The supply threat is real. Aggregation of farmers remains the single biggest challenge to overcome.

Peter Blommer

Blommer Chocolate Company

he subject of cocoa sustainability is gar-I nering increased attention from members of the cocoa supply chain as well as among consumers across the world. And for good reason; it is clear that the challenges at origin are many, including insufficient infrastructure, education and income levels that challenge farmers in the cocoa sector and also pose a threat to our industry in terms of future cocoa availability. Today, the increased number of sustainability programs being developed across the cocoa origins is encouraging. However, there is a compelling need for a stepped-up collaborative approach to cocoa sustainability to achieve the impact needed across the entire cocoa-farming sector. This article is adapted from a presentation made to the Cocoa Merchants Association of America in March 2011 and offers a case study of one sustainability program that demonstrates the power and scale that come from collaboration.

THE SUPPLY CHALLENGE

There appears to be a growing consensus that a severe cocoa-supply shortage is a distinct reality in the near future. The math is simple; a mere 3 percent growth in consumption would require the addition of nearly 1.8 million metric tons of cocoa by 2025 (Figure 1). In other words, the cocoa crop would need to increase by nearly 50 percent to meet projected demand. The entire global agricultural sector faces scarcity issues as we brace ourselves to provide food and energy to our rapidly growing world population. And cocoa is no exception.

One of the biggest challenges to this pending agricultural supply crisis is poor crop yield. And we know this is particularly the case with cocoa, where yields are quite poor due to lack of training and inputs. Pests and disease pressures claim an estimated 30 to 40 percent of the crop each year. The lowest yields can be found in the largest origin countries, Côte d'Ivoire and Ghana, where



Peter Blommer is president and chief operating officer at Blommer Chocolate Company. Prior to that he was chief operating officer. He joined the company in 1991 as plant manager of the Union City facility in California.

All of the tools needed to deliver higher yields are readily available. Our industry has developed farming techniques and technologies that have proven to significantly improve tree yields. yields average 450 to 500 kilograms per hectare. The solution cannot be land-based expansion because farm land is less available and the environmental impact of such expansion is not desirable. Instead, farming efforts must focus on intensification efforts to achieve significantly higher yields.

THE OPPORTUNITY

The good news is that we know that higher yields are possible with the right planting material and farming techniques. Plenty of examples abound, from the famous BAL estates of Malaysia to the CCN-51 clone in Ecuador, both of which have recorded yields in excess of 4,000 kg/ha. One particularly exciting example is the work being done today with an Ecuadorian "super tree" thought to be related to the National variety (producer of the flavor grade Arriba cocoa). National is a traditionally low-yielding variety, yet these "super trees" have achieved yields closer to the CCN-51 clone while retaining the more traditional Arriba flavor.

THE TOOLS

All of the tools needed to deliver higher yields are readily available. Through individual and collective actions over several decades, our industry has developed an impressive portfolio of farming techniques and technologies that have proven to sig-



nificantly improve tree yields. Companies like Nestlé and Mars have sponsored research into the identification of planting material that proves higher yielding and more resistant to pests and disease. And with the recent mapping of the cocoa genome our abilities in this area of plant genetics will only improve. Our industry has developed a collection of best practices in farm management, including pruning, side grafting, integrated pest management and appropriate use of chemical inputs. And we have developed an excellent model of delivering this to farmers through farmer field schools, print material and video-viewing clubs.

THE STAKEHOLDERS

There also is a tremendous amount of interest and activity in cocoa sustainability among many of the stakeholders in the cocoa supply chain. For several decades branded companies and cocoa processors worked in partnership to fund much of the research and activity behind these sustainability efforts. Today, these efforts have leveraged the resources of origin and Western governments; reshaped the on-theground activities of the cocoa exporters; and attracted the active interest and participation of retailers and consumers.

THE CHALLENGE

The challenge is to bring it all together in an efficient and effective manner (Figure 2). The question is how to engage the number of global stakeholders to deliver the vast array of best-practice techniques and technologies to the 6.5 million farmers around the globe. The scale and complexity make this a daunting task, to say the least.

incubators of new technologies, techniques and entrepreneurial efforts. But, given the scale and fragmentation of the 6.5 million farmers in developing countries lacking basic infrastructure, success can only be achieved through an open, broad and collaborative multistakeholder approach.

