Evaluation Report

Accelerating Organic Cotton in China by Replicating Behavioral Change

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Comissioned by: C&A Foundation

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Executive Summary

The *Accelerating Organic Cotton in China by Replicating Behavioral Change* initiative, implemented by RARE and funded by the C&A Foundation, had an implementation period from March 2016 through February 2019. The initiative had five programming objectives: 1) developing a partner implementation network using a hub-and-spoke approach; 2) implementing farmer training and delivery using a train-the-trainer and farmer field school model to promote organic cotton methods; 3) promoting sustainable behavior change; 4) creating sustainable models and lasting relationships based on agricultural best practices and full realization within the value chain; and 5) building demand for subsequent scale of organic production through the cultivation of networks and relationships with relevant governments and industry leaders to encourage and support investment in the scaling of organic cotton.

This evaluation assesses the relevance, efficiency, effectiveness and results, and sustainability of the initiative. Qualitative and quantitative data from reports and interviews have been triangulated through site visits including observations, key informant interviews, and farmer interviews/group discussions. The evaluation also draws on selected key program indicators (KPI) and their evolution over the implementation period, comparing these indicators with program outcomes. The evaluation used data from the following two broad sources: 1) program documents and data provided by the C&A Foundation and Rare, and 2) views as triangulated among a variety of different stakeholders to be interviewed during the evaluation process. The evaluation contains sections on the background of the initiative, scope and methods of the evaluation including a ratings scale by criteria, findings, conclusions, lessons learned, and recommendations.

Overall, the evaluation recognizes the considerable interconnected barriers that the initiative faced in terms of promoting organic cotton in China, but concludes that the initiative did not provide adequate solutions or meet thresholds in terms of relevance, efficiency, effectiveness and results, and sustainability. Key findings of the evaluation are as follows:

Relevance. The initiative's proposed design included innovative mechanisms for bridging income gaps for farmers during the period of transition to organic cotton. In its grant application for funding the initiative, implementers demonstrated a clear understanding that previous attempts by other NGOs and financing partners to promote organic cotton in China had failed because an effective business model to improve farmers' incomes had not been developed. However, the initiative also missed opportunities for assisting farmers, all of whom had economic losses during the transition period. These issues are summarized below:

- **Inaccurate estimation of economic returns to farmers**. The initiative's design was based on inaccurate assumptions regarding the economic returns to farmers. Had a more rigorous feasibility study been conducted, this might have resulted in more realistic key assumptions, identification of gaps, and a more well-informed business development model, which could have allowed the initiative to demonstrate crucial early "wins" to farmers during the first years of implementation.

- **Proposed behavioral change approaches not relevant to the operating context.** The initiative worked primarily with commercial farms using farm labor, rather than working with cooperatives of smallholder farmers. Although this approach mitigated some economic risks to farmers and provided the initiative with more opportunities to meet targets for cotton lint production, various elements of the initiative as initially proposed, including the initial choice of geographies and sites, the "Pride" behavioral change methodology, and the hub-and-spoke model of farmer training were less relevant than expected in the context of these commercial farms.

- **Insufficient initial understanding of value chain coordination.** The most essential element in promoting sustainable organic cotton in China is the need for key actors to function as effective value chain coordinators. A deeper understanding and established institutional knowledge and networks in China's fashion value chain were reported to be lacking initially, leading to the initiative adopting a primarily supply-driven rather than market-driven or industry-centric approach. As a result, efforts to engage value-chain actors and brands for organic and in-transition cotton developed slowly. The initiative has signed some smaller pre-orders, but larger brands, although they have expressed some interest, have been reluctant to sign long-term pre-orders or pay a premium for organic cotton.

Efficiency. The initiative had credible monitoring mechanisms in place, and reporting on activities, outputs, and outcomes were accurate. Reported data on income, yields, and farm acreage were also verified during the evaluation's farm-based site visits and interviews. Mid-term and annual reports painted a balanced snapshot, both on potential bright spots as they emerged, as well as on challenges and barriers, including its farm relationships. However, the initiative had several gaps in efficiency. Several of the proposed initiative elements, such as the closed-loop model, proved unfeasible due to the small scale of production. The inability to implement a closed-loop approach, combined with a dearth of opportunities to obtain premiums for in-transition cotton, resulted in farm partner losses during the transition period. There was also an inappropriate initial selection of geography within the context of cotton production trends in China. Results at the initial sites in Hubei province were limited in terms of sustainable cotton transition, but core staff remain based there, even as the majority of the initiative's cotton production was later shifted to Xinjiang. The large majority of funds were deployed for staffing and office costs in Hubei, with minimal direct investment in farms. The evaluation concludes that the initiative, even with credible monitoring mechanisms in place, achieved insufficient results for the effort and money expended.

Effectiveness. The scope of the initiative was smaller than anticipated, but revised key program indicators (KPI) have been partially achieved. The initiative is close, for example, to meeting renegotiated targets for cotton area of land in transition, and expects to slightly exceed its KPIs for 2018 on this metric. Although the initiative's agronomists offered well-received direct training and advice on organic agricultural methods, the dependence on direct training for farmers rather than through the proposed train-the-trainer model meant that the reach of the initiative was limited. There were attempts to build networks with other key actors and identify gaps in existing agricultural outreach system, but the initiative did

not present a systematic approach to building sustainable local capacity in organic production, and, as a result, fewer “ripple effects” than expected were achieved in terms of widespread adoption of organic cotton farming.

Sustainability. A number of partner farms now have improved understanding of organic cultivation and certification processes and improved access to organic fertilizers and bio-pesticides. The initiative has begun engaging larger brands, and has begun the process of developing a pipeline. However, without continued external funding, most of the initiative's interventions are not sustainable, largely because no financially self-sufficient model has been operationalized.

Recommendations

Strategic recommendations for the remainder of the current grant period are that the Foundation and Rare should:

- Jointly identify initiative elements that can be used for learning activities.

Strategic recommendations for the Foundation beyond the current grant period are to:

- Continue and reinforce engagement in China based on the learning from the initiative.
- Promote learning activities through a “learning summit” on the current situation of sustainable organic cotton in China.
- Establish an in-country presence geared towards developing effective partnerships and networks.
- Promote credible research and policy “white papers” on sustainable materials to inform policy discussions and future planning.

A special recommendation for the Foundation on Xinjiang—with important caveats on ensuring that standards and safeguards are in place—is to:

- Prioritize Xinjiang in selecting sites for sustainable cotton production.

In terms of recommendations for the Foundation’s organizational strengthening, the evaluators note that project managers need to develop a better understanding of the project cycle, and therefore recommend that the Foundation:

- Establish clear guidelines and training on the project cycle to enable project managers to better develop models for planning, delivering, assessing, and adapting programming.

Specific Recommendations for Rare are that the organization should:

- Engage in new areas after a substantial learning process is embedded.

In the specific case of organic cotton, there is a need to build greater in-depth understanding of value chains. Instead of adopting a primarily supply-driven approach, further efforts need to be placed on developing a market-driven industry-centric approach. By placing more emphasis on end-buyers, and starting with the expressed needs of these buyers, efforts to engage value chain actors and brands for organic and in-transition cotton could develop more rapidly.

- Cultivate long-lasting and sustainable partnerships with other organizations working toward similar goals.

In the realm of cotton production, Rare has correctly placed emphasis on soil remediation and water conservation. An approach to organic production as a "gold standard" tier of sustainable production should be integrated within existing sustainable cotton initiatives.

1. Background

China currently accounts for approximately 30 percent of the world's cotton output, and accounts for approximately 15 percent of the world's cotton-growing land.[1] Because of its importance as a leader in cotton production, by the mid-2010s, the C&A Foundation (CAF) was looking for opportunities to expand its activities in sustainable materials from India and other regions to China. In March 2015, CAF contracted with Rare to develop a scalable model for organic cotton in China through a pilot project intended to provide technical lessons from existing organic cotton practices, build readiness and demand for expansion among neighboring communities, refine the economic model and return on investment for the transition to organic cotton, including building links to markets and creating buying alliances with private sector partners, and synthesize and codify results of the project to inform future expansion.

In 2015-16, initiative activities occurred against a backdrop of convergence of lower international cotton prices and heavy flooding. While China is one of the world's biggest cotton users and producers, the country's cotton production has been steadily failing. Within the period from 2012 to 2016, China's overall cotton production decreased, from 7.4 million MT to 5 million MT. The falling production and rising labor cost have pushed Chinese cotton prices up, rendering it less competitive against its Indian counterparts.[2]

During the pilot phase in 2015, land allocated to in-transition organic cotton in Tian'ezhou was in a low-lying flood zone, and the site was flooded resulting in substantial losses to farm partners. Similarly, in the first implementation year of the current *Accelerating Organic Cotton in China by Replicating Behavioral Change* initiative, partner farms in Hubei province in central China, particularly the farm site in Bomao, experienced considerable losses due to flooding. Implementation occurred during a trend away from cotton production in Hubei in which, as with other areas of eastern China, the total area used for cotton was in decline.[3] Hubei, which was once a major inland China cotton growing area, witnessed a continuing decline in commercial cotton production during the implementation period, and according to interviews conducted with local farmers, much of all the cotton is grown by smallholders for local consumption. The initiative's farm partners in Hubei currently grow 5.6 hectares of in-transition cotton, including organic seed cotton, and continue to grow crops of comestible organics on a larger scale.

From the outset, Rare's 2015 grant proposal identified Xinjiang as "critical to cotton production in China," indicating that "if organic cotton was to scale in China, the pathway certainly leads through Xinjiang." In 2017, while continuing to work with two farms in Hubei, Bomao and Zhuqiao, the initiative expanded activities to the Xinjiang Uyghur Autonomous Region, a provincial-level autonomous region northwest of China. Xinjiang currently produces more

[1] http://www.chinadaily.com.cn/business/2017-10/23/content_33613858.htm

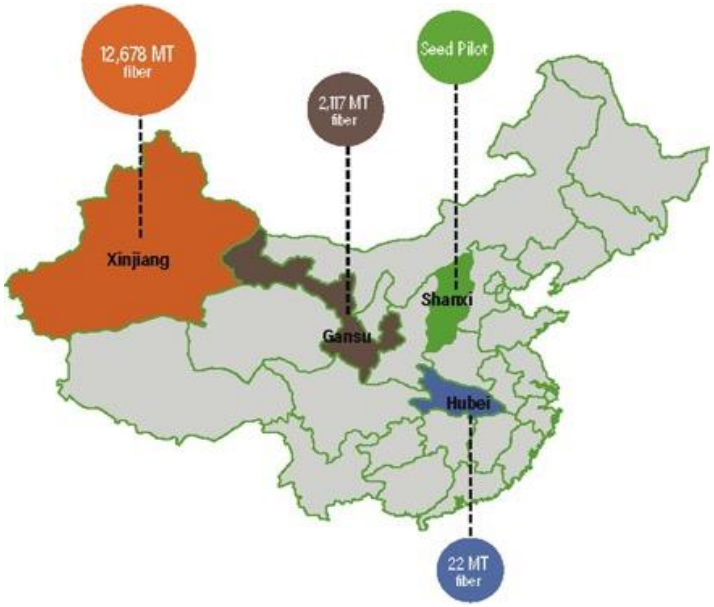
[2] Textile Exchange, Organic Cotton Market Report, 2017

[3] For a discussion on this, see for example, https://ipad.fas.usda.gov/highlights/2017/08/china/index.htm

than two-thirds of China's cotton, increasingly through mechanized farming[4], and accounts for 85% of the nation's organic production. [1] During the early part of the decade, China attempted to maintain a high level of price support for its cotton producers. With rapidly rising wages during the decade, cotton production costs rose faster than in the rest of the world. The rising costs that had motivated China's policymakers to strengthen their price support for cotton production in 2011 ultimately proved unsustainable, and by 2014 the country began switching producer support to direct subsidies, focusing support on producers in Xinjiang.[5]

Figure 1: Organic cotton production in China

From the outset, Rare's 2015 grant proposal identified Xinjiang as critical to cotton production in China and that "if organic cotton was to scale in China, the pathway certainly leads through Xinjiang."



1.1 Scope of the evaluation

This evaluation has two objectives. The first is to provide a mechanism for learning. A second is to provide an independent assessment related to accountability, particularly in terms of the extent to which the initiative met its stated objectives. This evaluation reviews activities during a nine-month pilot program from March 2015 through January 2016 under a grant from the C&A Foundation to Rare, Inc. entitled *Develop a Scalable Model for Organic Cotton in China* and subsequent activities conducted under a three-year grant to Rare from CAF entitled *Accelerating Organic Cotton in China by Replicating Behavioral Change* with an implementation period from March 2016 with activities through February 2019. The evaluation is intended to:

- Review the approach and design implemented by the initiative in progressing toward, or achieving, intended outcomes
- Assess factors in the design and implementation of the entire model or components of the model that have contributed to or impeded achievement of outcomes

[4] Xinjiang's production increased to 3.594 million tons of cotton in 2016 compared with 2015, accounting for 67.3 percent of China's total in 2017. Source: National Bureau of Statistics cited by China Daily/Xinhua, ibid. One Xinjiang farmer interviewed reported that a cotton-picking machine could do the work of 2,000 workers each day. Map source: Textile Exchange, Organic Cotton Market Report, 2017

[5] With rising wages, as for other commodities, cotton production is increasingly a part-time occupation for many farmers in China, and cotton has steadily accounted for a significant share of China's agricultural imports by value. Source: Stephen MacDonald, Fred Gale, and James Hansen. USDA, 2015. Cotton Policy in China.

- Examine the relevance, effectiveness (including value for money), efficacy, efficiency and sustainability/replicability of the initiative
- Distil actionable and strategic recommendations and lessons from the findings.

