

WALKING WITH THE FARMER

The journey of
the Sasakawa Africa Association
since 1986



Ryoichi Sasakawa and the former U.S. President Jimmy Carter discussing the launch of SAA



The former U.S. President Jimmy Carter, Norman Borlaug, and Yohei Sasakawa at the Carter Center, Atlanta, Georgia



Norman Borlaug with farmers in Blantyre, Malawi



Ethiopia's Prime Minister Meles Zenawi with the former U.S. President Carter and Marco Quinones in a discussion with farmers at an SAA demonstration plot



Yohei Sasakawa and Norman Borlaug at a media event with Jerry Rawlings, President of Ghana



Deola Naibakelao, Program Officer (3rd from left) and Chris Dowswell (3rd from right) during their visit to Cape Coast University, Ghana



The first SAFE diploma group enrolled at Ghana's Kwadaso Agricultural College



Ms. Naoko Ishii, CEO of Global Environment Facility, Dr. Akinwumi A. Adesina, President of African Development Bank, Japanese Prime Minister Shinzo Abe, Ruth Oniang'o, and Yohei Sasakawa (front row, from left to right) with speakers at the SAA official side event for TICAD VII, Yokohama, Japan



Yohei Sasakawa, Ruth Oniang'o, and Amit Roy at The Nippon Foundation to discuss SAA's strategic direction in 2019



At SAA's 35th anniversary event in Ethiopia in 2021, the SAA President, Country Director and staff enjoyed the occasion with farmers, delegates from the Ministry of Agriculture, and other partners



SAA Program Officer with an extension agent examining a plant in a farmer's field in Isingiro District, Uganda



Field day on regenerative agriculture practices (intercropping of wheat and faba beans) in the SNNP region, Ethiopia



A group of women in Kaduna, Nigeria, cleaning paddy rice for parboiling to enhance its nutritional value



Private service providers with a cereal dehuller in Sikasso region, Mali

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Acronym

AGRA	Alliance for a Green Revolution in Africa
BCCI	Bank of Credit and Commerce International
CASIN	Center for Applied Studies in International Negotiations
CBF	Community-based Facilitator
CDC	Centers for Disease Control
CIMMYT	International Maize and Wheat Improvement Center
ICT	Information Communication Technologies
IFDC	International Fertilizer Development Center
JSIF	Japan Shipbuilding Industry Foundation
MOFA	Ghana's Ministry of Food and Agriculture
NERICA	New Rice for Africa
NGO	Non-Governmental Organisation
PHTC	Postharvest and Trade Centre
QPM	Quality Protein Maize
SAA	Sasakawa Africa Association
SAFE	Sasakawa Africa Fund for Extension Education
SDGs	Sustainable Development Goals
SG 2000	Sasakawa-Global 2000
SOFRAIP	Soil Fertility Recapitalization and Agricultural Intensification Project
USAID	United States Agency for International Development
WHO	World Health Organization

Foreword

In the field, one finds not only challenges, but also the most suitable solutions for them. For 35 years, the Sasakawa Africa Association (SAA) has embodied this philosophy, and for this they have my utmost admiration.

In the 1980s, when Ethiopia was in the midst of an unprecedented famine, my father, the late Ryoichi Sasakawa, declared at an international conference that “One action is worth more than a thousand discussions,” and then joined Dr. Norman Borlaug and former President Jimmy Carter in going into the field. These men did this because they shared the belief that it was crucial to be in the same place, and sharing the same perspective and the same feelings, as the people who needed help.

SAA was born from this completely field-oriented way of thinking. It has always striven to remain close to Africa’s farmers, pursuing its efforts with the passion to allow no African child to go to bed hungry. During the 35 years of its efforts, it has dealt with many challenges, sometimes requiring strict guidance, and at other times facing unavoidable circumstances that forced it to begin its work anew. However, its unyielding perseverance, and its way of “walking with farmers” and putting them first, have combined to make SAA a truly unique organization in sub-Saharan Africa.

This passion and perseverance have enabled SAA to work with the region’s farmers to achieve increases in crop production that had previously been thought impossible. It is my strongest hope that SAA will continue to cooperate with farmers, working as equal partners to achieve the African Green Revolution that we dreamed of 35 years ago, and I solemnly pledge that I also will continue to work

with passion and perseverance until the day when Africa's Green Revolution comes to fruition.

In closing, I must express my sincere gratitude to SAA's chair, the Honorable Professor Ruth Oniang'o, as well as its vice-chair, Dr. Amit Roy and all of the members of SAA for their generous cooperation in the publication of this book. I would like to also offer my deepest thanks to its author, Mr. Thomas Hager. This book is not only a record of agricultural development in Africa, but also an invaluable source of information regarding politics, social change and the people themselves who are involved in agriculture in Africa. Mr. Hager unfortunately passed away before the book was completed, but the ideas and words that he put into it will live on forever, and I would like to express my deepest gratitude, and my condolences to his family, who supported him to the end.

Yohei Sasakawa
Chairman, The Nippon Foundation
May 2022

Chapter 1

A QUESTION OF HOW

It was a just short interchange during a long meal, but the outcome would reverberate across an entire continent and change the lives of millions of people.

It was August 1984 when the wealthy Japanese philanthropist Ryoichi Sasakawa and his son Yohei talked with the American agronomist Norman Borlaug. They were attending an international conference that Sasakawa's foundation, the Japan Shipbuilding Industry Foundation (JSIF), had financed to honor the fiftieth anniversary of a vital scientific breakthrough. It was a relatively small event on the Sasakawas' calendar, a minor effort compared to many of the others the foundation was involved in. The discovery it honored had been made by a Japanese scientist, Gonjiro Inazuka, a plant breeder who developed a new strain of hardy, high-yielding dwarf winter wheat called Norin 10. This new grain variety had proven vital in the work of Norman Borlaug, who used it to help kick off what became known as the Green Revolution—a package of high-yielding new grain varieties, powerful fertilizers, and optimized farming techniques. Borlaug, who was heralded as “The Father of the Green Revolution,” won the

Nobel Peace Prize for vastly increasing global food production in the 1960s and 1970s. The effects of his Revolution, especially in Asia, had helped stave off global famine.

By honoring Inazuka's work, the Sasakawas were simply reminding everyone that Japanese science had played an important role in this endeavor as well. The conference itself was pleasant, celebratory, and not all that important—except that it drew Norman Borlaug to Japan and put him in the same room with the Sasakawas.

At dinner following the conference, the two Japanese philanthropists, Borlaug and a few other scientists engaged in a wide-ranging conversation during which Ryoichi asked the American scientist about the possibility of increasing corn and sorghum yields to ease hunger in Africa. Could a Green Revolution be kicked off in Africa, perhaps to increase the production of sorghum, a family of grains important in much of the sub-Saharan part of the continent? Borlaug replied that he hadn't had much experience in Africa, but that he didn't see any reason why an approach similar to the one he'd proven to be effective in Mexico and Asia couldn't be adapted to Africa. It would require not only the proper crop strains and fertilizers, but, he stressed, education campaigns to spread the proper techniques among hundreds of thousands of smallholder farmers. Theoretically, it was possible, he said. But practically, there would be a lot of work to be done. As Yohei later recalled, "Dr. Borlaug replied, 'Although I am aware of outstanding research on corn and sorghum in many African countries, the information and results gained from such research has yet to be applied effectively in a manner that actually increases agricultural productivity.'" In other words, early research results had yet to be translated into practical programs for farmers.

* * * *

"Dawn, and as the sun breaks through the piercing chill of night on

the plain outside Korem, it lights up a biblical famine.” These dramatic words opened a seven-minute BBC television report from Ethiopia, spoken in the calm, intense baritone of veteran correspondent Michael Buerk, his professional delivery forming a striking contrast with the shocking images that illustrated his story. For the first time, the world saw the reality of famine in Africa.

The camera of African photographer Mohammed Amin showed a flat, dusty landscape. Hundreds of starving people holding empty bowls were huddled together on the ground. Waves of emaciated refugees hobbled toward even the smallest shipment of food. There were heart-wrenching close-ups of skeletal babies and sobbing mothers. The camera caught a funeral procession with white-robed mourners. Buerk noted that forty people had died there in a single day. A few western aid workers struggled to feed the living and treat the dying.

It was seven minutes of condensed outrage. First broadcast on October 23, 1984, two months after the conversation between the Sasakawas and Borlaug, Buerk’s report was played and replayed for tens of millions more viewers in the next few days by networks around the world. It went “viral” before there was a word for that. Today it is considered one of the highest-impact television news reports of all time.

And for a few years it seemed to change everything.

The speed of the response was exemplified by an Irish rock singer, Bob Geldof, who was so deeply moved by the BBC report that he quickly organized a supergroup he called Band Aid to help raise money for relief. He and fellow song writer Midge Ure wrote “Do They Know It’s Christmas?” which was recorded in a single day on November 25 and featured the biggest British and Irish musical acts at the time. The single was released in the United Kingdom a week later, entered the UK Singles Chart at number one and became the fastest selling single in UK chart history, selling a million copies in the first week alone and passing three million sales on the last day of

1984. Geldof followed this by organizing a globe-spanning network of charity concerts, Live Aid, broadcast on 150 media networks and seen by an estimated forty percent of the world's population.

Everyone wanted to help. After the Buerk report and the Live Aid blitz, money flooded in to dozens of aid agencies and charitable efforts in the region. Much of it went toward immediate food and medical aid. Within a few months, hundreds of thousands of generous donors from dozens of nations had secured and delivered countless tons of medicines, grains, and clothing, and saved thousands of lives. It seemed that the hearts of the world had been touched.

Then, through 1986 and 1987, the flood slowed to a trickle. There were other disasters that grabbed public attention: the explosion of the Chernobyl Nuclear Power Plant, the in-flight disintegration of the Space Shuttle Challenger. In 1987, the world stock market crashed. There was so much to worry about, so much to care about. There is also, in the world of nonprofits and charitable giving, what is known as "compassion fatigue." It happens when donors and supporters continue to hear heartbreaking stories without enough news about progress. The situation in Africa was like this: a serious, deep-rooted and on-going problem that could not be easily solved. But even as the aid continued to trickle in, questions remained. Were the much-needed shipments of food and medicine that began arriving in Ethiopia enough? Was the "developed world's" response no more than a short-term fix, a bandage applied to a much deeper injury? Were there longer-term programs that could stave off hunger not just for a year or two, but for generations?

* * * *

Ryoichi Sasakawa wanted to do more. His group, the Japan Shipbuilding Industry Foundation (JSIF), had been among the first to rush shiploads of food aid to Ethiopia. But Sasakawa looked farther

ahead and saw a longer-term challenge. Both he and his son Yohei wanted to be involved in something bigger, something with benefits that would last for generations, not just a year or two. They wanted to address the issue of food insecurity in Africa at its roots. They wanted African farmers to grow more of their own food, to feed their own people rather than relying on shipments of food from other countries. They wanted to modernize and revolutionize African agriculture, to increase yields and make entire nations food secure.

He began to contemplate putting together a sort of “super-team” to get to the roots of the problem. Now in his eighties, Ryoichi was firmly in charge of the Foundation he had built decades ago, determining where funds would flow, from health initiatives to cultural exchanges. By the mid-1980s, however, he depended increasingly on the assistance of his son Yohei, who was taking a greater role in outreach and management.

Together, they would make something happen. The question was how.

Ryoichi Sasakawa and Norman Borlaug were, in important ways, kindred souls. When the Ethiopian famine shocked the world in 1984 both men were mature—Borlaug in his seventies, Sasakawa in his eighties—both enormously successful, both self-confident, and both dedicated to doing good in the world. They were also stubborn, sure of themselves, blessed with seemingly endless energy, and intolerant of top-heavy bureaucracies. When they got hold of a good idea, they wanted to test it quickly, get it going, see if it worked. In other words, they were men in a hurry, and they could be impatient with those who weren't. They were down-to-earth visionaries who thought on a grand scale, but they also knew the importance of building organizations and persuading others to help.

And they both understood the importance of food in the modern world. They had grown up in farming areas: Sasakawa amid the rice

fields of Japan; Borlaug in the wheat and corn country of Minnesota. They both deeply appreciated the link between adequate food and world peace.

Africa would be another tie that bound them together. That brief conversation in August at the Japan anniversary of Norin 10 was the start of a dialogue that would continue for many years and eventually lead to programs that would feed millions of people. The Sasakawas, intrigued by the chance of exporting the Green Revolution to Africa and spurring food production increases like those seen in Asia, came to feel, as Yohei later said, that “the expertise of Dr. Borlaug was absolutely essential for tackling Africa’s food problems.”

They quickly arranged to reach out to him with an offer to fund an ambitious program in Africa. But Borlaug, they soon discovered, had no intention of starting a food revolution in a new continent. He was in his seventies, easing toward retirement, had just taken a comfortable part-time faculty position at a Texas university, and was getting ready to write his memoirs. Of course, he knew about the severe drought in Africa and the resulting “vast landscape of human misery.” He was aware that much of the continent south of the Sahara was producing far less food than it could, and that growing food insecurity threatened its fast-growing population.

But he also knew enough about the food situation in Africa to be wary of quick fixes. The problem went far deeper than a few dry years. Fixes ran well beyond what most of the current wave of aid-givers was prepared to do. Borlaug was not built for short-term actions. He had seen too many good-hearted people dive into a year or two of aid for the needy without thinking about long-term planning. The situation in Africa demanded this kind of difficult, strategic, forward-looking approach. “Once the drought was broken,” he wrote, the current aid-givers “hoped agriculture would recover and food supplies would again become plentiful. Unfortunately, this will not happen.”

He had seen enormous success with a complete, fully developed,



Norman Borlaug at work in Mexico, where he developed high-yielding wheat varieties

Norman Borlaug

Norman Borlaug knew about farming. He was born in 1914 in rural Iowa and grew up working on a small family farm, raising crops and livestock. He got his early education in a one-room schoolhouse.

It was brawn as much as brain that got him into the University of Minnesota, which was interested in the young man as much for his wrestling skills as his intelligence. But he studied relentlessly, earned a bachelor's degree in forestry, and went to work for the U.S. Forest Service before he returned to graduate school at the University of Minnesota. There he earned a doctorate in plant pathology in 1942 and got a job at a large chemical company, DuPont,

researching ways to improve food production.

That brought him to the attention of the Rockefeller Foundation, which hired him to help raise the people of Mexico out of poverty—specifically by improving wheat yields. For the next 16 years he researched answers to a series of problems, learned to love the people and culture of the country, and helped to train a generation of young Mexican scientists.

It was here that Borlaug developed successive generations of wheat varieties that were hardy, disease-resistant, adaptable to varying conditions and, most important, showed very high yield potential. Borlaug's new wheat strains, coupled with optimal fertilizer use and water management, transformed Mexican agriculture during the 1940s and 1950s. The proven techniques and strains then spread to Asia and throughout Latin America, sparking what today is known as the "Green Revolution." Because of his achievements in preventing hunger, famine and misery around the world, Borlaug was awarded the Nobel Peace Prize in 1970.

The increases in grain yields, especially in Asia, were so tremendous that observers said Borlaug "saved more lives than any other person who has ever lived."

long-term system that combined the adoption of new high-yield grain varieties with increased fertilizer use, ramped-up farmer education, government buy-in and international support. His Green Revolution had worked superbly in Asia, but Africa was a very different place. The challenge of food security went far beyond better seeds and more fertilizers, and encompassed more than technology and science. It was about national governments and regional markets, transportation infrastructure and water quality, local soil types and climate, educational structures, public health support, communications systems, and a score of other factors. Improving long-term crop yields in Africa was not going to be simple.

Yet here was an extraordinary opportunity for Borlaug to measure the power of his agricultural methods against a rolling humanitarian disaster. As he weighed his response, the BBC report on the Ethiopian famine aired, triggering a global outpouring of aid, the Band Aid publicity and fundraising effort among musicians, and an unprecedented wave of food shipments to Ethiopia and other African nations. There was little doubt in Borlaug's mind that the current crisis, severe as it was, would not be the last. Shiploads of food, welcome as they were, would not solve the problem in the long term.

Africa's population was growing fast. Africa's soils were often nutrient-poor. Africa's agricultural practices were far from up-to-date, and Africa's farmers were generally too poor to afford needed investments in their land. Most of them in the sub-Saharan continent were barely able to grow enough to keep their families fed. Without investments in the entire agricultural system, without significant improvement in the continent's ability to grow more of its own food, the future was threatened by more severe famines.

Borlaug could feel the enormity of the challenge. There were no simple answers in Africa. There would be an endless amount of hard work that would have to extend over decades. His professor's office beckoned in Texas. His memoir still had to be written.

But there was something that would not let him go, something deeper that drew him to Africa. It was the people. It was the knowledge that as he settled into a placid, contented American retirement, the farmers of Africa would be suffering. The idea haunted him. “I personally cannot live comfortably in the midst of abject poverty, hunger, and human misery,” he told an interviewer.

Africa would not let him go.

* * * *

And that was true of Ryoichi and Yohei Sasakawa as well. They were determined to get the Nobel laureate on board. After the BBC broadcast highlighted the Ethiopian famine, “We pleaded with him,” Yohei remembered, “saying ‘We would like you to help improve the food productivity of poor farmers in Africa.’” But Borlaug demurred. Despite the Japanese offers of substantial financial support, he told the Sasakawas, “I am a 72-year-old scholar who is already retired. I have no expert knowledge about Africa whatsoever. Therefore, I cannot help you.”

Borlaug was a stubborn man. But Ryoichi Sasakawa was even more so. He was fifteen years older than Borlaug, and he was not slowing down. Farming was farming, and he could see no good reason why the advances that had worked with small farmers in Asia could not work with small farmers in Africa. He got on the phone with Borlaug and, speaking through an interpreter, his international program advisor Itaru Tanaka, the elder Sasakawa convinced the American scientist to agree to at least *listen* to ideas for putting an ambitious African program into effect.

Before Borlaug could change his mind, Ryoichi sent Yohei and Tanaka on a personal mission to Texas to make a formal request for Borlaug’s cooperation. Still he hesitated. The challenges were daunting; the work would be immense. But immense, too, were the possible

benefits, as Yohei and Tanaka reminded him.

They flew back to Japan with at least a partial commitment: Borlaug agreed to participate in an international gathering of experts to outline the scope of the issue and cast light on the various components involved, from food production and support infrastructure to political, economic, and health concerns. If he was going to get involved, he wanted to make sure that everyone knew what they were getting into.

Ryoichi Sasakawa agreed to fund and organize the meeting in Geneva. A tentative date was set for the summer of 1985. With Borlaug's participation set, he thought about a third piece of the puzzle, another major participant—and a very important one: former U.S. President Jimmy Carter.

* * * *

The Sasakawas' growing range of philanthropic activities through the 1970s and 1980s brought them increasingly into the public eye. Ryoichi especially seemed happy to become an international symbol of Japanese philanthropy, flying around the world, announcing new programs, meeting international leaders, attending receptions and banquets, and accepting the thanks of grateful recipients.

Foremost among those grateful recipients was former U.S. President Jimmy Carter. Ryoichi had known Carter for years. The Sasakawas had given generously to the building of his presidential library as well as to a new social justice effort, The Carter Center, a nonprofit, nongovernmental organization that the former president was devoting to the furtherance of human rights and the alleviation of suffering.

There were obvious advantages in having the former President involved. And it went beyond the prestige of his name. Carter's years as President had opened doors for him. He knew a great deal about

international politics, could call on world leaders whenever he liked, knew how to get information from the highest levels of the U.S. government, and he had a reputation that would make it possible to talk to African government officials at a very high level, thus ensuring government cooperation.

Working with the governments of individual nations would prove critical. Good scientific ideas were one thing, but getting them implemented was another. If the effort in Africa was going to succeed, it would require the cooperation and support of the host nation, preferably from the top leaders on down, easing the way for unimpeded travel, supplies, facilities, close ties with existing agricultural programs, educational outreach, and much more. Each nation in Africa would have its own ways of doing things, its own power structure and leadership, and Carter's participation would help ensure governmental cooperation across the board.

So, it was natural that the Sasakawas reached out to Carter to see if he was interested in their ideas about fighting hunger in Africa. Carter's help and cooperation was often sought by nonprofit groups involved in a wide range of global work. But the Sasakawas' idea was one of the few he jumped at. For one thing, it aligned perfectly with his pre-existing interest in the African continent. His strong interest in African health issues overlapped with food and nutrition. He had been the first sitting U.S. President to visit the continent and was already involved in helping with health and medicine programs. And the Sasakawas had been strong supporters of his ideas for The Carter Center, which would be devoted to efforts like the one they were proposing.

When he invited the former President to attend the conference Borlaug had requested, Ryoichi received a welcome "Yes" in response.

With Carter on board, planning began in earnest. The result was a conference that would lay the groundwork for the Sasakawa Africa Association (SAA) and change the trajectory of agriculture in Africa.

Jimmy Carter

Jimmy Carter still lives in Plains, Georgia, where he was born in 1924. It is a tiny farming town where he learned early about agriculture and eventually ran a successful business growing and storing peanuts. Then he got into politics.

He was intelligent, good-hearted, and popular, skyrocketing from Governor of Georgia to President of the United States in a few short years. Carter's strong Christian principles and fresh ideas were a breath of fresh air after the scandals of the Nixon years.

After winning the White House in 1976, he ushered in a new era of informality, straight talk, and a focus on solving social problems. Unfortunately, he knew little about working with Congress, and his agenda for America stalled before it could go into action. The economy started suffering from chronic inflation. He began to lose popularity.

Then political disaster hit. U.S. embassy staff were taken hostage in Iran by a new revolutionary government. Carter first failed to secure their release with diplomacy, then attempted an unsuccessful rescue operation. In the 1980 election Carter lost by a landslide to Ronald Reagan, and subsequently moved back to Plains to begin a new phase in his life.

