FOOD SYSTEMS are changing rapidly in low- and middle-income countries. These countries seek food-based solutions for better nutrition and health of all people while addressing challenges of sustainability, inequity, and malnutrition. The CGIAR Research Program on Agriculture for Nutrition and Health (A4NH) works to develop evidence to support policies and actions for healthier food systems. A4NH is a consortium of seven managing partners, led by the International Food Policy Research Institute (IFPRI). This report summarizes 2019 research results from A4NH, across five research flagships, and highlights the partnerships through which research has led to outcomes in five focus and more than two dozen other partner countries.
A MESSAGE FROM THE A4NH DIRECTOR

2019 marks the midpoint in A4NH’s second phase, which is building on past successes in nutrition-sensitive programs, biofortification, and food safety and has begun new research on national food systems for healthier diets and on agricultural intensification and infectious disease risk, working with public health partners. These choices are both topical and timely, as global attention turns to issues at the core of our research—supporting food system transformations for healthy diets, fighting malnutrition in all its forms, addressing food safety and agriculture-associated infectious diseases in markets and in fields, and paying attention to gender and equity at all levels. Through our research, we strive to support policymakers and stakeholders with the data, research evidence, and technologies they need to implement food-based nutrition and health actions for all.

Recent decisions in the CGIAR also make this an important time to reflect on lessons learned and planned contributions. While A4NH will not continue in its present form beyond 2021–2022, we are working to ensure that our high-quality research, in-depth knowledge, and strong partnerships carry forward as the new CGIAR research agenda unfolds.

Effective partnerships have always been at the core of A4NH’s philosophy and critical to our theory of change. Our multi-institution managing partner structure and close collaboration with national governments, NGOs, and private sector entities have helped A4NH deliver high-quality outputs and achieve development outcomes. Many of those stories are told in the pages that follow, as well as online at A4N Hegiology.org. We look forward to sharing these achievements with you and continuing to build on them in the years to come, and we thank you for your continued support and interest in our work.

John McDermott

A MESSAGE FROM IFPRI’S DIRECTOR GENERAL

A4NH

continues to improve nutrition and health outcomes through programs and policies related to food systems. In my new role as Director General of IFPRI, I am immensely proud of what A4NH has accomplished in integrating nutrition and health perspectives into the CGIAR system. For me, this shift brings a welcome change in thinking that emphasizes the importance of food consumption and demand as food system drivers. My other initial impression is how effectively A4NH engages its six other managing partners—four CGIAR Centers and two non-CGIAR global agrifood and public health research institutes—in a multi-institutional partnership to plan and deliver results across an impressive research portfolio.

In 2019, A4NH worked with IFPRI to commission an external evaluation of a large portfolio of rigorous research on nutrition outcomes of agriculture-nutrition-gender programs from 2003 to 2016. The evaluation results confirmed the value of this research in assessing what interventions work as well as how they can be implemented more effectively by development partners.

A4NH has engaged with national partners across its portfolio, from agriculture-nutrition-gender programs through biofortification, food systems, food safety, and infectious diseases associated with agriculture intensification. At the national level, I see important benefits from A4NH expanding its work on food system transformation to align with broader economic transformation and policy processes in countries and regions.

IFPRI is pleased to serve as the lead Center for A4NH and to support this innovative research partnership that provides critical knowledge and evidence on how agriculture and food can improve nutrition and health for poor people throughout the world.

Jo Swinnen
**2019 Timeline and Highlights**

**JANUARY**
A4NH researchers respond to new report from the Lancet Commission on the Global Sydemic of Obesity, Undernutrition, and Climate Change.

**FEBRUARY**
A4NH joins CGIAR partners to launch new Antimicrobial Resistance Hub.

DFID and Bill & Melinda Gates Foundation announce $6M donation to ILRI and other A4NH managing partners to combat causes of foodborne diseases in Ethiopia.

A4NH participates in first FAO/WHO/AU International Food Safety Conference.

A4NH researchers at IFPRI publish results of first randomized controlled trial on aflatoxin and stunting.