1.2 Initiative design and elements

The Pilot Project: Develop a Scalable Model for Organic Cotton in China

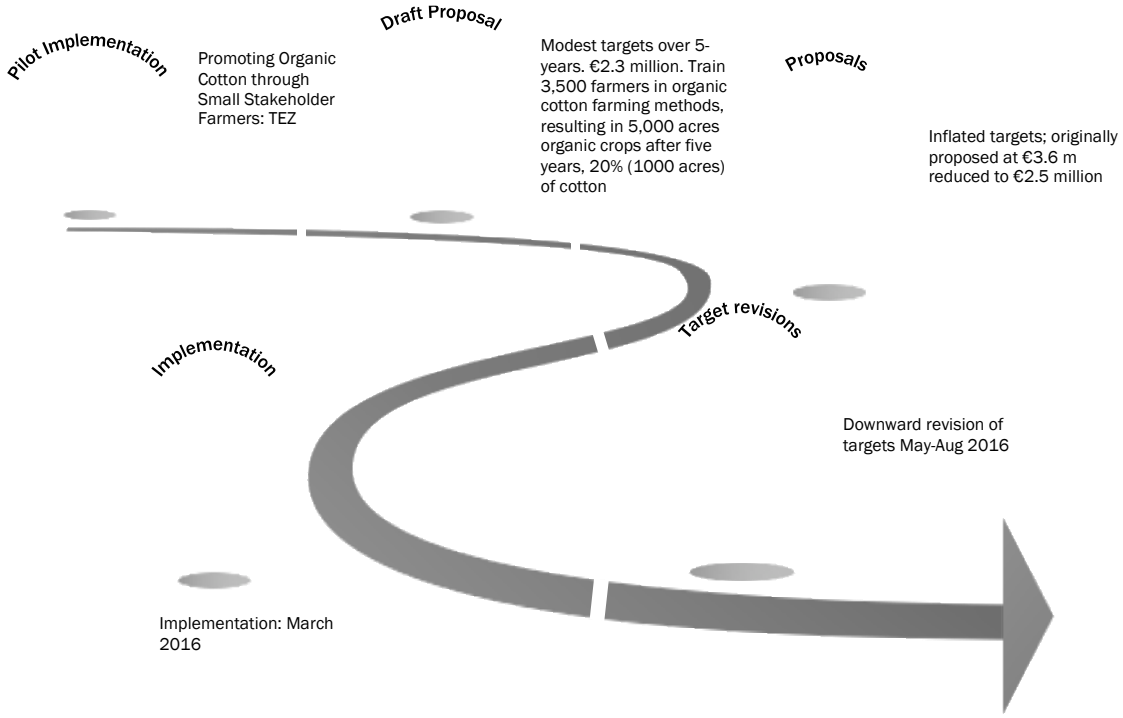
After initial meetings between Rare staff and CAF leadership, Rare developed a proposal to conduct work in China on organic cotton. Rare's first proposal was submitted in December 2014 with a geographic focus on the Yangtze River Basin in Hubei province. The proposed project was designed to increase the domestic cultivation of organic cotton through the adoption and implementation of sustainable farming techniques by small-scale farmers; to advance the economic incentives of small-scale farmers for adopting sustainable organic cultivation practices; and to build demand among large numbers of farmers ultimately to adopt this technology and cultivate relationships and networks with relevant governments and industry leaders in order to build demand for organic cotton at scale. In March 2015, CAF funded Rare with a €250,000 grant to work in partnership with the World Wildlife Fund (WWF), China. The objectives of this activity were to:

- Learn technical lessons from existing organic cotton practices and create an inter-cropped demonstration farm to model new techniques
- Build readiness and demand for expansion among neighboring communities for organic cotton planting in the 2016 growing season
- Refine the economic model and return on investment for the transition to organic cotton, including building links to markets and creating buying alliances with private sector partners
- Synthesize and codify the results of the project to inform future expansion to new sites and the creation of a scale strategy.

In this pilot activity, Rare partnered with WWF's office in Hubei to develop organic agriculture including cotton. WWF had already begun its conservation work in the area selected for the pilot, Tian'ezhou (TEZ), in 2000. WWF and Rare signed a memorandum of agreement (MOU) under which WWF was to secure approximately 82 hectares of land in TEZ to develop an organic demonstration plot including growing organic cotton.[6] The pilot project was managed by a company supported by WWF, which rented land from the village.

[6] In the MOU between WWF and Rare, WWF agreed to invest a total of US$300,000, of which US$200,000 was designated for the leasing of farmland, the procurement of inputs and labor directly associated with the design and cultivation of the demonstration plot, as well as monitoring and evaluation.

Figure 2: Initiative Timeline



The current initiative: Accelerating Organic Cotton in China by Replicating Behavioral Change

Within five months of pilot implementation, in September 2015, Rare submitted its first draft for funding the next phase of the initiative. The early draft contained relatively modest quantitative targets, aiming to reach and train 3,500 farmers in organic cotton farming methods during a five-year period, resulting in 2,000 hectares of either in-transition or fully converted organic crops, 20% of which would be dedicated to cotton. After input from CAF on this and further iterations of the proposal, Rare submitted a finalized grant application to CAF, in which quantitative output targets were substantially increased as a result of discussions with the Foundation that Rare should achieve greater reach for the budget allotted.

As originally designed, the project, which was to operate initially in Hubei, with a later expansion to Xinjiang or Gansu, had the following goals within five years:

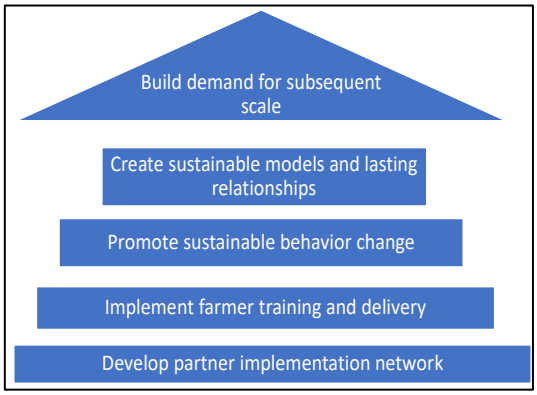
- Double organic cotton production in China from 6,000 ha to over 12,000 ha
- Increase total land under organic cultivation in China by 5% adding 100,000 ha

- Convert 100,000 farmers to practice organic methods with farmers achieving more than a 200% increase in net incomes.

As initially drafted, the initiative had four programming objectives leading to a higher-level fifth objective of building demand for subsequent scale for organic production. These major design elements were:

- Developing a partner implementation network using a hub-and-spoke approach to forming primary, scalable partnerships.
- Implementing farmer training and delivery using a train-the-trainer (TOT) and farmer field school (FFS) model to promote organic cotton methods, with a support network and helpdesk for ongoing technical assistance.

Figure 3: Initiative Elements



- Promoting sustainable behavior change through Pride methodology, described as a proprietary community engagement and social marketing approach, Campaigning for Conservation, to accelerate farmer and government buy-in, improve attitudes towards organic methods, and willingness to adopt new, sustainable behaviors.
- Creating sustainable models and lasting relationships through intercropping and crop rotation best practices; creating a “closed loop” model for full realization of cotton by-products and the value chain; building a brand and bridges to the market to realize full value for the product; and building a sustainable financing vehicle that reduces the dependency on philanthropy over time.
- Building demand for subsequent scale for organic production, which was to be achieved through the cultivation of networks and relationships with relevant governments and industry leaders to encourage and support investment in the scaling of organic cotton.

2. Evaluation Methodology

The evaluation assesses the relevance, effectiveness and results, efficiency, and sustainability of the initiative. The evaluation uses several methods, including *content analysis*, which was used for drawing inferences by identifying specified characteristics of the content of empirical documentation and interviews; *trend analysis*, which was used to examine different intervention monitoring indicators and benchmarks over time; and *gap analysis*, or determining which aspects of the program fell short in terms anticipated and actual performance and the causal factors related to specific intervention components.

The evaluation assesses the relevance, effectiveness and results, efficiency, and sustainability. Qualitative data from reports and interviews are triangulated through site visits including observations, key informant interviews, and farmer interviews/group discussions. This evaluation also draws on selected key program indicators and their evolution over the implementation period as compared with program outcomes. The evaluation used data from the following two broad sources – 1) Program documents and data provided by the C&A Foundation and Rare, and 2) views as triangulated among a variety of different stakeholders to be interviewed during the evaluation process. These are discussed below:

Secondary source materials. The Foundation and Rare have made program documents available to the evaluators. These included documents on grant agreements and modifications, baseline reports and indicators, mid-year and end-of-year reports, tracking spreadsheets, special topic reports, and presentations.

Key stakeholder interviews and group discussions included a range of individuals that were involved in some way in the program, e.g. participating farmers and farm managers, non-farm value chain partners, Rare staff in China, and the C&A Foundation's program team. At each selected farm site, the evaluation team conducted key informant interviews with 1 to 3 farm managers and one FGD with an average of 6 farm workers per site.

Sites. Eight initiative sites were considered for sampling based on criteria including the geographic area and type of farm, current status within the initiative (active; discontinued), the degree to which the initiative had reported Pride campaign activity, technical training or farmer field schools, and attempts to provide technical assistance for its closed loop model or market linkages. The eight sites in the sampling universe are listed by province below:

- **Hubei**. The initiative is currently operating in two sites in Hubei Province. Activities at a third pilot site were implemented in 2015 in collaboration with the World Wildlife Fund. These sites are: 1) Zhuqiao, 2) Bomao, and 3) Tian'ezhou.
- **Xinjiang**. The initiative is currently operating in four sites in Xinjiang. A fifth site, Huafeng, was dropped from participation in early 2018. These sites are: 1) Zhongliang, 2) Xianglin, 3) Lutai, 4) Jintian, and 5) Huafeng.

Site visits and interviews. Evaluators conducted site visits to five farms, Tian'ezhou (TEZ), Zhuqiao, and Bomao in Hubei, and Zhongliang and Jintian in Xinjiang, and held in-person interviews with farm management from two other Xinjiang farms: Huafeng and Lutai. Only one site, Xianglin in Xinjiang, was not included in the site visit or interview schedule.

Preliminary results were presented to CAF and Rare staff at CAF offices in Gurgaon, India in September 2018, and the current evaluation incorporates initial feedback from CAF and Rare staff.

3. Findings

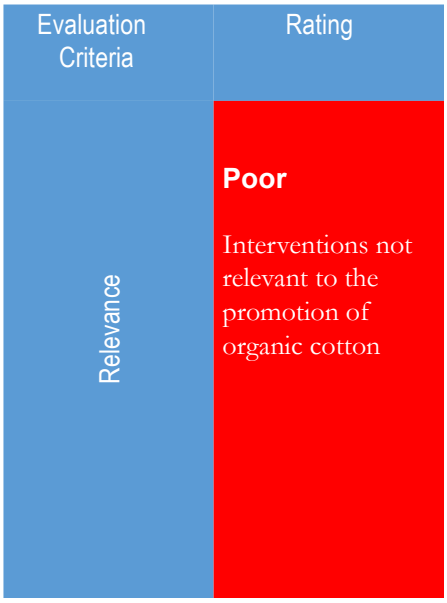
Based on the results of our review, evaluators used a rating system on a three-point scale (good, adequate, poor), reporting on these ratings using a color scheme of green, yellow, and red, respectively, to findings on key Organization for Economic Cooperation and Development (OECD) criteria, namely relevance, effectiveness and results, efficiency, and sustainability (Figure 4).

Figure 4: Rating Scale

Component Aspect	Ranking Scale		
	Poor	Adequate	Good
Relevance	Interventions not relevant to the promotion of organic cotton	Some of the interventions promote organic cotton	All of the interventions promote organic cotton
Efficiency	Insufficient results were achieved for the effort and money expended	Results achieved were commensurate with effort and money expended	Results achieved exceeded expectations for the effort and money expended
Effectiveness and Results	No evidence along the VC for sufficient economic or environmental benefit to supporting transition to organic cotton Achieved KPI values are less than 80% of the target values for at least 75% of the defined KPIs	Evidence along the VC for adequate economic or environmental benefit to supporting transition to organic cotton Achieved KPI values are at least 80% of the target values for at least 75% of the defined KPIs	Evidence along the VC of good economic or environmental benefit to supporting transition to organic cotton Achieved KPI values meet or exceed the target values for at least 75% of the defined KPIs
Sustainability	Component interventions unlikely to continue after program funding ends	Some parts of component interventions are likely to continue after program funding ends	All interventions and promoted practices are likely to continue after program funding ends

The evidence for each of the ratings has been provided in a box alongside the criteria, and is discussed at length in each section thereafter.

3.1 Relevance



- Proposed behavioral changes were developed to include smallholder farmers; approaches not relevant to the context of commercial farms with hired labor
- Insufficient initial understanding of the value chain by implementing partner

This section discusses both the relevance and realism of the initiative's design and approach in creating demand for subsequent scale of organic cotton production in its targeted areas in terms of whether output and outcome targets were realistic given the scale of the initiative. The report discusses the extent to which the initiative succeeded in identifying and engaging the most appropriate partner network and farmers; determines the most important gaps and whether they were filled by the initiative; and discusses the extent to which the initiative's strategies and objectives align with CAF and Rare's vision and mission in promoting organic cotton. The section concludes with a review of the extent to which the initiative's design of important elements of its model—including the Pride methodology, closed loop model, creating demand for subsequent scale and policy advocacy—were appropriate in achieving the intended objectives.

How relevant and realistic were various elements of the design and approach in creating demand for subsequent scale?

The initiative's design and approach—which was based on developing a partner implementation network using a hub-and-spoke approach, implementing farmer training and delivery using a train-the-trainer model, promoting behavior change, and creating a sustainable model including closed loop techniques and building a brand, all targeted to building demand for subsequent scale—misestimated important commercial, policy, and regulatory barriers that posed barriers to the development of organic cotton in China, all of which are discussed in later sections of this report.

Design gaps
The initiative's design and approach underestimated important commercial, policy, and regulatory barriers that posed barriers to the development of organic cotton in China.

In addition, many of the elements of the design and approach as actually implemented were not realistic in creating demand for subsequent scale. Targets, as initially agreed upon during the contract process were inaccurately estimated, were not grounded in the experience of previous efforts to promote organic cotton in China, and were subsequently revised downwards within months of the beginning of implementation.

To better understand the question of the realism and relevance of the current initiative, CAF requested that evaluators conduct an "archeology" of its genesis, through a review of the experiences in this nine-month pilot project and the timeline leading up to the proposal, the results of which are detailed below.

Understanding the Genesis of the Initiative

Rare had originally drafted a proposal with relatively modest goals. In this initial draft proposal, the scope and scale of the initiative and the initial design and approach grew out of its experience with this pilot project implemented in Tian'ezhou (TEZ) in Hubei Province. The scope of the proposed initiative became much larger in subsequent proposal submissions. Within less than two months from the start of implementation, after it became apparent to both parties that originally projected targets were high, Rare and CAF initiated discussions that required a major scale-back of the initiative, with some targets and objectives even lower than those originally proposed in their initial draft. To understand how the initiative was designed, it is important to briefly review the pilot phase and proposal process for the current initiative.

