

ANNUAL REPORT

Highlights and Performance

syngenta foundation
for sustainable
agriculture

20
23

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Mandiaye Paty Badji, an agripreneur, views agriculture as a promising solution to youth unemployment, Senegal.

Rising to special challenges

Rightly or wrongly, ‘unprecedented’ became a fashionable word for the Covid pandemic. But how should one best describe 2023? In many ways and for millions of people, it was a dreadful year. War, hunger, and suffering spread relentlessly. Climate change continued to destroy livelihoods and communities worldwide. For people working in agriculture, the challenges sometimes seemed all too much.

Our Foundation, however, was among the many organizations that saw these challenges as cause not for despair or resignation, but for accelerating action. My heartfelt thanks go to our teams and partners in Africa and Asia for their huge efforts, yet again, in the service of those pre-commercial smallholders who are underserved by the private sector who focus on commercial smallholders or their own governments. Even in the face of Sudan’s civil war, we kept going. Not surprisingly in such an awful year, we expanded our impact less rapidly than in 2022. But as the following pages show, we **did** increase it. Knowing that we helped improve the lives of more than three million smallholders makes all the effort worthwhile.

2023 also brought its specific challenges for our Foundation. In recent years, Syngenta Group, who has been the main funder of the Foundation since 2001, has significantly expanded its own efforts to support commercial smallholders with innovative and transformative solutions. It is in this context that in 2022, the company decided to phase out its funding of SFSA.

As a result, the Foundation will close its headquarters in Switzerland by the end of 2024 and is respectfully ending associated commitments. In its African and Asian countries of operation, however, the Foundation remains committed to promoting sustainable agriculture for pre-commercial smallholders. The Foundation is eagerly looking for partners and supporters interested in enabling its country programs to have a viable future as independent, locally-led and locally governed organizations. Final decisions are to be made by the end of June 2024.

We intend to honor the last two decades of Syngenta Foundation work in a separate publication. The present report focuses on our Performance and Highlights for 2023.

And yes, despite the problems of the world and remaining open questions relating to our operations in the countries, 2023 had its highlights! For me personally, one of these was COP 28. The UN Climate Change Conference in Dubai was the first in the long COP series to give agriculture the attention it deserves. I had the privilege of being among the delegates flying the flag for smallholder farmers and was given a platform to promote our AIM4Climate sprint.

Meeting similarly committed people from around the world was deeply rewarding. Discussions at COP 28 also opened the door to new partnerships. And when I say ‘partnerships’, I mean potentially major collaborations that deserve our title of “Flagship Initiatives”. First and foremost, we are looking to catalyze SACCA, the Smallholder Action Coalition for Climate Adaptation. Its initial focus is on Bangladesh (the subject of the AIM4Climate sprint), as described in this Report. My hope is that SACCA will become an institutional framework in which the Foundation’s current activities at country level can continue to grow and deliver impact.

We are very eager to hear from organizations interested in supporting our legacy initiatives. Meanwhile, I also hope that you enjoy reading this Report. As ever, I look forward to [hearing your comments](#).

Simon Winter

Executive Director

Syngenta Foundation for Sustainable Agriculture

Simon Winter at AIM4Climate sprint, at COP28, Dubai.



The Syngenta Foundation for Sustainable Agriculture (SFSA) is an implementing foundation that bridges the gap between research for innovations and their delivery for use by smallholders. We help innovations reach scale through entrepreneurship and enterprise models. We combine the best of scientific, non-profit, and private sector thinking and doing.



About SFSA

As the harvest comes in, farmers and Foundation staff enjoy seeing the high yields from a hybrid maize variety in Senegal.

Our vision

is a bright future for smallholder farming.

Our mission

is to strengthen smallholder farming and food systems; we catalyze market development and delivery of innovations while building capacity across the public and private sectors.

Our values

- Innovation
- Integrity
- Respect & growth for all
- Collaborative spirit
- Passion
- Reliability

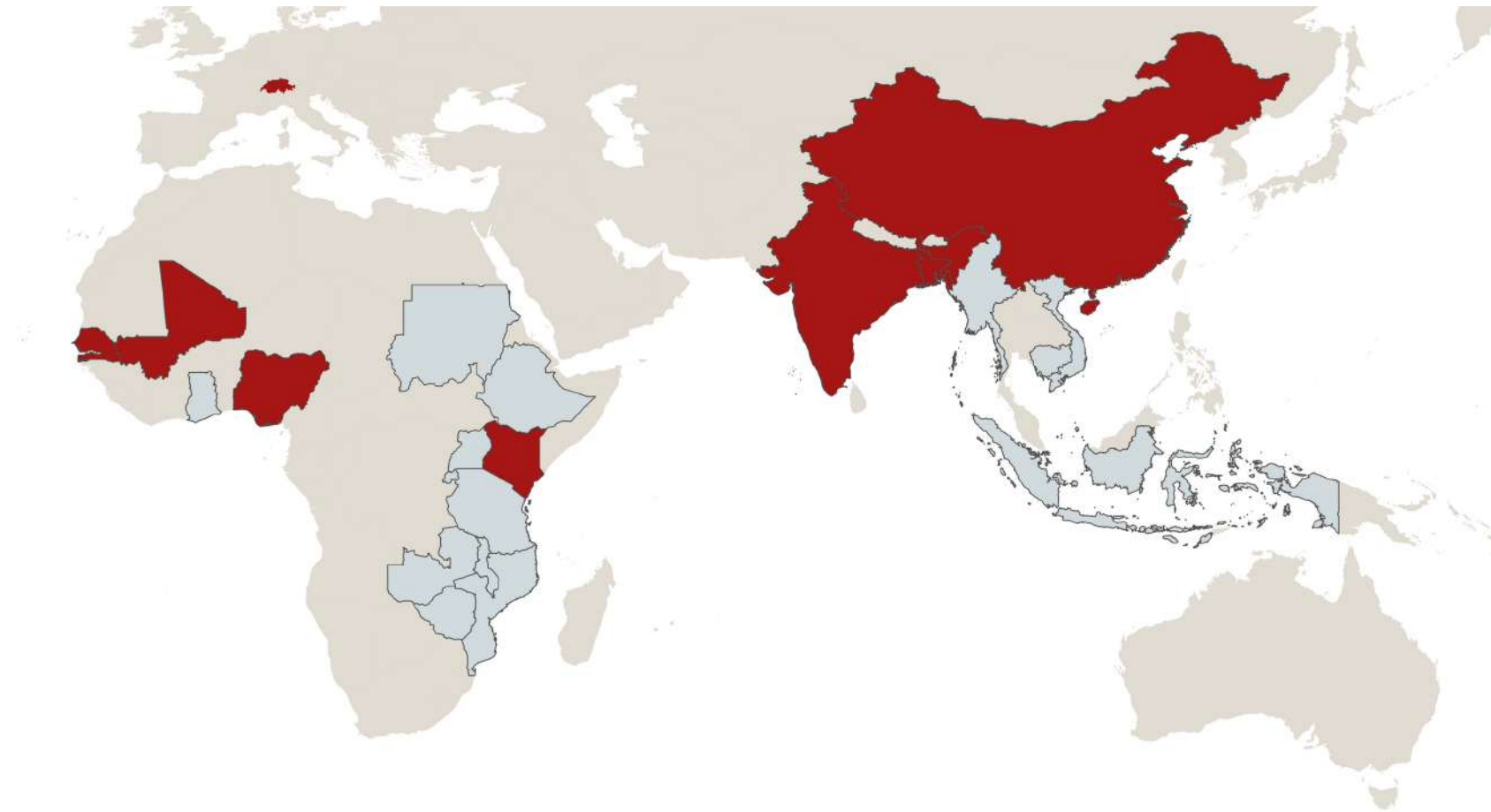
Our contribution to the SDGs





Our global programs

Switzerland (HQ)

- Mali  
- Senegal  
- Nigeria  
- Ghana  
- Sudan  
- Ethiopia  
- Uganda  
- Kenya   
- Rwanda  
- Tanzania  
- Zambia  
- Malawi  
- Zimbabwe  
- Mozambique 



- China 
- Bangladesh   
- Myanmar 
- Vietnam 
- Cambodia 
- India   
- Indonesia   

 SFSA teams
 Involvement through partners



Agriservices

- Training and agronomic advice
- Rural entrepreneurship with strong focus on women and youth
- Delivery of innovative products & services
- Market access



AIS

(Agricultural Insurance Solutions)

- Access to affordable agricultural insurance
- Easier access to credit
- Innovative products to reduce smallholders' risks



Seeds2B

- Access to new climate-smart varieties
- Capacity-building & technology-transfer
- Particular attention to women's needs & capacity
- Support of seed companies in delivery of new varieties

R&D and Policy Support (transversal)

- R&D focus on innovation and initial adoption with a particular focus on solutions that are climate-smart and resilient
- Policy work helps remove barriers and enables significant scale-up

2023 at a glance

3.1M

Smallholders supported¹
(Up from 2.7 M in 2022)

45%

of supported farmers are women
(Up from 29% in 2022)

73%

of farmers reporting at least
20% increased revenues
(Average from impact studies of key programs)²

19,300

Businesses selling SFSA-
supported products
(Up from 15,000 in 2022)

\$161M

Value of SFSA-supported products³
(Up from USD 142M in 2022)

57%

of entrepreneurs are women
(Up from 36% in 2022)

11,500

Jobs created
(Up from 11,000 in 2022)

78%

of these jobs are held by young people
(Up from 50% in 2022)

790,000

People benefited from capacity-building
(Up from 779K in 2022)

¹ 1.2m farmers supported by SFSA programs and partners. 1.9m farmers supported by the two catalytic intermediaries Agri Entrepreneur Growth Foundation (AEGF) and the Agriculture and Climate Risk Enterprise Ltd. (ACRE).

