations, as evidenced by rate of investments in agricultural research 	Outcome 2.4 Evidence on nutritional efficacy and impact informs value chain actors, as well as national and international investors	3 gender- and equity-sensitive delivery strategies, tested/piloted by HarvestPlus and partners, informed by published evidence on efficacy, adoption and monitoring studies on biofortification	Reworded from proposal	Publications (include gender and equity analysis), Head of Strategy and Policy Research and Head of M&E	1	1	1	1	Low	
			2 decisionmaking tools, incorporating evidence from gender-sensitive iron beans effectiveness study in Guatemala, shared with Government of Guatemala (and others in the region) to help them develop and implement national biofortification programs	Reworded from proposal	Publications (include gender analysis), Head of Nutrition and Head of Strategy and Policy Research	1	1	1	1	Low	
FP2	<ul style="list-style-type: none"> • CC Conducive agricultural policy environment 	Outcome 2.5 Biofortification supported by global institutions and incorporated	Standards for biofortified foods approved by Codex Alimentarius	Identical to proposal	Documentations from the Codex Committee on Nutrition and Foods of Special Dietary Use (CCNFSDU) meeting	0	0	0	0	Low	

⁶ For the 2018 POWB, slight changes to wording of Outcomes 2.1 and 2.3 to reflect terminology being used in the new HarvestPlus strategy (formerly referred to 'target' and 'expansion' countries, now it's 'priority' countries).

FP	Mapped to Sub-IDOs	2022 FP Outcomes	Milestones	Degree of Change since Proposal	Means of Verification	CGIAR Cross-Cutting Markers for the Milestone				Assessment of Risk to Achieve that Milestone	For Medium/High, the main risk:
						Gender	Youth	CapDev	ClimCh		
		into plans and policies by stakeholders	Biofortification included in World Health Organization (WHO) guidelines on micronutrient deficiencies	Reworded from proposal	Publication of the guidelines by WHO/FAO	1	1	1	0	Low	
FP3	<ul style="list-style-type: none"> Reduced market barriers Reduced biological and chemical hazards in the food system Appropriate regulatory environment for food safety CC Gender-equitable control of productive assets and resources CC Increase capacity of beneficiaries to adopt research outputs CC Enhanced institutional capacity of partner research organizations CC Enhanced individual capacity in partner research organizations through training and exchange 	Outcome 3.1 Key food safety evidence users (donors, academics, INGOs, national policymakers, civil society, and industry) are aware of and use evidence in the support, formulation and/or implementation of pro-poor and risk-based food safety approaches	National partners in Cambodia and Viet Nam build capacity and use tools from A4NH to implement gender-sensitive risk-based approaches in managing food safety	Identical to proposal	Tracking (including gender indicators) of implementation of regulations and policy self-assessment reports from country partners.	2	0	1	1	Medium	Partnership ⁷
			A4NH evidence, including gender relevant information, presented at WHO-FAO-AU-IBAR's first international conference on food safety in Addis Ababa	New	Conference proceedings	2	0	1	1	Low	
			Synthesis of evidence on promising technologies and market mechanisms for aflatoxin control presented to policy stakeholders in at least 2 countries (Ghana and Kenya)	New	Workshop proceedings	0	0	1	1	Low	
FP3	<ul style="list-style-type: none"> Reduced market barriers Reduced biological and chemical hazards in the food system Appropriate regulatory environment for food safety CC Gender-equitable control of productive assets and resources CC Increase capacity of 	Outcome 3.2 Market-based food safety innovations delivered at scale in key countries along with understanding of	Food Safety Index for multiple countries in Africa launched by AU-IBAR with technical inputs from A4NH	Reworded from proposal	Food Safety Index publications and supporting guidance	1	0	1	1	Medium	Partnership ⁷
			Traders and policy/regulators in at least two types of value chains (dairy, fish, produce) in at least Kenya, India, Viet Nam, Cambodia, plus more are	Reworded from proposal	Publications describing gender-sensitive guidelines; monitoring reports	2	0	1	0	Low	

⁷ Risk that partners won't be able to deliver a key piece on time.

FP	Mapped to Sub-IDs	2022 FP Outcomes	Milestones	Degree of Change since Proposal	Means of Verification	CGIAR Cross-Cutting Markers for the Milestone				Assessment of Risk to Achieve that Milestone	For Medium/High, the main risk:
						Gender	Youth	CapDev	ClimCh		
	beneficiaries to adopt research outputs <ul style="list-style-type: none"> • CC Enhanced institutional capacity of partner research organizations • CC Enhanced individual capacity in partner research organizations through training and exchange 	their impact and appropriate use	made aware of gender-sensitive guidelines for food safety based on evidence from A4NH Phase I and II								
			Six food safety projects launched to test market-based food safety innovations, all developed using inputs from A4NH food safety research: A4NH leads or co-leads three	New	Launch meeting reports	2	1	1	1	Low	
FP3	<ul style="list-style-type: none"> • Reduced market barriers • Reduced biological and chemical hazards in the food system • Appropriate regulatory environment for food safety • CC Gender-equitable control of productive assets and resources • CC Increase capacity of beneficiaries to adopt research outputs • CC Enhanced institutional capacity of partner research organizations • CC Enhanced individual capacity in partner research organizations through training and exchange 	Outcome 3.3 Biocontrol and GAP delivered at scale in key countries along with understanding of their impact and appropriate use	Aflasafe officially registered in Zambia and Tanzania, making local sale, manufacture, and use of aflasafe feasible	New	Registration dossier containing efficacy data, toxicological and ecotoxicological information; certificate of registration given by the national regulator	0	0	1	0	Low	
			Aflasafe manufacturing and distribution agreement signed between IITA and private sector companies in Ghana and Tanzania	New	Technology Transfer and Licensing Agreement signed by IITA and the private sector companies	0	0	1	0	Low	
			Final report describing analysis and lessons learnt from incentivization of Aflasafe in Nigeria (AgResults initiative project) disseminated to stakeholders	New	Donor report; publication accepted by Agricultural Systems journal	1	1	1	1	Low	
FP4	<ul style="list-style-type: none"> • Increased livelihood opportunities • Increased availability of diverse nutrient-rich foods 	Outcome 4.1 Development program implementers	At least 2 implementing organizations use A4NH's evidence (from Phase 1) of (gendered) impacts and	Reworded from proposal	Tracking of program implementing partners through targeted interviews and reviews of documents on nutrition-sensitive agriculture	1	0	0	0	Medium	Financial ⁸

⁸ Funding not fully confirmed or at risk of being cut.

