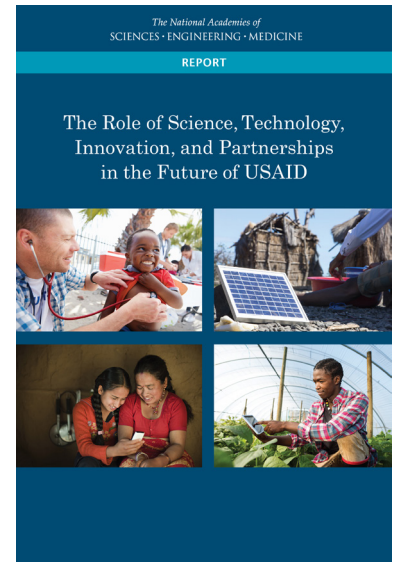# The Role of Science, Technology, Innovation, and Partnerships in the Future of the U.S. Agency for International Development

The United States has long recognized that the nation's prosperity and security depend on how we address challenges of disasters, poverty, famine, and disease around the world. The U.S. Agency for International Development (USAID) plays a vital role in promoting U.S. national and international interests by advancing strategies for employing science, technology, and innovation (STI) to respond to global challenges. *The Role of Science, Technology, Innovation, and Partnerships in the Future of the U.S. Agency for International Development* examines challenges and opportunities in expanding the utilization of STI in development assistance; assesses how USAID has deployed STI; and recommends priority areas for improvements going forward in partnership with others.

STRATEGIES FOR SCIENCE, TECHNOLOGY, INNOVATION AND PARTNERSHIPS IN USAID PROGRAMS

Four programmatic strategies for improving the effectiveness and impact of its science, technology, and innovation investments will help USAID address current challenges and formulate the widest set of national and global partnerships to meet development needs.

Strategy 1: Accelerate the transformation of USAID into a global leader and catalyst in applying science, technology, and innovation to developing-country challenges, drawing on resources from across the U.S. government, developing countries, the public and private research enterprise, research universities in the United States and abroad, and bilateral and multilateral development agencies.

In recent years, USAID has begun to transform itself from its traditional role of designing, implementing, and wholly funding specific projects in individual countries to that of a national and global broker of organizations and resources to achieve greater, more sustainable impact, in a more cost-effective way.

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Appropriate partnerships with other donor nations/ agencies and host nations are vital in reaching development goals, both at the national level and to achieve the global Sustainable Development Goals. Amidst these partnerships, USAID should recognize its core strengths: its field experience, role as a convener and catalyst, and ability to learn and adapt, and these strengths should be identified explicitly in future STI strategies, if appropriate.

Cutting-edge private-sector research enterprises have brought a spirit of entrepreneurship and a culture of innovation to the work of USAID. As pressure on the U.S. government grows to demonstrate maximum impact for each taxpayer dollar spent on development assistance, institutionalizing the Global Development Lab and the innovations it has introduced will enable USAID to become a powerful, effective conduit for developing countries to access "whole-of-U.S." expertise related to science, technology, and innovation in the public and private sectors.

Also, to perform as a more effective representative for other U.S. government science agencies in lower-income countries, USAID needs better connections with them in Washington. USAID and other U.S. agencies should set up mechanisms—such as through ad hoc advisory or working groups—to facilitate mutually beneficial relationships around common STI development concerns. This includes having a seat at the table when these agencies, including U.S. Department of Agriculture, National Institutes of Health, Department of Energy, and NASA, plan and prioritize research agendas.

Strategy 2: Strengthen host countries' institutional capacity to apply science, technology, and innovation in their own development, as well as to ensure training of individuals in higher education and professional schools both in-country and in the United States.

Successful development assistance ultimately depends on the capacity, organizational effectiveness, and political will of partner countries to create national development strategies, choose the most effective options from donors and other sources, and adapt technologies and systems they can sustain locally. USAID cannot impose solutions, but it can respond to host-country interests and needs and serve as a sustaining partner for long-term institutional change and capacity-building in the private and public sectors in host countries.

A thirst for science, technology, and innovation in all countries has opened a gap between expectations and delivery, creating demand for far greater training opportunities. USAID should develop a suite of assistance mechanisms to support efforts to build capacity for research in host counties, including top-quality, relevant training for students with various needs, support of science institutions, and strengthening of regulatory bodies.

