

DECEMBER 2016



INTEGRATED APPROACHES TO **FOOD SECURITY AND NUTRITION**

A Trip Report of the CSIS Delegation to Senegal, August 2016

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CONTENTS

IV | Acknowledgments

V | Introduction

1 | Key Lessons

2 | The Challenges

3 | Senegal: Some Background

5 | U.S. Feed the Future Programming

6 | The CSIS Delegation Trip

6 | Yaajeende

8 | Naatal Mbay

10 | The Feed the Future–Millennium Challenge Corporation Link

11 | Conclusions

13 | ANNEX I
Feed the Future Activities

17 | ANNEX II
Delegation Site Visits

30 | About the Author

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THIS REPORT IS BASED on interviews conducted in Senegal in August 2016. The research delegation included five U.S. congressional staff members:

- Jordan Dickinson, legislative assistant for Rep. Dan Kildee (D-MI)
- Ryan Evans, legislative assistant for Sen. Johnny Isakson (R-GA)
- Matthew MacKenzie, senior counsel for the U.S. House Committee on Agriculture
- Alicia Molt, deputy chief of staff and legislative director for Rep. Mark Pocan (D-WI)
- Andrew Rezendes, investigative counsel for the U.S. Senate Committee on Agriculture, Nutrition, and Forestry

This group, along with Center for Strategic and International Studies (CSIS) staff, met with representatives from Senegal's Ministry of Agriculture and Rural Equipment and its Fight Against Malnutrition Unit in the Office of the President, and with senior U.S. government officials based in Dakar. The delegation visited project sites and met with local Feed the Future staff and project partners in the Matam and Saint-Louis regions in northern Senegal, as well as with Peace Corps volunteers and representatives from the Millennium Challenge Account.

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The views expressed here are solely those of the author and are not attributable to the members of the congressional staff delegation or to members of Congress.

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INTRODUCTION

AMONG THE MOST IMPORTANT SHIFTS IN U.S. DEVELOPMENT POLICY in the last decade has been a renewed emphasis on addressing global hunger, poverty, and malnutrition through accelerated agricultural sector growth. This shift, which gained significant momentum in the midst of the 2007/2008 global food crisis, has enjoyed strong bipartisan support, and the enactment of the U.S. Global Food Security Act in July 2016 attests to the importance that the United States attaches to global food security as a matter of national interest. The Feed the Future initiative, launched in May 2010, has capitalized on this momentum, aiming for a more focused, strategic approach to increase agricultural productivity and improve nutritional outcomes in the initiative's 19 target countries, backed by significant new resources.¹

The renewed focus on agricultural growth and food security has been shaped by another important shift in U.S. development policy, namely a growing recognition of the role that private-sector actors and incentives can play in driving inclusive growth and reducing poverty. A core element of Feed the Future programming, therefore, has been to support market-based solutions to spur productivity and to expand consumer access to reliable, nutritious food.

From August 21 to August 27, the Global Food Security Project and the Africa Program from the Center for Strategic and International Studies (CSIS) led a congressional staff delegation to Senegal for a closer look at how Feed the Future and related U.S. assistance programs are contributing to agricultural growth and food security in a key U.S. partner in West Africa. The bipartisan delegation traveled from the Senegalese capital of Dakar to the east and the north of the country, visiting Feed the Future and Millennium Challenge Corporation (MCC) projects, and talking to farmers and millers, community groups and women's cooperatives, entrepreneurs and volunteers, national and local government officials, embassy staff, program implementers, and Peace Corps volunteers. The visit offered an opportunity to better understand how Feed the Future principles are put into practice, how the initiative's programs relate to other U.S. development investments, and how Senegalese partners—both in and outside of government—perceive the program's impacts and contributions.

¹ Agricultural development assistance, a major component of the USAID programming in the 1970s, dwindled to insignificance by the 1990s. Between 2008 and 2012, funding obligations in the sector doubled. See: Curt Tarnoff, "US Agency for International Development (USAID): Background, Operations, and Issues," Congressional Research Service, July 2015, <https://www.fas.org/sgp/crs/row/R44117.pdf>.

Key Lessons

The delegation did not undertake a technical or comprehensive assessment of Feed the Future programs in Senegal and focused primarily on two flagship projects funded by the U.S. Agency for International Development (USAID)—the Yaajeende and Naatal Mbay. Nonetheless, the delegation came away with a strong impression of programming that is strategically targeted, interconnected, and having an impact not just in production levels and nutritional outcomes, but also in supporting systemic changes that empower farmers, communities, and entrepreneurs. This report captures some of the delegation's experiences and observations—on how Feed the Future and related U.S. assistance investments are making a difference, and on what has made Senegal's experience a particularly promising example of how coordinated U.S. programming can support sustainable change. The views expressed here are solely those of the author and are not attributable to the members of the congressional staff delegation or to members of Congress.

Across the projects that the delegation visited, several key principles that have guided Feed the Future's programming approach in Senegal became clear:

- A first principle is to get beyond the perceived dichotomy between “commercial” and smallholder farmers. Instead, smallholder farmers are considered commercial farmers and are positioned as central players in agricultural transformation and food security. Feed the Future projects aim to build networks and systems tailored

to these farmers' circumstances, connecting them not only to markets but also to reliable sources of inputs, information, and financing.

- A second, related principle is to target key points in the grain value chain, with interventions that are coordinated, connected, and mutually reinforcing. These interventions look beyond short-term production increases and aim to build sustainable systems that can spur—and eventually accommodate—agricultural growth well into the future. Expanding access to credit and insurance, for example, is pursued through a constellation of integrated interventions—including support for seed certification, expansion of quality storage capacity, a warehouse receipt system, aggregation of data from individual farmers, and information exchanges—which together give financial institutions the data and guarantees they need to extend credit to smallholder farmers. These same interventions have knock-on effects in boosting yields and production levels, improving access to inputs and equipment, and reducing postharvest losses.
- A third principle that cuts across the projects visited by the delegation is to ensure that development assistance and government intervention do not crowd out local, market-based solutions, even at a micro-level and in services—sanitation and

nutrition, for example—that are not always associated with the private sector. From soap, iodized salt, and fortified meal, to tractor leasing, seed certification, and water management services, Feed the Future programming seeks local solutions and builds a cadre of community-based solutions providers, who are now largely self-sustaining. Feed the Future projects provide very few direct goods or services to farmers and local communities; rather, their emphasis has been to identify, empower, and link local actors and institutions that can.

