



RESEARCH
PROGRAM ON
Agriculture for
Nutrition
and Health

Led by IFPRI

2020

PLAN OF WORK AND BUDGET



Photo: Janet Hodur/IFPRI

A4NH is led by the International Food Policy Research Institute (IFPRI) and managed along with The Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT), the International Institute of Tropical Agriculture (IITA), the International Livestock Research Institute (ILRI), the London School of Hygiene and Tropical Medicine (LSHTM), and Wageningen University and Research (WUR).

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

Alliance



A4NH Plan of Work and Budget for 2020

Led by the International Food Policy Research Institute

Submitted to the CGIAR System Management Office on January 30, 2020

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1_Adjustments/Changes to our Theories of Change (ToC)

The goal of A4NH is to strengthen the capacity of CGIAR to contribute globally to CGIAR's second System Level Outcome (SLO2) on improved food and nutrition security for health and the 2030 Agenda for Sustainable Development.

At CRP level, A4NH's results framework remains unchanged from our [Full Proposal for Phase II](#) (2017-2022). The results framework describes our impact pathways, reflecting the different ways in which our research activities and outputs, including knowledge, technologies, capacity, and stakeholder engagement, contribute to outcomes in food systems. In some cases, our 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 improve 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 pathways are mutually reinforcing, with the policies pathway underlying and sustaining the other two.

No major modifications have been made to any of the five flagships' theories of change since the changes we reported in the 2019 Plan of Work and Budget. In anticipation of the end of A4NH in 2021 (instead of 2022), we will be reexamining partnerships key to the impact pathways for three CGIAR system-wide initiatives (food systems, biofortification, and food safety) to prepare for new institutional arrangements post-2021. Unless micronutrient targets set by HarvestPlus are recognized as a non-negotiable trait in breeding programs, incorporated into breeding programs' work plans, and independently monitored and evaluated then the [CGIAR's 2014 commitment to mainstreaming biofortification in breeding](#) may not be achieved by 2021. While HarvestPlus is working with partners to support mainstreaming, given this is controlled by others, Flagship 2's milestones for 2020 have been adjusted accordingly (Table 2A). A4NH's current set of theories of change are compiled in a single document available on our [website](#).

Effective partnerships are critical to our theory of change. In Phase II, A4NH Managing Partners (CGIAR and non-CGIAR) have taken responsibility for key research areas and partnerships, many of which can be continued post-2021. The close collaboration with national governments, NGOs, and private sector entities (e.g., for scaling up Aflasafe and biofortification) has helped A4NH to deliver high-quality outputs and achieve development outcomes. In the next sections we describe how time and resources, specifically CGIAR funding, will be used in 2020 to foster these healthy and effective partnerships.

2_Plans and Expected Progress Towards Outcomes

Flagship 1 (Food Systems for Healthier Diets)

In 2020, Flagship 1 will focus on consolidating analytical food systems tools, indicators, and frameworks, with a view to extending their application beyond our four focus countries (Bangladesh, Ethiopia, Nigeria, and Viet Nam) to other countries (potentially India, Myanmar, and Peru) to broaden the application of food systems analyses and scaling up use with policymakers, stakeholders and partners. We will finalize a compendium of food system metrics, methods and tools; develop country profiles based on the compendium; and validate and apply the World Index for Sustainable

and Healthy diets.

We will provide technical support to the development of the government-led food-based dietary guidelines for Ethiopia and Viet Nam and to the revision of the Food and Agriculture Organization of the United Nations (FAO) manual on development of food based dietary guidelines for healthy sustainable diets. An online A4NH Food Systems Resource Center, to be launched in early 2020, will accelerate outreach for impact beyond the four focus countries.

Using the [framework of food systems innovations](#), we will map innovations in our four focus countries. New evidence will be generated from a suite of consumer-oriented innovations for healthier diets, such as: improving availability, accessibility and acceptability of fruits and vegetables in Nigeria and Viet Nam and increasing healthy options of foods adolescents consume outside the home in Nigeria and Bangladesh. In Ethiopia, we will test a video-based behavior change intervention to raise awareness on healthy diets and in Viet Nam, we will evaluate how a school-based feeding program changes household eating habits.

In order to help align A4NH-supported food systems thinking and food policy approaches taken by local and global leaders, we will systematically document lessons learned in work with current partners and actively engage others in shaping food systems for healthier diets. Specifically, we will generate empirical evidence on private sector engagement through a collaborative project with the Scaling Up Nutrition (SUN) Business Network in Bangladesh. We will continue to build awareness of and capacity to use food systems approaches through targeted trainings with national policymakers; MSc students and advisors; and global stakeholders.

Flagship 2 (Biofortification)

Flagship 2, led by HarvestPlus, works in close collaboration with more than 400 partners, including other CGIAR Centers, national agricultural research systems, and public, research, civil society and private sectors to improve food systems through biofortification of key staples to deliver higher levels of micronutrients. HarvestPlus now aims to facilitate partnerships to scale biofortification in target countries with an ambition to reach 1 billion consumers globally by 2030. These facilitation efforts will include advocacy and mobilizing public, private, civil society, international finance, and multi-lateral aid organizations and working with these partners to develop and collect data on common metrics for assessment of the progress towards this goal.

By the end of HarvestPlus' current phase, we aim to complete several key studies (e.g., efficacy study for high-zinc rice in Bangladesh and an effectiveness study for high-iron beans in Guatemala) while also calling for consultations and roundtables with researchers to identify remaining knowledge/evidence gaps, especially as biofortification is taken to scale. We will systematically evaluate country programs and partnerships (e.g., AgResults and World Vision) to harness and share lessons learned on impact, cost-effectiveness, and sustainability. Following up on the knowledge products launched in 2019, including the updated [evidence document](#) and the [Biofortification Priority Index](#), in 2020, we will launch new tools, including a new open access biofortification digital library and a tool for mapping the national policies and strategies pertaining to biofortification.

In 2020, we will work with CGIAR Centers to guide and monitor/evaluate mainstreaming of biofortification in breeding programs. We will summarize lessons learned on the delivery models implemented in Rwanda, Uganda, Nigeria, and Bangladesh, and update the ex-ante as well as ex post impact and cost-effectiveness analyses of all target crop-country combinations. We will continue to work with the World Health Organization (WHO) on the finalization of the systematic review and development of guidelines, while also working with Codex and others on setting the standards. We will continue working with partners to have biofortification goals included in five

more national/regional policies and three additional country grants.

Flagship 3 (Food Safety)

In 2020, Flagship 3 will publish synthesis papers on CGIAR food safety research, aflatoxin mitigation options, and the efficacy of Aflasafe. We will continue to test and develop pilot approaches and technologies for food safety. These will include binders to reduce aflatoxins in feed and social marketing to drive consumer demand for food safety. Food safety is one of three themes in the new [One Health Research, Education and Outreach Centre for Africa \(OHRECA\)](#) to be established at ILRI with funding from the German Federal Ministry for Economic Cooperation and Development (BMZ) which aims to network and strengthen capacity for One Health in Africa.