² Includes the dollar value of SFSA-supported products & services sold to farmers during the reporting period + the dollar value created from market linkages.

³ Average from impact studies of key programs over the past few years. Five impact studies from Agriservice-Center models in India, Indonesia, Bangladesh and Senegal, and one each on Agri-Insurance in Bangladesh and tef improvement in Ethiopia.

Our 2025 Commitments

We continued making significant progress towards the Strategic Outcomes (SOs) outlined in our 2021-2025 strategy.

Our impact is driven by smallholders' increased adoption of solutions that address climate change, incorporate the needs of women and youth, produce nutritious food, and meet consumer demand in efficient markets.

Current Impact Targets

- ✓ At least 20% net income increase for five million smallholder families
- ✓ Greater gender equality and youth opportunities across the agricultural sector
- ✓ Better nutrition, health and food security
- ✓ Smallholders cope with climate change in a climate-smart and resilient way

Strategic Outcomes by 2025



Smallholders get the tools they need

- At least five million smallholders, particularly women and youth, have better access to affordable and sustainable innovations
- Use of SFSA-supported products and services creates more than US\$ 250 million in value annually
- SFSA action leads to greater investment in sustainable agriculture



Smallholders cope well with climate change

- Smallholders farm at least 2.5 million ha in line with improved management and resilience practices
- At least one new Climate-Smart, Agriculture (CSA) initiative starts each year
- At least five million smallholders and relevant institutions have strengthened their capacity and awareness related to CSA



Smallholders benefit from thriving markets

- At least 20,000 successful SFSA-supported enterprises, and increasing employment opportunities for youth
- Greater capacity in institutions, public and private, across and supporting the value chain

Outcome I.

Smallholders get the tools they need

We focus on low-income smallholders, putting them at the heart of agrifood systems. Our work increases these farmers' ability to choose, afford and use sustainable and innovative solutions to their challenges. To support the introduction of new technologies, we ensure suitable training and accompanying services. We also push for a stronger 'enabling environment', for example in finance, digitalization and agricultural policy. This work is anchored in strong partnerships, notably between the public and private sectors.

In 2023, our progress included supporting over **3.1 million** smallholders, a 15% increase over 2022. Our support focuses on better access to affordable and sustainable solutions and services. These include training, improved seed varieties, agronomic practices, mechanization, digital tools, financial services, agri-insurance, and market opportunities.

Our aim is to enable delivery of these solutions at scale. One way we achieve this is to establish special entities called Catalytic Intermediaries. Examples include the [Agri-Entrepreneur Growth Foundation \(AEGF\)](#) and [Agriculture and Climate Risk Enterprise Ltd. \(ACRE\)](#), established in 2019 and 2014, respectively. Further information follows below.

The share of female beneficiaries in our programs rose to 45%, up from 29% the year before. This increase took us a big step closer to our 2025 target of achieving 50:50 parity.

Our partners and we help smallholders gain access to a wide range of products and services. Sales from these increased compared to last year, reaching \$161 million. This sum includes premiums for agricultural insurance products, sales of inputs, fees for services like mechanization, as well as sales of farmers' produce made possible by good links to markets. Such activities generate revenue for farmers and other numerous participants in the value chain, and they substantially boost local economies.

In 2023, Bangladesh played a vital role in the success of our **Agricultural Insurance Services (AIS)**, benefiting over 300,000 farmers. Key factors included integrating agricultural insurance with credit and farm inputs, as well as increasing smallholders' understanding of risk management. Expansion of the insurance cover also contributed significantly. Here, we conducted field studies and collaborated with stakeholders to tailor new products. Examples include insurance solutions for mango growers and integrating health insurance with cover for *Boro* rice. In Zambia, AIS reached 12,000 farmers, thanks to partners such as ACRE, Mayfair Insurance, and the Ministry of Agriculture.



Susan Yiapan from Narok County, Kenya, is one of the pioneering farmers who have completed training on certified seed production entrepreneurship.



Despite the obstacles of operating in challenging and unstable regions, our dedication to providing innovative solutions to smallholders was stronger than ever.



Farm machinery is an important line of business in our Indian agri-entrepreneurship program.

Our **Seeds2B** team is dedicated to improving smallholders' access to better crop varieties that increase yields, enhance resilience to climate change, and boost incomes. We have so far identified more than 180 promising varieties, of which almost 70 are in advanced testing. Most come from public breeding programs; local seed companies play a crucial role in delivering them to farmers. In 2023, more than 271,000 smallholders benefited from better varieties. This was a small increase compared with the previous year. Our team secured USAID funding for the PASTTA program in Senegal, Kenya, and Mali throughout 2023, and for maintenance of initiatives in 2024. It also laid the basis for a future program under Seeds2B Africa, involving multiple countries and crops. These successes enabled us to build on the positive PASTTA outcomes achieved from 2017-22.

The **Agriservices** programs expanded to benefit more than 545,000 farmers. This represented growth of about 10% over 2022. Surveys conducted in Senegal, Nigeria, Bangladesh, Indonesia, and India revealed positive impacts on smallholders' lives. These benefits included higher crop yields and incomes, and improved market access. The surveys also identified areas for improvement such as product quality, training frequency, and access to finance. For more information, see the country-specific sections below.

Despite successes, we did not progress as fast as we had planned. Numerous factors slowed down our programs. In Indonesia and Malawi, for example, extreme rainfall disrupted our seed initiatives. As well as the fields, heavy rain also damaged roads. In India, changes in monsoon patterns continue to affect farmers' yields and incomes in the *kharif* farming season, with knock-on impact on agri-service businesses. Political instability and security concerns caused difficulties in several countries. In Sudan, armed conflict temporarily forced us to halt our insurance projects. In Ethiopia and Bangladesh, political disruption delayed certain initiatives. Security issues made some of our Myanmar seed production sites inaccessible. In Nigeria, inflation and price fluctuations affected the completion of some Farmers' Hubs and prevented several new ones from engaging fully in the intended activities.

Coumba Ka, facilitator, advises smallholders on good millet seed production, Senegal.



Outcome II.

Smallholders cope well with climate change

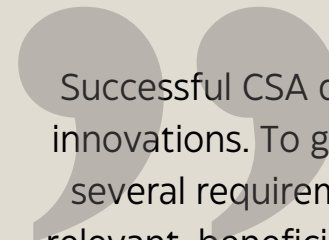
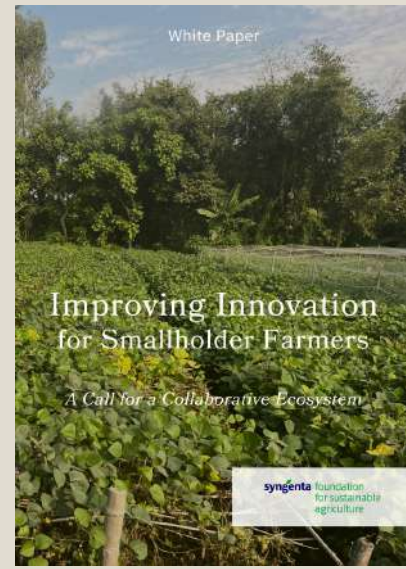
Agriculture both contributes to and suffers from global warming. There is an urgent need to improve the resilience of smallholder farming to climate change. As outlined in our Strategy, we are making Climate-Smart Agriculture (CSA) an integral part of the entire SFSA portfolio. We take an all-round approach, tailored to local contexts. To increase farmers' resilience and ability to adapt, we are implementing a range of strategies and tools. Increasing the likelihood of good harvests goes hand in hand with protecting smallholders against the consequences of crop failures. Longer-term contributions to resilience must be accompanied by more immediate economic incentives. Examples of such financial benefits include higher productivity, lower production costs and profitable sales of new rotation crops.