A CASE STUDY

The following case study shows the power and scale that come from engaging as many stakeholders as possible in a coordinated manner. In 2004, shortly after the conclusion of the 3-year Success Alliance program in Indonesia (sponsored by the industry through the World Cocoa Foundation), the industry found the quality of cocoa coming out of Indonesia was actually deteriorating severely and negatively impacting bean yields, fat content and factory throughput.

At Blommer Chocolate we faced a dilemma: we found ourselves on the one hand committed to supporting Indonesian farmer programs and on the other hand actively minimizing our purchases given the negative impact on plant efficiencies and yields. We knew something was not working if we had just spent three years training farmers on farming and postharvest practices and were receiving some of the worst cocoa we had ever seen from the region.

As we investigated with multiple trips and conversations with farmers and our trading partners, we came to several important conclusions. Many of the farmers who had trained in the Success Alliance programs were still practicing what they had been taught but they were receiving no added value from the local buying network for the improved quality they produced. And the local buyers were blending their good-quality cocoa with poorer quality. Clearly an essential link in the supply chain was broken—the commercial link—and without it farmers were not getting the market signals regarding quality and value from end users. So we partnered with Olam International, a Singapore-based cocoa exporter, to create that link and also continue the training of farmers.

Sulawesi Alliance of Farmers, Olam and Blommer (SAFOB)

The program is called SAFOB, or Sulawesi Alliance of Farmers, Olam and Blommer. It began in 2005 with just over 2,000 farmers and grew within a year to 12,000 farmers. The program consists of the following components: farmer training, quality improvement, market access and transparency, and quality premiums.

The farmer training focuses on good farm-management practices, such as pruning, sanitation, fertilizer application, harvest techniques and identification of pests and diseases. It also includes training in rehabilitation and rejuvenation through use of grafting techniques and nursery development.

There is a very strong quality focus to this program where farmers are trained on quality specifications and postharvest practices to produce export-quality cocoa at the farm level. This includes sorting of waste, particularly the exclusion of beans



significant increase

The most



What we created was a sustainable commercial system, linking the end buyer with the farmer, to drive value for both farmers and end users. and material from pods infested by the cocoa pod borer. It also includes the use of solar dryers to achieve lower moisture levels closer to the farm and reduce mold levels in the beans.

We have improved market access and transparency through 11 buying stations throughout Sulawesi which provide direct access between farmer and exporter. The program also includes premiums paid to the farmer in several forms: an upfront quality premium paid by Blommer/Olam based on meeting quality specifications, and an end-of-season bonus if certain quantity targets are achieved. But the most significant increase in value to the farmers comes from the efforts to teach the farmers to understand and capture the full value of their export-quality cocoa. The combination of export quality, an understanding of the value of this improved quality and access to exporters and end users willing to pay the correct value for this cocoa greatly improves the negotiating leverage and, therefore, the price paid to farmers versus the typical collector system.

What we created was a sustainable commercial system, linking the end buyer with the farmer, to drive value for both farmers and end users. It is our belief that true cocoa sustainability can only be achieved if there is value to all parties through this commercial link — commercial sustainability (Figure 3).

Scaleup

In late 2006 Blommer and Olam were approached by the U.S. Agency for International Development (USAID) to act as the implementation partner for cocoa as part of their Agribusiness Market and Support Activity (AMARTA) agriculturaldevelopment project in Indonesia. And by February 2007 Blommer and Olam signed a memorandum of understanding to create the Amarta Sulawesi Kakao Alliance with a combined investment of \$2.5 million in infrastructure and training (this figure does not include the premium structure paid to farmers for their cocoa).

As USAID described this cooperative venture, "AMARTA has facilitated the development of a unique public-private partnership providing an alternative model where market pull and price incentives based on quality will serve to provide an incentive for farmers to produce exportquality cocoa." Further, they state that "this new partnership will send a signal to cocoa farmers that the market needs good-quality beans and is willing to pay a premium."

The exciting aspect of this program is that we are leveraging our activities with government and nongovernment organizations to drive scale (Figure 3). This scale is well represented in Figure 4, which shows the growth to nearly 27,000 trained farmers participating in the program in Sulawesi; nearly 30,000 hectares under



improved technology; and nearly 25,000 metric tons of good-quality cocoa purchased annually through this program.

