Comment 1:
You note that industry partners don't necessarily know how innovation could impact them. You quoted, "What you don't know you don't know." Yes - and this is demonstrated in parts of your publication. For example, one of the president's council's outlined challenges is about managing new pests, pathogens, and invasive plants (see description copied below). In 2019 alone, there were over 14,000 lawsuits filed against Roundup - there is a consumer crisis. If you look at the pesticide industry, you see one that is SO focused and invested in chemical pesticides that is has edged out alternative ideas and approaches (competition). When identifying an urgent need and seeking a major shift in problem-solving, could FFAR consider some sort of match-making between the innovators (academia, most likely) and the private sector? While there are some academic institutions with strong technology transfer programs, most fall short. This shortcoming contributes to the lack of funding (which is one of the major challenges, as pointed out in your strategic plan). I'm thinking that FFAR could provide both a gap fund and a gap service - creating a link between the urgent problem, the innovative solution, and the industry. By placing the challenges even more forward-thinking (accompanied by strong guidelines yet fewer restrictions...for example the recent plant protein RFP indicated but didn't require legumes as a focus), I think FFAR can help break the status-quo, siloed-thinking that traps ingenuity in academic research.

Comment 2:
Regarding the section on funding alternatives, it is suggested that FFAR could invest as a VC. This does seem like an opportunity to raise funds. However, in academia we struggle to secure funding to get to the point where we'd be ready for a VC investment. We greatly appreciate your model of investing in an idea and helping it get to a point where it can benefit public:private partnerships. Funding the gaps (between the idea and proof-of-concept and then proof-of-concept to being market-ready) is critical. FFAR has an important and forward-thinking role in its current structure. We'd hate for that to get lost in the VC world. Additionally, once we have a product ready for VC support, there are a lot of funding options...it is a competitive space.

I want to let you know how impressed we are with the audacity of FFAR! Thank you!
Bashir Barau, PhD Student, Federal College of Agricultural Produce Technology, Nigeria
My name is Bashir Barau, currently undergoing my PhD program in post-harvest physiology and management of crops. I am working with Federal college of agricultural produce technology, hotoro, kano (Head of Department, postharvest technology) in the northern Nigeria. Currently I am involved in facilitating Good Agricultural Practices GAP) with remote rural farmers sponsored by GIZ (German international corporation) My Master's program is in crop science. Climate change is causing a great impact to those small-scale farmers and majority of those farmers are not very much aware on climate smart agriculture (CSA) technologies on which there is need to help those farmers understand the phenomenon and how to mitigate it. My comments could have been any policy (though I am learning that USA do not sign an agreement on climate mitigation) but if there is any way the FFAR can advocate for support to control food crisis using CSA through sensitization, symposiums, trainings and any form of help to sensitize those farmers, we will appreciate this and love this.

Thanks.

Erin Cadwalader, Ph.D., Consultant, Entomological Society of America (ESA)
On behalf of the more than 7,000 members of the Entomological Society of America, I would like to thank you for the opportunity to provide feedback on the Foundation for Food and Agriculture Research 2019 Strategic and Sustainability Plan.

Entomology is an incredibly broad and diverse discipline and our membership, including academia, industry, students, federal employees, crop advisors, pest management professionals, and even hobbyists, speaks to that breadth. Despite that diversity of interests and perspectives, there is strong agreement on the need to support agricultural research.

ESA was very happy to see the reauthorization of the Foundation in the 2018 Farm Bill as it had been one of our advocacy priorities. We feel the Foundation meets an important need in the public-private partnership space where the smaller size is an asset, allowing the organization to be nimbler in response to emerging opportunities, even if it doesn’t fund IPM. As data in the strategic plan and other places demonstrates, the rate of domestic investment in food and agricultural research has been slowing relative to the international sector, and we are concerned about what that will mean for U.S. leadership and competitiveness in this sector.

To that end, we were delighted to see in the new plan an emphasis on self-sustainment and transparency for the Foundation. However, we hope that leveraging those new efforts at fundraising will help create vehicles that don’t require a 1:1 match or one less favorable. Instead, we encourage the Foundation to make it as easy as possible for people with great ideas to bring them to this organization. Given the challenges we face as a nation, including invasive species and pest management, sustainable agriculture, insecticide resistance, and others, we need as many individuals as possible bringing their innovative solutions to the table, and we see that as a central tenet to inclusiveness.