Capacity-building is a cornerstone of our CSA work. Our initiatives aim to raise awareness and enhance the capabilities of smallholders, value chain participants, and other stakeholders. Activities include training sessions, field days, and in-depth discussions of strategies to address climate change and bolster resilience.

In 2023, our capacity-building initiatives benefited more than 790,000 farmers and other value chain participants. This figure was, however, lower than in 2022. The reduction was mainly due to changes in our portfolio and the conclusion of several financial education and insurance projects.

In our Agriservices programs, local agri-entrepreneurs (AE) again played a pivotal role in transferring knowledge and skills to smallholders. In India, for instance, an initiative supported by the [Bill & Melinda Gates Foundation](#) provided training for over 300,000 farmers through the AE network. We also made good progress in Indonesia and Nigeria. In Kenya, Bangladesh and through partners in Rwanda, entrepreneurs in the [Nutrition in City Ecosystems \(NICE\)](#) project trained over 23,000 smallholders. They worked mainly on good agricultural practices, agroecology, cropping systems, and the prevention of both soil erosion and post-harvest losses.

Our AIS team continued to inform smallholders about weather-related insurance and managing their finances. In Bangladesh alone, more than 200,000 farmers and staff from partner institutions attended AIS training events.



Successful CSA depends partly on the adoption of innovations. To get used, innovations need to meet several requirements. For example, they must be relevant, beneficial, easily available at the right time, affordable and understandable. Internationally, adoption of CSA innovations by smallholders lags behind many organizations' hopes and expectations. A 2023 paper by our team and partners highlights several barriers to adoption. These include challenges related to local conditions, financial support access, innovation suitability, and market engagement strategies¹.



¹ Nwokoro, C., Richards, J., Blackwell, M., Hemdev, S. and Berlin, R. 2023. "Improving Innovation for Smallholder Farmers". Syngenta Foundation for Sustainable Agriculture.

How Climate-Smart are we?

The term 'Climate-Smart Agriculture' (CSA) refers to farming methods that enable sustainable production and resilience to climate-related risks. To help implement this concept, the [NRI](#) (University of Greenwich, UK) and we have developed a digital tool to guide CSA decisions².

This tool analyzes potential interventions across the three pillars of CSA (Sustainable Production, Mitigation, Adaptation) and identifies trade-offs between them. The intervention outcomes are evaluated in five areas: production, labor and assets, value chains and processing, human capital and natural capital.

In 2023, we started using the tool to assess the 'climate-smartness' of our interventions. Workshops in Bangladesh and Kenya brought together partner representatives, academics, and experts from our teams. Each workshop evaluated two local interventions. In Bangladesh, these were the ultra-high-density planting regime for mangoes and alternate wetting and drying of rice (AWD, see below). In Kenya, we studied a climate-smart action strategy for potatoes and CSA for dryland cereals, with a focus on sorghum. We compared the climate impact of these interventions with a baseline of no intervention (i.e., traditional mango, rice, potatoes, and sorghum cultivation practices).



CSA decision-guide tool workshop in Dhaka, Bangladesh.



CSA decision-guide tool workshop in Nairobi, Kenya.

² Walsh, C. et al. (2024). Translating theory into practice: A flexible Decision-making tool to support the design and implementation of Climate-Smart Agriculture projects. [Manuscript submitted for publication].

The decision tool in action: AWD in rice

Our Foundation has considerable experience in alternate wetting and drying (AWD¹) of rice in a water-challenged region of Bangladesh. AWD is one of many ways to increase productivity and profitability and make smallholder farming climate-smarter.

Looking at the rice value chain more broadly, AWD can usefully be combined with other approaches such as:

- Precision Laser Land Leveling (PLLL)
- Urea Deep Placement (UDP)
- Improved tillage
- Integrated nutrient management and bio-pesticide application
- Integrated Crop Management (ICM)
- Crop rotation with high-value vegetables
- Carbon credits
- Crop insurance and credit facilitation
- CSA awareness

Agri-entrepreneurs and Farmers' Hubs can play a key role in promoting such approaches.

At the Dhaka evaluation workshop, the decision tool highlighted AWD's positive contributions to Productivity and Adaptation. On the productivity side, this intervention ranks very high in areas such as non-renewable energy, because it encourages efficient and sustainable water and energy use for pumping. On the 'Profitability and Markets' dimension, AWD scores very well on household income. By diversifying – notably by replacing irrigated rice with vegetables – farmers can achieve more than 2.5 times their previous revenue. However, AWD performed less well than expected for Mitigation. The technique is well known to reduce methane emissions. However, concerns were raised that it could lead to more fertilizer use, reduce soil carbon, and potentially increase cattle density. Careful planning and site-specific management options are important. The tool also points to AWD as labor-intensive because more weeding is required than in continuously flooded systems.

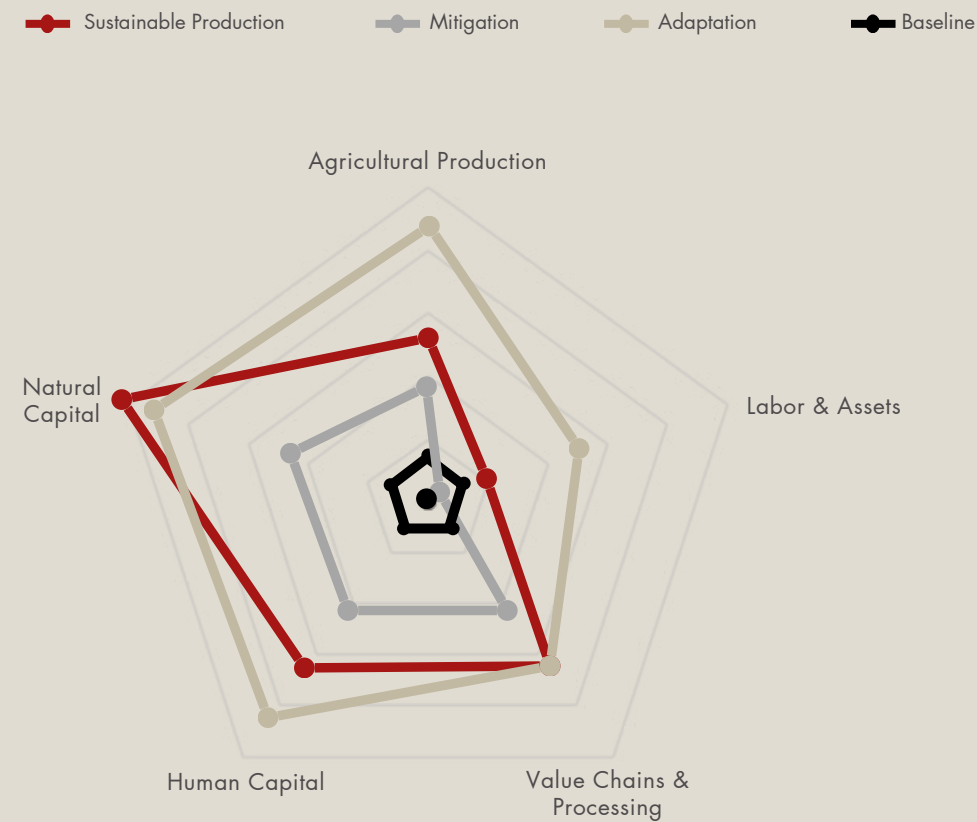


Fig. Individual scores of each CSA Pillar per Potential Outcome Area.
The black pentagon shows the boundary between positive and negative impacts

¹ AWD switches between flooding and drying of rice fields. This technique addresses both climate-related and financial aspects of traditional rice-growing. In countries with a heavy malaria burden, for example in West Africa, AWD also helps reduce this and other diseases (Chan et al. 2022).



The IWET project has implemented AWD in the water-scarce Barind Tract region of Bangladesh.



Outcome III.

Smallholders benefit from thriving markets

Sustainability has three pillars: environmental, social, and economic. Thriving markets are essential for sustainable improvements in livelihoods. In our case, these are markets in which smallholders can buy, rent and profitably sell, and in which businesses that serve them can thrive. SFSA links smallholders with markets for insurance, seed and other elements of successful farming. This section describes our progress in stimulating rural entrepreneurship.