By the time he began to work with the Sasakawa organization in the early 1980s, Carter was a full-time global humanitarian. After leaving the Oval Office, he and his wife, Rosalynn, began their long and direct involvement in Habitat for Humanity, eventually contributing to the building or repairing of more than 4,000 homes in fourteen different countries. He was also devoting his prodigious energies to funding his Presidential library and starting The Carter Center for resolving conflict, promoting democracy, protecting human rights, and boosting health efforts. Ryoichi Sasakawa and the JSIF provided him with much-needed funds. They worked well together, with Carter gaining enormous financial support, and the Sasakawas aligning their organization with one of the world's most renowned altruists. It was the start of a relationship that would help bring Carter into the effort to address food issues in Africa.



Former U.S. President Jimmy Carter at the Borlaug Symposium, Addis Ababa in 2010

Chapter 2

TWO PHILANTHROPISTS

“A man of action” is how more than one writer has described Ryoichi Sasakawa. The phrase is accurate as far as it goes. His was a long life marked by enormous energy, numerous projects, and significant achievements in the worlds of business, politics, and philanthropy, but “man of action” doesn’t capture the complexities. Sasakawa was a complicated man driven to action by an unusual mix of motivations that ranged from devotion to his mother to his support of the Emperor of Japan, from his belief in the brotherhood of all people to his conviction in the power of individual action.

He was born in 1899, at the dawn of a new century, and his life both mirrored and influenced the turbulent century to come. His father, a sake merchant, left him a small fortune which Ryoichi quickly multiplied through his acumen as a speculator in stocks and commodities, while expanding his activities—almost always with great success—into mining and other businesses. While still a young man, he had already amassed enormous wealth, some of which he used to indulge an interest in airplanes (building his own airfield, which he later donated to the government), and some of which he used to fund



Ryoichi Sasakawa (courtesy of The Nippon Foundation)

a small right-wing political party. He became a strong supporter of Japan's entry into World War II.

* * * * *

A child of a sake brewer, Ryoichi grew up in a country town outside of Osaka, a world of small farms, rice paddies, simple wooden houses, and close personal relationships. Ryoichi, however, was not one to fit in. He was an energetic, strong-willed child, a bit reckless, sensitive to criticism, and ready to fight if he thought it was necessary.

His interest was caught by something completely alien to village life: He loved airplanes. He was four years old when the Wright brothers successfully flew their first airplane, and something about it fascinated him. He wanted to fly. As a boy he climbed onto the roof of his house, strapped a pair of rice-paper shoji screens to his arms, and jumped off (somehow surviving the fall without serious injury). When he was seventeen, he ran away from home to learn from a pioneer Japanese flyer, spending two years absorbing all he could about plane design and the joys of flight. He joined the army, where he earned certificates in aeronautical engineering and the manufacturing and handling of aircraft engines.

But in his early twenties, after his arm was injured by a plane

propeller, he returned home, took over the family business after his father's death, and quickly grew the family fortune through astute investments in rice speculation. By the early 1930s he was a well-to-do young man, with money enough to pursue his interest in flying by buying planes, building a squad of volunteer flyers, and constructing his own airfield.

His energy seemed boundless. He dabbled in local politics in the late 1920s and helped found a right-wing political group called The Patriotic People's Party in 1931. He was an ultra-nationalist in those days, a believer in the Japanese occupation of Manchuria, an admirer of Germany and Italy, and a firm believer in the leadership of the Japanese Emperor. His unceasing energy and strong beliefs made him controversial. In 1935 Sasakawa was arrested and held for years by the government on suspicion of blackmailing companies while fundraising for his political party. The charges were eventually dismissed, and he went back into politics, getting elected to the Japanese Lower House of Parliament. During World War II he worked hard for Japanese victory.

And then came mass death raining from American planes, the defeat of Japan, and the arrival of occupying American forces. After surrendering himself to the Americans, Sasakawa found himself arrested as a suspected Class A war criminal, charged with impeding the development of democracy and with hostility to the United States.

Along with 2,000 others, he was incarcerated in Sugamo Prison, a Tokyo facility taken over by the Allied occupation forces to house those awaiting trial before the International Military Tribunal for the Far East. The fact-finding and trials dragged on for years. A few of the accused Japanese were executed, others received long jail sentences facing the possibility of a death sentence. Ryoichi did not succumb to despair, but rather experienced a significant internal transformation. He found that his spirits could be raised by working for others, not merely for himself. When he wasn't scrubbing out cells and hallways

he was reading, writing encouraging letters to his friends, and thinking about Japan's new place in the world. He became devoted to the idea of world peace and harmony between nations. He outlined a "Permanent Peace Plan" that he sent to U.S. President Harry S. Truman.

As time went on, it looked increasingly as if the U.S. was going to punish only a relatively small number of the accused Japanese war criminals and let others go in the service of healing wounds and restoring some stability to the nation. If he were to be released, what would he do? His old life had been swept away. He had no firm path to making a living, much less funding work for his new commitment to peace. He was still passionate about airplanes, but almost all air travel development in Japan was halted during the postwar years in order to blunt the potential military uses of air power. If the island nation of Japan wanted to explore international commerce and travel, it would not be through the air. Then as he contemplated his future and the future of his country from his cell in Sugamo, he came across a picture in a magazine. The prisoners had access to some American periodicals, and in one well-thumbed issue of *Life*, Sasakawa saw a photograph of a small, fast motorboat. Something clicked.

After three years of confinement, Sasakawa was released in December 1948 without ever undergoing trial. He walked out of Sugamo penniless. He emerged to find a new nation, a country looking for revival, for restoration, for new sources of business income and new ways of living. Spectator sports like horse racing, bicycle racing, and motorbike racing were becoming popular. Some of these sports allowed public betting on the outcome. Sasakawa had a brainstorm. Suppose he combined his interest in these new, fast boats together with post-war Japan's hunger for diversion, and used his contacts in government and business to set up a national motorboat racing system that allowed spectators to bet on the outcome. He would build a new sport in Japan, motorboat racing. He would work to

have gambling on the sport legalized by the government, with the proceeds earmarked for the development of the Japanese maritime industry. “No man is born without an urge to gamble,” Sasakawa said. Whether it was pachinko games or boat races, gambling was a part of life. The difference with boat racing was that the government would oversee the sport and use the profits for the public good.

At a stroke, his idea would provide the demoralized population with a new diversion, provide the money needed to build Japan into a seagoing power, and provide himself with a living. It would combine his skills as a politician, businessman, and lover of machinery. It would be perfect.

And it proved to be a smash hit. In 1951 Japan passed a motorboat racing law that embodied most of Sasakawa’s vision. Races were organized, crowds gathered, betting started, and money flowed. Sasakawa



Motorboat racing in 1959

was put in charge of a new organization designed to distribute the share of the proceeds the government had dedicated to the shipbuilding industry. The Japan Shipbuilding Industry Foundation (JSIF) grew through the 1960s from the proceeds of motorboat gambling, gradually becoming Japan's largest charitable foundation. During that time, Sasakawa used his political contacts to broaden the range of grants made through the JSIF, expanding the foundation's reach from the shipping industry alone to include other social needs. JSIF gave assistance to the 1964 Tokyo Olympics and funded disaster relief in Turkey, gave money for fighting disease and aiding refugees, and built cultural and economic ties through private-sector exchanges with Scandinavia, Great Britain, France, and the U.S.

By the mid-1980s, Ryoichi Sasakawa was a player on the world stage, using his undisputed control of the foundation to dispense grants large and small. He was deeply interested in relations with the United States, and helped fund the U.S.-Japan Foundation and Japanese studies programs at U.S. universities. He supported everything from the creation of a library and nonprofit center for former U.S. President Jimmy Carter to health studies undertaken by two-time U.S. Nobel Laureate Linus Pauling. His foundation was the largest individual source of funds for the agencies of the United Nations, with a special focus on the World Health Organization. The range and scale of grants was dazzling, with funding for projects large and small across many fields, the common denominator being efforts for world peace and the well-being of the needy. When it was all added up, the JSIF and (as it was renamed) The Nippon Foundation had distributed billions of dollars before the African food initiative was first being considered. "Don't we all arrive in this world naked and leave it the same way?" he said. "I plan to use all my money for society ... My wealth shall be put to perpetual use for good causes."

The aging philanthropist was known for both his generosity and his checkered background. With every humanitarian grant, it seemed,

a news story appeared pointing out his time in prison, his ties to fascism, and the money made from gambling on speedboats. Because of this, some recipients turned down the grants they were offered. He had built the infrastructure and mechanisms to fund an extraordinary array of projects—the JSIF, The Nippon Foundation, the flow of money from motorboat racing. After a lifetime of ceaseless activity, he was entering old age at the same time respected and controversial. Increasingly, he began handing over operations to his son.

* * * *

Yohei, born in 1939, was very different from his father. Where Ryoichi could be boisterous and attention-grabbing, Yohei was quiet and low-profile. Where Ryoichi's politics had veered toward right-wing activism as a young man, Yohei seemed to have no political affiliations. Where Ryoichi had jumped into causes, Yohei studied things carefully and took his time; where Ryoichi was a one-man show, Yohei worked best with the advice of others, in groups and larger organizations. He seemed as quiet and collaborative as his father had been bravura and self-assertive.

Yohei earned a degree from Meiji University's School of Political Science and Economics, an education that left him with a more nuanced understanding of global issues than his father had. As a young man, he had accompanied Ryoichi to a South Korean leprosy facility, where the effects of the disease affected him deeply. The global control of leprosy became one of Yohei's lifelong goals.

He was similar to his father in one important way: He seemed to be active everywhere, serving as his father's point man on site visits, handling the important day-to-day management that became so important as the JSIF charitable activities grew, quietly pursuing and researching Ryoichi's initial brainstorms.

Yohei would serve as JSIF President and eventually take over all

of his father's duties. But at the time of the great effort in Africa in the mid-1980s, he was still Ryoichi's "second," his steadfast right hand. He played a central role in all the early planning, acting as Ryoichi's representative and surrogate, and learning enough to take a greater and greater part in the development of the work as time went on. Eventually, Yohei's careful, collaborative approach would mark all of the changes that were to come.

It took both men to make it happen. In the beginning, Ryoichi's impulse to help after seeing the BBC report was critical. His stubborn refusal to take an initial "no" for an answer from Borlaug, and the speed with which he dispatched Yohei and Tanaka to Texas to get Borlaug aboard were critical. Action, speed, and tenacity were Ryoichi's strong suits.

But it took more to mount a long-term effort. It took careful thought, collaborative planning, strategic thinking, ongoing management, and collaboration. These would prove to be more Yohei's strengths. The two Japanese philanthropists, father and son, would both be essential to what came next.

Chapter 3

AN INTERNATIONAL FOCUS ON FOOD AND DEVELOPMENT

Putting together an important international conference requires more than a good idea. To make the meeting in Geneva happen, the Sasakawas needed someone to help with site selection, planning, and logistical support. They hired Jean Freymond, the young head of a promising, relatively new group called the Center for Applied Studies in International Negotiations (CASIN). Freymond had launched CASIN in 1979 in Geneva to provide seminars in governance for people in the public and private sectors, and then expanded into helping organize United Nations training activities for diplomats. CASIN was, he said, “an innovative venture in the spirit and perspective of the intelligent search in relation to the future of Mankind which characterized the Seventies.”

JSIF had first reached out to Freymond’s small organization in 1982 when Itaru Tanaka asked Freymond to help organize a conference on peace. CASIN’s work on logistics went well, and Tanaka and Freymond formed a mutually respectful relationship. Thus, it was to CASIN that the Sasakawas turned when they needed help putting together the summer 1985 meeting. Freymond enthusiastically

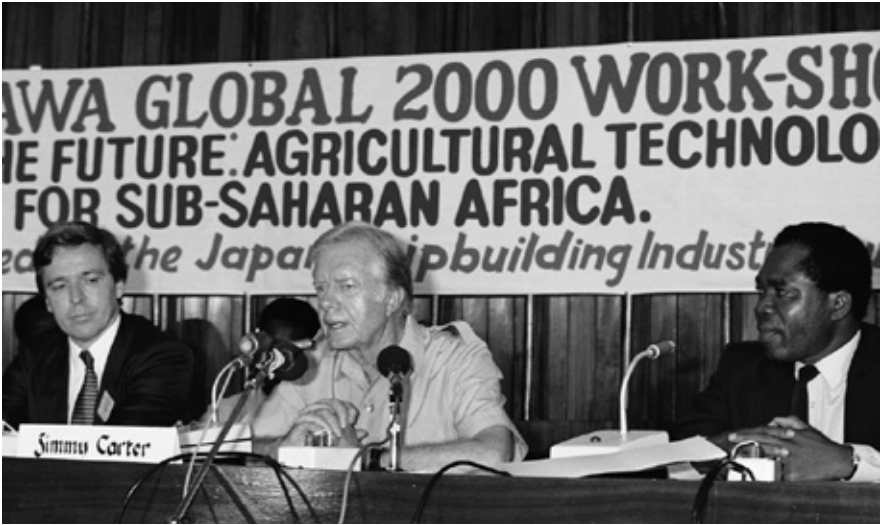
agreed to oversee the organization of the event, mobilizing his team in Geneva, and working closely with JSIF's Itaru Tanaka and Carter Center Executive Director George G. Schira to make it all work, from arranging a meeting site in Geneva to coordinating invitations, to fine-tuning the list of topics to be discussed.

From the start, the focus was on two things: bringing Borlaug's Green Revolution to Africa and placing it in a socio-economic framework designed to help it work. Freymond, working with Tanaka, Schira, and others, summarized the goals in a formal proposal to JSIF:

What is needed now is another "green revolution" in maize and sorghum in African countries. The time is right; it must be "made to happen" in the next six to seven years. However, such a revolution, in itself, is insufficient. There is indeed a primary need to produce more food and food of greater nutritional value. But food must grow at the right places and be made available to the masses of the poor. Thus, food production and distribution must be seen in a broad socio-economic and even political framework.

These paired goals—using Borlaug's techniques and technologies to improve crop yields while simultaneously working on the social and economic structures needed to get the food to the needy—recognized the importance of both a technical and a political/economic approach to the issue.

Things began moving quickly. A planning meeting was held in New York in March 1985 during which the major players (including Borlaug, Carter, Yohei Sasakawa and Alexander King) refined the agenda topics and went over the experts to be invited to Geneva in the summer. Freymond was there as well, and remembered his early impressions of the major figures involved: Carter, he recalled, was "simple and friendly," with a "remarkable intellectual ability to summarize and synthesize." Borlaug was "passionate and impatient,"



Former U.S. President Jimmy Carter and Jean Freymond, Director of CASIN, at a CASIN/SG 2000 workshop in Accra, Ghana

with a “talent for simplifying,” and a profound dislike of the bureaucracy and paperwork. It was a dislike shared by most of the early planners, and it fit in well with the Sasakawas’ fast-moving brand of philanthropy.

At about the same time, the SAA was granted legal status in Geneva. Planning for the event continued to go smoothly. Freymond arranged everything in Geneva; the invitations went out; and on July 8 the meeting—officially titled *Alleviation of Poverty and Hunger in sub-Saharan Africa: Prerequisite for Peace*—began. It was refreshingly small and informal—more a workshop than a conference—that was marked by its relative informality, its elite cadre of some thirty-five world experts, and its ambitious agenda. There were top representatives from the world’s leading crop genetics labs such as the International Center for Research in the Semi-arid Tropics (ICRISAT) and the International Maize and Wheat Improvement Center (CIMMYT). There were policy experts like India’s former minister of agriculture.

There was a range of leading academics. It was a group diverse enough to encompass not just food production, but also health, sociology, population studies, anthropology, and education.

Together they discussed and reviewed the unique situation in Africa, from the rate of population growth to the dangers of war, from smallholder farming to nutritional deficiencies. The challenges of rural life in sub-Saharan Africa, the enormous number of smallholder farmers working with inadequate equipment and little education, the pressure to grow crops for cash rather than food, transportation difficulties, access to credit; all of this received attention. The discussions underlined the enormity and complexity of the problem of food production.

Then the participants zeroed in on action items. Here the focus was on Borlaug's specialty: the introduction of higher-yield crop strains and the supporting infrastructure needed to make that effort successful. This opportunity to explore the idea of a Green Revolution for Africa with a group of experts who could spot potential problems and suggest improvements was key as far as Borlaug was concerned. There was also time to discuss a series of in-depth papers that had been written by the invited participants ahead of time on various aspects of the issue.

For two days, they worked through the most pressing issues in discussions that were thoughtful, calm, targeted toward results—and hopeful. There was talk of doubling or tripling crop yields in Africa by simply improving the use of crops and technologies that were already in hand.

On July 9, after the long second day of spirited idea exchange, Carter called workshop organizer Freymond and a trusted advisor, former U.S. director of the Centers for Disease Control (CDC) William Foege, to his suite at the Hotel du Rhone for a wrap-up meeting—at midnight. After a tiring day, Carter was far from exhausted. “An impressive hour,” Freymond recalled, “during which I

was exposed to the extraordinary memory of President Carter and his capacity to summarize, synthesize, and get to the crux of the matter.” While the ideas of the day were still fresh in his mind, Carter hand-wrote a list of eleven recommendations he would make the next day at the workshop’s close.

The next day, July 10, the meeting closed at mid-day. Ryoichi Sasakawa, Jimmy Carter and Norman Borlaug stood before the group and spoke about what they had learned and how it might be applied in Africa. After hearing all sides of the issue, Borlaug and the others were ready to move ahead with an ambitious agenda. “There was broad agreement,” one participant wrote, “on the need for investment in agricultural research, rural roads, education and health services—all of which, directly or indirectly, have an impact on food security.” Carter read his list of recommendations. Borlaug made it clear that he was now fully engaged with the effort. And Ryoichi Sasakawa announced that his foundation would support the start of a program in Africa with an initial grant of \$5 million.

In the end, the workshop was everything the Sasakawas could have hoped for. After the workshop closed, participants were invited to socialize at the lakeside home of the President of Tufts University, an hour or two away. They spent a few hours eating, drinking and winding down. The elder Sasakawa was ebullient and “very much at the center of the stage,” one participant remembered. “He was so happy with the promising conclusions of the event he had inspired.”

* * * *

The mid-1985 workshop had accomplished just what it was designed to do. It spurred important discussion among international experts, clarified the range and scope of the issues involved, and helped refine future strategies. It was a final step in convincing Borlaug to fully join the effort. The Sasakawas, father and son, had learned a great deal

about the complexity of the challenge involved, and how far the issues extended beyond simply introducing new crop strains.

There were, however, a few aspects to this important conference that might have been done better. A look at all the participants showed a great number of Europeans and Americans, a fair number of Asians, a few Mexicans, and almost no Black faces. Only one of the participants was an African native. Many had studied issues on a global scale or from a scientific perspective, but, as participant Chris Dowswell noted later, “Few participants had specialist knowledge of sub-Saharan countries or smallholder food production.”

While it was an important kick-off for the Sasakawa project, as time went on, the need for knowledgeable people who actually lived and grew crops in the African nations involved became more apparent. The ability of the Sasakawa organization to learn and evolve from this lesson and many others, as well as the organization’s flexibility and response to change, would become very important over the next few years.

* * * *

Borlaug, Ryoichi Sasakawa, and Jimmy Carter had much in common. All three were at the same time visionaries and doers. All three wanted to do good in the world. All three were hard workers with seemingly endless energy. Yet each brought a different skill set to the issue: Borlaug’s boots-in-the-dirt, get-it-done science experience; Carter’s political skills, reputation, and global contacts; and Sasakawa’s energy, intuition, and money. The scientist, the politician, and the philanthropist—three leaders unafraid of attempting one of the most difficult tasks imaginable: Bringing the Green Revolution to Africa and planting the seeds that would help the continent feed itself indefinitely.

Together, it seemed, they would be unstoppable.

SAA and the Sustainable Development Goals (SDGs)

SDGs are 17 goals set by the United Nations to help reduce poverty and improve environmental sustainability. Through various interventions, SAA will contribute to the following goals:

Goal 1: End poverty in all its forms everywhere.

Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

This goal is a priority in SAA interventions. SAA needs to boost productivity, close the yield gap, and provide sufficient nutritious food to keep pace with population growth, as well as strengthen the linkage to markets to improve family incomes.

Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

Goal 5: Achieve gender equality and empower all women and girls.

Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

Goal 12: Ensure sustainable consumption and production patterns. Reduce post-harvest losses through technical backstopping.

Goal 13: Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy.

Goal 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development.

Chapter 4

CLEAR GOALS, FAST ACTION

Jimmy Carter chaired a follow-up planning meeting in November in Atlanta, Georgia, with Borlaug, Yohei Sasakawa, and the heads of the major Green Revolution scientific centers—those that had worked on the development of new high-yielding grain varieties—in attendance. The conversation now moved from the general discussions held in Geneva to the tougher issues of day-to-day management. An effort this size was going to require defined oversight, an executive structure, and clear lines of reporting.

And again, everything went smoothly. Carter invited Yohei Sasakawa to his home in Plains, Georgia, where the Japanese philanthropist sampled fried catfish with ketchup at a local restaurant and got better acquainted with the former president. He found Carter to be highly motivated and very serious about the issue, “perhaps too serious,” and eager to take charge of the effort. The Carter team wanted to fold the African initiative into an existing program at the Carter Center under the umbrella of Global 2000, Inc. That initiative had grown out of a 1981 Carter-sponsored paper entitled “The Global 2000 Report to the President—Entering the 21st Century.” The

paper, written as a sort of farewell message to the incoming Reagan administration, was a bleak summary of the Carter team's view of the near future if appropriate steps weren't taken to encourage sustainable development, the responsible use of resources, and the provision of adequate food and health care. Reagan promptly ignored it.

Carter, however, used the ideas in the paper as guiding principles for his work at the Carter Center. The Sasakawas' food initiative in Africa would fit nicely with the other programs he was considering. The Center's director, William Foege, who had accompanied Carter to the Geneva meeting, agreed. And the Center's head fundraiser, George G. Schira, was all for it. Not only would the Sasakawa program be big and newsworthy, but it would also come with the added benefit of substantial already committed support. It was just what the recently launched Carter Center needed. Schira told the Sasakawas that the Center could field staff in place within three months of signing an agreement. Demonstration fields could be planted soon after.

