United States Department of Agriculture

Foreign Agricultural Service

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Washington, DC
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UNITED STATES DEPARTMENT OF AGRICULTURE
SCIENTIFIC EXCHANGES PROGRAM
West Africa SPS/TBT and CSA Program

Application Deadline: July 20, 2022
Eligible Countries: Cotê d'Ivoire, Ghana, Nigeria, and Senegal

Background:

The Scientific Exchanges Program (SEP) supports USDA's agricultural research goals of promoting collaborative programs among agricultural professionals of eligible countries, agricultural professionals of the United States, the international agricultural research system, and U.S. entities conducting research. SEP is implemented by USDA's Foreign Agricultural Service, Global Programs, Fellowship Programs.

The SEP Fellowship in general was created to promote food security and economic growth in eligible countries by educating a new generation of agricultural scientists, increasing scientific knowledge and collaborative research to improve agricultural productivity, and extending that knowledge to users and intermediaries in the marketplace. The collaborative nature of the SEP training and research programs benefits the fellow, his or her home institution, and partner country; the U.S. host institution, its professors, researchers, and students; and the global agricultural sector by improving agricultural productivity, systems, and processes in partnering nations through the transfer of new science and agricultural technologies.

This application package is focused on applicants interested in improving human capacity in sanitary and phytosanitary (SPS) measures and technical barriers to trade (TBT), and the relationship to this of climate smart agriculture (CSA). The goal will be to empower fellows to advocate for sound SPS policy to peers, decision-makers, and the public.

Objectives of the Fellowship:

- Provide early-to-mid career agricultural research scientists, faculty, and policymakers with individual training opportunities in SPS measures and TBT, while considering Climate Smart Agriculture to improve food safety.
- Foster increased collaboration and networking to increase trade and transform agri-food systems towards green and climate resilient practices.
- Improve food safety systems in West Africa by offering "real-world" research opportunities on food safety issues and topics related to SPS measures and TBT.

- Address obstacles to the adoption of technology such as improving policies and regulations. More broadly, through their research, fellows will affirm the importance of the international standard setting bodies (Codex Alimentarius, the International Plant Protection Convention and the World Organization for Animal Health) to agricultural policy makers responsible for the development or improvement of national food safety regimes throughout West Africa.

Research Topics:

Focuses on food safety issues with a direct impact on international agricultural trade, such as sanitary and phytosanitary (SPS) measures and technical barriers to trade (TBT). Research should include the potential for using Climate Smart Agriculture (CSA) to improve food safety. Below is a list of topics of interest.

A. Plant Health

- Plant Pathology and Plant Breeding
  - Conduct phytosanitary disease surveys (wheat, dry beans, pearl millet, sorghum, corn, soybean)
  - Assess the impact of crop diseases on international trade
  - Alignment of import standards and regulations for crop diseases
  - Field research on integrated management and diagnosis of crop diseases
- Applied Plant Ecology (sorghum)
  - Agroecological issues from interplant competitions to ecological weed management in organic production systems to optimize the efficiency and sustainability of agricultural production systems
- Insect Ecology, Biological Control, Integrated Pest Management (wheat, dry beans, sorghum, corn, soybeans)
- Plant Protection
  - Plant quarantine
  - Pest risk analysis
  - Decision support systems and risk management
- Climate smart Agriculture
  - Cropping systems
  - Precision agriculture

B. Food Safety

  - Molds and mycotoxins
  - Post-harvest, including regulation and quality standards
  - Genetically modified food crop gene editing and safety assessment
  - Bioinformatics of food allergens such as glutens (Celiac)
  - Food Microbiology assessment and validation studies
  - Foreign Supplier Verification Program
  - Nutritional labeling in the US: Requirements and how/what to be labeled for nutrients and for risk
  - Meat handling

- Food contaminants: chemical and natural
- Food testing and processing procedures
- Consumer food safety and UN guidelines for consumer protection

C. Animal – Human Health
- Ruminant diagnostics/microbiology
- Zoonotic diseases at the wildlife-livestock interface and spatial epidemiology
- Disease mapping in QGIS and spatial cluster analysis
- Textiles for the protection of humans from disease vectors, specialty fabrics/bags for grain storage
- Novel approaches to managing vectors and flies on livestock
- Development, evaluation, and use of innovative affordable agricultural tools, digital platforms to support small holder farmers
- Anti-microbial resistance monitoring
- Diagnostic/veterinary practices
- Biosecurity and biosafety (sanitation, isolation, and traffic control)
- Regulations for safety of animal source foods
- Epidemiology of foodborne pathogens