Pilot Project in TEZ

The land chosen for the pilot was inappropriate for agriculture, in that it was subject to regular flooding. The the site selected for organic farming had a high underground water table, and the area where cotton was planted had low-lying strips and shallow areas, indicating that the area was easily subject to rainfall flooding. The pilot phase resulted in a loss by WWF of RMB 1.5 million, or approximately US $230,000.

WWF absorbed costs of RMB 1.5 million, or approximately US $230,000. WWF continued its work in TEZ through 2017, but in-transition cotton yields continued to be much lower compared to conventional cotton and the farm continued to lose money on its cotton crop until it abandoned cotton production in 2017.

TEZ Pilot Project

During the 2015 pilot, 267 hectares (ha) were planted in organic cotton. The land chosen for planting was inappropriate for cotton agriculture, in that it was subject to regular flooding. The site selected for organic farming had a high underground water table, and the eastern half of the plot, where cotton was planted, had low-lying strips and shallow areas, indicating that the fields were easily subject to rainfall flooding.[7] In June 2015, within days of planting cotton seedlings, heavy rains of 131 mm flooded the low-lying cotton plantation area adjacent to fisheries in which the crops had been planted. This rainfall continued through mid-June, with precipitation for the month reaching 370 mm, or 2.5 times the monthly average. The first cotton planting was completely obliterated and later largely replanted with soybeans (50 ha)

[7] Techinal issues related to the pilot site were well documented in an end-of-project research report by Zhu Jianqiang and his team at Yangtze University entitled *Tian-E-Zhou Oxbow Organic Cotton and Sustainable Agricultural Development Project: Research Report, 2016*. The report indicated that the site selected for organic farming had a high underground water table, with an average range of 1.0-1.5 meters from the surface. Of particular interest was that the eastern half of the plot, where cotton and maize were planted, had low-lying strips and shallow areas, indicating that the fields were easily subject to rainfall flooding.

in the western half of the pilot area and with cotton (22 ha) and maize (32 ha) in the eastern half.[8]

According to the proposal for the pilot phase, Rare indicated that a key element was to use Campaigning for Conservation (C4C) as a platform for replicating sustainable organic cotton farming across China. C4C was intended to build the capacity of local leaders to develop and carry out social marketing campaigns. During the first two months of the pilot project, Rare indicated that they would develop a customized curriculum, design materials, and recruit for C4C, and in subsequent months, conduct C4C training and campaigns.[9] Rare did not conduct these activities.

Although an end-of-year research report noted some increase in knowledge of organic farming, the farmers interviewed indicated that although they were willing to contribute labor, they were not willing to conduct the organic cultivation of cotton on their own land because of the amount of labor required, low yields and unfavorable prices.[10]

In terms of actual organic cotton produced in TEZ in 2015, yields were very low, and fewer than 10 metric tons of seed cotton were eventually produced, with much of it left on site due to high labor costs. However, C&A's corporate offices assisted the initiative as part of its first green initiative in China by purchasing this in-transition cotton. Through its network, C&A produced 24,000 T-shirts in support of product campaigns through introductions to a commercial garment supplier in Ningbo that had its own network of spinners and ginners.[11]

Rare and WWF ceased collaboration after the first pilot year in 2015. WWF incurred financial losses of US $230,000[12], and neither party saw benefit in continuing the relationship. WWF continued its work in TEZ through 2017, but in-transition yields continued to be much lower compared to conventional cotton in the region and the farm continued to lose money on its cotton crop until it abandoned cotton production in 2017.[13]

The Current Initiative

The proposal process. A draft proposal for what was to become the current initiative *Accelerating Organic Cotton in China by Replicating Behavioral Change* was submitted in September 2015. In this draft, Rare initially proposed a five-year intervention with a budget of €2.3 million and relatively modest targets for farmer training, proposing to train 3,500 farmers in organic cotton farming methods over a five-year implementation period beginning

[8] Data provided by the initiative on farm size has been presented alternatively in Chinese *mu* (15 mu = 1 ha); acres (2.47 acres = 1 ha). For ease of comparison with other projects, figures in this document have been standardized and converted to hectares (ha).

[9] Grant agreement, March 20, 2015. Annex C: Proposal.

[10] Zhu et al., 2016, ibid.

[11] Interview at C&A corporate offices, Shanghai, August 2018.

[12] Per interview at WWF offices; based on total agricultural and labor inputs lost due to crop damage.

[13] 900-1200 kg. per ha, from Zhu et al., 2016. According interviews with WWF, later yields approximately 30,000 kg/ha compared with conventional yields of around 7,500-9,000 kg./ha. Cotton planting ceased in 2017. According to a WWF interviewee, the intervention resulted in a loss by WWF of RMB 1.5 million and RMB 800,000 for 2015 and 2016 respectively. With the abandonment of cotton in 2017, losses were lower.

in Hubei and expanding to other areas, and converting 2000 ha to in-transition or fully converted organic crops after five years, 20% of which (400 ha) would be dedicated to cotton.

Rare's proposals anticipated premiums and diminishing labor costs over a five-year period, resulting in an approximate *doubling* of average farmer income per unit of land by the third year, and a *tripling* of income compared to the baseline by years four and five, by which time farmers would be producing certified organic cotton.

In its grant application form of October 2015, an understanding that previous failures to promote previous attempts in organic cotton had not developed an effective business model throughout the value chain and had failed to improve farmers' incomes was clearly stated:

> The Asian Development Bank, World Bank and FAO promoted the environment friendly cotton project in Hubei province from 1996 to 2002. They trained approximately 30,000 farmers to reduce fertilizer and chemical pesticide and herbicide use. However, they did not promote the cotton as premium to the market and did not create and apply environmentally-friendly branding. Farmers did not realize enough profit from the conversion and the project could not be sustained.[14]

In their proposal for the current initiative, Rare indicated the need for creating sustainable financing vehicles to overcome these hurdles. The proposal included innovative approaches to risk-sharing and risk-mitigation mechanisms. An example was a special purpose vehicle (SPV), in which equity holders would include farmers and farming co-operatives, with Rare and other mission-aligned impact investors likely included as managing members. The proposed approach was also intended to allow the initiative to leverage pre-purchase agreements to obtain low-cost financing (e.g. from impact investors) to fund expansion activities, contracting out operations to top farm operators to provide technical assistance.

Despite evidence that there was awareness of the pitfalls of previous organic cotton initiatives, the initiative design lacked a clear strategy for promoting cotton sales once it was harvested, essential to, in the words of the proposal, "building a brand and bridges to the market to realize full value for the product, and building a sustainable financing vehicle that reduces the dependency on philanthropy over time."

Were output and outcome targets realistic given the scale of the project?

Initial targets were not realistic given the scale of the initiative, which was designed without robust cost and value chain analysis, and were based on unrealistic assumptions in the cost-benefit analysis for the current initiative.[15]

[14] Paragraph includes minor copy edits to the original.

[15] Appendix C: Financial Model/Return on Investment Analysis, 11/6/2015 included as annex to the grant contract, March 20, 2016:.

Although several of the targets submitted in an initial draft, eventually proved optimistic in terms of the number of proposed farmer trainees and net returns to farmers, the scale of activities proposed was rooted in the previous experience of the initiative's technical experts in agronomy. After discussion and input from CAF, however, targets in terms of farmers and area for organic conversion were increased.

First Draft Proposal

Although targets in an initial draft proposal proved to be optimistic, the scale of activities proposed was rooted in the previous experience of Rare's agronomists.

Although the proposal and associated appendix correctly identified several risks, including identification of partner sites, the ability to create sufficient income for small-scale farmers during the transition to organic cotton, and vulnerability of crops yields to weather or pest conditions, these documents did not assess the sensitivity to these risks. In the assessment of robustness of the financial analysis, the evaluation team relied primarily on three of six criteria[16] to evaluate the analytical quality, namely expected values, measurement of benefits and costs against a counterfactual, and risk.

Proposed initial targets not realistic

Targets provided in the grant agreement on acreage to be converted, yields, and returns were unrealistic. Within two months of the grant agreement, CAF and initiative staff initiated discussions that targets be revised downwards. This resulted in a modification that reduced targets to a fraction of those in the original grant agreement.

- *Expected values*: *Net present value (NPV) is the main criterion to be applied in decisions, and analysis in appraisal documents should strive to estimate and present the expected outcome rather than a best-case scenario.* A risky project can be defined as one with a high probability of achieving a negative NPV, and determining which projects so qualify could be made on an objective empirical basis by measuring and documenting the NPV of past projects. The feasibility study conducted for this initiative reported expected outcomes based on a best case-scenario.

- *Measurement of benefits and costs against a counterfactual*: *Benefits and costs should be measured as the change compared with what would have been the case without the project.* Although the analysis compared expected returns between organic and conventional cotton, several key assumptions on the cost of conversion such as financing and seed costs were not included, and the higher costs of pest control using bio-chemicals and labor were inaccurately captured.

- *Risk*: *Analysis should consider the sources, magnitude, and effects of the risks associated with a project by taking into account the possible range in the values of the basic variables and assessing the robustness of project outcomes with respect to*

[16] Criteria and definitions (in italics) from: *Cost-Benefit Analysis in World Bank Projects,* World Bank, 2010:20. Description of risky projects cited from p. 16.

changes in these values. When downside risks are not determined through sensitivity analysis, projected returns can often be biased upwards. In the present case, economic return models were based on returns to organic cotton lint production using rotation crops and the closed loop model, and several other assumptions, such as that price premiums would have accrued directly to farmers rather than being dispersed throughout the value chain.

CAF funded the grant for the *Accelerating Organic Cotton in China by Replicating Behavioral Change* initiative in February 2016, for an implementation period from March 2016 through February 2019. The initiative's targeted geographic focus was Hubei province with potential extensions to Xinjiang or other provinces.

The definition of farmer engagement was unclear and the numbers of farmers, acreage, and yields were inaccurately estimated in the final proposal submitted by Rare to the Foundation. CAF and initiative staff began communication on downward target revisions within two months of implementation (May 2016). Responding to some initial revisions proposed by CAF, Rare indicated that key targets be lowered further, some by as much as 90% compared to the grant proposal.[17]

[17] Rare email communication with CAF with Rare responses to CAF. 5/27/2016.

Figure 6: Initial Targets (February 2016)

	Year 1	Year 2	Year 3
Target number of cotton farmers (engaged)	30,000	102,000	214,500
Total number of [in-transition] Organic Cotton Farmers	2,700	9,900	27,900
Target cotton area (ha)	482	1,339	2,678
Target cotton production (MT Lint)	499	1,539	3,232
Average Yield Organic Cotton (kg/ha)	2,721.9	2,998.6	3,176.4
Average Net Income Level (RMB/ha)	14,780	20,636	24,065

Within months of signing the initial contract in February 2016, Rare and CAF entered into discussions on revising targets.

Figure 7: Proposed target revision (May 2016)

	Year 1 2016-17	Year 2 2017-18	Year 3 2018-19
Certified/IC Farmers (L1)	131	690	2,184
Land certified organic (ha)	252.2	1,700	5,282.6
Cotton Lint certified/IC (MT)	30	91	402
Seed cotton yield (kg/acre)	1,153	1,275	1,305

Discussions in May 2016 centered on revisions of key project indicators. In many cases, targets represented less than 10% of inital proposed.

Figure 8: Target revision in grant modification (August 2016)

	Year 1 2016-17	Year 2 2017-18	Year 3 2018-19
Trained/Certified/IC Farmers	89	176	457
Land certified organic (ha)	150.6	400	1,334
Cotton Area certified	56	188	811
Cotton Lint certified/IC (MT)	15	99	481
Seed cotton yield, Hubei (kg/ha)	2,274	2,993.6	3,347
Seed cotton yield, Xinjiang (kg/ha)	4,497.9	4,744.9	4,873.3

In a grant modification in August 2016, targets for numbers of farmers and organic acreage were again substantially reduced, this time to approximately one-quarter of what had been discussed a few months earlier in May. Estimates for increases in farm income were also substantially reduced in the modifcation.

Shift to Xinjiang. Unlike Hubei, where cotton production accounted for a declining percentage of total agricultural production, Xinjiang offered ample opportunities to more easily meet renegotiated quantitative targets, which now placed more emphasis on organic cotton production rather than the number of farmers reached. Because of the greater use of mechanized farming, the number of farmers per hectare is lower than in other areas of the country, and Xinjiang also had large numbers of existing land in-transition or organically certifiable. Also, in Xinjiang, the initiative collaborated with farms that already had experience with organic cotton production as well as other forms of sustainable cotton production through work with organizations such as the Better Cotton Initiative (BCI), which had worked with partner farms in the province for several years. Moreover, larger farm partners in Xinjiang were much better prepared to engage in organic cotton production. The first organic cotton trials in China had started in 2001 in the Akesu area in Xinjiang and by 2011, Xinjiang was the only province in China producing organic cotton on a large scale, with over 4,200 hectares of organic cotton under cultivation.[18] However, for reasons discussed in a later section, there were still important barriers for international NGOs working in Xinjiang.

How relevant and realistic were various elements of the design and approach in creating demand for subsequent scale of organic cotton production in its targeted areas?

The initiative involved agronomists with substantial prior experience in organic methods, which contributed to building farm partners' understanding of organic production techniques. However, various other elements of the initiative were not relevant to the eventual context in which the initiative operated. As detailed in later sections of this report, farm losses during the transition to organic cotton have been substantial, and although farmers were prepared for some initial losses during the transition period, these losses were far higher than anticipated. The proposed model, which was initially designed to encourage mass adoption of organic agricultural methods by smallholders through ripple effects, was not used, in part because of the difficulties in demonstrating adequate returns to farmers during the transition period. This impacted the ability to form a partner implementation network using a hub-and-spoke approach to forming primary, scalable partnerships in Hubei. The train-the-trainer model, although potentially relevant in Xinjiang through the training of agricultural outreach staff, was not adopted. Instead, a model of direct training and technical assistance for a limited number of partner farms was implemented.

