Many technologies and innovations to improve agriculture in the developing world have been developed or identified. However, organizations and groups face challenges in successfully scaling up innovations to make them truly impactful and sustainable. This four-hour AGRF Policy Forum, organized by the African Development Bank, Purdue University, Syngenta Foundation and USAID, was designed to address key issues related to the challenge of scaling agricultural innovations.

The forum was attended by over 100 participants, and built on a seminal conference held at Purdue University in September 2018 and subsequent discussions at the World Food Prize in October 2018 and the National Press Club in Washington, DC in April 2019. The Purdue Conference and the AGRF event brought together representatives of governments and the world’s leading research, non-profit and private sector organizations focusing on agricultural development in low-income countries. The Purdue conference and subsequent discussions focused on the key scaling successes in agriculture to date, and sought to understand the drivers behind these cases, and challenges that prevent more technologies from going to scale. These lessons and challenges were compiled into a scaling reference guide, the Scale-Up Sourcebook,¹ which was formally launched at this AGRF event.

The AGRF event sought to deepen the discussion about major challenge areas identified at Purdue and the follow-on discussions, and identify continuing funding gaps and areas where additional research is needed. The key areas for discussion included catalytic financing models, the role of small and medium-scale enterprises in facilitating scaling, intermediary organizations, the role of governments and the enabling environment in facilitating scaling, and changing monitoring and evaluation processes and indicators to better support scaling.

Simon Winter (Syngenta Foundation), moderated the AGRF session and starkly outlined the challenges. His introductory remarks focused on the big problems facing agriculture, including environmental challenges, nutritional needs, and the imperative of inclusivity. These challenges demand that we get out of small-impact project mode. Sub-Saharan Africa is currently importing $50 billion worth of food, said Jennifer Blanke (African Development Bank), and the figure is rising rapidly. The most promising approaches to scaling, as Gerald Shively (Purdue University) emphasized, must combine elements of the so-called “scaling up triangle,” consisting of the (i) power of science and technology, which universities can help supply; (ii) strong and sustained political will; and (iii) a favorable policy environment.

Larry Cooley (MSI) summarized the key findings of the Scale-Up Sourcebook. While business and governments are designed to address scale and sustainability, achieving these is more complex in development organizations, where the reward for successfully completing a project is another project. Over the last two decades, the number of donors and projects has proliferated, with increasingly smaller, shorter-term projects chasing large-scale systemic change.

Only 5 percent of all projects go to scale, and a key question is what makes project impact ‘go vertical’? We have made progress in developing tools (e.g. by USAID, CIMMYT) that help project planners assess

¹ The Scale Up Sourcebook is available at https://docs.lib.purdue.edu/scaleup/sourcebook/book/1/.
the scalability of their innovation at an early stage. We know now that the most important bottlenecks are not technological. They may include government policies and regulations, and project partners can play an important role in informing and shaping policies. Partnerships are critical, but they must be constructed strategically to fill knowledge, skill, and resource gaps. Perhaps the most critical and frequently missing element is the ‘intermediary organization’ that links projects to key players, partnerships and financing, and facilitates the learning and adaptive management that is critical for achieving broader systemic change. We need to rethink the use of innovation grants and projects to put more attention on filling this ‘missing I.’ Intermediation, in this case, especially for small and mid-sized enterprises (SMEs) may include Public-Private Partnerships (PPPs) that bridge the gap between the public and private sectors, but more generally refers to the people and organizations that work to create those partnerships.

During the first panel discussion, moderated by Simon Winter (Syngenta Foundation), speakers introduced the main challenge areas affecting scaling up in agriculture. Hon. Pr. Moussa Baldé, (Minister for Agriculture, Senegal) and Lassine Dembele (Secretary-General, Minister of Agriculture, Mali) discussed the critical role of government policies and programs in successful national-level scaling programs for rice and other commodities following the 2007-2008 global food price crisis. Political will from government leaders; trust of smallholder communities; new seed varieties and fertilizer from technology partners; the availability of finance and farmer loan repayment; and mechanization were all identified as critical elements.

Khalid Bomba (Agricultural Transformation Agency, Ethiopia) discussed the role of ATA as a system integrator to update decades-old fertilizer recommendations and provide much more specific recommendations and formulations to farmers. ATA mapped the entire country and partnered with a leading Moroccan fertilizer company, OCP, to make a $1 billion investment in new fertilizer production facilities. The Ethiopian government made tactical investments to bring in this transformative new private sector investment. In its role as a ‘system integrator,’ ATA was always adapting, looking for gaps and how to fill them (e.g., innovating mobile platforms to improve agronomic, weather and market information flows to farmers).

Simeon Ehui (World Bank) discussed the World Bank’s commitment to scaling up innovation, and its role in removing big bottlenecks, including improving coordination among government partners and financing. Jason Scarpone (AFAP) pressed for a laser focus on market-led scaling strategies, and highlighted the importance of better harnessing the power of small and medium-scale enterprises (SMEs) to reach farmers. Critical issues for SMEs include the lack of trade finance and tools to mitigate risk, including insurance.

Ertharin Cousin (CCGA) spoke about the importance of finance as a lever for scaling, noting that most commercial finance still goes to the cash crops – coffee, cocoa. While there is a lot of discussion about concessionary and blended finance to promote investment in food security crops, little is really happening on the ground. She called for more research on financing models and lessons.

Julie Howard (CSIS) focused on intermediary organizations. In the successful scaling cases to date these bridging roles have often been informal, played by government agencies, development assistance programs, and foundations. While there is growing appreciation for the importance of understanding and mapping the systems context, there is far less knowledge about moving beyond mapping to identify and fill system gaps. The private sector does this automatically, but knowledge is scant in the agriculture
area about what structures can work effectively to connect different components and help the system function better, especially in cases where the target is a marginalized population.

