



RESEARCH PROGRAM ON
Agriculture for
Nutrition
and Health

LED BY IFPRI

ANNUAL PLAN OF WORK AND BUDGET (POWB) FOR 2018



**CGIAR RESEARCH PROGRAM ON
AGRICULTURE FOR NUTRITION AND HEALTH**
LED BY THE INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

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1. Expected Key Results

1.1 Adjustments/Changes to Your Theories of Change

At CRP level, A4NH's results framework remains unchanged from our [Full Proposal for Phase II](#). We made adjustments to two flagship-level impact pathways (FP1 and FP5), which are described in more detail in the Annex. Also in the Annex are FP1's updated cluster-level theories of change.

1.2 Expected CRP Progress Towards Intermediate Outcomes and SLOs

In its more mature flagships (2, 3, and 4), A4NH will achieve a number of outcome milestones in 2018 as part of a longer-term stream of outcomes (see Table A2 and A1 respectively). Through FP2, we will support partners to scale-out biofortified crops in HarvestPlus priority countries with second and third-wave germplasm providing benefits to 7.5 million households in 2018. As a result of national partner and donor engagement, biofortification will be included in at least three national/regional policies and at least three country grants/loans from international financing institutions by the end of the year. As part of the evidence generated for and with the Partnership for Aflatoxin Control in Africa (PACA), at least three countries in Africa will include Aflasafe as a component for aflatoxin mitigation in their National Agriculture Investment Plans. As part of FP4's outreach and dissemination efforts from Phase I and more recent Phase II research, at least three implementing organizations will use A4NH evidence in their programming of nutrition- and gender-sensitive agricultural programs. FP1 is at an earlier stage than the other A4NH flagships. In 2018, in collaboration with national partners we will finalize national food system descriptions on research implementation plans in Bangladesh, Ethiopia, Nigeria and Vietnam. In FP5, also an earlier stage A4NH flagship, we will establish and promote, with other CRPs and partners, a platform for research on the contributions of livestock and fish sectors to human antimicrobial resistance.

1.3 Obtaining Evidence on Relevant Outcomes and Impacts

Table B describes the range of studies on-going in 2018 within the A4NH portfolio that are expected to provide evidence for the flagships' impact pathways – the links between research outputs, outcomes, and long-term impacts – that make up their theories of change. The table is organized by flagship and type of study to demonstrate the relationship between the type of studies and the current stage of on-going research in 2018 in each flagship. For the more mature flagships, there is a wider range of studies, with many more ex-post studies including efficacy, adoption, and impact evaluations and assessments. In FP2, the evidence for vitamin A and iron biofortified varieties are well established and much of the effort in 2018 will be on high-zinc crops. These include an efficacy study for zinc wheat, a bio-availability study for zinc rice and a large scale nationally-representative adoption study of zinc rice in Bangladesh. These studies will provide data for ex-ante M&E models to forecast adoption and impact under different interventions and investments. There will also be a series of outcome studies within the broader HarvestPlus M&E framework. For FP3, a major emphasis will be evaluating, using a series of field trials, additional components of integrated aflatoxin control including Aflasafe. These will supplement on-going multi-year evaluations of private sector production and distribution of Aflasafe. For food safety of perishable foods in informal markets, a rigorous field trial of different market-agent interventions will be tested for both health and nutrition outcomes. FP4 has a very large portfolio of rigorous, on-going evaluations of specific interventions, which also assess different implementation modalities. The evaluation research is well-linked to FP4 engagement with international and national platforms such as the Scaling Up Nutrition (SUN) Movement, the Comprehensive Africa Agriculture Development Programme (CAADP), and the Coalition for Sustainable Nutrition Security in India.

For newer flagships (1 and 5) evidence studies are at earlier stages (*ex ante* and data and evidence for forecasting studies). FP1 does not have any planned studies in 2018 that meet the criteria for inclusion in Table B. However, FP1's current work is focusing on baseline studies in four focus

countries (Bangladesh, Ethiopia, Nigeria, and Vietnam) that characterize national food systems including current dietary intake and gap analysis using household expenditure surveys and analyze national food systems using a common framework. In addition, the work in 2018 will involve the development of research road maps and foresight analysis to identify entry points for possible interventions. Policy assessment in the context of food systems will be carried out including characterization of policy narratives which will serve as baseline for studying changes in a later phase of the flagship. Most of the work in FP5 is also new, and hence at the early stages of evidence generation, which will lead in coming years to design and testing of interventions. FP5 does not have any planned studies in 2018 that meet the criteria for inclusion in Table B. However, FP5 is strongly oriented towards generating interventions that will achieve agricultural development while reducing human health risks. To give an example: researchers on antimicrobial resistance from ILRI and the London School of Hygiene and Tropical Medicine (LSHTM) have agreed on strategically building their current research on understanding antimicrobial use and patterns of antimicrobial resistance emergence into *specific* programs of interventions in animal health to reduce antimicrobial resistance risk to humans and the measurement of their outcomes.

1.4 Plans by CRP Flagships

FP1: Food Systems for Healthier Diets¹

For **Cluster of Activity 1.1** (Diagnosis and Foresight), in 2018 we will finalize together with national stakeholders, the participatory reviews that characterize the food systems and develop research road maps in our four focus countries (Bangladesh, Ethiopia, Nigeria, and Vietnam) and continue to disseminate results in national stakeholder workshops and international fora (e.g., Agriculture, Nutrition and Health Academy Week Conference and African Nutrition Epidemiology Conference). A dietary gap analysis will be carried out using secondary household survey data, and enriched with research into factors in the food systems that explain the dietary gaps. An initial compendium of key indicators for food system - dietary analysis will be prepared and the development of metrics and tools for use at country level (food-based dietary guidelines, Healthy Eating Index, Agrobiodiversity Index, Cost-of-Diet) will continue. In addition, multi-scale modelling tools will be made operational to be used for foresight analysis in the focus countries with capability to evaluate leverage points such as food system innovation and policies at (sub) national level and to test relevance to local conditions and knowledge gaps.

In **Cluster of Activity 1.2** (Food System Innovations), the focus in 2018 will be on co-development of gender-sensitive food system innovations (demand and supply related) and co-design of research on implementation and impact evaluation of those innovations. Some examples include testing the influence of vegetable vouchers in two contexts (Nigeria and Vietnam) and a school-based innovation using children as agents of change in influencing household food consumption in Vietnam. Efforts will be made to develop methodology to move value chain analysis (single chain analysis) to food system analysis (multi-value chain analysis); a workshop involving key researchers in this cluster will support co-development of a paper on a food system approach towards evaluation of food system interventions. Further emphasis will be given to the involvement of the private sector in food system innovations by developing a strategy based on experiences with public-private partnerships within and outside the CGIAR programs.

Concerning **Cluster of Activity 1.3** (Anchoring and Scaling), continued attention will be given to involve stakeholders in the four focus countries through stakeholder workshops where (preliminary) results of flagship research will be presented and discussed and next steps will be formulated. Baseline food policy analysis including reviews of food system policy frameworks and implementation, that started in Vietnam, will be also finalized in Bangladesh, Nigeria and Ethiopia.

¹ Changes to the impact pathway and theories of change are described in the Annex.

This will be followed by baseline participatory scenario analysis for national food systems in Nigeria and Vietnam. Strategies to strengthen the involvement of multi-stakeholder platforms in food policy (at local and national levels) will be finalized and implementation will start. Capacity building initiatives (food system courses, MSc project opportunities, PhD projects) will continue.

FP2: Biofortification

In 2017, HarvestPlus went through a strategic plan development process for the next five years of its operations (2018-2022). The goal of this new strategic plan is to establish the key activities and the resources needed for HarvestPlus and its partners to scale up biofortification over the next 5 years, with a vision to reach 1 billion consumers by 2030. The major change to FP2 since the Full Proposal has been the identification of 30 priority countries (that is an additional 15 countries) in which to introduce and/or scale up 13 biofortified crops (an additional 6 crops). More information about the strategic plan and the evidence-based analysis applied to identify the micronutrient-crop-country combinations can be found in [this post](#) on the HarvestPlus web site. The theory of change for FP2 remains the same. We will continue to work along the biofortification supply chain, through various push (nutrition and impact evidence development, breeding for nutrition content and mainstreaming of nutrition in CGIAR breeding programs, knowledge management, advocacy, communications) and pull (multiplication and delivery of biofortified planting material, inclusion of biofortified products in food processing) interventions.

Expected highlights for 2018 for **Cluster of Activity 2.1** (Crop Development, Mainstreaming, and Capacity Building) include the development of the interactive biofortification crop map and its launch. In **Cluster of Activity 2.2** (Delivery Science and Developing Lessons Learned), FP2 will develop an internal knowledge management system and associated tools, processes and resources to harness, catalogue and share the most recent data and information more effectively and publish at least two papers on lessons learnt from delivery and scaling up of biofortified crops in priority countries. Another major activity in 2018 will be an extensive review and revision of Harvest Plus's M&E system in light of (1) its new strategic plan; (2) lessons learnt from implementation of the current system in two consecutive years; and (3) new indicators as a result of requirements by new donors and new phases in the project (e.g., market penetration, equity aspects, etc.). The FP2 team will also progress in building the evidence on zinc biofortification and revise the ex-ante impact and cost-effectiveness calculations for the new crop-country combinations. In **Cluster of Activity 2.3** (Promoting an Enabling Environment), the [Biofortification Priority Index \(BPI\)](#) will be updated with the latest data and re-launched.

FP3: Food Safety

Under **Cluster of Activity 3.1** (Evidence that Counts), we will contribute to changing the investment climate for food safety in domestic markets of developing countries. Work by the World Health Organization (WHO) has shown that the [burden of food borne disease](#) is comparable to that of malaria, HIV/AIDs or tuberculosis, and work by A4NH shows that foodborne disease receives less than a twentieth of the investments that the 'big three' attract and that these investments have been unable to demonstrate any improvements to human health. In 2018, we lead or support three major evidence pieces around food safety investments in low- and middle-income countries – one led by the Global Food Safety Partnership, one by the World Bank, and one funded jointly by the UK Department for International Development (DFID) and the Bill and Melinda Gates Foundation (BMGF). These make a strong case for more and better investments and set out clear roadmaps to financing and achieving this. We will also disseminate evidence on nutrition and health through a Chatham House-ILRI initiative on animal source foods and the first 1,000 days. We are issuing a special edition on food safety and nutrition in value chains which will address assessment, interventions and policy. Another contribution to knowledge and decision making are 20 articles for an Elsevier Encyclopedia for Food Safety and Sustainability, which will likely be a key resource for

education. A special session at the premiere international veterinary epidemiology conference in Thailand will highlight food safety in informal markets.