**MARCH**
FSHD holds CGIAR food-systems stakeholder consultations in Bangladesh and Ethiopia.

**APRIL**
ILRI co-convenes A4NH-supported Regional Symposium on Research into Smallholder Pig Production, Health, and Pork Safety in Hanoi, Viet Nam.

A4NH leads a research theme at the Seeds of Change gender conference in Canberra, Australia.

**MAY**
IFAD and A4NH release guides for designing nutrition-sensitive value chain projects.

DFID announces major new commitment to HarvestPlus to fund work on biofortification.

**JUNE**
A4NH participates in CGIAR panel at EAT Forum in Sweden.

A4NH co-convenes 5th annual Agriculture, Nutrition, and Health Academy Week in Hyderabad, India.

**JULY**
FSHD supports CGIAR Research Program on Forests, Trees and Agroforestry to take a food systems approach.

Transform Nutrition West Africa releases summary of Nigerian Nutrition Policy.

PHOTOS: A4NH, J. HODUR; FSHD; ANH; A4NH, J. HODUR; FTA A4NH
AUGUST
A4NH-supported research group releases educational video on antimicrobial resistance.

Researchers participate in consultations on draft CFS Voluntary Guidelines on Food Systems and Nutrition.

SEPTEMBER
A4NH launches YouTube channel.

LANSA program receives A+ rating in program review for contributions to nutrition research in South Asia.

A4NH, IFPRI release evaluation study of research on diet quality and health of the poor.

OCTOBER
A4NH participates in CGIAR side event on sustainable food system transformation at CFS.

FSHD releases animation explaining food systems for healthier diets.

A4NH researchers contribute research support and background papers on equity to UNICEF’s flagship 2019 report on Children, Food and Nutrition: Growing Well in a Changing World.

NOVEMBER
A4NH convenes policy seminar at IFPRI on national food system transformations.

Transform Nutrition West Africa holds first francophone ‘short course’ in Senegal.

First Aflasafe® for Africa conference held in Dar es Salaam, Tanzania.

DECEMBER
CGIAR releases photo story featuring A4NH food systems and food safety work in Viet Nam.

Decade-long trial proves efficacy of Nigeria’s Aflasafe® biocontrol product.

IHH researchers release new modeling study to help predict dengue fever outbreaks in Viet Nam.

HarvestPlus, FAO release joint brief detailing latest research evidence, implementation lessons in biofortification.

PHOTOS: A4NH; FAO, GIULIO NAPOLITANO; CGIAR; IFPRI, J. FALIK; IFPRI, J. FALIK; ILRI, APOLLO HABTAMU
Flagship 1 FOOD SYSTEMS FOR HEALTHIER DIETS

The urgency to transform food systems for healthier diets is growing, reflecting worries about current systems’ performance. But there is still much uncertainty about how to make these transformations, particularly in low- and middle-income countries, given that the existing systems are changing rapidly. A4NH’s experience in this field has made the Food Systems for Healthier Diets (FSHD) flagship a critical resource for stakeholders at all levels. To best share A4NH-supported food systems thinking as the CGIAR research portfolio evolves, researchers are systematically documenting lessons learned in work with current partners, while actively engaging others in shaping food systems for healthier diets. From generating systematic assessments of innovations and interventions to building awareness of and capacity to use food systems approaches through targeted trainings with national policymakers, local MSc students and advisors, and global stakeholders, A4NH remains at the forefront of food systems research. Researchers continue to focus on developing food systems governance and on how transformations take place, carefully building understandings of consumer perspectives, and on the critical importance of partnerships. This flagship is led by Wageningen University & Research (WUR) with support from the Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT), the International Food Policy Research Institute (IFPRI), and the International Institute for Tropical Agriculture (IITA).

HIGHLIGHT ONE: Leading Food Systems Research across CGIAR

A4NH has been on the forefront of food systems research, and, as interest in this subject gains momentum worldwide, is using the experience built by the program’s researchers to foster collaboration across CGIAR. In doing so, A4NH researchers are guiding future food systems work, rooted in strong partnerships and addressing the global sense of urgency, to develop strategies that will lead to systemwide improvements with real impacts for consumers in low- and middle-income countries.

