PROCOTTON EVALUATION
TANZANIA PART - BIOSUSTAIN
(CFC/ICAC/40/Procotton 2011-2013)

IMPROVING PRODUCTIVITY AND MARKETING OF COTTON
THROUGH STRENGTHENING SELECTED PRODUCER ORGANISATIONS
IN EASTERN AFRICA

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24. October 2014
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GLOSSARY

BST: Biosustain Ltd.
CFC: Common Fund for Commodities
COMPACI: Competitive Africa Cotton Initiative (linked to Cotton Made in Africa standard on sustainable cotton)
FBG: Farmer Business Group
ICS: Internal Control System
MT: Metric tonnes
NMB: National Microfinance Bank
TACOGA: Tanzania Cotton Growers Association
TCB: Tanzania Cotton Board
TGT: Tanzania Gatsby Trust
ToR’s: Terms of Reference

Disclaimer

This report was produced by an independent evaluation team and therefore the views expressed in this report do not necessarily reflect the views of CFC.
1. EXECUTIVE SUMMARY

The report at hand evaluates the Tanzanian part of the CFC funded project “Improving productivity and marketing of cotton through strengthening selected producer organizations in Eastern Africa (CFC/ICAC/40)” based on the project document from September 2011 (CFC 2011). The evaluation was carried out between end of May and June 2014 culminating in a visit to the project region from June 02 – June 06 and corresponding stakeholder interviews in Mwanza and Dar Es Salaam between June 07 – June 11.

1.1. Results concerning project relevance

Smallholder agriculture in Tanzania particularly in the central corridor, where the project region is located, still bears a lot of potential for expansion due to favourable soils, available land and ample of organic fertilizers. Nevertheless smallholders lack access to markets for cash crop and corresponding extension services to be able to tap into this potential. The project allowed Biosustain to enter into a very remote location with poverty stricken population, which hardly has been dared by other private sector entities. The chance to participate in the project is just highly relevant to small farmers in Itigi area. The region’s other relevant cash crop, unflower, brings just a third of the gross margin of organic cotton. Furthermore the project could contribute vital support to the Company Biosustain in a critical phase. Meanwhile it has entered into large scale collaboration with COMPACI (Competitive Africa Cotton Initiative), which would not have been possible without the Procotton support.

1.2. Achievements of project goals

The overall project goal - the improvement of smallholders income position by enhancing their social, economic and environmental performance of cotton production – could be accomplished successfully with income increases ranging between 5% to 7% annually on average and up to 35% in individual cases. An agronomic assessment reveals clearly the profitability of the organic cotton production system over the conventional one.

Although the project duration was short the conducted interventions successfully managed to achieve relevant qualitative targets and key aspects of the quantitative targets. The intended number of farmers and acreage was integrated into the project. The productivity increase in the project region was significant (from 500 kg of seed cotton / ha to 720 kg, thus a remarkable 44%), but not as high as planned (1000 kg/ha). Likewise also the intended production volume was not fully met (504 MT instead of 700 MT planned).

The evaluation visit revealed that the smallholders in the project region do not have much experience with cotton production at all. Thus these “newcomers” start from very low yields of around 300 to 400 kg seed cotton per ha. In light of that aspect the achieved quantitative performance of the project has to be regarded as impressive. A large proportion of the integrated newcomers are female farmers; the female participation in the project region amounts to 35%. Though unintended, the project thus had a beneficial development effect and contributes to gender equality.

The project has helped Biosustain tremendously on its way to become a financially independent organic cotton actor. Three factors stemming from the project support were essential to reach this:

a) Augmentation of skills and performance of their staff and the corresponding extension system
b) Leveraging loans with favourable conditions to enter into ginning operations
c) Leveraging the partnership with COMPACI to enter into a much larger scale of their operations.

During the project duration it was not possible to create a stable sales relationship for the organic cotton produced. The potential premium that organic cotton can achieve in the market is thus still lacking in the margin of Biosustain. The organic cotton market is still a comparatively new and small market that shows a high volatility. Major actors from the organic cotton community are underway to establish a platform for
organic cotton aiming to increase transparency and accessibility of this market. Thus there are good chances that the marketing situation for Biosustain will improve in near future.

1.3. **Sustainability of the project impact**

Based on the comparatively good soils and the availability of land and organic fertilizers in the project region, the production technology and the applied crop rotations can be concerned as agronomic reasonable and environmentally sound and sustainable. All interviewed farmers stated that they would continue to produce cotton and also to continue to produce organically, if the given premium is paid also in future. Biosustain has consolidated remarkably and - although not yet financially independent – together with the new partner COMPACI its institutional sustainability is very likely.

1.4. **Project efficiency**

The project required approximately 160 US$ per farmer what has to be regarded as low compared to other organic cotton projects. Whereas the sheer income increase per farmer of 48 US$ could pretend an unbalanced input/output relation, the simple quantitative comparison does not take into account that the project helped to consolidate Biosustain and thus overlooks future income gains and qualitative benefits of soil fertility management and food security aspects due the implemented crop rotations.

The elements of the project implementation were reasonable, particularly the establishment of go-downs and the capacity building of the Biosustain staff. Compared to the overall project scale the undertaken efforts for management, coordination and reporting nevertheless seem to be unreasonably high.

1.5. **Strengths and weaknesses**

Major strengths are the fact that the project helped Biosustain to enter into this remote region that turns out to be very favourable for organic cotton production. Furthermore the project managed to combine productivity increase with sustainability aspects, which is a challenge for many other cotton producers. As great asset the project shows that organic cotton production systems can be agronomical highly competitive and thus fit favourably into national cotton strategies, if the surrounding production conditions (availability of biomass, manure, soils, labour hands) are suitable.

Another very “modern” challenge of agricultural value chains is picked up by the project approach: – the establishment of a model to tie farmer groups to a private sector based company. Although necessary capacities for an effective extension system could be established in remarkably short period of time, the project duration does not allow to establish FBGs whose interaction goes far beyond joint training and ICS groups.

Although short, the evaluation visit allowed to identify several aspects, where there might be room for improvements on the level of the project approach, Biosustain management and production technology. Particularly the recommended ICS streamlining concept and the identified plant protection measures may be “low hanging fruits” to rapidly improve the management efficiency and cotton productivity to take the Biosustain endeavour to next levels.
Chapter 2: Evaluation Method and Structure of Report

The report at hand evaluates the Tanzanian part of the CFC funded project “Improving productivity and marketing of cotton through strengthening selected producer organizations in Eastern Africa (CFC/ICAC/40)” based on the project document from September 2011 (CFC 2011). The evaluation was carried out between end of May and June 2014 culminating in a visit to the project region from June 02 – June 06 and corresponding stakeholder interviews in Mwanza and Dar Es Salaam between June 07 – June 11.

2.1. Structure of the report

After giving a brief overview of the cotton sector in Tanzania, the report follows the order of the questions of the ToR’s of the evaluation (Solidaridad 2014) and always quotes these original questions in order to facilitate that readers can keep track of this structure without referring to the original document. In each of these chapters the overarching question is answered at the end of the section based on conclusions from the various answers to the sub-questions corresponding to them.

2.2. Evaluation method

The information sources for elaborating the evaluation results were:

- Document research taking into account primarily the main project documents and reports and secondarily general documents dealing with the Tanzanian cotton sector like TCB 2010, Baffes 2002, FAO 2013 or TGT 2011.
- Farmer group discussions (with the particular approach to compare FBGs already established for some time and thus being experienced with a newly formed group.
- Analysis of the ICS data of BST aiming
  - to prove the representativeness of the interviewed FBGs and
  - to have some statistical basis for the assessment of the productivity
- Stakeholder interviews:
  TCB regional coordinator and local representative in the project area, TGT, Ginners
- Joint SWOT analysis with the Biosustain team
The following table gives an overview, how the individual questions of the evaluation were addressed methodologically.

**Table 1: Evaluation questions and the corresponding methods to respond to them**

<table>
<thead>
<tr>
<th>No</th>
<th>Topic</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a</td>
<td>Relevance for BST</td>
<td>• Discussion with BST team particularly joint SWOT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Stakeholder discussions particularly COMPACI and TCB</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• For contextual information: TCB and competing ginning company (Alliance)</td>
</tr>
<tr>
<td>1b</td>
<td>Relevance for Beneficiaries</td>
<td>• Group interviews with beneficiaries’ groups aiming to compare an “experienced group (established 2007) with a group formed 2012 within the project</td>
</tr>
<tr>
<td>2</td>
<td>Effectiveness of project</td>
<td>• Group interviews with beneficiaries aiming at discussions regarding the gross margins of organic cotton</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Field visit of organic cotton field and demo plot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• ICS data analysis (provided the data structure and completeness allows)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Documents for data comparison eg TCB statistics, ICAC CoP study, etc.</td>
</tr>
<tr>
<td>3</td>
<td>Sustainability of project</td>
<td>• Joint SWOT analysis with BST team particularly the “OT” part</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Group interviews with beneficiaries</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Interviews with extension officers, area coordinators and lead farmers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Stakeholder discussions particularly TCB</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Sector related documents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Optionally amended by interviews with BST clients</td>
</tr>
<tr>
<td>4</td>
<td>Efficiency of implementation</td>
<td>• Joint SWOT analysis with BST team</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Project reports</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Achievements discussion oriented at the project logframe with particular focus on success factors or reasons for non-achievement</td>
</tr>
<tr>
<td>5</td>
<td>Strengths and weakness of the</td>
<td>• Document research</td>
</tr>
<tr>
<td></td>
<td>approach</td>
<td>• Discussion with Solidaridad team</td>
</tr>
</tbody>
</table>
Although it would certainly have been fruitful to conduct the evaluation according to international standards for evaluation (like DCED standard for results measurement) or impact assessment for commodities (like COSA) the following reasons are speaking against their application:

- The overall project budget amount especially for the Tanzania part is comparably small. A full-fledged DCDE or COSA based evaluation study would require resources that do not match the project size.
- The evaluation questions are highly differentiated and should reveal lessons learned on three different levels of stakeholders: Solidaridad, Biosustain and ultimately on the farmer level. This degree of differentiation is not entailed in the standardised evaluation and impact assessment schemes.

2.3. Principles of the evaluation

The principles that were tried to be maintained during the evaluation were:

Principle 1: Utilization focus

Based on the thoughtfully and detailed ToRs the principle of utilization focus is already respected. The evaluation questions elaborated by Solidaridad already ensure that results and answers for the different stakeholders are produced provided all questions can be answered with substantiated information.

Principle 2: High degree of participation

To ensure the benefit for all stakeholder levels the conduction of the evaluation also pursues to entail a high degree of participation of the different stakeholders. Particularly the field part, which lacks documentation in terms of accessible ex-post data, shall be conducted in a way farmers and Biosustain can involve into the discussion and pose also their questions to the evaluation. The methods in which this participatory approach is culminating are group interviews with farmers and a joint SWOT analysis with the Biosustain team (details see following chapter).

Principle 3: Gender sensitiveness

Based on modern approaches to ODA each project should either integrate a gender component or at least take over a gender-sensitive approach. The evaluation will just integrate a gender sensitive perspective. This can be ensured because the local agronomist from the evaluation team is managing a Helvetas project for women farming groups in the very same district.