FP	Mapped to Sub-IDOs	2022 FP Outcomes	Milestones	Degree of Change since Proposal	Means of Verification	CGIAR Cross-Cutting Markers for the Milestone				Assessment of Risk to Achieve that Milestone	For Medium/High, the main risk:
						Gender	Youth	CapDev	ClimCh		
	<ul style="list-style-type: none"> Increased access to diverse nutrient-rich foods Optimized consumption of diverse nutrient-rich foods CC Gender-equitable control of productive assets and resources CC Improved capacity of women and young people to participate in decision-making 	and investors (governments, NGOs, UN institutions) use evidence, tools and methods to design and implement cost-effective nutrition-sensitive agricultural programs at scale	cost-effectiveness in programming of nutrition- and gender-sensitive agriculture programs		programming, investments and best practices						
FP4	<ul style="list-style-type: none"> CC Enhanced institutional capacity of partner research organizations CC Enhanced individual capacity in partner research organizations through training and exchange CC Increased capacity for innovation in partner development organizations and in poor and vulnerable communities 	Outcome 4.2 Researchers and evaluators, including in CGIAR and other CRPs, use evidence, tools and methods to design high-quality evaluations of a range of nutrition-sensitive agricultural and other multisectoral programs, and continue to build evidence	In collaboration with decisionmakers, nutrition-sensitive agriculture and gender programs are designed in 2 more target countries (tbd) with a rigorous evaluation component included	Identical to proposal	Program documentation and targeted interviews	2	0	0	0	Medium	Financial ⁹

⁹ Funding not fully confirmed or at risk of being cut.

FP	Mapped to Sub-IDOs	2022 FP Outcomes	Milestones	Degree of Change since Proposal	Means of Verification	CGIAR Cross-Cutting Markers for the Milestone				Assessment of Risk to Achieve that Milestone	For Medium/High, the main risk:
						Gender	Youth	CapDev	ClimCh		
FP4	<ul style="list-style-type: none"> Increased livelihood opportunities Increased availability of diverse nutrient-rich foods Increased access to diverse nutrient-rich foods Optimized consumption of diverse nutrient-rich foods CC Gender-equitable control of productive assets and resources CC Improved capacity of women and young people to participate in decision-making CC Increased capacity of partner organizations, as evidenced by rate of investments in agricultural research CC Enhanced institutional capacity of partner research organizations CC Increased capacity for innovation in partner development organizations and in poor and vulnerable communities 	Outcome 4.3 Regional, international and UN agencies and initiatives and investors use evidence, tools and methods to inform decisions and investment strategies to guide and support nutrition-sensitive agricultural programming and nutrition-sensitive policies	Regional and international organizations, influenced by new knowledge, demonstrate changes in discourse, attitudes, behaviors, and practices related to cross-sectoral nutrition-sensitive agriculture	Identical to proposal	Annual reporting from partners, content analysis of official policy statements and documents	1	0	1	1	Low	
FP4	<ul style="list-style-type: none"> Increased availability of diverse nutrient-rich foods Increased access to diverse nutrient-rich foods Optimized consumption of diverse nutrient-rich foods CC Enabled environment 	Outcome 4.4 National policymakers and shapers, and stakeholders from different sectors, civil	Engagement of national stakeholders in policy analysis in 3 more focal countries	Identical to proposal	Annual reporting from partners, FP outputs	0	0	1	1	Medium	Partnership ¹⁰

¹⁰ Risk that partners won't be able to deliver a key piece on time.

FP	Mapped to Sub-IDOs	2022 FP Outcomes	Milestones	Degree of Change since Proposal	Means of Verification	CGIAR Cross-Cutting Markers for the Milestone				Assessment of Risk to Achieve that Milestone	For Medium/High, the main risk:
						Gender	Youth	CapDev	ClimCh		
	for climate resilience <ul style="list-style-type: none"> • CC Gender-equitable control of productive assets and resources • CC Improved capacity of women and young people to participate in decision-making • CC Conducive agricultural policy environment 	society and industry use evidence to design effective nutrition-sensitive policies, and ensure quality implementation									
FP4	<ul style="list-style-type: none"> • CC Increase capacity of beneficiaries to adopt research outputs • CC Enhanced institutional capacity of partner research organizations • CC Enhanced individual capacity in partner research organizations through training and exchange • CC Increased capacity for innovations in partner research organizations • CC Increased capacity for innovation in partner development organizations and in poor and vulnerable communities 	Outcome 4.5 ¹¹ Stakeholders from different sectors, governments, UN institutions, civil society and industry, including CGIAR and other CRPs, have improved capacity to generate and use evidence to improve nutrition-sensitive agricultural programming, nutrition-sensitive policymaking	Delivery of 2 trainings and development of 3 tools to enhance cross-sectoral collaborative engagement, capacity and leadership among nutrition stakeholders	Reworded from proposal	Self-assessment reports from partners	1	1	2	0	Medium	Partnership ¹²

¹¹ For the 2017 POWB, slight changes were made to the wording for Outcome 4.5

¹² Risk that partners won't be able to deliver a key piece on time.