- Finally, Feed the Future in Senegal has been particularly successful in capitalizing on synergies across U.S. agencies and assistance programs. Absent infrastructure development, even the most strategic investments in agricultural growth will quickly run up against bottlenecks and diminishing returns. MCC projects in Senegal have been vital to Feed the Future’s success, and they provide a powerful example of how U.S. investments can be transformative and mutually reinforcing.

Operationalizing these core principles has been made easier by several context-specific factors in Senegal. Among the most important has been the government of Senegal’s commitment to agricultural growth and transformation and a comprehensive “roadmap” to which Feed the Future activities contribute. Strong collabora-

tion among U.S. agencies has been another key factor—according to one seasoned U.S. diplomat in Dakar, collaboration within the U.S. mission is “the best I’ve ever seen.” And finally, strong project implementers, empowered to be innovative and nimble in identifying and responding to targets of opportunity, have been critical to Feed the Future’s linked-up, systems-based approach.

The Challenges

Among the challenges that Feed the Future Senegal faces is how best to benchmark progress and impact. Feed the Future’s stringent targets—production levels and reduction in poverty and stunting—are important in marking impact and in giving U.S. taxpayers and congressional appropriators a sense of return on investments. But systemic reform—critical as it is to long-term, sustainable progress—is much harder to measure, and positive changes in attitude or approach don’t lend themselves to standard impact evaluations. “It’s hard to tell our story,” said a senior USAID official in Dakar, “even though it’s a good one.” In Senegal and more broadly, Feed the Future will need to develop more nuanced approaches to capture programmatic impacts.

Another uncertainty around Feed the Future programs in Senegal is whether (and how well) current interventions can be brought to scale. Unless interventions and policy reforms are undertaken in a balanced, coordinated, and holistic way, current progress in the agricultural sector will quickly bump up against policy and capacity constraints.

If demand for financing surges, for example, will Senegal’s banking system have the capacity and liquidity to respond? Will government subsidies for fertilizer and insurance be phased down as the

private sector expands? Will the government of Senegal accelerate investments in critical infrastructure—most importantly roads and power? Is the government of Senegal moving quickly enough to create a more enabling environment for private investors and regional trade? Are there smart strategies to engage Senegal’s impatient and rapidly urbanizing youth population in the business of agriculture and nutrition?

Some of these issues go beyond Feed the Future’s remit, but there are opportunities for other U.S. assistance programming to reinforce and amplify the initiative’s impact. Senegal has been deemed eligible for a follow-on MCC compact; Senegal has recently been selected as a partner in the U.S. Trade Africa initiative; and Power Africa is seeking to meet ambitious power generation and distribution targets across Africa. The challenge for the U.S. mission will be to draw these many strands of assistance into a connected, synergistic strategy, something that congressional appropriators will be scrutinizing. The U.S. Commerce Department, which at one time maintained a Foreign Commercial Service officer in Dakar, withdrew that support in 2011, thereby eliminating an important source of information and guidance for U.S. companies interested in investment opportunities.

U.S. companies have not had a strong presence in Senegal’s agricultural sector to date. The government of Senegal is eager to see these investments grow, but scale (Senegal’s economy is just \$14 billion) and the investment environment remain important constraining factors. Private investment pledges signed in 2013 under the New Alliance for Food Security and Nutrition—a G7/G8-led business initiative

to transform agriculture and food production in Africa by linking private investment, policy reforms, and donor assistance flows—have been slow to materialize and involve mostly Senegalese companies. Government policy reforms promised under the initiative have likewise lagged. One senior USAID official explained that Senegal’s signing of the New Alliance was pulled together quickly to coincide with President Obama’s visit in mid-2013 and that there hasn’t been a lot of buy-in from partners or visible progress since. Ultimately, it will be up to the Senegalese government to reenergize the alliance through accelerated reforms and outreach to private investors.

Senegal: Some Background

Located on the western-most edge of the Sahel, Senegal has a well-deserved reputation for stability, religious tolerance, and democratic consolidation. It has been an important U.S. partner in Africa, punching well above its weight in peacekeeping contributions, humanitarian assistance delivery, and preventive diplomacy in West Africa. With a professional and competent military, it has been an important U.S. security partner in a region rife with criminal and extremist organizations that pose an enduring threat. The country has been a destination of choice for U.S. presidents visiting the African continent, and during the Ebola crisis of 2014–2016, it served as a critical logistics hub and staging ground for U.S. efforts to combat Ebola in nearby Guinea, Liberia, and Sierra Leone.

For all its strengths, however, Senegal has remained among the poorest countries in the

world.² Almost half its population of 14.6 million lives in persistently high poverty, and every year thousands of young Senegalese risk their lives in harrowing and often fatal ocean voyages northward in search of employment in Europe.

The majority of Senegal's population—69 percent—make their living in agriculture, but, as in other countries in the Sahel, agriculture in Senegal has suffered from decades of underinvestment and has been hard hit by recurrent and often devastating regional droughts. Senegal is considered moderately food insecure: some 16 percent of Senegal's overall population is severely or moderately food insecure, but in a number of regions one-third to more than half of all households regularly lack adequate access to food.³ Despite recent improvements, undernutrition remains a challenge. Nationally, some 16 percent of children under five suffer from stunting, and micronutrient deficiencies are widespread.⁴

There is considerable evidence to suggest that Senegal is on an economic upswing. Under President Macky Sall, in office since 2012, the

government launched an ambitious economic growth strategy—*Plan Senegal Emergent* (PSE or Plan Emerging Senegal)—that prioritizes diversification and exports. In 2015, Senegal's GDP growth rate was 6.5 percent, the highest rate since 2003, making it the second-fastest growing economy in West Africa (behind Côte d'Ivoire), and the International Monetary Fund predicts that that rate will be sustained in 2017.