Under **Cluster of Activity 3.2** (Impact that scales for aflatoxins), we have several activities oriented to continuing to move aflasafe from a technology mainly delivered in projects and government programs to a technology delivered by markets and public-private partnerships. To this end, we are developing commercialization strategies and business plans. These set out different types of partnership arrangements at various levels depending on the situational and operational contexts. For example, at the manufacturing and distribution levels in Senegal/The Gambia and Nigeria, private sector partners have been licensed to take on these functions. The strategies and plans also cover regulatory and delivery aspects of aflasafe. Research on aflatoxin binders for livestock will continue with some initial evidence disseminated to stakeholders. The publishing of the first randomized controlled trial (RCT) on aflatoxins and stunting will lead to intensive debate and discussion which we will leverage to mobilize resources for further evidence generation.

Under **Cluster of Activity 3.3** (Impact that scales, informal markets), we commence three important projects that have the potential to bring our light-touch, market-based, trader-oriented approach started in Kenya to scale as part of three projects in three countries (Assam, India; Vietnam; and Cambodia). This involves policy engagement to build an enabling environment, and testing interventions aimed at fresh foods in wet markets. This will generate evidence, capacity and willingness to adopt new and better methods of managing food safety. As well as these new projects, we will commence a major randomized controlled trial in Kenya of the impacts of training and certification (with incentives) for informal sector milk vendors.

We will also use A4NH funding to support getting earlier research outcomes into policy and practice. This is happening at global and country scale. Globally, a BMGF project develops key research insights into media messages and also inserts these into United Nations' processes. Nationally, we have identified policy processes in several countries into which we will introduce research findings: these are multi-stakeholder platforms, several of which were originally supported by CRP Livestock and Fish but which now serve as livestock value chain innovation platforms. We have also been closely involved in the development of two new food safety funding initiative which are likely to be released in 2018: a DFID/BMGF call and a new Feed the Future innovation lab.

FP4: Supporting Policies, Programs and Enabling Action through Research (SPEAR)

Within **Cluster of Activity 4.1** (Nutrition-Sensitive Agricultural Programs), data collection and analysis will be ongoing for many of the program evaluation studies that are listed in Table B. We will conduct two process evaluations: one on a women's self-help group model for improving maternal and child nutrition in India and the other on a gender-sensitive nutrition-sensitive agricultural intervention in Bangladesh. Both will build understanding on the implementation of agriculture-nutrition interventions and inform plans for cost-effectiveness studies. We will collect endline data for the World Bank's Bihar Rural Livelihoods Project (or JEEViKA) in India, which assesses the effectiveness of the JEEViKA-MC model as compared to the standard JEEViKA model at improving maternal nutrition and health outcomes. As part of joint work with FP3, we will conduct the baseline survey of a dairy value chain project in Nairobi. Analysis of the impact of an intervention strategy that embeds a package of behavior change modification and nutrient supplements in Burkina Faso and Mali will be on-going in 2018 and primary outcome papers will be submitted to peer-reviewed journals. This year, we will develop with USAID and Helen Keller International the study design for a project in Nepal that will assess the impact of an adolescent support program delivered through schools that seeks to improve diets and nutrition by improving access to health services, healthy food, and sanitation.

In **Cluster of Activity 4.2**, we will continue to apply the [Stories of Change](#) methodology in new contexts to elicit the drivers of change in nutritional outcomes. Several studies are underway or will be initiated in Vietnam, Tanzania, Ghana, and India (at state-level), and the Rwanda Stories of Change will be completed. A farming systems study will be conducted to develop an estimate of efficiency of internal trade (extent of market integration) and an estimate of inter-annual and intra-annual real price trends in India. The team and partners will also undertake synthesis work to summarize findings across the Leveraging Agriculture for Nutrition in South Asia ([LANSA](#)) program for a special issue in *Food Policy*. We will examine the links between farming systems, market access, and nutrition outcomes to identify important associations between production patterns, market access, and consumption patterns using secondary data analysis. A key theme for this cluster of activity is subnational accountability mechanisms. In India, we will develop district nutrition profiles to gain insights on district-level nutritional outcomes, determinants, and interventions and we will evaluate the Azim Premji's Community Action on Nutrition social audit model in Odisha, piloting implementation of indices and community tools. In Tanzania, one of our on-going studies investigates the effect of nutrition scorecards on local/regional contexts and political leaders. We will continue to support the SUN multisector and multi-stakeholder platforms through research, training and knowledge support. This will draw on existing literature and involve country case studies with an online interactive knowledge product online to improve interactivity of these platforms. SUN and CAADP engagement will continue to strengthen commitment, coherence, and address national implementation challenges. Knowledge Initiative for Implementation and Impact (KI3) will build off work assessing perceived needs in active SUN countries and mapping knowledge providers in providing active support in identified challenge areas.

In **Cluster of Activity 4.3**, reports and briefs will be developed that identify capacity gaps and needs in nutrition leadership for nutrition-sensitive agriculture policy. A report on the theory of change, needs gap and research priorities within IFAD will also be developed. In Africa, guidelines for improving the nutrition sensitivity of CAADP and ReSAKSS processes at country and regional level will be developed. A consortium of organizations willing and able to respond to requests for knowledge assistance to support multisector coordination in SUN countries will be formed as part of the KI3 initiative. Training materials and guidelines will be prepared for INDDEx and a demonstration analysis plan developed for one focal country.

FP5: Improving Human Health¹

This flagship is a unique engagement of public health and agricultural partners, and 2018 will see the first steps at integrating activities that each institution established separately in 2017. For **Cluster of Activity 5.1** (Diseases in Agricultural Landscapes), we will initiate a rigorous review of evidence of the effects of agricultural change, in rural, peri-urban and urban settings, on human disease emergence and prevalence, particularly infectious disease. We will continue work to examine the spatio-temporal relations between agricultural change and vector borne diseases in Africa and Asia. For malaria in Africa, where the major mosquito vector is a rice-breeding species, this involves a collaboration between HarvestChoice, the Malaria Atlas Project, LSHTM and others to bring together geospatial data on disease, changing rice production and socioeconomic status, to identify and predict where rice intensification may threaten malaria elimination. Some initial biological work will be done on potential African vectors of Japanese encephalitis, an Asian disease associated with pigs and rice which is not yet established in Africa. In 2018, we will further develop fieldwork in West Africa on rice intensification and vector borne diseases. This was started in West Africa by IITA, and will involve a new collaboration with LSHTM and Africa Rice to examine the effect of rice production methods on vector populations. With the help of ILRI, plans will be developed to extend this research into East Africa with malaria and rice research partners there. In parallel to this work on diseases associated with rural agricultural systems, FP5 will also begin work on vector borne diseases

¹ Changes to the impact pathway are described in the Annex.

associated with urban agriculture and livestock keeping, in West Africa led by IITA and in India and Vietnam, led by ILRI. For its work on rural and urban agricultural change, FP5 will characterize vector populations in different agricultural settings, and particularly the effects of different settings on vector diversity and longevity, both being critical to the potential for disease transmission.

For **Cluster of Activity 5.2** (Emerging and Neglected Zoonotic Diseases), work on the priority disease, cysticercosis, will be extended from Africa to Southeast Asia, and a portfolio of new work on other neglected zoonoses will be developed. The long-term vision for the work on cysticercosis is to develop interventions in the agricultural sector (targeting the pig reservoir of the parasite) that have a human public health impact, and that raise the level of hygiene in the pork value chain. In 2018, the foundations for this will be laid through the development of a gold standard serum bank for cysticercosis for East Africa, against which the parameters of diagnostic tests can be assessed. Much of our work in 2018 on other zoonotic diseases will be focused in East Africa, where we will be producing guidance and training tools for national programs on zoonotic disease risk, and new evidence on risks associated with anthrax, Brucella and Echinococcus. We will invest new resources to conclude some initial work in Uganda on the potential of commercial pigs as hosts of Ebola. Overall, this work leads towards better tools for and data from surveillance for agriculturally linked zoonotic infection in humans and animals.

In **Cluster of Activity 5.3** (Global Challenges in Agriculture and Health), LSHTM and ILRI will bring together their respective methods for assessing antimicrobial use in human and animal systems, and the current ILRI and University of Liverpool work in East Africa on the molecular epidemiology of antimicrobial resistance in human and animal systems will be extended to Vietnam, with some preliminary work there on pig value chains. Previous work at ILRI in East Africa, much of which has been led by Liverpool, has established detailed biological studies of zoonotic and other disease in meat and milk value chains which are now being used to characterize the distribution of antimicrobial resistance microbes and genes. Other work on measuring antimicrobial use in other African countries, in collaboration with CRP Livestock, will also be reported in 2018 allowing informed discussions on pros and cons of different tools and approaches of measuring use. Work in India has also looked at antimicrobial resistance in milk value chains in India, while most work to date in Vietnam has been focused on initiatives to help livestock farmers use antimicrobials efficiently and in ways that reduce contamination of food chains. Also in Vietnam, a new project, SafePork, will start establishing a research platform for introducing and evaluating alternatives to antimicrobials in pig value chains. FP5 has acknowledged growing global interest amongst donors and in the CGIAR in antimicrobial resistance and will, in 2018, establish a platform for CGIAR research on antimicrobial resistance and linkages to human health research. Much of this will be focused on livestock, but we will also explore the potential risks of antimicrobial use in crops. Lastly, work on agrochemicals and disease vector resistance, led by IITA, is a new area for the CGIAR, but important as resistance currently threatens the major contribution that insecticide impregnated bednets have made to malaria reduction. We will rigorously review the nature of the evidence that can be used to show that agrochemicals have (or have not) contributed to vector resistance.

In 2017, FP5 began efforts to bring together public health and agricultural researchers around key common issues with a focus on antimicrobial resistance. Leading researchers and agencies from across the human and animal health antimicrobial resistance research spectrum, including WHO, FAO, OIE and Fleming Fund, came together to explore how we might harmonize the collection of data on antimicrobial use in these different sectors in developing countries. Anticipating national initiatives in this area, we identified the need for a pilot project to test and compare methods, which ILRI and LSHTM will develop as a proposal in 2018. We will also integrate our currently separate studies in East Africa on antimicrobial use, comparing methods across sectors and identifying best practices for future collaboration. Finally, in 2018, FP5 will bring together researchers around

diseases in agricultural landscapes, organizing international workshops at World Water Week and around the Agriculture Nutrition and Health Academy Week Conference in Accra, where there will be a particular emphasis on engaging regional African public health and agricultural researchers.

1.5. Cross Cutting Dimensions

1.5.1 Gender, Youth and Capacity Development

Outside of the expected deliverables represented in Table C, A4NH has some key areas of work planned in 2018 relevant to the cross-cutting issues of gender, youth, and capacity development.