FP	Mapped to Sub-IDOs	2022 FP Outcomes	Milestones	Degree of Change since Proposal	Means of Verification	CGIAR Cross-Cutting Markers for the Milestone				Assessment of Risk to Achieve that Milestone	For Medium/High, the main risk:
						Gender	Youth	CapDev	ClimCh		
		and implementation.									
FP5	<ul style="list-style-type: none"> Increased safe use of inputs Increased resilience of agro-ecosystems and communities, especially those including smallholders Enhanced adaptive capacity to climate risks (More sustainably managed agro-ecosystems) CC Improved capacity of women and young people to participate in decision-making 	Outcome 5.1 ¹³ Agricultural practices modified to reduce health risks	Risk maps used in Uganda for contingency planning of outbreak response for Rift Valley fever.	New	Policy brief on risk-based surveillance and control of RVF	0	0	1	1	Medium	External Environment ¹⁴
			Preparation and dissemination of synoptic review of current knowledge and research gaps regarding landscape-mediated effects of agriculture on vector-borne disease to guide FP5 and other research	New	Synoptic review; dissemination event report	1	1	1	0	Low	
			At least 1 agricultural research institution/authority in West Africa starts to include health-related indicators in evaluations and trials of alternative rice-production methods	New	CGIAR reports	0	0	0	1	Low	
FP5	<ul style="list-style-type: none"> Reduced livestock and fish disease risks associated with intensification and climate change Increased resilience of agro-ecosystems and communities, especially those including smallholders 	Outcome 5.2 Agricultural and public health policymakers and implementers deliver coordinated and	Policy makers in Kenya convened to agree on a draft national policy document on brucellosis diagnosis and control	New	Draft policy document	1	1	1	N/A	Low	
			National neglected tropical disease task forces in Kenya and Rwanda made aware of	Reworded from proposal	Technical report; policy documents prepared for the task forces;	1	1	1	N/A	Low	

¹³ For the 2018 POWB, slight changes were made to the wording of Outcomes 5.1 and 5.3. A fourth outcome was added (Outcome 5.4). The intent of these changes was to improve the alignment of the existing and planned activities by all the managing partners. The changes were a result of greater understanding of what the different managing partners were bringing to FP5 than what was known at the time of the proposal development.

¹⁴ Political, economic, legal, markets (e.g., risk of non-delivery due to conflict, economic/market changes)

FP	Mapped to Sub-IDOs	2022 FP Outcomes	Milestones	Degree of Change since Proposal	Means of Verification	CGIAR Cross-Cutting Markers for the Milestone				Assessment of Risk to Achieve that Milestone	For Medium/High, the main risk:
						Gender	Youth	CapDev	ClimCh		
	<ul style="list-style-type: none"> Enhanced adaptive capacity to climate risks (More sustainably managed agro-ecosystems) CC Improved capacity of women and young people to participate in decision-making CC Conducive environment for managing shocks and vulnerability, as evidenced in rapid response mechanisms 	effective solutions to cysticercosis and other zoonotic threats	prevalence, spatial distribution and burden of cysticercosis in smallholder livestock systems through stakeholder convening following publication of a technical report		stakeholder convening workshop report						
			National level convening of public sector stakeholders in Kenya to disseminate results of value chain mapping and transmission of zoonotic diseases	New	Report	1	1	1	N/A	Low	
FP5	<ul style="list-style-type: none"> Reduced livestock and fish disease risks associated with intensification and climate change Increased safe use of inputs CC Enhanced institutional capacity of partner research organizations CC Enhanced individual capacity in partner research organizations through training and exchange 	Outcome 5.3 ¹⁵ Public and private sector policymakers implement measures to reduce human and animal health risks from antimicrobial resistance and other interactions	One Health evaluation framework for antimicrobial resistance interventions is available for use by research within and outside CGIAR	New	White paper describing framework	1	0	0	0	Medium	Research/science ¹⁶
			CGIAR AMR platform compiling agricultural-associated AMR research data established, maintained, and used by internal and external stakeholders [extended from 2018]	New	Annual reporting from partners, content analysis of official statements and documents	1	1	1	1	Low	
			Risk map completed on insecticide resistance selection across rice farming	Reworded from proposal	Report on the conducted trial	0	0	1	0	Low	

¹⁵ For the 2018 POWB, slight changes were made to the wording of Outcomes 5.1 and 5.3. A fourth outcome was added (Outcome 5.4). The intent of these changes was to improve the alignment of the existing and planned activities by all the managing partners. The changes were a result of greater understanding of what the different managing partners were bringing to FP5 than what was known at the time of the proposal development.

¹⁶ Inherent risk in unknown cutting edge research or science

FP	Mapped to Sub-IDOs	2022 FP Outcomes	Milestones	Degree of Change since Proposal	Means of Verification	CGIAR Cross-Cutting Markers for the Milestone				Assessment of Risk to Achieve that Milestone	For Medium/High, the main risk:
						Gender	Youth	CapDev	ClimCh		
			areas in three countries in West Africa.								
FP5	<ul style="list-style-type: none"> Reduced livestock and fish disease risks associated with intensification and climate change Increased safe use of inputs CC Enhanced institutional capacity of partner research organizations CC Enhanced individual capacity in partner research organizations through training and exchange 	Outcome 5.4 ¹⁷ Agricultural research and funding institutions initiate collaboration with public health counterparts to solve complex intersectoral problems	Researchers representing natural and social scientists from health and agriculture participate in theme-based symposia to identify and develop research areas, recognizing gender and equity issues	New	Reports from meetings	1	1	1	1	Low	

¹⁷ For the 2018 POWB, slight changes were made to the wording of Outcomes 5.1 and 5.3. A fourth outcome was added (Outcome 5.4). The intent of these changes was to improve the alignment of the existing and planned activities by all the managing partners. The changes were a result of greater understanding of what the different managing partners were bringing to FP5 than what was known at the time of the proposal development.