Meetings with scientists from across CGIAR, consultations for Centers and other research programs, and workshops on critical topics such as the food environment are shaping and informing how CGIAR approaches food systems research. A growing collection of tools, such as a compendium of indicators and country food system briefs, accessible through the new Food Systems Resource Center, combined with guidance based on years of experience and deep partnerships, will be critical as the system prepares to enter its next phase of research.

HIGHLIGHT TWO: Empowering Stakeholders for Country-Level Action

In 2019, A4NH continued its strong tradition of building capacity and empowering stakeholders at the national level to undertake critical work toward building food systems that support healthier diets. In Ethiopia, the first two groups of MSc students to receive financial and mentoring support from FSHD completed their work, while researchers in Viet Nam worked with national policymakers and other stakeholders in pursuit of the country’s Zero Hunger initiative. Students from the University of Ibadan in Nigeria were trained to lead a course on food systems, which they helped design, to roll out in 2020. In Bangladesh and Viet Nam, local researchers teamed up with FSHD researchers to publish analyses of each country’s food system, while in Bangladesh, a new MSc grant scheme, in partnership with icddr,b, will soon begin accepting applications.

HIGHLIGHT THREE: Promoting Transformation through Innovation

In the flagship’s third year, numerous research projects came to fruition, resulting in a new set of resources and innovations for stakeholders to draw upon at every level of food system transformation. Researchers shared new knowledge on where critical data gaps lie in focus countries; a global map of food systems sustainability based on 20 indicators across 97 countries; progress in the development of food-based dietary guidelines for Ethiopia; an analysis of how food systems are transforming in rural, urban, and peri-urban sites in Viet Nam; and ways to improve fruit and vegetable consumption in Nigeria and Viet Nam. They also identified what key parts of food systems research still lack critical knowledge, including the interaction between the food environment and consumer behavior, and identified ways to begin to fill such gaps.
Flagship 2 BIOFORTIFICATION

Staple crop biofortification is now widely recognized as a cost-effective, sustainable, and scalable element in strategies to address micronutrient deficiency—or “hidden hunger”—among smallholder farming families and other low-resource populations. More than two billion people currently suffer from hidden hunger, which can increase susceptibility to infections and diseases and can cause stunting, anemia, impaired vision, and even death. HarvestPlus leads A4NH work on developing and promoting staple crops rich in iron, zinc, or vitamin A. In 2019, HarvestPlus collaborated with CGIAR and national agriculture research centers to release 27 new biofortified crop varieties, bringing the total released to date under HarvestPlus’s leadership to 238 varieties of 11 staple crops. These crops benefited an estimated 42 million members of smallholder farming families in 2019. HarvestPlus also supported partners in multiple sectors worldwide to catalyze scale-up of biofortification through public policy and private sector initiatives. New research expanded the nutritional evidence base for biofortification.

HIGHLIGHT ONE: Research to Inform Action
An expanding evidence base on the nutritional and health benefits of biofortification, as well as research on delivery models for biofortified crops, provided further critical support for policy and programmatic action. A study in Mozambique, published in the British Journal of Nutrition in 2019, evaluated the impact of a project that introduced vitamin A orange sweet potato vines and cultivation training in a given area, three years after project implementation had been completed. The study showed that the project had sustained impact on vitamin A intakes among participating families beyond the project end date. In a study in Rwanda, iron-deficient women who consumed iron beans twice a day for 18 weeks were found to experience not only improved iron status but also improved ability to conduct everyday physical tasks. This was the first study to show that solely food-based nutrition intervention (as opposed to taking supplements) led to an improvement in subjects’ “work efficiency”—the amount of energy needed to perform light tasks.

