

COFFEE AND PROSPERITY A PERFECT BLEND

THE COFFEE PARTNERSHIP FOR TANZANIA
FINAL REPORT



CPT
Coffee Partnership for Tanzania

KFW DEG

BILL & MELINDA
GATES foundation

INTRODUCTION – THE COFFEE PARTNERSHIP FOR TANZANIA

Since 2012, the Coffee Partnership for Tanzania (CPT), a public-private partnership managed by DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH, one of Europe’s largest development finance institutions, has been empowering male and female farmers to take full advantage of the opportunities arising from the production of coffee in Tanzania. The project was initiated by an US\$ 8 million grant from the Bill & Melinda Gates Foundation and received substantial co-funding in the amount of US\$ 11 million from six private sector partners. The Tanzanian Ministry of Agriculture, Livestock and Fisheries, the Tanzania Coffee Board, the Tanzania Coffee Research Institute (TaCRI) and the non-governmental organizations (NGOs) Café Africa, Solidaridad and Hivos were involved as strategic partners and have supported the CPT’s implementation from the outset.

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The goal of the CPT is to increase the net income from coffee for 90,000 smallholder coffee farmers in Tanzania, largely driven through productivity and quality increases, thereby improving the livelihood of an estimated 540,000 Tanzanians living in rural areas.

The project was originally designed to be implemented by three private sector partners – Tutunze Kahawa Ltd. (TKL), Coffee Management Services Ltd. (CMS) and the private foundation Hanns R. Neumann Stiftung (HRNS). In 2014, the project’s implementation structure was expanded to add three new partners – Dan & Associates Enterprises Ltd. (DAE), Olam Tanzania Ltd. (OLAM) and Tembo Coffee Company Ltd. (TEMBO) – and thus increasing the CPT’s targeted scale.



All six implementation partners support the partnership with large investments in the promotion of organizational development, qualification for smallholder farmers, improvements of market linkages and investments in the local coffee infrastructure. Through these holistic measures the CPT aimed at promoting coffee productivity and quality, and thereby ultimately increasing the net income from coffee for smallholder farmers.



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THE CPT IN A NUTSHELL

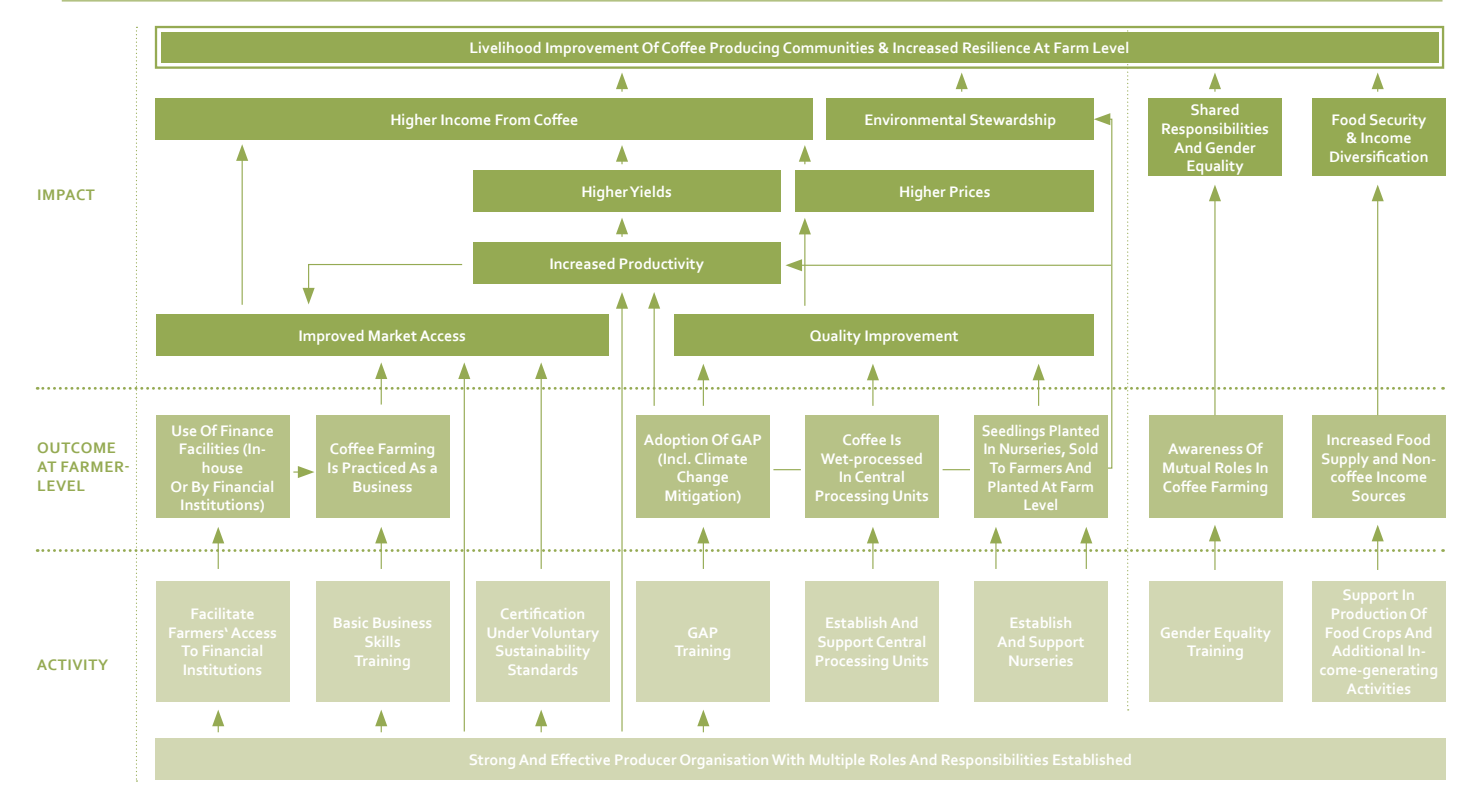
The CPT has aimed to improve the livelihoods of small-scale coffee producers through the combination of the following three objectives:

Increasing productivity of coffee production in an economically, environmentally and socially sustainable way

Improving prices paid to coffee producers through the promotion of organizational development, coffee quality and linkages to strong reliable markets

Diversifying income sources, increasing food supply and enhancing the sustainability of the overall project through social and environmental measures

The associated activities and anticipated farm-level outcomes and impacts from the CPT's implementation are laid out in the project's Theory of Change.



KEY CPT RESULTS

100,011

FARMERS TRAINED IN AGRONOMY

35,084

FARMERS CERTIFIED

47,841

FARMERS DELIVERING TO WET MILLS

CHANGE IN COFFEE YIELD
OF ARABICA

+22%

FARMERS SUPPORTED
SINCE 2012¹CHANGE IN COFFEE INCOME²

-5%

ARABICA FARMERS SUPPORTED
SINCE 2012

+104%

ARABICA FARMER SUPPORTED
SINCE 2014

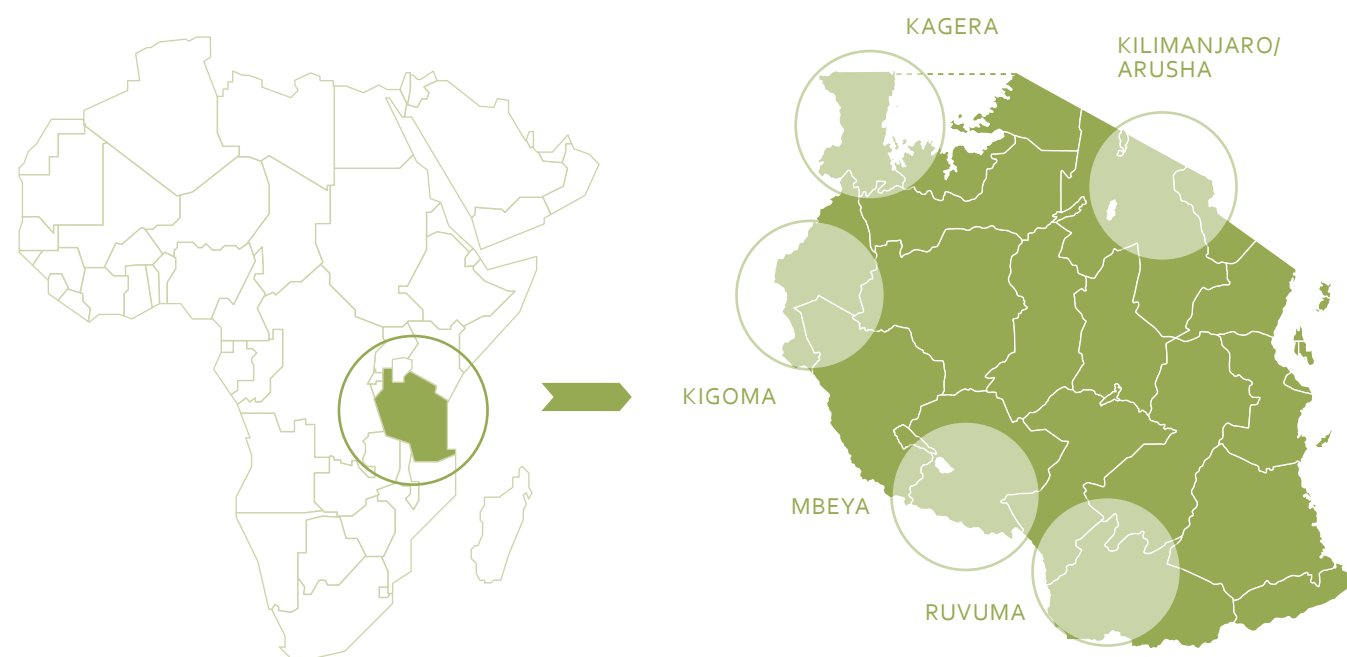
+162%

ROBUSTA FARMERS SUPPORTED
SINCE 2014

¹ Further productivity and coffee income increases are expected in future years as the adoption of agronomy best practices impact coffee tree production and coffee quality.