Table 2B: Planned Evaluations/Reviews, Impact Assessments and Learning Exercises¹⁸

Ex-post impact assessments					
CRP	FP	Status	Planned studies/learning exercises in the coming year	Geographic scope	Who is commissioning this study
A4NH	FP4 ⁺	On-going	CRP-commissioned external evaluation examining the impacts of IFPRI research from 2004-2016 on nutrition-sensitive agricultural programs	Global	A4NH and IFPRI
Evaluations					
CRP	FP	Status	Planned studies/learning exercises in the coming year	Geographic scope	Who is commissioning this study
A4NH	FP1	New	Evaluation of the impact of distributing coupons to reduce the price of fruits and vegetables in Hanoi and Ibadan	Multi-national, [Viet Nam, Nigeria]	Bill and Melinda Gates Foundation
A4NH	FP1	New	Evaluation of intervention to address seasonal availability of fruits and vegetables and preferences/barriers for consumption by peri-urban and urban low-income men and women in Hanoi and Ibadan	Multi-national, [Viet Nam, Nigeria]	Bill and Melinda Gates Foundation
A4NH	FP1	New	Food flow assessment of fruits and vegetables in peri-urban and urban low-income men and women in Hanoi and Ibadan (that informs an evaluation of an intervention to address accessibility of fruits and vegetables)	Multi-national, [Viet Nam, Nigeria]	Bill and Melinda Gates Foundation
A4NH	FP1	On-going	Evaluation of a market intervention to stimulate vegetable consumption - Veggies on wheels	National, [Nigeria]	A4NH
A4NH	FP1	On-going	Evaluating food products from fruits for home consumption and enhanced income	National, [Nigeria]	World Bank (PRODEMA)
A4NH	FP1	On-going	Evaluation of school-based intervention to improve diets consumed in school	National, [Viet Nam]	A4NH
A4NH	FP2	On-going	Adoption study for zinc rice in Bangladesh ¹⁹	National, [Bangladesh]	HarvestPlus
A4NH	FP2	On-going	Bio-availability study for zinc rice in Bangladesh	National, [Bangladesh]	HarvestPlus
A4NH	FP2	On-going	Socio-economic component of the effectiveness/impact evaluation study for iron beans in Guatemala to measure adoption and iron intake outcomes of adolescent girls ¹⁹	National, [Guatemala]	HarvestPlus
A4NH	FP2	On-going	Monitoring survey for iron beans in Colombia ¹⁹	National, [Colombia]	HarvestPlus
A4NH	FP2	On-going	Monitoring surveys for iron pearl millet in India ¹⁹	National, [India]	HarvestPlus
A4NH	FP2	On-going	Monitoring survey for vitamin A maize in Nigeria ¹⁹	National, [Nigeria]	HarvestPlus
A4NH	FP2	New	Monitoring survey for vitamin A maize in Zambia ¹⁹	National, [Zambia]	HarvestPlus
A4NH	FP3	New	Evaluation of Safe Food Fair Food project on capacity building in food systems in several countries in Africa	Regional, [Northern Africa, Southern Africa]	A4NH
A4NH	FP3	On-going	Adoption study of good agricultural practices (GAP) for promoting food safety in pork value chains	National, [Viet Nam]	ACIAR/A4NH

¹⁸ Our 2019 new and on-going 'studies' are presented by type: ex post impact assessment; evaluations (of our partners' interventions or technologies and of our own interventions); ex ante impact analyses; reviews; and learning exercises.

⁺ Indicates that members of the A4NH Program Management Unit are supporting this 'study.'

¹⁹ These studies feed into the M&E models which simulate the impact of biofortification interventions in terms of number and percentage of [crop] producing households reached; % of population that has moved from deficient to sufficient status, and number of DALYs saved

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A4NH	FP3, FP4	On-going	Cluster randomized controlled trial evaluation to assess health and nutrition benefits of informal dairy sector intervention in Nairobi	Sub-national, [Kenya]	Bill and Melinda Gates Foundation
A4NH	FP4	On-going	Evaluation comparing different modalities to integrate nutrition with agricultural programs in Bangladesh and India	Multi-national, [Bangladesh, India]	Bill and Melinda Gates Foundation
A4NH	FP4	On-going	Evaluation of the Bangladesh Initiative to Enhance Nutrition Security and Governance	Sub-national, [Bangladesh]	European Union
A4NH	FP4	On-going	Assessing Bangladesh's national nutrition program delivery in health facilities	National, [Bangladesh]	Bill and Melinda Gates Foundation
A4NH	FP4	On-going	Evaluation of an integrated package of nutrition and agricultural interventions on diets, health, and nutritional status of women and children	National, [Burkina Faso]	Bill and Melinda Gates Foundation
A4NH	FP4	On-going	Testing the integration of diet and nutrition interventions in urban health systems	National, [Burkina Faso]	Bill and Melinda Gates Foundation
A4NH	FP4	On-going	Evaluation of the integration of maternal diet and nutrition interventions into antenatal health care platforms in Burkina Faso and Ethiopia	Multi-national, [Burkina Faso, Ethiopia]	Bill and Melinda Gates Foundation
A4NH	FP4	On-going	Evaluation of mobile phone technology-based nutrition and agriculture advisory services in Ghana (m-Agri)	National, [Ghana]	UK Department for International Development
A4NH	FP4	On-going	Evaluation of mobile phone technology-based nutrition and agriculture advisory services in Tanzania (mHealth)	National [United Republic of Tanzania]	UK Department for International Development
A4NH	FP4	On-going	Evaluation to strengthen the understanding of the pathways through which self-help groups can improve nutrition through agriculture-nutrition interventions	Sub-national, [India]	Bill and Melinda Gates Foundation
A4NH	FP4	On-going	Evaluation to assess the feasibility of integrating a package of maternal nutrition interventions in existing maternal, newborn, child health services in India	National, [India]	FHI360
A4NH	FP4	On-going	Process evaluation of a mobile phone innovation in the Integrated Child Development Services program in India	National, [India]	FHI360
A4NH	FP4	On-going	Evaluation to gain insights on diets and nutritional practices during pregnancy in India	National, [India]	Bill and Melinda Gates Foundation
A4NH	FP4	On-going	Evaluation of Odisha Social Audit	Sub-national, [India]	APPI
A4NH	FP4	New	Building resilience through improved productivity, food security, health and nutrition: Assessing the World Food Program's Food for Assets program	National, [Zimbabwe]	A4NH
A4NH	FP5	On-going	Evaluation of the impact of community training using multiple information, education and communication materials on knowledge, attitude and practices on Rift Valley fever in Kenya and Uganda	Multi-national, [Kenya, Uganda]	USAID
A4NH	FP5	On-going	Evaluation of impact of education interventions on behavior of slaughterhouse workers exposed to occupational risk of zoonoses transmission	National, [Kenya]	BBSRC
A4NH	FP5	On-going	Evaluation of impact of hygiene interventions to prevent nosocomial transmission of antibiotic resistant bacteria among health workers in public sector hospitals	National, [Kenya]	University of Liverpool (internal award)
A4NH	FP5	New	Evaluation of the adoption levels of mobile phone-based surveillance systems in selected counties in Kenya	Sub-national, [Kenya]	A4NH