HIGHLIGHT TWO: Engaging the Private Sector
Private sector engagement in the seed sector is key to ensuring a sustainable supply of biofortified seed for smallholder farming families; in addition, engaging food sector businesses helps generate demand for biofortified crops so farmers are able to sell surplus for income. HarvestPlus provides capacity strengthening and technical assistance to hundreds of small- and medium-sized enterprises in Africa, Asia, and Latin America to support their work in biofortified seed and food value chains. In April, about 60 food industry representatives and business leaders from key grain value chains gathered in New Delhi to brainstorm ways to create markets for biofortified foods and stimulate Indian farmers’ biofortified crop supply. In November, at HarvestPlus Nigeria’s annual Nutritious Food Fair, food companies showed how they source biofortified ingredients from smallholder farming families. Oluwatoyin Onigbanjo, CEO of infant food company AugustSecrets, described how she uses biofortified maize in cereal products and engages a 1 million-strong community of mothers on the value of nutritious foods.

HIGHLIGHT THREE: Reaching the Most Vulnerable
The Mutwales, a family of seven from the Democratic Republic of Congo, live in the Meheba refugee camp in Zambia’s Northwestern province. They are also one of 105 refugee families participating in an initiative to help them cultivate nutritious vitamin A maize developed by the International Maize and Wheat Improvement Center (CIMMYT) in partnership with HarvestPlus. This is one example of how HarvestPlus and partners are able to deliver nutrition to some of the world’s most vulnerable populations through biofortified crops. Similarly, in partnership with Self Help Africa, more than 1,000 households in eight refugee settlements in northern Uganda are being introduced to cultivation of vitamin A orange sweet potato and iron-biofortified beans. Meanwhile, in the impoverished Indian state of Bihar, which has the country’s highest rate of stunting, two varieties of zinc wheat seeds were officially introduced on the market in 2019; zinc wheat is now expected to reach more than one million farming households in Bihar over the next five years.
Flagship 3 FOOD SAFETY

As countries move through food system transformations, not only does the focus shift from achieving food security to ensuring food safety, but also diets grow more complex and diverse, with food traveling greater distances from where it is grown. Identifying and mitigating food safety risks becomes increasingly important. From controlling aflatoxins to identifying risks along supply chains to working to ensure quality standards in informal markets, A4NH’s third flagship works to ensure policymakers, the private sector, and other stakeholders have the tools they need to take action as food systems evolve. This flagship is led by ILRI with support from IITA and IFPRI.

PHOTOS: ILRI; HARVESTPLUS

HIGHLIGHT ONE: Supporting International Developments in Food Safety with Quality Research, Engagement

As food safety has become more prominent on the international development agenda, A4NH has provided research into the largely ignored role of food safety in informal markets, where many poor people buy and sell fresh foods. Researchers have been able to provide high-quality research and relevant trainings. In 2019, a major training effort in Cambodia offered researchers and practitioners practical tools and skills to understand food safety in increasingly complex food systems. At the first WHO/FAO/AU International Food Safety Conference in Ethiopia, the important task of working with producers, market agents, and consumers to improve food safety and livelihoods in informal markets was highlighted. A4NH researchers also contributed to the evolving discussion on food safety in Africa, through the African Union and other platforms.

HIGHLIGHT TWO: Proving Efficacy of Nigeria’s Aflatoxin Biocontrol Product: Results from a 10-Year Study

An A4NH-supported partnership led by IITA has developed, tested, and adapted aflatoxin biocontrol for Africa south of the Sahara for more than 18 years. In 2019, the team published a landmark journal article reporting on a 10-year study in Nigeria on the efficacy of Aflasafe®, a registered biocontrol product for aflatoxin management. This is the longest-running, most extensive study on efficacy of any biocontrol product or management practice for aflatoxin mitigation, combining results of efficacy trials required for registration with data from both large-scale trials to demonstrate product value and commercial use by thousands of maize farmers. The study firmly establishes Aflasafe® as a vital tool in the fight against aflatoxins.

