



## SCALING AGRICULTURAL TECHNOLOGIES

***To realize the full potential of innovations developed to improve nutrition and reduce global hunger and poverty, Feed the Future is intensifying efforts to scale up promising agricultural technologies to millions of farmers and other technology users throughout the value chain in commercially sustainable ways.***

To deliver impact at scale, Feed the Future is linking scientists and other innovators with investors and technology users, wherever they may be: among developing country farmers and partners, the private sector, the donor community, and non-governmental organizations.

The Feed the Future Food Security Innovation Center (FSIC) leads USAID's implementation of the Feed the Future Research Strategy through seven interlinked research, policy and capacity programs aimed at sustainably transforming agricultural production systems. Visit [www.feedthefuture.gov/research](http://www.feedthefuture.gov/research) to learn more.

### RESEARCH IN ACTION

**Fertilizer Deep Placement (FDP)** is a technology that allows farmers to significantly increase yields of rice and other crops while reducing the amount of fertilizer needed.

In Bangladesh, FDP has helped to increase rice yields by 20 percent while reducing fertilizer use by about one third. The International Fertilizer Development Center (IFDC) and its partners have promoted this technology to over 4.7 million Bangladeshi rice farmers.

**USAID is working with IFDC and its partners to introduce FDP technology to 13 countries in Sub-Saharan Africa.**

### DID YOU KNOW?

- **FSIC and USAID's Feed the Future Partnering for Innovation Program** are working with USAID Missions to develop and implement Scaling Plans for a small number of agricultural technologies in each country that have the potential to achieve widespread, sustained impact on agricultural productivity and nutrition. FSIC is linking Feed the Future research programs to developing country partners, the donor community, implementing partners and the private sector to rapidly disseminate research outputs.
- **USAID is leading a learning agenda** around the challenges and opportunities of technology scaling to identify successful approaches to disseminate proven innovations and best practices, and build communities of practice around common challenges, including access to finance, risk mitigation, barriers to commercialization, and facilitating social and behavioral change.
- **Key partners in this effort** include the G-8 New Alliance for Food Security and Nutrition, the Alliance for a Green Revolution in Africa, the Forum for Agricultural Research in Africa, the CGIAR, Feed the Future Innovation Labs, and the private sector.

**USAID Missions** – USAID country and regional Missions play a central role in managing development programs to scale promising agricultural technologies with smallholder farmers and entrepreneurs in support of host country-determined priorities. USAID Mission programs facilitate the development of agricultural value chains, working closely with host governments, other donors, research partners, implementing partners and the private sector.

**Partnering for Innovation** – The Feed the Future Partnering for Innovation Program focuses on finding and commercializing agricultural technology that can help smallholder farmers. The program works to overcome the risks of investing in emerging markets so that the products of agricultural research can be put into action to make agriculture more productive, efficient and cost-effective. It also links research, development and the private sector to form robust partnerships that bring new technologies to the market, changing the way smallholder farmers do business.



**New Alliance for Food Security and Nutrition** – The G-8 New Alliance Cooperation Frameworks in ten countries (Benin, Burkina Faso, Cote d'Ivoire, Ethiopia, Ghana, Malawi, Mozambique, Nigeria, Senegal and Tanzania) outline specific commitments by government, donor partners and private companies to catalyze and facilitate agriculture sector investments that can help achieve country-determined development and growth goals. Through letters of intent, over 60 local and multinational companies have indicated they will invest over \$3.7 billion in New Alliance countries in support of New Alliance country priorities.

In six of these countries (Ethiopia, Ghana, Malawi, Mozambique, Senegal and Tanzania), the New Alliance has launched three integrated programs to assist in scaling agricultural technologies:

1. **African Agriculture Technology Platform** – Launched with the CGIAR and the Forum on Agricultural Research in Africa, the Technology Platform assists New Alliance countries in implementing their goals by setting 10-year targets for yield improvement and adoption of improved technologies. The Technology Platform has two components: on-the-ground engagement, facilitation and collaboration involving partners critical to technology adoption within New Alliance countries; and a web-based Virtual Information Platform that will feature a set of country-specific data and tools, including a value-chain prioritization tool, an ex-ante modeling analysis tool to assess the potential impact of specific technologies, and geospatial targeting tools to help select regions where conditions will support technology adoption.
2. **Scaling Seeds and Technologies Partnership (SSTP)** – SSTP, coordinated by the Alliance for a Green Revolution in Africa, is a three-year program to help accelerate smallholder access to improved seeds and related transformative agricultural technologies. Across six countries, SSTP's goals are to increase the production of high quality seeds by 45 percent in three years and help 40 percent more farmers gain access to seeds and complementary innovative agricultural technologies. SSTP will focus on working with host countries to strengthen seed sector regulatory systems and on creating new local seed companies. SSTP works closely with the Technology Platform to assess yield gaps and identify technology priorities in focus countries.
3. **ICT Extension Challenge Fund** – The New Alliance ICT Extension Challenge Fund will provide financial support for creative approaches using information and communication technologies (ICT) through public and private sector channels to help convince farmers of the potential gains of using the new technologies, deliver specific extension messages at scale, and facilitate feedback from farmers. The ICT Extension Challenge Fund will focus on the commodities and technologies prioritized by SSTP in six New Alliance countries. The Fund will tap, as appropriate, the full range of ICT channels including mobile networks, low-cost video, radio and television.