Image 1: Group discussion with lead farmers from Manyoni district. Discussing the gross margin of crops within the group helps to sort out farm and season specific effects and reveals trends and practices efficiently. The potential weak side of the method – a representativeness of the group – can be levelled out with other methods (e.g. ICS assessment).
3. **BRIEF CHARACTERISTICS OF TANZANIAN COTTON SECTOR**

The cotton production of the United Republic of Tanzania provides employment to approximately 500,000 rural small farming households. Cotton is Tanzania’s largest export crop after coffee contributing around 24 percent of the total agricultural exports (Baffes 2002).

The second Cotton Sector Development Strategy (TCB 2010) adopted in year 2010/11 intends to address the major challenges of the national sector identified as:

- low productivity,
- deterioration of cotton seed and cotton lint quality,
- low absorption of local cotton lint in apparel and textile industries.

Some of the measures suggested in the strategy include introduction of contract cotton farming and a specific industrial strategy for the development of textile and garment industries to process cotton fiber and yarn locally.

The majority of the country’s cotton production is concentrated in the western cotton growing area. For the period from production season 2004/05 to 2010/11, Shinyanga produced 62 percent of total seed cotton in the country, followed by Mwanza (23 percent), Mara (8 percent), Tabora (4 percent); and Kagera, Kigoma and Singida (jointly 2 percent). All these regions are in the western cotton growing area, while the whole eastern cotton growing area (comprising Manyara, Morogoro, Kilimanjaro Coast, Tanga and Iringa) covers only 1 percent of total production (all figures from TCB 2010).

4. **RELEVANCE FOR BIOSUSTAIN AND SMALLHOLDER COTTON FARMERS**

4.1. **Relevance at time of proposal formulation**

Original question according to ToRs of the evaluation

1a) To what extent were the objectives of the project as formulated at the time of the proposal valid in the eyes of the key stakeholders (normative)?

The 4 objectives according to Procotton were:

- a) To expand production by training and extension services for producers
- b) Reinforce the capacities of primary societies and formalise their relationship with BST
- c) To improve and strengthen the capacity of the services of Biosustain and its staff
- d) To make BST self-reliant and a donor independent organisation

The relevance of the project at the time of proposal formulation can be assessed on 3 levels:

I. The relevance for the global organic cotton community

II. The relevance for Biosustain as SME to act as nodal point for organic cotton producers

III. The relevance for Tanzanian smallholders producing cotton

4.1.1. **Relevance for the organic cotton community**

At the time of the project start the global organic cotton production had experienced a drop of 37% (from season 2009/2010 to 2010/2011). This was a time, when “singing with the chorus” that organic cotton is too difficult and just a niche product would have been easier. Instead of that Solidaridad preferred to analyse the bottlenecks of existing organic cotton production and identified the strength of producer organisation as one of the key challenges. The project thus filled a relevant gap that was missing in the global organic cotton perspective: The strengthening of smallholder groups and their intermediaries.
4.1.2. Relevance for Biosustain

All 4 objectives were key to Biosustain for achieving a critical mass of farmers, knowledge of staff and thus its extension and to grow to a size that it makes it more resilient to the market and production fluctuations. According to the BST business plan elaborated for the project (AFRICAFI 2012) the company was financially in a sensitive period at the end of 2011. The project could therefore contribute vital support in a critical phase. Since the project objectives were based on a participative needs assessment the project did address the most relevant aspects for Biosustain.

4.1.3. Relevance for the smallholders in Itigi ward

By the time the project had started the farmers were desperately lacking a cash crop to fulfil basic needs that cannot be covered by subsistence oriented crop production (school fees, textiles, etc.). Tobacco - the main former cash crop - just experienced a market and production crisis leaving the farmers in the region without alternative.

4.2. Validity of objectives today

Original question according to ToRs of the evaluation

1b) To what extent are the objectives of the project still valid in the eyes of the key stakeholders?)

4.2.1. Relevance for Biosustain

The relevance of the objectives has a proof in the fact that the same objectives are targeted at within a partnership with COMPACI, but aiming to reach higher quantitative figures in terms of production volume and numbers of farmers to be integrated and thus also with regard to the resources invested.

The project laid the foundation for Biosustain as organization to be sufficiently large and competent to establish this partnership. Particularly the mix with the access to loans to run an own ginnery and to erect up-country go-downs gives the programme a high relevance.

4.2.2. Relevance for the smallholders in Itigi ward

Compared to many other regions in Sub-Saharan Africa the farmers in the project region have certain favourable conditions for agriculture:

- ample of unused land,
- ample of livestock and thus access to manure,
- good soils.

Their main limiting factors are

- erratic rainfalls,
- access to markets, inputs and finance,
- few cash crops,
- knowledge and experience.

The potential relevance of cotton as cash crop was emphasised by the interviewed farmers. Sunflower is a frequent cash crop but tends to give much lower gross margins than cotton. Maize would be able to compete with cotton, but is the main staple food for the farmers and can only fetch the depicted price, if the farmer manages to be close to the market. Thus organic cotton is a very reasonable and relevant crop for the smallfarmers in the project region.
In the group interviews the farmers in Itigi themselves expressed the need for more training and to be given the chance to integrate more neighbours. This indicates that they appreciate the project and that there is room for the project to grow – another hint for its relevance.

Image 2: Group discussion with farmers in Itigi. Although their productivity on the first year of organic cotton was low, they clearly see the potential on the mid-term run and confirm to be interested to participate in the project.

4.3. Conclusion regarding the project relevance

Overarching question according to ToRs of the evaluation

1) To what extent was the project relevant to the addressing the needs of both the producer organization (BioSustain) and the final target beneficiaries (small scale cotton producers in Tanzania)?

Smallholder agriculture in Tanzania particularly in the central corridor, where the project region is located, still bears a lot of potential for expansion due to favourable soils, available land and ample of organic fertilizers. Nevertheless smallholders lack access to markets for cash crop and corresponding extension services to be able to tap into this potential. The project allowed Biosustain to enter into a very remote location with poverty stricken population, which hardly has been dared by other private sector entities. The chance to participate in the project is just highly relevant to smallfarmers in Itigi area. The region’s other relevant cash crop, sunflower, yields according to farmers’ interviews just a third of the gross margin of organic cotton.

As pointed out in the business plan for Biosustain (AFRICAFI 2012) the company was financially in a sensitive period at the end of 2011. The project could therefore contribute vital support in a critical phase. Since the project objectives were based on a participative needs assessment the project did address the most relevant aspects for Biosustain.
5. ACHIEVEMENT OF PROJECT OBJECTIVES

5.1. Achievement of objectives

Question according to ToRs of the evaluation
2a) To what extent have the objectives been achieved / are likely to be achieved (descriptive)?
Effectiveness here is the extent to which the objectives of the programme as defined in the overall programme proposal with the five main components (technical assistance, access to finance, capacity building, access to markets and product diversification and value additions), specifically related to Tanzania, and the objectives as formulated in the separate project plans and log frames have been realised as a result of the output and outcomes. Furthermore, changes in the project as agreed upon by the implementation partner and donor should be taken into account.

Structure of the answer to this question:
Owing to the complexity of the project there is a multitude of formulated objectives (overall project, country specific components) and additionally adaptation plans for the various implementation years. Thus any answer to the question requires a clear reference to its corresponding source of objectives.

The following evaluation statements present first a summarising table of the key performance indicators of the overall Biosustain work in the last 3 seasons as well as the relevant indicators for the project region “Itigi ward” itself (see Table 2 on next page).

In a second step these indicators plus additional findings from the evaluation visit are related to the most recently adapted specific objectives for the Tanzania / Biosustain part of the ProCotton project as formulated in the Year 2 implementation plan (BST 2013b) via a comparative table (see Table 3).
The third step to respond to this sub-question is than conducted by referring to the overall objectives of the ProCotton project with narrative qualitative answers thereby trying to allow readers a birds-eye view on the overall project results (see chapter 5.1.2).

Table 2: Key performance indicators of BST overall and for the project region
Source: BST 2014 (data are rearranged for better table formatting)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Unit</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of (active) organic members over the last five years</td>
<td>no.</td>
<td>3'775</td>
<td>6'189</td>
<td>6'189</td>
</tr>
<tr>
<td>Number of (active) conventional members over the last five years</td>
<td>no.</td>
<td>5'501</td>
<td>10'770</td>
<td>TBV</td>
</tr>
<tr>
<td>Organization’s organic cotton production volume in MT (lint)</td>
<td>MT</td>
<td>1'500</td>
<td>4'517</td>
<td>5'261</td>
</tr>
<tr>
<td>Organization’s conventional cotton production volume in MT (lint)</td>
<td>MT</td>
<td>6'000</td>
<td>8'400</td>
<td>TBV</td>
</tr>
<tr>
<td>Number of producers receiving technical assistance/training (organic)</td>
<td>no.</td>
<td>3'775</td>
<td>6'189</td>
<td>6'000</td>
</tr>
<tr>
<td>Number of producers certified</td>
<td>no.</td>
<td>500</td>
<td>4'581</td>
<td>5'145</td>
</tr>
<tr>
<td>Cost of input per farmer (estimation)</td>
<td>US$</td>
<td>120</td>
<td>117</td>
<td>133</td>
</tr>
<tr>
<td>Certified acreage under cotton production</td>
<td>ha</td>
<td>900</td>
<td>5'980</td>
<td>6'000</td>
</tr>
<tr>
<td>Conventional acreage under cotton production</td>
<td>ha</td>
<td>7'600</td>
<td>12'000</td>
<td>15'000</td>
</tr>
<tr>
<td>Percentage of cotton sold via the PO/ company</td>
<td>%</td>
<td>100</td>
<td>85</td>
<td>100</td>
</tr>
<tr>
<td>Percentage of cotton sold with a premium</td>
<td>%</td>
<td>10</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Cotton prices paid to certified farmers (per KG)</td>
<td>US$</td>
<td>0.54 &amp; 0.75</td>
<td>0.42</td>
<td>0.46</td>
</tr>
<tr>
<td>Cotton prices paid to conventional farmers (per KG)</td>
<td>US$</td>
<td>0.52 &amp; 0.71</td>
<td>0.42</td>
<td>0.43</td>
</tr>
</tbody>
</table>

Performance indicators for project region Itigi

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Unit</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional farmers</td>
<td>no.</td>
<td>275</td>
<td>1'080</td>
<td>1'500</td>
</tr>
<tr>
<td>Additional certified farmers</td>
<td>no.</td>
<td>100</td>
<td>400</td>
<td>700</td>
</tr>
<tr>
<td>Additional certified production of seed cotton</td>
<td>MT</td>
<td>0</td>
<td>289</td>
<td>504</td>
</tr>
<tr>
<td>Productivity per farmer (seed cotton)</td>
<td>kg / ha</td>
<td>500</td>
<td>692</td>
<td>720</td>
</tr>
<tr>
<td>Income increase</td>
<td>%</td>
<td>5</td>
<td>5</td>
<td>7</td>
</tr>
</tbody>
</table>

5.1.1. Achievement of objectives as related to Year 2 implementation plan

The following table is commenting on each of the objectives of Year 2 implementation plan and is assigning an achievement status to the individual objectives following a traffic-light approach:

- green colour to indicate complete fulfilment,
- yellow colour for partial fulfilment and
- red colour for non-fulfilment.
Table 3 A: Fulfilment of objectives formulated in year 2 implementation plan (BST 2013b)