Key characteristics of successful collaborative efforts include: establishing a backbone structure that acts as the glue, holding the partners together and ensuring other conditions are in place; having a common agenda, managed by the backbone structure; driving consensus on shared measurement; facilitating mutually reinforcing activities; and communication and strong governance. Examples of intermediary organizations in the agriculture space exist. These include ATA, the Coffee Farmer Resilience Initiative, Grow Africa, and the Southern Agricultural Growth Corridor of Tanzania (SAGCOT); but with the exception of CFRI, they have not been carefully studied. There is also an increasing trend for donors to work across collaborative platforms, but the extent to which they are being designed or function as effective intermediary organizations is not clear.

The second panel, moderated by Rob Bertram (USAID), highlighted specific experiences of public and private organizations in dealing with major challenges and opportunities affecting scaling up in agriculture.

Dieudonne Baributsa (Purdue University) spoke of the role that SME partnerships played in scaling Purdue Improved Crop Storage (PICS) bags. SMEs allowed PICS to tap into existing manufacturing capacity and distribution networks. Key challenges that emerged included market information, because the private sector wants to know the location and size of the market before investing resources. For PICS, logistical and supply chain issues related to making and delivering the right bags at the right time to the right place have been critical to successful scaling. Ongoing research and testing have also been important. As the bags, originally designed for cowpea storage, became popular, farmers expressed interest in using them to store other commodities. Modifications had to be developed and tested. The private sector was good at manufacturing bags, but it was difficult for manufacturers to identify supply chain constraints or to extend their vision to the longer term. Although subsidies can be well-intended, and sometimes even useful in boosting initial uptake, in some countries they have had the unintended consequence of bags being dumped on the market, diminishing the incentive for the private sector to produce new bags.

Matieyedou Konllambigue (Aflasafe), discussed the special problems with scaling an innovation like Aflasafe, a biocontrol product that significantly reduces aflatoxin contamination of food commodities. Food safety improvements in low- and middle-income countries are unseen and largely unrewarded by the market – i.e., farmers do not generally receive a price premium for aflatoxin-free commodities. The strategy employed by Aflasafe is to work with industry thought leaders, including large multinationals, who purchase commodities for brewing or processed foods and can advertise the product as aflatoxin-free. However, these buyers still represent a relatively small proportion of the market. Key challenges include improving consumer awareness about food safety, designing and implementing policies to help unlock the potential of food safety innovations, and identifying enablers who can serve as important entry points to the market and to influence policy. These include national food reserve agencies and their suppliers.

Driss Ennaanay (NETAFIM) shared the experiences of a leading Israeli drip irrigation firm that currently operates in 100 countries in dealing with key policy and finance constraints. Key challenges include

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access to water, access to equipment, and access to finance. On access to water, while it is the responsibility of the government to mobilize water for consumers, NETAFIM has had to adapt the drip irrigation system for smallholders, making different sizes and adjusting for market price points. This adaptation to market needs was a key innovation piece for the company. The company has also adapted to provide service to bigger projects, including a community irrigation project in India with more than 11,000 ha and 7,000 farmers. Increasingly the company provides irrigation wraparound services including classes, agronomics, and canals, in addition to irrigation equipment. Regarding access to equipment, it was pointed out that equipment must be available close to farmers; the company’s goal is to provide a full solution, end-to-end service. In projects carried out in collaboration with government, NETAFIM has helped to develop finance solutions, sometimes by working with distributors or injecting its own money. Finance is a very important piece, but it isn’t about accessing only equipment – the equipment must be bundled with technical assistance. Without technical expertise the farmer will not be successful.

Usha Zehr (MAYHCO), also discussed the increasing “wraparound service” role that MAYHCO, a leading hybrid seeds company in India, provides for its customers. MAYHCO and other ag service companies are taking on more extension roles. Bundling services helps distinguish companies from their competitors. Adaptation to climate change is currently one of the biggest strategic issues for the company. A key challenge is that climate is a moving target, but product development cycles are very long. Planned changes need to be anticipated far in advance. MAYHCO is adapting by building additional tolerance into all of its products. Flooding of rice is a problem in eastern India, for example, but submergence tolerance is being built into all the products, wherever sold. This example underscores that technology is increasingly important. When farmers purchase seed, they scan a barcode and the company receives a message. Farmers are incentivized to continue communicating and receiving information from the company. In-house applications are used to create more linkages. For example, seed producers are paid immediately through an online payment option. Farmers are able to send messages and get responses on some mobile phone apps.

The panels were followed by small breakout group discussions organized around the main challenge themes. Some insights from the group discussions included:

Catalytic Finance: importance of trade finance; role of commodity off-takers in providing credit for the whole system; challenge that SMEs are close to farmers and trusted, but their small size and ability to on-lend is very limited.

Intermediary Organizations: there are many different types of intermediary organizations. These may play roles from global to very local coordination; intermediary organization have a key role in ensuring that the marginalized have a voice in policy formulation. Funding and sustaining intermediary organizations remain challenges.

Policies and enabling environments: some discussants thought political security was paramount and that it was impossible to undertake development activities in less-secure areas; others argued that undertaking development activities in less-secure regions was critically important to creating alternative economic opportunities and promoting conditions that will support sustained peace. Strategies must be aligned at national and regional levels. Policies can be scaling force multipliers.

Monitoring and evaluation: topics highlighted included the importance of developing more efficient ways to collect data. Monitoring and evaluation must be continuous, and the incentives for ongoing revision of processes and data collection must be built-in.