In 2023, SFSA supported over 19,000 agri-enterprises, 29% more than in 2022. Depending on the local situation, our support can take many forms. They include providing technical assistance, facilitating access to financing options, catalyzing public-private partnerships, identifying and training future rural entrepreneurs, and promoting technology transfers.

The proportion of Agriservice Centers run by women increased significantly in 2023. It rose to an average of 56%, up from 35% in 2022. Progress was particularly notable in India, where we aim to establish more than 7000 female agri-entrepreneurs by the end of 2024. This figure is intended to rise to 10,000 in 2025.

Most of the agricultural enterprises supported by SFSA are Agriservice Centers. These vary locally in focus and name, such as Agri-Entrepreneurs, Farmers’ Hubs, Pancer Tani (Indonesia), or CEMA (West African mechanization centers). 4200 Agriservice Centers began operations in 2023. This represents good progress, but growth was slower than planned. The shortfall was primarily due to the local challenges outlined previously under Outcome I. These challenges both slowed development of new enterprises and made business harder for existing ones.

Despite the difficulties, the Agriservice Centers generated an extra 11,500 permanent or temporary jobs in 2023. Rural job creation plays a central role in poverty alleviation. It also helps tackle the growing problem of youth unemployment. More than three-quarters of the new Agriservice Center jobs went to people under the age of 35.

As well as Agriservice Centers, we also support other rural enterprises and build the capacity of public sector partners. The table provides further information.

Agriservice Centers	Small and medium-sized enterprises	Public Organizations
We help to identify and implement micro agribusinesses that facilitate smallholders' access to products and services that lead to better harvests and higher income. We empower rural entrepreneurs to meet the needs of their farming neighbors and create jobs.	Through partnerships, we assist and collaborate with local seed companies, network managers, insurance companies, regulators, and other stakeholders. They can thus expand their activities with improved solutions and products specifically for smallholders.	We focus on building capacity across many organizations. For example, in the seed system, we collaborate with CGIAR centers, National Agricultural Research Systems and other public entities.

Agri-enterprises and organizations supported by our work varied in size and type of products and services offered to smallholders.

Over the past few years, we have conducted impact studies and satisfaction surveys on some of our key projects. These reviews by external organizations and our local teams help us better understand the effects of our activities. Here are three examples:



Pancer Tani Program is the local name for Farmers' Hubs in Indonesia.

By December 2023, the Pancer Tani Program in Indonesia had fostered the growth of 772 agri-entrepreneurs. 73% of these were young people, 27% women, and 9% individuals with disabilities. Within a year of starting their businesses, the entrepreneurs had on average more than doubled their monthly income.



After graduating with an M.Sc. in Horticultural Agroecology, Anne Cisse from Mont Rolland, Senegal, became an agri-entrepreneur thanks to our Foundation.

In Senegal, we surveyed some 30 agri-entrepreneurs. 60% attributed a rise in their income to working with the Farmers' Hub program. Beyond the financial gains, survey participants also pointed to further benefits. For example, 40% reported that their Farmers' Hubs enable them to step up existing activities like livestock farming.



Maimunatu Nadabo uses plastic crates from a Farmers' Hub to cut post-harvest losses. Makarfi, Nigeria.

By 2023, a total of 30 Farmers' Hubs were operating in Nigeria. 95% of the Hub managers reported income increases. Many took the opportunity to invest in land, expanding their assets. Between 2020 and 2022, the average number of workers per Hub jumped from three to eleven, contributing significantly to local employment opportunities.

Highlights from our Country and Regional Programs

Bangladesh

Since 2011, Syngenta Foundation Bangladesh has run projects on climate-smart agriculture, digitalization, nutrition, and economic growth, improving smallholder livelihoods. Supported by donors and private sector funds for innovation, our team and partners have helped improve about one million smallholders' lives.

In Bangladesh, our initiatives include agri-entrepreneurship via Farmers' Hubs, development of the insurance environment, and promotion of climate-smart agriculture. We also help improve farming efficiency through mechanization and reduction of post-harvest losses. In 2023, we worked on eight programs with five donors, six development partners, 15 commercial partners, as well as universities and research organizations.

In 2023, about 660 Farmers' Hubs served more than 211,000 Bangladeshi smallholders. This brought the total over five years to about 555,000. The Hub offers include inputs, machinery, finance, knowledge, and market access. In our impact assessment, 77% of surveyed farmers reported revenue increases from using Farmers' Hub seeds or seedlings. The increases averaged 59%, and almost always resulted from higher crop yields. 84% of survey participants got access to new products through the Hubs; very few claimed they could find comparable alternatives elsewhere.

Last year, our insurance program helped more than 333,000 farmers reduce their agricultural risks. This figure represents a major step forward: It is roughly the same as the total numbers for 2019-2022. One key to such widespread adoption is meeting a range of needs by integrating crop insurance with farm inputs. The insurance enables farmers to invest in their crops with greater confidence. Two-thirds of our surveyed users wish to continue. Further contributions to the adoption of insurance

include easy affordability, smooth distribution, and a supportive policy environment. The Foundation strives to achieve all three. We work here with public and private insurance organizations, data service providers, distributors, and other stakeholders.

Another important focus of our work is on agro-processing and export markets for potatoes and mangoes. Our successful outgrower model offers smallholders good income opportunities providing high-quality products to food companies. With potatoes, for example, we selected the processing variety *Atlantic*, organized seed cleaning and multiplication using the Apical Rooted Cutting method and developed a production protocol for the desired yields and quality.

The Foundation also runs several initiatives in climate-smart agriculture. These include introducing water-efficient technologies (e.g., drip irrigation or alternate wetting and drying – see above), soil-free seedling production under cover, crop rotation with high-value vegetables, ultra-high-density plantation for agroforestry, and carbon credits. In 2023, for the first time in Bangladesh, we registered farmers in the carbon credit market. The aim is for them to gain a new source of income through suitable agricultural practices, notably in agroforestry.



My Farmers' Hub has made a big impact on my life. It gives me economic freedom and I'm now digitally skilled. I want to expand the business further and create more employment for women.

Tereza Kisku
Ethnic Santal agri-entrepreneur
Birganj, Bangladesh



China

We established our Beijing Representative Office in 2018 to facilitate sustainable agricultural development, aiming to improve the livelihoods of resource-poor farmers. Our focus is on under-developed provinces in western China. Our key intervention areas are upskilling farmers to grow cash crops, market linkages, post-harvest & processing, soil health and water shortages, and food safety and quality.

In Sichuan, our kiwi initiative aims to increase farmers' earnings through better yields, fruit quality, and prices, while adhering to environmentally sustainable practices. In 2023, we trained 3900 farmers on cultivation techniques and diversified cropping. These measures enabled them to sell additional produce worth about \$800,000 without increasing their production costs.

Farmers play a decisive role in the shift towards sustainable, low-emission agriculture. In collaboration with [The Nature Conservancy](#) (TNC) and both the Chinese Academy of Agricultural Sciences and its Sichuan equivalent, we also invested strongly in climate-resilient farming. Our joint research explores eight critical areas. These include efficient water usage and nitrogen fertilizer application. By adopting all the recommended practices, Sichuan's agricultural sector could reduce emissions by an estimated 12%.

We have crafted technical guidelines for producing low-carbon rice and kiwifruit, offering farmers and agribusinesses practical, cost-effective strategies. An expert committee helps make this

work more visible and encourages policy engagement. Our findings have been included in the 'Sichuan Province Climate Change Adaptation Action Plan.'

In Gansu Province, our collaboration with the Dingxi and Gulang Agricultural Bureaus, alongside the local [Modern Agriculture Platform](#) (MAP) team, has provided almost 6800 smallholders with training on vegetable cultivation, integrated pest management, and water and fertilizer management. We organized two sessions specifically for young farm entrepreneurs, which attracted 24 participants from Dingxi. Aiming to boost employment for local farmers, the training helped them gain essential knowledge and skills in the vegetable sector. We also facilitated the introduction of 16 new vegetable varieties, including tomatoes, cabbage, and carrots, suited to the region's growing conditions. Our work on fruit cultivation in Gulang focused on premium pears, greenhouse grapes, and Goji berries. We partnered with the County's Forest and Fruit Center to educate 1000 growers on orchard management and pest control.



Training for smallholder vegetable farmers in Gulang, China.



East Africa

In East Africa, we established our representative office in Nairobi, Kenya, in 2009. Work has focused on agricultural insurance, improved seeds, soil management practices, and access to markets.

Our Agriservices team has launched several sustainable business initiatives for smallholders, including advisory services and market connections. By 2023 our partners and we had set up some 360 Farmer's Hubs, managed by 17 network managers, serving nearly 50,000 smallholders. These initiatives also focus on improving urban nutrition, increasing the supply of nutritious foods produced using agroecological practices, and promoting inclusivity for women and individuals with disabilities.