Ex ante impact analyses					
CRP	FP	Status	Planned studies/learning exercises in the coming year	Geographic scope	Who is commissioning this study
A4NH	FP1	On-going	Foresight study on the role of bilateral trade in food systems on nutrition	Global	A4NH
Reviews					
CRP	FP	Status	Planned studies/learning exercises in the coming year	Geographic scope	Who is commissioning this study
A4NH	FP1 ⁺	New	Food systems transformation and youth: A collaborative framing paper	Global	A4NH
A4NH	FP1	On-going	Review of the recommend quantitative nutrient standards for school meals, related to Dietary Reference Intakes for school-aged children (School meals Standard)	National, [Nigeria]	Federal Government of Nigeria
A4NH	FP1	On-going	Review the promotion of consumption of nutritious foods (composite flours and orange-fleshed sweet potato)	National, [Burundi]	World Bank (PRODEMA)
A4NH	FP2	On-going	Validation of zinc targets	Global	HarvestPlus
A4NH	FP4	On-going	Systematic review on integrating nutrition and physical activity promotion	Global	A4NH
A4NH	FP4	On-going	Systematic review on climate change, equity and nutrition	Global	A4NH
A4NH	FP4 ⁺	New	Structured review on equity issues in agriculture, nutrition, and health research	Global	A4NH
A4NH	FP4	On-going	Review of methodological implementation tools to develop a matrix as part of the Knowledge for Implementation and Impact Initiative (KI3)	Global	Federal Ministry of Economic Cooperation and Development (Germany - BMZ)
A4NH	FP4	On-going	Stories of Change (data-driven narratives of drivers of change in nutritional outcomes) in Burkina Faso	National, [Burkina Faso]	Bill and Melinda Gates Foundation and SNV
A4NH	FP4	On-going	Stories of Change (data-driven narratives of drivers of change in nutritional outcomes) in Ghana	National, [Ghana]	Bill and Melinda Gates Foundation
A4NH	FP4	On-going	Stories of Change (data-driven narratives of drivers of change in nutritional outcomes), state-level in India	Sub-national, [India]	Bill and Melinda Gates Foundation
A4NH	FP4	On-going	Stories of Change (data-driven narratives of drivers of change in nutritional outcomes) in Nigeria	National, [Nigeria]	Bill and Melinda Gates Foundation
A4NH	FP4	On-going	Stories of Change (data-driven narratives of drivers of change in nutritional outcomes) in Viet Nam	National, [Viet Nam]	A4NH
A4NH	FP4	New	Stories of Challenge (assessment of political commitment and policy traction to address the double burden of malnutrition) in 3-4 selected countries	3-4 countries (tbd)	A4NH
Learning Exercises					
CRP	FP	Status	Planned studies/learning exercises in the coming year	Geographic scope	Who is commissioning this study
A4NH	FP1	On-going	Bangladesh Food Systems Review (an initial food systems profile with priority research questions based on stakeholder engagement and literature review)	National, [Bangladesh]	A4NH
A4NH	FP1	On-going	Nigeria Food Systems Review (an initial food systems profile with priority research questions based on stakeholder engagement and literature review)	National, [Nigeria]	A4NH

⁺ Indicates that members of the A4NH Program Management Unit are supporting this 'study.'

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A4NH	FP1	On-going	Viet Nam Food Systems Review Paper (an initial food systems profile with priority research questions based on stakeholder engagement and literature review)	National, [Viet Nam]	A4NH
A4NH	FP2	New	Annual LEAP (learning, evaluation, and annual planning) of HarvestPlus country programs	Multi-national, [DRC, Nigeria, Rwanda, Uganda, Zambia, Zimbabwe]	HarvestPlus
A4NH	FP3	New	Use of the Theory of Change approach to design integrated strategies for the control of <i>Taenia solium neurocysticercosis</i> in Uganda	National, [Uganda]	A4NH and Federal Ministry of Economic Cooperation and Development (Germany – BMZ)

Table 2C: Planned major new collaborations (CGIAR internal, or with non-CGIAR collaborators)²⁰