With the new USAID Feed the Future Innovation Lab on Food Safety, we will prepare situational analyses and investment reports for seven East African countries. We will help validate the Africa Food Safety Index (AFSI) with the African Union and start new engagements with the East African Community (EAC) such as support to a Food Safety Strategy. Our portfolio of six large-scale projects to improve food safety in informal urban markets will continue, allowing us to test our theory of change and improving our understanding of what works, where, and how.

We will continue the work to explore different technologies, approaches and partnership arrangements for commercialization and adoption. We will launch an impact evaluation of a groundnut intervention in Ghana combining value chain coordination with an effective low-cost technology (training and drying sheets). We will continue to scale up and out [Aflasafe](#) across Africa. Our plans for 2020 include conducting Aflasafe farmer field efficacy trials for the first time in Niger, Togo, and Democratic Republic of the Congo; appointing a private sector company in Kenya to distribute Aflasafe KE01; commissioning Aflasafe manufacturing facilities in Mozambique and Tanzania; opening a research for development (R4D) Aflasafe manufacturing facility in IITA-Ibadan in order to make manufacturing more efficient and cheaper; starting a large-scale Aflasafe project in Sudan; and, conducting demonstration trials with aflatoxin-conscious buyers (such as large commercial firms) in ten countries.

Flagship 4 (Supporting Policies, Programs and Enabling Action through Research [SPEAR])

In 2020, SPEAR will expand its contribution to the evidence base on multi-sectoral solutions for improving nutrition and health. The welcome consideration of malnutrition in all its forms, has led us to take a broader approach to malnutrition, including the co-existence of nutritional deficiencies - causing stunting, wasting, underweight and micronutrient deficiencies – along with rising problems of overweight, obesity and non-communicable diseases in the same countries, households, and individuals. We will publish a paper on double duty actions in *The Lancet* series on The Double Burden of Malnutrition and contribute to *The Lancet's* Maternal and Child Nutrition Series update, to be published ahead of the [Global Nutrition Summit 2020](#) in Tokyo.

We will continue our work on understanding how nutrition-sensitive agriculture programs affect a wide variety of outcomes and the pathways through which different types of approaches work to achieve impact. We expect to wrap up all publications from the empirical evaluations of Helen Keller International's homestead food production programs in Burkina Faso (2010-2013 and 2014-2017) and Tanzania (2014-2017). We will also conduct an end line evaluation for a poultry value chain project in Burkina Faso and the baseline evaluation for a food-for-assets program in Sri Lanka, among other initiatives.

To further develop our emerging portfolio on malnutrition in all its forms, we will advance work on 'Stories of Challenge' in 2020. We will apply the similar, mixed methods, country-focused approach used for [Stories of Change](#) to understand the drivers and potential responses to the double burden

of malnutrition in Ghana, South Africa, Viet Nam, and Indonesia and in one city.

In 2020, we will publish, disseminate, and build capacity as part of two major bilateral projects that (i) support nutrition policy and programming in West Africa and (ii) generate, synthesize, and mobilize diverse types of nutrition data and evidence to support policy decisions in order to reduce the evidence gap in Indian nutrition. Significant forthcoming publications relate to two studies of social accountability/local governance strengthening of nutrition-sensitive service delivery in Odisha (India) and in Bangladesh; and a scoping review of climate change, nutrition and equity.

Flagship 5 (Improving Human Health)

We will intensify our work in 2020 on building mosquito management strategies for malaria into rice irrigation schemes in West Africa in partnership with Africa Rice. Similar work will be initiated in East Africa in partnership with IRRI. A new aspect to this work is the link with climate change research, and the search for rice-growing methods that can reduce both the production of greenhouse gases especially methane, and the production of mosquitoes. Freie Universität Berlin, Friedrich-Loeffler Institute, Vétérinaires sans Frontières Germany and the Federal Ministry for Economic Cooperation and Development (BMZ) will become new partners on the epidemiology and control of Rift Valley fever (RVF) in East Africa work.

We will complete the development of a serum bank, a diagnostic kit, and national action plans for managing cysticercosis in Kenya and Uganda. A new partnership with the University of Munich has been created to support this work. Research on other neglected zoonotic diseases will be supported mainly through grant funding with a focus on developing One Health partnerships required for the management of these diseases. We will conduct analyses to determine the cost effectiveness of One Health interventions for key zoonotic diseases, including brucellosis and RVF.

As partnerships convened through the CGIAR Antimicrobial Resistance (AMR) Hub get activated, we will enhance activities on AMR. Our AMR work will be implemented with IMWI, WorldFish, IFPRI, LSHTM, the Swedish University of Agricultural Sciences (SLU), and the International Center for Antimicrobial Resistance Solutions (ICARS in Denmark) in Uganda, Kenya, Vietnam, Bangladesh, and India. Additional support from the Fleming Fund will be used to expand surveillance for [AMR in Kenya](#). In West Africa, we will complete work on insecticide resistance and convene stakeholder consultations on judicious use of insecticides/agrochemicals in farming. We will continue to convene and facilitate intersectoral meetings involving public health and agriculture stakeholders to share evidence generated from research and develop integrated approaches for managing agriculture-associated human health problems.

Cross-cutting units

Our 2020 plans for gender, equity, and empowerment research include the launch of guidelines for implementing and using the pro-WEAI (project-level Women's Empowerment in Agriculture Index), including the health and nutrition add-on module. Recognizing that there are large disparities in nutrition and health outcomes between groups of people, and resources and processes related to these outcomes are often distributed inequitably, targeted desk reviews were commissioned by A4NH and will be published in 2020 on youth and food systems and equity issues in agriculture, nutrition, and health research.

In 2020, key A4NH Managing Partners will lead the development of a series of situational analyses describing opportunities and entry points for engagement with national partners on agriculture-nutrition-health issues in the five focus countries (Bangladesh, Ethiopia, India, Nigeria, and Viet Nam). These reports will also detail how CGIAR can support countries in addressing these issues and are expected to be a useful input into planning CGIAR country coordination in the post-2021 agenda.

A4NH will co-convene the [2020 Agriculture, Nutrition and Health Academy Week](#) in Malawi with LSHTM. Since the first conference in 2016, A4NH has increased CGIAR involvement on the scientific committee, panels and presentations, and overall attendance. In 2020, we will actively pursue options for another CGIAR entity to continue to co-lead this influential initiative beyond 2021.

No new CRP-commissioned evaluations of flagships will be conducted in 2020. Instead we will focus on specific assessments of policies and innovations, particularly for the outcome impact case reports. For example, with the CRP on Roots, Tubers, and Bananas (RTB), A4NH is conducting an external assessment of CGIAR contributions to biofortification policies and investments in Africa.

3_Financial Plan for the coming year, including use of W1/W2

For the first half of Phase II (2017-2019), A4NH has been able to annually allocate CGIAR funding (W1/W2) to all Managing Partners consistent with amounts set forth in the 2017 CGIAR Financial Plan. This was made possible with W1/W2 carryover funding from Phase I, which offset declines in expected W1/W2 funding. As most of the Phase I carryover funding has been expended, we are planning for lower A4NH expenditures in 2020 (\$19 million) compared to 2019 (\$21 million). In 2020, we expect stable CGIAR funding relative to 2019 (\$17.3 million).