But Borlaug demurred. He had nothing against the Carter organization, but it was a new entity and didn't have a lot of field experience. Borlaug was not a rule-follower, didn't like being second-guessed, and hated unnecessary paperwork. "He had no use for bureaucracy," as Yohei Sasakawa summed it up. That was part of the reason Borlaug liked working with the Sasakawas. The Japanese offered a maximum of action with a minimum of paperwork. Starting a major new program like the Africa initiative based out of a newly launched center headed by a former politician seemed like it might result in just the sort of burdensome red tape Borlaug didn't want.

Instead, he argued that implementation be managed by Winrock International, a firm he knew and respected. Winrock had grown out of the Rockefeller Foundation's nonprofit work on agriculture. He respected the group's years of experience managing and supporting international agricultural efforts, knew it already had staff in place, and liked Winrock's leadership. They would help him do what he

needed to do—and not get in the way. This was the group he could work with. The decision came down to the man providing the funds, Ryoichi Sasakawa. He appreciated Borlaug's arguments, but also knew that Carter's international prestige and political connections would be critical in the program's success.

The nascent Carter Presidential Center was firming up its structure. With the main buildings nearing completion in Georgia, the ambitious plan was to focus on four major efforts: a human rights center, an international public policy center, the Presidential Library, and Global 2000. The Sasakawa Africa Initiative for fighting hunger would be one arm of the Global 2000 program; the other, focusing on health, would be headed by Carter's right-hand man, William Foege, the former head of CDC who was also heading the public policy center. The two efforts were seen as complementary, with nutrition affecting health, and health conditions affecting the battle against hunger. The plan was to have Borlaug head the half of Global 2000 comprising the Sasakawa Africa Initiative.

In January 1986 Borlaug was offered a directorship within the Carter Center. Not unsurprisingly, he turned it down. Once again, he dug in his heels, pointing to his existing commitments to teaching and consulting. Certainly, these were commitments he wanted to honor, but given his personality, his refusal to accept the directorship might have had more to do with his not wanting to be burdened with red tape and unwanted management responsibilities. Instead, he offered to serve as a senior part-time consultant on the condition that adequate funds for the Africa initiative were secured for five years.

Yohei Sasakawa and Itaru Tanaka were quickly dispatched to Texas, where they spent a day and a half talking with Borlaug. He was still in favor of bringing in Winrock to manage the Africa initiative, freeing him to work with farmers and focus on the best application of the best science. He was already planning to bring aboard his top men from the Green Revolution in Mexico, seasoned scientists who had

worked with him for decades, men he knew and trusted. Winrock handling the paperwork and management duties would allow him to start the real work. He and his team wanted to be freed so they could start getting their hands dirty.

After listening to Tanaka and Yohei's reports of the discussions, Ryoichi Sasakawa made a difficult decision. He would commit support for five years, as Borlaug asked, but he would let The Carter Center, not Winrock, manage the program.

It was a decision that made a lot of sense at the time. It would give Carter a sense of ownership over the success of the program, and that in turn might help drive him to make the greatest possible efforts for success. It would create a logical division of duties among the initiative's leaders, with Carter handling political and executive duties, Borlaug overseeing the science and technical issues, and the Sasakawas keeping the money flowing. In March 1986 the Sasakawas formalized "The Sasakawa Africa Association" as a legal entity designed to funnel funds from JSIF to Carter's Global 2000 organization. A few months later, "Global 2000" was formally chartered in Georgia, with Jimmy Carter as Chair, and Ryoichi Sasakawa and Agha Hasan Abedi, a Pakistani financier who was also a major Carter Center donor, as co-chairs.

* * * *

With the management structure roughed in and money in the bank, the effort now turned to a critical early question: Which countries would get the first programs?

The Sasakawa effort, high-powered as it was, still did not have enough resources to launch programs in more than a handful of nations in sub-Saharan Africa. By the first months of 1986, Carter was busy using his existing network of contacts to winnow down the field to the most likely candidates. His interest was in finding

places with the most favorable and enthusiastic government support, nations where the Sasakawa initiative—after mid-1986 promoted under the Carter banner of Global 2000—would be able to count on top officials cutting through red tape, encouraging cooperation, and adding the power of existing governmental programs in agriculture, education, and outreach. Carter’s organization quickly began setting up meetings with African political leaders.

Early interest focused on four nations: Ghana, Sudan, Tanzania, and Zambia. These four would be the first test cases. They were located in different parts of sub-Saharan Africa: Sudan to the north, Ghana to the west, and Tanzania and Zambia toward the southeast. All had great potential for improvement in crop production. And either Carter’s organization or Green Revolution scientists already had experience working in three of four of the nations.

The wild card was Zambia. A landlocked country neighboring Tanzania, Zambia’s economy had been tied to copper mining. Although farmers made up the majority of its population, they had not been a major focus of government action until copper prices began to fall, and Zambia started increasing its imports of food. Carter’s people had little experience there, and Borlaug was not enthusiastic about it either. But one man was: the Pakistani financier Agha Hasan Abedi.

Abedi had a seat at the table in planning Global 2000 efforts because he had become a major donor to Carter’s programs. It was estimated that Abedi and Sasakawa together were responsible for more than 80 percent of the money supporting the early Global 2000 projects. Abedi and the international financial empire he ran, especially the United Bank Limited and Bank of Credit and Commerce International (BCCI), had extensive operations in Zambia. He had started his own foundation there, which he felt could offer support for the Global 2000 work.

In January 1986 Carter, Borlaug, Ryoichi and Yohei Sasakawa, the

Carter Center's George G. Schira, former U.S. Ambassador to the United Nations Andrew Young and a support staff climbed aboard Abedi's private jet and took off on a trip to visit all four African nations. Abedi joined them in London.

They met first with leadership in Sudan and Tanzania, with Borlaug doing much of the talking, explaining his approach to increasing food production. Then it was on to Zambia, where they shared dinner with the nation's leader, Kenneth Kaunda, and watched afterward as Kaunda, waving a white handkerchief, sang a song of the Zambian revolution with his prime ministers and cabinet. "Their majestic singing voices were very impressive," Yohei remembered.

In Ghana they met with the nation's leader, Jerry Rawlings, in a fortress-like building on a rocky cliff. Rawlings arrived for the meeting dressed in a full military camouflage uniform and sunglasses. Determinedly casual, he sat behind a desk, leaned back, and put his boots up. Rawlings, who had been a young air force officer when he led a coup and took power in 1979, was obviously not there to fawn in front of the foreigners. Instead, he said some mildly insulting things about Carter losing the election and about America in general.

Finally, Ryoichi Sasakawa had enough. He rose to his feet and said, "The reason former President Carter and I came here is not for you or for political purposes," he told the African leader, "but to support the people of Ghana." The other visitors watched silently as the elderly Japanese philanthropist dressed down the young leader of Ghana. Rawlings looked at Sasakawa for a moment, put his feet down, took off his sunglasses, and began talking seriously about providing food for his people. Later he said he felt as if he had been scolded by his father.

When these initial visits with the top leaders in the chosen countries were over, the Global 2000 leaders felt that they were ready to begin in earnest. They had been assured that the program would be welcomed by the governments of all four nations, that adequate

support would be made available, and that agricultural markets would be open and able to accommodate the planned increases in grain production. Draft memoranda of understanding outlining relationships were written and sent to officials in each of the four countries. Ghana and Sudan were moved to the top of the list for the first pilot projects (although Abedi soon convinced Carter, Borlaug, and the Sasakawas to move Zambia to the top as well).

Now came the hard work. In order to start a Green Revolution in Africa, smallholder farmers would have to change both the crops they were planting and the traditional methods they had been using to grow and market them. The challenge was immense. Most African nations had recently been colonies overseen by European powers. The colonists had run them, in many cases, for quick profit, exploiting and exporting natural resources like metals, minerals, wood, and agricultural products. In place of the small, subsistence family farms common in precolonial Africa, large colonial plantations had been established to grow cash crops for export. Traditional ways of growing food for domestic use had been disrupted; smallholder agriculture was pushed aside and remained undeveloped.

The colonial era ended with a wave of national independence in the decades after World War II, and new African nations emerged with a variety of governmental and economic structures, from democratic capitalism to military rule to various forms of socialism. In order to keep money flowing into national treasuries, government programs still often emphasized plantation-style agriculture for cash crops and export, ignoring smallholder farmers and relying on imports of food rather than programs to educate smallholder farmers to grow more.

There were political forces at play, too. A number of the new African nations flirted with state ownership of industries and control of markets, a socialistic approach. Others went the route of private enterprise and freer markets, a more capitalistic approach. These nations became caught up in the larger geopolitical struggle at the

time between Communism and the more capitalistic West, each offering different forms of aid and cooperation depending on the nation's economic policies. What became known as "the Washington consensus" for agriculture—the Western approach—emphasized private firms growing crops like palm oil, coffee, and cocoa for export, rather than food for domestic consumption. At the same time, the excess from bumper crops of wheat from the U.S. was shipped to feed African nations, reducing demand for food crops produced locally.

This was especially bad for traditional smallholder farmers. These men and women, who operated a family farm of a few hectares growing enough to feed their households, with perhaps a bit left over for sale, had been the backbone of African life for millennia. Their techniques had changed little over the centuries. The smallholder farmers who accounted for about 80 percent of the population in Africa were generally poor, without either the time to invest in agricultural education, or the money needed for machinery, fertilizers, and improvements in irrigation. They farmed as their grandparents had. They farmed by hand or with the assistance of a few animals, growing relatively small harvests of traditional crops, feeding their families when the rains were good, going hungry during droughts.

It was an ancient system, and it made agricultural progress of the sort the Sasakawas envisioned extraordinarily difficult. These small, family-owned plots of land were often subdivided when they passed to a new generation, making individual farms smaller and smaller as time went on. And these smaller and smaller plots had to be farmed every year, leaving no time to let the land go fallow and regain some fertility. Trees had to be cut for firewood. The emphasis was on sustaining themselves, on feeding their families, from year to year, which gave the smallholders little encouragement to think about long-term improvements or investments. Farmers anywhere around the world are averse to taking risks. Among African smallholder farmers, that aversion was even stronger.

It added up to an enormous challenge. Borlaug saw the issue as one of inadequate food production. His Green Revolution techniques, if successfully applied, could solve that.

But it was the *application* of Borlaug's techniques across a new continent, their adoption by risk-averse, resource-poor smallholder farmers, that was the issue. Yes, there could be higher-yielding strains of wheat, corn, and sorghum available. Yes, there would be fertilizer available to feed the crops. But who would reach out to the farmers in isolated small villages and interest them in growing these crops, or in trying new farming techniques? How would they get the money needed to plant and fertilize them? Who would provide the ongoing education needed to make—and sustain—this switch? How could these rural small farmers ship their products if the roads were bad? Where could they store these increased harvests?

Some of these issues had been raised in the early discussions like the CASIN conference. But the Global 2000 effort could not solve all of them, at least not initially. They had funding from the Sasakawas for five years, which was time enough, the thinking went, to focus on one central thing: Borlaug's goal of vastly increasing grain yields.

Chapter 5

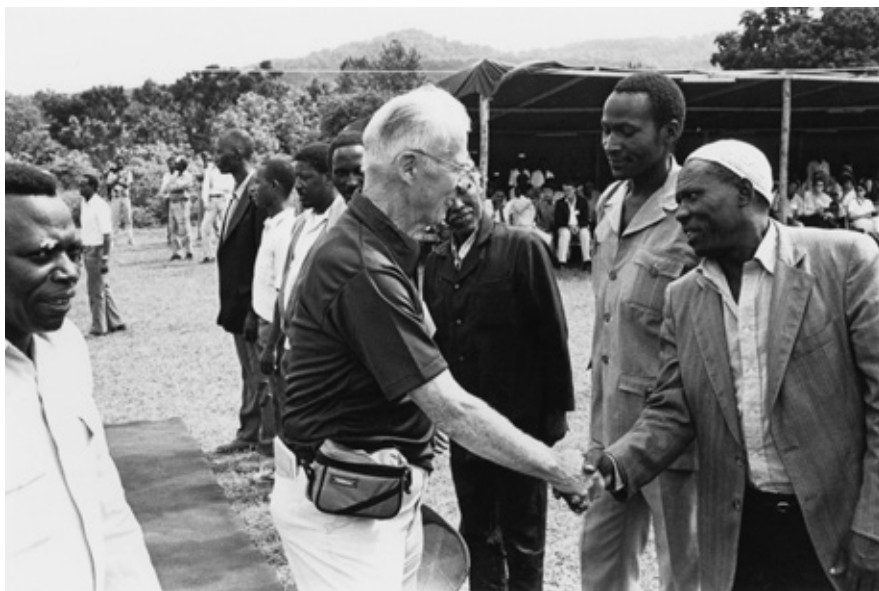
IDEAS INTO RESULTS

All energies were now directed toward launching the first programs in the initial target nations.

Facing the enormous challenge of enacting his ideas in these new and diverse environments, Borlaug relied on one simple idea: If you want to get smallholder farmers to change, you can't tell them to do it. You have to show them.

This came from his years of experience working with the men and women who grew food. Borlaug was no ivory-tower academic who delivered pronouncements from on high. Yohei Sasakawa remembered, after years of working with Borlaug, how he worked in the fields, "covered in mud and perspiration," sharing meals with farmers, talking about practical things, not abstract ideas. To inspire his team at Global 2000, he would tell them, "Your work is to increase the yield three-fold, and then five-fold. Instead of spending time on your paperwork, go out into the fields and give the farmers a hand with their difficulties."

Instead of holding classes or sending out government officials to spread the word about his new grain varieties and growing methods,



Norman Borlaug meeting with delegates in the field

Borlaug believed strongly in setting up demonstration plots, areas where the new strains were planted and properly tended, right next to others where the old strains and techniques were used. Local farmers could come and see the difference with their own eyes. Once impressed with the reality of healthier crops and higher production, farmers would tell others of what they had seen, spreading the word in the best possible way, from farmer to farmer. The demonstration plots could also be used to educate government officials and educators about the benefits of the new approach.

Arrangements were quickly made with tribal leaders to set aside land for demonstration plots, and the first comparison fields were planted. The idea worked exactly as Borlaug had hoped, boosting local enthusiasm and allowing his scientists to fine-tune their methods for the realities of local conditions by adapting to the particular soils, water availability, and climate of particular regions.

Expanding the demonstration program would be one of the main efforts during the early years of the SAA-Global 2000 initiative to establish a Green Revolution in Africa. It proved a fast and relatively low-cost way to drive home the benefits of the new methods and encourage farmers to change their approach.

By early 1987 the SAA-Global 2000 effort had eight scientists on the ground in Ghana, Sudan, and Zambia, along with staff for a growing number of local offices working out logistics, solving supply issues, making sure that the fertilizers and tools required arrived where they were needed. A vital function was to ensure that communication was established with the appropriate government officials and educators.

Results varied from country to country. The work in Sudan was under the direction of a team of Mexican scientists who had worked with Borlaug for years. Their Mexican experience had been with wheat grown in irrigated areas, using strains that excelled under those conditions. The problem was that most of Sudan agriculture relied on water from rain, not irrigation. The nation was still recovering from the most recent drought. While early efforts showed that a leap in wheat production was possible in areas of the country where irrigation water was available (for example, in the old British cotton-farming region that had access to irrigation water from the tributaries of the Nile), the same techniques were less applicable to most of the country. At the same time, a chaotic political scene led to growing security concerns for SAA-Global 2000 staff. It was an early sign that “one size fits all” solutions were not going to work in Africa. Every nation presented its own unique challenges.

Work in Zambia did not get underway in earnest until 1987, a year later than Sudan and Ghana. The focus here was on corn. But an unforeseen problem arose when Abedi, the man who had pushed for Zambia’s early inclusion in the project and whose network of contacts was important in ensuring government support, began to experience

serious health problems in 1988. Meanwhile, his international bank, BCCI, was coming under attack for suspicious business practices. Faced with both leadership and funding difficulties, the work in Zambia stalled.

The greatest success story during the early years was Ghana. Jerry Rawlings, despite the blustery first impression he made, proved an enthusiastic partner for the SAA-Global 2000 effort. “Spectacular” crop increases, according to one observer, were grown on an ever-increasing number of demonstration plots in Ghana, from 40 in 1986 to 1,600 in 1987, to 16,000 in 1988. During the next fifteen years, maize production in Ghana would more than double, and cassava and rice production would triple. The full cooperation of the government also allowed the development of support programs for educational outreach, for fine-tuning agricultural requirements for specific soils, and for the development of even better crop strains.



Ryoichi Sasakawa carrying a boy on his shoulder in a maize field (courtesy of The Nippon Foundation)

The demonstration plots in Ghana and the irrigated areas of Sudan became the darlings of local government officials who proudly showed them off to visitors and constituents. There were many problems yet to solve, but the proof of potential success was there: Properly administered and applied, Borlaug's ideas could work in Africa. A Green Revolution was possible.

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The successes were welcomed by the SAA-Global 2000 leadership, but at the same time, success increased the pressure to refine a more efficient management structure. And cracks began to show among the founding members of the effort.

One sore point in the early years was the executive director of Global 2000, The Carter Center's George G. Schira. "It soon became apparent that he saw the Global 2000 agricultural projects as Carter Center activities," wrote SAA insider Chris Dowsell, "with JSIF and BCCI playing the role of 'valued donors' but not directly involved in program implementation. No real role was identified for SAA, other than being part of the funding pipeline." This meant that Schira was in charge, sidelining the direct involvement of the Sasakawas and Abedi.

Abedi's attention was increasingly diverted to his own health problems and business scandals. But the Sasakawas certainly saw themselves as more than sources of money. They were, in fact, at the core of the vast initiative. Ryoichi's response to the drought in Ethiopia had given birth to the effort. He had persisted with Borlaug, overcoming his hesitation. He had been central to the efforts to attract Carter's interest. He and Yohei had engineered the initial meetings and paid for much of everything. Yohei was being groomed to take over the SAA's work and took a particular interest in Africa, traveling there when he could in the late 1980s to review progress with the

demonstration plots and enjoy the dancing, feasts, and gifts at the receptions he received. The Sasakawas had created the program in Africa. Regardless of what Schira thought, they were going to help run it.

This jockeying for position between the Carter Center and the Sasakawas led to what one observer called “bumpy” management issues. The challenges in Africa were growing as the program continued: four nations, each with its own government relations; thousands of demonstration plots going in; the need to quickly scale up personnel with appropriate contracting and oversight; endless questions about farm credit and outreach programs. Schira, who had risen to his position because he was an effective fundraiser, found himself quickly out of his depth, overwhelmed by the deluge of decisions associated with the Global 2000 work in Africa. Certainly, he knew far less about agriculture than Borlaug and the scientists around him. Whatever the reasons, his management faltered. Criticism of Schira increased along with the backlog of things to do until, in March 1987, Carter was forced to ask for his resignation. Former CDC director William Foege stepped in to take on the management of Global 2000, as well as most of the rest of The Carter Center activities.

From this point on, SAA began to take an increasing leadership role in the food initiative in Africa. The Sasakawas had given the head of their Peace Foundation, Akira Iriyama, responsibility for dealing with the Carter Center. In early 1988 he let the Americans know that SAA wanted to play a greater role in management of the agricultural program in Africa, especially in the areas of program planning, monitoring, and evaluation. At the same time, SAA was given more clout when Borlaug agreed in early 1988 to serve as the group’s President and Chairman of the Board. Borlaug had never been happy with the idea of Carter Center oversight. And he had come to trust the Sasakawa organization, working effectively with the Japanese. Now he threw in his lot with them. His new title and responsibilities were

part of a larger reorganization and revitalization of SAA as it took a lead role. In addition to Borlaug, the group's board now included Foege and Iriyama; Yohei Sasakawa was treasurer and Jean Freymond was board secretary.

It was just in time. In 1988 the effort's second biggest donor, Agha Hasan Abedi, underwent a heart transplant just as his bank's practices were coming under increasing scrutiny. That same year, the bank was indicted in Florida for laundering drug money, and would eventually be accused of fraud, arms deals, bribery, and other wrongdoing around the world before suffering a spectacular collapse in 1991. At the same time the Carter Center was happy to give up some of its management duties related to Borlaug's project and focus on health and medical issues in the region, especially Jimmy Carter's project of eradicating a particularly nasty parasite called Guinea Worm. Something was needed to fill that managerial vacuum, and quickly, as the food program's successes and challenges both grew quickly through the late 1980s.

Reflecting these changes, the food program in Africa would move forward not under the banner of Global 2000, the old Carter Center name, but as Sasakawa-Global 2000 (SG 2000).

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The changes in management were necessary to move forward efficiently, but the most important work was always done on the ground, farm by farm, acre by acre.

Here, on the land, with the small farmers, was where Borlaug's ideas would either spark a revolution, or prove to be a bad fit for Africa. The more demonstration plots that were planted, the clearer it became that many African soils were weathered, tired, nutrient-poor, and unable to support the growth of maximal yields, especially with the new, higher-yielding crop strains Borlaug was introducing. The

work of growing more food in Africa was thus closely tied to building the health of the continent's soils. Those soils often needed fertilizers. Finding out exactly which ones and in which amounts worked best with particular crops grown in specific soils and climates was Borlaug's challenge. Unless he could meet that challenge, he couldn't spark a green revolution in Africa. One important early realization was that the fertilizer many of the soils needed most was not necessarily nitrogen—the most commonly used fertilizer component around the world—but phosphorus. But because soils vary from nation to nation, region to region, even farm to farm, it was difficult to devise a single approach that could work in all situations at all times. However, it appeared that to get the most out of Borlaug's demonstration plots, significant amounts of added phosphorus were often needed, along with nitrogen and other soil inputs.

But fertilizers cost money, and most African smallholder farmers simply could not afford the amounts needed for maximal production. So, SG 2000 worked on another level of the problem, establishing sources of credit so that smallholders—many of whom had never borrowed money from a bank—could access small loans for needed improvements in their farms with terms they could afford. The system seemed simple: Money would be available for farmers when they needed it for fertilizers, and payments would be made when the harvest came in.