Our Seeds2B initiatives promote crop breeding, registration and commercialization of superior crop varieties, farmer awareness and the adoption of climate-smart technologies. Our portfolio includes the cassava enhancement project in Uganda and the tef improvement program in Ethiopia. Additional information on these is available in the R&D section. In Kenya, our 2023 activities in the PASTTA program generated the sale of more than 441 tons of seeds. 11,600 farmers used these improved varieties on 3400 hectares. The main crops were soybean, beans, sorghum, and potato. We also ran performance trials on more than 40 varieties.

Since 2009, our Agricultural Insurance Solutions (AIS) team has been working on innovative risk management strategies for smallholders. Insurance gives farmers more confidence to invest in their crops despite increasing weather variability. Together with partners, we have developed almost 40 weather-related insurance products tailored to smallholder needs. The Foundation's current work focuses on Zambia and Sudan and includes financial literacy training. In 2023, more than 12,000 Zambian smallholders invested in combinations of inputs and insurance. This is an increase of 38% over 2022.



Former smallholder Jessee Kamutu has become a business manager, leading a network of 30 Farmers' Hubs.

Farmers attending a claim payout ceremony of the Macro-Resilience Program, Zambia.



Ten years of ACRE

In Kenya, we helped launch Agriculture and Climate Risk Enterprise Ltd. in 2014. ACRE Africa took forward our earlier *Kilimo Salama* initiative. The social enterprise's mission is to expand the reach of agricultural insurance solutions throughout Sub-Saharan Africa. As a licensed insurance surveyor in Kenya and an insurance agent in Rwanda and Tanzania, ACRE Africa also serves Uganda, Ghana, Malawi, Mozambique, and Ethiopia. In 2023, it provided insurance access to over 600,000 farmers. Contributions to that success include strong partnerships, involvement in national programs and diversification of the product range. Over the past decade, adoption of new technologies has significantly improved operational efficiency, decision-making, and project management. Since ACRE Africa's partial acquisition by ZEP-RE in 2020, the Syngenta Foundation has maintained a minority stake and provides Board guidance. This is why we continue to report on ACRE Africa's progress ten years after its launch.



India

Syngenta Foundation India (SFI) was established in 2005 to involve small-scale farmers in agricultural development by enhancing their access to good seeds, agronomic knowledge, credit, and market connections.

Our major focus in India is on the Agri-Entrepreneur (AE) program. This is the country's most extensive such initiative. In 2023, it served about 1.3 million smallholders in 13 Indian states. By 2030, the AEGF aims to develop 100,000 AEs. They would serve some 15 million farmers. The program puts major emphasis on sustainable, climate-resilient agriculture and the equal participation of men and women.

The program began in 2014, aiming to serve smallholders and stimulate rural employment, above all for women and young people. In 2019, the program's reach expanded significantly through the creation of the [Agri Entrepreneur Growth Foundation \(AEGF\)](#), a joint venture with [Tata Trusts](#) and [IDH](#). The AEGF leads the training of AEs and their establishment in business. It has so far trained more than 17,000 people, of whom more than 15,000 are currently collaborating actively with our team. Of the remainder, some received training to work with our partner organizations. Others decide to do business on their own, or not to continue. Each AE provides local smallholders with relevant services. These include market connections, good inputs, crop advice, and digital banking.

Last year, we aimed for at least 30% of AEs to be female. We achieved more than 42%. This excellent result was thanks mainly to a dedicated initiative with the Bill & Melinda Gates Foundation. We aim to include even more women in the program and to increase the number of female Mentors. These supervisors select new AEs and support their business, particularly in the early stages.

In 2023, AEs were involved in some 1400 field demonstrations. These and other capacity-building initiatives reached nearly 500,000 farmers, more than one-third of them women. Soil analyses let AEs give more than 26,000 farmers customized recommendations on improving the health of their fields. AEs have also helped more than 14,000 smallholders grow drought-tolerant 'AAA' maize. This crop is now available and affordable thanks to our earlier R&D program. The maize has enabled smallholders in dry regions to increase their yields and incomes. AEs additionally facilitate farmers' access to weather insurance and credit.

To assess the program's impact, we surveyed 150 AEs aged 21 to 46 in Maharashtra, Bihar, and Assam. Satisfaction varied by state, influenced by local policies and program implementation. Overall, however, 89% of the AEs felt that their quality of life had improved; 84% reported higher incomes. Three-quarters of those interviewed said they applied their training effectively in business operations and/or farmer services. A parallel survey investigated the views of their smallholder clients. 75% of the farmers said they had improved their quality of life and professional techniques, including better use of chemical inputs. Thanks to engaging with AEs, 80% had stepped up crop or dairy production, and 79% reported higher incomes.



Beekeeping is one of the 21 'agri-archetypes' promoted in our Indian AE program.



Indonesia

Founded in 2020, [Yayasan Agri Sustineri Indonesia \(YASI\)](#) is an independent non-profit implementing SFSA programs. It introduces smallholders to innovative, affordable climate-smart technologies, and insurance, together with training. Rural entrepreneurship forms an important focus of YASI activities.

YASI's Pancer Tani program establishes young village entrepreneurs in businesses that serve their local farmers. By the end of 2023, YASI had put 772 such agri-entrepreneurs on the road to success. 73% of them are young people, 9% have disabilities. 27% of the entrepreneurs are women. Smallholders value the access that their Pancer Tani provides to good products and customer service. 85% of surveyed farmers reported increases in revenue thanks to these offerings. On average, their incomes had grown by 37% since working with a Pancer Tani.

The Agricultural Insurance program helps smallholders tackle weather-related risks. YASI designs the cover in close collaboration with insurers, financial institutions, and other expert organizations. They include [Jiva](#), [AXA Insurance Indonesia](#), [AXA Emerging Customers](#), [AXA Climate](#), and the German government's [InsuResilience Solutions Fund \(ISF\)](#). The Pancer Tani network provides an important distribution channel. For example, 838 rice farmers bought insurance via this route in the 2023 dry season and 2600 in the wet season. More than 5000 smallholders received training on insurance and its role in shielding them from certain effects of climate change.

In Indonesia, our Seeds2B program improves smallholder access to good potato and soybean seed at affordable prices. As in other countries, production and income rise as a result. Local soybean demand is increasing, primarily for tofu and fermented tempeh. However, domestic yields are still low, and production only meets about one-third of the demand. New varieties can help reduce dependence on imports and address quality issues such as short shelf life and poor drying. In 2023, YASI / Seeds2B worked on eight soybean varieties with superior yield potential. More than 8000 farmers gained experience with these varieties. Three showed promise in field trials. Testing continues in 2024. Meanwhile, introduction of a simple 'plastic house' drying technique is helping farmers reduce post-harvest losses, especially during the rainy season.



Simple technology showcased for farmers: a plastic house to dry soybean and reduce losses in the rainy season, Indonesia.

Mali

SFSA and its predecessor foundations have been working in Mali for over 40 years. Our local team works through farming organizations, seed companies and agriservice centers to improve farmers' access to resources, training, equipment, and reliable markets. The resources include good seed and climate information.

Our two leading programs in Mali are PASTTA (Partnership for Seed Technology Transfer in Africa) and [AICCRA](#) (Accelerating the Impact of CGIAR Climate Research for Africa).

Through PASTTA, the [SFSA team](#) promoted the adoption of Kabamanoj hybrid maize. This new variety achieves yields 50-110% higher than smallholders' conventional choices. Resulting financial returns were 21% higher. In the 2023 wet season, Malian farmers bought 120 tons of Kabamanoj seeds, worth about \$700,000. The maize grew on some 4000 hectares.

PASTTA also improves delivery systems by connecting local seeds partners and distributors. This has led to significant growth in the sector, for example at the company [MPC](#). PASTTA additionally emphasizes the key role of agricultural cooperatives in promoting smallholders' adoption of new tools and techniques.

Together with our AICCRA partners, we have established 22 Centers for Mechanized Services (abbreviated in French to 'CEMA'). In 2023, these served 60,000 farmers. Through service agents, CEMA also disseminate RiceAdvice. This digital decision-making tool helps rice-growers follow Good Agricultural Practices, for example in the efficient use of fertilizers. Following RiceAdvice recommendations has proved to give farmers an average of half a ton of paddy rice more per hectare.



Government officials opening a CEMA. Its machinery includes a rototiller and maize thresher. AICCRA project, Mali.