HIGHLIGHT THREE: Developing a Food Safety Index for Africa

As food systems transform and agricultural systems develop, countries need data-based evidence on their performance in critical areas such as food safety. With encouragement from A4NH researchers at ILRI and others, and support from a multidisciplinary team led by the Partnership for Aflatoxin Control in Africa (PACA), which included ILRI researchers, the African Union (AU) included a new Africa Food Safety Index in the second Comprehensive Africa Agriculture Development Programme (CAADP) Biannual Review in 2019. With a strong response rate from member states, researchers are working as part of a team to evaluate and validate the index for robustness and usefulness to AU and to each of its member states.
Flagship 4 Supporting Policies, Programs, and Enabling Action Through Research (SPEAR)

Addressing malnutrition in all its forms, from undernutrition and micronutrient deficiencies to the growing global crisis of overweight, obesity, and associated noncommunicable diseases, requires a broad approach. A4NH’s fourth flagship works with a wide range of partners at all levels to build the evidence base to identify actions needed to address the presence of multiple forms of malnutrition, not only within the same countries but also within the same households and individuals. From this strong knowledge base, researchers work with policymakers to identify appropriate solutions to improve nutrition outcomes and to build an enabling environment so that those solutions may take hold. This flagship is led by IFPRI with support from Bioversity International and the Institute of Development Studies.

HIGHLIGHT ONE: Critically Reviewing the Global Focus on Stunting

Over the past decade, stunting has become a global development objective. Without question, this focus has done considerable good, helping illustrate and communicate the consequences of undernutrition and providing incentives for policymakers and donors to develop and fund interventions, programs, and policies aimed at reducing the prevalence of stunting. A new A4NH study by IFPRI researchers challenges the assumptions underlying the attention to stunting and stresses the need to focus on more specific nutrition outcomes. Addressing stunting alone will not address other development issues linked to malnutrition such as delayed child development, reduced productivity and earnings in adulthood, and higher incidence of chronic diseases. Stunting is best seen as an indicator of a set of problems that needs solving, rather than stunting being the problem to solve itself.

HIGHLIGHT TWO: Engaging in Global Conversations on Food Systems, Nutrition, and Diets

In 2019, A4NH researchers worked closely with global consortia and organizations, and presented at numerous key international nutrition gatherings, to provide guidance on nutrition, equity, and other critical issues. A publication coauthored with the World Food Program (WFP), which explains the process to develop WFP’s nutrition-sensitive guidance, is now being used to design and redesign programs globally. The Scaling Up Nutrition (SUN) Movement is adopting the A4NH-developed multi sectoral engagement toolkit and, with input from SPEAR researchers, plans to review and revise its private sector guidelines. A4NH researchers also participated in SUN and CGIAR events at the Eat Forum and at a follow-up CGIAR event at the Committee on World Food Security, where they discussed issues ranging from how to incorporate a strong food system and gender perspective in policy to healthy diets and food system transformation in low- and middle-income countries.

HIGHLIGHT THREE: Building Capacity at the National Level to Address Malnutrition

Under SPEAR, A4NH researchers continue to provide critical forums and tools to support national program design and policy development that address malnutrition in all its forms. In 2019, Transform Nutrition West Africa held capacity strengthening short courses, including its first francophone course, in collaboration with the African Nutrition Leadership Programme, while the Stories of Change initiative engaged with stakeholders on policy analysis in countries across Africa and South and Southeast Asia. Practical project design guidance on nutrition-sensitive value chains, developed by A4NH researchers in collaboration with IFAD, reached wider audiences, adding guides in French and Spanish to the English version published in 2018.
Flagship 5  IMPROVING HUMAN HEALTH

At the core of A4NH’s research strategy is the understanding that agriculture, nutrition, and health are firmly linked, and that development in one area connects with and has impacts on the others. As agricultural intensification and livestock production transform landscapes globally, they also impact human health, from the way diseases emerge and spread to how communities respond and protect themselves to growing multisectoral threats like antimicrobial resistance. A4NH’s fifth flagship focuses on the intersection of agriculture and health, with an eye toward understanding their impacts on one another, identifying interventions to reduce disease risk and improve human health, and fostering a collaborative environment across sectors for future research in this critical area. This flagship is led by the London School of Hygiene and Tropical Medicine (LSHTM) and ILRI, with support from IITA.  