² Potential increases in net income from coffee for the farmers supported since 2012 have been offset by a steep coffee world market price decrease.

REGIONAL FOCUS



THE CPT – ACHIEVING SCALE, SCOPE AND SPEED IN SUPPORT OF COFFEE FARMERS

From the outset, the CPT was designed as a value chain and commercially-driven partnership with strategic support from the Tanzanian public sector and non-governmental organizations. This approach has

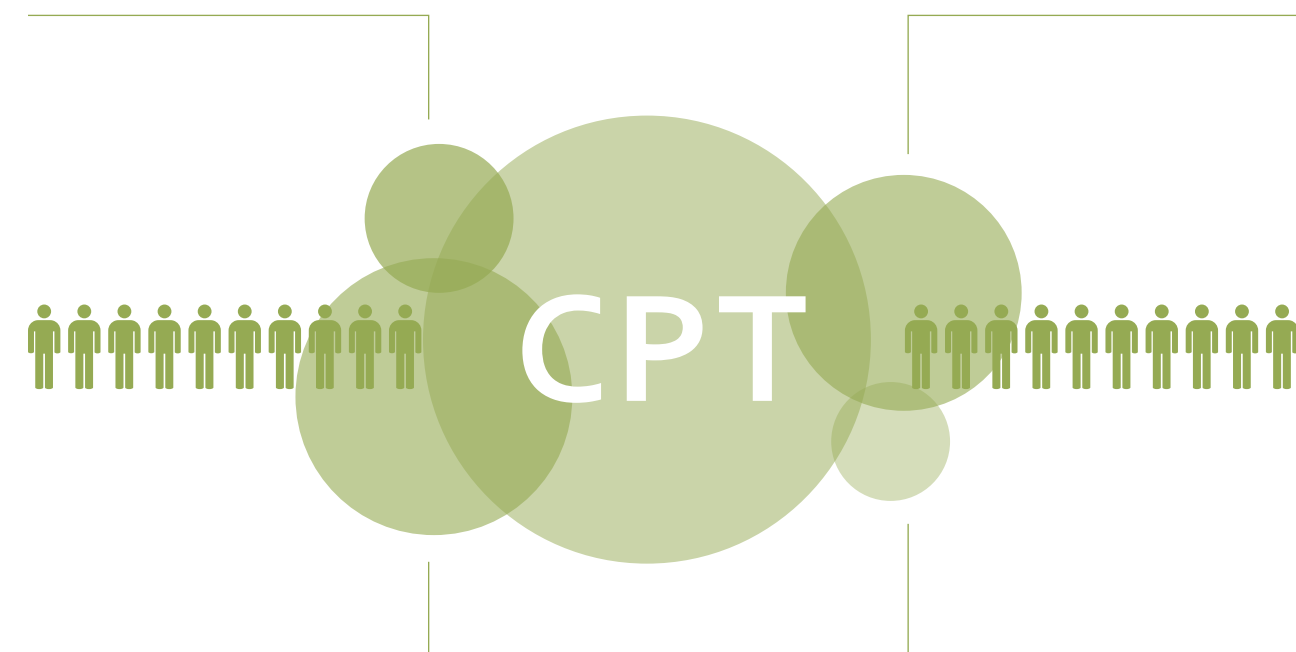
allowed the project to leverage large private-sector investments in the coffee supply chain. In order to generate maximal impact, the CPT has successfully provided for:

Use of Existing Structures and Relationships

All six CPT implementation partners already had established a presence in Tanzania and were familiar with the sector prior to their CPT engagement. Rather than building the structures and processes from scratch, this provided for the efficient use of existing resources and personnel.

Effective Leveraging and Scaling

The existing structures could be effectively used to accelerate and expand extension (and other) services to a substantial scale in a very short time. The CPT gradually expanded to support more than 100,000 coffee producing households over the course of four years.



Promotion of Strategic Learning Based on Different Business Models

DEG opted to work with different service provider models (rather than just one) to allow for maximal scale and to foster competition between different approaches. While all implementation partners, both those that joined in 2012 and those that followed in 2014, share the common goal of improving productivity of coffee growing and coffee quality, the CPT framework hosted diverse philosophies to achieve that goal. This allowed for strategic learning and an evaluation of the successes, challenges and best practices.

Enablement of Broader Infrastructure Investments and Spill-over Effects

The extensive scale of the CPT has also helped coffee companies justify larger investments in the local coffee supply chain, such as nurseries, coffee mills, training centers and warehouses, which will benefit the Tanzanian coffee sector overall.

THE CPT IMPLEMENTATION PARTNERS

ORGANIZATION PROFILES



Coffee Management Services Ltd. (CMS) is a leading agri-business service provider that reaches over 130,000 farmers in East Africa including Tanzania. The company offers farm management services, marketing, certification compliance, environment impact assessment, and access to inputs among other services.

Region
Mbeya, Ruvuma

Number of Coffee Producers
Supported through the CPT
18,503



Hanns R. Neumann Stiftung (HRNS) is a private foundation that supports environmental programs at its doorstep and runs grassroots projects funded by dedicated private companies and public donor organizations to support smallholder coffee farmers all over the world. The core of Hanns R. Neumann Stiftung's work is sustainable development through empowerment and capacity building of smallholder farmers and their organizations.

Region
Arusha, Kilimanjaro, Mbeya

Number of Coffee Producers
Supported through the CPT
25,223¹



Tutunze Kahawa Ltd. (TKL) specializes in the trade of high quality, fully-washed Arabica coffee purchased directly from farmer groups. Tutunze Kahawa Ltd. is a subsidiary of Ecom Agroindustrial Ltd. in Tanzania. Ecom has more than 50 years of experience in the coffee sector, working with more than 100,000 farmers in East Africa alone.

Region
Kigoma, Ruvuma

Number of Coffee Producers
Supported through the CPT
25,620



Dan & Associates Enterprises Ltd. (DAE) is a Tanzanian family-owned company located in the Mbinga District (Ruvuma region). The company is a national leader in buying and selling mild Arabica coffee and has more than ten years of experience in working with smallholder farmers. In 2013 Dan & Associates Enterprises Ltd. adopted the C.A.F.E. Practice certification system.

Region
Ruvuma

Number of Coffee Producers
Supported through the CPT
10,863



Olam International (OLAM) is a leading agri-business operating in 65 countries. OLAM's operations in Tanzania began in 1994. Since then, the company has established a significant presence in the country, particularly in the integrated supply chain from procurement to processing and trading of cocoa, cotton, sesame and green coffee products. OLAM directly sources Robusta coffee from over 5,000 farmers in the Kagera region, and is currently expanding its farmer base in the region.

Region
Kagera

Number of Coffee Producers
Supported through the CPT
5,208



Tembo Coffee Company Ltd. (TEMBO) is a registered limited liability company that has been operating in Tanzania since 2012. TEMBO is part of Westrock Group, a U.S. based company founded in 2009. Tembo Coffee Company Ltd. connects the world's specialty coffee market to the Southern Highlands region of Tanzania, which produces over half Tanzania's Arabica coffee.