<table>
<thead>
<tr>
<th>Year 2 output related objectives</th>
<th>Evaluation assessment</th>
<th>Achieve-ment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project objective 1:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To expand production by training and extension services for producers</td>
<td>Production volumes and number of farmers were successfully increased. The productivity was not increased as much as planned, but the planning figures have to be seen as very ambitious.</td>
<td></td>
</tr>
<tr>
<td>i) Productivity increased from 692 kg/ha to 1,000 kg/ha in 2013/2014 season (the year 2 implementation plan (BST 2013b) mentions 652 kg/ha, but this must be regarded as misprint)</td>
<td>Productivity of project farmers in season 2013/2014: 720 kg seed cotton per ha (see Table 2), For all Biosustain farmers in 2013/2014 season: 800 kg seed cotton per ha according to analysed ICS data. <em>(The BST ICS data does not distinguish project and non-project farmers for the time being)</em></td>
<td></td>
</tr>
<tr>
<td>ii) Biosustain production increased from 4,000 MT to 6,000 MT in season 2013/2014</td>
<td>Achieved production: 5261 MT (see Table 2).</td>
<td></td>
</tr>
<tr>
<td>iii) Production increased in Itigi from 289MT to 700MT</td>
<td>Achieved production in project region: 504 MT (see Table 2).</td>
<td></td>
</tr>
<tr>
<td>iv) Hectares planted increased from 432ha to 700ha</td>
<td>700 ha according (see Table 3)</td>
<td></td>
</tr>
<tr>
<td><strong>Project objective 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reinforce the capacities of primary societies and formalize their relationship with Biosustain</td>
<td>The project could successfully contribute to establish 18 farmer business groups (FBG). The farmers within the groups have been contracted, but in future Biosustain will try to operate on group contracts to streamline the contracting procedure <em>(Source: BST team during project evaluation visit)</em>.</td>
<td></td>
</tr>
<tr>
<td>i) 100% of the primary societies/FBGs are sensitized on the next steps for registration and registered</td>
<td>FBGs did not register formally, mainly due to objections against becoming members of TACOGA <em>(Source: BST team during project evaluation visit)</em>.</td>
<td></td>
</tr>
</tbody>
</table>

Table 3 B: Fulfilment of objectives formulated in year 2 implementation plan

<table>
<thead>
<tr>
<th>Year 2 output related objectives</th>
<th>Evaluation assessment</th>
<th>Achieve-ment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project objective 3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To improve and strengthen the capacity of the services of Biosustain and its staff by training on extension methods and administration</td>
<td>Biosustain staff is outstandingly motivated and competent up to the field extension worker level. The success of the Biosustain extension system can clearly be proven by the difference between new project farmers (first season 2012/2013) and those who are with Biosustain for several years <em>(see details in chapter 5.1.2)</em>.</td>
<td></td>
</tr>
<tr>
<td>Adoption of appropriate extension methodology</td>
<td>The cascade of extension worker training to farmer training is well elaborated. Room for improvement might be in using ICS data for a targeted group specific extension. The concept of pilot plots that will be implemented with the COMPACI partnership will bring additional opportunities for conducting field days.</td>
<td></td>
</tr>
<tr>
<td>Efficient service delivery systems achieved</td>
<td>The interviewed farmers were all very confident with the relationship to Biosustain. Their main wish was to stay in the programme and to gain access to finance for increasing their cotton acreage – a clear prove for a good relation between farmers and extension workers</td>
<td></td>
</tr>
<tr>
<td>Improved extension provider-farmer contact</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Project objective 4</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improve the quality of seed cotton for premium market</td>
<td>No standardized high volume instrument (HVI) testing results were available for the Biosustain cotton. The grading resulted in all fibres being in the range of 27 and 28 mm with a Micronaire of 2.8 and 3.2 <em>(Source: BST 2103)</em>, which is too fine for high quality yarns and tending to have a risk for neps. This challenge is difficult to tackle, because a major factor is the genetic basis of the cotton varieties available in Tanzania. Thus it is smart to have an own gin to work on quality issues in general, albeit this will not help much for the Micronaire aspect.</td>
<td></td>
</tr>
<tr>
<td>i) High quality premium market organic cotton produced</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
For the overall farmers of Biosustain registered for organic the organic certification compliance ranges between 85- 85 % in the last years. Compared to other organic cotton project in the world this figure has to be seen as a good performance, though there are not official data about that aspect and GMO contamination, which is not present in Tanzania, is reducing this performance figure in other organic cotton regions. In Itigi there was an issue that from 1500 farmers 700 were not taken into external certification procedure due to remaining deposits of mineral fertilizers and thus still are in conversion. In case buyers for organic could be identified in the following year this issue should resolve as the conversion period is complete by than.

The fact that Biosustain managed to establish the partnership proves that it has been recognized as professional organization. The achievements in the 3 project years are: 2011/2012 season: 10% sold with premium 2012/2013 season: 0% sold with premium 20113/2014 season: 6.3 % sold with premium (Source: BST 2014). The volatility of markets for organic cotton is creating a major challenge and also other organic cotton projects are facing difficulties to sell all their produce to organic markets. The mean value of premium for all project years is 5,4% premium and thus the target is fulfilled. This is of particular relevance, because most of the Biosustain cotton could not be sold as organic and thus this premium cannot be re-financed on the market. Another reason why the farmers are comparably loyal to Biosustain.

Project documentation is complete and accurate. Biosustain staff seems well qualified to take up projects of this kind, which is also proven by the establishment of the COMPACI partnership.

Summarised conclusion

From the 16 objectives and sub-objectives 7 were fully fulfilled, 8 were partly fulfilled and only one was not fulfilled at all. Overall – under the simplifying assumption that the objectives more or less have the same relevance – this reveals an overall high degree of fulfilment of project objectives.

5.1.2. Achievement of overall objectives as outlined for the entire Procotton project

Technical assistance:

According to the original Project Document (CFC 2011) the technical assistance should enable farmers to increase production volumes, increase productivity and obtain higher product quality and relates to the detailed project objective 1.

The increase of farmers integrated into a programme and the increase of the production volume as well as productivity improvements are a core rationale to justify public funds for value chain projects. As also visible in Table 3 (on previous pages) this basic criterion for the project success is fulfilled also in most of the quantitative terms.
The gap to complete fulfilment is remaining for the aspired productivity increases, but the targeted average productivity figure (1235 kg of seed cotton / ha originally and 1000 kg adjusted for Year 2 implementation plan) has to be regarded as ambitious. The evaluation visits to farmers showed that the Biosustain extension system is well capable of increasing the productivity of “their” farmers over time. Table 4 is summarising the gross margin calculation from the group farmer interviews, which shows a difference of nearly factor 5 for the “experienced” farmers (Manyoni) as compared to the “newcomers”. The impact of the extension system and the corresponding “learning curve” of the farmers are thus well reflected.

Of cause this comparison cannot be seen as scientifically solid, because it represents just anecdotal evidence from a small random sample and the interviewed groups seem – as assessed by random comparisons within the data sets of the ICS for all 6189 organic farmers of BST – rather extreme examples for good and bad profits. Particularly the yield of the interviewed farmers is even significantly higher than the average of all project farmers (1’076 kg / ha as compared to 720kg / ha on average).

Furthermore one cannot expect farmers in such a short interview to quantify the family labour invested. Nevertheless the trend for a visible impact is remarkable and underlines the productivity gains stated in the BST reports (BST 2013a, BST 2014 – see also Table 2).

Table 4: Summary of gross margin calculations for organic cotton for season 2013/2014 for two different farmer groups (Manyoni and Itigi) as analysed based on farmer group interviews during the evaluation visit (for raw data refer to Annex 1)

<table>
<thead>
<tr>
<th>Item</th>
<th>Manyoni</th>
<th>Itigi</th>
<th>Manyoni</th>
<th>Itigi</th>
<th>Manyoni</th>
<th>Itigi</th>
<th>Manyoni</th>
<th>Itigi</th>
<th>Manyoni</th>
<th>Itigi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean value</td>
<td>Mean value</td>
<td>Mean value</td>
<td>Mean value</td>
<td>Mean value</td>
<td>Mean value</td>
<td>Mean value</td>
<td>Mean value</td>
<td>Mean value</td>
<td>Mean value</td>
</tr>
<tr>
<td></td>
<td>per ha</td>
<td>per ac</td>
<td>per ha</td>
<td>per ac</td>
<td>per ha</td>
<td>per ac</td>
<td>USD / ha</td>
<td>USD / ha</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Farmers interviewed</td>
<td>11</td>
<td>6</td>
<td>11</td>
<td>6</td>
<td>11</td>
<td>6</td>
<td>11</td>
<td>6</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Total acreage</td>
<td>12'904</td>
<td>8.60</td>
<td>705</td>
<td>4.37</td>
<td>1'076</td>
<td>6.67</td>
<td>705</td>
<td>4.37</td>
<td>1'076</td>
<td>6.67</td>
</tr>
<tr>
<td>Cotton acreage</td>
<td>2'500</td>
<td>15.46</td>
<td>2'500</td>
<td>15.46</td>
<td>2'500</td>
<td>15.46</td>
<td>2'500</td>
<td>15.46</td>
<td>2'500</td>
<td>15.46</td>
</tr>
<tr>
<td>Seeds (provided by BST for free)</td>
<td>7'413</td>
<td>46.88</td>
<td>7'413</td>
<td>46.88</td>
<td>7'413</td>
<td>46.88</td>
<td>7'413</td>
<td>46.88</td>
<td>7'413</td>
<td>46.88</td>
</tr>
<tr>
<td>Manure including transport</td>
<td>4'944</td>
<td>27.79</td>
<td>4'944</td>
<td>27.79</td>
<td>4'944</td>
<td>27.79</td>
<td>4'944</td>
<td>27.79</td>
<td>4'944</td>
<td>27.79</td>
</tr>
<tr>
<td>Plant protection</td>
<td>9.08</td>
<td>0.57</td>
<td>9.08</td>
<td>0.57</td>
<td>9.08</td>
<td>0.57</td>
<td>9.08</td>
<td>0.57</td>
<td>9.08</td>
<td>0.57</td>
</tr>
<tr>
<td>Soil cultivation</td>
<td>33'832</td>
<td>18.38</td>
<td>33'832</td>
<td>18.38</td>
<td>33'832</td>
<td>18.38</td>
<td>33'832</td>
<td>18.38</td>
<td>33'832</td>
<td>18.38</td>
</tr>
<tr>
<td>Planting</td>
<td>2'500</td>
<td>15.46</td>
<td>2'500</td>
<td>15.46</td>
<td>2'500</td>
<td>15.46</td>
<td>2'500</td>
<td>15.46</td>
<td>2'500</td>
<td>15.46</td>
</tr>
<tr>
<td>Harvesting</td>
<td>8.885</td>
<td>0.52</td>
<td>8.885</td>
<td>0.52</td>
<td>8.885</td>
<td>0.52</td>
<td>8.885</td>
<td>0.52</td>
<td>8.885</td>
<td>0.52</td>
</tr>
<tr>
<td>Transport field to farm</td>
<td>6.178</td>
<td>0.36</td>
<td>6.178</td>
<td>0.36</td>
<td>6.178</td>
<td>0.36</td>
<td>6.178</td>
<td>0.36</td>
<td>6.178</td>
<td>0.36</td>
</tr>
<tr>
<td>Transport field to go-down</td>
<td>3.43</td>
<td>0.20</td>
<td>3.43</td>
<td>0.20</td>
<td>3.43</td>
<td>0.20</td>
<td>3.43</td>
<td>0.20</td>
<td>3.43</td>
<td>0.20</td>
</tr>
<tr>
<td>Insurance, land rent, interest</td>
<td>9.98</td>
<td>0.57</td>
<td>9.98</td>
<td>0.57</td>
<td>9.98</td>
<td>0.57</td>
<td>9.98</td>
<td>0.57</td>
<td>9.98</td>
<td>0.57</td>
</tr>
<tr>
<td>Others</td>
<td>3.64</td>
<td>0.20</td>
<td>3.64</td>
<td>0.20</td>
<td>3.64</td>
<td>0.20</td>
<td>3.64</td>
<td>0.20</td>
<td>3.64</td>
<td>0.20</td>
</tr>
<tr>
<td><strong>TOTAL costs</strong></td>
<td>142'083</td>
<td>83.83</td>
<td>142'083</td>
<td>83.83</td>
<td>142'083</td>
<td>83.83</td>
<td>142'083</td>
<td>83.83</td>
<td>142'083</td>
<td>83.83</td>
</tr>
<tr>
<td><strong>Yield</strong></td>
<td>7'413</td>
<td>46.88</td>
<td>7'413</td>
<td>46.88</td>
<td>7'413</td>
<td>46.88</td>
<td>7'413</td>
<td>46.88</td>
<td>7'413</td>
<td>46.88</td>
</tr>
<tr>
<td><strong>Revenue</strong></td>
<td>192'062</td>
<td>113.32</td>
<td>192'062</td>
<td>113.32</td>
<td>192'062</td>
<td>113.32</td>
<td>192'062</td>
<td>113.32</td>
<td>192'062</td>
<td>113.32</td>
</tr>
<tr>
<td><strong>Gross margin</strong></td>
<td>363.56</td>
<td>23.69</td>
<td>363.56</td>
<td>23.69</td>
<td>363.56</td>
<td>23.69</td>
<td>363.56</td>
<td>23.69</td>
<td>363.56</td>
<td>23.69</td>
</tr>
</tbody>
</table>