Agricultural development appears to be moving in the right direction as well. More than a third of the country's 2015 economic growth was generated by the agricultural sector. Shaken by the 2007–2008 global food price crisis—which precipitated riots in the streets of Dakar—the government has made agricultural growth and productivity a centerpiece of its national development plan,⁵ and Senegal invests more than 10 percent of its public expenditures in the sector.⁶ A primary goal of the PSE has been to liberalize rice markets and eliminate the need for rice imports by 2017. According to a senior official in the Ministry of Agriculture, if the current rate of progress

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- 2 In 2015, Senegal ranked 170 out of 188 countries in the UN Human Development Index. United Nations Development Program, "UN Human Development Report 2015: Senegal," July 21, 2015, http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/SEN.pdf.
 - 3 World Food Program, "Analyse globale de la vulnérabilité, de la sécurité alimentaire et de la nutrition (AGVSAN): Senegal," July 2014, http://documents.wfp.org/stellent/groups/public/documents/ena/wfp266798.pdf?_ga=1.176479013.1832676408.1473280600.
 - 4 More than 70 percent of children under five and 54 percent of women of reproductive age suffer from anemia, for example. Feed the Future, "Senegal: FY 2011–2015 Multiyear Strategy," February 22, 2011, <https://feedthefuture.gov/sites/default/files/resource/files/SenegalFeedtheFutureMultiYearStrategy.pdf>.
 - 5 The Accelerated Program for Agriculture in Senegal (PRACAS) is the agricultural component of the PSE. Its initial focus has been on achieving self-sufficiency in rice and onions; improving performance in the ground-nut sector; and promoting the off-season fruits and vegetables sector. It will then progressively cover other key agricultural commodities. Food and Agriculture Organization, "Senegal: Country Fact Sheet on Food and Agriculture Policy Trends," September 2015, <http://www.fao.org/3/a-i4841e.pdf>.
 - 6 Senegal is just one of 14 countries that have met the target (10 percent of public expenditures invested in the agricultural sector) pledged through the African Union's Comprehensive Africa Agriculture Development Program (CAADP), in one or more years, and one of just six countries that have done so consistently since 2003. International Food Policy Research Institute, "CAADP 10 Years Out: How Have Countries Fared in Agricultural Development?," November 12, 2013, <http://www.ifpri.org/news-release/caadp-10-years-out-how-have-countries-fared-agricultural-development>; and Xinshen Diao et al., "Evidence on Key Policies for African Agricultural Growth," International Food Policy Research Institute, February 2013, <http://cdm15738.contentdm.oclc.org/utills/getfile/collection/p15738coll2/id/127389/file-name/127600.pdf>.

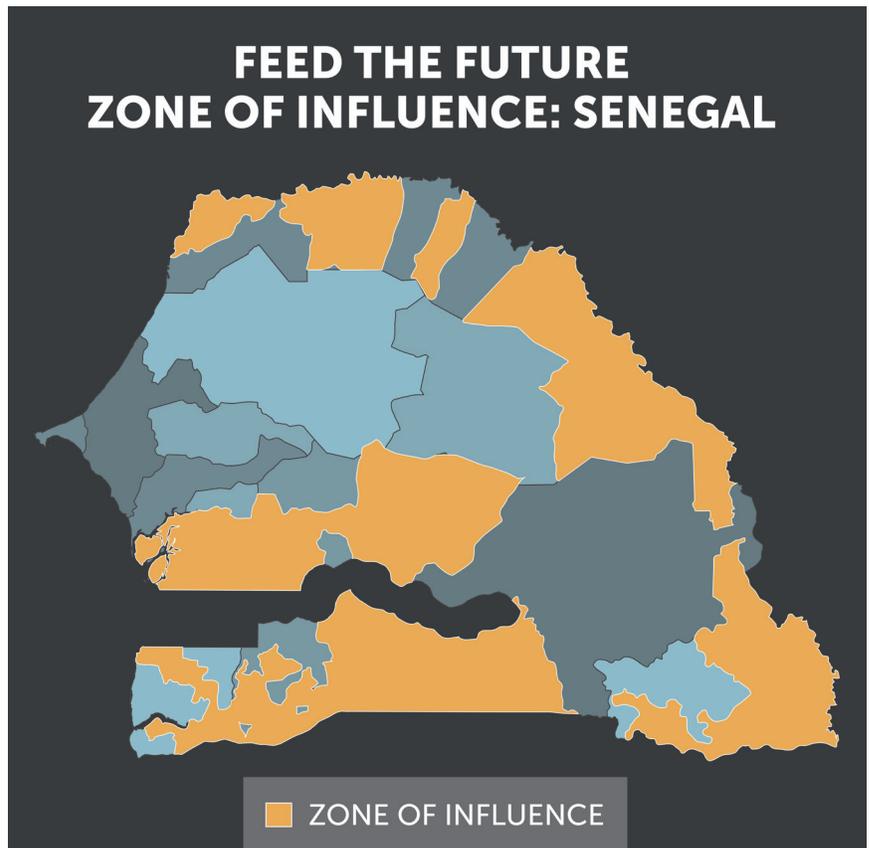
can be sustained, the country will meet that goal. Feed the Future and associated U.S. investments contributed 30 percent of the country's irrigated rice production in 2015. "There is no question," the official added, "that U.S. assistance has contributed. . . . We are really seeing and feeling the results [of that assistance]. Big, big results, especially in rice production."⁷

The government has also given greater priority to nutrition enhancement, moving from a purely reactive, health facility-based approach to a more comprehensive, preventive approach. Along with food security and the national HIV/AIDS response, nutrition enhancement sits within the president's office, giving the issue visibility and a dedicated budget line, and facilitating coordination across ministries.

Significant policy and capacity gaps remain, and for some Senegalese, the pace of reforms has been frustratingly slow. Nonetheless, the government of Senegal's growing investments in agricultural growth, food security, and nutrition have given Feed the Future and related U.S. assistance programming greater traction and opportunity for impact.

U.S. Feed the Future Programming

As noted above, the United States and Senegal have enjoyed a strong and enduring relationship, and the U.S. government has been keen to sup-



port the country's economic and political trajectory through multiple development assistance programs. Senegal was an MCC compact partner from 2009 to 2015, and has recently qualified for a second compact, a testament to its respect for civil liberties and its commitment to sound economic management and service provision. During the tenure of President George W. Bush, Senegal was an early focus country in the President's Emergency Plan for AIDS Relief (PEPFAR) and the President's Malaria Initiative. More recently, Senegal was selected as a focus country in the Obama administration's Power Africa, Trade Africa, and Feed the Future initiatives.

Feed the Future programs were first introduced in Senegal in 2010, with funding levels averaging \$25 million annually in the years since.⁸ This

7 CSIS delegation discussion with senior officials in Ministry of Agriculture, August 26, 2016, Dakar.

8 Senegal's Feed the Future allocation was \$28.3 million in 2010, \$20 million in 2011, \$17 million in 2012, \$16 million

is a significant funding bump; in 2008, Senegal received under \$4.6 million for agriculture and nutrition combined.⁹ Feed the Future targets specific geographical areas called “zones of influence” [see map], selected on the basis of poverty and nutrition indicators and commercial potential. The initiative’s immediate goals are to reduce the prevalence of poverty and stunting in the target area by 20 percent, but embassy staff and project implementers emphasize the goal of promoting systemic change and a conducive policy environment.