Region
Mbeya

Number of Coffee Producers
Supported through the CPT
10,809

¹ for HRNS, this refers to households

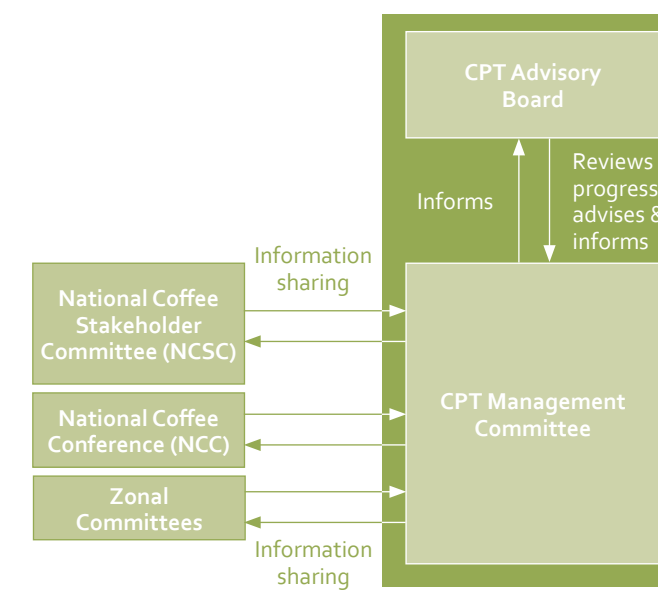
PROMOTING COFFEE STAKEHOLDER EXCHANGE AND COORDINATION IN THE TANZANIAN COFFEE SECTOR



In the four years of its implementation, the partnership relied on comprehensive stakeholder collaboration and in-depth exchange to ensure success. The project engaged regularly with the Tanzanian Ministry of Agriculture, Livestock and Fisheries, the Tanzania Coffee Board, the Tanzania Coffee Research Institute and other stakeholders on the CPT's Advisory Board which discussed issues pertinent to the CPT and Tanzanian coffee sector as a whole. Under this model, the advice of farmer representatives, Tanzanian policy

makers and regulators, traders, roasters, researchers and NGOs was reflected in the implementation and monitoring of the Coffee Partnership. Project implementation partners and DEG also shared information, achievements and challenges with the National Coffee Conference and Zonal Committees in the various coffee production zones. Additionally, the CPT engaged with the National Coffee Stakeholder Committee from which critical sector issues were fed back to the CPT implementation partners and DEG.

THE CPT'S STAKEHOLDER ENGAGEMENT



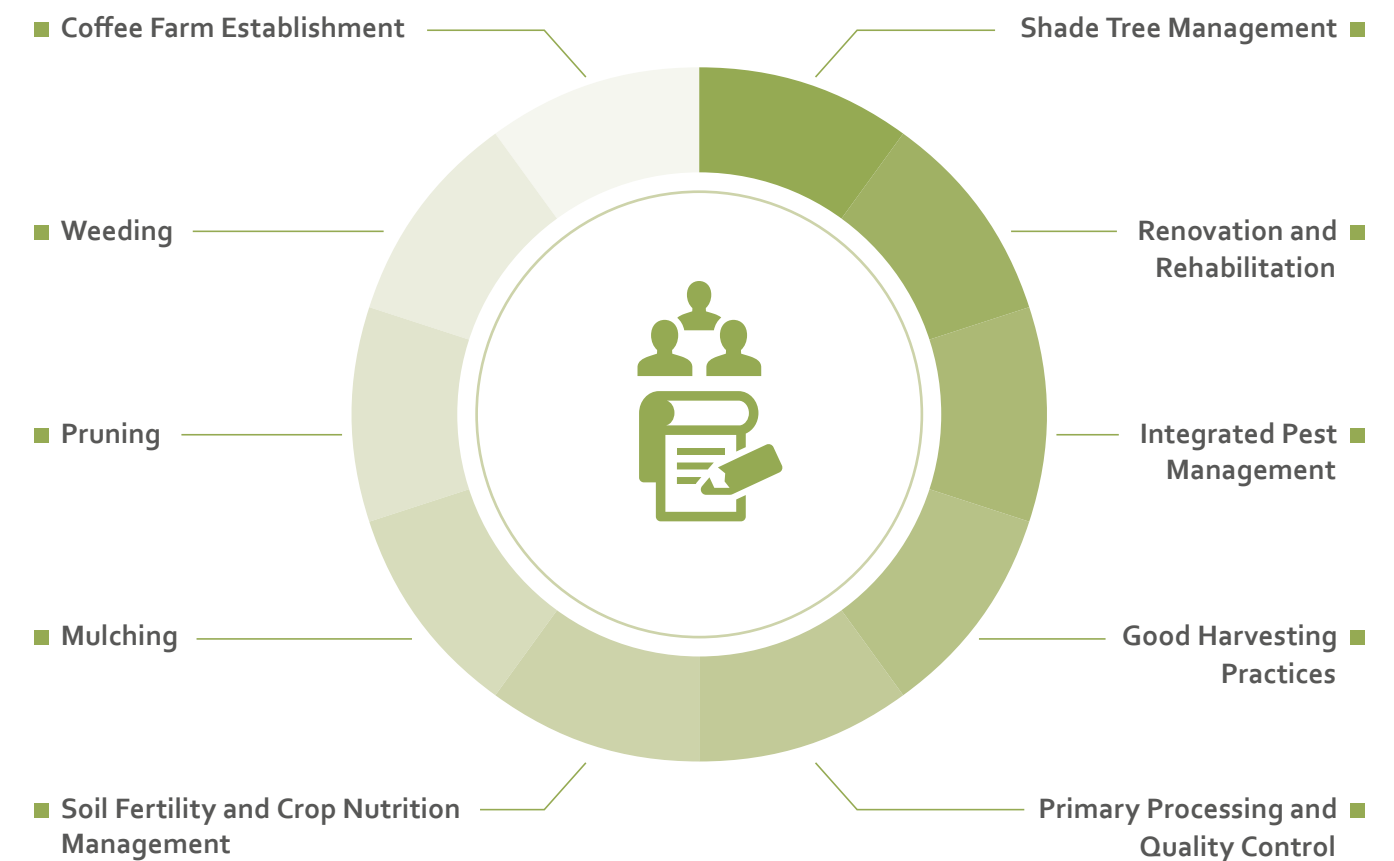
THE CPT'S ACHIEVEMENTS

SMALLHOLDER QUALIFICATION AND ADOPTION OF GOOD AGRICULTURAL PRACTICES

The CPT project deployed different extension approaches to train coffee growers. Trainers included agronomists, extension officers and lead farmers who delivered agronomic, organizational, business and gender role related knowledge to farmers. The use of farmer-to-farmer extension approaches and farmer field schools¹ increased the outreach of the project and created a pool of multipliers in the villages. These

multipliers will continue to train their fellow farmers in the future based on the established demonstration plots. Through the CPT, farmer organizations have also gained the capacity to run their own extension systems. The durable effect of qualification measures and the long-term multiplier effect of farmer-to-farmer extension systems ensures a sustainable and lasting impact of the CPT endeavour.

KEY COFFEE GOOD AGRICULTURAL PRACTICES PROMOTED BY THE CPT



"The training by fellow farmers is more practically oriented. They can visit my farm and point out the exact problem facing the crop and if the crop requires pruning, it's done there and then practically."

A CPT SUPPORTED FARMER IN ITETE VILLAGE IN THE MBEYA REGION

¹ The Farmer Field School approach is a capacity building method based on adult education principles, where farmers learn through observation and experimentation in their own fields. This allows them to improve their management skills and become knowledge experts on their own farms. The approach empowers farmers using experiential and participatory learning techniques rather than advising farmers what to do.

A farmer pruning a Robusta tree in the Kagera region

As a result of these training efforts, the adoption rates of all critical good agricultural practices (GAP) have increased. It seems that adoption of the more cost-intensive practices (such as the promotion of soil

fertility and coffee field renovation and rehabilitation) has, however, occasionally come with challenges for farmers.



A CPT training session in the Arusha region

LESSONS LEARNED AND RECOMMENDATIONS:

- The training on GAP needs to be based on farmers' requirements and preferences. Starting at the local level by assessing needs, attitudes, and risks regarding systemic GAP adoption allows for tailoring of training modules to serve a specific population. In addition, training sessions need to be well planned and announced in time to farmers.
- Key drivers of adoption of good agricultural practices are the following:
 - Relevance and farmer need.
 - Delivery method (demo plots, promoter farmers, fields visits, classes, on-site inspections).
 - Consistency and retraining (regular visits and follow-ups are crucial).
 - Clearly communicating the financial benefits of GAP adoption.
 - Focus on quality of training rather than quantity.
 - Showing quick results, e.g. on demo plots, is critical to encourage continued GAP adoption efforts by farmers.