CGIAR funding (W1/W2) remains critical for key research and partnership initiatives and leveraging grant funding. Window 3 and bilateral grants (“grant funding” or “grants”) continue to provide the main financial resources for research. The balance of CGIAR funding relative to grant funding has balanced since 2017 in the less mature A4NH flagships (Flagships 1, 3, and 5) due to successful bilateral resource mobilization. As a result, dependency on CGIAR funding will decline in 2020: 70% of the Flagship 3 portfolio will come from grants (up from 50% in 2019); 70% of Flagship 1 (up from 55% in 2019); and 60% of Flagship 5 (up from 41% in 2019). For the mature A4NH flagships – Flagship 2 and Flagship 4, the largest portfolios in A4NH – grant funding is significant. In 2020, 89% of the Flagship 2 portfolio will come from grants and 79% of Flagship 4. Grant funding to Flagship 2 will decline by approximately 20%, as donors shift funding from HarvestPlus directly to the CGIAR breeding programs.

In 2020, A4NH will use CGIAR funding to consolidate key research assets that will be building blocks for the post-2021 CGIAR portfolio. These include food system tools, approaches, and innovations plus lessons from national food systems transformations as well as lessons learned from innovations and interventions related to biofortification, food safety, nutrition-sensitive agriculture, antimicrobial resistance (AMR), and unintended human health consequences of agricultural intensification. We will continue to support and invest in new areas of emphasis introduced in the [CGIAR System 3-Year Business Plan 2019-2021](#), such as AMR research and the CGIAR AMR Hub along with the evolving CGIAR Biofortification Strategy.

Another critical input in the post-2021 CGIAR agenda will be partnerships. In 2020, time and resources, particularly CGIAR funding, will be dedicated to ensuring these are not neglected. These initiatives include: (i) supporting national partners in our five focus countries (Bangladesh, Ethiopia, India, Nigeria, and Viet Nam) to conduct joint research with A4NH with a view on how results can be followed up by national partners and (ii) regional discussions to follow-up on the action items agreed in the series of 2019 CGIAR-A4NH food system convenings, particularly around demand-led food system approaches and research on the food environment. A second series of conversations will focus on how major food groups - particularly nutrient-dense perishables, such as fruits and vegetables and animal source foods - can contribute to food system transformation in CGIAR focus regions.

TABLES

Table 2A: Planned Milestones

FP	Mapped to Sub-IDO	2021 FP outcomes	Milestones	Degree of change since the proposal	Means of verification	CGIAR Cross-Cutting Markers				Assessment of risk to achieve that milestone	For medium/high, main risk
						G	Y	CD	CC		
FP1	<ul style="list-style-type: none"> {primary} CC Enhanced institutional capacity of partner research organizations CC Increased capacity for innovations in partner research organizations 	F1 Outcome 1.1: Partners and other CRPs incorporate nutrition, health and gender in agri-food value chains and food systems programs	2019 extended to 2020 - Validated metrics and tools for assessing diet quality and characterizing food systems applied by 10 research organizations (partner and external organizations) across the 4 focus countries	Reworded/rephrased from proposal	Annual reports from partners and external organizations; citations in reports and publications	1	0	2	1	Low	
			2019 extended to 2020 - 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/rephrased from proposal	Document review, including official statements or publications (e.g., food-based dietary guidelines in Ethiopia); reports and presentations by (inter)national partners at scientific conferences, country stakeholder meetings, and workshops	1	0	1	1	Low	
	<ul style="list-style-type: none"> Increased availability of diverse nutrient-rich foods {primary} Increased access to diverse nutrient-rich foods Optimized 	F1 Outcome 1.2: Partners, including value chain actors, use evidence from impact evaluations when making operational and investment decisions	2020 - Value chain partners implement at least 2 gender-sensitive interventions aligned with findings from CoA1 in Ethiopia and Viet Nam	New/changed	Annual reports from partners describing evaluation designs and results	1	1	1	0	Low	

FP	Mapped to Sub-IDO	2021 FP outcomes	Milestones	Degree of change since the proposal	Means of verification	CGIAR Cross-Cutting Markers				Assessment of risk to achieve that milestone	For medium/high, main risk
						G	Y	CD	CC		
	consumption of diverse nutrient-rich foods										
	<ul style="list-style-type: none"> Increased availability of diverse nutrient-rich foods {primary} Increased access to diverse nutrient-rich foods CC Enhanced institutional capacity of partner research organizations 	F1 Outcome 1.3: Public-private partnerships formed to promote implementation of A4NH strategies for agri-food value chain/food system innovations	2020 - Private sector partners from 2 of the 4 focus countries build knowledge on opportunity areas and partners to work with to support food systems for healthier diets	New/changed	Workshop reports and results from evaluation	0	0	2	0	Low	
2019 extended to 2020 - Guidance note on areas of focus for business 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/changed	Workshop reports and results from evaluation; online reports of the public-private partnership projects	0	0	1	0	Low		
2020 - At least 4 private partners across the 4 focus countries promote implementation of activities that benefit food systems for healthier diets			New/changed	Document and website review; annual reports from partners	0	0	1	0	Medium	3. Partnership	
	<ul style="list-style-type: none"> CC Conducive agricultural policy environment {primary} CC Enhanced institutional capacity of partner research organizations CC Increased 	F1 Outcome 1.4: Key partners, stakeholders, and institutions (including national and local policy makers, private sector, consumer organizations, and other CRPs) are	2020 - 12 stakeholders across the 4 focus countries use results of systematic assessment of different scaling and anchoring options for food systems	New/changed	Document review, including official statements or publications; annual reports from partners	0	0	1	0	Medium	Partnership
			2019 extended to 2020 - Food system policies and narratives/discourses thoroughly analyzed in at least 2 focus countries, contributing to an improved	New/changed	Program monitoring and reporting	0	0	1	0	Low	