But of course, nothing is that simple. Mechanisms for making, tracking, and accepting repayment of the loans had to be put in place. Access had to be made as easy as possible for farmers who often lived in remote areas. Partnerships with local banks had to be established and overseen. Farmers had to be informed about not only the importance of fertilizers, but how to get the money to pay for them—and then persuaded that the risk of borrowing money was more than offset by the potential increases in income from bigger crops. All of this involved effective communication with tens of thousands of rural

people in isolated areas.

The SG 2000 effort in Africa was demonstrating that there was much more to increasing food production in sub-Saharan Africa than simply waving the Borlaugian magic wand of improved plant species. Borlaug's work was just the beginning. In order for it to succeed, attention had also to be paid to outreach and education, credit and transportation, irrigation and fertilizer supply, government relations and so much more.

And yet the effort was clearly worth it. The early demonstration plot successes in Ghana and parts of Sudan had shown that it was possible to quickly double or triple crop yields. The promise was there.

Chapter 6

GROWING THE PROGRAM

After the management adjustments were made, attention turned to expanding the SG 2000 program's initial successes. Through 1988 and 1989, Borlaug focused on his demonstration plots for maize, wheat, and sorghum, on assessing what worked best for a particular area, and on keeping an eye on the use of fertilizer and other inputs. Attention was also given to the farmer credit programs needed to buy the inputs, and on the education programs needed to build a knowledge base among farmers.

Work was helped by good rains in 1987 and 1988, easing the danger of drought and nourishing record harvests on the one- and two-acre demonstration plots. African smallholder agriculture was, for the most part, rain-fed. That made farming less expensive—no need for dams, canals, pipes, and control systems—but also more vulnerable to changes in the weather. When the rains were good, harvests were good. When droughts came, crop yields plummeted.

The water challenge was particularly evident in Sudan. Most of the nation is semi-arid and dependent on rainfall. Initially Borlaug had intended to focus on boosting sorghum and millet yields in these

traditional areas. But early attempts in that environment were hampered by the resumption of a long-simmering civil war in the nation, which made security for Borlaug's teams in these remote areas problematic. Efforts in Sudan moved to an irrigated area called the Gezira near the White and Blue Nile rivers around Khartoum and switched from millet and sorghum to wheat. This setting and crop were more familiar to Borlaug's scientists, a number of whom brought with them their experience in Mexico raising wheat in irrigated valleys. They quickly saw remarkable increases in yields.

But the Gezira was not typical of farming in Sudan. Farmers along the rivers had more acreage, more money, more machinery, and more water than the typical Sudanese smallholders. While the SG 2000 workers made significant advances in boosting yield by encouraging proper fertilizer use and better strains of wheat—earning the effort a Gold Medal from the Sudanese government in 1988—it was not a program suited to export to the rest of the country.

At the same time, the political situation in the country was deteriorating. The civil war was paralyzing the central government, reducing the amount of support available for SG 2000, and making security an ongoing concern for Borlaug's teams. The director of the Sudan effort, Ignazio Narvaez, began to think that there was no future for their work in the nation. He recommended to Borlaug in 1988 that they move the program instead to Tanzania, where prospects of success were higher.

The SAA Board agreed. Plans were made to switch personnel, programs, and funding to Tanzania. But Jimmy Carter still had an interest in Sudan. He was working hard to broker a peace deal in the region, saw that the wheat harvests were outstanding, and argued for continued funding. The Sasakawas provided a few months more support from JSIF, and the Carter Center found additional funders in Norway and Sweden—enough to keep the program operating for another two years.

In Zambia, work had been funded in great part by Abedi's collapsing bank. Although additional funding from Abu Dhabi's ruling family kept the program going until 1991, its original ambitious plans for the expansion of demonstration plots stalled, and The Carter Center decided to close it down at the end of 1990.

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The real success story was Ghana. The small demonstration plots planted there were yielding two, three, even four times the harvests normally seen by smallholder farmers. Good relationships with the government and the nation's Agricultural Development Bank helped farmers get the credit they needed. Maize harvests began to shoot up to levels never before achieved.

Borlaug's methods were working so well in the nation that SG 2000 funded the production of a documentary, *Feeding the Future: A Green Revolution for Ghana*, that was released in early 1989. It featured interviews with Borlaug, striding about a Ghanaian village, his white hair neatly trimmed, dressed in khakis, a pale-yellow short-sleeved shirt, and a pocket protector. "I tried to turn back time to how all of this started out, you see," Borlaug said in his clipped Midwestern accent. "This is closer to the soil than any of the cultures of the so-called industrialized developed world. And I guess back behind it all is the very fact that I'm able to understand many of these things having been raised on a very small farm. And I understand the struggle of the people to improve their standards of living."

By contrasting footage of the drought in Ethiopia with the lush maize fields of Ghana, by comparing the program's demonstration plots side-by-side with land cultivated using the traditional methods, the documentary made a clear point: Borlaug's methods worked in Africa. But it wasn't because of the agricultural science alone. The film highlighted the work of the nation's agricultural extension

services as well, and the importance of the government's outreach team to help teach smallholder farmers how best to apply the new techniques. "Nothing could be accomplished without weaving in the entire extension service," Borlaug said of the experience in Ghana. The ideas spread quickly.

It all added up to tremendously increased maize harvests in a very short time. But success came with its own challenges. Looking at the early results, Borlaug saw that there was a danger of flooding the market in Ghana with maize. Too many farmers trying to sell too much maize at the same time would lead to price drops and less money for farmers, and everyone would lose. As early as 1988, he was saying that the number of demonstration plots should be cut back, and that SG 2000's work should be broadened to other crops. SAA agreed, deciding in 1990 to cut back funding for demonstration plots in Ghana and shift efforts away from maize to other products.

Success in one area—significant increases in production—opened new challenges in another. The SG 2000 team was learning that skyrocketing harvests alone were not enough. One short-term answer to the increase in maize production was to build storage facilities where farmers could safely keep their harvests until the market stabilized and prices rose. SG 2000 workers realized early on that smallholder farmers didn't have the resources to invest in building pest- and insect-proof grain storage buildings; they either had to sell quickly or keep their grain in old wooden structures that let in vermin, moisture, and insects. The losses during storage could become tremendous—10 percent, 20 percent, 30 percent or more of the harvest. Borlaug argued for a greater emphasis on building new, better storage facilities with concrete floors and improved pest protection. His recommendations were echoed by the SAA board, which began placing a greater emphasis on proper drying, rat guards, and appropriate storage facilities for maize and sorghum.

As SAA funding for demonstration plots dried up, farmers who

had benefitted from the successful harvests on these plots began defaulting on the loans they'd taken out for fertilizers and other needed support. Credit in the form of small loans arranged by SG 2000 for the earliest harvests had worked well, with repayment levels in some cases topping 90 percent. But the Sasakawas did not want their effort to turn into banking, so a deal was arranged with the Agricultural Development Bank of Ghana, which agreed to advance credit to some 20,000 Ghanaian farmers in 1990. But when the default rate rose, the bank insisted that SG 2000 cover the shortfall. Arguments and accusations were traded until an accommodation was reached. It was an object lesson for the Sasakawa Africa Association, which from that point on handled the issue of farmer credit very carefully.

There were challenging personnel issues as well. In 1988 Chong Woon Hong, a top SG 2000 agricultural scientist in Ghana, left to take a job with another nonprofit. The next year Eugenio Martinez, Borlaug's scientific director in the country, decided to return to Mexico. New hires made to fill the vacancies brought new talents and interests to the program.

All of the new challenges and changes led to a request by the SAA board for an external review of the Ghana program in late 1990. An external team of agricultural experts in agricultural economics and fertilizer use visited the country and reviewed progress. Their report, while generally favorable, also pointed to places where improvements could be made, especially when it came to money for purchasing fertilizers and other needed inputs, and incentives to encourage smallholders to adopt the new way of farming. Crop demonstration plots were to be kept to a reasonable number, and additional attention needed to be paid to storage and seed production. An emphasis was placed on paying more attention to the economics of the effort and hiring expertise in this area.

The SAA board made sure that a number of these recommendations,

especially those related directly to Borlaug's efforts, were put into action. But the advice to put more resources into agricultural economics was not acted on.

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As the SG 2000 program moved into the 1990s, much was changing. The initial burst of enthusiasm that accompanied the introduction of Borlaug's techniques in Africa had now matured into a new phase, highlighted by personnel issues, political turmoil in the host nations, and the ongoing grind of day-to-day management. While successes were many—with thousands of farmers learning that they could vastly increase their yields—every success seemed to bring with it another level of obstacles, problems, and opportunities.

At the same time, the Carter Center and its Global 2000 arm continued to pullback management of the effort. The Abedi bank scandal was reaching its peak, and the loss of Abedi and his funding weakened one of the Carter Center's prime supports. Jimmy Carter himself increasingly focused his time on health and medical needs in Africa rather than nutrition. His decreasing activity promoting the effort with African leaders made government support at the national level more problematic. Without the enthusiastic support from the top down, it was becoming more difficult for the SG 2000 workers in Africa to set up productive working relationships with agricultural ministers and educational outreach programs.

In the face of all this—the stunning achievements now tempered by the looming problems—many nonprofits might have simply declared success and quit the field. But instead, the Sasakawa Africa Association increasingly took the lead. Ryoichi Sasakawa, now entering his nineties, was less energetic in the effort than he had been at the start. But his son Yohei remained enthusiastic about what their work was doing in Africa. Yohei traveled often to Africa and was

impressed by what he saw happening. There might have been growing questions about surrounding economic and political issues, but on the ground, he witnessed first-hand the difference in fields, the smiles on farmers' faces, and the enthusiasm of village leaders. The travel was anything but easy; he remembered later the light-hearted contest he had with his traveling group about who would come home with the most insect bites—a competition he won. But the impression it made was deep. As Ryoichi's influence waned, Yohei's enthusiasm and willingness to deal with challenges kept the SAA going.

It was becoming increasingly clear that there were no simple answers to Africa's food needs. It was not enough to simply show that a new package of seeds, fertilizers, and techniques could lead to bigger harvests. As the Ghana experience was proving, those increases had to be carefully managed, with a new emphasis on factors like transportation, farmer credit, grain storage, and attention to changing markets. Fields full of healthy, green, high-yielding crops were not the end of the process. They were just the beginning.

What faced the SAA leadership in the early 1990s was the growing realization of the full scope and scale of the African food challenge. Leadership was also facing an evolution in the management of the Sasakawa effort, both externally—in its working relationship with the Carter Center and interactions with African nations—and internally, with changes in management structure and efficiency. The evolution and interplay of these two trends would determine much of SAA's work during the decade.

Voices from the Field: Nigeria

The story of Grace Yohana, and how she is committed to widening access to quality seeds

Access to quality seeds has been a critical challenge for smallholder farmers in the Mararaba Rido Local Government Area of Nigeria, where Grace Yohana lives. As a way of addressing this issue, Grace trained as a community-based facilitator (CBF) to provide value chain extension services focusing on maize, rice and soybean. Upon completion of her training, Grace decided to go further by sharing her knowledge and skills with the wider farming community using platforms provided by SAA Nigeria and Alliance for a Green Revolution in Africa (AGRA) in Kaduna State.

One of the ways in which Grace has utilized the opportunities made available to her by SAA Nigeria and AGRA, is becoming a representative for Value Seeds Limited—a crop seed production solution and development company based in Nigeria. By becoming an intermediary between farmers and Value Seeds Limited, Grace assesses the requirements of farmers and then relays this information to the company, in order to ensure that smallholder farmers are provided with what they need.

“I was already serving my community as an extension agent by delivering services on crop production and enhancement,” Grace explains, “however, the series of training sessions I attended through the joint project implemented by SAA Nigeria and AGRA enabled me to understand key components of the agricultural value chain system. It broadened my horizons, and made me realize that I could increase my income from this new venture.

“My hard work paid off, and in addition to increasing my income, I’m also



Grace Yohana is a community-based facilitator. She supplies seeds and provides advisory services to smallholder farmers.

now engaged in solving the challenges that we have in the supply system for quality seeds.”

As part of her role with Value Seeds Limited, Grace procures seeds and then packages them accordingly in 2kg and 5kg bags, with appropriate labels. She also places orders on behalf of customers, and provides advisory services to smallholder farmers who visit the store.

Chapter 7

SAA STEPS UP

1991 was a pivotal year for SAA. The ripple effects of the external review of the Ghana program, which identified general strengths but also pinpointed specific areas that needed improvement, were being felt. The participation of the Carter Center was winding down. The effort in Zambia was coming to an end, along with funding from its major backer, Abedi.

It was time for some changes. The Sasakawas, before committing more money to the overall program, wanted to see better management put in place, with a tighter focus on assessing and maximizing results. They tapped into the proven managerial expertise of Akira Iriyama, president of the Sasakawa Peace Foundation. Iriyama took on increasing responsibilities, smoothing relationships with the Carter Center, advising on program development, and suggesting managerial changes that included bringing some of his colleagues from the Peace Foundation into the SAA fold.

As the Carter Center faded from the picture, the newly revitalized SAA made sure that Borlaug's influence remained central. Important hires included a man who had worked with Borlaug since the late

1970s, Chris Dowswell, who was hired as Director for Program Coordination. The SAA board changed, too, with the addition of Dowswell and SAA's new general manager, Masataka Minagawa, an expert in finance and administration. Minagawa smoothed the consolidation of SAA administration in Tokyo as the overseas staff shifted from working for Global 2000 to working for SAA.

The shifts in personnel reflected a changing attitude within SAA. The Sasakawas had pushed for greater oversight of the African food initiative for years. Now, with the waning of the Carter Center's active participation and a closer relationship with Borlaug, with a revamped managerial structure and greater financial oversight, SAA was positioned to take essential control of the effort. Things would be more businesslike, targeted, and efficient. And the man in charge of it all would be, increasingly, Yohei Sasakawa.

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In October 1991 the SAA board met to assess progress and fine-tune plans for the future. Norman Borlaug delivered a report about his recent visit to Nigeria and an invitation SG 2000 had received to start activities there. A representative of the Carter Center conveyed the former President's wish that an agricultural program be started in Ethiopia, where Carter was involved in peace-making efforts to calm the civil war. New board member Chris Dowswell outlined a proposal to start a scholarship program that would pay the way for promising undergraduate agricultural students who wanted to earn a degree at local African universities, with additional funding for graduate students to study for advanced degrees abroad.

Most important, Yohei Sasakawa told the SAA board that he was satisfied with Borlaug's successes, with the way things had been working with the Carter Center and in general with the progress made by the group's work in Africa. But, he added, there was more

work to do. Africans were still going hungry. Many nations had not yet benefited from SAA's new approach, and work remained to be done even in those nations where SAA's programs had already taken hold. He then made the most important announcement: JSIF, the foundation Yohei now headed, was going to fund SAA's activities for an additional five years. And, he hinted, continued progress would mean that more funds would likely be made available after that.

It was a remarkable vote of confidence in a program that was, in many ways, still just beginning to get its feet on the ground. The commitment to funding at this critical juncture was a much-needed vote of confidence at a time of managerial and programmatic change. It showed not only that the JSIF would stand by its programs in Africa, but also that it would continue to do so even as the SAA board adjusted to new realities, and the group's responsibilities changed to meet new challenges. In short, it was a sign of flexibility at the highest



Yohei Sasakawa visiting a field with the former U.S. President Jimmy Carter

levels. And that unusual and powerful combination of long-term commitment and institutional flexibility—the assurance of support even as the effort adapted to changing circumstances—would be a hallmark of SAA’s work through the next two decades.

By 1992, SAA was managing the country projects formerly run under the SG 2000 banner. While a cordial relationship continued with Jimmy Carter and the Global 2000 team (which continued to be represented by a few members on the SAA board), and while the SG 2000 name would still be used occasionally in communications, the old management structure with its attendant stresses and strains was a thing of the past. From now on, important decisions would come not from Atlanta, but from Tokyo.

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Noting the successes in Ghana, other African nations were increasingly interested in starting SAA programs. Fortunately, there was room for expansion. In 1991 the Global 2000 program in Zambia was closed; and the continued unrest and security concerns in Sudan led to the closure of that program in 1992. The question was where to go next.

Ethiopia was, of course, the site of the BBC report that had first ignited Ryoichi Sasakawa’s interest in a new approach to African agriculture. Ethiopia had not been among the Global 2000’s original four countries primarily because a civil war in the country had made the situation too uncertain. But now it appeared that stability might be returning. Jimmy Carter was playing an important role in returning peace to the region, and he encouraged SAA to look seriously at Ethiopia as a candidate for program expansion.

And the country was once again facing a food crisis. After a few years of good rains and substantial harvests, production had stalled in 1992, putting almost 8 million Ethiopians at risk of starvation unless

something was done. A fast response by food aid agencies, which quickly shipped in more than a million tons of food from around the world, blunted the worst of the threat. But it was a wake-up call for the new interim government, which made agriculture a central focus of its economic strategy.

SG 2000 arranged a tour of its program in nearby Tanzania for Ethiopian agricultural experts. They returned home after two weeks eager to start similar efforts. A proposal from SG 2000 was sent to Addis Ababa in early 1993 and quickly accepted. The director of the successful program in Tanzania was transferred to Ethiopia to launch the program.

Nigeria, too, was eager to host SAA. The motivating force was Olesegun Obasanjo, a participant in a military coup in Nigeria who, after returning the nation to civilian rule in 1979, retired to private life, took a six-week extension course in agriculture, and started farming. His interest in the land extended through the next two decades, as Obasanjo took on an increasingly public role, writing four books, working against apartheid in South Africa, helping advance the cause of peace in Angola and Mozambique, getting to know political movers and shakers around the globe, and once running for secretary-general of the United Nations.

He had been invited to speak at a CASIN workshop in May 1991 in Tanzania, resulting in an invitation for Borlaug to visit Nigeria. Obasanjo understood and appreciated the agricultural ideas promoted by SAA, and Borlaug, after listening to him and visiting the country, recommended that SG 2000 start work in the country. The SAA board, too, appreciated his advice about new areas of opportunity in Africa, including Mozambique, which was just emerging from a period of governmental instability. He had other ideas for expansion in Africa as well. Invited to join the SAA board, he accepted in 1993. Adding Obasanjo to the board offered immediate benefits, both in terms of his knowledge of African agriculture and in the breadth

of his contacts across the continent. SG 2000 programs were soon underway in Nigeria.

Obasanjo's advice to take a closer look at Mozambique helped spur action. Here, the SAA board came to believe, was another promising country just emerging from a period of turmoil. After 17 years of civil war, a peace accord signed in 1992 offered the chance for a new period of stability and cooperation. Obasanjo noted that while the agricultural system was in shambles, there were huge swaths of underused arable land begging for cultivation, with the promise of enormous increases in harvests. His recommendation that SAA's ideas be tested in the country was seconded by one of Global 2000's top advisers. Initial reviews of the country showed other advantages: Mozambique's diet included a considerable amount of maize, a crop that had been a proven success story for SG 2000. While government agricultural efforts had been crippled by the conflict, there was a private-sector agricultural development program in Mozambique that appeared promising. SG 2000 staff visited the country several times, meetings were held, and ideas were traded. In 1995 Mozambique and SG 2000 signed an official project document, kicking off work in the country.

Other countries, too, expressed an interest in hosting the project. There was talk of Uganda, Benin, Guinea, Mali, and others. There were so many possibilities. Borlaug's idea from the beginning had been to use demonstration plots to convince farmers to try his ideas. Now, after just a few years, entire nations like Ghana and Tanzania were serving as demonstrations, attracting interest across the continent.

It was hard to say no. But there was a danger, too, in expanding too far, too fast. The addition of each new country added substantial costs to the entire program in terms of funding for additional staff, facilities, travel, and outreach, and also in terms of that other precious resource: time. Each new program in each new country required an investment in analyzing current conditions, assessing agricultural

potential, identifying problem points, writing reams of reports, and holding numerous meetings with politicians, agricultural experts, education leaders, and other interested parties.

This was just the sort of work Norman Borlaug hated. He needed to be out in fields sweating with the farmers and getting dirt under his fingernails as he saw their results first-hand. He needed an effective structure behind him to handle the rest of that seemingly interminable administrative work.

The SAA board was careful about reviewing each new possibility, but the organization was also eager to expand. Success in one nation was not only success in *one nation*. It translated into interest from others. Now was the time to take advantage of that momentum by introducing the SG 2000 package to several additional nations relatively quickly, with the hope of getting as many smallholder farmers and agricultural extension agents as possible talking about the benefits and helping to spread the word.

The Ghana success, for example, had led to strong interest in the nearby nations of Togo and Benin. Small programs started in the late 1980s in Benin and in 1990 in Togo grew into full-fledged independent country programs by 1991. The initial focus on maize production showed promise, especially in Benin, and both countries added more crops to the mix, planting demonstration plots with rice, cassava, and mucuna (velvet beans).

In Benin, effort also went into an ambitious microfinancing program designed to provide smallholders with the funds needed for two years of fertilizers and other inputs to be used in small test plots. The idea was that after two years of seeing the benefits, farmers would find ways to finance their own inputs. But when the two funded years ended, the farmers simply did not have the money they needed—or fertilizer in particular—and use declined. Another financing scheme was explored in both Benin and Togo, with SG 2000 supporting the establishment of local savings and loan associations in rural outposts

and small towns, convenient places where farmers could come for small loans and learn about agricultural services. The idea of introducing smallholder farmers to local banks with a variety of services appealed to other African aid groups, and funds were provided for constructing buildings and training savings and loan employees in microfinance.

These programs were ambitious and well-intentioned, but they yielded mixed results. The maize continued to show good results, for instance, but every new crop added to the mix presented new challenges with differing cultivation techniques, costs, and markets. Farm credit was a never-ending problem. After a period of rapid growth through the 1990s, the savings and loan system in Benin was serving some 22,000 members. But when SG 2000 attempted to hand over the program to the management of a national association, financial and management problems quickly arose. SAA had to pull its remaining funding. The result was the demise of the program.