Thank you for your time and the opportunity to provide a public comment. We look forward to seeing how the Foundation moves ahead with executing this plan.
Pam Coleman, President, and Christie Tarantino-Dean, CEO, Institute of Food

Dear FFAR Board of Directors,

IFT would like to thank you for the opportunity to provide input in response to FFAR Strategic Plan ahead of the public meeting on October 11.

There is a strong alignment between IFT’s and FFAR’s vision statements - elevating science and innovation as mission critical to ensure accessibility to safe, nutritious, and affordable food.

FFAR: "Envisions a world in which ever-innovating and collaborative science provides every person access to affordable, nutritious food grown on thriving farms."

IFT: "A world where science and innovation are universally accepted as essential to a safe, nutritious and sustainable food supply for everyone."

Strategically, there is significant commonality between IFT’s priorities and FFAR’s goals, and opportunity for partnerships. Specifically:

• FFAR’s Goal 1 (Build inclusive public-private partnerships to fund innovative food and agriculture research) dovetails with IFT’s effort to increase funding for research in the science of food through public and public-private sources. IFT’s effort is in partnership with the Council for Food Science Administrators and reflects a long-standing commitment to academia.

• FFAR’s Goal 2 (Serve as a leading voice representing food and agriculture research) is in line with IFT’s priority to advocate for the science of food and to dispel mistrust. IFT sees this as an imperative for the entire food system, - including agriculture, nutrition and health, and digitization of the food supply chains. Joining voices would augment the reach and impact.

• FFAR’s Goal 3 (Develop the scientific workforce for food and agriculture) aligns with IFT’s commitment to increase the talent pipeline that encompasses two of IFT’s three pillars – Feeding Tomorrow Foundation, and the IFT Student Association. IFT works closely and systematically with academia to address the evolving education needs, including inter-disciplinary approaches, and practical preparation for the work force.

We look forward to engaging with FFAR to advance these common priorities and provide synergistic solutions to the needs of the food system with robust end-to-end supply chains from seed to cell.
Dr. Jose Dubeux, Associate Chair, University of Florida Agronomy Department
Thanks for the opportunity given to us to address the FFAR 2019 Strategic and Sustainability Plan. Florida is ground zero for climate change and that affects our Agricultural Systems. Research in stress resilient agriculture, integrated agroecosystems, One Health, algae bloom, invasive species, alternative crops, and ecosystem services of Florida agroecosystems are top priorities in our research agenda. We think these topics are the future of Florida Agriculture and they will be key to keep Florida environment sustainable over time. We are glad to see that most of these topics are also in the FFAR goals. We have a few constructive comments to help improving the FFAR Strategic and Sustainability Plan.

For Goal 1 (Build inclusive public-private partnerships to fund innovative food and agriculture research), we specifically would like to suggest ways for FFAR to achieve goals by targeting research that:
1) encompasses innovative agricultural techniques and technologies coupled with quantification of economic viability and impacts on food security and sovereignty;
2) partners with organizations that provide quantification of ecosystem services that can eventually be delivered to policy makers;
3) provides ecosystem and environmental resilience metrics; and
4) couples research into agroecosystem management with quantifying impacts to human health, including impact to community/regional food systems.

For the Financial Sustainability Plan, we have the following comments:
• Leverage federal funding by collaborating with other federal agencies such as NSF, NIFA, and NIH; concomitantly increases the breadth and depth of proposed project scientific scope.
• Reach out proactively to state agencies – the advantage of leveraging state funds with federal funds should be attractive to all parties; our state funding agency research goals align well with FFAR research priority areas in large part.
• Explore more funding models that partner with international funders of agriculture, including governmental and industry sources.

For the Transparency Initiative, we suggest holding regular themed town hall listening sessions with interested private and public entities focused on emerging “wicked problems” and other critical research focal areas.

Dorothee Goldman, Hammondsport, New York
We are interested to learn how FFAR can provide support for improving the economics of the dairy farmer. What programs and projects would be useful for help dairy farmers navigate the current challenges resulting from climate change, trade agreements, and changing markets?
John Farmer, Government and Public Affairs Director, Irrigation Association
On behalf of the more than 1,600 members of the Irrigation Association, thank you for the opportunity to briefly discuss our support of the Foundation for Food and Agriculture Research, the importance of irrigation efficiency in agriculture, and our continued involvement in the Irrigation Innovation Consortium.

About the Irrigation Association
The Irrigation Association is a national trade association with a mission of promoting efficient irrigation. We strive to achieve this mission through the implementation of our strategic plan, focusing on two main initiatives: professional development and advocacy. In addition to conducting various educational offerings throughout the United States, providing nationally recognized certifications for professionals in irrigation and promoting best management practices through sound public policy, the IA also conducts the annual Irrigation Show and Education Week, which is the world’s largest trade show focused on irrigation technology.