Name of Platform/CRP or non-CGIAR collaborator	Brief description of collaboration (give and take among CRPs/Platforms/non-CGIAR collaborator) and value added (e.g. scientific or efficiency benefits)
BoP Innovation Center Commonwealth Scientific and Industrial Research Organisation (CSIRO) Economic Community of West African States (ECOWAS) University of Bonn, Center for Development Research (ZEF) University of Ghana, Institute of Statistical, Social and Economic Research (ISSER) University of the Western Cape	Collaboration with Flagship 1 involves mapping urban food systems, policy options for improved nutrition, and the stakeholders associated with the policies shaping/influencing the urban food systems. The policy mapping in Kampala (Uganda) will inform policy options with high pay-off potential, and these policies will be tested using behavioral experiments in Kampala. This partnership is anticipated to enhance capacity as well as efficiency especially on execution of the field work.
Hanoi Medical University (HMU) National Institute of Nutrition (NIN), Viet Nam Rikolto (formerly VECO) University of Ibadan	Collaboration with Flagship 1 in the project <i>Fruits and Vegetables Intake in Viet Nam and Nigeria</i> ; in 2019, the project will collect baseline data on dietary intake, seasonal fruit and vegetable availability, retail outlet characterization including fruit and vegetable food flows
Federal University of Agriculture, Abeokuta (FUNAAB), Nigeria National Bureau of Statistics (NBS), Nigeria	Collaboration with Flagship 1 to conduct research on consumption of processed foods in Nigeria in the context of the nutrition transition; and research on diet quality and adequacy and rural-urban migration; we do this research based on primary data collected in collaboration with Nigeria national bureau of statistics and/or other data collecting firms involved in market intelligence; we anticipate that we will gain efficiency by partnering with local researchers in both research and data collection exercise
Centers for Disease Control and Prevention (CDC) Federal Ministry of Budget and Planning Federal Ministry of Agriculture and Rural Development (FMARD) Federal Ministry of Health (FMOH) FHI360, Intake – Center for Dietary Assessment Tufts University, International Dietary Data Expansion Project (INDDX24) United Nations Children's Fund (UNICEF), Nigeria country office	Collaboration with Flagship 1 on the National Food Consumption and Micronutrient Survey for Nigeria ; scientific benefits
CRP on Climate Change Agriculture and Food Security (CCAFS) Commonwealth Scientific and Industrial Research Organisation (CSIRO) Economic Community of West African States (ECOWAS) Utrecht University University of Oxford	Collaboration with Flagship 1 with the <i>Re-imagining anticipatory climate governance in the world's vulnerable regions</i> (RE-IMAGINE) project, CCAFS Flagship 1 (Future Scenarios) and possibly <i>Transform Nutrition West-Africa</i> (through A4NH Flagship 4) a workshop will be organized in West Africa with the Economic Community of West African States (ECOWAS) to understand the opportunities for introducing food systems foresight into the process of policy formulation; modelling support and follow-up research; Nigeria, Ghana and Burkina Faso will be presented as case study countries

²⁰ Our planned major new collaborations for 2019 are organized chronologically by flagship.

Name of Platform/CRP or non-CGIAR collaborator	Brief description of collaboration (give and take among CRPs/Platforms/non-CGIAR collaborator) and value added (e.g. scientific or efficiency benefits)
Georg-August-Universität (GAU), Göttingen University of Bonn, Center for Development Research (ZEF) University of Hohenheim	Collaboration with Flagship 1 to study the nutritional value, recipes and value addition potential of selected wild foods [w/Göttingen] socio-cultural aspects of wild food harvesting and consumption [Hohenheim], and the distribution and ecology of selected wild food plants as a basis for estimating their availability and developing management and conservation plans in cooperation with the local communities [Bonn] in Turkana (Kenya)
Federal Ministry of Health, Ethiopia Ministry of Health and Sanitation, Kenya	Collaboration with Flagship 1 to provide door-to-door nutrition counseling through its Health Extension Workers and Volunteers in Tigray (Ethiopia) and Community Health Extension Workers and Community Health Volunteers in Turkana (Kenya) and participatory cooking workshops
NEED Nutritional Products and Services	Collaboration for Flagship 1 with NEED on nutritional products and production of videos that can be broadcast with behavior change communication messages built in for healthier eating; scientific benefits
CRP on WHEAT, including CIMMYT	Collaboration with Flagship 1 to implement a study on agri-food system innovation in value chains for processed staples: survey of the consumer and retail landscape in Mexico City (Mexico)
University of Denver, The Frederick S. Pardee Center for International Futures	Collaboration with Flagship 1 on the new study on <i>Foresight of food systems: role of bilateral trade on nutrition</i>
University of Ghana, Institute of Statistical, Social and Economic Research (ISSER)	Collaboration with Flagship 1 on NOURICITY: partnerships for healthy diets and nutrition in Urban Food Systems. The research will investigate: a) urban food sources, characteristics and rural-urban linkages as “systemic drivers” of food choices and nutrition, b) people’s access to nutrition-related knowledge and c) how systemic and individual drivers determine people’s food consumption and nutrition status
Federal Government of Nigeria – Office of the Vice President	Collaboration with Flagship 1 on the <i>National Home-Grown School Feeding Program</i>
Ministry of Agriculture and Rural Development, Viet Nam Ministry of Planning and Investment, Viet Nam	Collaboration with Flagship 1 on food system data analytics and scaling of innovations under the umbrella of Zero Hunger (particular interest in nutrition-sensitive value chains)
Food and Agriculture Organization of the United Nations (FAO)	Collaboration with Flagship 1 as an implementing partner for new project entitled <i>Support for Modelling, Planning and Improving Dhaka’s Food System</i> ; scientific and efficiency benefits in Bangladesh
Commonwealth Scientific and Industrial Research Organisation (CSIRO)	Collaboration with Flagship 1 on microsimulation aimed at vulnerable households, youth and gender dimensions; implementation of the distributional effects in the microsimulation with food accessibility + dietary adequacy proxied by the nutrient composition of household food availability
Institute of Development Studies (IDS)	Collaboration with Flagship 1 on collaborative framing paper on food systems transformation and youth
CRP on Fish, including WorldFish	Collaboration with Flagship 1 for joint research on fish in Bangladesh and Nigerian food systems (one joint proposal; national food systems reviews; a co-funded PhD on modelling of fish in food systems at WUR)