Nigeria

Syngenta Foundation Nigeria has offices in Abuja and Kano. The team works across numerous states. It concentrates on ‘first mile’ entrepreneurship and delivery of good seeds to smallholders.

As well as establishing entrepreneurial Farmers' Hubs, our Nigerian team works on the Accelerated Varietal Improvement and Seed Delivery of Legumes and Cereals in Africa (AVISA) project. This is funded by the Bill & Melinda Gates Foundation via [CIMMYT](#). Our aim here is to strengthen the local cowpea and sorghum value chains.

Bridging between these two initiatives, in 2023 we formally opened the first [AVISA Farmers' Hub](#) in Nasarawa State. It supports commercial cultivation of cowpea, sorghum, groundnut, and pearl millet, and provides farmers with education, services, and valuable inputs. Two further such Hubs also opened last year.

With a total of 31 Farmers' Hubs in the country, we surveyed the impact so far. The feedback was overwhelmingly positive. 95% of surveyed entrepreneurs reported an increase in their income. They attributed this directly to our Foundation's work. Hubs' beneficial effects go much further, however. The entrepreneurs also play a key role in promoting at least one climate-smart agricultural practice or technology to their clients. To build smallholders' capacity, they provide personal extension advice, run field demos, and spread the use of IT tools. Despite gender challenges stemming from religious and cultural norms, three-quarters of the Farmers' Hub managers train women farmers. Around a quarter of the farmers served are female.



My community and I focus mainly on tomato farming. We used to face challenges during the dry season, due to lack of training, varieties, and market links. When the Syngenta Foundation introduced us to high-quality tomato varieties, we saw remarkable yields. Ever since, we've been consistently purchasing these seeds and benefiting from training and connections to seed companies.

Ruth Yakubu
Farmer, 35 years old

Senegal

We have been active in Senegal since 2014. Our Agriservice Centers give young men and women new employment opportunities. The Seeds2B team focuses on new varieties and strengthening seed systems to improve farmers' access to the varieties they need.

A strong focus of our Senegalese Farmers' Hubs is the improvement of vegetable quality and quantity. In 2023, a total of 38 new Hubs started business. 13 of these were established in partnership with the Feed the Future Naaforé Warsaaji project, run by [Connexus](#) with funding from [USAID](#).

Our team surveyed farmers' satisfaction with the Hubs, notably in the Senegal River Valley. Almost all of them reported benefiting from nursery sales; one-quarter of participants also mentioned advisory assistance. Satisfaction with the products and services was generally high. Some 87% of the surveyed smallholders reported production improvements. They mainly attributed these to the Hubs' good nurseries; many also mentioned advice, disease-resistant plants, and new varieties. High-quality nursery seedlings naturally cost more than informally traded alternatives. The investment, however, is worthwhile. Thanks to better crops, survey participants reported a 26% average rise in income.

Rice production continues to benefit from our support of mechanization and related advice. We have been establishing CEMA (Mechanization Service Centers) for a decade, together with Service Provider Agents (APS). As well as machinery, young APS also promote climate-smart tools such as RiceAdvice. This app, developed by [Africa Rice](#), has helped farmers reduce fertilizer use by 18% and increase their income per hectare by almost 36%.

Coumba Mané, a fonio grower from Tambacounda, Senegal, trains fellow farmers on best practices. With our support, she accesses good seeds, boosting her yields.



Vietnam, Myanmar and Cambodia

SFSA has been active in the Mekong region since 2018. In Cambodia, we partner to pilot Farmers' Hubs, establish Good Agricultural Practice protocols for seed production, develop agricultural insurance and enhance smallholders' financial literacy. In Myanmar and Vietnam we help local seed companies to serve farmers and grow.

Last year in **Cambodia**, the Foundation piloted weather insurance for fish farmers. The pisciculture cover addresses similar risks to those in crop farming: temperature extremes, heavy downpours, or lack of rain. This initiative aims to protect farmers from losses due to environmental factors affecting fish growth, health, and infrastructure. We also offered crop insurance to Cambodian farmers, combined with training on the benefits and requirements for claims. This capacity-building drive reached more than 7700 farmers directly, with thousands more informed via social media. In the 2023 wet season, more than 1000 farmers took out weather insurance for rice, maize, and cassava. This was the first time that smallholders had been able to insure all three crops simultaneously. Partnerships with FORTE Insurance, AMK Microfinance, IBIS Rice, World Vision, and iDE with financial support from the [Swiss Capacity Building Facility](#) (SCBF) have been crucial for the development and adoption of these insurance products.

In **Myanmar**, the Seeds2B team assists local seed partners in launching new improved 'climate-smart resilient' varieties. In 2023, we focused on mung bean, high-oleic groundnut, and the introduction of biofortified pearl millet. For the latter, the Foundation team collaborated with [AWBA](#) and [ICRISAT](#) to develop and provide suitable iron-enriched varieties. Studies of agronomic performance and iron content made significant progress in 2023. The results enabled identification of the most promising varieties for registration. ICRISAT will guide AWBA/SFSA on suitable licensing frameworks. We also explored the market potential for biofortified pearl millet in partnership with the snack producer H&H. Testing included blending likely varieties with chickpea and cashew to make nutritious cookies.

In **Vietnam**, we achieved registration of the first tropically adapted potato (see the R&D section below). An extensive trialing network is now evaluating this variety in a no-till rice-based cropping system.



I used to rely on traditional seed exchange with other farmers for mung beans, but I had low yields. The Syngenta Foundation / GSR program has provided me with access to high-quality mung bean seeds and technical support. I hope for continued higher yields and better price for my produce.

Myint Kyaw
Mung bean farmer
Yar Gyi Taw, Myanmar

Switzerland

Building bridges from Basel: The Foundation's focus is Africa and Asia. But it is also active in numerous ways in its home country, Switzerland.

In 2023, the Syngenta Foundation continued a wide range of activities in Switzerland. In October, for example, we hosted a highly successful Learning Forum on the [NICE](#) project. The public event was part of a Basel University program on the city's many connections with Africa. The Syngenta Foundation and its predecessor organizations have had their headquarters in Basel for 40 years. At the Learning Forum, program managers from Kenya and Rwanda discussed with the audience and representatives of our other Swiss NICE partners how best to improve African city nutrition. The event also provided a bridge to a week of knowledge exchange with Swiss cities held in early 2024.

In December 2023, we were again on stage in the panel discussion at the annual prize-giving event run by the [Swiss Forum for International Agricultural Research](#). As a long-standing member of SFIAR, we particularly support young Swiss researchers active in developing countries. As part of our own international R&D commitment, we continued our collaboration with the University of Bern on the Tef Improvement Project (see the R&D page of this Report).

In addition to their main jobs, Syngenta Foundation employees also voluntarily commit expertise and energy to relevant national organizations. Most notably, we provide the current Board Chair of the [Swiss Capacity Building Facility](#). Further colleagues co-lead two of the working groups of our philanthropic association SwissFoundations. One of them was a speaker at the organization's annual symposium.

A further example of our broader commitment to Swiss society is our role in the *Zivildienst*. This is the civilian national service, normally in lieu of the military draft. The Foundation has been a recognized *Zivildienst* employer since 2010. In 2023, our reputation again helped us attract excellent volunteers for varying periods of service. Three civilian graduates performed a broad range of tasks at our head office in Basel. With even younger people in mind, we also contributed two information sessions for Syngenta employees' children attending 'Future Day'. This nationwide annual event gives school pupils first insights into the world of work.



Learning Forum on healthier urban nutrition at Basel.



Other Highlights

R&D and Climate-Smart Agriculture



Novel, tropically-adapted potato varieties

The public-private partnership between [HZPC Holdings BV](#) and the [International Potato Center](#), brokered by SFSA, could revolutionize the potato industry: It is developing new varieties suited to tropical climates. Crossing of the partners' germplasm produced families of true potato seed which underwent selection and trials in Vietnam. Several promising clones have emerged from the program. In 2023, Vietpo Corporation registered HCIP210, a high yielding, white-fleshed table variety which resists late blight and viruses well. This and several other tropically adapted varieties were developed in just eight years. Traditional approaches take a decade or longer. The program is now distributing the varieties for testing and registration in other Asian and African countries. A detailed strategy will guide the successful introduction of these innovative potatoes to smallholders.



Climate-resilient Tef for Ethiopia

Tef, a gluten-free, nutritious grain, is a vital cereal for Ethiopians. Despite its regional significance, it has been largely overlooked by international agricultural research. The resulting lack of varietal development has contributed to tef's persistently low yields. Since 2006, we have been supporting tef improvement at the [University of Bern](#). Work there has included development of new lines better able to deal with climate-related stresses such as drought and lodging. Overall, the program has led to release of five new varieties and distribution of 1600 tons of seeds to farmers. Involvement of the Ethiopian [Institute for Agricultural Research](#) (EIAR) and of local seed companies has been crucial. In 2023, dissemination of the *Ebba* variety continued. A program funded by the [Swiss Agency for Development and Cooperation](#) focused on robust value chains supporting food security and serving the market for processed tef.