The SG 2000 effort in Togo was also hampered by problems with the country's government, which in the early 1990s entered a period of pro-democracy protests, strikes, demonstrations, and counter moves by the government. The turmoil kept the World Bank and other key donors from investing as much as they might have in Togo, which led to more limited government support for rural extension programs and other government agricultural efforts important for supporting SG 2000.

The experiences in Togo and Benin underlined the challenges of expanding the African programs into too many new nations, too fast. Each country came with its own particular set of issues to be addressed. Trying to advance on too many fronts at once risked diluting the focus on boosting harvests, while at the same time increasing program costs.

The SAA board took careful note.

The success story in nearby Ghana offered a different set of lessons. The first few years of the Ghana project had shown the importance of strong government support for the SG 2000 effort, which complemented the government's own agricultural development plans. Ghana's Ministry of Food and Agriculture (MOFA) and crop research institutes worked closely with SG 2000 staff to maximize results. Between 1986 and 1990, their work resulted in the planting of more than 115,000 demonstration plots by 50,000 smallholder farmers. Inputs were subsidized by MOFA, SG 2000, and the nation's banks. The result was a vast improvement in maize harvests (and a resulting disruption of the market).

But the program caught on. After 1990, Ghanaian banks gradually took over the task of financing the input costs of a pared-down number of demonstration plots. Farmers began adjusting to the new techniques, and SG 2000 shifted its focus to grain storage, seed production, agroprocessing, and training related to extension education.

An emphasis was placed now on quality as well as quantity of production. One example was the development, testing, and adoption of a promising new grain variety called Quality Protein Maize (QPM). Maize (which is what farmers call the crop that is later sold to consumers as corn) was a boon for farmers in many ways, offering great yield advantages as long as there was enough water and fertilizer to nourish it. After being imported to Africa and the rest of the world from its home in the New World, maize had become a staple crop in many nations.

But it suffered from one major deficiency: It was very low in two amino acids—lysine and tryptophan, components of protein—that are essential for health. Humans can't make these in their bodies; these components must be provided through diet. In the Americas, corn was often served with beans, which offered the missing nutrients,

or with meat, eggs, or dairy products, all rich in the missing amino acids. But in some countries in Africa, maize could account for more than half the average calories. If maize consumption was not offset by other protein sources, the result could be a nutritional disease called kwashiorkor. It affected children in particular, and it was a terrible thing to see. The kids were listless, with swollen hands and feet. In extreme cases, the disease manifested as stunted growth and liver and kidney problems. Kwashiorkor was a major problem in a number of African nations.

The answer, it seemed to scientists, was to breed a strain of maize that contained higher levels of the two amino acids. An international effort resulted in several new maize strains that could offer a more complete protein. Eventually the scientific work resulted in a new biofortified strain that offered just that: Quality Protein Maize (QPM).

In the late 1980s the SG 2000 team in Ghana added a veteran maize breeding expert from CIMMYT, Wayne Haag, who would rise to become country director in 1991. Haag had a strong interest in QPM and encouraged its use in Ghana, where it grew well. This was soon looking like another success story for SG 2000, but as always, there were challenges. QPM looked and tasted somewhat different than the maize varieties consumers preferred in Africa. The seed was more expensive than the older strains, and yields of this special cultivar tended to be lower. QPM was a gamble for farmers.

But SG 2000 promoted its use, and the government, eager to quash kwashiorkor, backed its adoption. Promotional campaigns were launched to counter consumer hesitance, and subsidies were offered to lower costs for smallholders. The amount of QPM grown in Ghana increased dramatically. Today, the crop is being grown on one million hectares in twenty nations in sub-Saharan Africa. Ghana still grows a large share of that.

By the early 1990s, the original SG 2000 staff in Ghana had turned over, and the emphasis had shifted from the original demonstration plots—which had already been cut far back in number from their peak a few years earlier—to QPM, storage, and extension services. The program had evolved. And that ability to evolve, to take on productive new lines of effort when they presented themselves, to cut back on parts of the program that were no longer effective, to tackle the next parts of the puzzle once the first had been handled, would be a hallmark of the SAA-SG 2000 effort through the rest of the decade.

Yohei Sasakawa

Yohei Sasakawa was born in Tokyo in 1939, and at the age of six, he miraculously survived the worst air raid on Tokyo, which is said to have killed over 110,000 people in one night. In 1976, he visited the Korean Leprosy Research Institute



Yohei Sasakawa with women farmers in Ethiopia

with his father, Ryoichi Sasakawa, where he saw his father's concern for and dedication to people affected by leprosy who had been abandoned by their families and society, and this inspired him to devote his life to the betterment of society.

In 1984, he joined Ryoichi Sasakawa, Chairman of The Nippon Foundation, Dr. Norman Borlaug, and former U.S. President Jimmy Carter to help Ethiopia cope with famine. In 1986, he established the Sasakawa Africa Association to promote agriculture in Africa.

In 2001, the World Health Organization (WHO) appointed him as the WHO Goodwill Ambassador for Leprosy Elimination, and in 2007, the Japanese government appointed him as the Goodwill Ambassador for the Human Rights of People Affected by Leprosy. In 2010, he was instrumental in the unanimous adoption of the Resolution on the Elimination of Discrimination against Persons Affected by Leprosy and their Families and the Principles and Guidelines by all 192 UN member states at the UN General Assembly plenary session. Since becoming the Chairman of The Nippon Foundation in 2005, he has been active both in Japan and abroad on humanitarian missions that transcend politics, religion, ideology, race, and national borders. Even in his 80s, he is still striving forward with his philosophy of overflowing commitment, perseverance to endure any difficulties, and continuity of effort until results are achieved.

In 2013, he was appointed as the Special Envoy of the Government of Japan for National Reconciliation in Myanmar by the Government of Japan in recognition of his longstanding humanitarian assistance activities in Myanmar, and he is working for reconciliation between the Myanmar Government and the various ethnic insurgent groups. In 2018, he was awarded the Gandhi Peace Prize by the Indian Government. In 2019, he received the Grand Cordon of the Order of the Rising Sun and the Order of Cultural Merit from the Government of Japan.

Chapter 8

THE LOSS OF A LEADER

Another important change for SAA in the early 1990s was taking place in Japan. There, the initiating force behind the project, Ryoichi Sasakawa, was letting go.

He was in his nineties now, traveled little, and was giving increasing responsibility to his son Yohei. His energetic, flamboyant, rich life had made him a star in philanthropic circles, an international figure, and a friend to many nonprofit enterprises. But his background with right-wing politics and gambling also made him notorious in some circles. He entered the last years of his life with a reputation as varied as his life had been. He was seen overall as a sort of lovable rascal, a pirate king whose good deeds helped balance a checkered past.

Those good deeds were now countless. His brainchild, the Japan Shipbuilding Industry Foundation, had transferred billions of dollars to fund an enormous range of philanthropic works around the world, from housing for the elderly to educational scholarships for needy students, from the health of the ocean to fighting leprosy, from disaster relief to cultural exchanges. Some gifts from the Sasakawas were one-time grants; others, like the Sasakawa Peace Foundation,

were long-term enterprises. His foundation had distributed more than \$7.7 billion (USD) to worthwhile causes, including subsidies and grants. His generosity won him many prizes and awards, and made him many friends.

However, few of the works he had initiated matched the far-reaching impact of the Sasakawa Africa Association. Ryoichi's immediate response after seeing the BBC news report from Ethiopia, his insistence on a long-term solution, his persistence in courting Norman Borlaug, his influence in making an alliance with Jimmy Carter—and of course his steady provision of funds—were essential to establishing, growing and supporting SAA.

Now, late in life, he was letting it go. Dealing with worsening health problems, he retired from the world stage and handed over the reins to his son. On July 18, 1995, at age ninety-six, Ryoichi Sasakawa died.

It was the end of an era. Ryoichi's larger-than-life personality had been a hallmark of the Sasakawa philanthropy—and a double-edged sword—both propelling it forward and linking it to his past associations with fascism and the gambling world. Now, with Yohei taking increasing responsibility, The Nippon Foundation (the parent foundation) would enter an era of quieter, more businesslike respectability. Yohei was a powerful figure who preferred to operate in the background just as much as his father had pushed to the forefront. He dressed elegantly but soberly, spoke carefully (although often with feeling), and operated without controversy.

But he faced many challenges. The Foundation's income was slowing as the Japanese fervor for wagering on speedboat races declined, sinking from a peak of almost 75 billion JPY in 1991 to just over 32 billion JPY a decade later. The decreased revenue meant tightened purse strings, which in turn meant that each gift decision took on more weight. Still, his support for SAA remained strong. Under his influence, total funding for the African projects increased significantly

during the 1990s, even as The Nippon Foundation's income declined.

Interest in Borlaug's program of new seeds and new techniques continued to grow. The success stories now included not only Ghana but also, across the continent to the east, Tanzania. The Tanzanian program started in 1988 with the first of what would become tens of thousands of demonstration plots. The relationship between SG 2000 and the Tanzanian government was strong, and the country had about 5,000 government extension workers involved with agricultural outreach. By 1995, around 1,000 of them had received crop management training from SG 2000 staff. Roughly two-thirds of the demonstration plots grew maize, and there the average yields shot up fourfold, from 1.3 tons per hectare to around 5 tons. Sorghum yields rose significantly, too. Farmer field days at the demonstration plots drew hundreds of thousands of smallholders who were able to see for themselves the benefits of the new practices.

Throughout the first three years, the Tanzania program, one observer wrote, looked like "an unqualified success." Farmer interest in the demonstration program was high, with thousands of smallholders planting test plots. The risks, after all, were low because SG 2000 arranged loans that covered the costs of the needed inputs. Loan recovery rates were high during those first three years, thanks to good rains and bigger harvests. Farmers were eager to participate in the low-risk program and keep planting test plots for as long as their costs were covered.

Then the loan recovery rate began to decline, as the growing popularity of the program collided with a lack of rural infrastructure for handling and tracking loans. Village extension workers sometimes had to handle large sums of money—a perilous addition to their usual duties—which sometimes resulted in unpleasant scenes with local farmers when they tried to collect overdue loans.

And then there was the weather. The smallholder farmers were dependent on rain. When rains lessened in Tanzania, as they did

in much of sub-Saharan Africa, the farmers generally did not have the means to irrigate. In Tanzania, harvests during the three years following 1991 were marked by poor rainfall, reduced yields, and an increased default rate on loans. SG 2000 staff found themselves working to solve rural credit problems. They tried reducing the number of test plots. They tried a program to get farmers to pay half of their input costs up front. They instituted a two-year limit on participation in the demonstration plot program after which farmers would be “graduated” to work on their own. Efforts were increased to get the Tanzanian government or private sector involved in solving the credit crunch.

During the 1993–94 cropping season, SG 2000 ended the practice of providing input credit to farmers planting test plots, while continuing the search for other ways to help smallholders afford the inputs they needed. In association with local village stores, fertilizer and seed companies, and farmers, a scheme to put together an entire input supply market was tried. Under this new program, registered stores in villages would be able to buy fertilizer from wholesalers on partial credit, with SG 2000 guaranteeing half the value. It moved SG 2000 away from the business of offering credit to individual smallholders and into the business of dealing with local store owners and wholesalers. If the scheme succeeded, a sustainable market system would emerge, with a new network of fertilizer stores working at the village level but with strong ties to large wholesalers. It was both ambitious and innovative, and it demonstrated the lengths to which SG 2000 was willing to go to set up long-term solutions to difficult problems.

Despite significant success during its first two years, the program also revealed the next level of the problem: Fertilizer wholesalers and importers to the region were themselves strapped for cash, running so close to the bone that selling on credit, with the associated risk of default, was a sticking point. Finding ways to set up new markets, deal with financial services, and establish trust in remote rural areas

presented enormous challenges. The fledgling program, despite its promise, was halted in 1998 when, after ten years, SG 2000 decided to discontinue its field program in Tanzania.

By then, credit wasn't the only challenge. Again, as in Ghana, the success with harvests led to the need to invest in postharvest storage facilities so that smallholders could stash their grain until market conditions were right. Traditional storage in Tanzania was as simple as large woven baskets, where the grain was prey to rats, insects, and mold (a problem made worse by inadequate drying). SG 2000 put considerable effort into improving communal storage at the village level, starting with surfacing the baskets with cement and raising them off the ground on platforms, often adding improved drying patios. These communal facilities were frequently overseen by farmers' associations, an important way to bring smallholders together to improve their economic power, allowing them to make better deals for inputs and improvements.

In order to help smallholders through the period while their grain was stored and before income could be generated by sales, SG 2000 tried pilot programs of another kind of credit, by providing short-term loans against the grain being stored. This again was run through local farmers' associations. The loans would be repaid over months as sales took place when market prices rose. The scheme was discontinued, however, for a reason peculiar to Tanzania's history: Farmers shied away from using communal grain storage, especially if government officials were involved, because it reminded them of the forced collectivization used during the time of former Tanzanian leader Julius Nyerere.

The SG 2000 program in Tanzania during the early and mid-1990s showed how venturesome, ambitious, and broad the SG 2000 vision could be. In addition to thousands of demonstration plots, various credit experiments, and improvements in grain storage, the program also involved extensive training for extension staff, the introduction

of an improved plow for smallholder tillage, an emphasis on improving soil health by encouraging the use of composts, animal wastes, optimized fertilizer mixes, and more.

The soil fertility work demonstrated not only how holistic SG 2000 could be in its approach, but also the ways such expansive thinking could run headlong into unforeseen problems. The initial impetus for the program came from the Tanzanian government, which asked SG 2000 to develop the key elements for what was called the Soil Fertility Recapitalization and Agricultural Intensification Project (SOFRAIP). With SG 2000's input, it was designed as a comprehensive answer to a number of issues, providing not only techniques for farmers to build soil quality through careful use of natural and chemical inputs, but also a credit component for smallholders to fund their purchasing. It included support for a suitable supply system and boosts for forming a system of savings and credit cooperative societies. Hopes were high that the World Bank would fund the plan, and months of work went into preparing a detailed proposal.

And there it bogged down. The World Bank experts questioned the number of moving parts to the proposals. They believed that there were too many sub-components involved. There was resistance to what the Bank saw as a "top down" structure telling farmers what to do without adequate input from the smallholders themselves. And there was a general sense that the scheme might add up to little more than another subsidy for farmers. The World Bank asked for a redesigned proposal with fewer sub-components and a greater emphasis on community participation. The proposal went back to the drawing board, resulting eventually in a revised and renamed project that addressed the World Bank's concerns. The project did not get final approval until 2003—and resulted in a greatly reduced role for SG 2000 in its implementation. The Sasakawa organization had been thinking for some time about bringing the Tanzania project to a close; it finally did so in 2004.

The lessons learned during the program's first decade in Ghana, Tanzania, and elsewhere showed again and again that the initial goal—tremendously increasing food production—was only the beginning. The challenges that followed, from credit to transportation to storage, were just as complex and just as important. The SAA program, still known widely as SG 2000, had to grapple with an appropriate response to these next-level issues, as well as deal with the popularity of their program. SG 2000 could not afford to go everywhere and do everything.

But in the mid-1990s it seemed like the organization might try just that. The programs in Sudan and Zambia had been shut down in the early 1990s, but around 1995 Ghana and Tanzania were fully active, and the programs started a few years earlier in Togo and Benin were still operating. A new country program in Mozambique had started when SAA representatives visited in 1993 after the end of that nation's long civil war. Talks between the Sasakawa organization and the Mozambique government continued for almost two years before a memorandum of understanding was signed in 1995. The new program was put under the direction of one of SG 2000's strongest proponents of QPM. Demonstration plots were quickly planted—40 in 1995–96, 720 the next year, expanding to 3,000 a few years later—focusing on maize at first, then adding rice, sunflower, cotton, beans, an improved strain of QPM, and other locally desirable and region-friendly crops. Farmers' associations were encouraged, village input dealers were supported, and relationships with the government's Ministry of Agriculture and extension services were strengthened.

In addition to Ghana, Tanzania, and Mozambique, an SG 2000 project was started in Guinea, on Africa's west coast, in 1996. Here the focus was on rice—Guinea was a rice-eating nation—especially a fast-maturing new cultivar called NERICA (New Rice for Africa).

Guinea's soils were nutrient-poor, but with NERICA it was possible to grow a harvest of rice and have time to follow it up with a nitrogen-fixing crop like velvet beans, replenishing the soil naturally. Rice harvests grew, reducing the nation's reliance on importing grain from foreign countries.

The SG 2000 system was working. After ten years of refining the demonstration plot approach and adding elements where needed, from farmer credit to better tools, the Borlaug package was helping to increase food security in country after country. It was easy to get caught up in the enthusiasm and help spread the word to more and more countries.

But the SAA board recognized that funds were not available to start SG 2000 programs in every nation that wanted one, or even maintain older programs that had been running for years. As early as the fall 1992 meeting, the board encouraged the development of a strategy for winding down programs in some countries. The intent from the beginning had been to come in for only a limited time, perhaps five or ten years, to introduce Borlaug's techniques to small-holder farmers, establish their benefits, and encourage their adoption until farmer enthusiasm and the host country's support spread their use in a self-supporting way. Then the SG 2000 staff would be moved to another country to repeat the success.

None of the country projects were meant to last indefinitely. Following early decisions to retire from Sudan and Zambia, the board started paring other projects as well, announcing the end of work in Togo, Benin, and Nigeria in the mid-late 1990s. The decision to pull SAA resources out of the promising Nigerian program in 1997 showed just how large a role politics could play: It came only after the man most responsible for bringing SG 2000 to the country, Olusegun Obasanjo, had been arrested by new leadership in the country and jailed as a political prisoner.

The board's ambition to spread the program across the continent

was colliding with the reality of limited resources. But the closures in some countries freed resources for others, and in a burst of expansion in the second half of the 1990s, SG 2000 initiated field programs in Mali, Uganda, Burkina Faso, and Malawi. The Uganda program was promoted by Jimmy Carter, who had been working with leaders in the country on conflict resolution. Mali and Burkina Faso offered the advantages of in-place irrigation systems built for cotton production.

Malawi, a country just east of Zambia, looked like a significant challenge. It was a very poor and food-insecure country with few large tracts of uncultivated arable land. It was also heavily dependent on maize, which provided more than half the average calories of its citizens. Malawi looked like a food disaster in the making. But despite encouragement from the World Bank and other institutions for SAA to get involved, Borlaug was not enthusiastic. The country was already chock-a-block with other aid efforts, he thought, with NGOs, private foundations, and government agencies practically tripping over each other. He wasn't sure that using SAA's limited funds to start a program there was the best use of resources. But the board saw promise, overruled him, and the SG 2000 Malawi project started in 1999.

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The SAA board might have been eager to expand the number of programs, but the source of its funds, The Nippon Foundation, was less enthusiastic. After Ryoichi Sasakawa's death, the foundation he had created as the Japan Shipbuilding Industry Association began to change. Ryoichi had been JSIF's Chairman, public face, and decision-maker. The name Sasakawa was closely associated with JSIF, an identification that led to concerns in some circles, especially when Ryoichi's many-sided and often controversial past was brought up.

After his death, both the name of the foundation and its leadership changed. What had been JSIF became The Nippon Foundation.

A new chair was invited to lead the foundation, the well-known Japanese novelist Ayako Sono, who offered respectability, a conservative outlook, a less controversial past, and service as a JSIF board member. She would chair The Nippon Foundation for ten years, while Yohei Sasakawa continued as President (a position had taken in 1989).

The new chairwoman was not critical of the SG 2000 programs. Under her leadership, The Nippon Foundation, even in the face of declining revenues, had increased funding for SAA (which rose by a total of 50 percent between 1992 and 2002). But she also saw the need to trim their expansion. In 1992 the SAA board had discussed the need to phase out country projects and even drew up a schedule: Ghana in 1994, followed by Tanzania, Benin, Togo, and Nigeria during the following four years.

But none of these programs had closed as scheduled. Instead, delays in the phased shutdowns and the addition of a number of new programs in new countries left The Nippon Foundation with little choice than to intervene directly in SAA's operations for the first time. It instructed the SAA board to close its projects in Nigeria, Togo, Benin, and Tanzania by 1998.



Ayako Sono, Chairman of The Nippon Foundation, greets Yoweri Museveni, President of Uganda, at a 2001 workshop in Kampala, Uganda

Chapter 9

EXPANSION AND CHALLENGE

The news came as an unwelcome surprise to Borlaug. He had become accustomed to working with the SAA board, which had exercised total decision-making control over his program in Africa. The country directors chosen by the board had been given wide latitude to shape their programs as needed. Borlaug appreciated this disseminated decision-making. It was the way he thought organizations should be run, by the people on the ground, with limited second-guessing from boards and foundations thousands of miles away.

But now The Nippon Foundation was flexing its muscle in ways that directly affected SG 2000. Borlaug appreciated the need for exit strategies, but he also saw the need for an ongoing presence to ensure that the programs, once established, were working as they should. He was growing especially concerned about how to handle the next-generation challenges that arose after farm yields went up: The needs for better storage, better roads, and better market conditions for small-holders. Borlaug was looking at the whole value chain, not just the first links. Pulling out too early might threaten to undo the progress that had been made.

His stature within SAA made his arguments especially persuasive. But now the decision-making had moved to another level. The Nippon Foundation, with its new leadership, was not so easily swayed. SAA quickly confirmed closure dates for Togo (1998), Benin (1998), and Tanzania (closure delayed until 2004). Nigeria was scheduled for closure in 1999, but it didn't happen. Plans took a turn when the dictator of the country suddenly died early in the year. The passing of the man who had imprisoned former leader and SAA booster Olusegun Obasanjo led to a change in government, and his successor released Obasanjo, who then asked Yohei Sasakawa to keep the SG 2000 project in Nigeria going for another five years. It looked like a second chance for the program to succeed. The program continued.

Nothing illustrated the difficulties in ending country programs more than the longest-lived of them all: Ghana. It had been SG 2000's greatest success story. After its launch in 1987, good relations with the government had been established, the demonstration plot program had been highly effective, and both the government and banks in the nation had become involved in extending credit to smallholders. By the 1991–92 planting season, SAA costs in the nation had started to decline as focus shifted from demonstrations to post-harvest storage, the development of agroprocessing, training for extension workers, and the development of Quality Protein Maize. As planned, the government and private sector were taking on more and more of the burden, thus lowering the costs for SAA. Program workers there could see a path toward self-sufficiency and zeroing out the project. But it couldn't happen too quickly. A rushed closure would endanger too many ongoing projects. The original target of 1994 was extended to 1998.