Highlight One: A4NH Joins Partners to Launch New CGIAR Antimicrobial Resistance Hub

Antibiotics and other antimicrobial drugs are among the most important tools available to medical and veterinary professionals for curing human and animal diseases and improving human and animal welfare, yet these drugs are increasingly failing. Development of resistance to these drugs in disease-causing bacteria and other microbes poses a major threat to global development; the World Bank estimates it could reduce annual global GDP by more than US$1 trillion by 2030. To combat this growing threat, A4NH joined a coalition of other CGIAR Centers and CGIAR Research Programs to form the new CGIAR Antimicrobial Resistance Hub. Through the Hub, researchers will work to foster learning from past experiences, support research excellence in the Global South, and ensure a critical mass of coordinated research to find suitable and sustainable solutions.

Highlight Two: Harmonizing Agricultural Intensification and Climate Change Mitigation

Climate change and food security are often seen as problems that compete for attention, rather than opportunities for collaborative thinking and strategies to address both. As rice growing intensifies in Africa, and irrigation schemes expand to accommodate it, is it possible to find rice-growing methods that can reduce both the production of greenhouse gases, particularly methane, and the proliferation of malaria-transmitting mosquitoes that often accompanies rice intensification? A4NH researchers have been working with AfricaRice in Côte d’Ivoire in West Africa on cutting-edge research to address these issues together, and plan to initiate collaboration with the International Rice Research Institute in East Africa in the coming year. The objective is to develop “win-win-win” interventions minimizing both greenhouse emissions and mosquito breeding while improving rice yield. In the longer run, the aim is to ensure that, from now on, measures to avoid the unintended and harmful side effects will be built into the development of new rice-growing methods, and new rice-growing schemes, in Africa.

Highlight Three: Connecting Research with Policy to Achieve Results on Critical Diseases

In 2019, A4NH researchers supported policy development to help reduce the impacts of numerous tropical diseases on health. Researchers convened high-level stakeholders with the national neglected tropical disease task forces in Kenya and Rwanda for discussions on the prevalence, distribution, and burden of cysticercosis in smallholder livestock systems, resulting in national prioritization of this issue. They also worked with policymakers in Kenya on a draft national policy document on brucellosis diagnosis and control, held a national-level meeting of public sector stakeholders in Kenya to disseminate value chain and transmission mapping of zoonotic diseases, with workshops for dairy and meat industries, and developed a statistical model for forecasting dengue fever incidence in Viet Nam.
Focus GENDER AND EQUITY

Issues of gender, equity, and empowerment are so central to all aspects of the A4NH research portfolio that they are addressed as a Cross-Cutting Unit of the program. This approach enables the team to support researchers across A4NH as they seek to incorporate and address issues of equity related to gender, age, geography, and social standing, among others, in their work.

PHOTOS: SHUTTERSTOCK, RAWPIXEL; SHUTTERSTOCK, TUKARAM KARVE

HIGHLIGHT ONE: Impact of Pro-WEAI Grows

In 2019, the Gender, Agriculture, and Assets Project, Phase 2 (GAAP2), which aims to develop quantitative and qualitative tools to measure women’s empowerment in agricultural development projects, moved forward with the release of the pilot version of the project-level Women’s Empowerment in Agriculture Index (pro-WEAI). Pro-WEAI is the first comprehensive, standardized tool for measuring women’s empowerment in agriculture at the project level. The team conducted trainings on the tool at the Seeds of Change gender conference in Canberra, Australia, and at the Agriculture, Nutrition, and Health Academy Week in Hyderabad, India. Pro-WEAI’s development was chronicled in a paper published in World Development in October, which helped build momentum and awareness as the overall suite of WEAI tools reached 100 users.