Name of Platform/CRP or non-CGIAR collaborator	Brief description of collaboration (give and take among CRPs/Platforms/non-CGIAR collaborator) and value added (e.g. scientific or efficiency benefits)
Global Alliance for Improved Nutrition (GAIN)	Collaboration with Flagship 2 to commercialize biofortification in 6 countries and to leverage on each other's tools and resources to do so
International Potato Center (CIP)	Collaboration with Flagship 2 to share lessons learnt in scaling up/commercialization and to harmonize monitoring evaluation and learning systems across HarvestPlus and CIP's orange-fleshed sweet potato program
Institut de Recherche en Sciences Appliquées et Technologies (IRSAT) Wageningen University & Research (WUR) University of Florida World Vegetable Centre	Collaboration with Flagship 3 on new Bill and Melinda Gates Foundation (BMGF)/UK Department for International Development (DFID)-funded food safety project in Burkina Faso and Ethiopia
London School of Hygiene and Tropical Medicine	Collaboration with Flagship 3 on new Bill and Melinda Gates Foundation (BMGF)/UK Department for International Development (DFID)-funded food safety project in Kenya and Mozambique
African Union	Collaboration with Flagship 3 to develop the first Food Safety Index for Africa
Global Alliance for Improved Nutrition (GAIN)	Collaboration with Flagship 3 to identify food safety investment opportunities in maize and milk value chain in Kenya
Bangladesh Livestock Research Institute	Collaboration with Flagship 3 on a situational assessment of food safety in Bangladesh
CRP on Fish, including WorldFish	Collaboration with Flagship 3 for exploration of potential joint research on food safety and fish in Bangladesh and Nigeria
Agriculture Transformation Agency (Ethiopia), Ministry of Agriculture and Natural Resources (Ethiopia), Rwanda Agriculture Board (Rwanda), Ministry of Agriculture and Animal Resources (Rwanda), Institut d'Economie Rurale (IER, Mali), Elephant Vert (Mali), Institut National de la Recherche Agronomique du Niger (INRAN; Niger), National University of Agriculture (UNA, Benin), Pakistan Agriculture Research Council (Pakistan), Centre for Agriculture and Bioscience International (CABI, Pakistan)	Collaboration with Flagship 3 on new Aflasafe product development in Ethiopia, Mali, Niger, Rwanda, Benin and Pakistan
Shalem Investment (Kenya) SAPHYTO (Burkina Faso)	Collaboration with Flagship 3 on distribution and deployment of Aflasafe KE01 in Kenya and Burkina Faso
A to Z Textile Mills Ltd, Pee Pee, Kibaigwa Flour Supplies Ltd, Meru Agro Ltd (Tanzania)	Collaboration with Flagship 3 on manufacturing and distribution of Aflasafe TZ in Tanzania (1-2 of the four will be selected and offered the final license)
Farm to Market Alliance (FtMA)	Collaboration with Flagship 3 on market linkages in maize value chain in Tanzania
East African Farmers' Federation (Kenya) AGRA (Ghana, Tanzania)	Collaboration with Flagship 3 on deployment of Aflasafe in Kenya, Ghana, Tanzania
Groundnut Working Group (GNWG), Miruku Agro Industria, Mozambican Association of Modern Cooperatives (AMPCM), Norges Vel	Collaboration with Flagship 3 on financing, manufacturing and distribution and deployment of Aflasafe MZ02 in Mozambique

Name of Platform/CRP or non-CGIAR collaborator	Brief description of collaboration (give and take among CRPs/Platforms/non-CGIAR collaborator) and value added (e.g. scientific or efficiency benefits)
One Acre Fund, Afri-Oils, EXAGRIS AFRICA LIMITED, Agro Input Supply Limited (AISL), Canon Garth	Collaboration with Flagship 3 on deployment of Aflasafe MWMZ01 and MW02 in Malawi and potential uptake of Aflasafe treated grains in Malawi
COMACO Share-Africa Zambia ZARI, NISIR University of Zambia	Collaboration with Flagship 3 for on-farm assessment of the impact of cultural practices (conservation agriculture) on aflatoxin; Sensory and chemical analyses of peanut products; and awareness campaigns in Zambia
Nathan Associates London Limited (MADE Program), STEPRI, Ghana Standards Authority, Ghana Export Promotion Agency, Agricare Limited	Collaboration with Flagship 3 on awareness raising on aflatoxins and Aflasafe GH02 in Ghana and advocacy for better policies for aflatoxins management in Ghana
Direction de la Protection des Végétaux et du Conditionnement (DPVC), Ministry of Agriculture ; Confédération Paysanne du Faso (CPF)	Collaboration with Flagship 3 on awareness raising on aflatoxins and Aflasafe BF01, and deployment of Aflasafe BF01 in Burkina Faso
FHI360, Alive & Thrive, India NEERMAN	Collaboration with Flagship 4 under the Partnerships and Opportunities to Strengthen and Harmonize Actions for Nutrition in India (POSHAN) project
Results for Development (R4D) Johns Hopkins Bloomberg School of Public Health	Partnership with Flagship 4 in a new initiative DataDENT (Data for Decisions to Expand Nutrition Transformation) to support data analytics and strengthen nutrition-relevant data value chains globally
Emory University	Collaboration with Flagship 4 to analyze data on the project-level Women's Empowerment in Agriculture Index (pro-WEAI) from four projects under the second phase of the <i>Gender, Agriculture, and Assets Project</i> (GAAP2) led by IFPRI, to develop a concise tool to monitor Sustainable Development Goal 5 on gender equality at national and program levels.
CRP on Climate Change Agriculture and Food Security (CCAFS)	Collaboration with Flagship 4 on a published framework review/systematic mapping of work on equity, nutrition and climate change
North-West University, African Nutrition Leadership Programme University of Sheffield	Collaboration with Flagship 4 under <i>Transform Nutrition-West Africa</i> , to deliver leadership courses for nutrition professionals in West Africa Partnership with Flagship 4 planned with the School of Health and Related Research, public health section to support work on topics related to obesity
World Food Programme (WFP)	Collaboration with Flagship 4 in the study assessing the roles and impacts of World Food Programme's Food for Assistance Program
CRP on Fish, including WorldFish Royal Veterinary College	Collaboration with Flagship 5 on the development of a joint research agenda on antimicrobial resistance for fish within the CGIAR special initiative (along with the CRP on Livestock and the emerging CGIAR AMR Hub in Nairobi), plus antimicrobial use and associated interventions in the aquaculture sector based on established links to a previous joint bilateral project