Our Support for FFAR’s Strategic and Sustainability Plan
Many challenges lie ahead for U.S. agriculture. Climate change, trade uncertainty, access to capital, market forces, an aging workforce, and urbanization all threaten the future viability of U.S. food production. FFAR is correct in comparing U.S. versus foreign public investment in agriculture production and research. Even though the United States is at the forefront of agricultural innovation, we lag in public investment to ensure the viability and stability of our agricultural sector.

The Irrigation Association believes in the strength of public-private partnerships and the role FFAR plays in driving agricultural innovation.

As the FFAR board and the Sustainable Water Management Advisory Council continue to set the direction of FFAR relating to water management, including identifying future opportunities to drive research in this area, the Irrigation Association encourages FFAR to continue your balanced approach when addressing agricultural productivity and natural resource conservation. Many times, government programs address just one part of agricultural production, without looking at the whole picture. An example is promoting water conservation to enhance stream flow. This can be a very positive outcome, but yield may be adversely affected. Water conservation through efficiency and increasing yield are not mutually exclusive from one another and we appreciate FFAR’s continued balanced approach of supporting farmers and the environment.

The Irrigation Association also encourages FFAR to continue your work with corporate entities through various sustainability and corporate social responsibility plans. The Irrigation Association is seeing many farming practice decisions being driven by CSR/sustainability plans that call for a reduction in natural resource/chemical use of their suppliers. Through FFAR’s public-private partnership model, this is an opportunity for FFAR to serve as a conduit between corporations, NGOs and the farming community to continue promoting sustainable agriculture through market drivers.
Irrigation Innovation Consortium
The Irrigation Innovation Consortium was established in April of 2018 as a collaborative research effort to accelerate the development and adoption of water and energy efficient irrigation technologies and practices through public-private partnerships. Made possible through a matching grant by FFAR, the IIC has five founding university partners, along with eight founding industry partners, including the Irrigation Association, which now drives innovation and research in all aspects of irrigation through the development of more strategic collaborative partnerships that generate new synergies by leveraging each other’s expertise, technology and resources.

Speaking on behalf of the irrigation industry, we see that this consortium is already making an impact on research and innovation. Through driving discussion among industry and academic leaders, we are now bridging a gap between two essential partners in agricultural, turf and landscape irrigation – truly identifying the current and future research needs of our industry and driving money where it needs to go to achieve our research and innovation goals.

From technology research to data gathering, the Irrigation Association looks forward to using the results from the IIC to continue achieving our mission: promoting efficient irrigation. We thank FFAR for your continued role in making this plan a reality.

Conclusion
We look forward to our continued partnership with FFAR. We also look forward to supporting the implementation of FFAR’s strategic and sustainability plan, while advocating for a sustainable funding model to ensure the future success of the foundation.

Joyce Hunter, CEO, Vulcan Enterprises LLC
1. Partnerships are necessary to insure sustainability and I applaud the ones that you have listed under project approach. However, I did not see one with GODAN (Global Open Data for Agriculture and Nutrition). Is there one planned?
2. What is the appetite for collaborating with start up organizations such as NativeAg.io as part of your engaging with key enablers, that have unique ideas/solutions like block chain and democratizing agricultural data to enable market transparency to help FFAR achieve your mission?
3. Part of your strategic plan should include partnership with STEM programs for youth that have an agriculture component in order to encourage interest in data science and data analytics and build a potential future workforce pipeline.
Glance Flaherty, Research Scholar, Gerald J. and Dorothy R. Friedman School of Nutrition Science and Policy at Tufts University

Thank you for the opportunity to provide feedback on the 2019 Strategic Plan of the Foundation for Food and Agriculture Research. FFAR fills an essential role in the food and agricultural research landscape, often focusing on research questions that are not being answered elsewhere. Perhaps the most pressing food system challenge in the United States and around the world is the accelerating rate of diet-related diseases. Through the Health-Agriculture Nexus and Urban Food Systems Challenge Areas, FFAR has convened cross-sectoral partnerships in support of innovative research projects and actionable solutions. In order to ensure FFAR’s continued impact, the undersigned individuals from Tufts University’s Friedman School of Nutrition Science and Policy offer the following recommendations.

