

Bridging the gap between farmer knowledge and varietal development

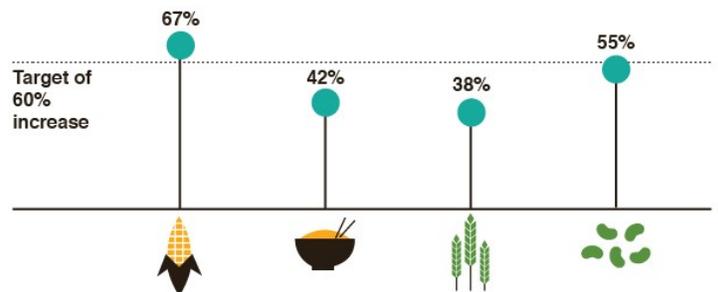
Perspective

Landscape and opportunities for the Integrated Breeding Platform

Overall, consumption of food crops is increasing around the world, and especially in Africa where the demand is largely met through food imports, affecting macro-economic stability. However, it is possible to increase crop production by allowing farmers to access cultivars that address both their local needs and the larger market's demands, all the while mitigating climate threats and agro-ecological challenges such as pests, diseases and stressors.

Indeed, large efforts and funds have already been invested in developing such cultivars, and many varieties have come out of breeding programs over the last decades, performing better than the currently cultivated ones. Yet, most farmers continue to use older, less optimal varieties, and struggle to generate the yields and incomes that were promised. This is largely due to a lack of engagement with farmers to better understand their needs – notably with the most marginalized (women, youth and ethnic minorities), and to smallholder farmers' limited information about new cultivars and where to find the corresponding seeds. There is an urgent need for breeding programs to implement a more demand-driven approach for crop improvement, and to support knowledge sharing to larger farmer

Yields of maize, rice, wheat, and soybean all need to **INCREASE BY 60%**, by 2050 to meet demand but current yields are falling short.

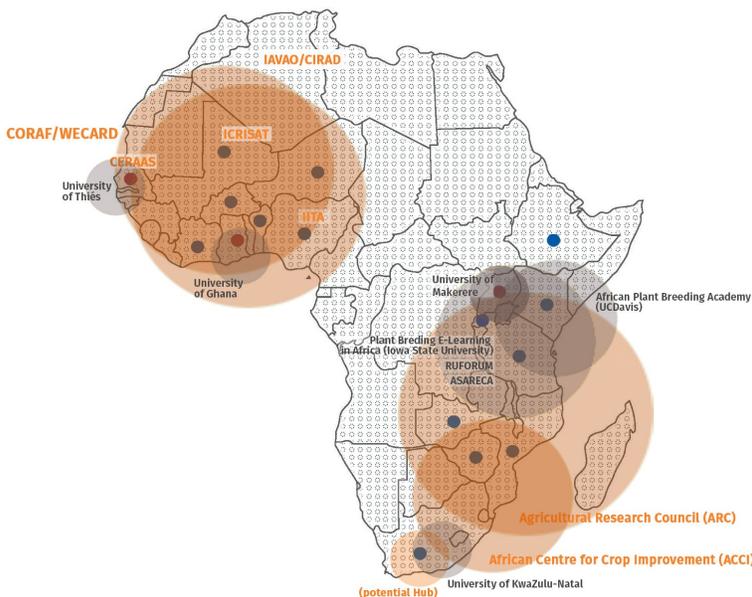


Source: CGIAR Research program on Climate Change, Agriculture and Food Security (CCAFS)
<https://ccafs.cgiar.org/bigfacts/#theme=food-security&subtheme=food-production>

“For developing countries, breeding for stress tolerance (drought, low fertility, etc.) has particularly helped in increasing yields” — Weber et al., 2013; Singh et al., 2011

This only works if real efforts are made to foster the upfront engagement of farmers in defining product objectives and characteristics, better seed distribution channels, and easier interactions with the local market. We believe this can be greatly facilitated through the innovative use of information and communication technologies (ICTs), and the implementation of knowledge interfaces to share actionable data between actors of the crop value chain.