**Summarised conclusion:** High degree of fulfilment

**Access to finance:**

According to the original Project Document financial services shall bridge the gap between purchase of cotton seed and sale of cotton lint. For the component in Tanzania there were no particular objectives assigned to this component and no specific activities carried out.

Nevertheless project farmers benefit in this aspect via their contractual affiliation with Biosustain by receiving untreated, thus organic farming compliant cotton seed. Therefore seed costs of project farmers are lower as compared to conventional farmers. Furthermore there is also a subsidy on bio-pesticides for the Biosustain farmers, but since also conventional farmers receive subsidised pesticides this does not turn out in lower comparative input costs.

Interviewed farmers expressed the wish to have access to finance to increase their cotton acreage (to finance tillage, manure applications and harvesting) and Biosustain is in contact with the Tanzanian National Microfinance Bank (NMB) to roll out such loan programmes. On the level of Biosustain itself the project helped to acquire trade capital for crop pre-financement from the Rabobank.

**Summarised conclusion:** Medium degree of fulfilment, though no detailed quantitative indicators were defined.
**Capacity building:**
The ProCotton programme intended to support producer organizations in capacity building and development of human capital through trainings, new staff and improvement of organizational management.

This component can be evaluated on the level of Biosustain itself and on the level of the FBGs formed within the programme and relates to the detailed objectives 3 and partially 4 (see Table 3).

Whereas the capacity building and staff development of Biosustain was highly effective, the project duration did not allow FBGs to reach a high degree of institutional development. It also would be required to clarify the milestones an targets an institutional development of FBGs should reach. The formal registration as FBG and the corresponding membership in TACOGA is not visibly beneficial to the farmers.

Biosustain is now underway to establish 2 milestones for the institutional development of FBGs:
- The creation of pilot plots to facilitate field days (though it is not necessarily aimed that each FBG will have on in due course)
- The contracting of FBGs rather than individual farmers

In future also group lending in collaboration with NMB might be one aim for FBGs.

**Summarised conclusion:** High degree of fulfilment on Biosustain level, low degree of fulfilment on FBG level

**Access to markets:**
The objectives according to the ProDoc for this aspect aim to support producer organizations in improving business skills, valorising their produce and identify new clients. And refers to detailed objectives 4 in Table 1.

Doubtless the project has contributed to professionalize Biosustain in a way that they could establish the partnership with COMPACI and acquire corresponding substantial funds and further support. Identifying key clients for the organic cotton failed. In light of the global challenges for this aspect and the fact that other project failed in this area, too, excuses this failure.

**Summarised conclusion:** High degree of fulfilment on organizational development of Biosustain contrasting to failure on the marketing level

**Product diversification and value addition:**
According to the Procotton Project Document this component shall allow for the elaboration of value added rotation crops and investments in ginning operations. The realization of an own ginning facility with a long-term loan from NMB and Rabobank Foundation leveraged by the project was a key element for the future economical sustainability of Biosustain. Crop rotations were suggested and are practiced by farmers that may lead to further income (e.g. sesame, hibiscus, green gram), but contribute for the time being to the food security.

**Summarised conclusion:** High degree of fulfilment

**5.2. Impact of the project**

**Original question according to ToRs of the evaluation**

2 b) To what extent has impact been achieved or is likely to be achieved (descriptive)?

Impact here refers to the effects on long term which have been produced related to the objectives (outcomes) as formulated in the project.

BST calculations (BST 2014 – see also Table 2) determine income increases between 5% to 7% from season to season for the integrated project farmers, but it does not give the baseline figure of the income calculation.

For independent calculations of the income increases achieved it would be required that the ICS integrates several project years in a way that the performance over time of the farmers could be tracked. Unfortunately the BST ICS works on one hand with individual excel files for each year and on the other hand with ex-ante data of the certification instead of ex-post data from the warehouse. -Integrating these figures for a statistical solid calculation of the income increase would have required a workload that the evaluation could not provide. The above figures thus can only be supported by using the KPIs of Table 2 and deriving organic cotton based income increases
based on mean values of the yield and the estimations of the costs by the BST team. The resulting figures are depicted in the following Table 5.

**Table 5: Calculation of cotton based profits and income increases during the project period**
(Data source BST 2014 – see also Table 2)

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Year 1 2011/2012</th>
<th>Year 2 2012/2013</th>
<th>Year 3 2013/2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall costs</td>
<td>USD / ha</td>
<td>120.00</td>
<td>117.00</td>
<td>133.00</td>
</tr>
<tr>
<td>Yield</td>
<td>kg / ha</td>
<td>500</td>
<td>692</td>
<td>720</td>
</tr>
<tr>
<td>Price paid to farmer</td>
<td>US$ / kg</td>
<td>0.54</td>
<td>0.42</td>
<td>0.46</td>
</tr>
<tr>
<td>Revenue</td>
<td>US$ / ha</td>
<td>270.00</td>
<td>290.64</td>
<td>331.2</td>
</tr>
<tr>
<td>Profit</td>
<td>US$ / ha</td>
<td>150.00</td>
<td>173.64</td>
<td>198.20</td>
</tr>
<tr>
<td>Difference year by year</td>
<td>%</td>
<td>15.76</td>
<td>14.14</td>
<td></td>
</tr>
<tr>
<td>Difference year 1 to year 3</td>
<td>US$ / ha</td>
<td>48.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difference year 1 to year 3</td>
<td>%</td>
<td>32.13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From project year 1 to project year 3 the average organic cotton based income increase amounts to ca. 48 US$ per ha of organic cotton absolutely and 32% relatively. The acreage that farmers are devoting to organic ranges in most cases between 2 and 3 acres. For the last project year 5180 certified farmers had an organic cotton acrea...

...Thus the overall goal of the programme to improve the income position of small scale cotton producers in Tanzania via enhancing the social, economic and ecological performance has been achieved remarkably. On top of quantitative income increases food security elements via the crop rotation elements (green gram, maize sesame, etc.) have to be added.

...The programme fits very well into the agro-ecological and socio-economic conditions of the particular project region. It plugs well into the crop rotations, labour availability and costs of the region. An element which might become a highly relevant competitive factor in comparison to other cotton and organic cotton production regions.

...Furthermore Itigi region has a huge potential for enlargement of organic cotton: land and especially livestock and thus manure are still well available. This is very different to many other organic cotton regions, where particularly manure is scarce and is a relevant component of household fuels.

...The comparison of the potential profits between organic and conventional cotton cultivation show a trend towards preferability of the organic production system. Again it has to be emphasised that the short visit and the correspondingly small random sample should not be regarded as a scientific approach, but as anecdotal evidence indicating a trend. Quite clearly the comparison has the methodical limit that the farmers were not asked to quantify the family labour in cost terms.

...Relevant factors in this favourable outlook are the savings of the cost of mineral fertilizer and low regional labour costs. Also the project team from BST concludes a favourability of the organic system compared to conventional cotton production (BST 2014 – the relevant data are given in Annex 2) with costs for mineral fertilizers and conventional sprays being the major reasons for disadvantages of the conventional production.

...One of the key factors that help to realize the good yields of organic cotton as compared to the conventional peers are the integration of legumes into the crop rotation and the application of manure. Both aspects are not necessarily restricted to organic, but could be applied by conventional producers, too. Nevertheless the farmers' trainings of Biosustain and the good selection of lead farmers help to ensure a high adoption rate of these practises. The poor yields of first year farmers (see Table 4) also show that farmers' need a “learning curve” to improve their productivity and require constant extension from a dedicated team to achieve yield levels as the Manyoni farmers.

...The project doubtless created a functioning organic cotton “cell” that has a good potential for growth, if the marketing side will change. This change is to be envisaged in future: large retailers have engaged in ambitious programmes for increasing the sustainability of the cotton fibre they source and thus organic cotton demand is poised for growth.
5.3. Unintended effects of the project

Original question according to ToRs of the evaluation
2 c) What other effects, if any, have occurred, positively or negatively, directly or indirectly, intentionally or unintentionally, that can be contributed to the project (descriptive)?

Gender aspects:
The original ProDoc relates to gender aspects only in the Zambia part. Although there are no particular activities related to gender aspects, the Biosustain project has outstanding effects in this field: The ratio of female farmers in the project region is a striking 35% (Source: BST 2013b and BST 2014).

During the group interviews it was revealed that the female farmers have an equal performance as their male peers, particularly in Manyoni (see also raw data in Annex 1, where the genders are indicated for each of the interviewed farmers).

Female farmers can even be lead farmers for their FBGs as proven with one female participant of the interviewed group of farmers from Manyoni. She was highly accepted by male lead farmers and the Biosustain staff due to her outstanding capability of creating a profitable crop rotation based on organic cotton and a skilful integration of legumes. Furthermore she managed to increase the female participation in her FBG remarkably. Of course the short duration of the evaluation visit did not allow to assess, how representative this finding might be. But this female lead farmer proved that such personalities exist.
Comparable local projects – e.g. the vegetable production project from HELVETAS Swiss Intercooperation in Singida region – show the relevance of gender aspects with regard to overall development indicators like schooling ratios or nutrition status of children, when women have access to income.

**Land rent prices and availability of land or biomass and manure**

In other regions in the world the success of organic cotton projects had undesirable effects via visible increases of land rent prices or otherwise increased pressure on land resources. In other cases biomass and manure were very scarce, so that prices for organic fertilisation rose steeply.

Since the chosen project region has ample of unused land and livestock available no undesirable effects of this kind were identified during the field visits.

### 5.4. Factors influencing achievements and non-achievements

**Original question according to ToRs of the evaluation**

2 d) What were the major factors influencing the achievement or non-achievement of the objectives as described in the project (descriptive)?