100,011

Farmers trained in agronomy

64%

of farmers adopt at least 50% of key coffee GAP

22%

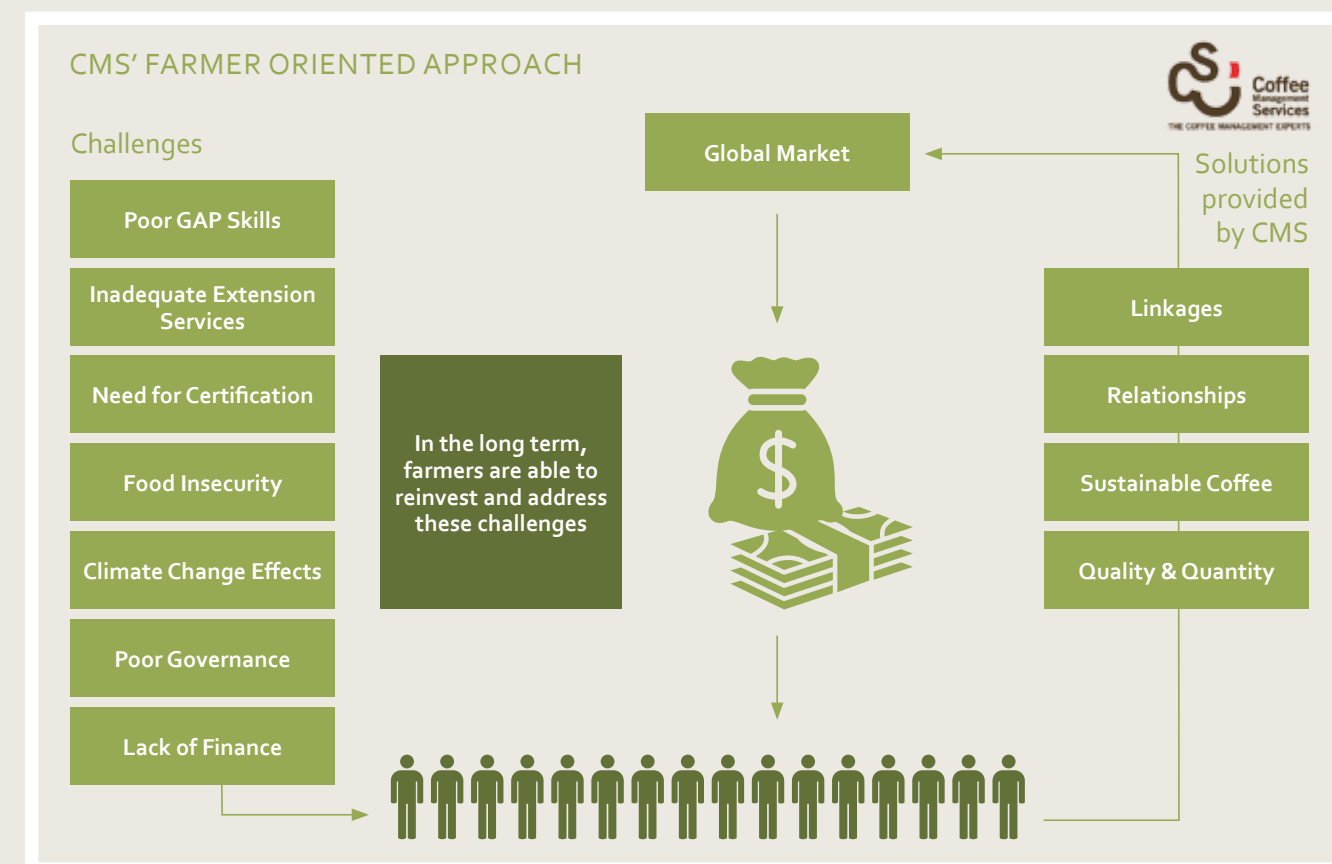
increase in coffee yield (kg/productive tree) for farmers supported since 2012

Putting the Farmer at the Centre - A Key to Success



CMS has been working with farmers on various sustainability interventions in the last ten years and has learned that as much as the idea is to provide solutions to the challenges farmers are facing, such solutions cannot be done without their inclusion and engagement. Some of the farmers the company works with have been in the coffee business for over a century. Coffee farming has been passed down generations through a delicate albeit informal training system. It is with this background that CMS views coffee producers as partners in finding sustainable solutions.

CMS brings the farmers to the discussion table with other stakeholders such as roasters, development partners, and regulators and asks the question: what are your objectives? Thereupon, areas of alignment are identified and a common work plan developed to achieve these objectives. Interestingly, the objectives have a strong convergence point... centred on the farmer! An overview on CMS' farmer oriented approach is shown in the figure below.



With farmers as partners, CMS customized its training program to incorporate topics which are highly relevant to farmers through a so-called spot training. During every scheduled training session, a ten minute open session is scheduled in that allows company field officers to address issues farmers are presently dealing with. These range from pests and diseases they are currently seeing on their farms to the trends in coffee prices during the harvest season. This additional session increased the relevance of training sessions and attendance subsequently increased by about 10%.

ACCESS TO FINANCIAL SERVICES AND GENUINE AGRICULTURAL INPUTS

Enabling and providing access to much needed financial services has been amongst the more ambitious undertakings of the CPT's implementation. Due to challenges of moral hazard, which are particularly prevalent in Tanzania's coffee sector, financial institutions have sometimes been reserved to provide coffee-specific loans to farmer groups which prompted the CPT's implementation partners to take a stronger role in financing farmers themselves. At the same time, the CPT has also ensured access to genuine

agricultural inputs at affordable prices by cooperating with reputable input providers.

The CPT's experience with regard to the promotion of financial services has also been strongly shaped by the realization that savings and financial literacy are two critical elements to sustainably improving farmers' and farmer groups' investment capacity. Credit facilities are rarely available, and when they are, they come with substantial costs and risks for farmers.

LESSONS LEARNED AND RECOMMENDATIONS:

- Coffee traders and exporters are in a position to offer better loan terms than financial institutions typically do (at least in Tanzania), as they can combine their coffee buying activities with loan assessment and loan monitoring procedures for which financial institutions need to hire dedicated staff.
- The timely availability of financial instruments and agricultural inputs is crucial for success.
- It might prove most effective to establish farmer groups administered saving schemes before linking farmers to financial institutions. This would create

a positive track record, which, in return, facilitates access to credit from financial institutions for more "mature" farmer organizations.

- The promotion of savings schemes is valuable in itself and reduces reliance on costly credit products. At the same time, existing saving schemes will most likely not be able to satisfy the large amount of investment required in the Tanzanian coffee sector. Therefore, smallholder credit will remain an important pillar of further development in the coffee sector, at least in the mid-term.

US\$ **14,204,282**

disbursed or facilitated by the CPT implementation partners to farmer groups as post-harvest crop collection loans to support the coffee marketing process

US\$ **1,508,425**

disbursed or facilitated by the CPT implementation partners to farmer groups as pre-harvest loans to enable farmers to invest in agricultural inputs

US\$ **124,754**

disbursed or facilitated by the CPT implementation partners to farmer groups as long-term capex loans to enable larger farm or equipment investments

US\$ **1,239,375**

saved, enabled through farmer group administered savings schemes

28,992

farmers acquired inputs with the help of finance facilities

Soil Fertility – A Critical Ingredient for Sustainable Coffee Production. A Case Study and Success Story by Tutunze Kahawa Ltd. in the Ruvuma region



Improving the livelihood of smallholder farmers through higher income from coffee is an aim several public, private and non-governmental organizations have been working on for years. Every coffee growing area has its own characteristics, history and culture. Coffee trees in the Mbinga district are aging, ranging from 30 to 40 years old on average. Furthermore, farmers are applying insufficient or non-genuine fertilizer. Pest outbreaks are common in the Ruvuma region and climate change with longer hot and dry periods as well as intensive rains during a shorter period could decrease coffee yields even further.

Against the backdrop of these regional characteristics, TKL developed a unique model which addresses these challenges in the context of the company's holistic farmer support program which was reinforced by the CPT. Soil and leaf analyses were conducted in cooperation with the Tanzania Coffee Research Institute (TaCRI) as well as Yara Tanzania Ltd. and a recommended fertilizer provided to coffee growers on credit. Farmers supported through the pilot managed to increase their coffee yield by around 100% and to double their income as seen in the below table.

Year	2013	2014	2015	2016*
Members	100	109	100	86
Production (in kg of parchment per farm)	54,190	54,339	46,925	82,508
Type of fertilizer applied	UREA /CAN	UREA /CAN	UREA /CAN	Nitrabor /Yara Milla (optimal applicaton)
Income per farmer through coffee (US\$ per coffee season)	891.28	1,271.99	921.67	1,801.15
Production (in kg of cherry per tree)	1.58	1.45	1.36	2.79

Source: All data collected by TKL

* Year of input finance pilot.

Generally, repayment loyalty amongst coffee farmers is not very high and savings schemes are not yet in place. Nevertheless, TKL achieved a 100% repayment rate for all fertilizer provided through credit schemes.