Gender and Youth. In 2017, A4NH contracted the Institute of Development Studies (IDS) to review existing research on equity issues in A4NH and to provide recommendations for how to better incorporate equity into A4NH research during the rest of Phase II. A4NH research considers several dimensions of equity, but gender, income, and poverty are of a particular focus across all five flagships. Life stage (including youth, CGIAR's emphasis) is less frequently included in A4NH research along with ethnicity and disability, which are rarely addressed explicitly through the research. At the start of 2018, the Gender Equity and Empowerment (GEE) Unit launched a plan to integrate equity more fully across research in all of A4NH's five flagships. Part of this plan for 2018 includes devoting US\$15,000 (total = \$75,000) from the PMU budget for each flagship to develop one or two formative and/or diagnostic research projects on equity that can be carried out by flagship researchers and/or consultants during 2018. These projects will be strategic or analytical activities that help the flagships better understand their needs, priorities, resources, and/or capacity for equity research. Some preliminary ideas include providing support (i) to help HarvestPlus revise its monitoring and evaluation systems with an equity lens, (ii) to analyze some existing A4NH datasets with an equity lens, and (iii) to explore questions like how does gender, role and other dimensions of equity influence the options and capabilities that individuals have in managing certain disease risks. In April 2018, researchers from FP4 and the GEE Unit will hold [pro-WEAI](#) (project-level version of the Women's Empowerment in Agriculture Index) learning and outreach events in Rome, in cooperation with FAO and as part of the second phase of the Gender, Agriculture, and Assets Project (GAAP2). The learning event will be a technical workshop for the research team and participants who are interested in using/adapting the pro-WEAI for their organizations. The outreach event will be a soft launch of the pro-WEAI and will include representatives from the Rome-based UN agencies, donor organizations, researchers, and civil society organizations.

Capacity Development. Some of the main areas of A4NH work in 2018 related to capacity development include the third annual [Agriculture Nutrition and Health Academy Week Conference](#), which will be held in Accra from June 25-29, in partnership with the Leverhulme Centre for Integrative Research on Agriculture and Health and the Innovative Methods and Metrics for Agriculture and Nutrition Actions project. W1/W2 resources from the PMU will be contributed to the event itself and several A4NH-affiliated researchers will lead a variety of sessions during the two-day Learning Labs that start the week. In addition, FP1 is building capacity through MSc grant schemes in Ethiopia and in Vietnam. IFPRI and IDS, as part of FP4, will host its popular short course, [Transforming Nutrition: Ideas, Policies and Outcomes](#), designed to equip development policymakers and practitioners with the knowledge and skills to more effectively design, improve and implement strategic approaches to address nutrition issues at regional, national and global levels. FP4 will partner with the African Nutrition Leadership Program to hold its first training courses in West Africa this year as part of the Transform Nutrition-West Africa project. FP4 will also organize an event for information sharing and capacity strengthening on nutrition sensitivity within CGIAR.

1.5.2 Open Data and Intellectual Assets

In 2018, the A4NH Monitoring, Evaluation and Learning (MEL) Unit began an initiative to identify existing data sets associated with the A4NH research portfolio from Phases I and II of the research

program. Part of the purpose of this initiative is to help strengthen the Managing Partners' capacity to compile and make data sets available for secondary analysis and comparative studies. With the help of IFPRI's Communication and Public Affairs (CPA) division, a sub-dataverse was added to the IFPRI Dataverse in March 2018. At the time of writing, 20 A4NH-associated data sets have been identified and added or linked to the [A4NH Dataverse](#). As the [Agriculture, Nutrition, and Health group on Mendeley](#) serves as a go-to place for agriculture-nutrition-health publications, the A4NH Dataverse has potential to become the go-to place for agriculture-nutrition-health data sets. The number of data sets in the A4NH Dataverse is expected to grow over the course of 2018 as the MEL Unit finalizes a formal survey of the Managing Partners for further information about the status of data sets associated with A4NH since it began in 2012. Targeted resources from the PMU will be devoted to helping researchers from A4NH Managing Partners make existing data sets more findable, accessible, inter-operable, and reusable starting in 2019.

2. Planning for CRP Effectiveness and Efficiency

2.1 CRP Staffing in 2018

Table D is based on December 31, 2017 staffing lists provided to the PMU from the five CGIAR and two non-CGIAR Managing Partner institutions. This is a reasonable estimate given that staffing budgets are similar in both 2017 and 2018. A few staff (< 5 FTE) from A4NH's two strategic partners (the Institute of Development Studies and the Global Alliance for Improved Nutrition) are not included. The staffing mix represents a critical mass of senior researchers (~40%) across all flagships, with an important complement of younger researchers (post-docs and research fellows, ~20%) and scientific support staff (~40%). In most staffing categories, females comprise more than 1/3 of the total and represent the majority in the Flagship Leader, Research Fellow and Scientific Support Staff categories. Overall, 54% of A4NH staff are female.

2.2 Financial Plan for 2018, including use of W1/W2

As in 2017, the 2018 A4NH financial plan represents 100% of the System Council November 2017 allocation for 2018. In 2017, 100% of the System Council allocation (November 2016) was either disbursed to the six (four CGIAR Centers and two non-CGIAR) Managing Partners or retained by IFPRI, the Lead Center, for their planned POWB activities. IFPRI and the other Managing Partners made some internal judgments on how they planned to expend the budgeted and disbursed amounts (50% was disbursed on signing the PPA and the remaining 50% disbursed in December). Overall, approximately 80% of the budgeted amounts were expended. Non-expended balances were either committed or have plans to complete 2017 deliverables that were extended into 2018. Across A4NH, the Lead Center and Managing Partners will plan to spend 100% of the System Council 2018 allocation of \$19 million (Table E). At flagship level, the percentage of CGIAR funding (W1/W2) planned for 2018 relative to grant funding (W3/bilateral) reflects the relative stage of research. FP2 is 90% grant funded, reflecting both its maturity and the large amount of delivery funding from grants. FP3 and FP4 both include several well-established research initiatives plus some new. They are approximately 80% and 75% grant funded, respectively. FP1 is a new A4NH flagship for Phase II. Grant funding will experience continued growth in 2018 and is expected to be almost 2/3 of total funding. Like FP1, FP5 is a new A4NH flagship for Phase II, and is also the smallest A4NH flagship. Grant funding for FP5 is expected to grow more slowly, with an expected 50% grant funding in 2018. CGIAR funding (W1/W2) remains critical in 2018 for leveraging grant funding in the larger and more mature flagships and in providing a large proportion of funding for new initiatives (Table F). CGIAR funds have allowed us to support greater national partner engagement in our five focus countries (Bangladesh, Ethiopia, India, Nigeria, and Vietnam) as well as to expand cross-cutting research support, such as helping flagships to more carefully consider gender and other equity issues (for example youth employment in food systems and nutrition- and health-sensitive value chains) in their theories of change and research plans for 2018 and 2019.

2.3 Collaboration and Integration

2.3.1 New Key External Partnerships

A4NH classifies our partners into four broad categories of researchers, actors in value chains, development program implementers, and enablers. A selection of the strategic, new or substantially enhanced external partnerships for 2018 are listed below by category. In 2018, A4NH will be updating its full external partnership list and the information will be available in MARLO.

Researchers. A4NH will have several new research partnerships, particularly in the newer areas we are taking on like food systems, obesity, and human health issues associated with agriculture. In 2017, FP1 launched a small MSc grants scheme in Ethiopia and Vietnam. As a result, partnerships with five Ethiopian and Vietnamese universities have been initiated to carry out the funded research and co-mentor the students in the scheme. In Ethiopia, the 2017 started partnership with the Ethiopian Public Health Institute will be strengthened through an MoU. In Vietnam, FP1 will also substantially strengthen the partnership with the National Institute of Nutrition in research activities including new PhD projects ranging from diagnosis, foresight, food system innovations, and anchoring and scaling up; with the Mekong Development Research Institute in a school-based food innovation study; and with the Hanoi Medical University in designing an innovation for vegetable and fruit intake. Efforts will be made to include the General Statistics Office, Vietnam, as a new core partner in food systems data sharing and collaboration on data analysis and visualization. In Nigeria, the University of Ibadan will be involved as a research partner in diagnosis, foresight, food system innovations, and anchoring and scaling up, and the Federal University Ndufu-Alike will be involved with FP1 in policy and participatory scenario analysis. FP3 will launch a new partnership with Lilongwe University (Malawi) which will focus on equity aspects of food safety. New partnerships will also be launched in India as part of a new project and in Burkina Faso under a project on aflatoxins. FP4 will launch a new partnership with the Sheffield University, School of Health and Related Research, Public Health section to support work on topics related to obesity. In 2018, FP5 will build on dialogues and linkages that were initiated in 2017, including with the Swiss Tropical Public Health Institute on engaging public health interest in agriculture; the Royal Veterinary College and the University of Stirling on a major proposal on antimicrobial resistance in fish systems; and a number of public health and agricultural institutions following on a workshop on methods for measuring antimicrobial use across both sectors. In addition, FP5 will establish a partnership with GALVMED to seek funding to progress research on cysticercosis. For work on insecticide resistance, new partner, the Liverpool School of Tropical Medicine, recently established a laboratory at IITA and the partnership will be strengthened in 2018.

Actors in Value Chains. Friesland Campina (Netherlands and Nigeria) will be involved in designing an RCT on fortified milk in Nigeria. In Vietnam, Fresh Studio, is a key partner in a project on marketing for vegetables. In 2017, FP1 started a partnership with the Global Alliance for Improved Nutrition (GAIN) to enhance involvement of the private sector and in 2018 this partnership will be substantially enhanced in joint projects. Unilever will partner in a research project on sustainable nutrition in Vietnam. Collaboration with Choices International on development and implementation of a label in Vietnam will be further enhanced.

Development Program Implementers. Rikolto's office in Vietnam will be a key development partner in research on market systems, trade, food flows and interventions in food supply systems. Rikolto is an international NGO based in Belgium that works with farmer groups to help them become solid business partners and implement future-proof, sustainable practices. They support farmers so that their products meet quality standards and connect them with innovators in the food industry to explore new ways of doing business. Rikolto will also be involved in implementation of food system work in Nigeria.

Enablers. At the end of 2017, FP2 received a grant from the MacArthur Foundation for philanthropic funding for scaling up of biofortified crops in HarvestPlus phase 1 countries in Africa (DRC, Nigeria, Rwanda, Uganda, Zambia, Zimbabwe), scaling out/introduction of biofortified crops in 3 HarvestPlus phase 2 countries (Malawi, Niger and Tanzania) and establishment of a regional directorate for Africa in Nairobi, Kenya at CIAT regional office. This new partnership will enable FP2 to deliver the milestone for outcome 2.3.

2.3.2 New Contribution to and from Platforms

In 2018, FP1 plans to inform the Big Data Platform on progress made in assessing consumer intelligence with Euromonitor and to develop a proposal for the second INSPIRE round on consumer oriented big data development and analysis. A4NH remains a strong partner in the Gender Platform through members of the GEE Unit.

2.3.3 New Cross-CRP Interactions

Table G describes A4NH's collaborations with other CRPs. In brief, FP1 provides A4NH's main links with other AFS-CRPs and Centers with the new initiatives described in the table; FP3 links A4NH with Livestock; and new collaborations through FP5 (with Livestock and Fish on antimicrobial resistance and WLE on rice and malaria and other water, agriculture, and vector-borne disease issues).