## RESEARCH IN ACTION

Feed the Future's Partnering for Innovation Program awarded a commercialization partnership grant to Netafim, an Israeli-based drip irrigation company, to expand its Family Drip System (FDS™), a gravity-based, low-volume drip irrigation technology, to smallholders in Kenya. FDS maximizes productivity without requiring additional investment in infrastructure such as pumps or electricity and is suitable for plots of any shape between 100 and 2,000 square meters. Combined with good agricultural practices, FDS increases yield and quality and optimizes water efficiency by reducing runoff, leaching and soil erosion. Growers in limited rainfall areas can extend growing seasons and take advantage of market opportunities during times when prices for their crops tend to be higher.

Netafim has teamed up with an agricultural finance consulting firm to structure a non-collateral lending program for smallholder farmers through local commercial banks. Netafim's system is currently being promoted to smallholders in Bhutan, Vietnam, Thailand, Kenya, Niger, Zimbabwe and India. In Niger, smallholder lettuce growers using the system increased their revenue by more than 400 percent.



**Host Governments** – USAID efforts to scale technologies align with country priorities. Through the Comprehensive Africa Agricultural Development Program (CAADP) process, Sub-Saharan African governments commit to agricultural development priorities and develop a Country Investment Plan that guides USAID technology scaling priorities.

**Other Governments** – We work with development partners at country, regional and international levels to share experiences and coordinate scaling activities. Through the New Alliance Country Cooperation Frameworks, G-8 governments and partners express their commitments to support and catalyze agriculture sector investments in alignment with African development and growth priorities.

**USG Partners** – Under Feed the Future's whole-of-government approach, USAID partners with the U.S. Department of Agriculture, the Millennium Challenge Corporation and other agencies with expertise in agricultural research, technology development and commercialization at scale.

**International Institutions** – Through support to major research programs of the CGIAR, USAID's global investments are linked to national research organizations and local partners. Through global breeding programs, long-established collaborations with national systems, and deep experience with participatory research, the CGIAR research programs provide a pathway for new technologies to reach farmers.

**Implementing Partners and the Private Sector** – Through USAID Missions and global programs such as the Feed the Future Partnering for Innovation Program, USAID is making major new investments through public-private partnerships, leveraging critical resources, upstream research investments and product development capabilities to expedite the release of new crop varieties.



The [Feed the Future Food Security Innovation Center](#) leads USAID's implementation of the Feed the Future Research Strategy through seven interlinked research, policy and capacity programs aimed at sustainably transforming agricultural production systems. It is housed within the Bureau for Food Security and is a strategically aligned and integral component of USAID's science and technology programs. The seven programs of the Food Security Innovation Center are:

- **Research on Climate Resilient Cereals** – This program helps smallholder farmers adapt to climate change and build resilience by developing new cereal varieties with enhanced yield and tolerance to drought, heat, salinity and low soil fertility, and delivering these varieties in diversified, sustainable farming systems.
- **Research on Legume Productivity** – This program increases the production and consumption of critical, protein-rich legumes by developing disease- and stress-tolerant, high-yielding varieties, improving market linkages and post-harvest processing, and integrating legumes into major farming systems to improve household nutrition and incomes, especially for women.
- **Advanced Approaches to Combat Pests and Diseases** – This program harnesses U.S. scientific expertise and emerging molecular tools to develop new animal vaccines and crops and animals resistant to pests and diseases that cause significant production losses in tropical systems.
- **Research on Nutritious and Safe Foods** – This program links research on the production and processing of safe, nutritious agricultural products to a learning agenda on household nutrition, including the utilization of and access to fruits, vegetables, meat, fish, dairy and legumes with the goals of preventing undernutrition (especially in women and children), improving child survival and securing family investments in agriculture.
- **Markets and Policy Research and Support** – This program works to achieve inclusive agricultural growth and improved nutrition through research on enabling policies, socioeconomics and technology targeting, and by building the capacity of partner governments to effect sustainable change in areas such as land tenure, financial instruments, input policies and regulatory regimes.
- **Sustainable Intensification** – This program works with smallholder farmers to incorporate sustainable, productivity-enhancing technologies and farming practices into major production systems where the poor and undernourished are concentrated and, through intensification and diversification of these systems, to enhance resilience, nutrition and agricultural growth.
- **Human and Institutional Capacity Development** – This program strengthens individuals – scientists, entrepreneurs, educators – and institutions, ensuring that food and agriculture systems in developing countries are capable of meeting the food security challenge and that women in particular are poised to take advantage of new opportunities and provide critical leadership in agricultural research, private sector growth, policy development, higher education and extension services.