The program has aligned its priorities with those spelled out in Senegal’s PSE and benefits from a strong working relationship with the government. “We’re not just coming in with lots of advice and recommendations,” said one embassy staffer. “We’re pursuing their priorities, and we’re facilitating change through local actors.”

The initiative identifies three areas of strategic focus:

- Improve productivity and linkages in rice, maize, and millet value chains;
- Reinforce the sustainability and nutritional quality of food production and intake; and
- Support policy reform and reinforce institutional and human capacities to promote private-sector investment and inclusive economic growth.¹⁰

(See Annex I for the fuller roster of Feed the Future activities.)

The CSIS Delegation Trip

The CSIS delegation traveled from the Senegalese capital of Dakar to the Matam Region in the east and then to the Saint-Louis Region, along the country’s northern border with Mauritania. Matam is an extremely poor, arid region with the highest rates of underweight children in Senegal and among the highest levels of stunting. Saint Louis, the former French colonial capital, sits along the Senegal River Valley and is the heart of Senegal’s commercial rice production zone.

The group spent time with participants in two of Feed the Future’s flagship projects in Senegal: the Yaajeende project, which focuses on nutrition-led agricultural development, and Naatal Mbay, which aims to strengthen cereal value chains and help the country achieve rice self-sufficiency.¹¹ The delegation also visited several MCC infrastructure project sites, and spent an afternoon and evening with Peace Corps volunteers working in agroforestry and horticulture.

Yaajeende¹²

One of the earliest of Feed the Future activities, the Yaajeende project seeks to address endemic food insecurity through what it terms a “nutrition-led agriculture” approach. The U.S. National Cooperative Business Association (NCBA CLUSA)

in 2013, and \$22 in 2014. Prior to Feed the Future, support for agriculture sector development hovered around \$4 million.

9 In addition to the \$4.6 million in agriculture and nutrition funding in FY 2008, the mission also received about \$2 million in Private Sector Competitiveness and \$600,000 in Economic Opportunity funds.

10 Presentation at U.S. Embassy in Dakar, August 22, 2016.

11 Feed the Future, “2016 Progress Report: Growing Prosperity for a Food-Secure Future,” 2016, https://feedthefuture.gov/sites/default/files/resource/files/2016%20Feed%20the%20Future%20Progress%20Report_0.pdf.

12 Yaajeende means “plenty” in the local Pulaar language.

is the lead implementer of the project. Yaa-jeende looks at nutrition enhancement through the prism of the food system.

The initiative has four interrelated areas of focus in building access, availability, and demand for, and utilization of, nutrition-enhancing foods, and governance.

A first area is to work with institutions like the Agricultural Research Institute of Senegal (ISRA) to develop and increase the availability of nutrient-rich food and nutrition-enhancing technologies, including biofortified crops, enriched flours, improved livestock breeding, market and micro gardens, and conservation agriculture.

A second area is to increase access to these products and technologies by investing in organizations, enterprises, and individuals that can serve as intermediaries and service providers for local communities. Intermediaries include producer organizations and farmer cooperatives; collectively owned micro-enterprises that produce and sell nutrition-enhancing products like enriched flours and fortified foods; and community-based solutions providers (CBSPs), entrepreneurs who support community gardens and smallholder farms with inputs, services, and information.

Building a network of CBSPs has been an important element in Yaaajeende's program. In 2015, CBSPs in Yaaajeende's focus areas generated \$1 million in sales. Now, through the CultiVert enterprise, Yaaajeende is building a franchise model of locally based, high-quality product and service provision—from seed testing and supply, to training and extension services, water management services, and equipment leasing.

An additional program to increase access has been "Passing the Gift," an intervention pioneered by Yaaajeende partner Heifer International, which provides a targeted group of women with livestock that they raise and breed, and then pass on to another household. In the communities where Yaaajeende works, among the poorest in Senegal, some 9,000 vulnerable households now have livestock assets through the program.

A third area of focus is to promote demand for nutrition-linked goods and services and encourage improved nutrition and sanitation practices through training and communication. Yaaajeende works with CBSPs, local community groups like the Debbo Galle (Good Mother) network—which now includes more than 57,000 women—and with local government authorities and citizens' groups to convey best practices in nutrition, clean water, and sanitation.

Finally, Yaaajeende seeks to support government engagement in nutrition-promoting policies at national and local levels. Yaaajeende helps organize and support Citizen Working Groups (CWGs), linking them to local and municipal councils to promote a culture of advocacy and accountability, collaborative planning and implementation, and joint evaluation of local initiatives in food security, nutrition, and sanitation. Some CWGs have "graduated" from direct Yaaajeende assistance and are now self-sustaining. In Dabia commune, which the delegation visited, the mayor has provided a dedicated room within the office compound for CWG activities. According to the leader of the CWG in Dabia, "it is hard to overstate how much the United States has helped us . . . with Yaaajeende support

we now have a much closer and collaborative relationship with [the mayor's office] and they understand better what our communities need.”

Naatal Mbay¹³

The Naatal Mbay project, implemented by the U.S.-based Engility Corporation, was launched in Senegal in 2015. The four-year, \$24 million project is the successor to the USAID/Senegal's *Projet Croissance Economique* (PCE), or Economic Growth Project, which worked from 2010 to 2015 to improve agricultural performance by small producers. Naatal Mbay's core objectives are to increase productivity among smallholder farmers and strengthen markets systems for three major staple crops—rice, maize, and millet.

In line with Senegal's national development plan, rice production has been the project's priority. In the southern Casamance region, where poverty rates are the highest in the country, the project emphasizes the connection between rain-fed rice production and poverty reduction. In the northern Senegal River Valley, also known as the “rice corridor,” Naatal Mbay emphasizes strengthening commercial, irrigated rice production and markets for smallholder producers. The project looks to create a “virtuous cycle” among farmers, consumers, wholesalers, insurance industry actors, and the banking system. Implementers stress the importance of this “system-wide approach” and the need for strategic interventions that are coordinated, connected, and mutually reinforcing.

Three core—and interrelated—components of this systemic approach are to: promote high standards for seed and grain quality control;

create financing models tailored to the circumstances of smallholder farmers; and strengthen small and medium-size processing and agricultural service providers.