A key lesson, and one that was not anticipated in the design, is that a hub-and-spoke model works once the hub has demonstrated a proven case for organic cotton, a process that can take at least three years or longer before hubs can expand to spokes. In more remote areas, such as Zhongliang in Xinjiang, the hub-and-spoke model is not feasible. [19] Similarly, a closed loop model, which anticipated fuller realization of cotton by-products, could not be

[18] Textile Exchange, 2011; http://farmhub.textileexchange.org/learning-zone/growing-regions/china

[19] Responses to follow-up questions. Communication from Rare, August 31, 2018.

implemented because of the lack of scale of farmer production and the inability to market farm by-products.[20]

The behavioral change models advocated in the initial design were based on Rare's previous experience in community-change models, which targeted community-wide knowledge, attitude, and behavior change in support of conservation goals. However, many of the farms that the initiative associated with were larger scale profit-oriented businesses, and most had centralized management structures. Under such a scenario, and with exceptions such as Jintian, where farm managers were working to create a multi-ethnic community environment, the buy-in of farm management became much more important than the knowledge, attitudes, and practices of the individuals that work the land, who in many cases were hired laborers. For this reason, in most cases, behavioral change models and training for large number of farmers were less relevant than anticipated.

Non-relevance in the context

The various elements of the initiative were not relevant to the eventual context in which the initiative operated. The initiative was unable to demonstrate sufficient returns in the transition period to enable it to develop a partner implementation network using a hub-and-spoke approach to forming primary, scalable partnerships, and as a result did not implement farmer training and delivery using a train-the-trainer model.

There was also insufficient initial understanding and lack of established institutional knowledge and networks in China's fashion value chain. Although efforts to engage value chain partners gained some momentum during the later phases of implementation, because the initial focus of the initiative was on developing a network of farm-based partners rather than on other levels of the value chain, the initiative missed opportunities early on to assist in marketing during early implementation. These factors led to a primarily supply-driven rather than market-driven or industry-centric approach at the start. As a result, despite efforts to engage value-chain actors and brands after collaborating with C&A corporate offices in Shanghai, which marketed in-transition cotton products in its retail outlets in 2016 from cotton produced the previous year at the TEZ pilot site, the development of markets for organic and in-transition cotton has developed slowly. Although some larger brands have shown interest and two small brands have signed pre-orders, most brands have been reluctant to sign long term pre-orders or pay a premium for organic cotton.

What specific, existing gaps were filled by the initiative in promoting organic cotton in the provinces where the initiative was implemented?

As Figure 5 shows, there are numerous players in the cotton sector. In contrast to conventional cotton, which relies on the spot market for coordinating the actions of players, organic cotton requires a dedicated and closely coordinated value chain to ensure that organic cotton moves from the farm gate to end consumers.

[20] Sources: farmer interviews; Rare 2017 end-of -year report (p. 20): a challenge lies In collecting the cotton straw and delivering it . . . as the machinery to collect the cotton straw requires thousands of mu. Therefore, the size of the organic cotton plot at Zhongliang is too small and is not economically feasible. A key lesson learned about closed loop is in economies of scale and that farmers may be better off using the by-products to make compost.

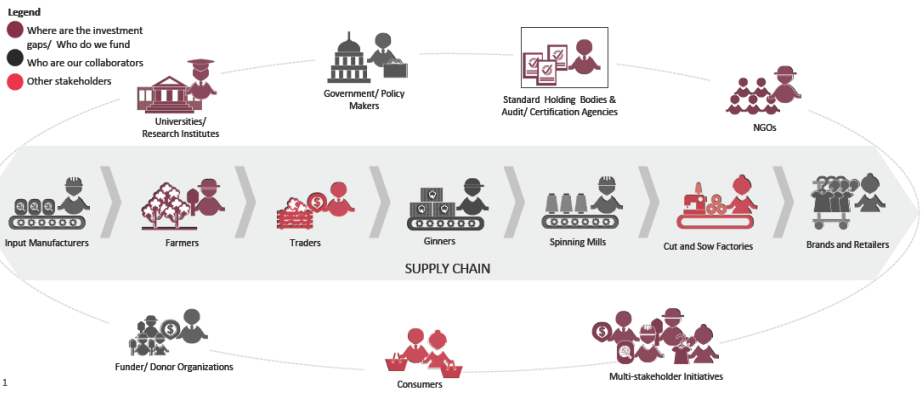
To function well as a promoter of organic cotton requires an organizational model that can effectively influence policy, promote actors along the value chain to change the mix of products and services, and provide a range of services from agricultural inputs, fieldwork to marketing, collecting and tracking relevant data on a larger scale, ensuring that relevant organic standards and principles are complied with, and providing transparent and traceable materials. It is also key to ensuring farmers' loyalty through providing incentives to transition to organic, including providing credit services and linkages to financial institutions, particularly for smallholder farmers, developing contract farming arrangements with ginners, and ensuring the availability of local warehousing service providers, all of which continue to remain as important gaps.

As discussed in a later section, by the second year of implementation, the initiative did begin to make some steps to coordinate activities along the value chain, including presentations at Biofach and Intertextile as well as farm site visits with brands and suppliers. However, brand engagement has in general been a slow and arduous process, particularly for an organization with no previous experience in the garment industry.

Value chain coordinator

The most essential element in promoting sustainable organic cotton in China is the ability to function as an effective value chain coordinator.

Figure 5: The Sector Landscape



To what extent was the initiative successful in identifying and engaging the most appropriate partner network and farmers?

Particularly in the first two years of implementation, emphasis was placed on developing the farm network with a primary focus on commercial companies to meet revised production targets. In all cases, including Xinjiang farm partners added in 2018, farms are investor-owned managed.

Identifying and developing farm implementation partners. To assess the relevance of partner farms reviewed in this evaluation, the evaluators developed a matrix that assesses the following criteria by site visited and interviews conducted with farm management and selected partners according to points on specified criteria. These criteria included prior experience in commercial cotton production, BCI cotton production, and organic cotton production; the nature of the business, the size of the organic cotton field; and organizational and ownership structure (Figure 6). Initial Hubei partners had no experience in commercial cotton production, no experience with BCI cotton, and no prior experience with organic cotton production. With the exception of the pilot partner (WWF), a non-governmental organization (NGO), all partners including Huafeng, which withdrew from participation in 2018, have a company structure

Figure 6: Farm Implementation Partners Visited / Interviewed

	Prior experience in commercial cotton production	Prior experience in BCI cotton production	Prior experience in organic cotton production	Nature of business	Size of organic cotton field	Org. structure / ownership
Hubei						
TEZ	No	No	No	NGO	44 ha	NGO
Zhuqiao	No	No	No	Farming	2 ha	Company
Bomao	No	No	No	Farming	3.3 ha	Company
Xinjiang						
Lutai	Yes	Yes	No	Farming, ginner, spinner, and fabric producers	207 ha organic, total size 13,333	Company
Jintian	Yes	Yes	No	Farming, ginner	58 ha organic, total size 1,533 ha	Company
Zhongliang	Yes	Yes	Yes	Farming	44.5 ha from 3 households	Company
Huafeng	Yes	Yes	Yes	Farming, ginner and quilt producer	80 ha organic, total is 3,666 ha organic	Company

Engage partners along the supply chain. Particularly during the first year of implementation, the initiative insufficiently involved key partners along the entire value chain. Sufficient lack of previous experience in the sector inhibited the function as a value chain facilitator particularly during the early implementation period, although this process improved in later phases of implementation. By year two of implementation, the initiative began to increase its public

exposure and establish initial relations within the value chain through public presentations and brand visits. However, as described in a later section, although the initiative has pre-purchase agreements on a small scale, it has yet to demonstrate larger-scale results in terms of pre-purchase agreements with larger brands. The attempts to manage and cultivate relationships with key NGO partners such as WWF were not successful.

To what extent was the initiative's design— including the Pride methodology, closed loop model, creating demand for subsequent scale, and policy advocacy— appropriate in achieving the intended objectives?

Behavior change methodology*.* In terms promoting sustainable behaviors through the Pride methodology, the design as proposed was not appropriate for the conditions in which the initiative eventually operated. Although the model might potentially have had greater effect had the initiative worked with cooperatives of smallholders, as the initiative was actually implemented, it focused efforts on corporate plantation farms. Therefore, there were few opportunities to implement a train-the-trainer approach with the proposed hub-and-spoke model. The Pride campaigns were therefore limited to those farms with which Rare collaborated, and limitations related to campaigning in Xinjiang due to political sensitivities inhibited the degree to which campaigns could be conducted. In interviews with farmers that also cultivated their own plots, few expressed an interest in cultivating organic crops because of the additional costs involved.

Closed-loop model and rotation crops. Although aspects of closed-loop farming and crop rotation are rooted in Chinese agricultural practice, the initiative's proposal and supporting feasibility study relied on a best-case modeling scenario for implementing these practices on a broad scale. Key assumptions were that these methods, together with price premium assumptions, would offset the considerable investment in agricultural inputs and result in a doubling of farm profits by year three.[21] As described in a later section, closed-loop models may show promise if specific conditions are met, such as in the case of large dairies,[22] but the feasibility study lacked any references to econometric studies substantiating projected economic returns related to the sale of cotton by-products and resultant increased farm profitability.

[21] Appendix C: Feasibility study, op cit. Increases in farm profits were estimated as -14% over baseline for year 1; 66% for year 2; doubling by year baseline (104% increase); and tripling by year 4 (203%), increasing further by year 5 (220%). The feasibility study demonstrates that costs related to organic production are much higher than for conventional cotton—as one example, fertilizer costs accounted for 83% of total agricultural input costs compared to 34% for conventional cotton, with assumptions that these could be reduced by mixing manure and composting materials with commercial organic fertilizer. Costs for weeding accounted for triple of the proportion of labor costs—31% for organic compared to to 11% for conventional cotton.

[22] See reference to Shengmu Dairy in this report as well as plans to implement closed-loop at the largest dairy in the Eastern U.S. See farmfutures.com/blogs-back-to-the-future-with-closedloop-farming-755. This phenomenon has been relatively well studied. Early exploratory research on closed-loop dairy farming using linear regression analysis to investigate the influence of the farming system on economic performance found that adopting a closed-loop model increase the net profit of milk products by 5 percent. Source: van Schaik et al. Vet Rec. 1998:142(10):240-2. *Exploratory study on the economic value of a closed farming system on Dutch dairy farms.*

Because the scale of production in Hubei was inadequate to provide sufficient economic incentive for farmers to use this model, the closed-loop approach proved unsuccessful, and attempts at generating income from by-products were limited by the scale of production.[23] In terms of promoting rotation crops, the model did not anticipate that if rotation crops proved more profitable than cotton, as was the case in Hubei, farmers would be less willing to grow cotton or that farmers accustomed to mono-cropped cotton, as was the case in several of the Xinjiang sites, farmers would be hesitant to try other crops.[24] There was also an unwillingness by food oil producers, which produce on a scale of 100 tons per day, to process small quantities of organic cottonseeds separately. By this time, initiative documents reflected a better understanding of the need for in-depth market analysis on potential closed-loop products, market players, sales channels, and [economic] quantification,[25] but although there was farm-based training on using some cotton by-products, including cotton stalks for ground cover and mulching, the closed-loop model as proposed was not implemented.

The initiative continues to study experiences with the closed-loop model. For example, in 2017, according to Rare, the amount of land in transition towards organic cotton cultivation has increased from 1,277 hectares in 2015 to 27,477 hectares, much of it initiated by China Shengmu Organic Milk Co. In 2018, Shengmu transitioned a further 2,667 ha of land, with a priority of obtaining cotton seeds as feed for their cows, while selling fiber as conventional cotton.[26]

Is there potential for a closed-loop model?

The closed-loop model can have promise in specific cases. The initiative recently identified the case of Shengmu Dairy, which grows organic cotton, using cotton by-products as feed for organic milk production and currently markets its cotton as conventional.

Policy advocacy. There continue to be serious policy obstacles to promoting organic cotton in China. Policy issues in China are generally promulgated based on white papers conducted by recognized and credible domestic research organizations for later inclusion in policy or discussion documents published by the Central Committee of the Communist Party of China and the State Council. A recent example of important policy documents has guided such projects as the Greater Yangtze Delta Conservation Program and the zero-growth of chemical

[23] See for example Rare 2017 end-year report, op cit. and Closed Loop Model Execution Plan, October 2016 on this topic. After several rounds of discussion with existing sites, farmers indicated their preference for the sale of rotation crops. There was also an unwillingness by food oil producers, which produce daily quanties in the 100s of tons, to process small quantities of organic cottonseeds separately. By this time, project staff indicated the need for in-depth market analysis on potential products, market players, sales channel, and economic returns. Source: Closed Loop Model Execution Plan, October 2016.

[24] Sources: farm interviews, and communication with Rare (8/31/2018).

[25] Closed Loop Model Execution Plan, October 2016: p. 18.

[26] Email communication with Rare (8/31/2018)

agriculture as recently promulgated by the central government.[27] In its proposal, Rare correctly anticipated the need to engage China's government officials and industry leaders, and also proposed to develop a policy brief and assemble an advisory board of senior government officials, with the understanding that government agriculture policies could influence initial farmer willingness to grow organic cotton. Initiative staff reported outreach to Ministry of Agriculture (MOA) officials, who demonstrated little support for organic cotton, but did express support for sustainable cotton production.[28] Rare reported that it had agreed with CAF to deprioritize policy advocacy.[29] There is, however a strong future need to promote credible research and policy white papers on sustainable materials to inform policy discussions and future planning.

To what extent are the initiative strategies and objectives aligned to CAF's vision and mission in promoting organic cotton?

As originally proposed, the objectives of the initiative were aligned to CAF's *vision and mission* in promoting organic cotton. Rare's conservation mission coincides in important ways with CAF's desire to promote organic cotton. Both organizations are concerned with soil degradation and the deleterious effects of agricultural waste on the natural environment, and Rare has engaged the services of Soil and More to conduct soil analysis, provide recommendations for improving soil quality and water usage, and calculate the potential carbon sequestration benefits of planned activities compared to baseline greenhouse gas emission calculations.[30] Using organic agriculture can substantially reduce CO_2, acidification and, in combination with the cultivation of rotation crops or intercropping, also reduce eutrophication.[31] As a conservation organization, Rare correctly takes the approach that even with organic certification, soil quality and regeneration is often ignored and not accounted for in the quantitative targets in the original CAF proposal. These additional steps for generating support for organic cotton are a good example of the potential contributions of conservation partners such as Rare, and this example emphasizes the need for careful target setting that reflects the strengths and expected contributions of development partners.