Name of Platform/CRP or non-CGIAR collaborator	Brief description of collaboration (give and take among CRPs/Platforms/non-CGIAR collaborator) and value added (e.g. scientific or efficiency benefits)
	(AMFORA) and follow-up from that work through a Royal Veterinary College-supported PhD project
CRP on Rice, including Africa Rice, IRRI, and CIAT Institut Pierre Richet (IRP), Bouaké	Collaboration with Flagship 5 on integrating work on climate change adaptation (water saving) and mitigation in IRRI, Africa Rice, and CIAT with mosquito vector management, creating opportunities for climate change research funding and, ultimately, policy co-benefits; on tracking mosquito productivity of alternative irrigated rice cultivation techniques, in order to identify how to grow rice in Africa without growing deadly mosquitoes; and on effects of landscape-change on the vectoral capacity of malaria vectors, including the work on rice
County Government of Kajiado, Kenya Addis Ababa University The Ohio State University Intergovernmental Authority on Development (IGAD) Sheik Veterinary Training Institute, Somaliland	Collaboration with Flagship 5 through the <i>One Health Research Network for the Horn of Africa</i> (HORN)-based collaboration working with University of Nairobi on zoonotic disease surveillance (East Africa)
Liverpool School of Tropical Medicine National Malaria Control Programs and National Agricultural Research and Extension Systems, Benin, Cote d'Ivoire and Cameroon	Collaboration with Flagship 5 on mobilization of financial resources and technical research support for activities related to pesticides utilization and insecticide resistance selection
Federal Institute for Risk Assessment (BfR), Germany Free University of Berlin Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), Uganda	Collaboration with Flagship 5 through a bilaterally funded project on antimicrobial resistance in poultry and Rift Valley fever, ILRI will be closely working with the Federal Institute for Risk Assessment (BfR), with BfR bringing in expertise on risk assessment. BfR is also a partner in ILRI's role as a Fleming Fund Fellowship Scheme for which ILRI has been identified as a host institution. ILRI will be closely working with the Free University of Berlin on mitigating antimicrobial resistance risks in the poultry value chain in Uganda and will also support entomological analyses on Rift Valley fever; with Uganda's Ministry of Agriculture, Animal Industry and Fisheries on Rift Valley fever; the main focus in 2019 will be to generate risk maps for Rift Valley fever and support risk-based surveillance activities to collect and characterize Rift Valley fever virus (Uganda)
Institute of Tropical Medicine Antwerp	Collaboration with Flagship 5 on anthropological fieldwork on use of anti-microbials and awareness of resistance
International Centre for Interdisciplinary Solutions on AMR (antimicrobial resistance)	Collaboration with Flagship 5; this new centre to be established in Denmark will closely collaborate with CGIAR to find context specific solutions on antimicrobial resistance and thus is a strategically important alliance
University of Copenhagen	Partnership with Flagship 5 on antimicrobial use in Kenya , also involving the World Organisation for Animal Health (OIE)
University of Bonn, Center for Development Research (ZEF)	Collaboration with Flagship 5 on insect vectors of zoonoses; MoU signed in 2018, to start in 2019

Table 3: Planned Budget

	Planned 2019 Budget (USD)				Comments on major changes
	W1/W2	W3/bilateral	Center's own funds	Total	
FP1: Food Systems for Healthier Diets	\$4,045,000	\$5,089,540	\$0	\$9,134,540	Expected to include additional grant funding
FP2: Biofortification	\$3,800,000	\$28,165,211	\$0	\$31,965,211	
FP3: Food Safety	\$3,700,000	\$3,533,709	\$0	\$7,233,709	Expected to include additional grant funding
FP4: Supporting Policies Programs and Enabling Action through Research (SPEAR)	\$4,355,876	\$14,762,908	\$55,378	\$19,174,162	
FP5: Improving Human Health	\$2,379,200	\$1,669,792	\$0	\$4,048,992	
Cross Cutting Initiatives					
Gender, Equity and Empowerment	\$377,528	\$2,459,620	\$0	\$2,837,148	
Country Coordination and Engagement	\$375,000	\$622,565	\$0	\$997,565	
Monitoring, Evaluation and Learning	\$508,544	\$0	\$0	\$508,544	
CRP Management & Support Costs	\$1,843,928	\$0	\$0	\$1,843,928	
CRP Total	\$21,385,076	\$56,303,345	\$55,378	\$77,743,799	

Note: Planned contribution in 2019 of non-CGIAR partner in Flagship 1, Wageningen University and Research, is \$1,739,542.