Setting High Standards for Grain and Seed Quality

The Naatal Mbay program (and its predecessor, PCE) helped establish three private seed production centers in northern, central, and southern Senegal. Each center has a seed laboratory for testing and certification and a seed-processing unit. Buttressed by more robust implementation of seed laws already on the books, Senegal's stringent seed certification process has significant knock-on effects.

First, the certification process increases farmer yields. Certified seeds are guaranteed to be high quality and ready for germination. Because the certification process eliminates mixing of rice varieties, plants are ready for harvesting at the same time—mixing can lead to harvest losses of up to 30 percent.

Second, high-quality seeds have helped increase consumption of domestically produced rice, since quality is high, with no mixing of strains (which cook at different rates). The rice produced is fresh and naturally aromatic, unlike many Asian imports, which are often “aromatized” artificially.

Finally, seed certification has opened up new opportunities for smallholders to access credit and insurance. Banks will provide finance only to seed and rice producers who use certified seed. Seed certification among Senegal River Valley farmers has risen from 40 percent in 2014

¹³ Naatal Mbay means “bountiful harvest” in Wolof.

to 85 percent today, and nationally the availability of certified seeds for maize, millet, and rice has increased from 3,000 metric tons in 2014 to 10,000 metric tons today.¹⁴

Improving Smallholder Access to Finance

An important element of Naatal Mbay's programming is to tailor financing and risk-mitigation models to the circumstances of smallholder farmers. A big part of this strategy is building the confidence and willingness of financial institutions to extend credit to smallholder farmers who are generally perceived as high-risk and are typically not able to provide collateral. The seed certification process has been one important step in that process.

At the same time, Naatal Mbay is also working with rice farmers, cooperatives, and millers to build and expand a contract-based finance program that allows farmers to use certified, warehoused rice to pay back loans or to use as collateral. This entails expanding storage and warehousing capacity in the region, as well as improving standards of temperature, moisture, and pest control. The project is working on strengthening a nascent warehouse receipt system and, in collaboration with the World Bank and the Ministry of Commerce, is helping develop new regulations and program infrastructure investments to expand cereal storage in the Senegal River Valley. Naatal Mbay has also helped establish a producer-controlled database into which farmers can feed data on rainfall, technology adaptation, yield, and output levels. This real-time information gives financial insti-

tutions greater confidence in making risk-benefit calculations, and since that confidence is at the heart of access to credit, farmers have a commercial incentive to update and maintain the database. The rice-backed model appears to be working: annual finance for rice production in the Senegal River Valley has gone from \$5 million in 2011 to \$20 million in 2015, with reimbursement rates of 95 percent.

Promoting Contract Services and Expanding Rice Processing Capacity

Along with expanding access to financing, Naatal Mbay links smallholder farmers to other players in the rice value chain through contractual arrangements with seed and processing enterprises, consolidators and distributors, service providers, and equipment-leasing companies. The ability to book tractor and harvester services from specialized operators allows smallholder farmers to expand the acreage they are able to cultivate, and, with planting and harvesting time dramatically shortened by mechanization, many are able to plant two rice crops in a single year, doubling output and income. Finally, as rice yields and output levels rise, Naatal Mbay is also supporting the expansion of milling capacities, helping small-scale millers access financing to move to semi-industrial enterprises with support for business administration, accounting, and digitized recordkeeping. Several of these mid-scale mills have developed their own quality rice brands, which the Naatal Mbay project is helping them promote in Dakar and on regional urban markets.

¹⁴ In conjunction with this project, the MCC also supported a long and sensitive consultation process with local communities, the government of Senegal, and others on issues of land tenure and the rights of indigenous versus nonindigenous residents.

The Feed the Future—Millennium Challenge Corporation Link

Finally, a particular strength of U.S. food security efforts in Senegal has been the strong synergy between Feed the Future interventions and MCC investments, neither of which would have had as much impact without the other. In Senegal, as elsewhere in Africa, even the best-planned agricultural sector interventions will deliver diminishing returns in the absence of significant investments in infrastructure. Rugged dirt roads that become impassable when it rains raise transport costs and timeframes, isolating rural farmers from potential markets and giving them little incentive to move beyond subsistence levels. Without an irrigation and water management system infrastructure, arable land that sits just a few miles from the Senegal River lies parched in the dry season and flooded in the rainy season. Fertile fields that are cut off from markets by waterways mean that farmers must shuttle inputs and produce back and forth on slow-moving ferries or pirogues.

The MCC Senegal partnership, a compact of \$540 million for the 2009–2015 period, finally made possible infrastructure projects long advocated by local communities, some of which had been on the books in Senegal’s successive national development plans for 30 years or more. Road rehabilitation in the northern rice corridor and the southern Casamance region (some 230 miles of paved road altogether) has opened new opportunities for productivity and

growth. A new bridge spanning the Doué River connects the fertile *Ile à Morphil* to the town of Ndioum and to commercial rice and produce markets. Since farmers are able to get inputs and mechanized harvesting equipment onto the island, they have been able to increase yields and even move to two annual plantings. A major irrigation and water management system along the Senegal River Valley has opened up large swaths of previously underutilized land. Critically, MCC also supported a long and sensitive consultation process with local communities, the government of Senegal, and others on issues of land tenure and the rights of indigenous versus nonindigenous residents. And the rehabilitated road outside Donay Taredji town has cut transport costs and time lags down, making farmers more competitive, and allowing them to deploy equipment that allows them to do two plantings.

Feed the Future programming has come in alongside or just behind these MCC projects. Naatal Mbay is helping previously isolated, smallholder communities scale up production and make the right connections with providers of inputs, finance, and markets.¹⁵ Private investors are also taking advantage of these infrastructure improvements and are expanding areas dedicated to rice farming by smallholder farmers.

These two sets of U.S. development investment have meshed remarkably well. This is due, in part, to the government of Senegal’s development roadmap and articulation of priorities, but also a concerted effort by Feed the Future to make the most of these new opportunities.

¹⁵ In conjunction with this project, the MCC also supported a long and sensitive consultation process with local communities, the government of Senegal, and others on issues of land tenure and the rights of indigenous versus nonindigenous residents.

Conclusions

Feed the Future programming in Senegal offers a promising example of host-government commitment and planning, strategic and coordinated U.S. investments, and interventions that seek to generate systemic change and growth.

Agricultural development and reform can take many decades, and there is a long road ahead for Senegal to achieve its goals in food self-sufficiency, expansion of regional markets, and reduction in poverty and undernutrition. Although it is still early days, there has nonetheless been demonstrable progress in strengthening the agricultural sector. And, as many of the Senegalese officials and citizens with whom the CSIS delegation met acknowledge, U.S. investments have contributed in significant ways.