THE RESULTS

A detailed survey of the AMARTA program published in January 2011 shows some very encouraging results. As the chart in Figure 5 indicates, there was a significant increase in farmer's yields with over 35 percent of farmers achieving yields in excess of 800 kg/ha, many well in excess of 1,000 kg/ha, up from less than 8 percent prior to the program. Additionally, the methodology of pod selection during harvest season significantly improved, as has knowledge in recognizing pests and diseases, helping to improve both yield and quality. Over 99 percent of the farmers learned about propagation through grafting techniques such as side grafting. Thirty-one new technologies and management practices were made available. And equally important, over 90 percent of farm-





ers gained greater understanding of the quality standards required by end users, up from 31 percent prior to the program. This awareness, and the production of export-quality cocoa, dramatically improved bean yields and factory output, thus providing significant value to Blommer Chocolate.

And farmers have much greater access to exporters to market their good cocoa through the 11 Blommer/Olam buying centers upcountry as well as buying centers of other exporters. In fact, over 67 percent of farmers reported having direct access to exporters versus just over 15 percent prior to the program. It is important to point out that farmers are free to sell their cocoa to the highest bidder and do not have any obligation to Blommer/Olam.

With improved yields, improved quality, a better understanding of the value of their cocoa and greater access to the market to sell their cocoa, farmers saw a substantial increase in their incomes (Figure 6). SAFOB farmers get a price premium of nearly \$200/MT higher than what they could have received from a local collector. This is the price passed on at the farm gate by Olam, including a quality premium and adjusted for transportation to With improved yields, improved quality, a better understanding of the value of their cocoa and greater access to the market to sell their cocoa, farmers saw a substantial increase in their incomes.

Results: Increased Income



There are efforts underway to harmonize around industry standard criteria for certification. And a program to expand the certification infrastructure will help improve availability of certified cocoa. the port city. Over the past six years, the SAFOB program has procured nearly 80,000 MT of cocoa, improving farmer incomes by nearly \$16.1 million in comparison to the price they would have received selling into the local supply chain.

Today SAFOB has also expanded into Sumatra, providing improved training and market access to nearly 5,000 farmers in this region.

NEXT STEPS

Given the success of the AMARTA program, with SAFOB as the implementation partner, USAID is proposing to expand the original program with AMARTA II. This effort promises even broader participation among stakeholders, including branded companies, more NGO participation and the inclusion of a microcredit component. This momentum will continue to drive the scale needed in cocoa sustainability.

With the commercial link firmly in place, and the programs leveraged for scale through government and NGO participation, Blommer and Olam are also in the midst of certification of these programs. The branded companies' commitment to certification links their sustainability aspirations with our programs on the ground. This promises further leverage for scale. And this commitment by the branded companies is an invitation to retailers and consumers, who are increasingly interested in sustainability in the supply chain, to support sustainability through their purchase decisions.

CERTIFICATION

There can be no doubt that certification creates added impetus for real action toward cocoa sustainability. The public commitments to certification have raised awareness and accelerated the pace of sustainability activity. But we must remember that certification is not the end goal, but rather a useful tool to help achieve the real goal—a healthy, sustainable cocoa supply chain (Figure 7).

While certification can be a helpful tool to drive cocoa sustainability, the competitive elements of certification can threaten the collaborative approach that has been the sustainability model to date. Competition exists at many levels, from competition among certifying "brands" to the competitive positioning among branded manufacturers in the market place. Similarly, competition exists among the processors and traders given the lack of availability of certified cocoa as we rush to fill an acute new need for our most important customers at a time when they are redefining the supply chain and those who will play a roll in it. It would be an unfortunate paradox if the efforts to certify cocoa sustainability actually undermine the collaborative approach necessary for success.

Fortunately, there are efforts underway to harmonize around industry standard criteria for certification. And a program to expand the certification infrastructure will help improve availability of certified cocoa.

Also, there are alternative models to certification. Not all brands are looking to communicate their sustainability commitment on pack. Yet they want to build sustainability into their own supply chains. A



good example of this can be found in a program Blommer Chocolate and Olam have developed in partnership with Costco in the Côte d'Ivoire. This is a fully audited, traceable sustainability program with all components of farmer training, quality premiums and a social component. It also includes other key stakeholders, such as the World Cocoa Foundation, the shipping line Safmarine and the Ivorian Government (to provide long-term support for social programs). This is another collaborative sustainability example that includes active involvement of a major retailer.