But as that later date approached, there were second thoughts. Costs in 1997 for the SG 2000 program in Ghana were now just a third of what they had been in 1991. Professional Ghanaian staff and management were taking over most of the duties. The education

program had created a pipeline of trained agricultural experts who earned their degrees at local colleges. There were now hundreds of new graduates knowledgeable in the latest techniques and innovations who could handle extension and management duties. The investment in agroprocessing was creating opportunities at the village and regional level.

By 2003, when the program was finally brought to an end, SAA could point to a number of successes: Maize production had more than doubled; cassava and rice harvests had tripled. High-protein QPM varieties had been planted on a quarter of a million hectares. And new soil conservation techniques were being used on more than 100,000 hectares. In 2011, economic well-being rose to the point where Ghana broke into the ranks of the world's middle-income countries. Many factors played a part, from the country's political stability to increasing prices for major exports like cocoa and gold, but there is little doubt that increases in food production at the smallholder level—the focus of SG 2000—played an important role.

Even after the Ghana program closure, SAA maintained close ties with institutions in the country, collaborating in the ongoing development of QPM, helping with agroprocessing efforts, and assisting with education programs.

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The education component proved especially important. SAA programs depended on the dissemination of knowledge to farmers. In many nations this has been the job of agricultural extension agents working through government offices or universities. Extension agents are the foot soldiers of any green revolution. And SAA realized early on that success depended on partnering with national governments and universities to train extension agents in the particulars of the Borlaug package. If SAA was going to change how farming was done,

it needed the help of highly trained, preferably local agents, men and women who knew the latest technical aspects of the program and could promote them effectively to smallholders.

The question was how to do it. Early discussions by the SAA board revolved around starting a diploma program in Ghana modeled on a Pan American School of Agriculture program in Honduras. But an estimate of costs showed that the funding needed to start a program of this scale was extremely high. So, another approach was developed, calling for a scholarship program for extension agents.

In 1991 SAA launched The Sasakawa Africa Fund for Extension Education (SAFE), an arm of the organization devoted to training and building leadership skills for future generations of extension workers. The focus was on mid-career extension staff, workers who had been grappling with farm issues for years, working with the agricultural services of their national government, often in conjunction with an SG 2000 project. It made sense: These mature, established mid-career workers were already trained in the basics of farm extension work. They brought skills to the table. They had valuable field experience and real-world knowledge and needed only the addition of intensive training in the new Borlaug techniques as adapted to Africa.

With management help from the Winrock International Institute for Agricultural Development (a group Borlaug trusted and had long promoted), SAFE started by looking for universities and agricultural colleges that might host the program. At the same time, they gathered information from government agricultural agencies on how best to secure release time for their mid-career staff to attend the program. The intent was to make the program attractive by ensuring the students were guaranteed their jobs when they completed the training and were paid while they went to school. There was also the opportunity for promotion. A certificate, a diploma from the program, might open the door to higher leadership positions. The program would

train a new generation of agricultural leaders, people who could carry on the ideas even after SG 2000 left a country.

It kicked off in Ghana in 1993, housed in the University of Cape Coast. From the start, candidates were chosen based on the following criteria:

- They had to be nominated by their employer (most often this was the Ghanaian Ministry of Food and Agriculture).
- They had to have at least three years of field experience.
- They had to possess a high school certificate or a diploma in agriculture or a related field.
- At least a quarter of each class should be female.

This last requirement was designed to rectify the gender imbalance in the extension services in Ghana, and to recognize the growing importance of women farmers in the country. Very few women in Ghana had the required education in agriculture; their school degrees and certificates tended to be in fields like Home Economics and Food Science. To help, remedial courses were set up. And as more and more women went through the SAFE training and back into the field, the number of qualified female candidates seeking out the program gradually grew (although it continued to be difficult to hit that 25 percent benchmark).

An emphasis was also placed on placing students out in the fields to experience first-hand the challenges in translating classroom lessons into real-world improvements. Students were required to participate in Supervised Enterprise Projects where they planned and executed off-campus, field-based projects, narrowing the gap between theory and practice. They met with local smallholders, assessed their needs in a particular village, and designed a program to address those needs. After completing the plan, they returned to the village to implement their ideas. This encouraged creativity, brought students face-to-face

with real-world challenges, and offered villages direct help. It was a tremendously valuable learning experience and became what one SAFE employee called “the nerve of the program.”

But there were challenges from the start. The SAFE program was designed to address immediate needs for agricultural extension and was built with a “demand-driven curriculum” that focused on solving real-world problems. This was a tough fit for many universities, which focused on academic rigor in traditional disciplines. Mid-career professionals going back into the classroom might also be a concern. Would they have lost track of their educational skills? Would they fit into campus? The training approach was new; the target students were new, and it took time to convince universities to bring SAFE onto their campuses.

“The early days of the SAFE initiative were a true struggle,” concluded one report. But after a few years of pilot programs, fine-tuning, and success in Ghana, universities began to come around. So did government agencies. And SAFE began to hit its stride.

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Interest in SAFE grew among educational institutions, employers, potential students, and in other SG 2000 host nations. But requiring mid-career workers to be on campus for a two-year (or more) program did not work well for some candidates, especially women who often had to balance family demands. Some could simply not afford the time away from their homes and children. Employers, too, often could not afford to lose a worker for such an extended period of time.

Recognizing the need for a more flexible mode of delivery, SAFE administrators and the SAA board made the program somewhat more flexible. As it spread from country to country, SAFE proved adaptable to changing needs and demands, expanding in some places to include high school graduates as well as mid-career extension

workers, and successfully mixing the younger and older students in the classroom. Adaptability also meant exploring the use of distance learning, running classes on weekends and in summer, and adjusting to holiday schedules. This creative and responsive fine-tuning allowed a more effective combination of work and study, reduced the need for travel, and helped lower costs. By 2020 SAFE programs were running in eleven current and former SG 2000 countries through a growing number of partner universities and agricultural colleges. From a handful of students in that first program in Ghana in 1993, the total number of students participating in and graduating from a SAFE program grew to almost 9,000 by 2020. The great majority of graduates—95 percent, according to SAA records—ended up working in agricultural extension; a number of them have now risen to high levels of responsibility.

SAA built on this educational success with programs designed to complement and expand the lessons learned in the classroom. From the start, the programs depended on close ties with national agricultural extension services, and here, too, SAA's work was marked by its ability to adapt to local conditions. In Ethiopia, for instance, agricultural extension is delivered almost exclusively by the government, thus SAA programs are designed to fit with central needs. Uganda, on the other hand, decentralized its extension effort, giving greater responsibility to smallholder farmers selected at the village level to facilitate extension work. Here SAA's efforts focused on the smallholder representatives themselves, providing them with comprehensive training scaled to their knowledge base and local needs. In Nigeria, SAA works state-by-state, because the federal system there has placed responsibility for extension services with the state.

Attention was also paid to vocational training. Through the 1990s, as SAA increasingly began to appreciate the importance of the agricultural value chain beyond simply boosting production, it worked to develop support for crop processing, storage, and marketing, focusing

on these areas not only in the SAFE program, but by launching training efforts through farmers' organizations, emphasizing skill-building in financial affairs and competitiveness.

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By the late 1990s, the ongoing challenge of balancing the desire to stay in a needy country with the reality of limited funds for the entire SAA program still had not been solved. Although SAA's funder, The Nippon Foundation, had made it clear that certain country programs were to be closed, only two—Benin and Togo—had done so on schedule. Nigeria, Tanzania, and Ghana were still going strong long past their planned closure dates. Beyond that, in the late 1990s new SAA programs had been added in Guinea, Burkina Faso, Mali, Malawi, and Uganda. Instead of fewer country programs, in 2000 SAA was supporting more than it had when The Nippon Foundation flexed its muscle.

In the face of real-world experience, the old plans to terminate programs after a certain date were seen as no longer relevant. Initially, the idea was that SG 2000 would start a program in a country, spend the first five years demonstrating productivity gains, then invest two or three more years to address specific problems of institutionalization and capacity building. The whole process was to be completed in less than a decade. But as the programs continued, it became clear that longer time frames were necessary for real success. The first five-year phase was now expected to be more like six or seven years, with the second phase requiring an extra year or two. A growing recognition of the long-term importance of extension education, the success of the SAFE programs, and a growing appreciation for the work that was needed across the entire value chain, led to even longer-term horizons. The Mozambique program would run for 12 years before it was shut down, Tanzania for 16, and Ghana for 17.

No one wanted to shut down a country program prematurely before the concepts and techniques had been absorbed into the host country's structure and before there was some confidence that the progress made by SAA would be carried on once its support was ended. The structure of the SG 2000 program made shutting down, on any schedule, a challenge. The program vested a great deal of decision-making in its country directors. This was a very effective strategy in important ways because it gave directors leeway to make case-by-case adjustments to reflect the government structures and farmer needs in specific nations. But also opened the door to program expansion. Country directors were talented and enterprising. When they saw a problem, they did their best to fix it, even if it resulted in the program moving into areas somewhat removed from the initial goal of raising productivity. Each new effort at the country level was seen as important; and each led to new, sometimes long-term obligations for SAA.

Another part of the issue arose from the Sasakawas' core philosophy. From the start, the Sasakawa effort was designed to move away from the old, short-term aid approach of diving into a crisis area, throwing money at the problem, and quickly moving on. The Sasakawas built the SAA around Borlaug's ideas precisely to do the opposite. They wanted a viable, sustainable, long-term solution to food production in Africa, not a temporary fix. For the benefits to last over time, the host countries had to pick up the reins and keep the momentum going. That transition took time, but it would be time well spent.

Thus, when country directors asked the SAA board for a few more years to transition out of a nation, they were often granted the extra time. Shutdowns were delayed in the 1990s while at the same time new country programs were added. By 2000, SAA was funding eight active country programs. That was twice the number originally envisioned. Instead of decreasing the number of countries, as The Nippon

Foundation had wanted, the total kept going up.

There were simply not enough resources available to keep the ambitious agenda going indefinitely. Something had to give.

Voices from the Field: Mali

“Thanks to SAA, we have seen our revenues and livelihoods greatly improved.”

How SAA empowered Assa Sanogo and her fellow farmers to improve their livelihoods



Assa Sanogo, standing by a groundnut pulp mill

Assa Sanogo is a 66-year-old smallholder farmer from the village of Monzomblena in Mali. In addition to engaging in the production and processing of agricultural products including groundnuts, Assa is also the President of the women’s group, comprising 223 members at the Postharvest and Trade Centre (PHTC) in Monzomblena, Dioila Region, Kerela Commune, Mali. As a result of training administered by SAA on improved farming practices and technologies, Assa and her colleagues have seen their technical and operational capabilities greatly improve.

“I was impressed with the technologies SAA encouraged us to test and adopt. At first, I was reluctant—especially with the new variety of groundnut flower 11 brought for demonstration by SAA—as the person responsible for coordinating with the women of the village. However, time proved SAA right after an initial agricultural test campaign,” Assa explains, “I was impressed by the quality and quantity of the harvest within our community, and SAA have helped ensure food security in our community.”

In addition to training farmers on good agricultural practices, SAA also helped obtain a groundnut processing unit, consisting of a sheller, roaster and groundnut pulp mill. Additional training ensured that smallholder farmers are fully knowledgeable in using the equipment safely and efficiently.

“Over a two and half month period of activity, we processed 500kg of grain groundnut into 75 container paws. With a starting amount of 450,000 XOF (\$786.70), we generated a revenue of 175,000 XOF (\$306). In terms of capacity building efforts, SAA has supported members of the group in a variety of areas, including entrepreneurship in agriculture, business management, marketing, and contracting, among others.

“We are truly grateful and delighted with the training we received, as it has enabled us to manage our own business better, and to ensure financial profitability. Thanks to SAA, we have seen our revenues and livelihoods greatly improved.”

Chapter 10

A NEW UNDERSTANDING

Faced with pressures from both below and above, in 2002 the SAA board commissioned an external review of all country projects. A group from Nagoya University, one of the top research universities in Japan, was engaged to undertake the comprehensive review. Leading members of Nagoya's International Cooperation Center for Agricultural Education ran the project, coordinating a team that included experts from International Development Center of Japan, Winrock International, and the Japan International Research Center for Agricultural Sciences, as well as SG 2000 staff.

The review started with site visits to nine SAA country programs in Africa, talking with staff and local farmers, visiting operations, and observing the project's effects first-hand. When the final report came in, it provided a strong endorsement of SG 2000's general approach and methods. The evaluation team's leader, Tetsuo Matsumoto, commented favorably on the project's hands-on approach, writing, "Rather than talking, SG 2000 implements effective and practical technology demonstrations on farmers' own fields. Working at the grassroots level, as well as with top policy makers, makes SG 2000



Donald Plunkett and Tetsuo Matsumoto interviewing farmers in Kano, Nigeria as part of an external review of all SG 2000 projects

more effective than other NGOs.”

He also endorsed the management approach at the country level, adding “Country directors enjoy great autonomy, and I believe that this is one of the strengths of SG 2000. Because each director has decision-making authority, each project is able to identify the best way to disseminate modern technology within that country.” After cautioning that strict adherence to preset timetables might be counterproductive if the host country wasn’t ready to take over, he concluded, “It is a tremendous task to transform sub-Saharan small-holder agriculture to a commercial-scale one, and it certainly takes time. What SG 2000 alone can do is limited, but close collaboration with local people will expand the capacity of local institutions. In time, it will indeed lead to a Green Revolution for Africa.”

The report was not finished until 2003. And while it was more

than encouraging to the SAA board and everyone involved with SG 2000, it did not sway the board of The Nippon Foundation. Faced with a continuing decline in income, the Sasakawas' core foundation, the source of most of SAA's funds, remained impatient with the slow pace of closures. In early 2003, it formally instructed the SAA board to design a strategy for focusing SG 2000 efforts. Instead of the nine country programs then active, it wanted SAA to pare the program down to just three or four.

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The report's effects were being felt just as a change of leadership was coming to The Nippon Foundation. After heading the group for ten years, Ayako Sono left her position and was replaced in 2005 by Yohei Sasakawa, who now oversaw both the activities of SAA and the foundation that provided its funding. His management style—less flamboyant than his father's had been, more inclined toward careful study, favoring constant program assessment, and operationalizing those assessments into improved effectiveness—would mark the next phase of SAA's activities.

His new position offered the SAA program the chance for a reset. Many things had changed in the almost two decades since the inception of the first Global 2000 country program in Ghana. The SAA approach had been proven a success. Country directors had tailored efforts to fill national needs, coming up along the way with innovative answers to difficult questions, from how best to work with banks to effective ways to align with extension services.

Perhaps most important, by 2003 a fuller view of the elements needed for long-term success had emerged. It involved many elements along the agricultural value chain: seed and soil, fertilizer, farm equipment, credit, storage buildings, and agroprocessing, through to roads, transportation, communications, and market conditions.

As one SAA report put it, “To maximize income, farmers need to produce a healthy agricultural surplus, process it efficiently and store it until market prices are attractive.” To do all this, villagers had to work together, with support from local service businesses, suppliers, machinery fabricators, and local farmers’ associations.

In other words, impressing a smallholder farmer with the demonstration of a new strain of crop was only the first step in a longer series of events, relationships, and challenges. SAA was now seeing the bigger picture. It just needed to better coordinate, streamline, and deliver the needed support.

The first decade of the twenty first century was marked by the long-planned closure of programs in Ghana (2003), Tanzania (2004), Guinea (2004), Burkina Faso (2005), Mozambique (2005), and Malawi (2006), demonstrating to The Nippon Foundation Board that its advice was being taken seriously. Activities were now focused on the four remaining nations: Ethiopia, Nigeria, Mali, and Uganda.

At the same time, SAA began designing a new overarching framework for organizing its activities in those countries. After digesting the Nagoya report, the organization held a series of brainstorming sessions and planning meetings to generate ideas about how best to organize activities going forward.

What emerged was a matrix system of five key areas of focus, program-wide “themes” under which individual country directors could organize their activities. By approaching all its efforts through these five themes, SAA could bring greater coherence to the program and create clearer reporting lines, while still offering country directors freedom to fine-tune the implementation in individual nations.

The five themes recognized both the original focus of SAA’s work and the important lessons the organization had learned through two decades of experience:

- I. Crop Productivity Enhancement (includes extension work)

- II. Postharvest Handling and Agroprocessing
- III. Public-Private Partnerships and Market Access
- IV. Human Resource Development (includes SAFE)
- V. Monitoring, Evaluation, Learning and Sharing

Theme I: Crop Productivity Enhancement

This was the original heart of the program, the successful introduction of Borlaug's techniques to African smallholder farmers. But by the early years of the new century, much had changed since Borlaug first agreed to join the Sasakawas' effort in the mid-1980s. The initial effort then had been in many ways top-down: Bring the fruits of modern agricultural thinking to the smallholders of Africa and demonstrate their effectiveness. Once the farmers saw the new strains and methods for themselves, they would switch.

Of course, it was never that easy. African smallholders were accustomed to eking out food for their families from small plots of often poor soil. They were extremely risk-averse. To persuade them to try the new methods they had to be assured not only that they worked, but also that they would not have to go into too much debt to reap the benefits.

By the mid-2000s the demonstration program had been refined: Demonstration plots were still being planted, but at the same time local farmers were planting other fields in the village on a scale ranging up to the size of land used by the smallholders themselves. Here nearby farmers can see the effects of different varieties, planting techniques, fertilizer and pesticide use on a real-world scale.

But the demonstrations were only part of the effort in Theme I. As the decade went on, an increasing emphasis was placed on techniques designed to restore degraded soils and build long-term soil health as well as offer immediate boosts in productivity. A new complementary piece was SAA's emphasis on extension workers to provide answers

to questions, face-to-face training, and monitoring and supervision for smallholders to help them through the transition. As Andreas Oswald, the Theme I director at the time, said, “We are transferring knowledge and skill to the farmer. The demonstration is there so that the farmer can see that we say is true. But the knowledge is actually brought to the farmer through training.”

The parts of the program under Theme I came together into what was called a “Farmer Learning Platform,” with field demonstrations of low-cost technologies supported by training sessions with extension agents. A new emphasis was added for encouraging and training women farmers, who were an increasingly important force for change in SAA’s target countries.

SAA’s timelines were becoming more standardized as well. The organization would work closely with a particular village for about three years, with significant staff engagement and identification of specific needs. Once those first years of crop demonstration were completed, the Phase I team would move its emphasis to the next village.

The work done with extension agents varied from country to country, depending on the governmental structure for agricultural outreach. Ethiopia, for instance, gave extension education and outreach a strong emphasis, creating a national network in which there was one extension agent for every 500 households. Uganda, by contrast, had one agent for every 5,000 or so households. In that country, SAA helped create a network of community-based facilitators, farmers chosen to be trained by extension agents who then offered advice to their fellow smallholders. In Mali, which also had a modestly staffed national extension service, the approach was similar but worked more often through village development committees and farmers’ organizations.



Women host farmers producing an improved maize variety at a demonstration plot, Mali

Theme II: Postharvest Handling and Agroprocessing

This represented a next link in the value chain. Increasing productivity at the farm level required an investment in the next steps: Improved storage and value-added agroprocessing, along with the development of networks of private-service providers to supply needed services, from equipment for harvesting to repairs and maintenance for processing and storage machinery.

The goal was to help smallholders ensure that as much as possible of their now increased crop harvest was saved, and that it was made as salable as possible. Instead of growing and storing just enough for local needs for a year, smallholders were now thinking about selling to new, increasingly urban consumers, who wanted longer-lasting, more convenient forms of food. The farmers had to think in terms of a changing market.

The first emphasis was on storage. Training sessions and demonstrations for smallholders across all four focus countries showed the benefits of raised storage platforms to protect stored crops from pests and weather. In Mali, where farmers could lose up to a quarter of their stored millet to pests and rot, SAA helped rehabilitate 38 storage facilities and construct 227 concrete drying floors. Metal silos went up, new grain bags were introduced, and plastic barrels helped keep out rats, insects, and moisture. As more improved storage was available, the local farmers were better able to time their sales.

The next step was the promotion of grain processing machinery such as harvesters, threshers, shellers, and cleaners. SAA helped organize and promote the use of more effective technologies at farmer field days, agricultural fairs, and demonstrations. Local farmers were encouraged to attend, and private machine suppliers and manufacturers were invited to show their wares. To keep the momentum going, SAA worked with local farmers and others to create facilities and programs for ongoing education in post-harvest handling and agro-processing. They went by different names in the different countries, but the goal of these new centers was the same: To improve facilities for farmers to learn about technologies to reduce losses and develop salable products. A special emphasis was placed on creating training programs that worked well for women farmers, whose time available away from the home was limited.

SAA was now involved in looking for local agricultural talent and promoting its success. This included not only people working the land but also those involved in manufacturing small, affordable machines to help the farmers. An example was Geoffrey Munyegera, a born tinkerer from a small town in eastern Uganda, who came up with a small, motorized maize sheller. His machine had a gas engine that could be used to drive the sheller and then power the machine down the road to the next farm. It was small, relatively low-cost, and innovative. But Munyegera's shop needed improvements if he was



Leonides Halos-Kim, Director of Agro-processing and Postharvest, training local fabricators in Nigeria

to start making and servicing the machines in larger numbers. After SAA took him and his employees to a local university for two weeks of training on welding, materials, and engine repair, his output went up, quality improved, and sales grew.

The realization grew that smallholder farmers could not be optimally successful without a business network around them to sell them inputs and equipment, provide credit, build the machines they needed, and offer repair services. It was the sort of small-town environment that had grown up in farming areas around much of the world, with a local bank or credit union, a farm and feed store, a machine shop, and an equipment dealer. But in rural Africa, SAA was helping create it, often from scratch.