Protecting and disseminating improved cassava varieties

Cassava is a vital staple in sub-Saharan Africa. Together with [Embrapa](#) in Brazil and the CGIAR, we aimed to improve cultivation by increasing multiplication rates, germination, and vigor. In Malawi, we demonstrated that [Mandiplus seed treatment](#) not only protects cassava stakes from pests. It also boosts germination, yield, and profits, especially under whitefly pressure. These findings align with previous trials in Tanzania. Further studies confirmed the absence of chemical residues, echoing results from Uganda in 2022. In East Africa, collaborations with [NaCRRRI](#) and seed partners are expanding. In Brazil, Mandiplus is progressing toward registration, with support from Embrapa and Syngenta. The Mandiplus approach holds promise for scaling improved cassava varieties in East Africa. It is also potentially applicable to crops such as sweet potato, banana, and yams.



Supporting soil health and yield stability in African cropping systems

African smallholders contend with many challenges. These include climate change and economic pressures. Factors such as drought and low-input maize monoculture often degrade soils and reduce crop resilience. We address these issues by developing regenerative agricultural practices, crop diversification, soil fertility, and access to good seeds and planting technologies. In 2023, sustainable practices like minimum tillage and crop rotations were demonstrated in Kenya's Central Highlands, increasing local seed availability and output market linkages. Partnerships with [AgDevCo](#) and others are deepening the exploration of [regenerative agriculture](#). The work continued to support the development of existing and new smallholder 'foodscapes' in partnership with [TNC](#), [Agventure](#), [Solidaridad](#), [One Acre Fund](#) and others. We also partnered with the [International Institute for Tropical Agriculture](#) to enhance soil health for more Kenyan farmers, focusing on soil fertility and crop diversity. The collaboration aims to develop soil management recommendations and support the Smallholder Action Coalition for Climate Adaptation (SACCA).

Breeding crop varieties that Africa really wants

Like other products, new varieties only get used if they meet a need. The Demand-Led Breeding (DLB) program has helped African plant breeders better understand and focus on the demands of their farmers and markets. Leading African educators and breeders are championing DLB. This is stimulating more entrepreneurial breeding.

A 2013 study commissioned by the CGIAR Impact Assessment team showed that in sub-Saharan Africa, farmers were only planting modern varieties on one-third of the crop area. Experts believed that one reason for this limited adoption lay in plant breeding: Scientists were not developing varieties that met consumers' – and therefore farmers' – demands and preferences.

This hypothesis was the starting point for a major eight-year program: *Demand-led plant variety design for emerging markets in Africa*. Funding and technical support came from a Food Security Alliance between the Australian Centre for International Agricultural Research (ACIAR), The Crawford Fund and our Foundation. The University of Queensland provided program management. The DLB program focused on three main areas: Plant Variety Design, Education & Professional Development, and Policy & Advocacy.

In the first phase (2014-2018), African and international partners co-created DLB. Pan-African training of both next-generation and mid-career breeders came from leading African universities and professional crop networks. These included the African Centre for Crop Improvement (ACCI, University of KwaZulu Natal), the West Africa Centre for Crop Improvement (WACCI, University of Ghana), PABRA (Pan-Africa Bean Research Alliance / CIAT Africa) and the Biosciences eastern and central Africa (BecA)-ILRI Hub in Nairobi. Members of WACCI and PABRA received the Africa Food Prize in 2022 and 2023, respectively.

The program is broad and inclusive: 26 workshops welcomed breeders from across Africa who were studying a food or fodder crop¹. To date, more than 600 have participated in DLB training and mentoring. They are members of the Community of Practice (CoP) led by Nasser Yao, DLB's Pan-African Coordinator, based in Nairobi. The CoP, networking and collaborative spirit have been key to stimulating change and creating successful varieties.

Phase II (2019-2023) focused on implementation of DLB in the breeding programs of NARS (national research organizations), universities and some CGIAR centers. The program used beans in Eastern and Southern Africa and tomato in West Africa as test value chains for matching breeding to market demands. Among the educational resources, a module on Gender & Inclusivity helps breeders target women's needs better. Universities in South Africa, Ghana, Ethiopia, and Kenya routinely include DLB principles in their postgraduate training. At the University of Nairobi, DLB forms an official part of the PhD curriculum.

Another major achievement has been DLB's pioneering work in introducing the concept and practice of Product Profiles. Each profile describes a variety's desired characteristics. DLB was the first program in Africa to advocate for product profiling as a critical design tool to drive breeding goals. The continent's scientists are now widely adopting this approach. Currently, more than 20 profiles are in use across 11 crops. NARS' application of DLB principles has already led to new registered varieties of beans, tomatoes, and sorghum that are proving popular with farmers.

Policy & Advocacy work focused on institutional change in public breeding in Ethiopia, Ghana, and South Africa. In Ghana, the government has invested \$1 million to improve the seed system for tomato varieties bred at WACCI in Accra². Ethiopia has adopted DLB in national breeding programs for sorghum and other priority crops, under the leadership of the National Variety Release Committee.

In 2023, ACIAR commissioned an external review of Phase II. In November the review team held a concluding workshop in Nairobi with DLB partners and some 30 African breeders. The team rated the DLB program as outstanding. Its report underlined that the partnership had exceeded expectations, because demand-led principles are now widely known and being implemented in countries, crops, and institutions across the continent. A vital success factor has been African experts' vision, leadership, and championing of change.



¹ Training resources, product profiles and policy briefs are available via www.demandledbreeding.org

² Information on the Ghanaian business case for tomatoes is available via WACCI: <https://wacci.ug.edu.gh/content/business-case-tomato-value-chain-ghana-journey-towards-self-sufficiency>

Improving national and regional policies and regulations

Our Policy work focuses on a strong ‘enabling environment’ for sustainable smallholder farming. Foundation research papers for policymakers and other stakeholders are available on our [website](#).

In 2023, we implemented our refreshed Policy Engagement and Advocacy Strategy. This includes activities tailored to the local situation in several countries. Our Policy team partnered with leading research organizations to propose improvements in a range of areas. The topics included reorienting agricultural R&D, climate-smart agriculture, soil health, nutrition, and low-carbon agriculture. Our efforts involved both policy studies and advocacy for change.

Through the NICE project (see below), we are engaging with government officials in Bangladesh to improve food system governance and increase public awareness of safer food practices. A significant milestone has been the creation of Standing Committees on City Nutrition and Food Systems in Rangpur and Dinajpur. We also advocate for the inclusion of nutritious, sustainably produced foods in the national public procurement system.

In Indonesia, we have recently focused on public R&D in the agriculture and food sector. Following the full report at the end of 2022, we issued a policy brief early in 2023. This led to a series of high-level policy roundtables. They included discussions with the Deputy Minister for Food and Agriculture, and with leaders of the National Research and Innovation Agency. Similar policy research focusing on reorienting agricultural R&D is underway in Kenya and India. Preliminary results highlight comparable challenges to those in Indonesia. These include the need for increased investment, and for improved governance and coordination across institutions.

In China, The Nature Conservancy and we have been studying [the effects of subsidies and incentives on soil health](#) and Green agricultural development. One of our focal areas was on subsidy policies for organic fertilizers in Gansu Province apple production. Our studies make several recommendations. These involve regulating organic fertilizer standards, strengthening market supervision, supporting agricultural science and technology, and promoting large-scale and cooperative farming. We also continued our ‘Green Manure’ training with the Gansu Academy of Agricultural Sciences. In 2023, field days promoted green manure use to more than 550 farmers and technicians. We hope that our work will help shape future organic fertilizer subsidies.

As part of our China-Africa Agricultural Cooperation program, we completed analyses and developed strategies to [strengthen the rice value chains](#) in Nigeria and Mali. Our aim is to improve collaboration between stakeholders and attract more foreign investment in seeds, milling and equipment. High-level workshops in both countries validated our findings, shared insights from China, and secured commitments to implement our recommendations. Resource mobilization plans are now in place to identify funding needs and set priorities for attracting investment. In Nigeria, a locally based Chinese agricultural company has signed an agreement related to improved rice varieties. In Mali, our local team has been working with another company to trial Chinese rice varieties that could boost yields and improve farmer income.



Farmers in Gansu discover the benefits of orchard ‘green manure’.