The Integrated Breeding Platform (IBP) is well positioned upstream – with strong ties to the scientific community, national agricultural systems, universities and development networks across Africa – but recognizes it will need your help to bridge the gaps between farmer knowledge and varietal development. To achieve a truly demand-led crop variety development process will require the engagement of farmer groups and the use of participatory approaches to inform product development processes and priorities, connecting to other key value chain operators (extension workers, seed dealers, etc.), and building a knowledge interface between them with the support of ICTs.



Banking on existing networks and initiatives: The IBP and its partner research institutes invite new donors to join in the effort for the empowerment of farmers across Sub-Saharan Africa. Current funding includes: Bill & Melinda Gates Foundation, IFAD, World Bank (WAAP/WAATP), and USAID Feed the Future Innovation Labs.

In short, we seek to expand our partnerships, and leverage new sources of experience and expertise, to link the dots across the crop value chain and generate innovative solutions that enhance food security. If you have a grasp on ICTs, knowledge management or field extension work, and share our vision that empowering local farmers will be the key success factor in ensuring global food security, read on and contact us to explore avenues for collaboration.

Proposed activities:

Farmer participatory approaches: A reference set of lead farmers in different communities across target crops and countries will be engaged to evaluate improved cultivars on their own farms. Their feedback will serve four purposes: (a) define breeding objectives; (b) eliminate cultivars that do not pass on-farm testing, thus increasing the efficiency of seed multiplication and cultivar dissemination; (c) provide relevant information for new cultivar registration (on-farm data is mandatory in several countries as part of the registration process); and (d) facilitate adoption due to their early exposure through participation.

Promotion and scaling through local community facilitators: Farmer community leaders and mentors will be closely supported to disseminate their knowledge of variety characteristics, performance and availability onto others, effectively acting as change agents and facilitators in their communities for the broader reach of project outcomes. University students could be engaged to facilitate training on mobile solutions with farmers, and to gather survey data from visits to cooperatives and local markets about which varieties are more successful in a given community. These 'front-line' actors are critical to create awareness, momentum and reinforcement, and to bring adjustments to projects as they unfold.

Using community-driven digital tools to strengthen interaction and knowledge nodes along the value chain: The effective transformation of the crop sectors into a reliable enterprise will be achieved by creating value chain resource centers (using ICT tools – mobile apps, GIS tools, web tools). Thanks to novel and integrated ICTs, the exchange and management of information will facilitate the adoption of new and better products, and stimulate the creation of sustainable business entities. New software applications will also be developed to facilitate seed management from breeders to farmers (purity, quantity and availability). This would also provide a beautiful opportunity for entrepreneurs, and especially youth, to use these new applications to improve and/or establish seed businesses.

Targeted beneficiaries and impact:



Smallholder farmers and farmer communities, many of whom are in situations of subsistence farming, are at the heart of this proposal. We wish to directly engage with a first set of reference farmers in participatory activities for needs appraisal and product evaluation. These reference farmers will facilitate buy-in from the onset, and facilitate an increase in the uptake of new climate-resilient crop varieties within their communities. After a few years, we anticipate that 25,000-30,000 farmers can be exposed to the benefits of the new varieties, with increased yields, thus improving productivity and profitability on a larger scale.



Extension workers are the missing link: they will help us bridge knowledge and resources between actors of the value chain thanks to strengthened linkages with research systems



The national breeding programmes engaged will also benefit from the project through the creation of an enabling and demand-driven crop improvement environment.



Cooperatives and small-to-medium enterprises (SMEs) are also expected to expand into larger structured markets at national and regional levels, and therefore broaden the impact to a larger number of small-scale farmers. The capacity building of young entrepreneurs, and the use of adapted digital solutions, will also improve the provision of seed and services to value chain actors.

Working with the IBP

The IBP is not bound to any crop or geographical location and operates on the basis of an 'honest broker' approach, by which resources are allocated strategically among partners, based on the principles of agility to manage them towards successful outcomes. Bringing people together, and creating opportunities and spaces for them to grow alongside one another, is central to our culture and at the very core of any initiative aimed at modernising development practices. We invite you to take part in something bigger: your investment will contribute to build solid and vibrant communities across and between fields of expertise to provide concrete solutions for a new, sustainable operational model in R4D. Help us ignite a digital revolution for food security!

Donor and CSR opportunities:

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