OTHER COLLABORATIVE MODELS

Our industry has built its sustainability activities on a strong foundation of global collaboration. A good example of this can be seen in the World Cocoa Foundation, founded by the industry in 2000 and today numbering over 80 member companies across most segments of the cocoa supply chain.

It is the World Cocoa Foundation that facilitated an exciting new sustainability partnership called the Cocoa Livelihoods Program. This is a \$40 million program in West Africa that is funded in partnership with the Bill and Melinda Gates Foundation. This program builds on the success of previous government initiatives and cocoa-sector-development programs, like the Sustainable Tree Crops Program funded by the cocoa industry and the U.S. Agency for International Development.

The Cocoa Livelihoods Program provides an exciting model for the collaboration and scale needed in cocoa sustainability. The program is managed by the World Cocoa Foundation and implemented through a consortium of five organizations including Agribusiness Services International (ASI), an ACDI/VOCA affiliate; Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH; the International Institute of Tropical Agriculture (IITA)/Sustainable Tree Crops Program (STCP); SOCODEVI; and TechnoServe. Funding for the program comes from the Bill & Melinda Gates Foundation and the private sector, including major branded manufacturers the Hershey Company, Kraft Foods and Mars, Incorporated; cocoa processors Archer Daniels Midland Company, Barry Callebaut, Blommer Chocolate Company and Cargill; and supply chain managers and allied industries Armajaro, Ecom-Agrocacao, Noble Group (Noble Cocoa), Olam International Ltd. and Starbucks Coffee Company. Additional support is provided by the German Federal Ministry for Economic Cooperation and Development (BMZ). Each country government has a representative on the steering committee.

But there is still so much more coordination and cooperation needed among the many public and private sustainability programs at origin. Too many programs operate in silos. Farming "best practices" and technology are not consistently and broadly applied. And while they are excellent efforts, they are not driving the scale we need.

THE MISSING LINKS

There are also several major impediments to scale which we must find a way to solve: lack of farmer aggregation, insufficient infrastructure and limited governmental policy/involvement. The resources applied to reaching the disaggregated farmer pale in comparison to the sophistication and technology applied at the other end of the value chain, where branded manufacturers partner with retailers to aggregate the end consumer.

Regarding farmer aggregation, the mid-

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We will achieve success only by building on the strong foundation of collaboration that has been the hallmark of our industry for the last decade. dleman is the missing link (Figure 8). Yet this middleman—the collectors, pisteurs and traitants—provides aggregation today for 80 percent of the cocoa supply chain. They "own" the last mile, yet they are strikingly absent from sustainability efforts. The industry must find a way to engage them in our efforts while simultaneously developing stronger farmer groups such as cooperatives or buying centers. Farmer access to credit is critical if these efforts are to succeed, necessitating inclusion of microcredit programs in sustainability efforts. And the application of technology should be vigorously explored as a vehicle for reaching a dispersed farmer population. One such example is the Hershey Cocoalink program in Ghana, distributing mobile devices to farmers through which critical farming information can be disseminated.

Similarly, while governments are involved in selected projects, there are no robust, comprehensive government programs in cocoa today. One must recall that the only reason we have not suffered the massive cocoa shortfall that our industry fears today is due to several strong governmental programs to develop cocoa in the last few decades. The legendary support for cocoa development in Côte d'Ivoire by President Houphouet Boigny and the more recent push into the western part of that country, combined with the Indonesian transmigration policy which supported cocoa growing in Sulawesi, Indonesia, were land-based cocoa expansion programs that helped meet growing world demand for cocoa. With the exception of Ghana, today there is no comprehensive government program such as we have seen in the past. And tax policy in Côte d'Ivoire reduces farmer incomes without providing the extension services and other promised benefits.



What we need is an intensive, yieldbased governmental program akin to previous decades' efforts. Perhaps one can debate the role of the government, but policies should at least be in support of the private/public efforts and should preserve the economic rewards that create an incentive to the farmer.

CONCLUSION

The supply threat is real. And while industry sustainability efforts to date are impressive, they are insufficient to reach the scale required to positively impact the millions of cocoa farmers. While the tools and technology are readily available and a majority of the cocoa stakeholders are committed to sustainability, aggregation of farmers remains the single biggest challenge to overcome. We must solve the missing link of the middleman. And we must convince origin governments of the acute need and opportunity to develop more comprehensive yield-based programs in partnership with industry efforts. Finally, we will achieve success only by building on the strong foundation of collaboration that has been the hallmark of our industry for the last decade.

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