D. General Policy/Management
- Economic analysis of SPS implementation – including business drivers
- Risk Analysis, surveillance systems, quarantine practices, inspection/monitoring processes, etc.
- Leadership and science communication
- Understanding political and policy communication
- Inter-regional coordination/ cooperation/ collaboration for SPS implementation
- Resource optimization and allocations
- Risk communication
- Leadership and science communication
- Understanding political and policy communication
- Inter-regional coordination/ cooperation/ collaboration for SPS implementation

Climate Smart Agriculture Integration

Climate change will have severe consequences for the health of crops and livestock, affecting both agricultural productivity and the quality of raw materials needed to support the global food industry. In addition to abiotic stresses, climate change can also lead to changes in pests and other biotic threats to our food supply. CSA aims to adapt and build resilience to climate change; sustainably increase agricultural productivity and incomes; and reduce greenhouse gas emissions, which lead to further environmental degradation. The University of Missouri is home to the Precision Agriculture Technology Program, the Center for Regenerative Agriculture, the Food and Agriculture Policy Research Institute, the Missouri Climate Center, the Center for Watershed

Management and Water Quality, the Soil Health Assessment Center, and the Interdisciplinary Plant Group, which focuses on understanding how plants respond to changing environments. The University of Nebraska-Lincoln is home to many Centers that deal with climate change and climate smart agriculture including the Center for Advanced Land Technologies, the Nebraska Center for Plant Science Innovation, the Center for Grassland Studies, the Center for Resiliency in Agricultural Working Landscapes, the National Drought Mitigation Center, and the Daugherty Water for Food Global Institute. North Carolina State University faculty contribute to the Advanced Self Powered Systems of Sensors and Technologies Center, the Animal and Poultry Waste Management Center, the Center for Environmental and Resource Economic Policy, the Center for Human Health and the Environment, the Center for Integrated Pest Management, the North Carolina Institute for Climate Studies, the Water Resources Research Institute, and the Southeast Climate Adaptation Science Center.

Length of Fellowships:

The fellowship will last 12 weeks, and the implementing partners are University of Missouri, University of Nebraska-Lincoln, and North Carolina State University. After completing the U.S.-based portion of the fellowship, the mentor will visit the Fellow's home institution within six months to one year after the U.S. portion of the training. Tentative dates for the program are March 1 – May 31, 2023.

Eligibility Requirements:

Candidates will be selected based on their academic and professional research interests and achievements, level of scientific competence, aptitude for scientific research, leadership potential, likelihood of bringing back new ideas to their home institution, and flexibility and aptitude for success in a cross-cultural environment. Consideration is also given to the relevance of the applicant's research area to the research topics highlighted in the application announcement and to global food security and trade. Please use the research topics described above as a guide for answering questions on the application regarding your research proposal and research action plan.

Below is a list of eligibility requirements:

- Citizen of Cotê d'Ivoire, Ghana, Nigeria, or Senegal.
- Good reading, writing, and speaking skills in English language.
- Master's degree or higher with at least two years of practical experience (minimum).
- Currently employed by a university, research institution, or other scientific institution in a country in either Cotê d'Ivoire, Ghana, Nigeria, or Senegal.
- Intention to continue working in their home country for a minimum of two years following the return from the United States.
- Researcher with a clear connection to the research topics outlined in the call.
- Never participated previously in the Borlaug Fellowship or Scientific Exchange programs
- Proposal directly related to the research topic.

Application Requirements:

- **PAPER** Application form (Provided)
- Signed approval from applicant's home institution
- Two letters of recommendation (academic and professional preferred)
- Copies of diploma(s) for college/university degree(s) received
- Copy of passport identification page

Contact Information:

Submit applications by email to Cara Conley (Cara.Conley@usda.gov), CCing Joyce West (Joyce.West@usda.gov) and CIP@missouri.edu. Applications must be received on or before July 20, 2022. If appliable, in person or virtual interviews with applicants are tentatively scheduled to take place in November/December 2022. Final selection of participants will be made by a FAS/USDA committee in Washington, D.C.

Applicants must complete the application in English. We will only accept applications for the program that are completed in English. The applicant's training objectives and their university administration's expectations of them upon return should be discussed and agreed upon prior to the interviews.

Should you have any questions concerning the program, please email the contacts above and reach out to:

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