The major success factor for achieving the key indicators with regard to farmer integration and volume increase were the choice of a suitable region (see chapter 5.2 with regard to the favourability of the agro-ecological conditions) and the establishment of a competent and motivated team at Biosustain.

The major reason for the only main shortcoming of the project – the unavailability of a long-term and large scale purchase partner for organic cotton – lies in the high volatility and intransparency of this market.

Image 4: Female lead farmer of the project (left) and her colleague. The lead farmer had successfully integrated green gram (both pictures right) into the crop rotation, thereby contributing as well to food security as soil fertility.
The paradox situation is that large scale textile retail brands complain about the limited production volume and growth of organic cotton production, whereas the large organic cotton projects complain about missing purchase partnerships.

Other value chain partners like traders or spinning mills do not want to risk to step up as missing link due to the drastic market volatility of the entire cotton markets in 2008 which forced some companies from this sector into bankruptcy.

Key drivers of the textile sector that are concerned about cotton sustainability (eg. C&A, H&M, Inditex) have linked up with competent actors (eg textile exchange, cotton connect) to start thinking about establishing a purchase platform that can improve the market situation for both sides – the organic cotton producing projects and the textile retailers interested in organic cotton. The related project has the working title organic cotton accelerator.

Hopefully this will change the situation on the organic market side for organic cotton projects like Biosustain in order to unfold their potential to act as change agent for cotton small holders around the world.

Some relevant regulations have picked up the issue, too, e.g. the EU Ecolabelling Scheme that makes organic cotton mandatory for some product groups aiming at giving market signals to producing actors (e.g. baby clothes).

5.5. Conclusion as to whether the project met its objectives

Overarching question according to ToRs of the evaluation

2. To what extent did the project meet its objectives, directly or indirectly, intended or unintended (i.e. what was the effectiveness of the project)?

The overall project goal - the improvement of smallholders income position by enhancing their social, economic and environmental performance of cotton production – could be accomplished successfully with income increases ranging between 5% to 7% (BST 2014) and agronomic advantages of the profitability of the organic cotton production system over the conventional one.

Although the project duration was short the conducted interventions successfully managed to achieve relevant qualitative targets and key aspects of the quantitative targets. The intended number of farmers and acreage was integrated into the project. The productivity increase in the project region was significant (from 500 kg of seed cotton / ha to 720 kg, thus a remarkable 44%), but not as high as planned (1000 kg/ha). Likewise also the intended production volume was not fully met (504 MT instead of 700 MT planned).

The evaluation visit revealed that the smallholders in the project region do not have much experience with cotton production at all. Thus these “newcomers” start from very low yields of around 300 to 400 kg seed cotton per ha (see Table 4). In light of this aspect the achieved quantitative performance of the project has to be regarded as impressive.

A large proportion of the integrated newcomers are female farmers, the female participation in the project region amounts to 35%. Though unintended, the project thus had a beneficial development effect and contributes to gender equality.

The project has helped Biosustain tremendously on its way to become a financially independent organic cotton actor. Three factors stemming from the project support were essential to reach this:

- Augmentation of skills and performance of their staff and the corresponding extension system
- Leveraging loans with favourable conditions to enter into ginning operations
- Leveraging the partnership with COMPACI to enter into a much larger scale of their operations.

During the project duration it was not possible to create a stable sales relationship for the organic cotton produced. The potential premium that organic cotton can achieve in the market is thus still lacking in the margin of Biosustain. The organic cotton market is still a comparatively new and small market that shows a high volatility. Major actors from the organic cotton community are underway to establish a platform for organic cotton aiming to increase transparency and accessibility of this market. Thus there are good chances that the marketing situation for Biosustain will improve in near future.
6. SUSTAINABILITY OF THE PROJECT

6.1. Existence of sound exit strategies

Original question according to ToRs of the evaluation:
3 a) To what extent have sound exit strategies been developed for the support provided by the project to BioSustain (descriptive)?

Two elements were basically laying the foundation to ensure that exit-strategies are in place and work:

- The development of an institutional business plan for Biosustain (AFRICAFI 2102); This plan already contains the support from COMPACI.
- A clear project implementation with annual adaptations to plan the project termination properly.

Practically the project helped to leverage the partnership with COMPACI thereby catalysing a partnership for Biosustain on a larger scale (1.5 million US$ plus training support) than the ProCotton project could provide. Thus exit strategies were well planned and in place though not aimed at full financial independency of Biosustain yet.

6.2. Sustainable development of Biosustain based on the project interventions

Original question according to ToRs of the evaluation:

Image 5: Night shelter for the livestock. The method helps to collect the farm yard manure efficiently. The good ratio between land used for cropping, livestock and available biomass is one of the strong assets of the project region making it a very good location for organic cotton production.
3 b) To what extent has the financial and technical support provided through this project provided a ground for sustainable development of the services and interventions provided by BioSustain (descriptive)?

As described in chapter 4.1.2 the project supported Biosustain during a critical stage of its development. Additionally the project was a key catalyst to allow the implementation of two factors for a successful implementation – the motivated and competent team and the favourability of the chosen region (see chapter 5.4).

The project laid the foundation for Biosustain to enter into a large scale partnership with COMPACI and thus can be regarded as relevant pillar for Biosustain to achieve institutional sustainability. The major reasons for COMPACI to enter into this partnership were the good access to farmers, the high expertise in cotton sustainability and the readiness of the extension team as compared to other cotton projects in Tanzania.

Image 6: Biosustain field coordinator demonstrating correct spacing and use of GPS device to measure accurate field sizes. Both measures are critical to address key challenges of production and procurement (for volume planning and certification) and reveal that the Biosustain team has trained to make proper prioritization of measures for intervention and training.
6.3. Integration of relevant knowledge and skills

Original question according to ToRs of the evaluation:
3 c) To what extent are relevant knowledge and skills integrated into regular activities of the professionals and services providers from BioSustain working with the small scale cotton farmers (descriptive)?

The extension system of Biosustain is well developed in form of a cascade of continuous training and education of the field extension workers and field coordinators and the training of farmers. Key processes are well documented: The ICS (BST 2012b), a trainer’s guide (BST 2012a) and a guidance for the conduction of farmer field schools (BST 20123d). The overall extension system has proven its efficacy as outlined in chapter 5.1.2,

Image 7: Organic cotton demonstration plot in Singida. Due to the remoteness of the project farmers this plot can only be used for the Training of Biosustain extension workers. Nevertheless the good shape of the field and the good plant protection management make it a very suitable element within the extension measures.

Room for improvement might be in three aspects:

- A closer interaction between ICS data and extension to create more farmer group specific trainings.
- A higher degree of documented interfaces between these key documents, so that synergies can be unfolded and systematised (example: the trainer document could refer to the way farmer field schools may pick up certain topics). Based on experiences from other organic cotton projects one cannot expect this integration to be established in such a short project duration. First these processes and systems need to be described, than tried out and improved by identifying possible interfaces.
- A closer interaction with other organic cotton projects to ensure constant innovation and exchange between the leading actors of the organic cotton community. This aspect is in many cases difficult to realize for organic cotton projects, because the resources of this exchange are difficult to be made available and the short term benefit is hard to be quantified. At least a participation in the organic cotton community of practice might be recommendable.
6.4. Continuity of impact
Original question according to ToRs of the evaluation:
3 d) To what extent are the interventions and its impact on the final beneficiaries (small scale cotton farmers) likely to continue when external support is withdrawn (normative)?

The interviewed farmers were very confident with the production technology and the offered extension services. Their main doubt was the efficacy of the chosen bio-pesticide.

During the interview they confirmed that they would like to continue or even expand cotton. Based on the acquired skills at least the farmers with a longer organic cotton experience certainly would also continue to grow organic, if the premium and the support in certification can be provided. The comparison of the gross margin of organic and conventional cotton (see Fout! Verwijzingsbron niet gevonden. and Annex 2) is a factual basis for this attitude.

6.5. Factors influencing achievements with regard to sustainability.

Original question according to ToRs:
3 e) What are the major factors that influence the achievements or lack thereof with regards to sustainability (ownership and leadership) of BioSustain (descriptive)?

The essential element for the success or non-success of a commercial entity like Biosustain is the effectiveness of the extension system and the loyalty and sustainability of the relation towards the farmers. Both elements could be strengthened during the project.

6.6. Likelihood of replication and scale-up

Original question according to ToRs:
3 f) How likely will the interventions of BioSustain be replicated or scaled up (normative)?
Attention should be paid here especially to organic cotton production and the extent to which this is embraced by target beneficiaries or other stakeholders.

As mentioned, the interviewed farmers were all keen to enlarge their acreage of cotton production (their overall acreage would allow that in all visited cases without compromising a reasonable crop rotation compliant to organic standards) and all keen to stay with the programme.

Thus there is a high likelihood for a scale-up in two dimensions: a growth in number of farmers and an increase of production with already integrated farmers. The higher profitability of organic as compared to conventional cotton as described in chapter 5.2 gives this perception acquired during the evaluation interviews a good factual basis.

Furthermore a scale-up if not for organic than for sustainable production methods is already institutionalised with the partnership towards COMPACI.

6.7. Involvement of other players to contribute to the sustainability of Biosustain

Original question according to ToRs:
3 g) To what extent and in which way may the involvement of civil society organisations, private sector players and/or governments communities, other organisations or other stakeholders (private sector, government) contribute to future sustainability of BioSustain as well as the final beneficiaries (small scale cotton farmers) (normative)?

Interviews with Tanzanian stakeholders from the governmental (TCB), the NGO sector (TGT) and private sector (Alliance – competing cotton ginning company) during the evaluation visits revealed that Biosustain was highly acclaimed for their professional engagement and their overall contributions to the Tanzanian cotton sector.

This high credibility by different kinds of stakeholders shows that the company is well integrated into the cotton sector and that it has a high degree of institutional sustainability with regard to its integration into the relevant national networks.

Particularly the appreciation by the national governmental cotton authority – the Tanzanian Cotton Board – is remarkable. A lot of other organic cotton projects have to struggle for their recognition constantly and get
occasionally the feedback that they are not well positioned in the national cotton strategy, because their activity undermines the volume of the conventional production.

The opinion of the interviewed TCB delegate, the coordinator for the entire Western production region, was opposite: he welcomed the organic cotton approach, because it diversifies the Tanzanian cotton supply to the global markets and improves the image of the Tanzanian cotton sector by its strong orientation to sustainability. Furthermore he regarded the project as in line with the actual national cotton strategy (TCB 2010) and contributing to an overall production increase.

6.8. Conclusion regarding the sustainability of the project

Original question according to ToRs of the evaluation:

3 ) To what extent is the project sustainable ?

Based on the comparatively good soils and the availability of land and organic fertilizers in the project region, the production technology and the applied crop rotations can be concerned as agronomically reasonable and environmentally sound and sustainable.

All interviewed farmers stated that they would continue to produce cotton and also to continue to produce organically, if the given premium is paid also in future.

Biosustain has consolidated remarkably and - although not yet financially independent – together with the new partner COMPACI its institutional sustainability is very likely (see also Annex 4 depicting the results of the joint SWOT analysis with the Biosustain team – this contains many aspects relating to the sustainability of Biosustain and the adherent project interventions).

7. EFFICIENCY OF IMPLEMENTATION

7.1. Project costs related to outputs achieved

Original question according to ToRs of the evaluation:

4a) To what extent can the costs related to the execution of the project been considered as well spent (efficient) related to the outputs achieved (descriptive) ?