2.3.4 Expected Efforts on Country Coordination

In the Full Proposal for Phase II, A4NH introduced the Country Coordination and Engagement (CCE) Unit, an initiative designed to make the way A4NH conducts research more efficient by formalizing ways to share information between A4NH flagships working in five focus countries – Bangladesh, Ethiopia, India, Nigeria, and Vietnam – and improving the connections between A4NH researchers and our national partners in the agriculture, nutrition, and health sectors. The structure and funding for the CCE Unit and its five country teams remains the same as described in the Full Proposal: the CCE Unit is coordinated by the A4NH PMU and made up of in-country teams (3-5 in-country researchers representing flagships working in each focus country), led by a Country Coordinator who commits 10% of his/her time to coordination and as the A4NH focal person for CGIAR country coordination. The Country Coordinator is provided with an annual budget, based on an approved work plan, for supporting activities of the team. The CCE Unit will be fully operational in 2018.

2.4 Monitoring, Evaluation and Learning

Several on-going evaluations and impact assessments that comprise the A4NH portfolio are described in Sections 1.3 and 1.4, and in Table B. In this section and in Table H we present primarily the external evaluations, reviews, and learning exercises being coordinated by the Program Management Unit (PMU) through the Monitoring, Evaluation, and Learning (MEL) Unit. One of these learning exercises is described in more detail in Section 1.5.2 on Open Data and Intellectual Assets. A4NH will launch its first CRP Commissioned External Evaluation in Phase II in 2018. This evaluation, done jointly with IFPRI's Impact Assessment team, will examine the long-term impacts of research on nutrition-sensitive agricultural programs from 2004-2017 conducted by IFPRI and starting in 2012, research carried out by IFPRI and other CGIAR Centers as part of Flagship 4 in Phases I and II of A4NH. The CCEE will be carried in 2018 with final reports expected in early 2019.

3. CRP Management

3.1 Management of Risks to Your CRP

As highlighted in the Full Proposal for Phase II, building and maintaining effective and efficient partnerships is considered a critical risk area for A4NH. The two partnership risks we are actively managing in 2018 are the partnerships with national partners in our five focus countries and the engagement of new CGIAR strategic partners. As mentioned earlier, by mid-year, in all five focus

countries, A4NH will have a full complement of in-country research teams supported by an FTE. A full slate of formal research events and informal consultations are planned in each focus country in 2018. New strategic CGIAR partnerships in 2018 will focus on food systems research in focus countries and in revising partnerships for mainstreaming biofortification in CGIAR, which is being coordinated by HarvestPlus (FP2).

3.2 CRP Management and Governance

In the areas of management and governance, there will be three changes in 2018. For FP5, we will have an interim Flagship Leader, Jeff Waage from LSHTM. Jeff will serve for a one-year interim period to strengthen flagship management procedures and the partnership between LSHTM, IITA and ILRI and allow Eric Fèvre, Flagship Leader in 2017, to focus on his rapidly expanding research portfolio. Bernard Bett of ILRI has been identified as the next Flagship Leader and will work closely with Jeff in 2018 to ensure a smooth transition. The second change, outlined in the Full Proposal for Phase II, will be to formalize procedures to more actively engage A4NH's Managing Partners. In 2018 the PMU will (1) finalize an A4NH governance and management handbook and (2) develop a tracking system for managing partner contributions to A4NH in the areas of research management (including research ethics), output and outcome delivery, intellectual assets, financial management, and other provisions outlined in the program participant agreement (PPA) IFPRI, as Lead Center, has with all Managing Partners. Lastly, A4NH will add two more members to the [Independent Steering Committee](#) (ISC) to serve from 2018-2021, one of which will also serve as the liaison with the IFPRI Board of Trustees. This will bring the total to eight members.

Table A: Planned Milestones

Table A1: 2022 CRP outcomes mapped to sub-DOs with contributing budget

FP	Mapped and contributing to Sub-DO	2022 CRP outcomes for each FP	2018 Budget W1/W2	2018 Budget W3/Bilateral
FP1	<ul style="list-style-type: none"> • CC: Enhanced institutional capacity of partner research organizations • CC: Increased capacity for innovations in partner research organizations 	Partners and other CRPs incorporate nutrition, health and gender in agri-food value chains and food systems programs	\$1,545,422.00	\$2,735,629.77
	<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 	Partners, including value chain actors, use evidence from impact evaluations when making operational and investment decisions	\$654,091.50	\$628,355.11
	<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 	Public-private partnerships formed to promote implementation of A4NH strategies for agri-food value chain/food system innovations	\$654,091.50	\$628,355.11
	<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 training and exchange • CC: Increased capacity for innovations in partner research organizations 	Key partners, stakeholders, and institutions (including national and local policy makers, private sector, consumer organizations, and other CRPs) are effectively implementing the evidence and lessons learned at scale in their food system related strategies and policy agenda	\$906,395.00	\$1,174,888.00
FP2	<ul style="list-style-type: none"> • Increased availability of diverse nutrient-rich foods 	High-yielding micronutrient enhanced varieties developed and released in priority countries	\$0.00	\$3,697,833.33
	<ul style="list-style-type: none"> • CC: Increased capacity of partner organizations, as evidenced by rate of investments in agricultural research • CC: Enhanced institutional capacity of partner research organizations 	Biofortification mainstreamed into CGIAR and NARS breeding efforts	\$0.00	\$3,975,633.33
	<ul style="list-style-type: none"> • Closed yield gaps through improved agronomic and animal husbandry practices • Increased availability of diverse nutrient-rich foods 	High-yielding micronutrient enhanced varieties delivered at scale in priority countries	\$668,296.00	\$10,731,318.83

	<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 	Evidence on nutritional efficacy and impact informs value chain actors, as well as national and international investors	\$2,831,704.00	\$8,726,833.33
	<ul style="list-style-type: none"> CC: Conducive agricultural policy environment 	Biofortification supported by global institutions and incorporated into plans and policies by stakeholders	\$0.00	\$8,877,692.16
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 	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	\$1,593,960.00	\$819,287.00
	<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 	Market-based food safety innovations delivered at scale in key countries along with understanding of their impact and appropriate use	\$1,106,040.00	\$1,760,109.00
	<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 	Biocontrol and GAP delivered at scale in key countries along with understanding of their impact and appropriate use	\$800,000.00	\$6,705,841.00
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 	Development program implementers and investors (governments, NGOs, UN institutions) use evidence, tools and methods to design and	\$945,236.50	\$3,651,067.50

<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 	<p>implement cost-effective nutrition-sensitive agricultural programs at scale</p>		
<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 	<p>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>\$945,236.50</p>	<p>\$3,651,067.50</p>
<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 	<p>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</p>	<p>\$618,711.00</p>	<p>\$2,100,274.50</p>
<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 for climate resilience • 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 	<p>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</p>	<p>\$618,711.00</p>	<p>\$2,100,274.50</p>
<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 	<p>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 and implementation.</p>	<p>\$637,980.00</p>	<p>\$1,369,985.00</p>

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 • CC: Improved capacity of women and young people to participate in decision-making 	Agricultural practices modified to reduce health risks	\$737,264.00	\$471,716.00
	<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 Reduced smallholders • Enhanced adaptive capacity to climate risks • 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 	Agricultural and public health policymakers and implementers deliver coordinated and effective solutions to cysticercosis and other zoonotic threats	\$647,560.00	\$1,108,465.00
	<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 	Public and private sector policymakers implement measures to reduce human and animal health risks from antimicrobial resistance and other interactions	\$445,177.00	\$96,115.00
	<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 	Agricultural research and funding institutions initiate collaboration with public health counterparts to solve complex intersectoral problems	\$50,000.00	\$0.00

Table A2: Planned milestones by flagship and assessment of risk to achievement

FP	2022 CRP outcomes for each FP	2018 Milestone*	Means of verification	Assessment of risk to achievement**
FP1	Partners and other CRPs incorporate nutrition, health and gender in agri-food value chains and food systems programs	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	<ul style="list-style-type: none"> - Reference to flagship documents on validated metrics and tools for food system-diet assessment in papers, documents, brochures of research organizations. - Reference to flagship food system review papers (of Ethiopia, and Vietnam, Bangladesh and Nigeria) in papers, documents, brochures of relevant stakeholders. - Number of times FP1 scientific papers on validated metrics and tools are referred to based on Web-of-Science statistics - Webinar on co-creation of compendium of indicators and metrics for assessing diet quality and food systems attended by partner organizations. 	Low
	Partners, including value chain actors, use evidence from impact evaluations when making operational and investment decisions	At least 2 partners, including value chain actors, participate in the identification and design of at least 2 gender-sensitive interventions aligned with findings from CoA1 to improve diets in Bangladesh and Nigeria	<ul style="list-style-type: none"> - reference to the gender-sensitive interventions on the web-site of the partners - presentations of the partners on the gender-sensitive interventions on (international) conferences 	Low
	Public-private partnerships formed to promote implementation of A4NH strategies for agri-food value chain/food system innovations	Systematic approach to be used to engage private sector stakeholders in FSHD focus countries	<ul style="list-style-type: none"> - mentioning of the systematic approach in the Development Horizon blog of Haddad - leaflet on systematic approach accessible through the A4NH web-site - use of the approach in focus countries and number of stakeholders engaged 	Low
	Key partners, stakeholders, and institutions (including national and local policy makers, private sector, consumer organizations, and other CRPs) are effectively implementing	8 stakeholders in relevant policy processes across the 4 focus countries are made aware of A4NH evidence on dietary trends.	<ul style="list-style-type: none"> - Participants lists of A4NH stakeholder workshops in the 4 focus countries - Short reports by relevant stakeholders made during seminars or meetings and linked to the A4Nh website 	Low

	the evidence and lessons learned at scale in their food system related strategies and policy agenda		- Public seminar with the Food and Business Knowledge Platform 16 February 2018 (http://knowledge4food.net/co-creation-research-uptake-and-nutrition-sensitive-value-chains)	
		Food system policies and narratives/discourses thoroughly analyzed in at least 2 focus countries, contributing to an improved understanding of the current research agenda on food systems	- presentations of narratives/discourses in at least 2 focus countries	Low
		Strategy to strengthen and develop effective healthy diets platform developed for at least 2 countries	- Strategy document available through the A4NH website - Presentation of strategy in stakeholder meetings in at least 2 focus countries.	Low
FP2	High-yielding micronutrient enhanced varieties developed and released in priority countries	Recommendations of molecular marker external review implemented	Head of crop development, annual reporting from CGIAR partners, NARS, and national release committees	Low
	Biofortification mainstreamed into CGIAR and NARS breeding efforts	3 crop breeding programs establish/review mainstreaming targets and plans for each target crop/agroecology	Head of crop development, annual reporting from CGIAR partners	Low
		2.5% annual increase in mainstreaming as a percentage of total CGIAR Center efforts for target crop/agroecology	Head of crop development, annual reporting from CGIAR partners	Low
	High-yielding micronutrient enhanced varieties delivered at scale in priority countries	7.5 million HH in HarvestPlus priority countries growing and consuming biofortified crops	Head of M&E, Monitoring database and reports	Medium
	Evidence on nutritional efficacy and impact informs value chain actors, as well as national and international investors	Partner and implementing organizations use lessons learned about factors (e.g., gender, equity) facilitating and hindering adoption and consumption of biofortified crops to develop equitable and cost-effect delivery plans	Head of Strategy and Policy Research and Head of M&E, Reports on qualitative evaluations, outcome monitoring and adoption surveys, two papers on lessons learnt in delivery	Medium
	Biofortification supported by global institutions and incorporated into plans and policies by stakeholders	Biofortification included in 3 national/regional policies and 3 country grants/loans from IFIs	Head of Advocacy and Policy, information from/websites of multilateral institutions and other stakeholders	Medium
FP3	Key food safety evidence users (donors, academics, INGOs, national policymakers, civil society, and industry) are aware of and	East African Community supports standardized and harmonized policies and regulations for aflatoxins following policy support process	Review of official policy documents and statements, review and tracking of implementation of regulations and guidelines	Low