FP	Mapped to Sub-IDO	2021 FP outcomes	Milestones	Degree of change since the proposal	Means of verification	CGIAR Cross-Cutting Markers				Assessment of risk to achieve that milestone	For medium/high, main risk
						G	Y	CD	CC		
	capacity for innovations in partner research organizations	effectively implementing the evidence and lessons learned at scale in their food system related strategies and policy agenda	understanding of the current research agenda on food systems								
			2019 extended to 2020 - 10 stakeholders engage in participatory scenario analysis in at least 2 focus countries (Bangladesh and Nigeria)	New/changed	Program monitoring and reporting	1	1	1	1	Medium	6. External environment (political, economic, legal, market)
			2019 extended to 2020 - Key platforms for Healthier Diets identified, and collaborative activities started in at least 2 of the 4 focus countries	New/changed	Program monitoring and reporting	0	0	1	0	Low	
FP2	<ul style="list-style-type: none"> {primary} Increased availability of diverse nutrient-rich foods CC Increased capacity of partner organizations, as evidenced by rate of investments in agricultural research {primary} CC Enhanced institutional capacity of partner research organizations 	F2 Outcome 2.1: High-yielding micronutrient enhanced varieties developed and released in priority countries F2 Outcome 2.2: Biofortification mainstreamed into CGIAR and NARS breeding efforts	2020 - 65 countries host multi-location testing of biofortified crops	Reworded/rephrased from proposal	Annual reporting from CGIAR partners and NARS	1	1	1	1	Low	
			2020 - CGIAR Breeding Centers finalize mainstreaming monitoring reports for each crop (rice, wheat, beans, and pearl millet)	Reworded/rephrased from proposal	Mainstreaming monitoring reports for each crop (rice, wheat, beans, and pearl millet)	1	1	1	1	Medium	Partnership
			2020 - CGIAR breeding Centers progress on harmonizing early generation seed production with seed systems strengthening, capacity building and delivery activities/efforts (iron beans, iron pearl millet, vitamin A cassava, vitamin A maize, vitamin A potato, and zinc rice)	New/changed	Annual reporting from CGIAR breeding Centers	1	1	1	1	Medium	3. Partnership

FP	Mapped to Sub-IDO	2021 FP outcomes	Milestones	Degree of change since the proposal	Means of verification	CGIAR Cross-Cutting Markers				Assessment of risk to achieve that milestone	For medium/high, main risk
						G	Y	CD	CC		
	<ul style="list-style-type: none"> Closed yield gaps through improved agronomic and animal husbandry practices {primary} Increased availability of diverse nutrient-rich foods 	F2 Outcome 2.3: High-yielding micronutrient enhanced varieties delivered at scale in priority countries	2020 - 10 million households in HarvestPlus priority countries growing and consuming biofortified crops	Reworded/rephrased from proposal	HarvestPlus monitoring database; HarvestPlus Global Households Reached Projection Model	1	1	1	1	Low	
	<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 	F2 Outcome 2.4: Evidence on nutritional efficacy and impact informs value chain actors, as well as national and international investors	2020 - Ex ante impact and cost-effectiveness analyses of all target crop-country combinations are updated and published	New/changed	Program monitoring and reporting	0	0	0	0	Low	
	<ul style="list-style-type: none"> CC Improved capacity of women and young people to participate in decision-making {primary} CC Increased capacity of partner organizations, as evidenced by rate of investments in agricultural research 	F2 Outcome 2.4: Evidence on nutritional efficacy and impact informs value chain actors, as well as national and international investors	2020 - Lessons learned on delivery of the biofortified crops along the value chain in Rwanda, Uganda, Nigeria, Bangladesh summarized and published	New/changed	Program monitoring and reporting; bilateral donor monitoring and reporting	0	0	1	0	Low	
	<ul style="list-style-type: none"> CC Improved capacity of women and young people to participate in decision-making {primary} CC Increased capacity of partner organizations, as evidenced by rate of investments in agricultural research 	F2 Outcome 2.4: Evidence on nutritional efficacy and impact informs value chain actors, as well as national and international investors	2020 - Two decision making tools incorporating evidence from efficacy studies of zinc biofortified crops (rice and wheat) for various target populations finalized and disseminated	Reworded/rephrased from proposal	Program monitoring and reporting	1	1	1	0	Low	
	<ul style="list-style-type: none"> {primary} CC Conducive 	F2 Outcome 2.5: Biofortification supported by global institutions and	2020 - Biofortification included in 5 additional national/regional policies and 3 additional country grants/loans from IFIs	New/changed	Review of websites of multilateral institutions and other stakeholders	0	0	1	0	Low	

FP	Mapped to Sub-IDO	2021 FP outcomes	Milestones	Degree of change since the proposal	Means of verification	CGIAR Cross-Cutting Markers				Assessment of risk to achieve that milestone	For medium/high, main risk
						G	Y	CD	CC		
	agricultural policy environment	incorporated into plans and policies by stakeholders	2020 - Biofortification Priority Index (BPI) 2.0 database is updated with new varieties released data	New/changed	Program monitoring and reporting	0	0	1	0	Low	
FP3	<ul style="list-style-type: none"> Reduced market barriers Reduced biological and chemical hazards in the food system {primary} Appropriate regulatory environment for food safety 	F3 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	2020 - At least 3 intergovernmental agencies (WHO, FAO, OIE, WB, RECS) and national governments use evidence on policy and regulatory advice for food safety in informal markets to member states	Reworded/rephrased from proposal	Document review, including official policy documents and statements; monitoring of implementation of regulations and guidelines	1	1	1	0	Low	
			2020 - New food safety innovation lab initiates pro-poor, equitable and risk-based research	New/changed	Document and website review	1	1	1	0	Low	
			2020 - Regulators in at least 9 countries approve registration of 12 Aflasafe products based on evidence of efficacy and safety of the products	New/changed	Document review of official statements by national regulators (regarding dossiers and registration certificates)	0	0	1	0	Low	
	<ul style="list-style-type: none"> Reduced biological and chemical hazards in the food system Appropriate regulatory environment for food safety {primary} CC Increase capacity of beneficiaries to 	F3 Outcome 3.2: Market-based food safety innovations delivered at scale in key countries along with understanding of their impact and appropriate use	2020 - 2 more informal value chains identified for piloting and testing risk assessment and management	Reworded/rephrased from proposal	Partner reports from Assam (India), Cambodia, and Viet Nam	1	1	1	0	Low	
2020 - Policy/regulators in at least two types of VCs (dairy, fish, produce) in at least 4 target countries are following gender-sensitive recommendations for food safety based on evidence from A4NH Phase I and II	New/changed		Document review, including official statements or publications (specifically looking for gender-sensitive aspects)	1	1	1	0	Low			

FP	Mapped to Sub-IDO	2021 FP outcomes	Milestones	Degree of change since the proposal	Means of verification	CGIAR Cross-Cutting Markers				Assessment of risk to achieve that milestone	For medium/high, main risk
						G	Y	CD	CC		
	adopt research outputs										
	<ul style="list-style-type: none"> {primary} Reduced biological and chemical hazards in the food system • Appropriate regulatory environment for food safety • CC Increase capacity of beneficiaries to adopt research outputs 	F3 Outcome 3.3: Biocontrol and GAP delivered at scale in key countries along with understanding of their impact and appropriate use	2020 - Four-fold increase from 2017 – 500,000 hectares covered. 156,000 farmers adopt biocontrol across 8 countries in Sub Saharan Africa, producing 548,000 tons of low-aflatoxin maize and groundnut (with 159,000 tons for consumption by farmer families)	Reworded/ rephrased from proposal	Aflasafe production logs; monitoring systems by countries (agreed under PACA); partner reporting; monitoring (including gender indicators)	1	1	2	1	Low	
2020 - At least 5 private firms or public institutions adopt Aflasafe business plans and commercialization strategies to set up Aflasafe			New/changed	Signed technology transfer and licensing agreements; partner reporting; documentation from national authorities	0	0	1	0	Medium	6. External environment (political, economic, legal, market)	
2020 - Private firms produce aflasafe™ in 3 countries			New/changed	Signed technology transfer and licensing agreements; partner reporting; documentation from national authorities	0	0	2	0	Medium	3. Partnership	
FP4	<ul style="list-style-type: none"> • Increased access to diverse nutrient-rich foods • {primary} Optimized 	F4 Outcome 4.1: Development program implementers and investors (governments, NGOs, UN institutions) use	2020 - At least 3 implementing organizations and investors use evidence generated in Phase I and II of A4NH in the funding, design, and programming of nutrition- and gender-sensitive agriculture programs	New/changed	Tracking of program implementing partners through targeted interviews and document review (nutrition-sensitive agriculture)	2	1	1	1	Medium	Financial