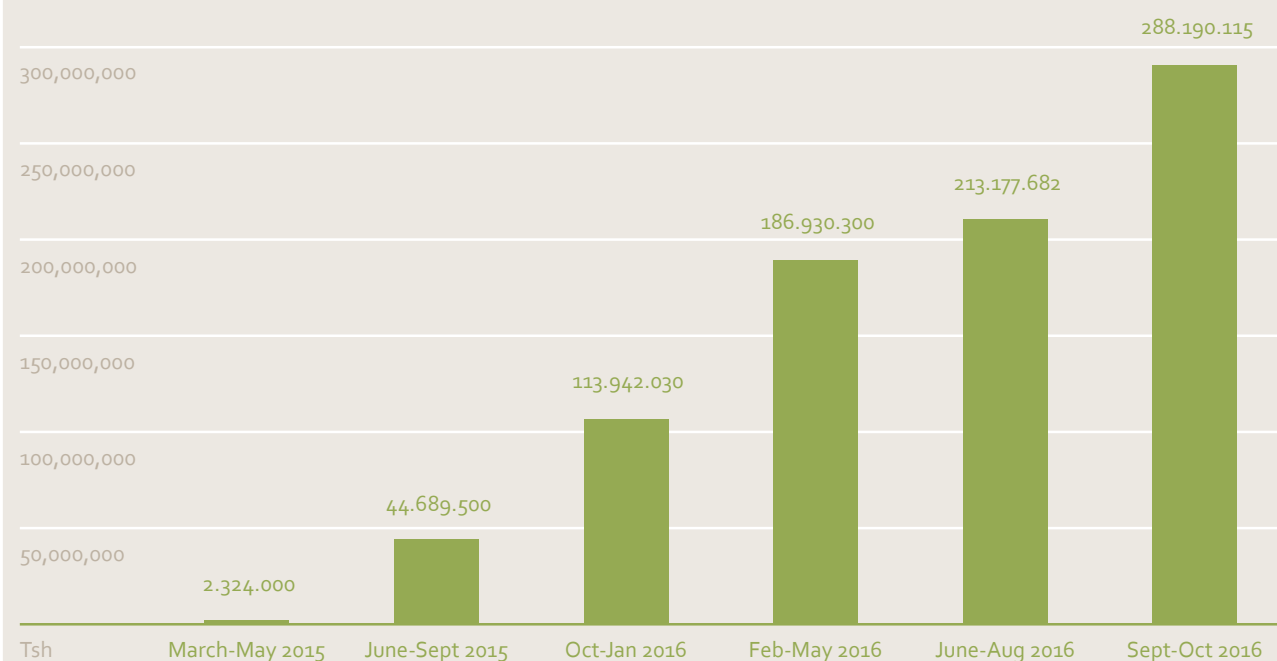
An intensive screening process of farmers was necessary to ensure the success of this pilot project. Good governance in a registered farmer organization as well the provision of business records over previous years were critical criteria. Furthermore, the group had to be well-positioned to produce a minimum volume of high quality fully-washed certified coffee. Lastly the group needed to be fully committed and had to financially contribute to the project from the very beginning. Intensive training by TKL's agronomists as well close monitoring of the performance ensured that the relevant knowledge was transferred to the farmer. Input finance should be linked and feasibly sequenced with coffee farm renovation and rehabilitation activities so that the combination of the two does not become too much of a financial burden to the farmer.



Organizational Development and Community-Building Go Hand in Hand – An Insight into OLAM's Farmer Engagement in the Kagera Region

When OLAM joined the CPT, the company made one of its first forays into direct farmer group management in its coffee operations in East Africa. OLAM's model, shared by many partners in the CPT, was to group farmers geographically, with locally-elected leadership. Good agricultural practices were then promoted through the voluntary support of so-called lead farmers and dedicated OLAM extension officers for each group. Over the life of the CPT, OLAM formed 84 farmer groups and enrolled a total of 5,345 farmers throughout the Kagera region in northwestern Tanzania, with 168 lead farmers and demonstration plots established. Finding ways to facilitate collaboration, communication, and a general sense of community among farmer groups was an interesting challenge for OLAM, as the farmer group model works best when the farmers feel a sense of reciprocity with and responsibility to one another as well as loyalty to OLAM. One surprising way that a sense of engagement and community was bolstered among farmer groups was through Savings & Internal Lending Community Schemes (SILC), led by one of OLAM's local partners, the Tanzanian Association of Environmental Engineers (TAEs).

THE GRADUAL DEVELOPMENT OF THE SILC SCHEMES – SILC GROUP PROGRESS



The Olam Livelihood Charter, a set of eight principles, drove OLAM to grow sustainable supply chains relying on the deepest level of engagement with smallholder farmers across origins and products all over the world. Facilitation of access to finance for OLAM's farmers was a key part of the CPT. Working with TAEs, OLAM introduced small SILC groups, as sub-divisions of existing farmer groups beginning in March 2015. SILC groups with ideally no more than 30 members each wrote their own constitutions, bylaws, and terms of engagement, with an additional focus on gender equity and female representation in financial decision-making processes.

These groups operate based on weekly meetings where all members must contribute at least one share, and any member in good standing can request loans, with community-defined terms, from the group. Once a year, the group "graduates". All loans are paid back into the pot with any interest accrued and the funds are returned to the members depending on the number of total shares purchased. Across 127 SILC groups, TSh 288,190,115 (about US\$ 136,000) had been saved and redistributed in total.

To complement these savings and loans activities, TAEs facilitated a subset of OLAM's good agricultural practice training programs, focused on financial management and literacy, gender equality, and leadership skills. These training programs, conducted in tandem with group advisory sessions and often in close relation to group meetings, boasted a significantly higher attendance rate across the board than OLAM's general good agricultural practice training, which were open to members of larger farmer groups of 60 to 100 farmers each. For each TAEs-directed GAP training module, group attendance hovers around 61% of total farmer base on average, while the attendance rate across all other modules, delivered to larger groups, hovers around 25% of total farmer base.

There are many factors to consider here – such as the timing and scheduling, training content, accessibility to training locations, and even weather and harvest cycle – but the stark difference between trainings administered by TAEs to specific, small SILC groups and trainings delivered by OLAM extension officers provided to larger farmer groups is noteworthy. It can be argued that organizing farmers into small groups and binding them together through systems of responsibility and loyalty was beneficial for the company. The cohesion facilitated in these smaller groups holds an important lesson for OLAM: group organization and community-building go hand in hand.



PROMOTE BUSINESS SKILLS AND FARM PROFITABILITY

In 2014, the CPT introduced farmer record books (FRB) to select farming households to complement the existing monitoring, evaluation and learning framework. The FRB data are recorded by farmers themselves at the time coffee related costs or revenues

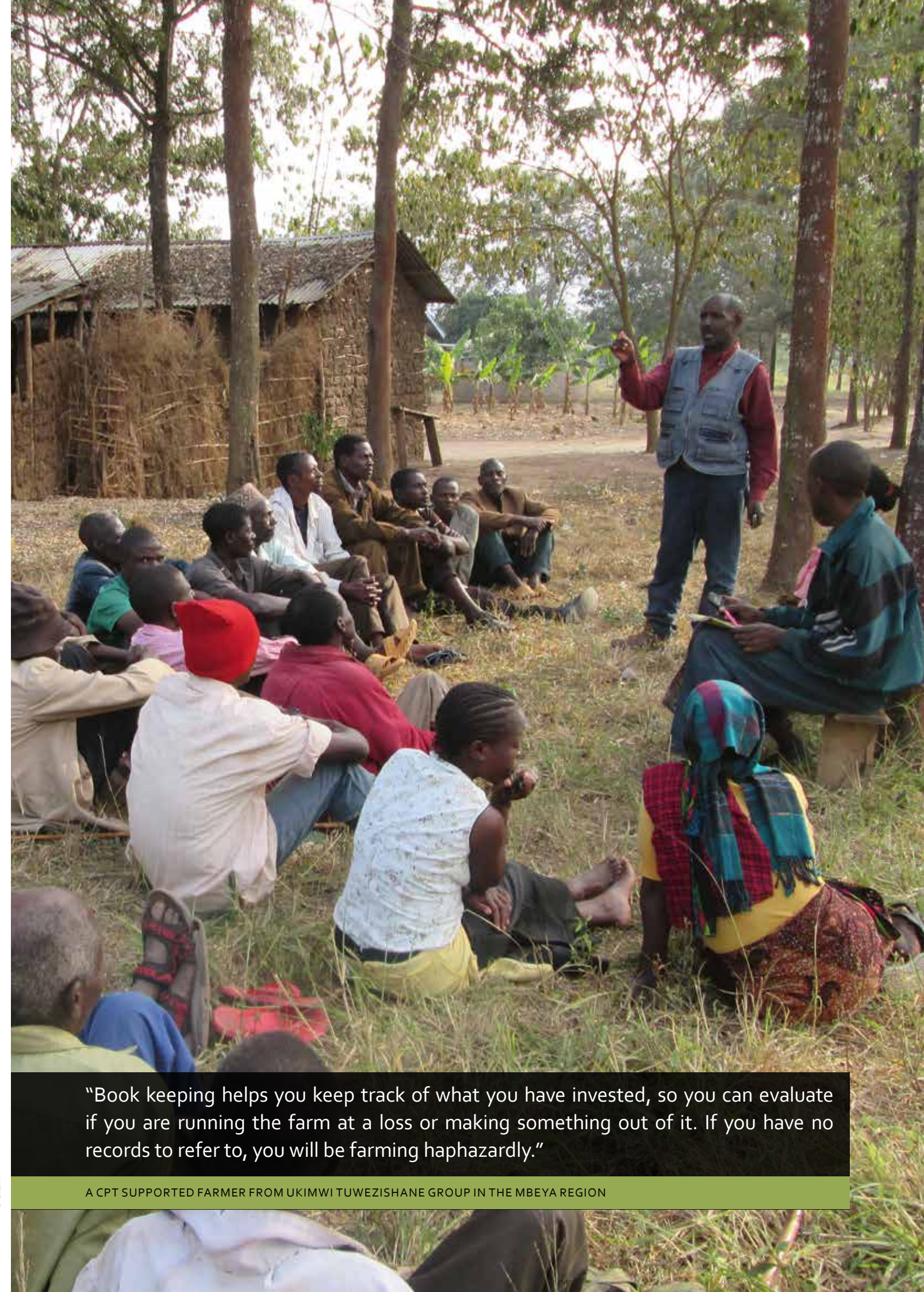
occur. The introduction and gradual improvement of FRBs not only provided an important transmission channel on CPT project progress in the field, but also created invaluable feedback to farmers on how they could improve their production systems.