	use evidence in the support, formulation and/or implementation of pro-poor and risk-based food safety approaches	Through PACA, 3 countries include Aflasafe as a component for aflatoxin mitigation in National Agriculture Investment Plan	Partner reports, monitoring reports	Low
		Policy stakeholders endorse or commit to approaches that draw on A4NH evidence on food safety in informal markets to consider improvements to specific value chain(s)	Review of official policy documents and statements	Low
	Market-based food safety innovations delivered at scale in key countries along with understanding of their impact and appropriate use	No milestone in 2018	n/a	n/a
	Biocontrol and GAP delivered at scale in key countries along with understanding of their impact and appropriate use	At least 40 farm-based organizations obtain 5% premium or more from sale of Aflasafe maize and groundnut due to market linkages created by innovation platforms	Aflasafe production logs, monitoring systems by partners	Low
	Development program implementers and investors (governments, NGOs, UN institutions) use evidence, tools and methods to design and implement cost-effective nutrition-sensitive agricultural programs at scale	At least 3 implementing organizations use evidence generated in Phase 1 of A4NH in programming of nutrition- and gender-sensitive agriculture programs	Tracking of program implementing partners through targeted interviews and reviews of documents on nutrition-sensitive agriculture programming, investments and best practices in 2018, 2021 and 2022	Medium
FP4	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	No milestone in 2018	n/a	n/a
	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	No milestone in 2018	n/a	n/a
	National policymakers and shapers, and stakeholders from different sectors, civil	Gender-sensitive diagnostic and priority-setting tools developed and applied in 3 focal countries	Annual reporting from partners, FP outputs (with gender components)	Low

	society and industry use evidence to design effective nutrition-sensitive policies, and ensure quality implementation			
	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 and implementation.	FP4 researchers with key partners from SUN, CAADP and others host at least one regional learning event involving participants from at least four focal countries and other CGIAR/CRP researchers	Annual reporting from partners	Low
	Agricultural practices modified to reduce health risks	Workshop convening senior national and sub-regional experts from the health, agriculture and environmental communities to discuss research priorities, including gender and equity issues.	Meeting report	Medium
FP5	Agricultural and public health policymakers and implementers deliver coordinated and effective solutions to cysticercosis and other zoonotic threats	Stakeholders (farmers and field veterinarians) have access to a validated and semi-commercialized pen-side diagnostic assay for cysticercosis	Monitoring and evaluation in program sites, annual reporting from partners	Medium
	Public and private sector policymakers implement measures to reduce human and animal health risks from antimicrobial resistance and other interactions	Decision makers in Kenya, Uganda, and Vietnam engaged in discussion of research results on antimicrobial use patterns in livestock agricultural systems and the impact on resistance	Annual reporting from partners, content analysis of official statements and documents	Low
		CGIAR antimicrobial resistance platform compiling agricultural-associated antimicrobial resistance research data established, maintained, and used by internal and external stakeholders	Annual reporting from partners, content analysis of official statements and documents	Medium
	Agricultural research and funding institutions initiate collaboration with public health counterparts to solve complex intersectoral problems	At least 10 research organizations representing natural and social scientists from health and agriculture participate in theme-based workshops which recognize gender and equity issues, and build on partnerships identified in 2015 A4NH regional consultations	Annual reporting from partners, content analysis of official statements and documents	Medium

Table B: Planned Studies for Relevant Outcomes and Impacts*

FP: Type of Study Planned Topic of Study	Geographic Scope	Relevant to Sub-IDO, or SRF target if appropriate	Comments
FP2: Evaluation Validation of zinc targets	Global	<ul style="list-style-type: none"> Optimized consumption of diverse nutrient-rich foods 	
FP2: Evaluation (Efficacy Study) Efficacy study for zinc wheat in India	Sub-National: Multiple provinces or states	<ul style="list-style-type: none"> Increased availability of diverse nutrient-rich foods 	
FP2: Evaluation (Efficacy Study) Bio-availability study for zinc rice in Bangladesh	Sub-National: Multiple provinces or states	<ul style="list-style-type: none"> Increased availability of diverse nutrient-rich foods 	
FP2: Evaluation (Impact Evaluation) Socio-economic component of the effectiveness/impact evaluation study for iron beans in Guatemala to measure adoption and iron intake outcomes ³	Sub-National: Multiple provinces or states	<ul style="list-style-type: none"> Increased access to diverse nutrient-rich foods 	
FP2: Adoption Study Adoption study for zinc rice in Bangladesh ³	National	<ul style="list-style-type: none"> Increased access to diverse nutrient-rich foods <i>SRF Target - # of more farm households have adopted improved varieties, breeds or trees</i>	
FP2: Outcome Case Study Outcome case study (from monitoring surveys) for vitamin A maize in Nigeria ³	Sub-National: Multiple provinces or states	<ul style="list-style-type: none"> Increased access to diverse nutrient-rich foods 	
FP2: Outcome Case Study Outcome case study (from monitoring surveys) for iron pearl millet in India ³	Sub-National: Multiple provinces or states	<ul style="list-style-type: none"> Increased access to diverse nutrient-rich foods 	
FP2: Outcome Case Study Outcome case study (from monitoring surveys) for iron beans in Colombia ³	Sub-National: Multiple provinces or states	<ul style="list-style-type: none"> Increased access to diverse nutrient-rich foods 	
FP3: Evaluation (Adoption Study) Experimental study of uptake of maize driers	Single location	<ul style="list-style-type: none"> Reduced biological and chemical hazards in the food system 	
FP3: Evaluation (Adoption Study)	Single location	<ul style="list-style-type: none"> Reduced biological and chemical hazards in the food system 	

³ 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

Experimental study of uptake of Aflasafe by farmer groups			
FP3: Evaluation (Adoption Study) Experimental study of extension messages and aflatoxin mitigation behavior	Single location	• Reduced biological and chemical hazards in the food system	
FP3: Evaluation (Adoption Study) Experimental study of efficacy and acceptability of aflatoxin binders	Single location	• Reduced biological and chemical hazards in the food system	
FP3: Outcome Case Study Pesticides use on rice grown for household consumption vs. sale	Regional	• Reduced biological and chemical hazards in the food system	
FP3: Impact Assessment Experimental study on impact of post-harvest interventions on aflatoxin	Single location	• Reduced biological and chemical hazards in the food system	
FP3: Impact Assessment Ex ante impact assessment on standards and aflatoxin	National	• Appropriate regulatory environment for food safety	
FP3: Impact Assessment Ex ante impact assessment on policy and informal milk sector	National	• Reduced biological and chemical hazards in the food system	
FP3: Evaluation Aflatoxins and stunting RCT in Kenya	Single location	• Reduced biological and chemical hazards in the food system	
FP3 & FP4: Evaluation (Impact Evaluation) Cluster RCT to assess health and nutrition benefits of informal dairy sector intervention in Nairobi	National	• Optimized consumption of diverse nutrient-rich foods	2017-2020, MoreMilk Conducted in peri-urban informal dairy markets in Nairobi to assess the health and nutrition benefits of an informal dairy sector intervention aimed at improving the quality of milk.
FP4: Evaluation (Impact Evaluation, Process Evaluation, Cost-Effectiveness Study) Evaluation of mobile phone technology based nutrition and agriculture advisory services in Tanzania (mHealth) and Ghana (mAgri)	Multi-national	• Optimized consumption of diverse nutrient-rich foods	2015-2019, mNutrition In 2018 complete baseline reports and conduct endline data collection
FP4: Evaluation (Impact Evaluation) Evaluation of impact of an integrated package of nutrition and agricultural interventions on diets,	National	• Optimized consumption of diverse nutrient-rich foods	2016-2021, Se Lever No 2018 deliverables

health, and nutrition status of women and children in Burkina Faso			
<p>FP4: Evaluation (Impact Evaluation) Evaluation of impacts of two enhancements to a rural self-help group model intervention in Bihar, India: more intense BCC and improved access to and utilization of key public services</p>	National	<ul style="list-style-type: none"> • Optimized consumption of diverse nutrient-rich foods 	<p>2015-2017, JEEViKA-Multisectoral Convergence: Building a Model for Better Nutrition Outcomes in Bihar Completing endline report in 2018; BCC includes more detailed and frequent messages regarding health, nutrition and sanitation, the need for dietary diversity, food security, the use of kitchen gardens, and so on to women. Improved access and utilization of key public services by increasing convergence and coordination between government departments and frontline workers, and by improving the awareness and knowledge about supply-side providers at community level</p>
<p>FP4: Evaluation (Process Evaluation and Feasibility Study) Feasibility of integrating a package of maternal nutrition interventions in existing maternal, newborn, child health services in India</p>	National	<ul style="list-style-type: none"> • Increased capacity for innovations in partner research organizations 	<p>2017-2020, Baseline on feasibility and process evaluation completed in 2017 (planned 2018 deliverables) This study is expected to generate evidence on the processes related and operational approaches to implementation, and to document lessons learned about how to scale up the strategy for expanding maternal nutrition at scale through MNCH services delivered by the government</p>
<p>FP4: Evaluation (Impact Evaluations and Feasibility Study) Evaluation of an intervention strategy that embeds a package of behavior change modification and small-quantity lipid-based</p>	Multi-national	<ul style="list-style-type: none"> • Increased access to diverse nutrient-rich foods 	<p>2014-2017, PROMIS Impact papers written in 2018 IFPRI's PROMIS projects have contributed to the integration of preventive and curative strategies</p>