Theme III: Public-Private Partnerships and Market Access

The importance of connecting rural smallholders to the market had now grown into a major theme for SAA. Experience over the past

two decades had shown that increased crop yields and improved storage and processing meant little to farmers in the end if they could not make enough money for their goods in the marketplace.

Maximizing income from sales was another multi-part challenge. Individual smallholders had little access to market information and little power to push for better deals. Step one was helping them organize into associations, farmers' groups that could better track market conditions and deal with buyers. SAA worked both to encourage the formation of associations and then to help train the staff in the basics of assessing market demand, analyzing the value chain, and developing viable business plans. The group helped forge productive relationships between private-sector small businesses, government extension services, and farmers to create self-sustaining systems for working effectively with the market. It helped broker new opportunities for farmers' groups to partner with entrepreneurs (especially women), working with local banks and credit unions, government agencies, agricultural researchers, USAID, the World Bank, and other NGOs like Oxfam and the Bill & Melinda Gates Foundation to make it happen.

The importance of establishing an enveloping network of human and business relationships to maximize the effects of Borlaug's science was becoming ever clearer. In addition to farmers' associations and extension workers, SAA helped private businesses to reach out to smallholder farmers, helping build the skills of input dealers, store managers, traders, seed companies, and processors, and then facilitating their success in helping farmers. One creative approach was the development of what were called Community Association Traders (CAT) to improve farmers' access to supplies and markets. Most often they were businesspeople involved with supplying inputs like fertilizer. SAA provided them with extra training designed to help connect farmers with needed services, filling what was often a gap in small towns. They acted as agents for seed and equipment suppliers,



SAA set up an apex association to organize grain aggregation for improved market access

and produce buyers, and helped farmers forge links with extension agents and banks.

Activities gathered under Theme III also included developing access to financial services. Here SAA not only helped bring farmers and local businesspeople together with banks for needed credit, but also provided training for input dealers and traders, enabling them to act as advisers and extension workers themselves.

These initiatives to establish a network of public-private relationships built around helping smallholder farmers were an ambitious set of ideas and experiments. They were a way of weaving together support services at the village and town level to establish long-term structures that would, ideally, become self-sufficient over time.

Theme IV: Human Resource Development (SAFE)

This was the effort directed at strengthening agricultural extension

services in focus nations. Here the work was organized by the Sasakawa Africa Fund for Extension Education (SAFE), which had been offering educational opportunities and building the skills of extension workers since 1991. This partnership between the Winrock International Institute for Agricultural Development and SAA had been spun off as a separate legal entity years before. By 2012 its successful focus on sending extension staff and other students to African universities for training had expanded to nineteen universities, supporting some 5,000 extension professionals. The staff returned to their programs with a deeper knowledge base, new communications skills, and a broader appreciation of the key roles their programs play.

The program constantly adapted to the changing realities of agricultural work in Africa. Initially, extension work was done almost exclusively at the government level, but an increasing stress on private-sector participation in nations like Uganda had shifted attention to working in new ways with other important players. As SAA increasingly focused on the importance of the entire value chain, SAFE's efforts, too, shifted toward building students' understanding of the importance of storage, processing, marketing, and working with farmers' associations. With that wider viewpoint, students were better able to go out in smallholder communities, identify needs across the value chain, and innovate creative approaches to solutions.

Through the first decade of the new century, SAFE continued to evolve to meet the changing needs not only of agriculture, but also of its own students. Increasing flexibility in program design accommodated the increasing number of students unable to carve out two or more years for study at a university far away from home. A new emphasis was placed on distance learning, on building in support for working parents, and on working effectively with employers who wanted their workers to take advantage of SAFE but were unwilling or unable to commit to a long absence.

Interest in SAFE remained strong. It was a successful approach



Graduates of the SAFE program at Wollo University, Ethiopia

that multiplied the effects of SAA's support—mostly in the form of seeding programs and ongoing management—by leveraging resources from universities, national governments, private employers, and other nonprofits. Everyone ended up winning, especially smallholder communities benefiting from the highly trained workers assessing their needs and offering support.

Theme V: Monitoring, Evaluation, Learning and Sharing

The arrival of Yohei Sasakawa to the leadership position of The Nippon Foundation in 2005 signaled a new emphasis on measuring and assessing program results. In part that reflected his careful, data-driven nature. And in part it was a response to SAA's growing interest in working with partners to reach its goals. Working with groups like The World Bank and the Bill & Melinda Gates Foundation often required sharing a great deal of information on effectiveness, reams of hard data that quantified both the scale and the results of various

aspects of a program.

But SAA-SG 2000 had very little data in hand. During much of the two previous decades, SAA did not undertake formal monitoring and evaluation of its program activities. No baseline studies had been done in focus countries, thus before-and-after comparisons were difficult. Various measurements had been gathered on yield increases and other metrics of program success, but the approaches could vary from country to country. “SG 2000 staff members were legendary for the time they spent in the field with farmers, reviewing outcomes and assessing the agronomic efficacy of recommended technologies,” said one progress report, “But the lack of an organized monitoring, evaluation, learning and sharing program was an organization weakness.” It reduced the influence SAA had in international development circles, making it almost impossible to build a data-driven, compelling case for what was working and what was not.

In 2006 SAA decided to correct the problem, working with the Mexico-based CIMMYT to monitor and assess the effects of its programs in Uganda and Ethiopia. A team of social scientists,



A typical monitoring, evaluation, learning and sharing activity in a village in Uganda

economists, and other specialists spent months studying the effects of SAA/SG 2000 programs on the livelihood of smallholder farmers, eventually publishing more than 20 technical economic reports. By the Improvement Center's work ended in 2010, SAA had learned a great deal about the impact of its programs on the lives of smallholder farmers. And now it had a data-driven model for its own work.

The result was the institutionalization of Theme V, with its own director and staff, to monitor, evaluate, and share information on the real-world effects of SAA programs across all four focus nations.

THE END OF AN ERA

By the time the five themes were being embedded and operationalized within SAA, with the appointment of their own directors, staffs, and reporting systems, other forces were also at play. One of the most important was the passing of Norman Borlaug.

The Nobel Peace Prize winner had headed the SAA effort since its early days. But by the time he celebrated his ninetieth birthday in 2004, it was becoming clear that although his mind was still sharp, his energy was not what it once had been. He was spending more time at his home in Texas and less working on SAA details. His health began to decline, and on September 12, 2009, SAA President and world-changing scientist Norman Borlaug died of lymphoma. Even at the end he was thinking about the core thrust of his work. His last words were reputed to be, “Take it to the farmer.”

It was the end of an era at SAA. Borlaug had set the tone for the first two decades of SAA’s work. The hope was that his “Green Revolution” ideas, which had proven so dramatically successful in south Asia during the 1960s and 1970s, would prove equally and dramatically as effective in sub-Saharan Africa.

But that didn't happen—at least not as fast, and not on the same scale. The situation in Africa proved quite different from that in Asia. The factors that had worked in Borlaug's favor in Pakistan and India—well-organized market economies, adequate transportation and irrigation systems, strong central government support—were absent or inadequate across much of Africa. As Akinwumi Adesina of the Alliance for a Green Revolution in Africa put it in 2010, the work in Asia was dramatically successful not only because of higher-yielding rice and wheat varieties, but because of three other “critical factors”: political will, supportive policies, and large-scale financing from national governments. “What has made the African situation different is that despite the new varieties that can make dramatic impacts, we have lacked those three critical elements,” he said.

Borlaug's work had been slowed, too, by pushback against parts of his package. This was especially true of environmentalists' response to his emphasis on increasing the use of chemical inputs like pesticides and inorganic fertilizers. As one observer noted, “the environmental community in the 1980s went crazy, pressuring the donor countries and the big foundations not to support ideas like inorganic fertilizers for Africa.”

Borlaug had little patience for the concerns of environmentalists and other critics of his methods. “I object to some of the ideas I constantly hear being proposed by certain narrow-minded individuals in the affluent nations that in essence say, ‘Don't upset the status quo' in the third-world countries,” he wrote. “Don't introduce modern technology into agriculture because it's not sustainable—while they themselves are privileged to be utilizing vast quantities of non-renewable resources for their own and their own societies' personal benefits.”

Borlaug's personal style had marked SAA's first twenty years. He had little patience for paperwork and hierarchies, preferring getting out and into the fields with local farmers to filling out grant requests

and dealing with rules and regulations. That attitude offered the benefits of fast action and an emphasis on practical results. But it was also limited. By emphasizing the first steps in the program—the introduction of higher yielding crop varieties with appropriate planting techniques and increased use of chemical inputs—Borlaug had achieved some quick successes, as in Ghana. It also uncovered some weaknesses, as the differences between Africa and Asia became clearer, especially the lack of necessary infrastructure in Africa and laxer government control over agricultural markets. Thus, Borlaug's SAA found it necessary to become involved in a widening range of activities along the value chain, from storage to credit to market coordination. Each step took Borlaug a little farther away from his core skills. Each step involved more study and review, added complexity, and more paperwork. Many of those on the team he had helped assemble in the 1980s and 1990s had moved on to other projects. Those who remained were increasingly unhappy with the layers of management that seemed to come between them and their goals. Gone were the more freewheeling days when country directors identified challenges and created solutions on the fly; now everything was being measured, assessed, and approved at multiple levels.

It didn't suit Borlaug. He could become irritable, unhappy about changes in the management structure, worried about what he saw as diversions from SAA's main purpose of bringing the Green Revolution to Africa. He even once refused to attend an SAA meeting as a form of protest.

Until the end, he remained essentially Borlaug: plain-spoken, action-oriented, and stubborn. In the mid-2000s Yohei Sasakawa remembered taking a trip to Africa with the aging Nobel laureate. Borlaug tired easily and was coughing so much Yohei became concerned about his health. But when he asked if it might not be better if Borlaug cut the trip short, Borlaug replied, succinctly and in his clipped Midwestern voice: "I have been entrusted by Mr. Ryoichi

Sasakawa to do a job, and I intend to do it thoroughly.”

“I felt the tremendous power of his strong will,” Yohei remembered. The two men might differ on how to reach their goal, but they remained in close agreement on the goal itself: Helping farmers in Africa feed their families, their nations, and their continent.

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As Borlaug’s health failed, SAA had to find ways to move ahead without his guidance. Restructuring around the five themes, a move that went into effect near the time of the Nobel Laureate’s death, reflected the group’s post-Borlaug thinking: SAA’s efforts were now much broader than they had been in 1986, offering a comprehensive perspective that linked smallholder farmers in Africa into the entire agricultural value chain. No longer was it enough to simply demonstrate for rural smallholders the benefits of Borlaug’s package of seeds, inputs, and techniques. Greatly improved yields were possible—SAA’s work had proven that. But these stunning advances meant little if they did not exist in a larger structure that would offer maximal benefits over a long period, at a risk level that smallholders could accept. The five-theme approach took Borlaug’s work as a starting point, and then built on it.

This required partners. The food challenge in Africa was enormous, daunting, and many-faceted. It was far too much for any one organization to tackle on its own. Successful partnerships were vital to continued and sustained improvements. This meant that SAA increasingly depended on developing productive relationships with governments (a priority from the days of Jimmy Carter), NGOs, financial institutions, international foundations, and a variety of aid groups.

SAA made an attractive partner. It offered the benefits of long experience in the field; a reliable funding base from The Nippon

Foundation (which had continued to increase SAA funding even when overall income declined); an improving tracking system for assessing effects; and a proven ability to tailor its services to the realities on the ground, to do what was needed in order to solve a problem even if that meant adapting and changing past practices.

Other organizations brought their own strengths and added funding. The result, at its best, was a whole that could be greater than the sum of its parts. In Ethiopia, SAA worked on various projects with the Ethiopian government's Agricultural Transformation Agency; the Bill & Melinda Gates Foundation from the U.S.; the UN's World Food Programme in Rome; Foreign Affairs, Trade and Development Canada (formerly the Canadian International Development Agency); and the Japan International Cooperation Agency (JICA) on food issues in the early 2010s. These collaborations with a variety of groups across four continents was a testament to SAA's solid reputation.

One key to its success was SAA's consistent focus on working with host countries. From the beginning, the effort stressed good working relationships not only with the governments of the nations in which it operated, but also with its agricultural researchers, education leaders, farmers' associations, and directly with smallholder farmers themselves. This gave SAA a solid reputation not only in the air-conditioned halls of big-money institutions, but also in dirt-floored meeting rooms in rural African villages. Partnering with other organizations and local agricultural groups was one of SAA's strengths.

"Collaboration with others, both from Africa and the wider international community, will be essential if the continent is to continue to increase the productivity of smallholder farming and strengthen livelihoods and incomes across the agricultural sector value chain," concluded a 2015 report. "Partnerships will be at the heart of the strategy of Sasakawa Africa Association as it looks to the road ahead."

As the organization moved beyond Borlaug's death to a new phase of activity, SAA still found itself fighting an old battle over the question of fertilizer use in sub-Saharan Africa. Borlaug's methods had, of course, depended on feeding his high-yielding cereal grains with inorganic fertilizers, especially nitrogen- and phosphorus-containing substances mined from rock or made in factories. The Green Revolution in Asia had depended on these inputs; high-yield farming everywhere around the world still does.

African soils were notoriously low in these nutrients, and money-poor African farmers, faced with the annual need to feed their families and the hope for a bit of surplus, had worsened the problem by keeping their soils under constant cultivation. They could not afford to let a field rest for a year in order to restore fertility, and for the most part, they could not afford fertilizers to correct the problem. The result, year after year, was a slow decline in the soil's ability to grow more crops.

Borlaug's answer had been to teach them to use more fertilizer, and to find ways of arranging funds so they could afford it. This put him at odds in the 1980s and 1990s with the world's environmentalists and a growing number of food activists concerned about the abuses of "industrial agriculture" in the world's most developed nations. They were set on preventing the same abuses in Africa, thus almost any mention of supplying inorganic fertilizers to Africa farmers was met not with applause, but with resistance.

SAA leaders recognized that the overuse of inorganic fertilizers could be damaging. But so could their under-use. The damage from overuse could come from wasted inputs, run-off into local waterways, and in extreme cases declines in soil quality. The damage from under-use came from reduced harvests, with all the attendant economic problems, increased hunger, and increasing pressure to solve

the problem by putting new, uncultivated land under the plow. That would mean depleting forests and wildlife preserves.

It was a thorny issue. And it illustrated SAA's flexibility in dealing with criticism. Instead of simply ignoring the issue or attacking the activists, SAA made its program better. The focus increasingly shifted from the old Green Revolution advice to add more fertilizer, to a more comprehensive and nuanced approach in which inorganic fertilizers were one component of the broader task of improving soil quality. A new emphasis was placed on micro-dosing—applying small amounts of fertilizer beside each plant—instead of broadcasting it across an entire field. In Uganda, SAA worked with the government and a European fertilizer company to outfit a truck that could serve both as a mobile soil testing laboratory and an outdoor classroom, with SAA and extension staff driving it from village to village.

The push and pull over proper technology, the use of fertilizers, choice of crop strains, and soil health would continue through the 2010s, as the pace of agricultural research science continues to quicken in the face of climate change challenges, groups like SAA will continually adapt to the new tools made available—as long as they work well for smallholder farmers in Africa.

* * * *

In the 2010s, SAA adopted Borlaug's last words—"Take it to the farmer"—as a powerful statement of purpose. The organization put it on the covers of its annual reports and referred to it in presentations. It neatly summarized SAA's main goal of taking powerful new ideas from laboratories and research groups, and introducing them, appropriately and sustainably, into the real world of smallholder farming in Africa.

That remained a noble goal. But by the end of the decade the limitations of the approach were becoming more evident. Amid all the



Chris Dowswell and Joaquim Alberto Chissano, former President of Mozambique, at a Symposium commemorating Dr. Borlaug in Addis Ababa, Ethiopia

individual success stories of farmers increasing their yields, women gaining more power, and the value of educating more African extension workers in Africa, there were signs that things were not moving ahead as fast as SAA's founders had hoped.

The group had been hard at work in sub-Saharan Africa for more than three decades, with a total investment from The Nippon Foundation during that time in the hundreds of millions of dollars. It had met challenge after challenge and devised innovative solutions. It had pared away parts of the program that didn't work and concentrated on building those that did. As 2020 approached, it was, in many ways, stronger and better-run than ever.

And yet it was not moving the needle on food security in Africa as much as was hoped back in the days when Ryoichi Sasakawa, Jimmy Carter, and Norman Borlaug first dreamed of a Green Revolution

in the continent. SAA's relationships with host governments were generally good; the SAFE program for educating extension workers was functioning well; and small advances were being made on the village-by-village level. But the idea of "setting the grassroots on fire" with Green Revolution ideas and technologies had never taken off. Grain and cereal production across Africa had gradually risen, but not as fast and not to the levels Borlaug had seen in Asia. There remained too many obstacles in too many places, from all-too-common government instability to worries about chemical pollution, from the need for better roads to changing dietary preferences. Wheat production in sub-Saharan Africa rose slowly through the 1990s and 2000s, but not enough to keep up with skyrocketing demand as Africans began eating more wheat and less of Africa's traditional cereals like millet and sorghum.

And there was also a problem of perception, a reflection of the decades-old mindset expressed in Borlaug's phrase "Take it to the farmer." It expressed, simply, and honestly, the heart of the SAA effort. But it also placed SAA separate from farmers. Smallholders in Africa were there to receive the benefits of scientific advances and put them into action, ideally benefiting both themselves with extra income and their nations with reduced food insecurity. SAA's was a noble mission, but it could also be seen by many in Africa as patronizing. The emphasis was on ideas developed in foreign countries and delivered through an organization that was run for the most part by people from outside of Africa. Through the 2000s, SAA slowly increased the African presence in management, but as it neared 2020 the numbers were still small: The SAA President and Executive Director were Japanese, two-thirds of the board of directors were non-African (although the chairperson, Ruth Oniang'o, was Kenyan), and the guiding ideas came, for the most part, from Asia, Europe, and the Americas.

This was not by any means unusual. It was true of almost all large

aid groups involved with African agriculture. But now the limits of this one-way transfer of knowledge, from the top down, were becoming clearer.

What was needed was another approach.

Voices from the Field: Uganda

“SAA has built my capacity, and I can now train fellow farmers”

A story about how good agricultural practices introduced by SAA improves livelihoods



Better agricultural practices enabled Henry to purchase a truck

Henry Sebyala, a father of five living in the Nakaseke district of Uganda, has seen his productivity and income increase as a result of the Sasakawa Africa Association (SAA) interventions. Henry was also selected to host various demonstrations as part of collaborations between the Nakaseke District Local Government and SAA.

“I ventured into commercial farming as far back as 2002,” Henry explains. “Back then, I mainly cultivated beans and maize on about two acres of land, respectively. However, the process was tedious and earned me barely enough money to provide for my family. I relied on traditional farming methods, and production was inadequate.”

By observing farmer learning platforms established by SAA and engaging in training, Henry realized that a significant amount can be harvested from a small plot of land. As a result, he harvested 600kg of beans from half an acre, and 2,300kg of maize from one acre—previously Henry would harvest just 250kg–400kg of beans from one acre.

“SAA trained me on the best farming practices, climate resilient technologies and selected me to host the climate smart village. SAA also supported me in acquiring an irrigation system by linking me to equipment suppliers, installing the irrigation system, and providing technical backstopping. With the irrigation system in place, I am able to grow tomatoes, eggplants, pumpkins and cabbage all year round on four acres of land on a crop rotation basis.

“Currently, I am growing vegetables on two acres of land while the remaining two acres rest for soil recovery. In the second season of 2018, I made \$514.24 from horticultural products, which enabled me to acquire a small truck to transport my produce—farmers in my community sometimes hire my truck at \$19.17 for a return journey. I was also able to repay a loan I got from the Namilyango Tweekembe Farmers Saving Group.”



By adopting good agricultural practices, Henry is able to pay his children’s school fees and the increased income has motivated him to purchase additional land to expand his vegetable production.

Henry has ambitious plans for the future. *“SAA has built my capacity, and I can now train fellow farmers on*

climate smart technologies. Farmers in my community have realized the benefits of climate smart practices and adopted them. I have linked farmers to suppliers of irrigation equipment. Looking to the future, I hope to establish a nursery to sell seedlings, acquire more land and establish an agricultural learning centre.”

Chapter 12

THE POWER OF A PRONOUN

Language frames how we think and how we act. It is as powerful a force as the weather, as formidable an influencer as money. When SAA created and embraced its new slogan, “walking with the farmer,” the organization did more than change its messaging. It revolutionized its thinking.

Within Borlaug’s stated mission to “take it *to* the farmer” was a top-down approach, the firmly embedded, well intentioned philanthropic attitude of helping those in need by transferring expertise and capital from the fortunate to the less fortunate. Borlaug was, to his immense credit, “with” the smallholder farmer—on the land, in the fields, planting crops—as few experts and leaders are. And SAA, over the decades, through successes and challenges, had increasingly reached out to, partnered with, and in some cases even helped to create local supporting agencies. The new slogan, “walking *with* the farmer,” recognized and amplified these efforts. It represented what had been an ongoing, evolutionary change—but was now a dramatic restatement of vision. With the altering of the pronoun from *to* to *with*, SAA entered a new era. Its extraordinary relationship with



SAA staff working with rice farmers in Nasarawa State, Nigeria

the food-insecure countries of Africa was now, at its (literal) roots collaborative.

This new slogan heralded the creation of the strategic plan SAA had been working on, under the ongoing pandemic conditions, since mid-June 2020. The process included wide-ranging consultations with internal and external stakeholders, three virtual workshops, and the active participation of SAA staff and management. But years before that, SAA had already been planting the seeds for its future as it drew top talent from around the world, broadening and deepening its leadership along the way. In 2011, long-time African food activist Ruth Oniang'o was named chair of the board, bringing with her important insights from decades of real-world experience increasing yields and bringing women into the process.

In 2014 another important board hire was made when Amit Roy, then the president and CEO of the International Fertilizer

Development Center (IFDC), joined the Board of Directors. Dr. Roy, a chemical engineer and a veteran researcher who had devoted his career to using research to improve lives of underserved people, brought fresh energy to SAA. In December 2015, SAA headquarters was relocated to Tokyo, Japan from Geneva, Switzerland.