Better nutrition and food security

The Nutrition in City Ecosystems (NICE) project aims to improve nutrition and health, and to reduce poverty in secondary cities. It does so by increasing the demand and supply of nutritious food produced using agroecological practices. It involves women and youth through initiatives like Farmers' Hubs and strengthens local food system governance. The six project cities are in Bangladesh, Kenya and Rwanda. Co-financed by the Swiss Agency for Development and Cooperation, NICE is implemented by a public-private Swiss consortium. Our fellow members are the Swiss Tropical and Public Health Institute, ETH Zürich, and Sight & Life.

Key achievements in the first three years include progress in six areas.

- ✓ **Research:** Studies across the cities to inform intervention strategies, including nutritional assessments of 1200 malnourished urban inhabitants and surveys of 900 farmers on agroecological practices.
- ✓ **Governance:** Multisectoral Food System Platforms, involving women and youth, with regular meetings and strong leadership committees.
- ✓ **Demand Generation:** Major campaigns in all three countries to raise nutrition awareness. Nutrition Clubs in urban schools and nutrition workshops. More than 43,000 people had participated by 2023.
- ✓ **Production and Supply:** 250 Farmers' Hubs across the three countries, training for thousands of smallholders in Good Agricultural Practices, support for the establishment of supply chains with quality management and traceability systems, while aggregating produce for sale to off takers.

- ✓ **Knowledge Exchange:** Online learning sessions, national and international peer-learning events, and shared experiences at international conferences.
- ✓ **Policy Dialogue:** Review of food system policies for improvements, support for local governments in policy drafting, and advocacy for the formation of committees to oversee food system work.

NICE has already led to improved food systems governance, increased demand for nutritious food, and enhanced production and supply chains, with a focus on knowledge sharing and policy engagement.

Nelly Netima keeps records of the tilapia being harvested from cages in Lake Victoria, from Hainja Farmers' Hub in Busia County, Kenya.



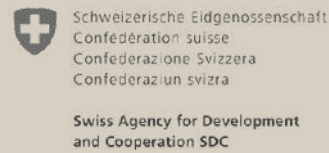
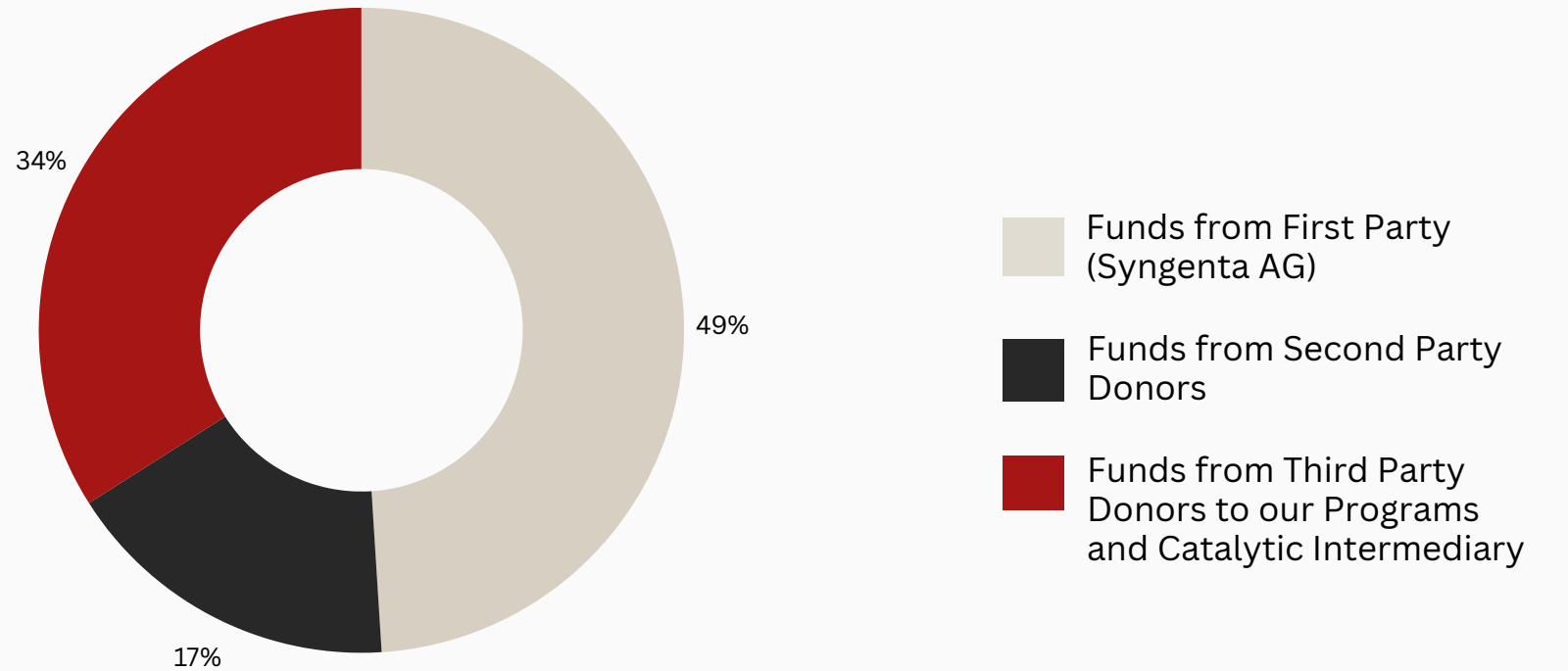


Resourcing and Partners

We are very grateful for the financial and in-kind support of Syngenta AG and our other partners. In 2023, they provided funds of \$38 m¹. These funds were allocated as follows

USD38 million

Total support in 2023



Some of our major partners (including investing, technical and implementing).

¹ Total sum raised. This includes funding provided by Syngenta AG to SFSA HQ and country offices as well as funding from other sources that goes directly into local organizations and programs. Interim financial statements, unaudited. In 2023, funds from Syngenta included the contribution to Syngenta Foundation India.

Our Progress in Numbers

		Farmers supported ('000)				Businesses selling SFSA supported products (SPs)				Sales of SFSA-SPs (\$ m)			
		2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023
Agriservices*	Asia	607.1	883.3	1599	1670.7	4003	7590	14508	18549	23.4	97	119	126.3
	Africa	28.3	35.8	124	150.4	171	217	332	493	1.6	1.9	3.8	5.4
Agricultural Insurance Solutions*	Asia	32	173.7	386	335.9	31	14	26	102	0.02	0.11	0.68	0.66
	Africa	100.4	66.1	348	691.6	27	34	43	97	0.75	0.71	6.8	19.6
Seeds2B	Asia	16.5	31.9	39.4	25.3	34	31	55	25	0.77	1.4	1.7	1.4
	Africa	90	181.7	224	246	152	94	74	95	5.3	6.5	9.6	7.4

		Beneficiaries from capacity building ('000)				% of women among farmers supported				% of women owned businesses				Jobs created (% held by youth)			
		2020	2021	2022	2023	2020	2021**	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023
Agriservices*	Asia	12.2	20.5	410	518	n/a	16%	32%	51%	17%	23%	35%	57%	n/a	6600 (56%)	10017 (65%)**	10235 (81%)
	Africa	10.2	11.6	24.5	35	n/a	20%	39%	35%	29%	26%	38%	37%	n/a	576 (57%)	670 (49%)	1348 (69%)
Agricultural Insurance Solutions*	Asia	11.2	202.8	291	209.6	n/a	33%	19%	22%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Africa	8	20.3	34.9	3.3	n/a	55%	42%	45%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Seeds2B	Asia	1.9	0.8	0.7	0.8	n/a	14%	28%	18%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Africa	7.7	12.4	18	28	n/a	26%	15%	35%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

The specific details of these indicators are outlined in each section. Data are collected biannually, partly through automated means using SFSA's or partners' IT tools. For manually collected data, we utilize Smartsheet with automated validation processes. Definitions and methodologies for the indicators may change based on the evolution of activities and the implementation of our strategy.

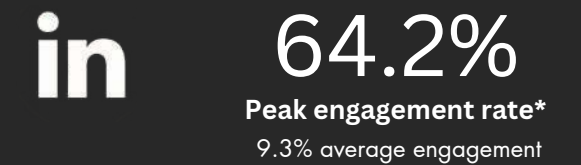
(*) Values include SFSA programs and catalytic intermediaries.
 (**) Values were retrospectively adjusted based on revised figures from partners.

Social Media Reach

Follower Growth



Engagement Rate



*With our post on How Can We Improve Smallholder Innovation?

Content Reach



A bright future for smallholder farming

syngentafoundation.org



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