nutrient supplements during first line case-finding services of child acute malnutrition in Mali and Burkina Faso; feasibility is being assessed in Senegal			aimed at child acute malnutrition through health facility and community-based platforms in West Africa
FP4: Evaluation Evaluation of household-based approach to improve nutritional status of pregnant and lactating women and children under two years of age in Nepal plus research to inform interventions designed to reach and benefit adolescents	National	<ul style="list-style-type: none"> Optimized consumption of diverse nutrient-rich foods 	2016-2020, SUA AHARA II In 2018 design adolescent sub-study
FP4: Evaluation (Process Evaluation) Process evaluation of a mobile phone innovation in the Integrated Child Development Services program in India	Sub-national: Multiple provinces or states	<ul style="list-style-type: none"> Increased capacity for innovations in partner research organizations 	Under POSHAN II - Implementation research on an ICT-enabled innovation in the ICDS
FP4: Evaluation Maternal nutrition evaluation to gain insights on diets and nutritional practices during pregnancy in India	Sub-national: Multiple provinces or states	<ul style="list-style-type: none"> Improved capacity of women to participate in decision-making 	Under POSHAN II - Insights on diets and nutritional practices during pregnancy
FP4: Evaluation (Process Evaluation and Cost-Effectiveness Study) Evaluation research to strengthen the conceptual and empirical understanding of the pathways through which self-help groups can improve nutrition through agriculture-nutrition interventions in India	National	<ul style="list-style-type: none"> Increased capacity for innovations in partner research organizations 	2015-2020, WINGS (Women Improving Nutrition through Group-based Strategies) In 2018 conduct process evaluation and cost effectiveness analysis
FP4: Evaluation (Process Evaluation, Impact Evaluation, and Cost-Effectiveness Study) Evaluation of four treatment arms comparing different modalities to integrate nutrition with agricultural programs with and without nutrition sensitive ag extension and male sensitization in Bangladesh and India	Multi-national	<ul style="list-style-type: none"> Increased access to diverse nutrient-rich foods 	2015-2019, TRAIN (Targeting and Re-aligning Agriculture to Improve Nutrition) in Bangladesh and India In 2018 complete process evaluation and cost effectiveness analysis Gender is a major component of the study and the main outcomes of interest are nutritional status among young children and women, knowledge and attitudes among women and men

			around infant and young child feeding practices, household and individual welfare, women's empowerment, etc.
FP4: Outcome Case Study Stories of Change, state-level in India	Sub-National: Multiple provinces or states	<ul style="list-style-type: none"> • Conducive agricultural policy environment 	Under POSHAN II - The stories of change will produce data-driven narratives of factors that drive change in nutritional outcomes at the subnational level
FP4: Outcome Case Study Stories of Change study in Rwanda	National	<ul style="list-style-type: none"> • Conducive agricultural policy environment 	2018-2019, Under SNV The stories of change will produce data-driven narratives of factors that drive change in nutritional outcomes

Table C: Cross-cutting Aspect of Expected Deliverables*

Cross-cutting	Number (%) scored 2 (Principal)	Number (%) scored 1 (significant)	Number (%) scored 0 (not targeted)	Total overall number of deliverables
Gender	1.48% (6)	37.44% (152)	61.08% (248)	406
Youth	0.25% (1)	6.90% (28)	92.86% (377)	
CapDev	3.20% (13)	19.95% (81)	76.85% (312)	

*These are conservative estimates in the absence of guidance from CGIAR on what the scores really mean. As an example, for gender within A4NH '0-not targeted' will include deliverables that have a singular focus on women and girls, which does not meet our definition of gender research, but other CRPs may interpret this as gender research and assign a 1 or even 2. Once definitions are available, A4NH researchers may feel more confident in assigning a higher score. We look forward to receiving definitions in time for 2017 annual reporting.

Table D: CRP Staffing

Category	Female FTE* CGIAR (Non-CGIAR)	Male FTE CGIAR (Non-CGIAR)	Total FTE	% female (FTE)
Program director & flagship leaders	4.9 (1.0)	4.4 (0.4)	10.7	55.1%
Principal Investigators	7.3 (4.0)	13.0 (4.7)	29.0	39%
Other Senior Scientists (not PIs)	8.9 (1.0)	19.2 (0.64)	29.7	33.3%
Post-docs / junior scientists	2.9 (1.0)	2.9 (3.9)	10.7	36.4%
Research fellows	11.8 (2.0)	7.4 (0.8)	22.0	62.7%
Other science support staff	40.5 (4.0)	13.3 (4.1)	61.9	71.9%
Total CRP	76.3 (13.0)	60.2 (14.5)	164.0	54.5%

*FTE= Full Time Equivalent

Table E: CRP Planned Budget 2018

	Planned Budget 2018 (\$US)					Comments on major changes
	2017 Carry forward W1/W2	W1/W2	W3/Bilateral	Center Own funds	Total	
FP1	\$0.00	\$3,760,000.00	\$5,117,227.99	\$50,000.00	\$8,927,228.00	N/A
FP2	\$0.00	\$3,500,000.00	\$36,009,309.98	\$0.00	\$39,509,310.00	N/A
FP3	\$0.00	\$3,500,000.00	\$9,285,237.00	\$0.00	\$12,785,237.00	N/A
FP4	\$0.00	\$3,765,875.00	\$13,349,823.00	\$0.00	\$17,115,698.00	N/A
FP5	\$0.00	\$1,880,001.00	\$1,676,296.00	\$0.00	\$3,556,297.00	N/A
Strategic Competitive Research grant	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	N/A
CRP Management & Support Cost	\$0.00	\$1,363,124.00	\$0.00	\$0.00	\$1,363,124.00	N/A
Cross cutting initiatives: Monitoring, evaluation and learning; Gender, equity and empowerment; and country, coordination and engagement	\$0.00	\$1,239,000.00	\$572,865.00	\$0.00	\$1,811,865.00	N/A
CRP Total	\$0.00	\$19,008,000.00	\$66,010,758.97	\$50,000.00	\$85,068,759.00	N/A

Table F: Main Areas of W1/W2 Expenditure

Expenditure area	Estimated percentage of total W1/W2 funding in 2018	Comments
Planned research: principal or sole funding source	25%	none
Planned research: Leveraging W3/bilateral funding	40%	none
Catalyzing new research areas	15%	none
Gender	10%	none
Youth	1%	none
Capacity development	2%	none
Start-up or maintenance of partnerships (internal or external)	1%	none
Monitoring, learning and self-evaluation	1%	none
Evaluation studies and Impact Assessment studies	3%	none
Emergency/contingency	1%	none
Other	0%	none
Total Funding (Amount)	\$19,008,000.00	

Table G: Collaborations among Programs and between the Program and Platforms

Name of CRP or Platform	Brief description of collaboration (give and take among CRPs) and value added*	Relevant FP (if known)
CRP on Climate Change, Agriculture and Food Security (CCAFS)	<p>A4NH through FP1 and CCAFS:</p> <p>(1) in Bangladesh on participatory scenario analysis and modelling impacts of climate change on equity and diets, which is likely to include a partnership with Columbia University and their provision of climate information services;</p> <p>(2) joint paper on food systems and climate change; and</p> <p>(2) explorations to expand the collaborative activities to Ethiopia and Vietnam.</p> <p>A4NH through FP4 and CCAFS (also with PIM) are discussing joint research and a policy brief on climate-smart agriculture and nutrition, exploring the research gaps and outlining a research agenda.</p> <p>A4NH through FP5 and CCAFS collaboration will be strengthened in 2018 if the LSHTM-led proposal for a UK GCRF hub on climate change and development is successful.</p>	
CRP on Fish	<p>A4NH through FP1 and Fish:</p> <p>(1) co-development of NWO-CGIAR NL proposal on small fish;</p> <p>(2) food system paper in Nigeria and Bangladesh;</p> <p>(3) shared MSc project on review of literature on fish in Nigeria;</p> <p>(4) small grant scheme in Nigeria (with one proposal on fish research to be financed);</p> <p>(5) re-analysis of dietary gap analysis specifically related to fish intake; and</p> <p>(6) exploration of sandwich PhDs on role of livestock and fish in food systems in collaboration with WUR Animal Sciences.</p> <p>A4NH through FP5 and Fish are planning joint research on antimicrobial resistance so that fish are included in animal uses of antibiotics and their potential influence on human antimicrobial resistance (along with WorldFish and CRP on Livestock).</p>	
CRP on Livestock	<p>A4NH through FP1 and Livestock starting a joint agenda on animal source food and the role of livestock and fish systems in improving human nutrition starting with external PhD project with ILRI staff on consumer behavior and drivers of animal source food consumption; MSc internship project on analysis of AVCD data on dietary diversity, as a twin project with Kenya students; MSc student project group on ToC development of livestock and nutrition; exploration of sandwich PhDs on role of livestock and fish in food systems in collaboration with WUR Animal Sciences; and develop ideas for co-development of proposal for upcoming IFAD call.</p> <p>A4NH through FP3 and Livestock:</p> <p>(1) conducting food safety research linked to pork value chain development in Vietnam;</p> <p>(2) disseminating insights from earlier food safety projects to multi-stakeholder policy programs supported by Livestock;</p> <p>(3) livestock advocacy messages related to (a) livelihoods; (b) natural resources; and (c) health and nutrition- A4NH/FP3 will cover the latter; and</p>	<p>FP2: Livestock Health and</p> <p>FP5: Livestock and Livelihoods and Agri-Food Systems</p>

	<p>(4) special edition on food safety and nutrition in livestock value chains for <i>Global Food Security</i></p> <p>A4NH through FP5 and Livestock:</p> <p>(1) collaborative activities are being initiated to address antimicrobial resistance within a One Health framework, focusing on the use of antimicrobials in livestock and the implications for their effectiveness in livestock (focus of Livestock) and on the link to human antimicrobial resistance (focus of A4NH);</p> <p>(2) Livestock is providing assessment tools to measure/characterize antimicrobial use in livestock on farms in Vietnam where A4NH is assessing antimicrobial resistance;</p> <p>(3) antimicrobial resistance experience sharing workshop will be held in Uganda on methodology development;</p> <p>(4) other joint resource mobilization opportunities around antimicrobial resistance are being explored; and</p> <p>(5) risk assessments and studies on emerging diseases, including tick distribution and vector-borne diseases.</p>	
CRP on Maize CRP on Wheat	A4NH through FP1 and Maize and Wheat will develop a collaborative project linking Maize and Wheat work to processing partners including those providing equipment for processing (e.g., Buhler).	
CRP on Policies, Institutions and Markets (PIM)	<p>A4NH through FP1 and PIM will collaborate on learning about value chain finance in Vietnam and whether cost effective strategies to reduce food loss and waste exist across a set of countries being studied by PIM.</p> <p>A4NH through FP4 and PIM will continue to collaborate on a number of studies related to social protection programs, with A4NH focusing on impacts related to health and nutrition.</p> <p>A4NH through the cross-cutting GEE Unit and PIM will continue to collaborate on developing, testing, and disseminating the Women's Empowerment in Agriculture Index (WEAI) and its subsequent versions.</p>	FP3: Inclusive and Efficient Value Chains
CRP on Roots, Tubers and Bananas (RTB)	A4NH through both FP1 and FP2 and RTB will have joint efforts in Rwanda, Tanzania and Nigeria on building advocacy for promotion of biofortification. The collaboration for Nigeria and Tanzania occurs with other CGIAR centers in the Building Nutritious Food Baskets (BNFB) project.	FP4: Nutritious Food and Added Value
CRP on Water, Land and Ecosystems (WLE)	<p>A4NH through FP5 and WLE:</p> <p>(1) collaboration on water, agriculture, and vector borne diseases, initially focusing on dams for irrigation and malaria, with links to IWMI, IITA, ILRI and LSHTM;</p> <p>(2) exploring in 2018 other areas of mutual interest, such as possible agricultural cases of chronic kidney disease in tropical agricultural systems; and</p> <p>(3) joint A4NH–WLE workshop held at Stockholm Water Week (August 2018), entitled Water Use, Food Security and Disease: Achieving Healthy Outcomes. It will bring together medical, agricultural, environmental and social researchers and practitioners together to identify key and emerging risks and possible solutions.</p>	<p>FP3: Rural Urban Linkages and</p> <p>FP4: Resource Variability, Competing Uses and Resilience</p>