HIGHLIGHT TWO: Empowering New Veterinarians in Malawi to Incorporate Gender and Equity in Their Work

A4NH’s mandate to develop capacity and ensure that gender and equity are considered in agriculture, nutrition, and health work involves supporting researchers to include these issues in all stages of their work. In 2019, researchers at the International Livestock Research Institute developed and implemented a two-day training, with the support of A4NH, for the first class of veterinarians at Malawi’s University of Agriculture and Natural Resources. The training improved the new veterinarians’ understanding of equity issues in veterinary medicine and how inequalities affect the livestock owners and managers with whom they will interact. The students also learned about practical examples and received suggestions on incorporating gender and equity considerations into their work. This knowledge can be put to immediate use in the research proposals they are currently preparing.

HIGHLIGHT THREE: Analyzing Equity in Agriculture, Nutrition, and Health Research

To understand what is needed to tackle different aspects of inequity in agriculture for better nutrition and health, it is critical to identify what research already exists and what is missing. Doing so will help identify how issues of marginalization and inequity are addressed in research and are shaping progress toward better nutrition. To this end, researchers at the Institute of Development Studies, supported by A4NH, undertook a scoping review of existing academic literature to pinpoint knowledge gaps that are preventing researchers, policymakers, activists, and others from ensuring that, as the UN Sustainable Development Goals stress, no one is left behind.
Equity, or the fair distribution of resources or participation in processes among groups, is based on the idea that all people should be treated as equals. Inequities, on the other hand, are differences that are unnecessary, avoidable, unfair, and unjust. Inequities may be related to gender, income, poverty, life stage, youth, and geography, among other characteristics. Addressing equity is essential to achieving global goals in nutrition and health, as well as other development goals, and to preventing large disparities in nutrition and health outcomes across groups.

However, a 2017 external review of equity issues in A4NH research found the program only systematically focused on gender. In response, program management, led by the Gender, Equity, and Empowerment (GEE) unit, made the strategic decision to strengthen other areas of equity research. Next steps included identifying priority areas for equity research and developing research projects explicitly focused on equity. The identification of priority research areas, reported on in 2018, began with a series of regional consultations with stakeholders and partners to identify what research was underway, how partners are integrating equity into their work, and what tools and resources to better address equity are missing.

An important topic raised in the consultations was the need to increase knowledge and awareness of equity issues among those research and development partners that normally don’t consider the implications of equity. To address this need within A4NH, flagship research teams were supported to develop and implement research and capacity development projects on topics arising from the consultations. One Health researchers from ILRI worked with equity colleagues to create a training curriculum on equity and gender for the first veterinary class at Malawi’s Lilongwe University of Agriculture and Natural Resources. That curriculum, profiled in this report in highlights from our Gender, Equity, and Empowerment Cross-Cutting Unit, aimed to raise awareness about equity issues in veterinary medicine and teach trainees about how equity affects both their work and the people who own or manage livestock. The process involved developing a theory of change for how key inequities in the food systems affect diet quality, and assessing the assumptions and related evidence at each step before the curriculum could be designed.

Another topic raised in the consultations, especially in Africa, was the role of youth. Given that the creation of decent jobs is an important outcome of national food system transformations for healthier diets, A4NH looked to develop strategies for engaging youth in food system innovations. In a soon-to-be-released study, we commissioned partners working on youth in agriculture to review the available literature and to engage with our Food Systems for Healthier Diets research team to propose key considerations for engaging and enabling youth in food system transformation in different contexts.

As a third example of expanded equity focus, equity and inclusion were integrated into a research effort in multiple countries on the challenges of reducing malnutrition in all its forms. This project, called Stories of Challenge, focuses on the difficulties countries face in reaching nutrition targets and the role of equity and inclusion in addressing nutrition challenges.
To further expand awareness of equity in agriculture-nutrition-health research, A4NH has convened additional discussions. At the 2019 Agriculture, Nutrition, and Health Academy Week, the program held two side sessions that profiled several research projects being conducted on different aspects of equity, followed by intense discussions about the findings, the research process, and how equity was addressed in each case.

A key lesson is that while equity issues are important, they are complex, and it is easy to make mistakes and advocate for interventions or programs that have negative consequences. What becomes evident in addressing one aspect of equity is how interconnected that aspect often is with many others—a phenomenon known as “intersectionality.” For example, addressing equity issues pertaining to youth is important, but it is also critical to understand how youth intersects with other factors affecting equity, such as wealth, gender, or geography.