[27] See for example, Peoples Republic of China. China's Annual Agricultural Policy Goals: 2017 No. 1 Document of the CCCPC and the State Council, 2017. *Several Opinions of the CPC Central Committee and the State Council on Carrying forward the Structural Reform of Agriculture on the Supply Side and Accelerating the Cultivation of New Kinetic Energy Driving the Development of Agriculture and Rural Areas* (December 31, 2016); released by Xinhua News Agency, February 5, 2017. Although other chapters deal with topics of organic production related to food safety, Chapter II specifically recommends that the state should take the action of zero growth in chemical fertilizers and pesticides, pilot the substitution of chemical fertilizers with organic fertilizers and promote cost saving and benefit enhancement of agriculture.

[28] Rare communication, August 31, 2018, op cit.

[29] Comments to draft evaluation, October 15, 2018.

[30] Source: *Impact Projections: Organic Cotton Cultivation at Jintian Farm*, 2017, March 2018.

[31] Source: PE International, *The Life Cycle Assessment (LCA) of Organic Cotton Fiber*. Textile Exchange, 2014. According to this study, given certain defined parameters, conventionally grown cotton was calculated as a CO2 global warming potential saving of 46 percent. The acidification potential was equal to a potential saving of 70 percent, and the eutrophication potential was 26 percent less.

3.2 Efficiency

- Attempted transfer of learning and knowledge from previous applications of methodologies but many not feasible in the political environment and in the context of large farms with hired labor
- Large majority of funds for core costs; minimal risk-sharing with farm partners
- Inappropriate initial selection of geography within the context of current cotton production trends
- Limited achievement of results in terms of sustainable cotton transition in Hubei, but core staff remain based there

How efficient was the initiative?

Rare made several attempts to transfer learning and knowledge from previous applications of methodologies but these methodologies were inappropriate to the context of working with large commercial farms that used hired labor, as the initiative ultimately shifted focus its from smallholders to the context of larger farms. In 2017, the initiative was able to initiate behavior change and social marketing campaigns in only two farm sites, Zhongliang and Zhuqiao, as management of the three other initiative sites involved at the time did not view farmer and community engagement at their farms, which relied primarily on temporary or other hired labor, as appropriate.

Although the rationale that the approach of choosing farms that are willing to absorb all costs may lead to greater buy-in and sustainability in the long run has some merit, with the failure of the closed-loop approach, the dearth of opportunities to obtain premiums for in-transition cotton or to leverage pre-purchase agreements to obtain low-cost financing, creating risk-sharing arrangement with farmers and other equity holders by contributing as managing members, were missed opportunities .[32] The large majority of funds were deployed for staffing and office costs with minimal direct investment in farms.

Although there were clear early indications that the initiative would not be able to achieve the types of results expected, particularly in terms of a transition to sustainable cotton in Hubei, the office was maintained, and the majority of core staff remained based in Wuhan, the provincial capital, even as the initiative began to identify Xinjiang—located 3,300 km from

[32] Relevant language for the latter reference from the proposal: "Equity holders include farmers and/or the farming co-operative, and in the short term, managing members would likely include Rare and others mission-aligned impact investors."

Wuhan and generally accessible only through costly air travel—as the appropriate area for its expansion activities. Under changes in the foreign NGO law, NGOs can only establish offices in provinces where they have a government sponsor, and Xinjiang, due to its political sensitivity, has not approved any foreign NGO registration there. However, that fact does not impede the ability of international NGOs to station senior staff in Xinjiang, and having national staff working for international non-governmental organizations is a common practice.[33]

Did the initiative track outputs and outcomes in a credible, systematic manner?

The initiative's reporting on activities, outputs, and outcomes were accurate. Reported data on income, yields, and farm acreage were credible and were verified during the evaluation's farm-based site visits and interviews. Similarly, mid-term and annual reports were accurate and painted a balanced snapshot, both on potential bright spots as they emerged and on challenges and barriers, including its farm relationships.

In terms of presentation of monitoring data, during the initial year of implementation in 2016, the initiative used a monitoring framework that was developed primarily from the perspective of individual farmers as the primary unit of analysis.[34] This was consistent with an implicit theory of change underlying the proposed approach, namely one that primarily anticipated direct benefits to farmers, rather than benefits to companies and indirectly to farm workers through wages. As a result, individual household-level social and economic data were an important focus of the monitoring framework.

By 2017, however, with the assistance of the Foundation's recently hired analytics specialist, Rare moved toward a more customized and useful framework for monitoring project data. By late 2017, in conjunction with its contracted technical partner, Soil and More, the initiative began collecting social and environmental data using control factors to calculate potential climate mitigation, an approach which was not explicitly proposed or included in the project's key indicators. This process has the potential for adding value by allowing farmers to better understand their contribution in lowering greenhouse gases as a result of organic conversion.

What mechanisms were used to capture and use data and experiences for adaptive management or mid-course corrections?

Particularly during the first half of implementation, it was difficult to demonstrate value to farm partners for in-transition cotton, and the action required to adjust the implementation model did not occur to the extent necessary. The model, as originally designed and implemented, did not take into consideration important differences that distinguish the organic cotton value chain from the conventional cotton value chain, nor did implementers to take sufficient early steps to identify a potential role for themselves as a value chain coordinator. The initiative only belatedly addressed problems with the business model and the need to facilitate an organic supply chain, with the result that, with the exception of relatively small-scale pre-order

[33] Key informant interview, Xinjiang.

[34] As an example, see document with data submitted by Rare with the electronic version title of: *C&A Reporting Framework Oct 2016.*

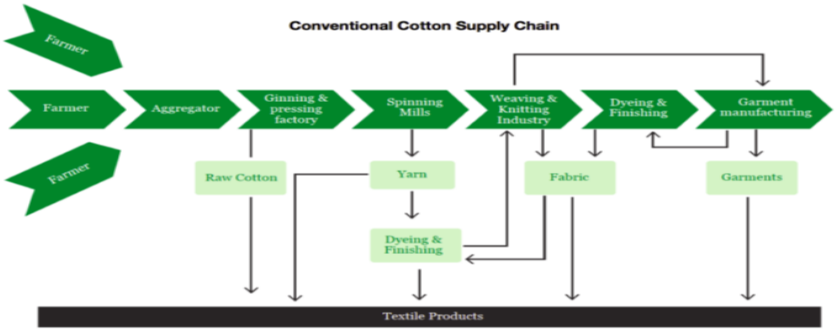
commitments from value chain partners *Organic Awareness* and *Shokay*, no pre-orders had been signed as of the time of the evaluation.

The introduction of some economic concepts can help elucidate differences between the organic value chain and the conventional value chain. These include a*sset specificity,* which refers to the specialized nature of required assets; *task programmability,* referring to the level of common understanding required to performed tasks; and *task separability*, referring to the ability to determine and measure the value of each contribution to assign individual rewards.

Conventional cotton is characterized by a spot market due to its low asset specificity, low programmability, and low nonseparability.

Organic cotton requires a much more seamless coordination of upstream and downstream actors in the value chain.

Figure 7: The conventional cotton supply chain



Conventional cotton is characterized by a spot market. In China, this usually means that farmers market their cotton without necessarily knowing ahead of time the contract price or who the buyer will be. Smallholder farmers sell cotton to traders (aggregators), who collect raw cotton from the farm and sell the consolidated produce to ginners, generally within a radius of 50 km in the same county. Cotton collected from farmers is processed to extract fiber from the seed in a ginning plant and the lint is packed in bales. These bales are loaded and transported to spinning mills to manufacture yarn or thread, which is used in weaving units to manufacture grey fabric, which in turn is dyed and finished to provide color and other properties. Finally, the dyed and finished cloth is used in the garment manufacturing unit and stitched to produce various items of clothing or bedding.

Organic cotton has standards and certification requirements that can include quality and safety standards compliance. Organic cotton requires a much more seamless coordination of upstream and downstream actors in the value chain. There is, therefore, an increase in asset specificity compared to conventional cotton, required to ensure compliance with organic standards; a higher level of programmability, in that organic cotton is more dependent on pre-orders and contracts; and higher nonseparability in terms of the need to enhance coordination among farmers and to improve the horizontal coordination within the value chain to meet specific requirements and standards for organic cotton.

For these reasons, to succeed, organic cotton production and distribution requires a higher degree of collaboration, stable and long-term contracts for cotton, or alternatively, a vertical ownership and integration structure. It also requires a promoter who coordinates with all other key players. Alternatively, partnerships can be formed with owners having achieved a degree

of vertical integration within the value chain, as was the case in Huafeng, and to a lesser extent in Lutai.

Although Rare, through its agronomists, was prepared to offer training and advice on organic agricultural methods at a limited number of sites, the organization had inaccurately estimated the effort required to become a value chain coordinator, which requires facilitating production and distribution throughout the value chain.

To what extent were implementers able to transfer learning and knowledge from previous applications of RARE methodologies?

Rare did attempt to transfer Pride methodologies, which initiative staff view as applicable to a wide variety of circumstances. Rare's methodologies were originally designed for community-based conservation activities, which are typically confined to the defined geographic boundaries of smaller communities. Well into the implementation period, the initiative continued with a supply-driven community-based model drawing on its past practices, prioritizing the need for community-based knowledge and learning, but the realities of the company and farm labor context meant that many of its tools could not be feasibly applied, particularly in the absence of "communities" as typically understood, such as cooperatives in which farmers have ownership or long-term use right of farmland and possess residual claims to work. As discussed earlier, there were important exceptions, such as in Jintian, where there were opportunities to engage a new multi-ethnic community of farm workers, many of whom were engaging in intercultural dialogue for the first time in their lives.

In general, however, because collaborating farms used primarily hired laborers, who have a different incentive system from smallholder farmers, the proposed behavior change models were either inappropriate or not feasible to implement. Moreover, the model and strategy pursued by Rare, which was heavily supply-driven, produced an inevitable set of problems for cotton production related to marketing, price premium, access to credit, and high costs, which have yet to be adequately resolved.

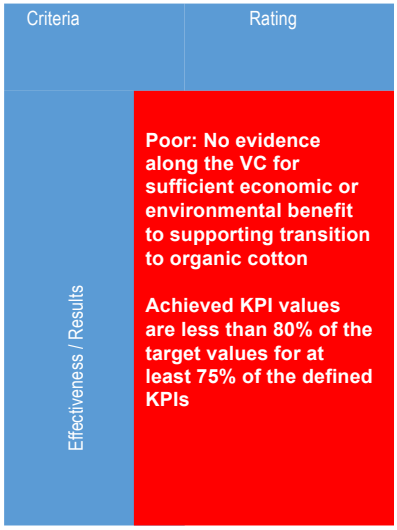
Was the initiative cost-effective? If not, what elements could have been improved?

There were early and clear indications of difficulties in scaling in-transition cotton in Hubei, partly because of catastrophic weather events which destroyed harvests, but, more importantly, because of the initiative's lack of experience in acting as a value chain coordinator. Owing to the small scale of cotton production in Hubei during the first half of implementation, the initiative also had few opportunities to develop industry-centric value chain relations based on its experiences there.

When the initiative began its expansion into Xinjiang, and subsequently associated with cotton producers with a track record of sustainable agriculture, core staff traveled frequently to Xinjiang from Hubei and other locations, to provide technical assistance. A more cost-effective way would have been to relocate senior staff, particularly those who could be charged with developing the existing service provider and agricultural outreach network in organic techniques. Such an approach, based on developing a local cadre of professional service providers with a good understanding of organic production could have also better contributed

to longer-term sustainability for organic cotton production in the region by reinforcing existing capacities.

3.3 Effectiveness



- Non-realistic initial targets and inaccurate estimation of net economic benefit for farmers
- Behavior change models and support for economic viability did not achieve intended results
- Scope of initiative smaller than anticipated, but revised KPIs have been partially achieved
- Dependence on direct training for farmers rather than through proposed TOT model
- Continued gaps in engagement of key players within the value chain
- Policy advocacy deprioritized
- Attempts to build networks with other key actors and identify gaps in existing agricultural outreach system but lacked a systematic approach to building sustainable local capacity
- Farm partners experienced losses during transition

To what extent were project approaches effective and in promoting organic cotton in the context of cotton farming in China?

The proposed behavior change models and support for economic viability did not achieve intended results on the scale intended, and on an important metric—net economic returns to farmers—it is unlikely that the initiative will achieve expected results. The initiative did provide adequate training to a limited number of farms and farmers, assisted with organic certification and, in some instances such as with Bomao and Zhuqiao in Hubei, facilitated the involvement of local government, which provided subsidies in the context of the Greater Yangtze Delta Conservation Program. However, many of the wider anticipated results did not occur, in large part because it was not possible to demonstrate adequate returns to organic farming during the transition phase. There continue to be important gaps in the engagement of key players at the producer level and within the value chain.

What are the drivers (both positive and negative) that influenced farmer adoption and market demand?

The most important driver related to farmer adoption is net returns to farmers. Although farmers were prepared for some initial losses during the transition period, these losses were higher than anticipated. There were a variety of reasons for this, including weather, non-feasibility of the closed-loop approach within the operating context and because the initiative struggled with helping farmers to negotiate with value chain actors to purchase in-transition cotton. Moreover, the eventual focus on primarily large company-owned plantations, as opposed to cooperatives, meant that although some of commercial farms are able to offset risks to individual farm workers, behavioral change models were less appropriate than had been envisioned during the design and proposal process.

Did the initiative sufficiently involve/engage with relevant actors and stakeholders? If so, what types of partnerships contributed most to expanding organic cotton production and why?

As discussed earlier, the initiative failed to gain sufficient traction in Hubei to promote in-transition cotton, although farm partners did benefit from government funding as part of a nationally supported program to benefit the ecology of the Yangtze River. Due to the small scale of its intervention in the first year, the initiative did not sufficiently identify and engage the most influential players of the cotton sector.