In 2014, Feed the Future reports that its programming helped nearly 84,000 farmers and producers use new agricultural technologies on more than 41,700 hectares of land. Irrigated rice yields in Senegal jumped from five to seven tons per hectare, which led to more than \$10 million in incremental sales. Certified seed availability increased from 3,000 tons in 2014 to 10,000 tons in 2016. A Yaa-jeende impact evaluation revealed progress on the poverty reduction and improved nutrition fronts as well: stunting had decreased by 7 percent (a 30-percent improvement) and poverty by 2 percent in activity areas—compared to a slight increase in poverty in surrounding nonactivity areas.

The successes in expanding rice farming are not limited to the Senegal River Valley. The country's south has seen rapid expansion of rain-fed rice and maize farming as well. Through generalized

access to certified seed, rain-fed rice yields have increased 50 percent on average and acreage has more than doubled. Beneficiaries—the majority of whom are women, are now able to cover their household needs and produce a surplus that opens new income opportunities in small-scale processing. As in the north, these successes are the result of an alignment with the government of Senegal's priorities, and synergies between Feed the Future field work and MCC's major road investments in that zone.

Increases in production and reduction in cases of malnutrition do not tell the whole story in Senegal. For instance, the expansion of the rice sector has created demand for field labor, mechanical maintenance, and management skills all along the value chain. Youths from the southern region of Saloum are migrating to the north to fill in these new jobs, and have started to return with new skills to apply in the south. Women's groups are investing in small-scale processing and developing their own brands for local distribution.

A major challenge for Feed the Future, as for many other U.S. development programs, will be how to capture systemic changes that do not lend themselves to traditional or quantitative assessments. Feed the Future should continue to encourage innovative interventions and approaches and ensure that hard program targets do not constrain innovation.

Infrastructure was a recurring area of concern for farmers, millers, and local officials, particularly noting the importance of the availability of electric power. The lack of reliable, affordable electricity is a major drag on private-sector growth

generally and hurts the agricultural sector hard as well. Rice millers and many farmers with whom the delegation met pointed to electricity as their biggest challenge and their highest operating expense by far (up to 60 percent). For seed processors and millers, periodic blackouts can essentially shut operations down for long stretches. With a second MCC compact under consideration, the Power Africa initiative looking to expand, and the U.S. Overseas Private Investment Corporation supporting a major energy project just north of Dakar, there will be a unique opportunity to chip away at this infrastructure constraint. The need for reliable power goes well beyond the agriculture sector, but the Senegalese government and the United States should coordinate to ensure that future investments in power generation and distribution have a strong component that amplify gains already made in the agricultural sector and open opportunities for future growth.

Another challenge to address will be the expansion of the capacity and reach of Senegal's financial services sector. Private banks currently finance only 9 percent of agricultural needs, and as demand grows there will be a need to build the confidence and capacity of private institutions to support agricultural growth with longer-term investments and to ensure that public programs do not crowd out private-sector options. Building out systems to track an expanding portfolio of loans, collateral, and reimbursement will be critical. Just as Naatal Mbay is working to build ICT capacities in the private sector to improve access to services, financing, and markets, the government of Senegal will also need to beef up its own IT capacities and skills.

To sustain progress, it will be critical for the government of Senegal to pursue policy and reg-

ulatory reforms that encourage private-sector investment in agriculture and support the needs of smallholder farmers, processors, and rural communities. Feed the Future currently has projects that focus on institutional capacity building, policy research, and reform, namely the Agricultural Policy Project and Policy for Agriculture Investments Project. In its next phase, Feed the Future should consider even greater emphasis on improving the policy and investment environment. Senegal recently joined the U.S. Trade Africa Initiative, which, if carefully planned can help amplify Feed the Future's efforts and help the country develop a potential export market within West Africa.

It will be important to support public constituencies that will sustain pressure on the Senegalese government to undertake and accelerate necessary policy reforms. Civil society, universities, research institutes, and cooperative associations all can play a more active role in helping inform and encourage smart agricultural policy. These groups can also help policymakers and the public better understand the various benefits and tradeoffs of different policy choices or identify priorities.

Finally, one of the most critical questions to answer will be how best to engage Senegal's young and rapidly urbanizing population in the business of agriculture, identifying opportunities for job creation, training, and innovation. Boosting employment and livelihood opportunities for the country's young and growing population is not only one of the greatest gaps in the current portfolio, but will have major implications for stability and security in Senegal and in the broader West Africa region.

ANNEX I

FEED THE FUTURE ACTIVITIES

SENEGAL IS ONE OF 12 FEED THE FUTURE FOCUS COUNTRIES IN AFRICA and one of 19 focus countries worldwide. The country has received an average of \$25 million per year in Feed the Future funding since the launch of the initiative in 2010. In 2008, total U.S. funding for agriculture and nutrition in Senegal was less than \$3 million. The budget in 2016 is \$25 million, with a request of \$32 million for FY 2017.

The delegation had the opportunity to observe two of Feed the Future programs in Senegal—Yaajeende and Naatal Mbay—both of which this report describes in detail:

Yaajeende

GOAL: to accelerate the participation of the very poor in rural economic growth and to improve their nutritional status.

BUDGET: \$49.8 million from November 2010 to September 2017.

Naatal Mbay

GOAL: to expand the use of known best practices and technological packages to strengthen production, productivity, and marketing of target crops in an inclusive way and assist the government of Senegal in reaching its national target for rice production.

BUDGET: \$24 million from March 2015 to February 2019.

There are programs in the Feed the Future Senegal portfolio that the delegation did not have a chance to visit during its brief trip that nevertheless provide valuable support and warrant mentioning. Those include:

Coastal Resources Management (COMFISH)

GOAL: to reform Senegal's fisheries sector through collaborative management of its marine fisheries. Fish consumption accounts for 43 percent of Senegal's protein intake, and COMFISH promotes sustainable fisheries, climate change resilience, policy reform and best practices, and support for artisanal fishing communities.

BUDGET: \$11.9 million from September 2011 to September 2016. (Note: A follow-on award, COMFISH PLUS, was awarded October 1, 2016. It is a two-year bridge activity for \$4.5 million, ending September 30, 2018.)

Education and Research in Agriculture (ERA)

GOAL: to develop human and institutional capacity in agricultural teaching, research, training, and conduct outreach to serve the needs of the public and private sectors, including farmers.