*e.g. scientific or efficiency benefits

Table H: Planned Monitoring, Evaluation, and Learning Exercises

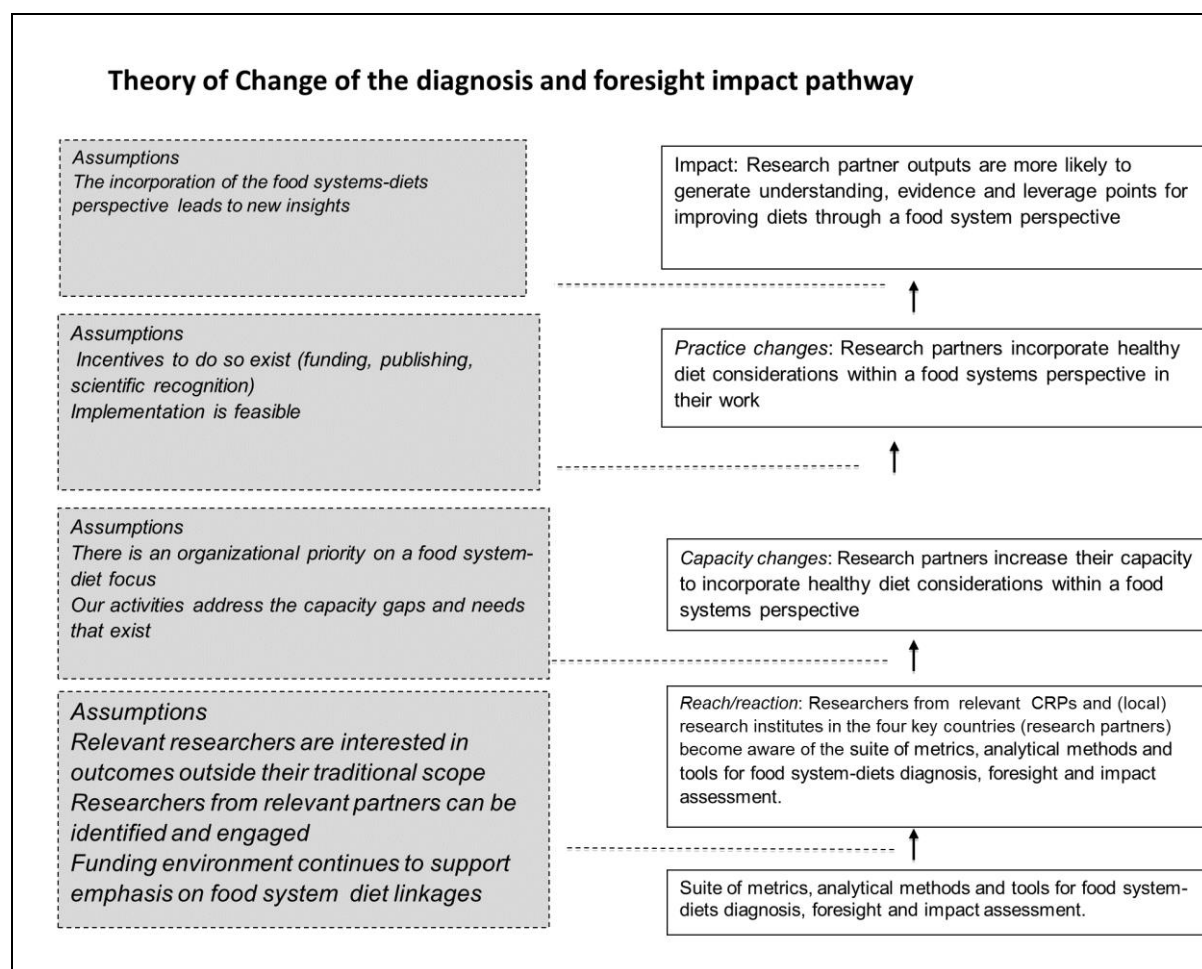
Planned studies/learning exercises in 2018	Comments
<p>CRP Commissioned External Evaluation (CCEE) /Impact Assessment</p> <p>External evaluation of the impact of a combination of IFPRI's research since 2004 on nutrition-sensitive agricultural programs through the work carried out by IFPRI (and others) in A4NH Phase I and the initial year of Phase II under Flagship 4</p>	<p>2018/2019</p> <p>Study is being carried out jointly between A4NH and IFPRI's Impact Assessment team with an external evaluation team</p>
<p>CRP Commissioned External Evaluation (CCEE)</p> <p>External evaluation of progress on mainstreaming of nutrition in CGIAR breeding programs.</p>	<p>2018/2019</p> <p>A4NH has delayed planning this CCEE pending the development of a new CGIAR Biofortification Strategy, which is being coordinated by HarvestPlus. HarvestPlus/A4NH will then design and commission the external evaluation guided by the new strategy.</p>
<p>Learning Exercise</p> <p>Survey of all A4NH Phase II researchers to identify location and status of A4NH-affiliated datasets. Exercise is intended to create a one-stop-shop for datasets related to agriculture-nutrition-health (housed as a sub-Dataverse under IFPRI's Dataverse) and help the MEL Unit identify where resources can be focused within flagships to make data more FAIR (findable, accessible, interoperable, and reusable).</p>	<p>2018</p> <p>Exercise is being carried out the MEL Unit with advice from IFPRI's Communication and Public Affairs division and consultation with Big Data and experts from Managing Partners</p>
<p>Learning Exercise</p> <p>Three stakeholder workshops will be organized by the PMU for A4NH flagship representatives along with: (1) the Rome-based agencies; (2) Africa-based partners; and (3) South Asia-based partners to understand stakeholder views on equity research priorities in A4NH's flagships and opportunities for engagement.</p>	<p>2018</p> <p>Exercise is being carried out as part of the management response to the external review on equity commissioned by the GEE Unit in 2017.</p>
<p>Review</p> <p>Review and possible revision of HarvestPlus' M&E system to align with their new strategic plan. This will involve reviewing FP2's theory of change for A4NH, the overall HarvestPlus M&E framework, and studies.</p>	<p>2018</p> <p>Review is led by HarvestPlus with close coordination between the A4NH Flagship 2 Leader/Manager and the MEL Unit</p>

Annex: Changes to Flagship-Level Impact Pathways and Theories of Change

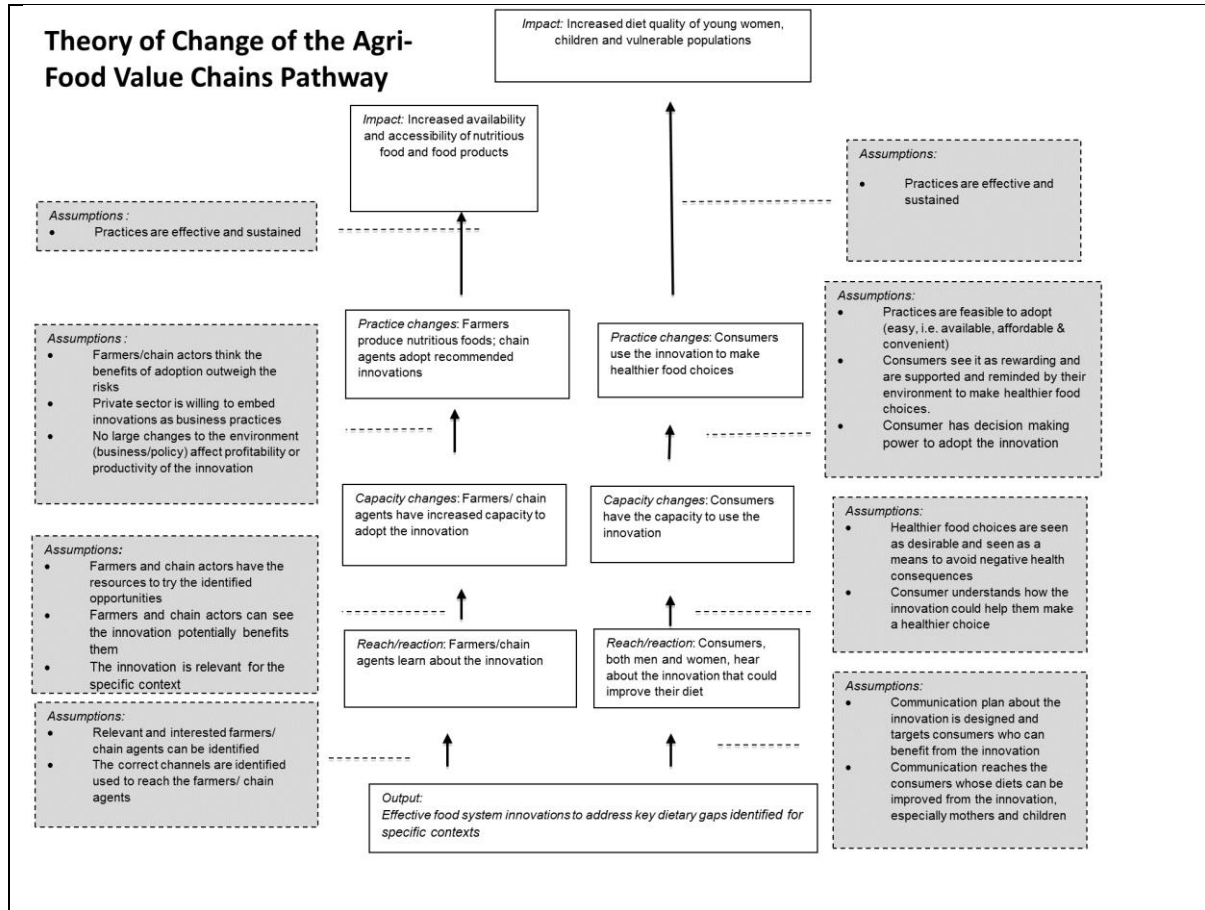
Flagship 1: Food Systems for Healthier Diets

Based on FP1 discussions and PMU advice, changes were made to FP1's impact pathway in 2017. A new 2022 outcome was added related to policy engagement and learning (see Tables A1 and A2). In addition, minor modifications were made to the list of sub-DOs to which FP1 research will contribute: the sub-DO: 'Diversified enterprise opportunities' was removed as this sub-DO is not a target of the flagship. The sub-DO: 'Enhanced individual capacity in partner research organizations through training and exchange' was added.