Continued Congressional support is essential to FFAR’s mission

We agree with over 80 percent of the surveyed stakeholders who believe that continued Congressional funding is essential to sustaining FFAR’s scale of impact. In recent decades, public funding of agriculture research in the United States has slowed, stifling discovery and innovation and threatening our national competitiveness. Today, Brazil and China spend a far higher proportion of national agricultural GDP on research and development than the United States. In 2014, the Research, Education and Extension mission area at the USDA received only $2.8 billion, a tiny fraction of the department’s annual budget. In contrast, the National Institutes of Health invest nearly $39.2 billion annually in medical research. The relative lack of funding directed toward food and agriculture research underscores the centrality of public funding to FFAR’s mission.

In the U.S. and elsewhere, private investment in agricultural technology rises and falls with the level of platform funding from the public sector. Private firms focus on proprietary innovations, including R&D and marketing for innovations whose value can be captured by the seller, while the public sector focuses on research tools and other innovations used by private companies and farmers in ways that spill over to many consumers and must therefore be funded by taxpayers.

Non-traditional funders offer the potential to amplify FFAR’s impact

Guaranteed public support from Congress has facilitated FFAR’s impressive track record of building collaborative, cross-sectoral partnerships with private funders, from food corporations like Dole Food Company; to private foundations like the Bill & Melinda Gates Foundation; to public entities like state departments of education. The Strategic Plan lays out a framework to grow FFAR’s set of co-funders in order to diversify its funding base. We believe that FFAR is well-positioned to continue to attract non-traditional funders to the food and agriculture research space. Given the consequences of the nation’s diet-related disease challenges, FFAR should strengthen existing and seek out new partnerships with:

   a. Health care providers and insurance companies

Health care costs in the United States are projected to continue to rise, driven in part by skyrocketing rates of diet-related diseases. More than 100 million adults in the U.S. have diabetes or pre-diabetes, while cardiovascular disease affects 122 million people; together, these two diseases cost $678 billion per year. Poor diets are the leading cause of mortality in the U.S.,
responsible for 500,000 deaths per year. Improving Americans’ dietary patterns – for example, by reducing consumption of sodium, refined starch, processed meat, trans-fat, and added sugars; and increasing consumption of fruits, nuts, fish, vegetables, legumes and whole grains – would begin to reduce the prevalence of these chronic diseases, easing the financial burden on health care and insurance providers. A number of such institutions have recognized the importance of nutrition to the health care sector’s challenges; for example, John Hancock Vitality Life Insurance incentivizes the consumption of healthy foods and other lifestyle changes in order to connect its policyholders’ long-term health with financial wellbeing. FFAR should continue to build partnerships with the health care providers, insurers, and other stakeholders that stand to benefit from stemming the tide of rising health care costs.

b. Major employers

The growing burden of diet-related diseases also impacts employers throughout the American economy, which not only see the direct costs of health care, but also the indirect costs caused by loss of productivity. Research has found links between poor nutrition and worker absenteeism, presenteeism, work disability, early retirement, and premature mortality; one estimate found that obesity alone causes 39.2 million lost work days in the U.S. American employers have a vested interest in ensuring a healthy and productive workforce, and several have already collaborated with FFAR on related research initiatives. FFAR should continue to pursue partnership opportunities with private sector employers to identify actionable solutions to diet-related challenges.

c. Defense leaders

Poor nutrition jeopardizes U.S. military readiness. A 2018 report found that obesity disqualifies 31 percent of 17- to 24-year-olds from serving in the armed forces, exacerbating the military’s existing recruiting challenges. The current rates of overweight and obesity among children and teenagers pose a long-term risk to national security, underscoring the need for obesity prevention strategies beginning early in life and continuing through adulthood. FFAR should pursue opportunities to collaborate with defense industry leaders to support research that can identify effective, science-based interventions that will improve Americans’ health and alleviate the burden that poor diets place on our military.

The broad set of challenges associated with diet-related diseases underscores the potential for FFAR to leverage private investment from non-traditional partners. FFAR’s Strategic Plan recommends instituting a higher match requirement for projects where industry is likely to benefit; the potential collaborations outlined above suggest that the range of projects that warrant substantial private support is quite broad. However, today, these non-traditional funders represent less than 5 percent of FFAR’s co-funding. As FFAR works to diversify its funding on the path toward financial sustainability, it should take advantage of heightened interest from actors who are not part of the traditional food and agriculture research landscape. At the same time, Congress should strengthen FFAR’s core model by instituting mandatory funding, signaling the importance of food and agriculture challenges to potential co-funders. With sustained public support, FFAR can continue to support bold multidisciplinary research,
mobilize a diverse set of stakeholders, and articulate the clear vision we need to address our nation’s pressing food and agriculture challenges.