BUDGET: \$28 million from October 2010 to September 2016.

Agricultural Policy Project—*Projet d'Appui aux Politiques Agricoles (PAPA)*

GOAL: to promote public and private agriculture sector investment through strengthened agriculture sector policies. The activity links the local research and academic community with policy and decisionmaking agencies, collects and interprets data to guide policy formulation, and analyzes policy impacts.

BUDGET: \$6 million from July 2015 to July 2016.

Policy for Agriculture Investments (P4I)

GOAL: to support the government of Senegal's efforts to promote an enabling environment for agriculture in parallel with public and private-sector capacity-building and improved market linkages.

BUDGET: \$3 million from 2014 to 2017.

Climate Information Services for Increased Resilience and Productivity in Senegal (CINSERE)

GOAL: to increase the resilience and productivity of targeted Senegalese farming and pastoralist communities in the Feed the Future Zone of Influence in the face of climate variability and change, through the improved provision, communication, and use of climate information and services.

BUDGET: \$15 million from March 2016 to March 2019.

Strengthening Partnerships, Results, and Innovations for Nutrition Globally (SPRING)

GOAL: to expand and scale up evidence-based, high-impact, nutrition-sensitive and specific interventions. This includes: providing community-based solution providers (CBSPs) access to information, inputs, and services; promoting women's access to land, livestock enterprise, credit, and insurance; supporting small and medium-scale enterprises for nutrition; and encouraging greater uptake of nutrition-related products and practices.

BUDGET: \$7.5 million from August 2015 to September 2017.

Peace Corps

GOAL: to develop and provide training packages to Peace Corps volunteers in improved infant and young child feeding practices; improved consumption of diverse and quality foods; improved agribusiness product, production, and profitability; and increased quality and yield of food produced by master farmers and communities.

BUDGET: \$1.2 million from September 2013 to September 2017.



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ANNEX II

DELEGATION SITE VISITS

Nutrition and Sanitation Promotion by Women's Community Groups

Debbo Galle group

Cellal Bamtare, Senegal

The CSIS delegation met with members of a Debbo Galle (Good Mother) community group. Diary Sakho demonstrates how members have been trained to mix fortified maize, sorghum, beans, groundnuts, and sugar into a powder that will eventually be cooked into a nutrient-rich porridge. (Sakho assures the group that children enjoy it.) Members use some of the enriched flour for their own children and sell additional supply throughout the area. Women in the group are also trained on water and sanitation issues, and members have become advocates in their homes and community for improved sanitation practices. Youma Sako explains, "we teach our children to wash their hands when entering or leaving the house; we teach how to access clean water, make sure the space around the cooking area is clean, where to put latrines." Members told the delegation that the incidence of diarrhea and of malnutrition has noticeably decreased among the 700 children living in the community.

Community Gardens for Nutrition Enhancement

Bokidiawe Soninke Women's Community Garden Bokidiawe, Senegal

Aicha Tirera is president of the Bokidiawe Soninke Women's Community garden group. When she met with the delegation, she stood in a lush garden, planted with okra, peppers, orange-fleshed sweet potatoes, cowpeas, onions, mung beans, and moringa—a local plant that is catching on as a superfood in U.S. health food stores. The garden started out as an empty and biodegraded plot. Community members raised 40 percent of the costs to fence the area, lay down piping from a local cistern, and prepare the land; USAID contributed the remaining 60 percent. Now, 76 women cultivate this three-hectare garden, which has the possibility of expanding to five hectares. The women pay Idrissa, a community-based solutions provider (CBSP), to manage the garden's water and irrigation infrastructure, and another CBSP, also trained by Yaajeende, to handle seed testing. Average annual sales from the garden are around \$120 per participating woman, enough to cover school and health fees, and that is on top of the food consumed by their families. Aicha told the delegation that women are realizing that to improve health they need to grow different types of food and that they can grow multiple types of produce simultaneously throughout the year.



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Building a Franchise Model for Community-Based Service Providers

*Aboubakary Kane, CultiVert Franchise Holder and CBSP
Agnam Thiodaye, Senegal*

Aboubakary Kane was recommended as a CBSP by the Agnam Thiodaye community when Yaajeende first came to town in 2011, and he is now among the first CultiVert franchise holders. He stands behind the counter of his impeccably tidy shop, with well-stocked shelves of seed varieties behind him and a test garden out back. He works with a network of local CBSPs, as a logistics, training, and administrative hub, while also maintaining his own customers to whom he sells seeds, arranges equipment leasing and irrigations services, and gives advice on cultivation techniques. The Yaajeende project provided Mr. Kane with training in business management and cultivation best practices and helped connect him to reputable wholesalers and seed-testing facilities in Dakar. Mr. Kane tests all the products he sells in his own plot. If seeds or products are defective, he will go back to the supplier or, depending on the problem, reimburse his customers. While his franchise is financially self-sufficient, Mr. Kane continues to work with Yaajeende, training CBSPs and producers.

Expanding Access to Livestock

Passing the Gift initiative

Sylla Diongto, Senegal

Hapsatou Kah (top right) joined the Yaajeende project in 2011 as a community nutrition volunteer in Sylla Diongto. She is now a CultiVert franchise holder and has helped develop a network of CBSPs in adjacent communities.

Hapsatou shows the delegation a typical garden, with corn, orange-flesh sweet potatoes, mung beans, and moringa. The garden also grows forage for the community's expanding herd of goats, sheep, and milk cows, a result of the "Passing the Gift" program. The number of goats owned by women in the community has more than tripled in the last two years, from 32 to 100. And from 60 sheep provided to 20 women four years ago, there are now 428 sheep owned by 80 women.

A number of women have traded up. Mariam Sibé Sow (bottom right) is 55 years old, the mother of two boys and four girls. She received two sheep in the Pass the Gift program. After two years, she was able to exchange four sheep and 200,000 CFA (approximately \$300) for a milk cow. When asked if she shares ownership with her husband, Mrs. Sow laughs. The answer is an emphatic no—"This cow is mine, and I can do what I wish with it."



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Irrigation and Water Management

FEGINA Rice Producer Union

Donay Taredji, Ngalenka Basin, Senegal

The delegation meets with the Dental MCA and Fegina farmer associations in Donay Taredji, a community now cultivating land that was transformed by the MCC Ngalenka Basin irrigation and water management project. In addition to the irrigation system, a pump station, a main canal, secondary power lines, and a warehouse were constructed as well. Now producers pay for those services based on plot size and water use.