More concerted brand engagement began in the second year of implementation, and particularly as the initiative began to shift emphasis toward Xinjiang commercial farm-based production. There, large company-owned commercial farms using hired labor were more capable of mitigating risks by converting small portions of their holdings to organic cotton production. This expansion, particularly in 2018, also allowed the initiative to better meet quantitative production targets with yields closer to conventional levels. In Xinjiang, as in Hubei, the initiative provided support for organic transition, provided access to markets for organic inputs, assistance with obtaining certification, and training for farmers, many of whom were motivated to convert portions to organic due to declining yields for conventional cotton. Moreover, in most cases, Xinjiang farmers already had insights and networks in the cotton value chain and had established networks for providing technical assistance through their association with other NGOs such as *Solidaridad* and the Better Cotton Initiative.

The following section briefly details experiences in Hubei and Xinjiang, providing mini-case studies for the farms for which interviews were conducted. This section is followed by a discussion on the initiative's experience in engaging partners along the supply chain.

Farm Partnerships

Hubei. The initiative was unable to identify suitable partners for planting organic cotton at an appropriate scale. The small-scale of in-transition cotton (5.6 ha total in 2017 and 2018), and the lack of adequate returns to in-transition cotton in 2017 were partly due to catastrophic weather conditions of the previous year, particularly in the case of one farm, Bomao. Even under normal weather conditions, however, the two farms collaborating with the initiative were reticent to expand cotton production, preferring to focus on more profitable markets for organic produce. The lack of performance to demonstrate the financial benefits of engaging in organic cotton transition provided a negative motivation in terms of behavior change and sustainable adoption of organic cotton as an economic crop in the surrounding areas. Although one of the farms now grows non-GMO cotton for seed, in general, the small scale of production of in-transition organic cotton made it difficult to identify commercial buyers or initiate a closed-loop production model.

Figure 8: Comparing profits/losses by crop mix in Hubei

Zhuqiao					
Organic: Net Profit/(Loss) RMB per ha				Conventional: Net Profit/(Loss) RMB per ha	
Cotton (0.067 ha)	(823)	Rice (0.067 ha)	704	Rice (0.133 ha)	102
Average Net Profit/(Loss) per ha			(1,785)	Average Net Profit/ (Loss) per ha	3,060
Difference between the Net Profit/(Loss) of Organic and Conventional					-158%
Bomao					
Organic: Net Profit/(Loss) RMB per ha				Conventional: Net Profit/(Loss) RMB per mu	
Cotton (0.067 ha)	(673)	Rice (0.067)	80	Rice (0.133 ha)	102
Average Net Profit/(Loss) per ha			(8,895)	Average Net Profit/ (Loss) per ha	3,060 ha
Difference between the Net Profit/(Loss) of Organic and Conventional					-390%

Source: Rare: 2017 end-of-year report

Current Hubei farm partners and their association with the initiative based on site visits and interviews are briefly described below:

Bomao is led by an investor that has leased 800 ha of farmland and grows rice, rapeseed, and horticultural and aquaculture products. The farm also intends to develop eco-tourism, but has not yet succeeded in doing so. Bomao experienced a flood in 2016 and lost 6 million RMB. The organic farming area is as much as 53.3 ha, of which 10.2 ha was planted in cotton in 2016. In 2017 and 2018, the cotton area was reduced to 3.3 ha. Farmers interviewed work both on their own land and on the Bomao farmland. They stated that they received technical training provided by Rare and had developed an understanding of organic farming and its benefits, particularly in terms of soil regeneration. Because farmers agreed that costs for organic cotton farming increased significantly, by as much as 50% compared to conventional cotton, and yield was reduced by almost 50%, none interviewed grow organic cotton but several indicated that they practice organic farming for their own food consumption.

Zhuqiao. Although Zhuqiao has a mixed model, consisting of a company, a cooperative, and households, RARE partners with the company owned by three investors Zhuqiao that leases farmland from households. Farm managers stated that thanks to the initiative, Zhuqiao had improved its visibility, and as a result received 126,000 Euros in government funding through the Greater Yangtze Delta Conservation Program.[35] Farm managers indicated that their site was not appropriate to cotton because of the lack of larger tracts of plains land, and that it is hard to control pests and to market transition cotton without a

[35] Per Rare communication after fieldwork, as of September 2017, Zhuqiao had secured one million RMB (126,000 Euros) from a potential allocation of ten million RMB (1.26 million Euros).

premium, given that the yield is lower by 30-50% compared to conventional, but labor costs are 20-30% higher. A lack of non-GMO seed has been a constraining factor in scaling organic cotton, and because there is no conventional cotton at Zhuqiao, the initiative selected this farm for growing two hectares for breeding non-GMO seeds.

Xinjiang. In Xinjiang, the evaluators found mixed results in terms of identifying appropriate farm partners. As an advantage, all of the farm partners interviewed for this evaluation are commercial cotton producers and all have experience with growing sustainable cotton, some for as long as a decade, and all have solid experience and knowledge in the cotton sector. New partner companies added in 2018 show greater promise than was the case with partnering Hubei farms, but at the time of the evaluation, the first harvest had not been completed, and only estimates were available for yields. Sites in Xinjiang, with input from a former BCI consultant, were co-identified by the initiative and the Xinjiang Academy of Agricultural Sciences, which is responsible for implementing the national Chemical Pesticides and Fertilizer Reduction (Double Reduction) program in the province.

Farm owners in Zhongliang and Xianglin lease the land to individual farmers, whereas in Huafeng, Jintian, and Lutai, the farm hires farmers to grow crops.[36] Based on site visits and interviews, participating farms visited and/or interviewed in 2018, including Huafeng, which was dropped from the initiative in early 2018, the Xinjiang sites are described below:

Zhongliang had previously worked with *Solidaridad* to grow organic cotton in 2008, but failed due to inadequate technology and inputs, and the farm lost around RMB 4 million. Under the current initiative, there are three participating individual farmers, two of whom began in 2017 and one in 2018. Rare provided technical training, and through Rare, farmers received seeds and bio-pesticides, which accounted for about 10% of total production costs. In 2017, Rare also facilitated the sale of three tons of in-transition cotton, amounting to approximately 10% of their total in-transition production. Despite this assistance, one of the two farmers participating in 2017 experienced substantial economic losses and indicated the likelihood of discontinuing organic cotton in the coming year. Farmers indicated that because of the risks and losses associated with organic transitioning, rather than allowing farmers to take all risks and losses, a fund should be established to provide an incentive to transition to organic cotton, and that a subsidy of 3,750 RMB/ha (approximately $617/ha) per year would be appropriate. The farm currently pays for what respondents described as a competent Talimu University team as part of their efforts working with another NGO involved with cotton production.

Huafeng. Huafeng started its cooperation with the initiative in 2017, but this cooperation ended in 2018. The company began organic cotton production in 2000 and is now the largest organic cotton producer in the country, supplying 80% of the organic cotton in the country, with premiums ranging between 0 and 40%. Huafeng currently has 667 ha of organic cotton planted in southern Xinjiang and 3,000 ha in the north of the province. In terms of the farm management aspect, there was a perception of inadequate value added

[36] For a fuller description, please see the matrix of farm types provided by Rare (07/12/18), which is included as an appendix to this evaluation in the inception report.

by the initiative, which they viewed as capable of providing entry-level knowledge which was not suitable for experienced organic cotton farmers. On the other hand, initiative staff maintained that Huafeng was not transparent in its communications, particularly concerning the organic certification process. Huafeng was dropped from the initiative in 2008.

Partners in two other Xinjiang sites, Jintian and Lutai, both of which were added as Rare farm partners in 2018, are optimistic about potential outcomes, but there was no available data as of the time of this report on yields or economic returns for these farms. Both farms have well-founded motivation for the transition to organic cotton and are each piloting in-transition cotton on their farmland. In both cases, conventional cotton production has resulted in the overuse of chemicals and declining yields, providing strong economic and ecological rationales for shifting at least portions of their cotton cultivation to organic. In each of these farms, the scale of organic cotton grown accounts for a small portion of the total cotton production area, meaning that the incremental costs of organic cotton production can be spread across the entire farm budget, making the transitional process less painful and more affordable. The scale of organic cotton growing is also much larger than the farms in Hubei, and each of these farms has existing market linkages, with one of them, Lutai, having already achieved a considerable degree of vertical integration. Farmers at these sites believe that they will have no problem marketing their in-transition cotton crops through existing market linkages, although because crops have yet to be harvested, there is not yet any data on results. These farms are briefly described below:

Jintian has been a BCI partner since 2013, and since that time it had already adopted rotation and deep plowing. Approximately 95% of its crop has already been BCI certified and in-transition cotton represents approximately 4% of the total cotton crop. The farm already has a well-developed existing technical assistance network, and in addition to its partnership with BCI, has engaged the technical services of Talimu University for its cotton production. The farm practices crop rotation with one year of rice planted for each two years of cotton. Jintian's in-transition crop is extra long staple (ELS) for high-quality niche markets, providing a comparative advantage, but farm managers anticipate that yields are expected to be lower by 30% compared to conventional crops. Other challenges include higher labor costs, particularly in terms of weeding costs, which have doubled. Farm managers indicated that their choices of bio-pesticides are limited, and those available do not work with some pests.

Lutai devotes 207 hectares to IT cotton, representing approximately 1.5% of its 13,300 hectares of total land, of which 11,300 hectares of cotton is BCI certified. Lutai has an integrated production model, and is engaged in seed breeding, production, ginning, spinning, fabric and sales. For Lutai, the principal motivation in transitioning to organic, at least on a smaller scale, is that although cotton is the most suitable crop for their area, water shortages and creeping desertification as well as deteriorated soil quality have prompted them to seek alternative approaches. Farm management reported that bio-pesticides are functioning well, and input costs, with the exception of labor, are similar to conventional cotton.

Engaging actors in the supply chain

For reasons discussed previously, and related to the small scale of organic cotton production by Hubei farm partners, during early implementation, the initiative had insufficient opportunities to involve key supply chain partners. By year two of implementation, Rare began to increase its public exposure of the organic cotton program at multiple public events, including Biofach and twice at Intertextile. At Biofach, Rare staff manned a booth and presented on behavior change. At Intertextile, Rare presented on a panel hosted by EcoCert on global organic textile trends and certification. At a Textile Exchange meeting, Rare co-hosted a strategy meeting for developing a China organic cotton roundtable. The initiative also conducted brand site visits to Zhuqiao and Zhongliang, inviting ten representatives from across the supply chain (i.e. brands, manufacturers, dyers, etc.) and a second brand visit was in the planning stage at the time of the site visit. According to initiative staff, nine organizations attended this event comprised of brands, suppliers, and a certification agency.[37]

However, attracting supply chain actors to in-transition cotton has been very difficult. Relationships with aggregators, ginners, spinners, fabric manufacturers, garments and brands have progressed slowly, and many of the decisions regarding purchases are driven by brands. Although preliminary discussions with large brands such as H&M and Esquel have occurred, these have not yet led to pre-purchase orders.[38]

[37] Source: Rare, comments to draft evaluation.

[38] As examples, H&M requested 50 kg of extra long staple (ELS) conventional cotton to prepare yarn, fabric and garment samples to ensure the quality is comparable with the Pima cotton that they have used previously, and Rare reported that H&M has confirmed their acceptance of quality. Initiative staff have also attempted to engage with Esquel through their client, Patagonia, without success as organic cotton comprises only a small part of Esquel's business. Initiative staff also indicated in October 2018 that an international brand expressed interest in supporting farmer training next year and negotiating in a pre-purchase agreement and that a local brand has indicated their intention to enter into a pre-purchase agreement of 100 tons of organic colored cotton for 2019. Sources: Rare comments to draft evaluation.

Rare has some very dedicated small partners and has entered into two pre-purchase agreement with them. The first firm, Organic Awareness, agreed to purchase cotton for $15,000 over a three-year period. Another firm, Shokay, an innovative impact-oriented designer uses yak materials in fashion. Shokay recently entered into a purchase agreement for organic certified cotton from Zhuqiao at a 20% premium and introduced two key spinners to initiative staff, one of whom is reported to be considering purchasing in-transition cotton from Jintian.[39] Although these are important initial steps, the initiative has not yet established relations within the value chain that allow for the promotion of organic cotton at a larger scale.

Building on other sustainable cotton practices

There is an ecosystem of actors working to promote sustainable and more equitable agricultural practices in China. Fairtrade, for example, works in China and elsewhere to promote better living conditions through market access. This section, however, makes specific reference to BCI because of its role in promoting sustainable cotton in the country. BCI does not specifically promote organic cotton, but does have a progressive system that rewards farms for achieving certain benchmarks, and at the local level has assisted the initiative with introductions to partners seeking organic alternatives. Farmers in Xinjiang are interested in such alternatives, as they recognize the environmental degradation, leading to progressively lower yields, that result from conventional cotton growing practices. Some see organic farming as a natural next step to building on other sustainable cotton practices. In the words of one farm manager, who began work with the initiative during the past year: "BCI is like middle school; organic farming is the next step—high school." In many respects, organic cultivation, particularly when coupled with efforts to reduce water consumption and agricultural runoff, should be considered as the gold standard of sustainable agriculture.

Globally, there are many discussions on integrating sustainable and organic practices, and publications such as the 2017 edition of the Pulse of the Fashion Industry make convincing arguments in terms of both the economic and environmental benefits of adopting sustainable practices.[40]

In Rare's annual end-of-year report for 2017, Rare indicated that "there is synergy in working with BCI to build a strong pipeline of farms potentially interested in transitioning towards organic cotton cultivation" and that "with the growth of BCI in China, particularly in Xinjiang, the opportunity lies in sharing and demonstrating good agricultural practices with more BCI farms to interest them in organic agriculture. The report indicated that BCI farms that were already adopting certain aspects of organic agriculture could be identified through an existing good relationship between Rare and the BCI partnership manager in Xinjiang. It also identified the Jintian farm as practicing crop rotation, and the Lutai farm as having adopted good integrated pest management practices as well as a slightly longer-term vision that would reduce some of the risks of transitioning towards organic.

[39] Rare comment to draft evaluation, October 2018.

[40] *Pulse of the Fashion Industry*. Global Fashion Agenda and The Boston Consulting Group, Inc., 2017.

However, although the initiative has established professional relationships with BCI and its staff at the local level, Rare has been constrained in its ability to establish an institutional relationship with BCI and other important potential NGO partners such as WWF. Had an institutional relationship been feasible during the implementation period, and had BCI as an institution been open to promoting organic cultivation, this could have led to greater sustainability. Under such a scenario, BCI-affiliated farms nationwide would have greater opportunities to choose to expand at least a part of their production, to organic farming.