The agency also needs better ways to evaluate the gains from its investments because results can take decades to manifest. Traditional economic analyses rarely take into account valuable, yet difficult-to-quantify, impacts from advanced training such as enduring professional networks and partnerships. The short lifespan of most projects at USAID has to be extended for capacity-building programs, both for effective implementation and for measurement of results.

Strategy 3: Elevate scaling of successful interventions to be a core USAID priority, to expand the impact and improve the sustainability and cost-effectiveness of science, technology, and innovation applied to development challenges.

With a global population currently at 7.4 billion and projected to reach 9.7 billion by 2050, development programs and their partners need to find ways to significantly expand the impacts of their investments in science, technology, and innovation as a matter of urgent priority. Emerging research on scaling points to the importance of planning for scaling impact almost from project inception, including closely tracking process data and interim impacts, building the business case for sustaining service provision after the conclusion of the project, feeding back information to project managers and changing program trajectories as needed throughout the life of the program, and identifying private- and public-sector institutions essential for scaling success.

USAID has taken steps to focus on scaling solutions in the Global Development Lab and in technical bureaus, and could be a global thought leader in how to improve this critical aspect of development. To elevate scaling as a priority, USAID needs a sharpened policy focus on the value of and access to data to set strategies and measure results. Advanced 21st century data tools, including incorporation of big data, should set the standard for major USAID units to collect, curate, analyze and share such data for maximum

value. Additional research is necessary, though, to understand how best to bring an innovation to scale in lower-income countries.

Strategy 4: Expand investments in science, technology, and innovation that engage and empower women.

Through education and access to the formal economy, empowering women can sharply increase the global human potential to address societal challenges. Expanding women's opportunities leads to better living conditions through improvements in education, health, and agriculture, and through access to technology and economic opportunities.

USAID uses science and technology to address a broad range of gender-related challenges, such as improving health for women and girls, promoting gender equality and access to education, addressing the Internet gender gap, and achieving gender equality in agriculture. Some STI-focused USAID programs have well-developed, data-based gender analyses and use this information to shape programming, but others still face challenges in data collection and analysis. Central collection, review, and sharing of gender data and analyses conducted at all stages of the program cycle would enable more rapid institutional learning across missions and program units.

RECOMMENDED MANAGEMENT CHANGES FOR SUPPORTING SCIENCE, TECHNOLOGY, AND INNOVATION WITHIN USAID

USAID faces a number of operational issues to implement and sustain an expanded focus on science, technology, and innovation. These issues include adequate technically qualified personnel levels, incentives for such professional tracks, and resolving contracting hurdles to initiating innovative programs. USAID has expanded the technical expertise of staff by doubling the size of the Foreign Service, borrowing staff from other agencies, and taking advantage of fellowship programs. But the agency also needs to support science, technology, and innovation with a change of culture to promote an increased appetite for risk-taking, additional training, promotion, and rewards to permanent staff (Foreign Service, Civil Service, and Foreign Service Nationals) for longer-term success and impact.

Five management changes are particularly important to implement the agency's programmatic strategies:

1. **Reinforce its on-the-ground presence to collaborate with others mutually engaged in science, technology, and innovation for development.**
2. **Integrate and coordinate its science, technology, and innovation planning and investments.**
3. **Address its future workforce needs by promoting the flexibility required to adapt to changing science, technology, and innovation opportunities.**
4. **Increase incentives for including informed risk taking and learning throughout its planning process and project implementation.**
5. **Take advantage of its strong evaluation policy for the development of sustainable science, technology, and innovation programs across the agency.**

CONCLUSIONS

Science, technology, innovation, and partnerships are vital to solve 21st century problems. Scientific research produces discoveries to improve lives and societies; technological breakthroughs revolutionize commerce and knowledge-sharing; and innovation inspires people to seek new solutions to persistent problems. Partnerships in all three of these areas potentially maximize the impact of efforts by individuals and groups to reach millions, rather than just thousands, of people with unmet needs.

USAID has built a well-earned reputation over 50 years for bipartisan support in Congress and administrations; engagement of U.S. businesses, universities, and development-oriented nongovernmental organizations; and effectiveness in promoting economic growth and meeting human needs in the countries it has assisted. By integrating science, technology, and innovation throughout its operations in Washington and in the field, and by taking advantage of the continual quest for knowledge and progress embodied in science, technology, and innovation, USAID can make a deep and lasting improvement in the lives of people and their communities on behalf of the American people and U.S. foreign policy.

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