FP	Mapped to Sub-IDO	2021 FP outcomes	Milestones	Degree of change since the proposal	Means of verification	CGIAR Cross-Cutting Markers				Assessment of risk to achieve that milestone	For medium/high, main risk
						G	Y	CD	CC		
	<p>consumption of diverse nutrient-rich foods</p> <ul style="list-style-type: none"> • CC Gender-equitable control of productive assets and resources 	evidence, tools and methods to design and implement cost-effective nutrition-sensitive agricultural programs at scale			programming, investments and best practices)						
	<p>• {primary} CC Enhanced institutional capacity of partner research organizations</p> <ul style="list-style-type: none"> • 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 	<p>F4 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</p>	<p>2020 - Researchers and evaluators are aware of and are using A4NH's evidence on the (gendered) impacts and cost-effectiveness of nutrition- and gender-sensitive agriculture programs in a variety of contexts</p>	Identical to proposal	<p>Document review of curriculum and materials on evaluation methods and nutrition-sensitive agriculture programming used by institutions involved in the Agriculture, Nutrition and Health Academy</p>	2	1	1	0	Medium	2. Financial
	<ul style="list-style-type: none"> • Increased access to diverse nutrient-rich foods • {primary} 	<p>F4 Outcome 4.3: Regional, international and UN agencies and initiatives and investors</p>	<p>2020 - Regional and international organizations incorporate new knowledge/approaches on climate change and gender relations in their</p>	Reworded/ rephrased from proposal	<p>Annual reporting (including on gender) from partners; document review of citations in</p>	2	1	1	2	Medium	2. Financial

FP	Mapped to Sub-IDO	2021 FP outcomes	Milestones	Degree of change since the proposal	Means of verification	CGIAR Cross-Cutting Markers				Assessment of risk to achieve that milestone	For medium/high, main risk
						G	Y	CD	CC		
	<p>Optimized consumption of diverse nutrient-rich foods</p> <ul style="list-style-type: none"> CC Improved capacity of women and young people to participate in decision-making 	use evidence, tools and methods to inform decisions and investment strategies to guide and support nutrition-sensitive agricultural programming and nutrition-sensitive policies	discourse, attitudes, behaviors, and practices related to cross-sectoral nutrition-sensitive agriculture		official statements or policies (specifically looking for gender aspects)						
	<ul style="list-style-type: none"> Increased access to diverse nutrient-rich foods {primary} Optimized consumption of diverse nutrient-rich foods CC Improved capacity of women and young people to participate in decision-making 	F4 Outcome 4.4: National policymakers and shapers, and stakeholders from different sectors, civil society and industry use evidence to design effective nutrition-sensitive policies, and ensure quality implementation	2020 - At least three countries refer to cross-sectoral nutrition-sensitive A4NH evidence in policy and investment decisions	New/changed	Document review of citations in official policy statements and documents	1	0	2	0	Medium	6. External environment (political, economic, legal, market)
	<ul style="list-style-type: none"> {primary} CC Increase capacity of beneficiaries to adopt research outputs CC Enhanced individual capacity in 	F4 Outcome 4.5: Stakeholders from different sectors, governments, UN institutions, civil society and industry, including CGIAR and	2020 - Nutrition leaders and institutions in at least one country (Ethiopia) and the African Union demonstrate improved capacity to generate and use evidence and information systems, including gender-sensitive information tools, to inform policy and program processes	Reworded/ rephrased from proposal	Self-assessment reports from partners; document review of citations in official documents and reports	1	1	2	1	Medium	6. External environment (political, economic, legal, market)

FP	Mapped to Sub-IDO	2021 FP outcomes	Milestones	Degree of change since the proposal	Means of verification	CGIAR Cross-Cutting Markers				Assessment of risk to achieve that milestone	For medium/high, main risk
						G	Y	CD	CC		
	partner research organizations through training and exchange <ul style="list-style-type: none"> • CC Increased capacity for innovation in partner development organizations and in poor and vulnerable communities 	other CRPs, have improved capacity to generate and use evidence to improve nutrition-sensitive agricultural programming, nutrition-sensitive policymaking and implementation.									
FP5	<ul style="list-style-type: none"> • {primary} 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 	F5 Outcome 5.1: Agricultural practices modified to reduce health risks	2020 - Research partners scale-up trials of agricultural innovations that include vector indicators	New/changed	Progress reports from partners	0	0	1	2	Medium	2. Financial
			2020 - Spatio-temporal dynamics model of Rift Valley fever developed and used by the Ministry of Agriculture (Uganda) for evaluating interventions	New/changed	Document review of official publications (technical report)	0	0	1	1	Low	
			2020 - At least one rice development agency in Africa describes the need to reduce mosquito/greenhouse gas emissions in their plans or strategies	New/changed	Progress reports from partners	0	0	1	2	Medium	6. External environment (political, economic, legal, market)

FP	Mapped to Sub-IDO	2021 FP outcomes	Milestones	Degree of change since the proposal	Means of verification	CGIAR Cross-Cutting Markers				Assessment of risk to achieve that milestone	For medium/high, main risk
						G	Y	CD	CC		
	<ul style="list-style-type: none"> {primary} Reduced livestock and fish disease risks associated with intensification and climate change Increased resilience of agro-ecosystems and communities, especially those including smallholders CC Conducive environment for managing shocks and vulnerability, as evidenced in rapid response mechanisms 	F5 Outcome 5.2: Agricultural and public health policymakers and implementers deliver coordinated and effective solutions to cysticercosis and other zoonotic threats	2019 extended to 2020 - Stakeholders (farmers and field veterinarians) have access to a validated and semi-commercialized pen-side diagnostic assay for cysticercosis	Reworded/rephrased from proposal	Monitoring and evaluation in program sites; annual reporting from partners	0	0	1	0	Medium	1. Research/science
			2020 - Regional serum bank for cysticercosis test validation created and made available to regional researchers	New/changed	Program monitoring and reporting	0	0	0	0	Low	
			2020 - National Action Plan for cysticercosis raised to a government priority and Action Plan drafted for government approval in Kenya and Rwanda	New/changed	Document review of citations in official documents and reports	0	0	1	0	Medium	3. Partnership
			2020 - Brucellosis evidence from sub-region leads to implementation of national surveillance and control in Kenya	New/changed	Document review of citations in official documents and reports; progress reports from partners in Kenya	1	0	0	0	Low	
	<ul style="list-style-type: none"> Reduced livestock and fish disease risks associated with intensification and climate change {primary} Increased safe use of inputs CC Enhanced 	F5 Outcome 5.3: Public and private sector policymakers implement measures to reduce human and animal health risks from antimicrobial resistance and other interactions	2019 extended to 2020 - One Health evaluation framework for antimicrobial resistance interventions is available for use by research within and outside CGIAR	New/changed	Program monitoring and reporting	1	0	0	0	Medium	1. Research/science
			2019 extended to 2020 - Risk map completed on insecticide resistance selection across rice farming areas in three countries in West Africa.	New/changed	Program monitoring and reporting	0	0	1	0	Low	