A scoping literature review commissioned by A4NH and led by Jody Harris and Nick Nisbett of the Institute for Development Studies, completed in 2019, assessed how aspects of equity have been treated in agriculture, nutrition, and health research by A4NH and others to date, focusing on the A4NH flagship research areas. Among their findings was the infrequency with which the intersectionality among different aspects of equity, and where these aspects interact, are studied. In a webinar previewing the study’s findings, Harris noted that different disciplines have engaged with different aspects of equity, and highlighted the need to read widely across disciplines to understand the range of equity issues. Considering intersectionality is challenging, particularly when not all important aspects are well understood; ethnicity, disability, and age were topics the study found were less studied than others. Moreover, while most papers looked at what the equity problem was, a smaller but significant number went on to look at how that inequity was shaped. Fewer still went on to look at the original causes of the inequity.

A4NH has made a good start in expanding our equity perspectives, but much work remains to be done. Context is critical and thus researchers must work in concert with local stakeholders from the beginning of their work. As A4NH moves its research agenda forward toward ensuring that food system transformations enable healthy diets, addressing malnutrition in all its forms, and supporting a connection between agricultural transformations and improving human health, it does so with an eye toward not just building the knowledge base around the critical importance of equity and inclusion in food systems, but also enabling action. Any actions require planning and implementation by local groups. Local groups also need to be involved in assessments relevant to their chosen actions to learn from and adapt them. True progress can only be achieved when equity—from individual aspects to how they intersect with one another—remains a priority for all.
The 2019 A4NH financial summary shows little change from 2018. Expenditures from the CGIAR Fund represent approximately 24 percent of overall funding, with the remainder from grants to the A4NH managing partners. Biofortification and SPEAR remain the largest flagships by expenditure, each with a substantial portfolio of coordinated grants aligned with their long-term objectives. The Food Systems for Healthier Diets and Food Safety flagships also have significantly increased financial and human resources over the past few years.

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<th>Program Components</th>
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<td><strong>CRP Total</strong></td>
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**FOUNDATIONS, INTERNATIONAL FINANCING INSTITUTIONS, AND GOVERNMENT FUNDING AGENCIES**

- Bill & Melinda Gates Foundation
- Biotechnology and Biological Sciences Research Council
- Biovision Foundation
- Canada
- Children’s Investment Fund Foundation
- European Union
- Food and Agriculture Organization of the United Nations
- Germany
- Global Environment Facility
- International Fund for Agricultural Development
- Italy
- Japan
- John D. and Catherine T. MacArthur Foundation
- Netherlands Organization for Scientific Research
- Norway
- Rockefeller Foundation
- Royal Netherlands Academy of Arts and Sciences
- UNICEF
- Van Dam Foundation
- Wellcome Trust
- The World Bank
- World Food Programme

**PARTNERS PROVIDING RESOURCES**

- Alliance for a Green Revolution in Africa
- Assam Rural Infrastructure and Agricultural Services Society
- Chinese Academy of Agricultural Sciences
- Deloitte Consulting LLP
- Dutch Organization for Internationalisation in Education (NUFFIC)
- European Alliance on Agricultural Knowledge for Development
- FHI 360
- Global Alliance for Improved Nutrition
- Helen Keller International
- Indian Council of Agricultural Research
- Institute of Development Studies
- Johns Hopkins University, Bloomberg School of Public Health
- Kenya Society of Ethnobotany
- McGill University
- Mercy Corps
- Netherlands Development Organisation (SNV)
- Norwegian University of Science and Technology
- Nutrition International
- PATH
- Stichting Dienst Landbouwkundig Onderzoek (LEI)
- Top Institute Food and Nutrition
- Top Sector Agri & Food
- Tufts University
- Unilever
- University of Bonn
- University of Copenhagen
- University of Florida
- University of Liverpool
- University of Michigan
- University of South Carolina
- University of Washington
- Uppsala University
- Washington State University
- World Vision International

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† Departed in 2019
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