© Rachel Ambrose/HRNS

LESSONS LEARNED AND RECOMMENDATIONS:

- Due to substantial time gaps, farmers may find it difficult to recall historic information that relates to their farming systems when being surveyed ex-post.
- Therefore, farmer record keeping should be further promoted not only as a data collection method but, maybe more importantly so, as a tool for farmers themselves to learn about the economics and profitability of their farming systems. Such learning should be promoted through individual, periodic feedback, since record-keeping only makes sense for the farmers to undertake if they can analyze the data and receive tailored recommendations and advice based on the data, e.g. in workshops or group discussions. A more educated assessment of production systems also helps farmers realize that investment makes business sense for them.
- Extensive training in financial literacy and follow-up by extension staff is critical to help farmers maintain solid farm records.



“Book keeping helps you keep track of what you have invested, so you can evaluate if you are running the farm at a loss or making something out of it. If you have no records to refer to, you will be farming haphazardly.”

A CPT SUPPORTED FARMER FROM UKIMWI TUWEZISHANE GROUP IN THE MBEYA REGION

COFFEE FIELD RENOVATION AND REHABILITATION

In spite of the limited (spatial) availability of improved planting material and insufficient investment from farmers, the CPT has been successfully promoting the uptake of newly developed, improved coffee varieties that are higher-yielding and resistant to pest and diseases. This was achieved through close cooperation with the Tanzania Coffee Research Institute (TaCRI), the promotion of farmer-owned

and managed nurseries in combination with financial support and close oversight, and by multiplying the newly introduced compact seed variety and reducing the cost per seedling through economies of scale. However, the aging coffee tree stock of many Tanzanian coffee farms will require further efforts to promote coffee field renovation and rehabilitation activities in the country's coffee sector.



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LESSONS LEARNED AND RECOMMENDATIONS:

- In the area of improved planting material, TaCRI- and District-subsidized seedlings continue to constitute problematic signals to farmers who are reluctant to pay prices for coffee planting material which reflect the actual cost of production. As a result, there is currently no privately-organized seed sector that could produce and distribute improved varieties on a commercially viable scale.
- As there is no sufficient supply of improved planting material, it is difficult for Tanzanian coffee farmers to invest in planting material to the extent required.
- The reduction of production cost through economies of scale in company-owned nurseries as well as the strengthening of nurseries owned by farmer groups or individual farmers have been pursued by the CPT implementation partners as the most promising strategies. Farmer group or farmer-managed nurseries may require close oversight and advice at the initial stage.

287

farmer and company-owned coffee nurseries operated and supported

1,790,957

coffee seedlings multiplied and planted at farm level



Coffee Field Rehabilitation and Rejuvenation Promotion by TKL – Investing in Coffee as a Crop of the Future

The age of coffee trees is a limiting production factor as yield is continuously decreasing over the years. Therefore, TKL encourages farmers to rejuvenate the coffee stock by stumping coffee trees. Unfortunately, farmers oftentimes do not see the long-term advantage in rejuvenating but instead rather consider their short-term losses. Therefore, TKL's approach is to first increase the coffee income by fertilizer application to compensate farmers for the losses they might face when rejuvenating their coffee stock. A critical success factor is the gradual rejuvenation of 5 to 10% of coffee trees per year. An additional incentive in rejuvenation is provided by TKL in the so called "1 for 2 strategy". Selected farmer groups whose members are stumping one old unproductive coffee tree are remunerated by TKL with two improved, drought resistant and high-yielding seedlings of the hybrid compact seed variety developed by TaCRI.



TKL believes that the gradual replacement of the old coffee stock with a higher yielding variety coupled with optimal fertilizer application will continue to change the lives of smallholder farmers. TKL has just started promoting this approach and will closely monitor its impact. The company is also interested in collaborating with the local government on the issue of increasing soil fertility. Mbinga's soils have a low pH value which prevents the coffee plant from absorbing all of the nutrients from the fertilizer. Increasing soil fertility is one more factor that can significantly change productivity and measures to do so will be explored further in the future.

ORGANIZATIONAL DEVELOPMENT OF FARMER GROUPS

The CPT partners demonstrated very different approaches to organizing farmers and establishing different forms of farmer organizations. Throughout the CPT, producer organizations have been established, strengthened in governance and formally registered. This allowed them to act more effectively as intermediaries for the provision of extension, financial (credit and savings) and other services and to access higher value markets through improved bulking and their own marketing efforts. Overall, there are very encouraging indications that improved market linkages, higher coffee volumes and qualities, as well as strengthened producer organization structures have enabled higher payments in spite of a globally decreasing coffee price trend over the life of CPT.



LESSONS LEARNED AND RECOMMENDATIONS:

- The amount of agency, independence, and responsibility given to producer groups should be scaled up over time. Full autonomy of farmer organizations may take several years to develop.
- Sustainability of farmer organizations is critical and builds on the following pillars:
 - Bottom-up approach starting with the build-up phase
 - Services offered by the farmer group/value proposition
 - Transparency
 - Ownership
 - Trust
- Developing leadership systems with checks and balances is important to ensure the success of organizational structures in the Tanzanian context.

78,705

farmers organized in well-governed producer organizations

"The Chairperson and Secretary meet with the members and we agree on the amount of the loan to take for inputs. Each member then projects the amount of input he wants and then the group decides the amount to secure for the input."

A CPT SUPPORTED FARMER IN UIJIJINI VILLAGE IN THE MBEYA REGION



Service Delivery through the Organizational Structure Supported by Hanns R. Neumann Stiftung

In Tanzania, there is a scarcity of professional and well-managed farmer-based organizations that have the capacity to explore existing market opportunities and make use of these opportunities to raise efficiency and add value. At the same time, farmers lack the necessary entrepreneurial and agricultural skills and knowledge required to move from subsistence farming to commercial levels.

Against this backdrop, HRNS has addressed the need for viable and commercially oriented farmer organizations, which provide services, such as marketing, extension, access to inputs and finance as well as advocacy. Moreover, the three-tier established structure of farmer organizations (see figure below) served as a way of transferring knowledge to individual farmer households via a farmer-to-farmer extension system and through this ensuring the long-term sustainability of project interventions.



HRNS encourages the active participation of farmers and the member-orientation of the organizational structure through the establishment of Producer Organizations (PO). Apart from having established new farmer groups, HRNS has also strengthened existing groups to improve their governance structure and accountability towards their members by developing and implementing codes of conduct. In addition, HRNS has introduced structural amends to the second-tier organizations including the establishment of business, finance, and disciplinary committees as well as farmer councils, and monitoring committees for internal audits. The apex organization Tanzania Coffee Farmers Alliance (TCFA) has established a transparent member-driven governance structure with the General Assembly as the highest decision-making authority. The aforementioned committee structure is also implemented at the TCFA level and the three committees oversee the operations of the TCFA’s Board of Directors.