The strategic plan would be the organization's road map for the next five years. But such a plan had to emerge from, and be embraced by, an organization that was cohesive with motivated staff. In May of 2019, Professor Oniang'o and Dr. Roy traveled to Tokyo to hold important meetings with Yohei Sasakawa, Chairman of The Nippon Foundation and Takeju Ogata, President of The Nippon Foundation, to discuss the future of SAA, including its management; they all felt that bold action and a bold strategy were needed for SAA to lead the transformation of agriculture in a Africa in a rapidly changing environment exacerbated by climate change, increasing poverty and the on-going COVID-19 pandemic. Shortly after the meeting, Dr. Roy, who was given the mission of spearheading the 5-year strategic plan, moved to Tokyo, where he streamlined the operation of the office, and a veteran agricultural expert, Dr. Makoto Kitanaka, was recruited as the President of SAA. Dr. Roy then proceeded to involve the entire staff in a consultation process to develop the strategic plan that would guide operations for the next five years. Dr. Roy remained in Tokyo to righten the ship until the end of February 2020, leaving just a day before the border closed due to the COVID-19 pandemic.

The plan that he, top leadership, and the entire staff collaborated on aimed to stimulate greater professional trust, ensure technical and management support, and continue SAA's impact on technology and extension intervention. The new strategy was anchored on three pillars: (1) sustainable, resilient, and regenerative agriculture to help improve soil health and increase productivity; (2) nutrition-sensitive agriculture based on the introduction of bio-fortified crops and nutrient-dense indigenous vegetables to help improve the health of



Makoto Kitanaka, President of SAA, with farmers and extension agents at SAA demonstration plots in the SNNP Region in Ethiopia

farming communities and others; (3) market-oriented agriculture to develop farming as a business enterprise in order to ensure food security and improve livelihoods. The plan recognized the tough lessons SAA had learned through the decades, particularly that its work was constantly subject to a changing environment and a wide range of external influences that required flexibility and adaptability.

The mission embedded in the new strategic plan is clear—as is the continuing, ever more desperate need to pursue it. There is a dire need to feed the people of Africa. With its current population of 1.4 billion, the continent is the most food-insecure region on earth, especially in the more fragile agro-ecological zones. The population growth in Africa is the fastest in the world, and the continent’s population is expected to be 2.4 billion by 2050. Although the continent is producing more food, that production cannot keep up with population growth.

In response to worsening food insecurity and the damaging impact

of climate change on agriculture, SAA is aiming to contribute to the creation of a food system in Africa that is both resilient and sustainable, by placing regenerative, nutrition-focused, and market-oriented agriculture at the center of its technology intervention strategy. The effective implementation of this new strategy is expected to help improve the food, nutrition, and income security of Africa's small-holder farmers.

The new—or rather, renewed—vision will incorporate the perspectives of both food producers and traders in vital topics, including consumer health, nutrition, food loss, and environmental conservation. Staying true to the *working with* the farmer directive, the new mission will be to promote sharing with and between African farmers to enable food, nutrition, and income security in their communities.

Regenerative Agriculture, a pillar of SAA's continued engagement and central to its new strategy, describes systems of agriculture that work to restore the habitat they occupy by restoring the biodiversity of degraded soils. These approaches, which include crop rotation, cover cropping, composting, and mulching, aid the water cycle and carbon sequestration. SAA is committed to mainstreaming this ecological approach to conserving and restoring Africa's rural environment with the goal of achieving sustainable intensification of farming in Africa and producing more crop per unit area.

The second pillar in the strategic plan is an increased emphasis on improving nutrition in rural Africa. The goal here is to have a positive impact on early childhood development, as undernourishment and malnutrition have been proven to have significant negative effects. This requires helping small-scale farmers cultivate and market nutritious crops, as well as ensuring that women, the traditional guardians of family health, understand the importance of nutrition. The strategic plan calls for SAA-affiliated university programs to incorporate nutrition-related classes in their Extension program curriculum.

Finally, the third pillar of the plan, market-oriented agriculture,

is designed to help encourage small-scale farmers to adopt a more business-like attitude to farming. This is an important shift in thinking from the current “grow and sell” to a more entrepreneurial, market-trend oriented “grow to sell.”

Underpinning these pillars are a number of vital strategic approaches. Knowledge creation, which involves a partnership between farmers and entrepreneurs to advance business-oriented agriculture, is the foundational approach. This is followed by knowledge packaging, which involves switching the focus of the farming business model from “crop-centered” to “farmer-centered” activities. After knowledge creation and packaging comes the all-important strategy of knowledge transfer using new digital tools that will support the virtual exchange of information between farmers and other stakeholders.

The three pillars that are the foci of the new plan, along with the strategic approaches that underly and support these pillars, all exist within challenging and ever-changing contexts. These are overlapping concerns, each with its own set of challenges, that are—and have been—a part of SAA’s efforts. Revisiting them, and deepening and widening the understanding of these contexts creates firm footing for future plans. Those contexts are food insecurity, and hunger and malnutrition.

Food Insecurity

Africa is the most food insecure region of the world with more than 250 million people at risk of becoming undernourished, a situation exacerbated by the current pandemic. Although Africa produces more food every year, population growth outpaces production. African soils are poor and produce less than other regions of the world. Clearing more land for food production means depleting forest land

and wildlife habitat.

Hunger and Malnutrition

The urgent need for action in this sphere is distressingly obvious: The African continent has the highest *percentage* of undernourished people in the world—and the second-highest *number*. If current trends, driven by climate change and political unrest, continue the continent could have the largest total number by 2030.

Clearly, worsening malnutrition—and the related, and increasing, economic and social costs—mean that traditional health-related interventions need to be supplemented by a vigorous development agenda focused on food and agriculture. The latter has in recent years been advanced by global declarations and commitments, including Sustainable Development Goals (SDGs). This has led to the emergence and promotion internationally of the “nutrition-sensitive agricultural/food system” concept. At the same time, agricultural



A woman farmer in Ethiopia taking care of her permagarden; it helps improve household nutrition and income

organizations are expected to make more efforts to increase the supply of, and demand for, safe and nutritious foods through every stage of the food value chain.

Attention also needs to be paid to the cost of food. A key reason why millions of Africans suffer from hunger, food insecurity, and malnutrition is that they cannot afford a healthy diet. The problem has been exacerbated by the economic consequences of the pandemic and the ongoing effects of climate change. At the same time, in the post-COVID era, action is needed to prevent future disruption to world food systems, particularly in food-deficit countries, to achieve the already daunting challenge of the SDGs' Zero Hunger target.

The reframed mission to walk *with* the farmer presents significant challenges—and opportunities—as SAA continues its commitment to help achieve real and sustained change.

The risks and realities associated with climate change and disasters impact food, nutritional and income security, sustainable natural resource management, and smallholder farmers' livelihoods. Integrated solutions are needed to manage and respond to these risks.

Stakeholders must understand the likely impact of climate change so they can prepare, adapt, mitigate, and take action to create value chain resilience. At the same time, they should also be made aware of the widespread problem of soil degradation—a leading cause of poor agricultural productivity in Africa—which results, through erosion, in the depletion of nutrients and soil organic matter.

As food demand increases, the effects of climate change, declining soil fertility, and scarce water resources will place additional burdens on agricultural systems. These pressures, combined with rapid urbanization, rising incomes, and changing consumer preferences, will require that agricultural systems undergo fundamental reforms to meet the demands of growing populations while at the same time reducing soil degradation.

Despite recommendations that climate-resistant crops and crop

varieties help smallholder farmers cope with or adapt to climate change, their adoption has been highly variable. The most important factors that determined the use of these climate-resistant crops were the availability of extension services and outreach, followed by the education levels of heads of households, farmers' access to inputs—especially seeds and fertilizers—and the socio-economic status of farming families. The main determinants for the use of crop varieties in climate change-adaptation strategies were social differences, such as gender, marital status, and ethnicity.

The COVID-19 pandemic has deepened the challenges facing the entire agricultural value chain, impoverishing vulnerable African farmers, and accelerating demand for a healthy and nutritious diet. Food shortages and consequent high prices are the result of disruptions to the food supply chain caused by border closures and poor access to inputs. Even in normal times the supply chain struggled to stock markets and provide farmers with seeds, fertilizers, and other inputs. During the pandemic, lockdowns in many countries made it impossible to harvest on time and package food, while the disruption to agricultural extension services limited farmers' and extension agents' ability to build capacity. The pandemic-fueled closure of universities and colleges will have a long-term impact on education, as well as on food and nutrition security in Africa. The silver lining is that the pandemic has driven a growth in online education, which has seen an acceleration in digital agricultural extension.

Despite being vulnerable to poverty, food insecurity, and malnutrition, African women play a vital role in agricultural production and marketing. Yet their opportunities to participate in, and benefit from, agricultural value chain activities are often limited. As SAA looks to the future, it is tackling this by pioneering the participation of women in agricultural extension systems. It is also committed to integrating women and youth in its activities to ensure equal access to

employment and equitable benefit sharing.

Sustainable job creation is critical in addressing the possibility of social and political unrest stemming from youth migration from rural towns to Africa's urban centers, and is also part of the new strategic plan. As a labor-intensive sector, agriculture could offer stable employment for young girls and boys by unleashing its potential through youth-inclusive investment. These jobs could be created along the entire agricultural value chain. The development of profitable commercial farming, particularly at a smallholder level, is key to the future participation of youth in agriculture, as that generation aspires to a better life.

In addition, the eradication of poverty will not be achieved without addressing the rights and needs of disabled people in every aspect of development policy. This must be prioritized because people with disabilities are widely discriminated against in the absence of effective laws protecting and promoting their rights.

As SAA moves into the next five years, the organization's vision is clear and compelling. It restates and reaffirms the decades-long, tireless commitment to support Africa in fulfilling its aspirations to build resilient and sustainable food systems. "Africa feeding Africa" is SAA's overarching aim.

International cooperation in agriculture has focused on increasing food production as a means of promoting food security. For producers, this has put an emphasis on strengthening the value chain. Yet farmers are not always able to meet local demand, with many countries relying on imports to meet the shortfall. However, during the COVID-19 pandemic, importing has been challenging, as food exporting countries have cut back their shipments as they prioritize the needs of their own citizens. Lockdowns have reduced transport capacity.

The pandemic has highlighted the frailties of the 'food

system’—the supply of safe food that meets consumer health, nutritional and environmental standards. Going forward, what is called for is international agricultural cooperation, involving all stakeholders, to help stabilize food systems at a national and regional level.

The mission facing SAA for the next five years is to catalyze knowledge-sharing with smallholder farmers and facilitate their adoption of agricultural technologies. This means fostering agriculture-centered economic growth and setting goals to increase the productivity and production of major agricultural products. It can be achieved by applying the value chain approach to enhance food production, income, and nutrition security, and to reduce the risks associated with climate change. Extension systems run by ministries of agriculture, SAA, and public research institutes as well as semipublic and private providers can facilitate the dissemination of knowledge. Necessarily, this depends on coordination and clear demarcation of roles and responsibilities.

Information Communication Technologies (ICT) and Strategic Partnerships will enable SAA to scale up its extension models as well as transfer and share its knowledge with extension agents and smallholder farmers. Outside SAA target areas, partnerships with universities and public extension services will enhance sustainable access to an adequate supply of nutritious food.

In his final speech on African soil delivered in Bamako in 2006, then SAA President Norman Borlaug urged his audience “not to wait for perfect conditions or the perfect seed variety. Use whatever is available—and get on with it.” Borlaug’s bold, action-oriented philosophy formed the foundation for SAA’s work on the continent for decades. His entreaty to “take it to the farmer,” spoken in 2009, was also a powerful motivator.

But when senior staff and stakeholders came together to discuss the way forward for the next five years, it was clear that the emphasis had changed. The work to be done in the future was no longer the

delivery of a series of instructions from one side to the other. It was an equal sharing of information, experience, and activity between SAA and the farming communities with which it worked.

It was the recognition that these farmers had been working their land longer than agricultural science had been developing new technologies. It was a recognition that the farmer often knew the best solutions but lacked the necessary tools and resources.

“Walking with the Farmer” meant walking in their shoes to understand their challenges, to tap into their reservoir of experience and knowledge, and to co-create solutions.

This is now the way forward. Together.

Acknowledgments

Walking with the Farmer was written to fulfill the desire of Mr. Yohei Sasakawa to document the history, and the evolution, of the Sasakawa Africa Association (SAA) over the last 35 years. My friend Amit Roy encouraged me to take on this task. The hope is that this institutional history will help guide future generations of agricultural scientists, humanitarian workers, and policymakers to continue their important work in Africa. The need for a food and nutrition-secure Africa has not changed since SAA's inception in 1984, but the approach and solutions have evolved over time.

After careful research, after spending time with a myriad of institutional documents, and after conducting many interviews, I came to understand the reasons why Mr. Ryochi Sasakawa felt called to help Africa, a continent far from Japan, to help feed its people, and to avert famines such as that in 1984 in Ethiopia. Ryochi, Dr. Norman Borlaug, and former U.S. President Jimmy Carter formed a remarkable team that launched SAA and began to establish programs in several African countries. Over the years, important advances have emerged from SAA's ability to integrate cutting-edge ideas with local realities. The result: ongoing and ever-evolving, practical, cost-effective ways that help Africa feed its people.

Food and nutrition security is more than just crop production. It's about the entire agricultural value chain, from planting and harvesting of crops, to building better storage facilities, to selling surplus in the markets. It's everything from training agricultural extension agents to transfer new knowledge from experimental fields, to working with farmers, to establishing government policies, to creating supply systems. SAA is working on every front to ensure that this system works

effectively. Through SAA's commitment to smallholder farmers to improve their food and nutrition security while working with other development partners to improve their quality of life, the institution has helped lay the foundation for Africa to nourish its population.

Many thanks go to Mr. Yohei Sasakawa for sharing his account of SAA's history, beginning with the initial planning for SAA with his father. Mr. Jean Freymond provided copious notes on the preparation and execution of the inaugural meeting and the subsequent establishment of SAA. Sayako Tokusue and Miho Oikawa spent endless hours gathering historical records, correspondence, and background material. Both are veterans of the organization, and their memories of the organization's early papers and operations were critical to making the book a reality. Ruth Oniang'o's input in discussing the evolution of the institute since succeeding Norman Borlaug as the Chair of the SAA Board was invaluable. I would also like to thank Makato Kitanaka for his vision on the future direction of SAA based on its 35-year history.

There are several SAA employees, past and present, who—though not mentioned in this book—played a critical role in shaping the institution. Some of their reports and publications that provided valuable insight into 'Who, Where and How' helped to fill some gaps. Mr. Makoto Wada of The Nippon Foundation has ensured the accuracy of SAA's facts and figures in this book.

The ongoing support and encouragement of Amit Roy, his deep commitment and passion for the work he does and the work of SAA, buoyed me at every turn. Always available to answer questions, he pushed me to complete the manuscript when I was about to 'throw in the towel' because of my ailment. I am grateful for his persistence, which moved me to prepare the first draft of all chapters except the last. When my ailment made me too weak, my wife, Lauren Kessler, an accomplished nonfiction writer, turned the rough draft into a finished manuscript and wrote the final chapter. I am forever thankful to

her not just for this, but for her love and care during the most trying of times.

Finally, a heartfelt thank you to all SAA staff. Your work is strengthening the food and nutrition security of Africans.

Thomas Hager
Eugene, Oregon
2021

Timeline

1983	Famine ravaged the Horn of Africa countries—Sudan, Ethiopia and Somalia. The protracted drought and ensuing famine engulfed at least a dozen countries in sub-Saharan Africa.
1984	In August, Ryoichi Sasakawa met Norman Borlaug for the first time while he was visiting Japan to attend a conference being supported by JSIF.
1985	In January, Ryoichi Sasakawa sent Itaru Tanaka to Texas A&M University to map out the steps that might be taken to accelerate maize and sorghum production in African countries, and to signal JSIF’s potential interest in financing such an endeavor.
1985	In March, a planning meeting was held in New York during which the major players (including Borlaug, former U.S. President Jimmy Carter, Yohei Sasakawa and Alexander King) refined the agenda topics and went over the experts to be invited to Geneva in the summer.
1985	In July, Jean Freymond, head of the Center for Applied Studies in International Negotiations (CASIN) in Geneva, arranged a meeting, held in Geneva, officially titled “Alleviation of Poverty and Hunger in sub-Saharan Africa: Prerequisites for Peace.”
1985	In November, a follow-up meeting, chaired by President Carter, was held in Atlanta with Borlaug, Yohei Sasakawa, and the heads of the major Green Revolution scientific centers in attendance.
1986	In January, President Carter, Ryoichi and Yohei Sasakawa, Norman Borlaug and Andrew Young, former U.S. Ambassador to the UN, visited Sudan, Tanzania, Zambia and Ghana to meet national leaders.
1986	In March, the Sasakawa Africa Association (SAA) was formed and registered in Geneva as a non-profit association under the Swiss Civil Code to facilitate the flow of funds from JSIF to Global 2000. A few months later, “Global 2000” was formally chartered in Georgia.

1986	The SG 2000 Program in Ghana and Sudan started.
1987	The SG 2000 Program in Zambia started.
1988	A gathering in Nairobi reviewed the initial performance of the new SG 2000 projects in Sudan, Zambia and Ghana.
1988	The SG 2000 Program in Tanzanian started.
1988	SAA began to take an increasing leadership role in the food initiative in Africa. Borlaug agreed to serve both as President of SAA and Chairman of the SAA board. Jean Freymond served as Board Secretary and the official representative in Switzerland. Yohei Sasakawa served as Treasurer, and Akira Iriyama, Saburo Kawai, William Foege and William Watson joined as board members.
1991	Chris Dowswell was hired as Director for Program Coordination. The SAA board changed, with the addition of Dowswell and SAA's new general manager, Masataka Minagawa, an expert in finance and administration.
1991	SAA assumed management responsibility for all SG 2000 country programs.
1991	Small programs started in the late 1980s in Benin and in 1990 in Togo grew into full-fledged independent country programs by 1991.
1991	The SG 2000 program in Zambia was closed.
1991	SAA launched the Sasakawa Africa Fund for Extension Education (SAFE).
1992	The Sudan program ended.
1992	The SG 2000 Program in Nigeria started.
1993	Nigerian president Olusegun Obasanjo joined the SAA board.
1993	SAFE kicked off in Ghana, housed in the University of Cape Coast. Seventeen candidates were chosen as the first students.
1993	In May, the SG 2000 Program in Ethiopia started.
1995	Mozambique and SG 2000 signed an official project document.
1995	At age ninety-six, Ryoichi Sasakawa died.

1995	Ayako Sono became the Chair of the The Nippon Foundation.
1996	The SAA Board of Directors approved the launch of projects in Guinea, Mali, Burkina Faso, and Eritrea.
1997	The SG 2000 program in Uganda started.
1999	The SG 2000 Program in Malawi started.
2001	Beninese president Nicephore Soglo joined the SAA board.
2003	The Ghana program ended.
2004	The Tanzania and Guinea programs ended.
2005	The programs in Burkina Faso and Mozambique ended (2005), followed by the program in Malawi (2006).
2005	Yohei Sasakawa became the Chairman of The Nippon Foundation.
2009	Norman Borlaug died of lymphoma on 12 September. His last words were reputed to be, "Take it to the farmer."
2010	The Borlaug symposium was held in Addis Ababa to commemorate Dr Borlaug's legacy.
2011	Ruth Oniang'o was named chair of the SAA board. SAA celebrated 25th Anniversary in Mali.
2013	The SAFE 20th Anniversary symposium was held in Accra/Cape Coast, Ghana.
2014	Dr. Borlaug's centenary symposium was held in Makerere/Jinja, Uganda.
2014	Amit Roy joined the SAA Board of Directors.
2015	SAA was registered as a general incorporated foundation in Tokyo, Japan.
2016	SAA hosted a 30th anniversary event in Nairobi, Kenya, during TICAD VI.
2017	SAA started operating as a general incorporated foundation, taking over full responsibilities from SAA-Geneva.
2018	SAFE was integrated into SAA.

2019 SAA hosted a side event in Tokyo during TICAD VII in Yokohama. Amit Roy became the Vice-Chair of the SAA Board of Directors.

2019 Makoto Kitanaka joined as the President of the SAA.

2021 SAA launched a new Strategic Plan 2021–2025, with a new slogan: “walking with the farmer.”

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Training on drip irrigation system installation at Gubta Arjo, Ethiopia



A woman farmer watering tomatoes in her garden in Dacoumani, Mali



Multi-crop thresher demonstration in a village in Ethiopia



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About *Walking with the Farmer*

Walking with the Farmer chronicles the history and accomplishments of the first 35 years of the Sasakawa Africa Association (SAA). This is a story of an attempt to change the future of an entire continent and better the lives of millions of people. It is a story of imagination, inspiration, great challenges, enormous projects, occasional stumbles, political setbacks, technological adventures, institutional resets, and a stubborn refusal to ever give up. It began with Japanese philanthropist Ryoichi Sasakawa's ambitious idea to bring together the father of the Green Revolution, Norman Borlaug, and former U.S. President Jimmy Carter to try to tackle the complex, persistent and devastating issue of hunger on the African continent. Author Thomas Hager tells the dynamic human story of SAA's evolution, which is simultaneously the history of agricultural development in Africa.

About Thomas Hager

Author Thomas Hager was an award-winning science journalist and historian who specialized in writing about the impact of research and technology on society. His critically acclaimed books include: "Electric City: The Lost History of Ford and Edison's American Utopia," "Ten Drugs: How Plants, Powders and Pills Have Shaped the History of Medicine," "The Alchemy of Air: A Jewish Genius, a Doomed Tycoon, and the Discovery that Fed the World but Fueled the Rise of Hitler," "The Demon Under the Microscope: From Battlefield Hospitals to Nazi Labs, One Doctor's Heroic Search for the World's First Miracle Drug," and "A Force of Nature: The Life of Linus Pauling."