FP	Mapped to Sub-IDO	2021 FP outcomes	Milestones	Degree of change since the proposal	Means of verification	CGIAR Cross-Cutting Markers				Assessment of risk to achieve that milestone	For medium/high, main risk
						G	Y	CD	CC		
	institutional capacity of partner research organizations		2020 - National level surveillance implemented in Kenya under the banner of the Fleming Fund	New/changed	Annual reports from partners in Kenya; bilateral donor monitoring and reporting	0	0	1	0	Low	
			2020 - Antimicrobial susceptibility testing facilities up and running in CGIAR AMR Hub lab in support of internal and external partners for diagnostic purposes and capacity development	New/changed	Program monitoring and reporting (CGIAR Hub report on susceptibility testing and other lab activities conducted)	0	0	1	0	Low	
	<ul style="list-style-type: none"> Increased safe use of inputs CC Enhanced institutional capacity of partner research organizations {primary} CC Enhanced individual capacity in partner research organizations through training and exchange 	F5 Outcome 5.4: Agricultural research and funding institutions initiate collaboration with public health counterparts to solve complex intersectoral problems	2020 - Researchers representing natural and social scientists from health and agriculture participate in theme-based symposia in 2020 to identify and develop research areas, recognizing gender and equity issues	New/changed	Reports on meetings held in 2020 demonstrating interdisciplinary participation and dialogue, and indicating specific components on gender, youth, capdev and climate change	1	1	1	1	Medium	4. Internal resources

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

CRP	FP	Status	Planned studies/learning exercises in the coming year	Geographic scope	Who is commissioning this study
A4NH	FP1	Ongoing	Evaluation of intervention to address seasonal availability of fruits/vegetables and preferences/barriers for consumption by peri-urban and urban low-income men and women in Hanoi and Ibadan	Viet Nam, Nigeria	Bill & Melinda Gates Foundation (BMGF)
A4NH	FP1	Ongoing	Evaluation of the impact of distributing coupons to reduce price of fruits and vegetables in Hanoi and Ibadan	Viet Nam, Nigeria	Bill & Melinda Gates Foundation (BMGF)
A4NH	FP1	Ongoing	Evaluation of school-based intervention to improve diets consumed in school	Viet Nam	A4NH
A4NH	FP1	Ongoing	Evaluating food products from fruits for home consumption and enhanced income	Nigeria	The World Bank
A4NH	FP2	Ongoing	Monitoring survey for iron beans in Colombia	Colombia	HarvestPlus
A4NH	FP2	Ongoing	Monitoring survey for vitamin A cassava in DRC	DRC	HarvestPlus
A4NH	FP2	New	Monitoring survey for iron pearl millet in India	India	HarvestPlus
A4NH	FP2	New	Monitoring survey for iron beans in Malawi	Malawi	Farmers Union Malawi, CIAT, HarvestPlus
A4NH	FP2	Ongoing	Monitoring survey for vitamin A maize in Malawi	Malawi	Farmers Union Malawi, CIAT, HarvestPlus
A4NH	FP2	Ongoing	Monitoring survey for vitamin A maize in Nigeria	Nigeria	HarvestPlus
A4NH	FP2	New	Monitoring survey for vitamin A cassava in Nigeria	Nigeria	HarvestPlus
A4NH	FP2	New	Monitoring survey for iron beans and vitamin A maize in Zimbabwe	Zimbabwe	HarvestPlus
A4NH	FP2	Ongoing	Adoption study for zinc rice in Bangladesh	Bangladesh	HarvestPlus
A4NH	FP2	New	Consumer acceptance study for zinc rice in Bangladesh	Bangladesh	HarvestPlus
A4NH	FP2	New	Outcome assessment on biofortification engagement and influence on national and regional level policies	Sub-Saharan Africa	CRPs on A4NH and on RTB
A4NH	FP2	New	Case study on lessons learned on the biofortification value chain (in particular, delivery of biofortified crops) in Rwanda, Nigeria, Bangladesh, and Uganda	Rwanda, Nigeria, Bangladesh, Uganda	HarvestPlus
A4NH	FP2	New	Updated ex ante impact and cost effectiveness analyses of all target crop-country combos	Global	HarvestPlus
A4NH	FP2	New	Validation of the new theory of change for commercialization of biofortification, including a set of a harmonized indicators	Global	A4NH (in cooperation with GAIN, CIP, and the CRP on RTB)
A4NH	FP3	New	Credit, uncertainty, and monitoring for technology adoption: The case of Aflasafe in Senegal	Senegal	A4NH and PIM
A4NH	FP3	Ongoing	Study on uptake of Aflasafe by farmer groups	Kenya	A4NH

CRP	FP	Status	Planned studies/learning exercises in the coming year	Geographic scope	Who is commissioning this study
A4NH	FP3	Ongoing	Impact assessment of aflatoxin on health of milk consumers in Burkina Faso	Burkina Faso	USAID Feed the Future Innovation Lab for Livestock Systems
A4NH	FP3	Ongoing	Ex ante impact assessment on policy and informal milk sector in Kenya	Kenya	Bill & Melinda Gates Foundation (BMGF) and Department for International Development (DFID)
A4NH	FP3	New	Assessment of health benefits of an informal market intervention in Kampala, an intervention designed by CGIAR	Uganda	BMZ
A4NH	FP3	New	Assessment of health benefits of an informal market intervention in Viet Nam, an intervention designed by CGIAR	Viet Nam	Bill & Melinda Gates Foundation (BMGF) and Department for International Development (DFID)
A4NH	FP3	New	Assessment of health benefits of an informal market intervention in Burkina Faso and Ethiopia, an intervention designed by CGIAR	Burkina Faso, Ethiopia	Bill & Melinda Gates Foundation (BMGF) and Department for International Development (DFID)
A4NH	FP3	Ongoing	Cluster RCT to assess health benefits of an informal market intervention in Cambodia, an intervention designed by CGIAR	Cambodia	USAID Feed the Future Innovation Lab for Livestock Systems
A4NH	FP3	Ongoing	Evaluation of Safe Food Fair Food project on capacity building in food systems in several countries in Africa	Northern Africa, Southern Africa	A4NH
A4NH	FP3 & FP4	Ongoing	Cluster RCT to assess health and nutrition benefits of informal dairy sector intervention in Nairobi, an intervention designed by CGIAR	Kenya	Bill & Melinda Gates Foundation (BMGF) and Department for International Development (DFID)
A4NH	FP4	Ongoing	Impact evaluation comparing four different modalities to integrate nutrition with agricultural programs in Bangladesh and India, intervention designs of which CGIAR made contributions	Bangladesh, India	Bill & Melinda Gates Foundation (BMGF)
A4NH	FP4	Ongoing	Evaluation to assess the feasibility of integrating a package of maternal nutrition interventions in existing...health services in India, intervention designs of which CGIAR made contributions	India	FHI360
A4NH	FP4	Ongoing	Maternal nutrition evaluation to gain insights on diets and nutritional practices during pregnancy in India, an intervention design of which CGIAR made contributions	India	Bill & Melinda Gates Foundation (BMGF)
A4NH	FP4	Ongoing	Process evaluation of a mobile phone innovation in the Integrated Child Development Services program in India, an intervention design of which CGIAR made contributions	India	Bill & Melinda Gates Foundation (BMGF)
A4NH	FP4	Ongoing	Evaluation of an integrated package of nutrition and agricultural interventions on diets, health, and nutritional status of women and children...designs of which CGIAR made contributions	Burkina Faso	Bill & Melinda Gates Foundation (BMGF)