The overall implementation costs of $174,000 (thereof $152,326 for implementation itself) for a programme of bringing ca. 1’000 farmers (from 544 existing to 1’500 in 2 project years – source: see Table 2) towards organic cotton farming plus consolidating Biosustain financially and institutionally are surprisingly low. With the resulting figure of 160 US$ per farmer the project delivers a reasonable input/output relation particularly in light of the fact that it was conducted in a time when the global organic cotton sector needed another relevant pillar in a country outside India.

Other organic cotton programmes eg. from Helvetas had to invest approximately double of the amount per farmer, although these figures should not be compared directly, because other programmes had to start from scratch and the context is hardly comparable.

The implementation of other Sustainable cotton programmes / standards are usually much cheaper because they can build upon existing knowledge, do require less changes of the production technology and do not require the establishment of an ICS for certification – thus their figures range from 5$ (COMPACI) to 17$ (BCI) to 32.5 $ (ProCotton, CAZ) per farmer (Sources for calculations: ICAC TFIC 2013 and CFC 2011).
The budget was spent mainly in the core activities of farmer extension and the surrounding “hardware”. No direct financial transfers were made from project funds to farmers. Particularly useful seems the erection of local warehouses to reduce transport costs for farmers, which can make up to 12.5% of all input cost in the smallholders’ gross margin calculation (see Table 4 for detailed figures).

Particularly useful seems the erection of local warehouses to reduce transport costs for farmers, which can make up to 12.5% of all input cost in the smallholders’ gross margin calculation (see Table 4 for detailed figures).

Nevertheless the balance between project scale and its administration and surrounding planning efforts might be considered as critical. Project size and duration might be regarded as small compared to the establishment of the surrounding project management and reporting infrastructures.

The fact that Procotton is comprising of two implementation programmes in two countries gives this consideration a much better balance. The Tanzania component as stand-alone project would have to be regarded as under critical to justify all surrounding efforts and resources.

7.2. Value for money

Original question according to ToRs of the evaluation:
4 b) To what extent can the project be considered ‘value for money’ taking into account costs and outcomes/impact obtained (normative)?

Project costs of 160 US$ per farmer relate to an income increase of 48 US$ per ha (see Table 5). Whereas this may look like an unbalanced project effort, one has to add the following qualitative additional effects:

The value of catalysing the stabilisation of Biosustain as continued partner for the farmers can not be expressed in quantitative terms. The farmers thus have options for further income increases via
- further productivity gains in the following years (examples good farmers in Manyoni show that figures above 1000 kg seed cotton per ha can be achieved – the calculation of income increase was based on the average yield of 720 kg per ha),
- further options for income from other crop rotation products to be sold in the organic market.
- additional qualitative benefits like soil fertility management and food security from the crop rotation.

7.3. Conclusion regarding the project efficiency

Original question according to ToRs:
4. To what extent has the project been implemented in an efficient way?

The project required approximately 160 US$ per farmer what has to be regarded as low compared to other organic cotton projects, but in the upper range of costs per farmer when compared to other sustainable cotton projects like BCI or COMPACI.

Whereas sheer income increase per ha of 48 US$ could pretend an unbalanced input/output relation (with approximately 1 ha of cotton being the average organic cotton acreage), the sheer quantitative comparison does not take into account that the project helped to consolidate Biosustain and thus overlooks future income gains and qualitative benefits of soil fertility management and food security aspects due the implemented crop rotations.

The elements of the project implementation were reasonable, particularly the establishment of go-downs and the capacity building of the Biosustain staff.

Compared to the overall project scale the undertaken efforts for management, coordination and reporting nevertheless seem to be unreasonably high.

8. STRENGTHS AND WEAKNESSES OF THE APPROACH

8.1. Main characteristics of the project approach

Original question according to ToRs:
5a) In general, what can be defined as the main characteristics of the project (approach or strategy) (descriptive)?

The main characteristics of the ProCotton approach as extracted from the project document (CFC 2011) are:

1. Indirect support to cotton producing smallholders via the strengthening of a producer group
2. Utilization of 2 models of producer groups (private sector based and membership based)
3. Focus on modern forms of sustainable cotton production technologies to allow access to premium markets for the cotton produced and at the same time strengthen the ecological sustainability of the smallholders
4. Capacity building of the key staff people
5. Early integration of phase-out plans to prepare the supported groups for their institutional sustainability directly from the start
6. Combination with access to finance as well for the smallholders as for the producer group

8.2. Sharing of lessons learned between the Zambian and the Tanzanian project teams

Original question according to ToRs:
5 b) To what extent have lessons learned during this period been shared between CAZ and BioSustain (descriptive)?

During a project visit of the CAZ team to the Biosustain project in first half of 2013 the teams were able to present major insights from their project work to each other.
8.3. Incorporation of lessons learned

Original question according to ToRs:
c) To what extent have the lessons learned of CAZ been incorporated in the approach of the BioSustain (descriptive)?

On top of the previously described project visit the major instrument to ensure project to project learning was the coordination by Solidaridad. The projects were closely followed by the regional coordinator from Solidaridad thereby realizing the integration of lessons learned in the evolving extension manuals and transfer of applicable insights via personal interaction with the key project managers on both sides.

It has nevertheless to be mentioned that the organic production technology is rather specific and the corresponding standard requires implementation of particular data streams and management practices (ICS) to reach compliance. A detailed sharing of technical manuals thus has limitations.

8.4. Strengths of the project

Original question according to ToRs:
5 d) What are strengths of this project (normative)?

The overall strength of the project approach unfolds in three aspects that will be key future challenges for agricultural commodities:

1. A significant increase of productivity and
2. an improvement of the sustainability of the production
3. the strengthening of producer groups (either private sector based or membership based – both models were tried out in the ProCotton project: private sector based in the case of Biosustain and membership based in the case of CAZ) to have efficient means of reaching the individual farmer.

Future market partners in the North, particularly large textile retailers will be under pressure to prove that their cotton is sourced from

- economically (with regard to reasonable land use),
- ecologically (with particular regard to soil fertility and water resources) and
- socially (with regard to good income conditions for smallholders)

sound methods thereby adhering to all three pillars of the sustainability concept.

The project approach realized to define milestones for all these 3 pillars particularly in the Tanzania approach in which the organic cotton production method fulfils also ambitious demands for environmental soundness.

In order to identify detailed strengths of the project as well as strengths of Biosustain as organization a strengths and weaknesses assessment was conducted with the Biosustain team. Results were assigned to different areas of the project resp. the organization to allow a systematised view on the compilation.
Table 6: Compilation of strengths of the project resp. organization as elaborated during the participatory assessment during the evaluation visit on June 06, 2014

<table>
<thead>
<tr>
<th>AREA</th>
<th>STRENGTHS</th>
</tr>
</thead>
</table>
| Inputs                    | • Abundance of biomass and manure for fertilizing available in project region  
                            • Organic quality seed supply by BST                                                                                                               |
| Production                | • Selected location has many advantages as compared to other organic cotton areas: available land, organic fertilizers, potential for productivity increases, etc.  
                            • Diversification gives good options                                                                                                               |
| Marketing                 | • High motivation and loyalty of farmers, no pirate buying  
                            • Potentially very competitive price (only 10% premium)  
                            • Flexibility to offer CmiA as well as organic                                                                                                     |
| Extension and ICS         | • Proven increase of productivity  
                            • Cascading system now consolidating  
                            • Demo plots under development (with COMPACI)  
                            • ICS lead farmers act as internal inspectors in “other villages”                                                                                   |
| Group organization        | • New contract approach reveals good vision and promises progress including access to finance                                                                                                               |
| Management / company      | • New outlook with new partners (Semer, COMPACI)  
                            • Experienced and motivated team  
                            • Well integrated into and accepted by the national cotton community (GOs, NGOs, other ginning companies)                                                                                     |
| Project                   | • Very valuable as intermediate step to “bridge” the gaps until COMPACI partnership could develop                                                                                                         |

8.5. Weaknesses of the project

Original question according to ToRs:
e) What are weaknesses of this project (normative)?

It is a critical challenge to reach significant and proven changes of the production technologies (including increases of productivity and sustainability at the same time) as well as institutional developments for producer groups in only two project years. Likewise it is not very reasonable to establish an entire project management, reporting and administration structure for small project amounts and short project durations.

Both aspects have to be concerned as the main overarching weaknesses of the project approach. A more detailed list of project respective organization related weaknesses was generated during the participatory strengths and weaknesses assessment with the Biosustain team.
Table 7: Compilation of weaknesses of the project resp. organization as elaborated during the participatory assessment during the evaluation visit on June 06, 2014

<table>
<thead>
<tr>
<th>AREA</th>
<th>WEAKNESSES</th>
</tr>
</thead>
</table>
| Inputs           | • Erratic rainfalls, water stress situations, no drought insurance yet  
|                  | • Limited access to finance for farmers  
|                  | • Cotton varieties used may need improvement with regard to micronaire  
| Production       | • Undercritical productivity of new farmers  
|                  | • Plant protection measures leave room for improvement  
| Marketing        | • Staple length produced is a category where it has a lot of competition in the organic market  
|                  | • Organic markets insufficient penetrated  
| Extension and ICS| • Many stakeholders and changes (referred to in past, was streamlined for the future)  
| Group organization| • ICS data not used for extension and ICS management leaves some room to be streamlined  
|                  | • New FBGs did not have much time to develop institutionally due to short project duration  
| Management / company | • Limited financial capacity, dependant on expensive loans  
|                  | • High transaction costs  
|                  | • Many stakeholders and a lot of efforts to maintain the network with gvt and NGO cotton stakeholders (eg high transaction costs for price negotiations with Government, etc.)  
| Project          | • Undercritical support volume and time to achieve relevant steps in group organisation  
|                  | • High reporting and administration efforts  

8.6. Benefits of the approach as compared to conventional cotton

Original question according to ToRs:

5 f) What are benefits of the approach as described in the project, especially in comparison to conventional cotton (normative)?

The approach takes over a holistic idea of a smallholder income which has to take all factors of an income calculation into account. This should comprise factors like production costs, dependency from external inputs, production risk and diversification, etc. From that point of view organic farming approaches unfolds a strong rationale for the small farmer context.

Several of these benefits apply well for the Tanzanian part of the Procotton project:

- The farmers in the project area are very remote and hardly supplied by merchants for agricultural inputs. Nevertheless they have sufficient livestock allowing for manure applications. Thus many of them practice a production method which is sometimes referred to as de facto organic farming. The project region is therefore very suitable for organic cotton.

- The critical aspect of the area is the water scarcity and erratic rainfalls. Organic farming requires farmers to practice a good crop rotation. On top of the soil fertility management aspects this practice ensures minimization of risks. The crops that were named by the interviewed farmers that plug into this idea are sesame, green gram, millets and hibiscus. In case Biosustain manages in future to identify organic markets for these crops (very likely for sesame and green gram) there are good chances for additional income.

Finally the suitability of the region for organic cotton production is proven by very competitive gross margin calculations for organic cotton when compared to conventional peers. Not only that organic cotton yields can be on the same level or even higher as conventional ones, but also the costs of mineral fertilizers can be saved. As Fout! Verwijzingsbron niet gevonden, visualizes the profit for organic cotton can be remarkably higher. This is particularly interesting and a strong argument, because the conventional cotton calculation does not even include insecticides and their applications. Furthermore the mineral fertilizer price (at least for Urea) is artificially low due to subsidies from the Tanzanian Government. A full cost calculation and a long-term view, in which the yields should even show an upward tendency in organic, would reveal even stronger arguments for the organic cotton production method.