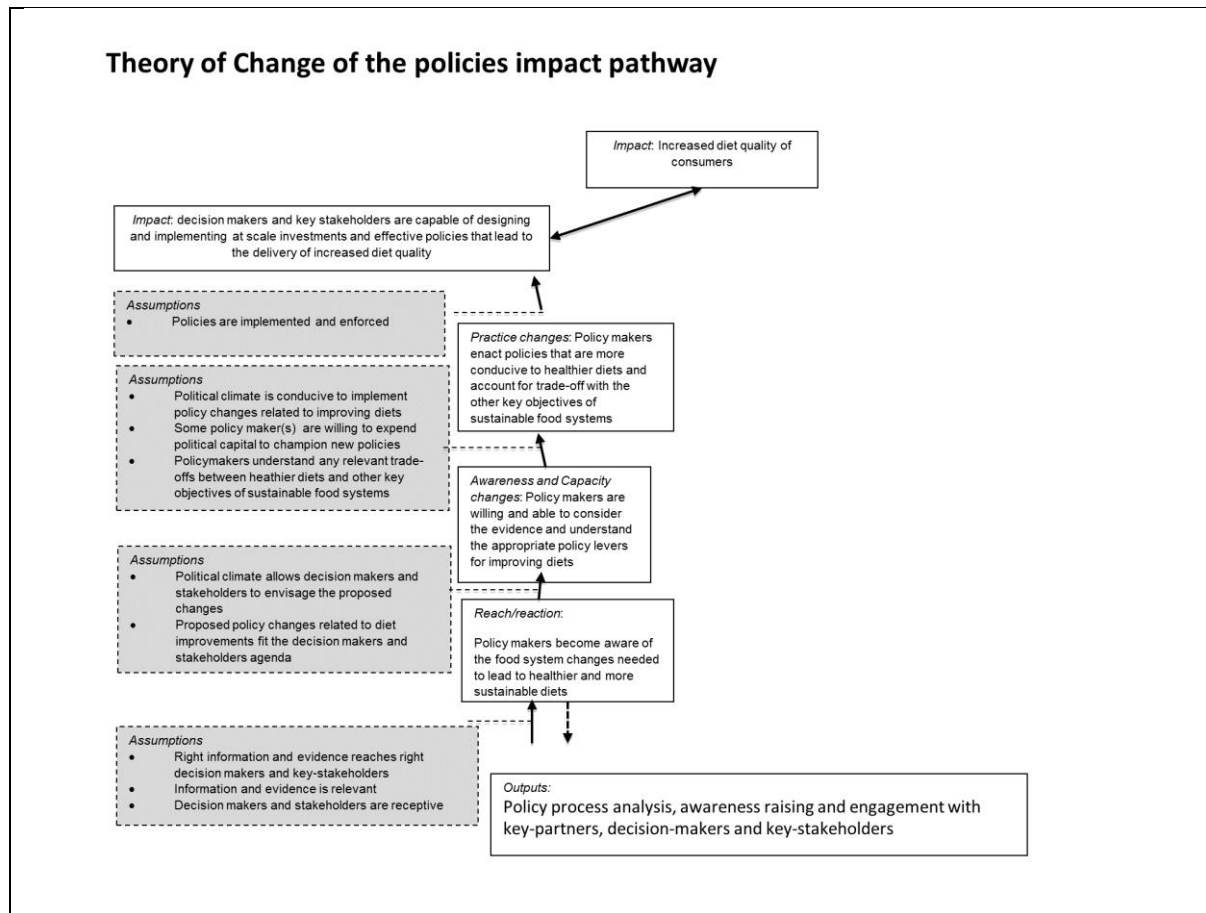
FP1 impact will occur through two main pathways, as reflected in the proposal: (1) through testing out successful food system innovations with food systems actors being producers, chain actors and consumers (Agri-food value chains pathway); and (2) through providing evidence to influence key decision makers and policy processes to support food system transformation for healthier diets (Policies pathway). In addition to the two theories of change described in the proposal, in 2017 a third theory of change was added. This new theory of change reflects how the diagnosis and foresight activities (reflected in a suite of metrics, analytical methods and tools for food system-diets diagnosis, foresight and impact assessment) contribute to generation of understanding, evidence and leverage points for improving diets through a food system perspective by research partners (including relevant CRPs, CGIAR Centers and (local) research institutes. For all three theories of change, outcomes and assumptions were updated and a start was made to assess the strength of the evidence available for the assumptions, this work will continue in 2018. The revised figures and evidence tables for each cluster of activity are included below.



Outcomes and likelihood of occurrence	Assumptions	Strength of evidence
Will incorporation of food system-diets perspectives lead to research outputs that generate understanding and leverage points for improving diets through a food system perspective? <i>Likelihood:</i>	Incorporation of the food system-diets perspective leads to new insights	Weak (Absent)
Will increased research capacity in food-system- diet linkages results to practice changes? <i>Likelihood:</i>	There are incentives to do so Implementation of metrics, methods and tools is feasible	High: more funding, possibility to publish, to present, scientific recognition For some high feasibility (DDS), for some low (24 hr recall) for some we still have to collect evidence on this (consumer demand for example)
Is the awareness sufficient motivation to learn a new approach? <i>Likelihood: Low</i>	There is an organizational priority on food systems-diets focus FP1 activities address these priority capacity	High, medium and low. For other CRPS low (let A4NH do it); some other organisations seems to have it more internalized.
Will information on the suite of metrics, tools and methods reach our research partners? <i>Likelihood: High</i>	Relevant researchers are interested in outcomes outside their traditional scope Researchers from relevant partners can be identified and engaged Funding environment continues to support emphasis on food-system-diet linkages	High, helped by the climate of the SDGs Medium (for flagship and CRPs high, but others medium). Self-identifying, involvement of FP1 researchers in other CRPS High: numerous high level reports on food systems and diets, interest in linkage to NCDs is increasing, lots of requests to FP1 researchers to be included in programmes and proposals, GAIN turns into food systems.



Outcomes and likelihood of occurrence	Assumptions	Strength of evidence
<p>Will sustained adoption of innovation of farmers/change agents lead to increased availability and accessibility of nutritious food and food products?</p> <p>Will sustained adoption of innovation by consumers lead to increased diet quality of (young) women, children and vulnerable populations? <i>Likelihood:</i></p>	<p>Practices are effective and sustained</p>	<p>Weak</p>
<p>Will increased capacity lead to sustained adoption of the recommended innovations?</p> <p><i>Likelihood:</i></p>	<p>Farmers and chain actors think the benefits of adoption outweigh the risks</p> <p>Private sector is willing to embed innovations as business practices</p> <p>No large chances to the environment affecting the profitability of the innovations</p> <p>Practices are feasible to adopt (easy, i.e. available, affordable & convenient)</p> <p>Consumers see it as rewarding and are supported and reminded by their environment to make healthier food choices</p> <p>Consumer has decision power to adopt the innovation.</p>	<p>Weak to moderate</p> <p>Weak</p> <p>High evidence of negative effects</p> <p>High (otherwise we do not implement them)</p> <p>High evidence that environment is important so should be included in the innovation implementation</p> <p>High evidence that vulnerable groups do not have the decision power</p>
<p>Is the awareness sufficient motivation to learn about the innovation?</p> <p><i>Likelihood: Low</i></p>	<p>Healthier food choices are seen as desirable and as a way to avoid negative health consequences Consumer understands how innovation could help them make a healthier choice</p> <p>Farmers and chain actors can see the innovation potentially benefits them</p> <p>Farmers and chain actors have the resources to try the identified opportunities</p> <p>Innovation is relevant in the specific context of the farmers/chain agents</p>	<p>Moderate evidence that consumer don not care so much</p> <p>Weak</p> <p>Weak</p> <p>Weak</p>
<p>Will information on the food system innovations reach farmer and chain agents and consumers?</p> <p><i>Likelihood: High</i></p>	<p>Relevant farmers and chain agents can be identified</p> <p>The right channels are identified and used</p> <p>Communication plan about innovation is designed and targets consumers who can benefit from the innovation</p> <p>Communication reaches the consumers whose diets can be improved from the information, especially mothers and children</p>	<p>Self selection? Through platforms, part of association?</p> <p>High for farmers; moderate to weak for chain agents</p> <p>High</p> <p>High (we know how to reach consumers, what channels to use, sms, smartphone, radio, etc)</p>



IMPACT: Decision makers and key stakeholders are capable of designing and implementing at scale investments and effective policies that lead to the delivery of increased diet quality		
Outcomes and likelihood of occurrence	Assumptions	Strength of evidence
Will implemented and enforced policies lead to increased diet quality of consumers? Likelihood: low	Policy makers enact policies that are more conducive to healthier diets and account for trade-offs with other key objectives of sustainable food systems	Weak
Will policy makers be willing and able to consider the evidence and understand appropriate policy levers for improving diets Likelihood: Medium to low	Political climate is conducive to implement policy changes related to improving diets Policy makers understand the relevant trade-offs between healthier diets and other key objectives of sustainable food systems Political climate allow decision makers and stakeholders to envisage the proposed changes Proposed policy changes related to diets improvement fits the decision makers and stakeholders agenda	Weak but very much country-specific
Will policy makers become aware of the changes needed to lead to healthier and more sustainable diets; LIKELIHOOD: medium to high	Right information and evidence reach right decision makers and key stakeholders Information and evidence is relevant	Medium to high, right venues selection to convey scientific inputs and right processes stirred with country teams and partners

Flagship 5: Improving Human Health

While the theory of change for FP5 has not changed since the Full Proposal, we have restructured its clusters of activities and projects so as to be clearer about how our aims will be achieved. [Within A4NH's terminology, a 'project' represents a collection of key research outputs for the flagship.] For Cluster of Activity 5.1 (Disease in Agricultural Landscapes) we have restructured one project to include deliverables which generate evidence of important agricultural landscape and disease interactions while the other project will focus on developing and testing interventions to reduce disease risk while achieving agricultural targets. As this is a new area of work, this project has fewer deliverables as yet. For Cluster of Activity 5.2 (Emerging and Neglected Zoonotic Diseases), we have separated all of the funding and deliverables relating to cysticercosis, both with respect to generating evidence and evaluating interventions and put them in a single project, while the other project contains similar initiatives on other zoonotic diseases. This will enable us to capture more clearly progress on this cluster's key and secondary targets. Finally, for Cluster of Activity 5.3 (Global Challenges in Agriculture and Health), we have separated the projects so that one includes research on antimicrobial resistance and the other research on insecticide resistance in vectors. While these research targets are similar insofar as they related to integrating parallel, interacting activities in agriculture and health sectors, they are very different research challenges. Separation allows progress on them to be better captured. Our last project is in fact a cross-cutting activity. It relates to the facilitation of agricultural and public health sector engagement across all three FP5 clusters, and indeed potentially across A4NH and CGIAR in general. However, for operational reasons, we have left it in Cluster 5.3, rewritten its description to indicate this breadth, and given it a distinct outcome for 2022.