The land available for use expanded from 44 to 450 hectares, with the majority of farms being just one-half a hectare. The delegation is told that from a yield of 1.5 tons of rice produced per half-hectare plot (just enough to feed one family), the yield has doubled—to 3 tons. Further, with access to finance and mechanization, farmers have been able to plant two times in a year—thus going from production of 1.5 tons per year to a total 6 tons annually. Naatal Mbay has supported the expansion of the warehousing receipt and collateral system and is working with union members to track production and finances and link to banks, loans, and reimbursements. “The MCC totally changed our situation here,” said a member of the rice union.



PHOTO BY CAITLIN HEALY

Raising the Standard for Quality Rice

*COOSEN Seed Processing Center
and Seed Testing Lab
Richard Toll, Senegal*

In Richard Toll, a government-run seed-processing unit was restructured with USAID support into a public-private partnership with the Northern Seed Producer Cooperative (COO-SEN), a collective of 36 seed multiplication firms. USAID assisted in financing the refurbishment of the center's offices, warehouse, laboratory, and power lines at with an initial outlay of \$300,000. Today, the center is a self-sustaining entity.

Mr. Baldé, head of the seed laboratory, walks the delegation members through the arduous screening and certification process, which tests for varietal homogeneity, cleanliness, varietal purity, and germination rate. The lab testing is done anonymously, and seed producers are assigned a random code. The lab adheres to a varietal purity standard that is higher than the international standard, and the Organization for Economic Cooperation and Development (OECD) has recently certified the process and assessed the rice as exportable to international markets.

Mr. Diop takes the group through the seed-cleaning facility, which during the peak seasons operates around the clock and turns out 1,000 90-lb bags per day. Three years ago, the center processed 2,000 tons of seed per year. In 2015, the center certified and cleaned 7,000 tons, enough for 60,000 hectares . . . and demand is rising.

Systems Improvement and Financial Services

*Mbodji et Frères
Rosso, Senegal*

The delegation met with Mbodj & Freres, a rice-milling enterprise that went from processing 700 tons annually in 2010 to a projected 10,000 tons in 2016. The brothers credit the Naatal Mbay project with helping expand their business with training on quality control, database management, branding, and market promotion. Through lease financing they were able to expand their processing unit from two mini-mills to a unit capable of processing 30 tons daily. The project has helped establish a nascent warehouse receipt system that allows banks to extend credit with warehoused rice as collateral. With Naatal Mbay support, the business is moving to a more sophisticated, digitized receipt system and is looking to integrate insurance as well.

The warehouse manager knows the exact number of bags, humidity levels, and temperature range of each section of the warehouse. The project is moving to a more sophisticated, digitized receipt system and is looking to integrate insurance as well. During the 2016 dry season harvest, warehouses like this held 55,000 metric ton of rice valued at \$13 million in collateral across the region. Mbodj itself now supports 5,000 farmers, with pre-finance, extension services, equipment leasing, and production data. The business is also helping stimulate the dairy industry in the area, as a supplier of rice bran, a by-product of the milling process sold as cattle-feed to a nearby dairy farm and to herders. Naatal Mbay's support to Mbodj & Freres has been entirely in technical assistance—that is training, systems improvement, and linkages with financial services and markets.

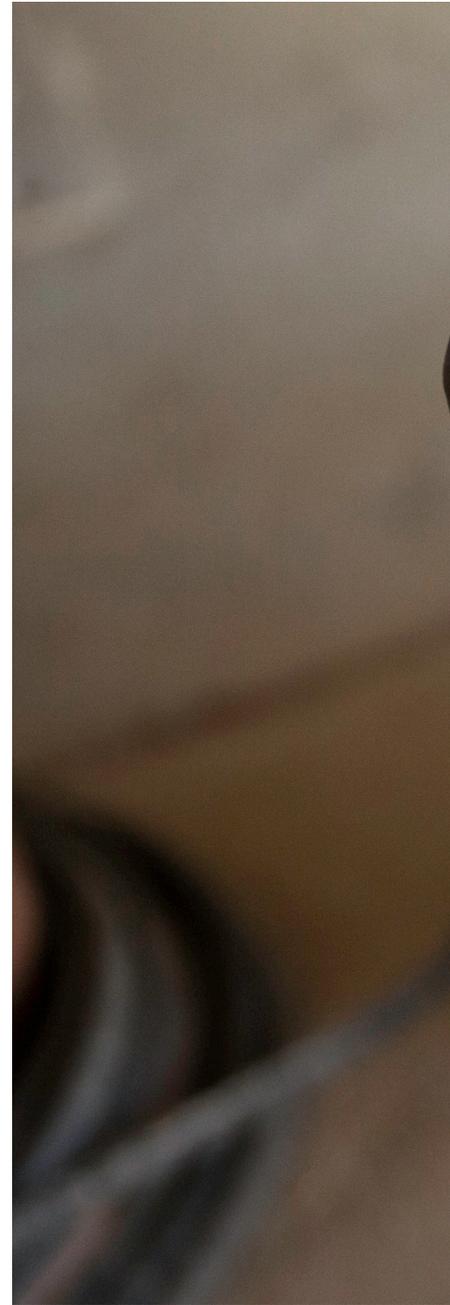


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JENNIFER G. COOKE is director of the CSIS Africa Program, where she leads research and analysis on political, economic, and security dynamics in Africa. She is a frequent writer and lecturer on U.S.-Africa policy and provides briefings, testimony, and policy recommendations to U.S. policymakers, the U.S. Congress, and the U.S. military. Recent projects include an examination of militancy and extremism in the Sahel and Lake Chad Basin, religious authority and the State in Africa; energy trends in Sub-Saharan Africa, and the launch of the “Spotlight on Africa” conference series, which provides an in-depth look at political and economic developments in Africa’s largest and most dynamic economies.

Cooke is a frequent commentator in print, on radio, and on television, and she has testified before Congress on Boko Haram in Nigeria, the political crisis in Côte d’Ivoire, and the African Union. She travels widely in Africa and has been an election observer in Sierra Leone, Mali, Nigeria, and Ghana. Growing up, she lived in Côte d’Ivoire and the Central African Republic, as well as Belgium, Italy, and Canada. Prior to CSIS, she worked at the National Academy of Sciences in the Office of Human Rights and the Office of News and Public Information and in the U.S. Congress on the House Subcommittee on Africa. She holds an M.A. in African studies and international economics from the Johns Hopkins University School of Advanced International Studies (SAIS) and a B.A. in government, magna cum laude, from Harvard University.

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