Timothy Griffin, PhD
Jerold Mande, MPH
Renata Micha, RD, PhD
Tali Robbins

Lara Moody, Vice President of Stewardship & Sustainability, The Fertilizer Institute
The Fertilizer Institute represents the nation’s fertilizer industry including producers, importers, retailers, wholesalers, and other companies that provide services to the fertilizer industry. TFI members provide nutrients that nourish the nation’s crops, helping to ensure a stable and reliable food, fuel, and fiber supply. TFI’s full-time staff, based in Washington, D.C., serves its members through advocacy, educational, technical, economic, and public communication programs. The mission of FFAR to “create unique public-private partnerships” aligns closely with how strongly TFI values public-private research collaboration. The Fertilizer Institute is supportive of Goal 1 – to build public-private partnerships to fund innovative food and agriculture research. We feel that greater funding and inclusion of the 4R principles can help contribute to the impact objectives of enhancing the viability of farms and our food supply, increasing environmental resilience, and improving human health and well-being through food and agriculture. Specifically, three of the six Challenge Areas that are continued from 2018 (p. 43, Appendix I: soil health, sustainable water management, and health-agriculture nexus) are directly related to the nutrient content of the soil and harvested crops.

Considerable interactions exist between Strategic Plan goals 3 and 4 and where TFI engages with agronomic practitioners and nutrient management researchers. A future workforce of well-trained agronomists is a critical component to the food production system that our population relies on. Nutrient stewardship principles that are based on the 4Rs allow agronomists and producers to optimize crop production while minimizing nutrient losses to the environment. The Fertilizer Institute recommends including the dissemination of the importance of 4Rs to a workforce that relies on sound science in agriculture. Financial stability is required to lead and facilitate change via agricultural research. The Fertilizer Institute supports FFAR’s stance that financial stability is a prerequisite to enabling change.

In the Key Food and Agriculture Challenges listed, research funded by the 4R Research Fund has already demonstrated the ability to reduce greenhouse gas emission though improved fertilizer management by considering the right source of fertilizer, at the right rate, the right time, and in the right place (4Rs), primarily on the corn based systems. Further research is needed to better understand the impact of combinations of fertilizer management changes that can be simple and cost effective for farmers to implement on greenhouse gas losses in more cropping systems and climates.

The fertilizer industry through the Foundation for Agronomic Research and the 4R Research Fund has a commitment to funding research to improve the efficiency of fertilizer use in all
cropping systems. Partnering with FFAR to increase the impact of this investment will be key to meeting the goals and challenges outlined in FFAR’s 2019 Strategic and Sustainability Plan.

Developing Research Programs
Specific programs within FFAR have the opportunity to identify and focus upon “real needs” of stakeholders throughout agriculture. Within the Strategic Plan (p 53) “How We Work: Developing Research Programs” details the processes of concept development, concept clearance, and program approval. The fertilizer industry represents the entire spectrum of crop nutrient use in agriculture, and TFI is ideally positioned to be a source of information and ideas about research concepts that represent potential solutions to challenges that producers face in nutrient management. Defined FFAR research programs that specifically focus on improving nutrient stewardship by using fertilizers and other crop nutrients using the 4Rs.

Ebenezer Saygba, Student, Sierra Leone
I want this institution to promote Insect Pest Management because it is main strategy that can help the peasant farmers in the developing nations. These management strategies are biological control, cultural control, and mechanical control. They do not cause an economic constraints and also they do not cause harmful effects to the environment and useful organisms and no toxins in food chain.

Reshmi Sarkar, Texas A&M AgriLife Research
Within Goal 1: Supporting conscientious stewardship of natural resources is not enough, what we need is improvement in their understanding on the value of natural resources and how the results of research and employing the improved techniques can help enhance yield as well as the decrease the use of those resources. For example, improving soil carbon stock not only help improve soil’s health and quality, and overall outcome of the farm in short and long-term also it supports global goals of sustainability and reduce climate change impacts.
We need to conduct research in stakeholders’ fields with improved scientific techniques to show how the results can be different from the age-old practices.

Vikram Sunkara, Lead Operations Specialist, FAARM LLC
1) FFAR strategy/plans to promote farming as respectable and profitable profession for future generation?
2) Any future plans for FFAR to have easy and affordable Micro Insurance plans for all agricultural needs?
3) FFAR strategy/plans to promote Green waste management for converting food waste to Bio compost?