This participatory bottom-up approach ensured that the organizational structures are owned by the farmers and as such sustained by these. Farmer organizations have gradually taken up the services provided by HRNS.



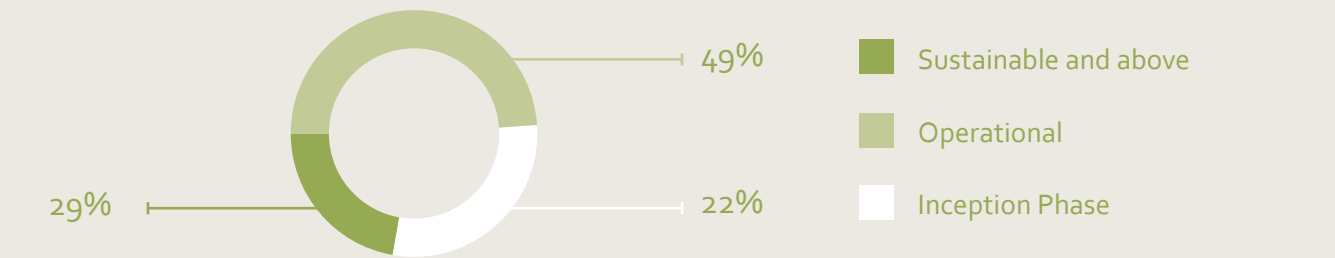
Service Delivery through the Organizational Structure Supported by Hanns R. Neumann Stiftung

The following sustainability factors for farmer organizations have been identified in order to conduct a comprehensive interactive assessment of their sustainability status, identify the major training needs and help them to define strategies for improving their own structures:

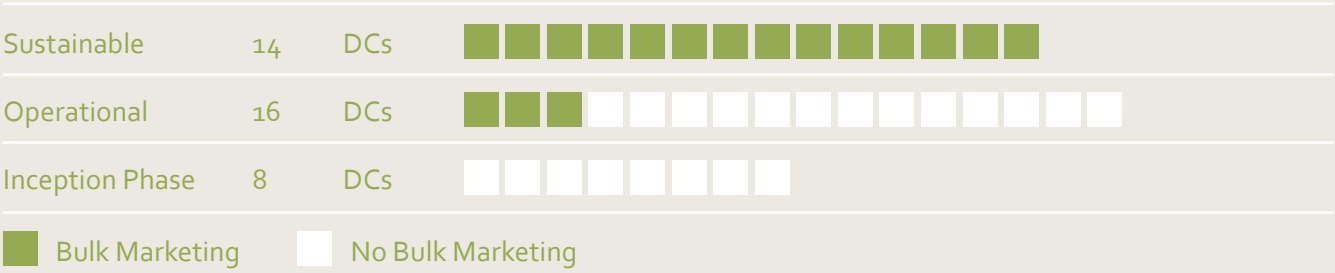
- Ownership
 - Good governance and transparency
 - Professional Service Delivery including:
 - Farmer-to-farmer extension
 - Internal savings
- Access to financial services
 - Input bulking
 - Bulk marketing
 - Access to improved planting material
 - Advocacy

At the end of the four-year implementation period of CPT, 29% of the HRNS-supported POs were sustainable or even more advanced based on the aforementioned criteria.

PRODUCER ORGANIZATION SUSTAINABILITY



In the southern HRNS project area, marketing of the coffee is conducted through the secondary organizational structure known as the Depot Committees (DCs). Based on a first assessment of the supported DCs in 2016, there is a clear correlation between this service provision and their sustainability status. This forward integration in the coffee value chain enables farmer organizations to offer their members a higher share of the market price as well as transparent information.



Once capacity is built, farmer organizations are consolidated and strong linkages with service providers have been established through the facilitation of HRNS, this kind of project support is no longer needed and the parties engage in further businesses independently. The Farmer Field Schools act as independent service and information centers, which provide all necessary technical know-how to their farmer members and source outside assistance through established linkages with government extension and research institutes if needed.

The formation of member-driven farmer organizations is based on a change in mind-set and takes time since producers need to build up trust and confidence in their organizations to create ownership. However, an apex organization based on farmers’ ownership and participation will be a solid structure for the future.



© TEMBO

Tembo Direct – A New Service Provider Model for Coffee Farmers in Tanzania's Southern Highlands



TEMBO experienced challenges in working with coffee producer groups in the last coffee seasons. One of the most important values at TEMBO is to pay fair prices according to quality. Premium prices have been paid to the farmer group leaders for good quality coffee. However, TEMBO realized that they were rarely paid to farmers or reinvested in groups' activities. TEMBO also noticed a lack of transparency regarding input sharing within the groups the company was providing inputs to.

As a result, TEMBO and group members faced a number of critical issues:

- Any increase in production due to input application was not resulting in increased purchase volumes for TEMBO
- Borrowers often defaulted
- There was no contract enforcement from the relevant authorities
- Producers often times resorted to predatory loans although saving practices and basic budgeting would have made credit obsolete



Against the backdrop of these challenges, TEMBO felt that farmers' needs should be considered individually, which prompted the company to launch the Tembo Direct service provider model.

Tembo Direct is a transparent sourcing and training program that involves no intermediary in the supply chain. Coffee goes directly from the farmers to TEMBO. The program focuses on paying higher prices, cutting off middle-men and improving quality. It gives more buying power and decision-making power to the farmers. The payments are made on the spot (or after a small delay for second payment) via the mobile payment system M-pesa. This created a strong incentive for farmers to sell their coffee to TEMBO because they knew they were being paid the full value of their higher quality deliveries.

The M-pesa system also has the great advantage of being very transparent (improve reporting capability, coffee traceability and the company's accountability) and less risky than having cash out in the field. The farmers and TEMBO's staff are not exposed to the risk of being robbed and TEMBO's field officers have a better control on the transactions, making sure the money is entirely delivered to the registered farmer.

CERTIFICATION TO ENABLE ACCESS TO STRONG AND RELIABLE MARKETS

Certification under voluntary sustainability standards has been pursued as planned. Farmers have been primarily certified under the Rainforest Alliance and Café Practices standards. While farmers and CPT partners

have increasingly marketed their coffee as certified, this has not always boiled down to tangible price premiums. The CPT experience shows that the business case for certification takes time to materialize for farmers.

LESSONS LEARNED AND RECOMMENDATIONS:

- Although certification improves access to markets that could not be tapped otherwise, it does not solve productivity issues. A strategic re-thinking of coffee roasters might be required and roasters should be more strongly involved in field level support activities that go beyond certification as the “silver bullet”.
- At present, there are no fixed premiums set by most coffee sustainability standards and, in the long-term, there might no longer be any premium payments at all.
- Given that price premiums paid by certifiers are relatively modest and are not expected to increase in the future, it might be more effective for certain farmer groups to tap into specialty coffee markets through which higher price premiums can be generated while maintaining a strong link to farmers.

35,084

farmers certified under voluntary sustainability standards and marketing their coffee as certified at a premium

PROMOTE THE USE OF COFFEE WET MILLS TO ACHIEVE OPTIMAL QUALITY

The CPT partners and farmers supported by the project are successfully operating a total of 130 central processing units (CPU). The deliveries to CPUs have picked up again in the most recent season and the delivery ratios have been the highest since project start for most project partners working with

CPUs. Wet mill usage increased from a level of 35% in 2012 (and 19% in 2014), to 61% in 2016. As a result, the project partners observed substantial quality improvements for fully-washed Arabica and can pay higher prices for the coffee delivered.

LESSONS LEARNED AND RECOMMENDATIONS:

- Although prices paid for CPU-processed coffees are substantially higher, farmers might decide to sell coffee prematurely at a lower price due to economic emergencies and cash flow shortages. Therefore, farmer cash flows and how they influence farmers' selling and processing decisions need to be fully understood.
- Regulatory changes have caused substantial challenges in recent years. A stable regulatory environment is critical for increasing investment in central coffee processing units.

130

farmer and company-owned coffee wet mills operated and supported

47,841

farmers delivering coffee to central processing units and selling fully-washed coffee at a premium



Certification - Promoting Sustainability and Creating Market Access



In 2015, the five major coffee roasters have committed that at least 30% of their purchased coffee shall be certified by 2025. Most certification standards focus on improvements in social, economic and environmental aspects but leave out the crucial link to the value chain. This has left many farmers with certified coffee that they do not find markets for. Through a holistic approach which takes opportunities along the coffee value chain into account, CMS aimed at creating market linkages for farmers using the following certification model:

CMS' CERTIFICATION MODEL



During the tenure of the CPT, CMS drew the following learnings from certification under voluntary sustainability standards in cooperation with smallholder farmers:

- There appears to be a disconnect between the expectations of farmers and what the standard owners envision as the benefits of certification. Standard owners consider benefits on environmental, social justice and economic transparency while the farmers primarily understand it as a tool that will ensure price premiums and higher incomes.
- Farmers feel that they have a bargaining chip when they hold a certification in at least one of the voluntary standards.
- Although there is no guarantee for larger price premiums, there is real value of certification as a market access tool as new buyers are attracted to Tanzanian coffees. Therefore, certification can be seen as a necessary and valuable instrument for coffee producers.