What evidence emerges from the initiative in promoting organic cotton through behavior change models and technical training coupled with other support for economic viability?

How effective was Rare's Pride behavior change approach, including its partner implementation network; farmer training; sustainable behavior change; financial viability models; and creating demand for scaling up? What were the results?

The evidence from observations and interviews conducted in the field demonstrates that insufficient progress has been made as a result of behavior change models and technical training coupled with other support for economic viability. Previous sections have described weaknesses in terms of the partner implementation network and inability to demonstrate successful financial viability models, the limited reach of farmer training, and its impacts on the potential for scaling up. These results can be summarized as follows:

- The types of farmers participating were not those envisaged during the grants process. To better meet cotton production goals the initiative pivoted to large farm companies using hired labor.
- Farm partners did not capture expected financial benefits during the transition period and, with a recent exception, no price premium was offered to them. Instead, farm partners bore nearly all costs related to converting to organic cotton. There was a lack of commitment by buyers, and the future for larger-scale organic cotton is not yet proven, making it less likely that organic practices in the cotton sector can be replicated or scaled up.

Rare did however, make contibutions in terms of agronomic and technical training, which were welcomed by farm partners. Initiative staff identified gaps in existing direct training and technical extension service capacity in Xinjiang and sought to enhance existing training networks.[41] Because of the importance of Xinjiang in terms of the greatest need for expanding sustainable cotton, future efforts should emphasize a systematized and intensive center of excellence approach, which would likely contribute to greater sustainability than direct training at a limited number of farms and the ad-hoc engagement of specialists.[42]

[41] Reference to center of excellence: Proposal appendix E: Logframe, Project Objectives 1 & 2: Develop partner implementation network, and implement farmer training and delivery.

[42] In follow-up communciation, initiative staff indicated that they are working or have worked with the following organizations: Xinjiang Academy of Agricultural Sciences to train farmers on organic bio pesticides; Xinjiang Academy of Environmental Sciences on monitoring; Xinjiang Garment Industry Association on market promotion; Xinjiang Hongruida

Behavior change. The opportunity to work with farmer cooperatives, a potentially effective vehicle for changing farmers' behaviors, was missed. Changing farmer behaviors requires horizontal coordination, cooperation among farmers, especially for smallholders who also require a compelling benefit exchange that makes change attractive. This benefit exchange was difficult to achieve either because farmers are simply paid by their employer and there is no incentive to change or because the farm could accrue no price premium, while taking on added costs and risk. Because cooperatives are owned and controlled by farmers, they are capable of achieving required horizontal coordination and jointly sharing common challenges. Successful cooperative models could have potentially been replicated to increase the number of farmers growing organic cotton through the development of farmer self-help groups. Under such circumstances, behavioral change models would likely have deeper and wider impacts by working with farmers with a greater stake in outcomes. Changing the behaviors of *farmers*, who have direct stakes in outcomes, but at the same time whose losses can be mitigated by the cooperative, differs greatly from changing the behaviors of *hired farm laborers*, who require closer monitoring, under a corporate plantation model.

Farmer Training. Farmers indicated their appreciation of the Curriculum (farmer handbook; presentations) and of on-farm and remote technical training and support. However, without a sound model for financial viability and demonstrable returns to farmers, the hub-and-spoke model could not function as anticipated and is yet to be developed. This model was therefore not feasible, at least during the transition period. A systematic train-the-trainer approach would have been preferable to the adopted model of direct training of farmers in Xinjiang, where many partners already have technical capacity to transition to organic, drawing on local technical assistance providers and networks.

Lack of a financially sustainable business model. As a whole farm approach, organic cotton is a losing economic proposition for most new organic farmers, particularly in Hubei, but also for some individual farmers in Xinjiang. Access to markets and value chain actors, such as ginners, spinners, dyers, fabric or yarn makers, an important motive for many farms, was not well developed. Although the larger Xinjiang farmers have existing distribution networks and are better able to absorb losses because cotton is a small percentage of their total portfolio, financial sustainability has yet to be demonstrated. Similarly, the closed-loop model, which requires fully developed synergies at each level of the value chain, has been unsuccessful due to the small scale of production. Brand visits by large companies have not yet yielded major results and there has been a lack of success with forming broad marketing alliances or negotiating premiums for in-transition cotton. Several partners, including WWF and Huafeng, reported a lack of mutual benefit in working with Rare.

Building demand for subsequent scale. For these reasons, the initiative has not been successful in building a replicable model. Learning exchanges, workshops and site visits, although appreciated by participants, have not created significant demand for subsequent scale, with some exceptions as noted in this report. Although some brands have participated

Company to produce organic fertilizer with organic cotton straw; Beijing Qiankun Biotechnology Co., Ltd. Xinjiang Department on compost training; Xinjiang Evila Bioon bio pesticides. Source: Follow-up communication, August 31, 2018. A commenter to this draft also noted that Rare sought out local experts in Xinjiang who were knowledgeable about organic techniques including those at Shihezi University, but found inadequate knowledge of organic methods.

in initiative-sponsored events and expressed some interest in in-transition cotton, this interest has not yet been translated into major purchase orders.

Policy advocacy. There continue to be serious policy obstacles to promoting organic cotton in China. Policy issues in China are generally promulgated based on white papers conducted by recognized and credible domestic research organizations for later inclusion in policy or discussion documents published by the Central Committee of the Communist Party of China (CCCCP) and the State Council. A recent example of important policy documents has guided such projects as the Greater Yangtze Delta Conservation Program and the zero-growth of chemical agriculture discussed in this report.

In its proposal, Rare correctly anticipated the need to engage China's government officials and industry leaders, and also proposed to develop a policy brief and assemble an advisory board of senior government officials, with the understanding that government agriculture policies could influence initial farmer willingness to grow organic cotton. Initiative staff reported outreach to Ministry of Agriculture (MOA) officials, who demonstrated little support for organic cotton, but did express support for sustainable cotton production.

Rare reported that it had agreed with CAF to deprioritize policy advocacy.[43] There is, however an important need to promote credible research and policy white papers on sustainable materials to inform policy discussions and future planning.

Progress on meeting key program indicators. Because of the substantial downward revision of targets, particularly in the 2016 grant modification, it is difficult to measure progress against targets using traditional metrics as current targets represent very small fractions compared to those originally proposed. In terms of meeting some of its renegotiated targets, the initiative has made progress. The initiative is close, for example, to meeting targets for cotton area of land in transition, and expects to slightly exceed its KPIs for 2018 on this metric (Figure 2Figure 9).

Rare also reports that it is on track to meet its target of 457 certified/IT farmers. Targets for seed cotton yield in inland areas (from 14,565 kg/ha in 2016 to 20,490 in 2018) will not be met, with current estimates for 2018 at 13,665 kg/ha, slightly under the base year figure of 13,815 kg/ha. In Xinjiang, seed cotton yields for year-one farms will be less than 75% of KPI targets in their first year of harvest partly due to the type of cotton grown in Jintian (ELS), but figures for other areas in are expected to be about 75-80% of KPIs (Figure 10).

[43] Rare comments to draft evaluation.

Figure 9: 2017 and 2018 actual vs. target KPI of cultivation area

	2017 (ha)			2018 (ha)		
	Cotton	Other	Total	Cotton	Others	Total
Zhongliang	22.7	-	22.7	44.5	-	44.5
Xianglin	26	106.7	132.6	26	507.7	532.7
Huafeng	80.8	-	80.8	Dropped in 2018		
Jintian	-	-	-	66.7		66.7
Lutai	-	-	-	207		207
Bomao	3.53	54.2	57.7	3.53	54.2	57.7
Zhuqiao	2.06	77	79.1	2.1	77	79.1
Actual	124.3	242.5	366.8	349.7	637.9	987.6
KPI	76	324	400	328.3	1005.3	1333.3
% of KPI achieved	**164%**	**75%**	**92%**	**107%**	**63%**	**74%**

2017 figures as reported by Rare in 2017 report; 2018 figures from Rare correspondence, Sept. 24, 2018

Figure 10: Rare Estimates for Y3 against KPIs

	Year 1 KPI	Year 2 KPI	Year 3 KPI 2018-19	Estimated for Year 3
Number of hubs	2	5	7	6
Certified/IC Farmers	89	176	457	457
Land certified organic (ha)	150.6	400	1334	203.4
Cotton area – certified (ha)	22.7	76.1	328.3	335.6
Cotton Lint certified/IC (MT)	15	99	481	300-350
Seed cotton yield (over baseline in Year 1) • Inland • Gansu/Xinjiang	 0% 0%	 25% 5%	 40% 8%	 Y3: 40% Y1: 0%, Y2: 0%
Seed cotton yield (kg/ha) • Inland • Gansu/Xinjiang	 2399 4497.0	 2998.6 4745	 3373.4 4872.7	 Y3: 2250.1 Y1: 3477.8 (ELS), Y2: 4394.1
Seed cotton yield (against conventional) • Inland • Gansu/Xinjiang	 -36% -14%	 -20% -10%	 -10% -7%	 Y3: -21% Y1: -22%, Y2: -11%
Increase in net farm income per acre:				
a) Against conventional cotton • Farmer (co-operative) • Farmer (company)	 -33% -	 0% 0%	 30% 4%	Growing season is still in progress+ price of cotton is not yet finalized
b) Cost reduction	13%	0%	0%	

Source: Y1 and Y2: Initiative 2017 annual report; Y3 estimates, Rare communication, Sept. 2018

What external and internal factors as well as challenges and risks have influenced the initiative delivery, successes and failures and why?

External factors, challenges and risks

Many of the external challenges and risks have been discussed in detail in previous sections, but bear repeating and summarization:

- Catastrophic weather conditions and declining cotton prices particularly during early implementation impeded the ability of the initiative to demonstrate the type of early wins required to demonstrate returns to farmers.

There are also important commercial, policy, and regulatory barriers that have hindered development of the organic cotton industry that impacted the results of the initiative.

- Rare reported having approached the Ministry of Agriculture's (MOA) technical promotion division to understand the central government's position on organic cotton and learned that while organic cotton is not an MOA priority, they are in favor of promoting sustainable cotton. Although regional environmental plans, such as the Greater Yangtze have important conservation goals, have been leveraged to some extent by Hubei farm partners, organic cotton is not yet included in the Chinese government's agricultural development agenda.

Another policy issue relates to domestic certification and branding by international organic cotton standards, such as the Global Organic Textile Standards (GOTS).

- Rare also reported contacts with the China National Textile and Apparel Council (CNTAC) and the Global Organic Textile Standards (GOTS) to advocate improvements in the certification process of organic textiles. Standards such as GOTS are still not recognized by Chinese authorities, making it more difficult for even fully organic cotton products to receive a premium in the domestic market.

Specific issues are related to Xinjiang:

- Xinjiang has been the focus of recent scrutiny by the United Nations, and in a review meeting focused largely on Xinjiang and Tibet, convened in August 2018, UN experts indicated that China was lacking an anti-racial discrimination law and a national human rights institution in line with the Paris Principles, and that the recent Foreign Non-Governmental Organization Management Law and Charity Law imposed restrictions on the funding and operations of

domestic non-governmental organizations.[44] Rare has reported that policy changes regarding international NGOs have resulted in potential partners becoming wary of working with them and requires lengthy trust building, especially in matters related to campaigning and community sensitization.

Internal factors, challenges and risks

Although weather conditions and declining prices in the cotton sector had important implications for performance during the early evaluation period, this evaluation has also noted that the selection of growing regions, partners, and sites exacerbated challenges and risks factors.

Rare's lack of experience and networks in agriculture and the garment industry led to an inappropriate design and lack of sufficient mid-term course correction, with efforts to coordinate with value chain actors developed belatedly.

These factors meant that Rare had to undergo a long and arduous journey against the background of a steep learning curve, with the large majority of costs funded by the Foundation. The lack of an incomplete vision of the industry also caused Rare to choose inappropriate strategies and road maps for actions, and even after the mid-term adjustment of targets, Rare was unable to take effective actions to move toward a sound business model based on firm partnership with key players within the value chain.

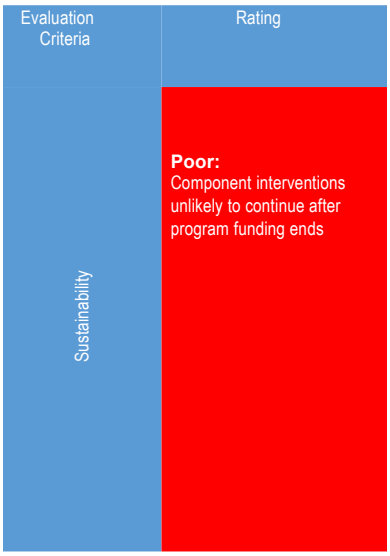
Lack of experience and institutional structures

CAF and Rare were aware from the outset that Rare lacked experience in agriculture in general and the garment industry in particular.

When the pilot project and the initiative were funded, the Foundation was in the process of further professionalizing its activities, but lacked a well-established project cycle and institutionalized monitoring and supervision mechanisms.

[44] International Convention on the Elimination of All Forms of Racial Discrimination/Committee on the Elimination of Racial Discrimination. *Consideration of reports submitted by States parties under article 9 of the Convention*. Part 1 was presented by the Central China government; parts 2 and 3 by the Special Autonomous Regions of Hong Kong and Macao, respectively. Available at: tbinternet.ohchr.org/_layouts/treatybodyexternal/Download.aspx?symbolno=CERD/C/CHN/14-17&Lang=en.

3.4 Sustainability



- Component interventions are unlikely to continue after program funding ends
- Future efforts should be focused more intensively on developing viable partnership building to better include organic cotton within existing sustainable materials efforts

What are the main factors that promoted and/or impeded the sustainability of the program?

The fact that farms experience financial losses during the transition to organic cotton is the most important factor in impeding wider adoption of organic cotton cultivation. In terms of the Chinese domestic market, it is difficult, even for brands with corporate social responsibility (CSR) objectives, to justify additional costs associated with organic cotton or to pursue carefully monitored traceability within the value chain on the domestic market. At the same time, there continues to be a generalized lack of awareness of the benefits of organic cotton and the considerable environmental and health hazards associated with conventional cotton production. Although the initiative did make some contributions in this regard, building the type of commitment required to scale will require coordinated larger-scale campaigns to raise awareness, which are quite likely beyond the capacity of any single implementing partner or initiative without extensive and coordinated actions taken by the garment industry or domestic consumers. Although the Chinese government, through the MOA, is supportive of more sustainable cotton growing, their current policy environment does not prioritize organic cotton farming.