The comparison in Fout! Verwijzingsbron niet gevonden, was based on the very random interviews of the evaluation visits and their representativeness might be limited. But gross margin calculations by the Biosustain
team reach the same conclusion: organic cotton gross margins can be substantially higher than conventional peers (BST 2014). The corresponding calculation is presented in Annex 2.

8.7. **Downsides of the approach in comparison to conventional cotton**

**Original question according to ToRs:**

\[ g \) What are downsides of approach, especially in comparison to conventional cotton (normative)? \]

A fully market driven project in conventional cotton has much less costs per farmer, because they frequently do not consider aspects of sustainability and institutional developments but focus fully on productivity. Such projects also attract contributions of other market partners (e.g. input providers or service providers), which share the same priorities and focus on short term results. Therefore the project looks expensive and having low returns (see the corresponding discussion in chapter 7.2), if compared with a short term perspective to conventional projects.

The same consideration has to be made by Biosustain: an extension and internal control system for an organic farming project is more labour- and management intensive than a conventional one (e.g. COMPACI or BCI). If the market does not reward that - as it seems the situation right now, given the low percentages of the volume that Biosustain can market as organic - the higher management and extension overhead cannot easily be justified.

8.8. **Recommendations**

**Original question according to ToRs:**

\[ h \) What other recommendations can be provided to improve this or similar projects? \]

8.8.1. **Recommendation with regard to the project approach**

*Future small scale projects to focus innovations*

It can be foreseen that future projects for the implementation of sustainable production technologies of agricultural commodities will have a larger scale. This will make it difficult for smaller programmes to justify themselves particular with regard to an economy of scale of project management.

As recommendation one may consider that projects with smaller scale should focus more on innovative aspects in production technologies or partnership structures. No doubt that these would contain higher risks. But the large organisations like BCI or COMPACI are under pressure to achieve large scale and impact rapidly and are therefore careful to try out innovative approaches. Thereby they have to concentrate on the sheer role-out of proven approaches. This leaves a gap for more risky and radical innovations, which could be filled by projects of the scale of the Biosustain project.

*Comparison of farmer group models*

The ProCotton project bears the highly relevant and interesting opportunity to compare a private sector based model for farmer groups (Biosustain) with a membership based model for farmer groups (CAZ). It can be recommended to create a learning space that allows for exploring pros and cons of both approaches (e.g. joint workshop with the relevant stakeholders, etc.). Results could be highly interesting for similar projects. Based on this evaluation HELVETAS Swiss Intercooperation will take up the idea to look for opportunities to foster an exchange with that topic. Suggested interested stakeholders are Solidaridad, Rabobank, IFOAM, Textile Exchange, etc.

*Allow for agronomic comparisons*

The ProCotton project bears interesting options to compare the agronomic performance of two interesting production and management approaches. One could foresee a systematic comparison, that levels out methodical limitations (sample size, calculation method) and a resulting synchronoptic view of results.

*Feed-back or action plan with regard to organic cotton marketing*

As outlined in chapter 5.4 one of the main targets that lack accomplishment is the marketing of the Biosustain cotton with organic premium. No doubt, that such a young and small market like the organic cotton market is not easy to “play” and that is shows cycles and unexpected effects. The more it is important that the actors exchange about intended activities. The intended platform (working title organic cotton Accelerator) may be a relevant change agent. It is acknowledged, that Solidaridad engaged in it to contribute to the shaping of this approach. A continuation of this effort and a guiding feed-back to Biosustain, although it cannot be integrated under the auspices of the ProCotton project any more, is very relevant to the marketing strategy of Biosustain.
8.8.2. Recommendations for Biosustain management

Sharing lessons learned in organic cotton or organic farming platforms

Biosustain has established a remarkable project and an impressive corresponding extension system. The location is a great example for a region where organic cotton fits in very well. Sharing lessons learned (e.g. in the organic cotton community) might also be rewarded by recognition from organic cotton buyers. HELVETAS Swiss Intercooperation will make IFOAM conference organizers aware of the project, so that they may get invitations to speak at relevant conferences.

Impulses and exchanges with regard to the seed sector

The critical shape of the Tanzanian fiber quality cannot be solved by Biosustain alone. The issue has to be picked up by TCB or the cotton stakeholders of Tanzania might suggest TGT to engage in the topic. Other countries have shown a good share of roles with the private sector to even integrate aspects of organic breeding (examples to be found in India) or breeding for sustainability approaches (e.g. nutrient efficiency as outlined by Thorup-Kristensen 2013). Also an exchange with the BioRe project in Tanzania might be fruitful to allow for synergies in the seed sector (joint discussions with private breeders as existing in Uganda, exchange of varieties, voice the concerns in various national cotton platforms).

Integrating ICS data

Given the rapid growth of the project with regard to the number of farmers the ICS files are well managed, which is proven by the fact of the organic certificate. Nevertheless there is room for improvement in bringing the data streams together (ex-ante data for the certifier with the ex-post data on warehouse/gin level). This would allow for targeted measures in trainings (identifying particularly strong or weak groups), selecting good farms for farmer field schools and internal evaluations regarding the efficacy of special measures in the production technology (plant protection, weeding, spacing, etc.)

Up-scaling of the ICS to electronic systems or creating interfaces between COMPACI and organic data collecting streams

ICS systems for more than 3’000 farmers run solely on excel files reach the upper limit of efficient management. It is recommended that Biosustain looks into the meanwhile existing professional ICS softwares like e-cert®, farmforce®, etc to reduce the administrative burden and to allow for real time data transfer via tablets or smartphones. Since a similar system has been started for the COMPACI impact assessments, it is recommended to seek their engagement in helping harmonizing the data collection and processing methods.

Exploring the biodiversity aspect as additional sales argument

Various regions of the Manyoni and Itigi farmers are adjacent to national biodiversity hotspots. A national fund for compensating for elephant damages exists. It is recommended that Biosustain is mapping how relevant this aspect might be for the various farmer groups and whether emphasizing this particular aspect might be fruitful as additional strong sales argument for certain organic cotton buyers. It has to be noted that the fact that the cotton is rainfed already qualifies the Biosustain cotton for a good ecological profile. The biodiversity notion may be another tailwind argument for specific buyers (e.g. outdoor wear clothing companies, who are particularly concerned about biodiversity issues and whose cotton material flows are on a scale, that they allow sourcing from individual projects – examples are VauDe, Fjällräven, Mountain Equipment, Northface, Mammut, etc.)

Exploring gender opportunities

The high participation of female farmers is one of the very positive unintended (or at least not prioritised) effects of the project. Backboned by the interesting finding of the evaluation visit, that female farmers can be recognized lead farmers of their FBG and also show impressive agronomic results, this impulse might be highly fruitful. Ultimately also the national poverty reduction strategy paper (IMF 2006) identifies women in agriculture as relevant issue for development.

The fact that there is no handling of hazardous agro-chemicals in organic cotton makes this production system particularly interesting for women, who also have a lot of other household duties. Experiences from other organic cotton projects show that women tend to follow extension recommendations more closely, but that they may require some specific attention to be enabled to joint trainings.

Remains of women groups based on previous activities by the Government (as the interviewed case of the “sunflower” group showed) might be a great potential for efficient outreach. Biosustain is invited to link up with the local Helvetas team in Singida to explore how this potential can be tapped into. There might also be other synergies with the local HELVETAS team in organic farming activities like joining forces for marketing organic products locally or shared training efforts.
Teaming up with the Tanzanian small industries development organization (SIDO)

Some crop rotation products like sesame, sunflower, millet, green gram may reach premiums in the organic market, but they may require certain simple processing steps to access them. Biosustain may seek exchange with SIDO to explore whether there is room for such a project approach. The Singida branch of SIDO is particularly open, professional and interested to explore organic products, because demand for such products is picking up even in mid-size cities of Eastern Africa (e.g. by Hotels, Restaurants, canteens, individual processors).

Specific loan programm with NMB / Rabobank

Biosustain is already in contact with NMB and their stakeholder Rabobank for various financial issues regarding the Biosustain financement. On top of that it might be considered to create a special programme for partnering farmers aiming to help the project farmers increase their cotton acreage (the ratios between farm size and organic cotton acreage still allow for an intensification of the cotton part in the rotation without harming sustainability or diversification ideas – see also Annex 1 for exemplary cotton/farm size ratios). The interviewed farmers suggested this measure by themselves and would see that as supportive measure to help them engage. The ICS track record would help to make a hurdle of eligibility aiming to bring only suitable farmers into such a programme. Thus loan default risks can be reduced.

8.8.3. Recommendations with regard to the production technology

Room for improvement in plant protection

The interviewed farmers were wondering about the efficacy of the bio-pesticides applied. From the short visit it could not be clarified whether this is an issue of the product OR an issue of application time and technology. The short and random field visits revealed not a very high, but still noticeable infestation by pink bollworm, whereas the visible mealy bug infestation may not be sufficiently critical to justify specific actions.

It is recommended to explore the following options:

- Most interesting is the collaboration with local sugar producers to find ways to package molasses in small volumes to allow for the low-cost roll-out of molasses traps. This might also be an opportunity for a specific SME to enter into the market, because this measure is also interesting to COMPACI farmers or even conventional cotton farmers.

- Integration of attraction plants like okra or hibiscus via strip cropping. There is a proven efficacy for American bollworm which some farmers reported to be relevant. Some sorghum or millet plants can be integrated into these strips to act as bird perches. The random field visit showed that the agro-ecosystem is still highly diversified so that birds and beneficial insect as potential predators of pests are abundant.

- In combination with the above mentioned low cost methods, it might be worthwhile to check, whether pheromone traps are worthwhile (check price vs. local effectiveness). Either for scouting or even for a systematic catch (the latter one might be too expensive).

- Consider to change of the bio-pesticide product from a Neem based to an organic pyrethroid. Particularly Pyrethrum EW 5 or EC 5 might be more appropriate for the pest complex of Singida region than the utilized one. On top of that the mentioned Pyrethrum product is produced in Kenia and may have a reasonable local price.

Improvements in weed management

As the gross margin calculation for the project showed (see chapter 5.1.2) and as identified by ICAC 2013 in general, weed management is one of the main factors in the cost of production of cotton. Experiences from other organic cotton projects show the relevance of proper weeding timing. The random field visit and the visit of the trial plot in Singida gave hints that the fields are weeded very properly. Thus there might be room for emphasizing timing and prioritisation (younger stages, weed size up to 5-10 cm, to be given higher priority than in later stages and in row-weeding to be given higher priority than between rows) to achieve a better cost efficiency.

Strip cropping particularly with legumes may be a reasonable action to improve weed management. Trials with Mucuna pruriens as possible precursor crop before cotton should be conducted to check, whether this could reduce weeding efforts tremendously. It could have additional beneficial side-effects on microbial soil activities. The
limiting factor might be seed cost, but it could be a simple, but effective measure to provide such green manuring and weed management seeds by Biosustain.

Identification of main mistakes of newcomers
As shown in chapter 5.1.2 yields of “newcomer farmers” are strikingly low. The short evaluation visits did not allow for a credible and thoughtful identification of the main factors contributing to that. Thus it is recommended to give the local extension coordinators the task to systematically identify the e.g. 3 main mistakes of newcomers responsible for this big difference in yields. In outreaching to new farmers in the new season one could try to address these three factors thereby avoiding to run into these limitations even before the first systematic trainings start.