CRP	FP	Status	Planned studies/learning exercises in the coming year	Geographic scope	Who is commissioning this study
A4NH	FP4	Ongoing	Evaluation of an intervention package (of which CGIAR made contributions) of behavior change modification and nutrient supplements in Burkina Faso and Mali; in Senegal (assessing feasibility)	Burkina Faso, Mali, Senegal	Global Affairs Canada
A4NH	FP4	Ongoing	Assessing the integration of diet and nutrition interventions in urban health systems in Burkina Faso, Mali, and Senegal	Burkina Faso, Mali, Senegal	Bill & Melinda Gates Foundation (BMGF)
A4NH	FP4	Ongoing	Evaluation of the Bangladesh Initiative to Enhance Nutrition Security and Governance	Bangladesh	European Union
A4NH	FP4	Ongoing	Evaluation of the integration of maternal diet and nutrition interventions into antenatal health care platforms in Burkina Faso and Bangladesh	Burkina Faso, Bangladesh	Bill & Melinda Gates Foundation (BMGF)
A4NH	FP4	Ongoing	Building resilience through improved productivity, food security, health and nutrition: Assessing the World Food Program's Food for Assets program	Zimbabwe	A4NH
A4NH	FP5	Ongoing	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	Kenya, Uganda	USAID
A4NH	FP5	Ongoing	Evaluation of impact of education interventions on behavior of slaughterhouse workers exposed to occupational risk of zoonoses transmission	Kenya	Biotechnology and Biological Sciences Research Council (BBSRC)
A4NH	FP5	Ongoing	Evaluation of the adoption levels of mobile phone-based surveillance systems in selected counties in Kenya	Kenya	A4NH
A4NH	FP5	Ongoing	Evaluation of impact of hygiene interventions to prevent nosocomial transmission of antibiotic resistant bacteria among health workers in public sector hospitals	Kenya	University of Liverpool
A4NH	FP5	New	Assessment of the potential outcomes of antimicrobial resistance (AMR) research and development activities implemented through the CGIAR AMR Hub	Kenya and Vietnam	A4NH

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

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)
Abt Associates	Flagship 1 will evaluate efforts to stimulate mobile sales agents to supply nutritious foods, financed through the United States Agency for International Development (USAID) Feed the Future Bangladesh Aquaculture and Nutrition Activity, which is coordinated by Abt Associates.
BMGF - Bill & Melinda Gates Foundation	In Flagship 1, the Bill and Melinda Gates Foundation (BMGF) and Wageningen University and Research are initiating a partnership on a global scoping study on investment opportunities in fruit and vegetables. The study will provide synthesis on the global and regional trends in horticulture production and markets and will present case studies for 7 countries to explore where the food systems can be made to work better through investment in vegetable and fruit sectors, including research, starting materials, value chains and trade.
FOAG - Federal Office for Agriculture (Switzerland)	In this 2-year collaboration in Flagship 1, CIAT proposes to design and field-test a decision support tool (the Sustainable Food System Country Profile) to support more informed and evidence-based decisions around food systems in three countries - Bangladesh, Ethiopia, and Honduras . It is envisaged that this tool would become part of the "SFS Toolbox" of the UN-led One Planet (10YFP) Sustainable Food Systems (SFS) Program.
GIZ - Deutsche Gesellschaft für Internationale Zusammenarbeit / German Society for International Cooperation	Under Flagship 1, collaboration with Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) in the framework of the Knowledge for Nutrition (K4N) program and validation of the Gallup tool, an adjusted dietary diversity scoring tool incorporating healthy and unhealthy food components in Ethiopia and Viet Nam .
IFAD - International Fund for Agricultural Development	In Flagship 1, IFAD and Wageningen University and Research have initiated a 2-year partnership around the 2021 edition of the Rural Development Report, IFAD's flagship publication, which will focus on the merit of food systems approaches in sustainable rural development and job creation.
CIP	In Flagship 2, HarvestPlus will collaborate with CIP to harmonize the monitoring, evaluation, and learning and impact assessment of biofortification, and conduct field implementation of the tools developed, to track impact at scale, as well as to track sustainability and cost-effectiveness.
GAIN - Global Alliance for Improved Nutrition	In Flagship 2, HarvestPlus will continue to partner with the Global Alliance for Improved Nutrition (GAIN) for commercialization of biofortified crops and foods in 6 countries . HarvestPlus will continue to collaborate with GAIN to learn from GAIN's tools and methods for estimating impact of fortification at scale and to work on adaptation of these tools to biofortification. HarvestPlus will co-host the second global fortification summit together with GAIN and the Micronutrient Forum in March 2020 in Bangkok. It will be an important opportunity to ensure that biofortification is highlighted worldwide as a key intervention to nourish the next generations.
J-PAL - Abdul Latif Jameel Poverty Action Lab	As the thought leader in biofortification, HarvestPlus will partner with the Abdul Latif Jameel Poverty Action Lab to implement effectiveness studies/address questions along the impact pathway to scale in Flagship 2.