What elements of the initiative are likely to continue after the C&A Foundation funding depletes?

A number of partner farms now have improved understanding of organic cultivation and certification processes and improved access to organic fertilizers and bio-pesticides. The initiative has begun engaging larger brands and has begun the process of developing a pipeline. However, because no financially self-sufficient model has been operationalized, few elements are likely to continue or be scaled after funding depletes. Rare has indicated that in 2018 it signed three-year memoranda of understanding (MOU) with its two new Xinjiang farms, Jintian and Lutai, and will continue to support this partnership, but may be reliant on further outside funding for these activities. Rare has also recently identified a producer with a viable large-scale closed-loop model, which they intend to study.

To what extent can the initiative be scaled and/or replicated?

Although there are few identified areas in which the current initiative can be scaled or replicated, Rare has suggested that further investment in ELS cotton and carbon finance mechanisms have merit.[45] Future efforts should also be focused more intensively on developing viable markets for organic cotton products, partnership building to include organic cotton within existing sustainable materials efforts, and advocacy with government to ensure that certification and branding mechanisms, such as GOTS, are recognized within the domestic market.

[45] Comments to draft report, October 2018.

4. Conclusions

This evaluation, in addition to providing a mechanism for accountability, is intended to provide opportunities to promote learning. The evaluation recognizes the considerable interconnected barriers that the initiative faced in terms of promoting organic cotton in China, but concludes that the initiative did not provide adequate solutions or meet thresholds in terms of relevance, efficiency, effectiveness and results, and sustainability.

In terms of relevance, although implementers expressed an awareness of past shortcomings in promoting organic cotton in China, the initiative's design lacked rigorous feasibility analysis, and its initially uninformed business model was based on incomplete assumptions regarding the number and types of farmers that it would reach and the economic returns to farmers through the use of a closed-loop model. In terms of site selection, in order to convince farmers that organic production was a viable option, it would have been important from the outset to detail which regions were experiencing declining cotton production and which farm partners had substantive experience with sustainable cotton production. The organic cotton value chain has many characteristics that distinguish it from conventional cotton, but the importance of value chain coordination and building firm partnerships with relevant players within that chain was underestimated in program design. Had a more rigorous feasibility study been conducted, this might have resulted in more realistic key assumptions, the identification of gaps and partnership building to fill those gaps, and a more well-informed business development model. Such a model would have better estimated returns to farmers and allowed the initiative to demonstrate crucial early "wins" to farmers during the first years of implementation.

In terms of efficiency, the evaluators found that the initiative achieved insufficient results for the effort and money expended. In general, it was difficult to transfer learning and knowledge from previous applications of methodologies within the context in which the initiative operated. The large majority of funds were used for staffing and office costs and there was minimal direct investment in farm partners, many of whom suffered financial losses. In terms of effectiveness, the behavior change models and support for economic viability did not achieve intended results. Many fewer "ripple effects" than expected were achieved in terms of widespread adoption of organic cotton farming, and farmers experienced substantial losses in the transition to organic. In addition, there are still important gaps in terms of the engagement of key players within the value chain and policy advocacy. This is because most elements of the initiative are dependent on external funding rather than empowering intended beneficiaries to play lead roles. Largely because no financially self-sufficient model has been operationalized, most of the initiative's interventions are not sustainable without continued external funding.

5. Lessons Learned

At the time of the initiative's funding, the Foundation had not yet developed the type of well-established project cycle that is essential for programming. A sound project cycle includes elements of project preparation—these can include project concept notes, feasibility study, peer review, quality enhancement, appraisal documents, legal and project documents—and monitoring, evaluation, and supervisory support for project implementation and mid-term restructuring.

As a conservation organization, Rare correctly adopted the approach that even with organic certification, soil quality and regeneration is often ignored, and such steps for generating support for organic cotton are a good example of the potential contributions of conservation partners such as Rare. However, a vision that builds on solid knowledge, expertise, and networks in the targeted sector or industry is crucial to formulating a workable intervention strategy and activities. Rare proposed a dynamic and innovative strategy, but the experiences of the initiative have also shown that there are considerable obstacles, many of which were unanticipated, in promoting organic cotton in China. A key example is that farm-based behavior change techniques do not provide a sufficient incentive to farmers without demonstrable proof of economic viability.

A vision that builds on solid knowledge, expertise, and networks in the targeted sector or industry is crucial to formulating a workable intervention strategy .

In terms of promoting rotation crops, the model proposed by Rare did not anticipate that if rotation crops proved more profitable than cotton, as was the case in Hubei, farmers would be less willing to grow cotton or that farmers accustomed to mono-cropped cotton, as was the case in several of the Xinjiang sites, would be hesitant to try other crops. Also, because of the specificity of the organic cotton value chain, economic viability relies on having a well-coordinated value chain and a policy environment that supports larger-scale conversion to sustainable organic cotton. In a more demand-driven model, players beyond the producer community, particularly those with community social responsibility goals, should have been much more in the "driver's seat" from inception. As we have noted, there were also missed opportunities to work with cooperatives of smallholder farming partners making the transition to sustainable cotton, so the model as tested during implementation cannot provide empirical evidence into whether organic transition is viable for this group of farms.

More timely learning and actions can provide important value for money. Although many factors impacted the initiative's progress, the initiative has provided important insights into the difficulties of promoting organic cotton in China for both Rare and the Foundation.

- First, there are advantages in associating with farms that have substantial past experience in sustainable cotton, an informed rationale for transitioning some cultivation to organic, and existing market relations means.
- Second, there may still be certain conditions under which a closed-loop model can function on a larger scale. Should a rigorous study be conducted on contextual factors, environmental benefits, and cost savings based on the experiences of farms that currently implement this approach, this could provide further insights on the viability for scaling.

There were also key internal factors within the Foundation that influenced the decision to enter into this partnership. In the early to mid-2010's, the Foundation was undergoing a capacity-building process intended to strengthen its ability to provide effective philanthropy, and many of the personnel involved were new to their positions.

The initial concepts for these projects held great attraction for the Foundation, which was, and still is, open to trying innovative solutions. However, because the organization was in the process of organizational strengthening, it lacked a well-established project cycle and institutionalized monitoring and supervision mechanisms. Had these mechanisms been better formed and articulated, the Foundation may have been better able to interpret the feasibility of proposals and have been more equipped to provide better monitoring and supervision of the projects that it funded.

6. Recommendations

The strategic and programmatic recommendations below are arranged by suggested sequencing. Recommendations are categorized as directed to the C&A Foundation and RARE, so that there is clarity on which organization or organizations the recommendation is focused towards.

The recommendations are also intended to clarify where change is needed to solve issues and also where positive aspects should be continued or enhanced. Where change is needed, the evaluation must propose recommendations on what should be done differently.

The evaluation recognizes the important insights gained in implementation, both into the barriers to implementing sustainable organic cotton and potential pathways for further promotion of CAF's objectives in China.

Strategic recommendations for the remainder of the current grant period

The first recommendation applies to both the Foundation and Rare:

1. **Jointly identify initiative elements that can be used for learning activities.**

Strategic recommendations for CAF at the end of the current grant period

2. **Promote learning activities through a "learning summit" on the current situation of sustainable organic cotton in China.**

The evaluators envision this process as having several benefits. It will:

- Provide an opportunity for the Foundation to conduct stocktaking among a range of potential NGO partners, academic and research partners, and farming and value chain partners.

- Further document China-specific strategies in support of the Foundation's sustainable materials and, as appropriate, its circular fashion agenda and support for health and safety initiatives within the value chain.

- Build the Foundation's network and visibility in China's sustainable cotton sector among key players in the private and public sectors.

The evaluation recognizes the organization's commitment to sharing valuable insights that it has gained through the initiative, both into the barriers to implementing sustainable organic cotton and potential pathways for the further promotion of CAF goals in sustainable materials.

A learning summit is intended to be forward-looking and would have a threefold purpose:

1) Encourage institutional memory and knowledge transfer between Rare, the Foundation, and other future potential partners, whose efforts we believe will be required to move forward the effort to encourage a sustainable cotton agenda in China;

2) Initiate brainstorming on future activities within a wider coalition; and

3) Produce a synthesis report to guide required research and policy studies for further advocacy efforts. The synthesis report should have as its primary objectives: mapping out gaps in incentives for producers, gaps in coordination

in the supply chain and gaps in the policy environment, and initial proposed solutions.

The summit should involve a broad range of partners working on issues related to sustainable cotton. Attendees should include Foundation staff, farm managers, and key actors within the value chain, preferably jointly identified by Rare and the Foundation. To better ensure a smooth closeout and transition to a next phase, evaluators suggest engaging competent consultants to assist in moderating and further identifying next steps.

This evaluation has clearly demonstrated the need for a systematic approach to gaining greater understanding of the processes involved in supporting a transition toward sustainable cotton and other elements of its agenda. Although some experiences and practices have emerged as a result of the initiative's implementation, there remains a pressing need for empirical research on enabling and non-enabling factors and pathways toward success. Because of China's size and importance within the garment industry, the Foundation should:

Strategic recommendations for CAF beyond the current grant period

3. **Continue and reinforce engagement in China.**

In order to promote effective engagement in China, it will be crucial to identify specific areas in which the Foundation can add the greatest value. To best do this, the evaluation team recommends that the Foundation:

3.1 Establish an in-country presence geared towards developing effective partnerships and networks.

The evaluation team therefore recommends that, for 2019, the Foundation should pause most implementation efforts in China in preparation for more effective engagement. Rather than immediately commencing a new cycle of program implementation in China, the year following close-out should be dedicated to developing partnerships with organizations with a track record of promoting goals related to sustainable materials and other Foundation priorities.

Future efforts should be focused more intensively on developing viable markets for organic cotton products, partnership-building to include organic cotton within existing sustainable materials efforts, and advocacy with government to ensure that certification and branding mechanisms, such as GOTS, are recognized within the domestic market.

3.2 Promote credible research and policy "white papers" on sustainable materials to inform policy discussions and future planning.

Although the implementation of projects since 2015 has provided important lessons and insights into supporting the transition to organic cotton, several questions still remain to better synthesize experiences to date. These questions, should be addressed through research and policy papers for later circulation within various levels of government and their affiliated research organizations. The following is a list of questions that remain at least partially unanswered:

- Is a larger-scale transition to organic cotton viable and, if so, under what circumstances? What other alternatives are feasible in promoting a sustainable materials agenda?
- To what extent can conservation and organic cotton goals be better aligned?
- What role should be played by external funders in promoting organic cotton and what added value should these funders provide?
- Which approaches best support which underlying values? Are the values of rapidly increasing plantation size of sustainable and/or organic cotton plantation compatible with the goals of enhancing poorer, smallholder farmer livelihoods?
- If both equity and scale are equally valued, how can these goals best be balanced and what incentives are required? E.g. under what circumstances should direct subsidies or guaranteed price premiums be appropriate, and for which categories of farmers?
- Which organizations are best placed to promote CAF goals, and in which specific programming areas do they have the greatest strengths?
- How can coordination among value chain actors be improved?
- What, if any, are the requirements for policy changes and what is the appropriate pathway to achieving change?
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- What, if any, are the requirements for policy changes and what is the appropriate pathway to achieving change?

Special recommendations on Xinjiang

Xinjiang is the most important cotton producer area, accounts for two-thirds of the country's cotton production, and currently suffers from the adverse environmental impacts, including desertification related to conventional cotton production. For this reason, in terms of promoting sustainable cotton farming and viable economic

models, and although there are many other areas of China that will require some level of support, we recommend that the Foundation:

4. **Prioritize Xinjiang in selecting sites for sustainable cotton production.**

This recommendation does, however, come with caveats. Xinjiang has been the focus of recent scrutiny by the United Nations, and UN experts indicated that China was lacking an anti-racial discrimination law and a national human rights institution in line with the Paris Principles. Therefore, before funding further activities, our recommendation is that the Foundation implement standards and safeguards related to population resettlement and the rights of ethnic minorities. This can be done through the:

- Commissioning of a review by social development specialists to understand current social safeguards related to freedom of travel and access to employment for farm workers, population resettlement policies, and protection of minority rights.
- Identification of best practices in support of activities intended to build community solidarity and cohesion among ethnic groups working and living together.

Recommendations for Foundation Organizational Strengthening

Foundation-wide, project managers need to develop a better understanding of the project cycle:

5. **Establish clear guidelines and training on the project cycle to enable project managers to better develop models for planning, delivering, assessing, and adapting programming.**

These efforts should include, at a minimum:

- Opportunities for program managers to develop an evaluative monitoring approach to their supervision of projects; making strategic decisions at the regional or country level about programmatic areas of focus and associated resources; and learning from performance monitoring, evaluations, and other relevant sources of information to make course corrections as needed and inform future programming.
- Require public requests for proposals (RFPs) for all implementation activities concerning cotton in China.

- A subject expert committee should be formed to undertake peer review and quality enhancement of project concept notes and design.

Particularly if farm partners and value chain actors will be involved, the timing of activities should represent a clear understanding of seasonal cycles to best allow for an appropriate planning period before these cycles.

Specific Recommendations for Rare

The evaluation recognizes that implementation of the pilot project and the current initiative has been an arduous process for Rare, and evaluators recognize the importance of working within the agricultural in support of conservation goals. However, if the organization wishes to continue further in this direction, we recommend that it draw important lessons from its activities in promoting organic cotton in China to:

1. **Engage in new areas after a substantial learning process is embedded.**

In the specific case of organic cotton, there is a need to build greater in-depth understanding of value chains. Instead of adopting a primarily supply-driven approach, further efforts need to be placed on developing a market-driven industry-centric approach. By placing more emphasis on end-buyers, and starting with the needs of the buyers, efforts to engage value chain actors and brands for organic and in-transition cotton may develop more rapidly.

2. **Cultivate long-lasting and sustainable partnerships with other organizations working toward similar goals.**

Building effective partnerships is often the crucial key required for achieving short-term objectives. This however requires time, trust building and mutual benefit, particularly when entering new markets and sectors. In the realm of cotton, Rare has correctly placed emphasis on soil remediation and water conservation. An approach to organic production integrating such approaches could be included within existing sustainable cotton initiatives as the "gold standard" tier of sustainable production.