Overall the author acknowledges that Biosustain has entered into a new era of collaboration with COMPACI and thus has to focus on managing the rapid growth of farmer numbers and the corresponding extension system. Additional pilot activities that “tie up” management capacities may only be taken up after careful consideration of necessary resources. To pursue the recommendations given thus has to be carefully reflected based on available management resources.

8.9. Conclusion regarding strengths and weaknesses of the approach
Original question according to ToRs:

What are the strengths and weakness of the project and the benefits and the downsides of the approach as used in the project?

Major strengths are the fact that the project helped Biosustain to enter into this remote region that turns out to be very favourable for organic cotton production. Furthermore the project managed to combine productivity increase with sustainability aspects, which is a challenge for many other cotton producers. As great asset the project shows that organic cotton production systems can be agronomical highly competitive and thus fit favourably into national cotton strategies, if the surrounding production conditions (availability of biomass, manure, soils, labour hands) are suitable.

Another very “modern” challenge of agricultural value chains is picked up by the project approach: – the establishment of a model to tie farmer groups to a private sector based company. Although necessary capacities for an effective extension system could be established in remarkably short period of time, the project duration does not allow to establish FBGs whose interaction goes far beyond joint training and ICS groups. As further weakness the project approach seems to require a high management effort for a comparably small and short project. Although short, the evaluation visit allowed to identify several aspects, where there might be room for improvements on the level of the project approach, Biosustain management and production technology.
9. REFERENCES

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BST 2013b: Biosustain / Procotton Year 2 Implementation Plan (April 2013 – 2014)
CFC 2011: Procotton: Improving productivity and marketing of cotton through strengthening selected producer organizations in Eastern Africa (CFC/ICAC 40). CFC Amsterdam, Netherlands. 01. September 2011 (also referred to in this report as “project document”).
ICAC TFIC 2013: Report of the Task Force on Cotton Identity Programs to the 72nd Plenary Meeting of the ICAC. Cartagena September 2013
Solidaridad 2014: Terms of Reference for End evaluation ProCotton project. Solidaridad March 10, 2014
Thorup-Kristensen, K. 2013: Combining agronomic and breeding approaches for improved nutrient use efficiency In: Conference for breeding for Nutrient Efficiency - Göttingen, Germany, 24 – 26 September 2013. Conference within the EUCARPI NUE-Crops programme of the EU.
**Methodical remark:** Analysing the gross margin of field crops via group interviews reveals highly interesting aspects regarding the differences in the production technology between several farmers. The resulting gross margin figures reflect major tendencies and trends, but nevertheless cannot be used for scientific purposes, because the farmers joining the interview during the short evaluation visit were at random and not systematically chosen (e.g., on the basis of ICS performance data). The interesting aspect is, that the depicted Manyoni farmers are all long-term partners of the Biosustain project, while all Itigi farmers are new. Thus the significant difference in productivity proves the effectiveness of the Biosustain extension system well.

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<tr>
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<th>Farmer 2</th>
<th>Farmer 3</th>
<th>Farmer 4</th>
<th>Farmer 5</th>
<th>Mean value per ac</th>
<th>Farmer 1</th>
<th>Farmer 2</th>
<th>Farmer 3</th>
<th>Farmer 4</th>
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# Annex 2: Gross Margin Comparison of Organic and Conventional Cotton According to BST Data

Data from BST 2014 adjusted

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<th>Organic Quantity</th>
<th>Conventional Amount (TZS)</th>
<th>Organic Amount (TZS)</th>
<th>Conventional Amount (USD)</th>
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</table>

| Expected yield | 650 | 720 |
| Farm gate price | 700 | 750 | 0.45 | 0.48 |
| Revenue TZS / ac | 455'000 | 540'000 | 293.48 | 348.30 |
| Gross margin TZS / ac | 80'100 | 191'900 | 51.66 | 123.78 |
## ANNEX 3: RESULTS OF PARTICIPATIVE SWOT ANALYSIS

The author and the Biosustain team conducted a joint SWOT analysis for Biosustain and the project on June 06, 2014. The results were slightly reformulated to improve the understanding for the reader.

<table>
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<th>AREA</th>
<th>STRENGTHS</th>
<th>WEAKNESSES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inputs</strong></td>
<td>• Abundance of biomass and manure for fertilizing available in project region</td>
<td>• Erratic rainfalls, water stress situations, no drought insurance yet</td>
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<td></td>
<td>• Organic quality seed supply by BST</td>
<td>• Limited access to finance for farmers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Cotton varieties used may need improvement with regard to micronaire</td>
</tr>
<tr>
<td><strong>Production</strong></td>
<td>• Selected location has many advantages as compared to other organic cotton areas: available land, organic fertilizers, potential for productivity increases, etc.</td>
<td>• Undercritical productivity of new farmers</td>
</tr>
<tr>
<td></td>
<td>• Diversification gives good options</td>
<td>• Plant protection measures leave room for improvement</td>
</tr>
<tr>
<td><strong>Marketing</strong></td>
<td>• High motivation and loyalty of farmers, no pirate buying</td>
<td>• Staple length produced is a category where it has a lot of competition in the organic market</td>
</tr>
<tr>
<td></td>
<td>• Potentially very competitive price (only 10% premium)</td>
<td>• Organic markets insufficient penetrated</td>
</tr>
<tr>
<td></td>
<td>• Flexibility to offer CmiA as well as organic</td>
<td></td>
</tr>
<tr>
<td><strong>Extension and ICS</strong></td>
<td>• Proven increase of productivity</td>
<td>• Many stakeholders and changes (referred to in past, was streamlined for the future)</td>
</tr>
<tr>
<td></td>
<td>• Cascading system now consolidating</td>
<td>• ICS data not used for extension and ICS management leaves some room to be streamlined</td>
</tr>
<tr>
<td></td>
<td>• Demo plots under development (with COMPACI)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• ICS lead farmers act as internal inspectors in “other villages”</td>
<td></td>
</tr>
<tr>
<td><strong>Group organization</strong></td>
<td>• New contract approach reveals good vision and promises progress including access to finance</td>
<td>• New FBGs did not have much time to develop institutionally due to short project duration</td>
</tr>
<tr>
<td><strong>Management / company</strong></td>
<td>• New outlook with new partners (Semer, COMPACI)</td>
<td>• Limited financial capacity, dependant on expensive loans</td>
</tr>
<tr>
<td></td>
<td>• Experienced and motivated team</td>
<td>• High transaction costs</td>
</tr>
<tr>
<td></td>
<td>• Well integrated into and accepted by the national cotton community (GOs, NGOs, other ginning companies)</td>
<td>• Many stakeholders and a lot of efforts to maintain the network with gvt and NGO cotton stakeholders (eg high transaction costs for price negotiations with Government, etc.)</td>
</tr>
<tr>
<td><strong>Project</strong></td>
<td>• Very valuable as intermediate step to “bridge” the gaps until COMPACI partnership could develop</td>
<td>• Undercritical support volume and time to achieve relevant steps in group organisation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• High reporting and administration efforts</td>
</tr>
<tr>
<td>OPPORTUNITIES</td>
<td>THREATS</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>• Demand for rainfed cotton from “good agro-ecological zones” will increase by brand retailers -&gt; thus location of project well positioned to cater to them</td>
<td>• Climate change may increase water stress situation</td>
<td></td>
</tr>
<tr>
<td>• Contract farming experience valuable and increasing</td>
<td>• Streamlined cotton regulation might be “diluted” by politics</td>
<td></td>
</tr>
<tr>
<td>• COMPACI promises to become more successful including its public image</td>
<td>• Cotton prices in competition to synthetics will remain a challenge despite all improvements of the cotton image</td>
<td></td>
</tr>
<tr>
<td>• Nature conservation areas might be a bonus in marketing</td>
<td>• Cotton price volatility giving additional stress to ginning sector</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Competition with other crops</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Nature conservation conflicts in areas close to national parks</td>
<td></td>
</tr>
</tbody>
</table>
## 13. ANNEX 4 SCHEDULE OF EVALUATION VISIT

<table>
<thead>
<tr>
<th>DAY</th>
<th>DATE</th>
<th>STAKEHOLDERS</th>
<th>TOPIC</th>
<th>LOCATION</th>
<th>OVER NIGHT STAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>MO</td>
<td>02</td>
<td>BST, COMPACI</td>
<td>• Status of TZ cotton sector particularly contract farming, conservation agriculture, organic and CmiA approach&lt;br&gt;• Relation between ProCotton and COMPACI&lt;br&gt;• ICS data analysis&lt;br&gt;• Elaborate detailed plan for field visit</td>
<td>Singida</td>
<td>Singida</td>
</tr>
<tr>
<td>TU</td>
<td>03</td>
<td>Field day Itigi</td>
<td>• Group discussion with FBGs of project&lt;br&gt;• Area coordinator BST&lt;br&gt;• District cotton inspector TCB</td>
<td>Itigi</td>
<td>Manyoni</td>
</tr>
<tr>
<td>WE</td>
<td>04</td>
<td>Field day Manyoni</td>
<td>• Group discussion with FBGs formed already in 2007&lt;br&gt;• Field visit&lt;br&gt;• Extension officer BST</td>
<td>Manyoni</td>
<td>Singida</td>
</tr>
<tr>
<td>TH</td>
<td>05</td>
<td>DBB, BST</td>
<td>• Visit of demo plot in Singida</td>
<td>Singida</td>
<td>Singida</td>
</tr>
<tr>
<td>FR</td>
<td>06</td>
<td>BST, DBB</td>
<td>• Discussion of field day results&lt;br&gt;• Joint SWOT analysis</td>
<td>Singida</td>
<td>Singida</td>
</tr>
<tr>
<td>SA</td>
<td>07</td>
<td>TCB (Zonal Director Western Zone)</td>
<td>• (Transfer to Mwanza)&lt;br&gt;• Status of TZ cotton sector&lt;br&gt;• Wrap-up with BST in Mwanza&lt;br&gt;• Gross margin discussion for conventional cotton</td>
<td>Mwanza</td>
<td>Mwanza</td>
</tr>
<tr>
<td>SU</td>
<td>08</td>
<td>TACOGA (not confirmed)</td>
<td>• Integrating perspective of cotton farmers’ Association&lt;br&gt;• (Transfer to DAR)</td>
<td>Mwanza</td>
<td>DAR</td>
</tr>
<tr>
<td>MO</td>
<td>09</td>
<td>BST CEO TGT</td>
<td>• Project achievements and outlook&lt;br&gt;• Stakeholder discussion and outlook to TGT projects and production technology</td>
<td>DAR</td>
<td>DAR</td>
</tr>
<tr>
<td>TU</td>
<td>10</td>
<td>RLDP, Alliance Ltd Solidaridad</td>
<td>• Stakeholder discussions</td>
<td>DAR</td>
<td>Return flight</td>
</tr>
<tr>
<td>WE</td>
<td>11</td>
<td>Solidaridad, NL</td>
<td>• Debriefing&lt;br&gt;• Discussion of Solidaridad approach</td>
<td>AMS</td>
<td>Return flight</td>
</tr>
<tr>
<td>TH</td>
<td>19</td>
<td>Solidaridad, NL</td>
<td>• Report compilation</td>
<td>Zurich</td>
<td>Zurich</td>
</tr>
</tbody>
</table>