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)
PAD - Precision Agriculture for Development	As the thought leader in biofortification, HarvestPlus tests and adopts new technologies for cost-effective and sustainable scale up and commercialize biofortification. In Flagship 2, HarvestPlus will partner with Precision Agriculture for Development to test the effectiveness and scalability of digital tools in demand creation activities and for linking farmers to input and output markets.
WUR - Wageningen University and Research Centre	In Flagship 2, HarvestPlus will pursue the collaboration with WUR to validate the tools and methods for monitoring and evaluation of biofortification.
EAC - East African Community	Flagship 3 will be engaging with the East African Community (EAC) on three fronts: i) presenting evidence on the food safety situation from a new study with the USAID Feed the Future Food Safety Innovation Lab; ii) exploring how to develop an EAC food safety strategy with the Global Food Safety Partnership; and iii) exploring the development of an EAC food safety curriculum with the Food and Agriculture Organization of the United Nations (FAO). The EAC is the regional economic community in East Africa and helping develop a food safety strategy and curriculum will lead to changes in national policy and more rational and equitable implementation of food safety policy and regulation.
GAIN - Global Alliance for Improved Nutrition	Through Flagship 3, a food safety collaboration with the Global Alliance for Improved Nutrition (GAIN) to work on risk assessment is starting. This will be the first major food safety project implemented by GAIN who have considerable experience and expertise on nutrition. By linking with them as a food safety knowledge partner, A4NH can help leverage their funding and capacity for food safety interventions.
GIZ - Deutsche Gesellschaft für Internationale Zusammenarbeit / German Society for International Cooperation Livestock	With the CRP on Livestock, Flagship 3 will be partnering in a new GIZ Green Innovation Centre project in Zambia on dairy development. Flagship 3 will be providing technical expertise on milk safety
USAID - U.S. Agency for International Development	Flagship 3 are partners in the new USAID Feed the Future Food Safety Innovation Lab and will be conducting a QuickStart activity: a situational analysis of food safety in Africa . We expect evidence from this to influence implementation of the Food Safety Lab and also to generate evidence to influence.
AFD - Agence Française de Développement	In Flagship 3, new projects on Aflasafe in Sudan are starting, funded by the Agence Française de Développement (AFD), a development funder who has not previously invested in Aflasafe scale-out and implementation.
Norges Vel - Royal Norwegian Society for Development	In Flagship 3, new projects on Aflasafe in Mozambique are being initiated with the Royal Norwegian Society for Development, a non-profit development organization, who will be supported by Helvetas, an independent Swiss development organization.
The World Bank	In Flagship 3, new projects on Aflasafe in Burundi and Democratic Republic of the Congo (DRC) are starting, funded by the World Bank, a development funder who has not previously invested in Aflasafe scale-out and implementation.
BBS - Bangladesh Bureau of Statistics	Through Flagship 4, a new collaboration with the Bureau of Statistics on the implementation of the first urban livelihoods and nutrition survey in the four biggest cities (including slums) in Bangladesh will begin.
FAO - Food and Agriculture Organization of the United Nations	The objective of this collaboration in Flagship 4 is to work with the Food and Agriculture Organization of the United Nations (FAO) to update their review on nutrition-sensitive social protection relevant for food systems and to create related program impact pathways.

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)
IFAD - International Fund for Agricultural Development	Through Flagship 4, a new collaboration with the Living Standards Measurement Study (LSMS) team in the World Bank's Development Data Group, the Food and Agriculture Organization of the United Nations (FAO), and the International Fund for Agricultural Development (IFAD) called WEMNS (the Women's Empowerment Metric for National Statistical Systems) will begin. The objective is to develop a streamlined measure of women's empowerment to be implemented by national statistical systems.
FAO - Food and Agriculture Organization of the United Nations	
The World Bank	
ICARS - International Centre for Antimicrobial Resistance Solutions	ICARS is a Danish government initiative focused on AMR interventions in low- and middle-income countries. ILRI and ICARS are currently drafting a MOU and will collaborate in various projects namely development of a state-of-the-art antimicrobial susceptibility testing laboratory at ILRI and in a pilot intervention project in Viet Nam in pigs.
IRRI	In Flagship 5, the London School of Hygiene and Tropical Medicine (LSHTM) has initiated a new collaboration with IRRI East Africa (main office in Kenya), to work on the new Wellcome Trust grant on "Rice intensification: could climate change interventions help Africa malaria elimination?" As a collaborator, IRRI will add scientific value, but also strengthen collaborations on rice and malaria work in East African countries , with consequent efficiency benefits to our existing work in CoA1.
IWMI	Through Flagship 5, IWMI will facilitate the studies on modeling antimicrobial resistance (AMR) hotspots and dispersion in water systems together with ILRI and WorldFish.
WorldFish	
WorldFish	Through Flagship 5, ILRI and WorldFish will collaborate in convening an expert workshop to develop tools for AMR surveillance in fish, as well as in different research projects focused on mitigating AMR risks in aquaculture e.g. AMR profiling of selected microbiomes from tilapia and ponds for disease predication and mitigation strategies, characterization of interventions, and development of resources to increase awareness of AMR in aquaculture.
LMU - Ludwig Maximilians-Universität München	In Flagship 5, ILRI has initiated a new collaboration with the Ludwig Maximilians-Universität Munchen to finalize the development of a prototype diagnostic test for cysticercosis.
Freie Universität Berlin	
FLI - Friedrich-Loeffler-Institut	
VSF-Germany - Vétérinaires sans Frontières - Germany	
BMZ - Bundesministerium für wirtschaftliche Zusammen-arbeit und Entwicklung / Federal Ministry of Economic Cooperation and Development (Germany)	In Flagship 5, these new partners will participate in research on Rift Valley fever in Uganda . Freie Universität Berlin will lead entomological studies to identify mosquitoes involved in the transmission of the disease and determine their susceptibility to insecticides. Friedrich-Loeffler Institute will conduct more intensive vector competence studies in their labs in Germany. ILRI will be responsible for epidemiological studies and disease risk mapping while Vétérinaires sans Frontières Germany will lead capacity development activities including information dissemination.
CIRAD - Centre de coopération internationale en recherche agronomique pour le développement	Under Flagship 5, new partnership in support of a large One Health research program led by CIRAD. This is a large consortium involving 23 institutions that are developing a proposal for the EU's Horizon 2020. The proposal is entitled Sustainable Intensification in Africa: SFS-35-2019-2020 Vector-borne diseases in Africa."

Table 3: Planned Budget

	Planned 2020 Budget (USD)				Comments on major changes
	W1/W2	W3/bilateral	Center's own funds	Total	
FP1: Food Systems for Healthier Diets	\$3,825,844	\$8,948,092		\$12,773,935	
FP2: Biofortification	\$3,150,000	\$26,617,334		\$29,767,334	
FP3: Food Safety	\$3,352,000	\$7,788,239		\$11,140,239	
FP4: Supporting Policies Programs and Enabling Action through Research (SPEAR)	\$4,000,081	\$15,239,558		\$19,239,639	
FP5: Improving Human Health	\$2,148,080	\$3,231,005		\$5,379,085	
Cross Cutting Initiatives					
Country Coordination and Engagement	\$421,581	\$560,309		\$981,890	
Gender, Equity and Empowerment	\$447,214	\$2,677,587		\$3,124,801	
Monitoring, Evaluation and Learning	\$549,760	\$ -		\$549,760	
CRP Management & Support Costs	\$2,110,406	\$ -		\$2,110,406	
CRP Total	\$20,004,966	\$65,062,123		\$85,067,089	

Note: Planned contribution in 2020 of non-CGIAR partner in Flagship 1, Wageningen University and Research and in Flagship 5, London School of Hygiene and Tropical Medicine, is \$5,826,029 and \$515,730 respectively.