Farmers have established a compost to improve soil fertility



Promoting and Remunerating Coffee Quality Increases – How TEMBO Links Coffee Producers to Specialty Markets

TEMBO’s model in Rwanda showed that many specialty or high commercial coffee buyers want to have more traceability on the coffee they buy. Buyers highly prefer coffee coming from only a few places or washing centers.

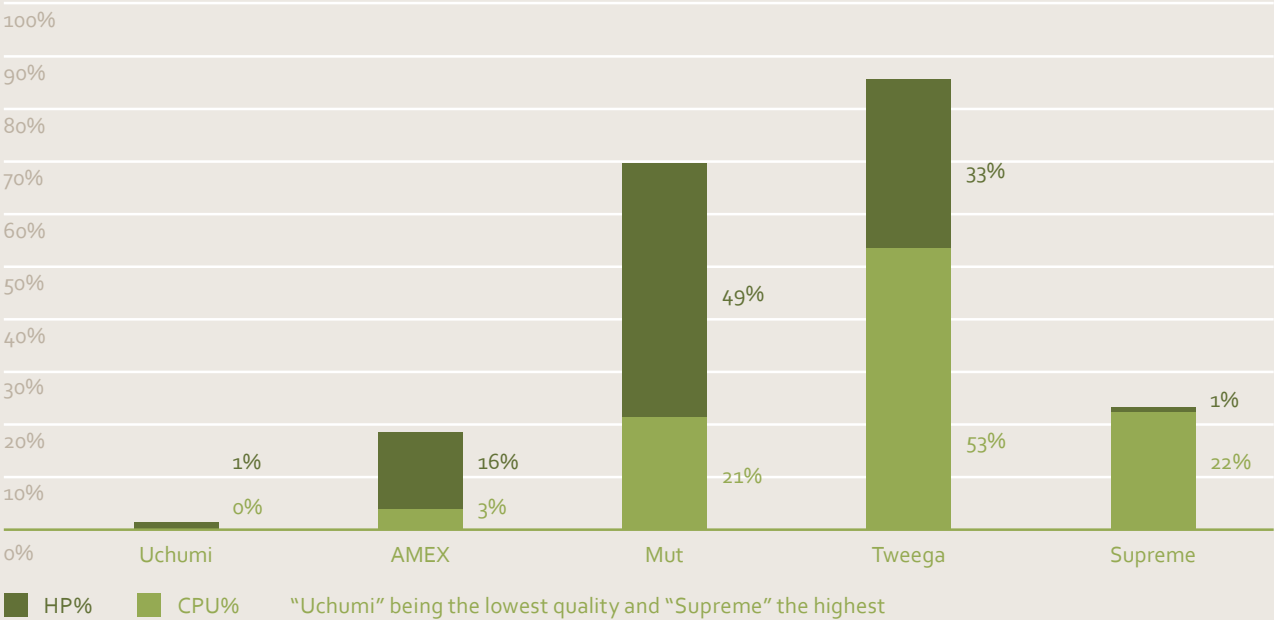
In the case of specialty buyers, many of them are linked to a specific washing station in Rwanda and worked with the station in different farmer impact programs for many years. TEMBO decided to replicate the model in Tanzania, the main objectives being to increase the quality by processing a higher volume of coffee under identical conditions and thereby increase the price paid to the farmers. TEMBO works with a two-price system according to quality of the coffee delivered. This model is also more transparent (both for the farmers and for TEMBO) as the company can document all deliveries (receipts, farmer’s summary card, copy for buying post and main office).

In the first year of the CPT, TEMBO faced a couple of challenges, including the difficulty of convincing farmers to deliver a high percentage of their crop to the CPUs as the delivery of cherries is far less common in Mbeya region than delivering home-processed (HP) coffee. Regulatory changes have also come with challenges and discouraged new entries to the CPU market although they would significantly develop the industry.

TEMBO is also strengthening relationships with existing farmer-owned wet mills, but with a strict prior selection of the producer organizations they are working with to make sure that quality and transparency standards are respected and that premium prices paid are directly benefitting the farmer group and its members.

CPU-processed coffee clearly achieves higher qualities compared to home-processed coffee. TEMBO also ensures that quality pays for the farmers. “Tweega” and “Supreme” coffees receive a tangible, fixed price premium upon sale at the buying post. Thus, improved quality results in a higher price paid to farmers.

QUALITIES OF HOME-PROCESSED (HP) AND CENTRALLY-PROCESSED (CPU) COFFEES



PROMOTING GENDER EQUALITY

Low membership rates of women in farmer groups and, thus, their participation in trainings has been a frequent challenge in Tanzania’s coffee sector. This can be attributed to the fact that women, while performing a lot of the work related to coffee, rarely benefit from or gain control over the income from coffee, as coffee is often still considered the domain of men. In order to tackle this gender perception and increase women’s involvement in household and farming decisions, the CPT implementation partners

have sensitized coffee farming communities for joint decision-making and more equal gender roles. In collaboration with the NGO Hivos, CMS and TKL pursued the [Gender Action Learning System \(GALS\)](#) approach in select CPT coffee farming communities. Gender equality was also addressed by all other CPT partners who regularly sensitized rural communities on gender roles and joint decision making during field training sessions.



© TKL

29%

female participation in CPT staff

25%

female participation in coffee agronomy trainings

45%

stronger involvement of women in decision making on how coffee income is spent

“There were some rules before that a woman was to escort the man to sell the coffee, the woman would come back with the sack and the man with the money in his pocket. But for now people are united and people are not in that era any more where women didn’t have a say in terms of money.”

A CPT SUPPORTED FARMER IN NKOANRUA VILLAGE IN THE ARUSHA REGION



Why the Inclusion of Women in Coffee Production Systems and Farmer Organizations is not only a Moral Imperative but Instrumental in Improving Livelihoods – DAE's Perspective on the Promotion of Gender Equality

In the Ruvuma region, women are strongly involved in coffee production and related field work such as land preparation, weeding, fertilizer application, harvesting, and sorting at CPUs. Through its farmer support program carried out with support of the CPT, DAE has found strong evidence that increasing women's participation in capacity building initiatives and farmer organizations can lead to significant improvements in crop productivity, quality, and environmental and social sustainability.

IMPROVED QUALITY

Both harvesting and sorting is oftentimes done by female farmers and therefore there is a direct correlation between women's work and coffee quality. Women tend to pay more attention to detail when conducting activities such as harvesting, sorting at CPUs and the identification of pests and diseases, all of which, if appropriately conducted, have the potential to improve coffee quality. This becomes even more relevant when considering the fact that the quality of coffee has occasionally been mediocre in the past because of harvesting pre-mature cherries and bad sorting at CPUs. In June 2015, women's attendance at training sessions on harvesting, primary processing and quality control was at 28%. The overall cupping score for coffees in this time period was 77%. In the following 2016 training cycle, women's attendance in the respective sessions increased substantially to 51%, as did the cupping score of the produced coffees (87%). DAE sees strong indications that the higher participation of female farmers has largely contributed to the fact that high-quality coffee cherries were received at CPUs and that the fully-washed coffees have received consistently higher cupping scores in the 2016/17 season.



BETTER MANAGEMENT AT GROUP LEVEL

Female representation in the leadership of producer organizations can improve their management and governance performance. Most field research conducted by DAE shows that female group leaders tend to show democratic and inclusive leadership, as demonstrated by a strong intent to share information, help resolve disputes and represent the interests of the entire group, while male counterparts occasionally struggle to live up to these standards. As part of the DAE's extension program and in collaboration with the local financial institution CRDB,

coffee producer groups have also been encouraged to establish savings schemes which are administered by the farmer organizations themselves. Lead farmers for all 77 groups supported by DAE through the CPT were trained on the topic, but not all of them have pursued the introduction of saving schemes to date. Interestingly, out of the ten farmer groups which have successfully established savings schemes, two are women-only groups and six are mixed groups led by women. Amkeni Women Group is one of the most successful groups. The group established a savings scheme in November 2015 and has accumulated TSh 4,732,000 (more than US\$ 2,000) in savings to date through monthly member contributions and profits from their coffee and cassava business. Based on its success, the group recently opened an account with CRDB bank.



Amkeni Women Group - a female coffee farmer group supported by DAE in the Ruvuma region

INCREASED PRODUCTIVITY

Female family members perform most of the field activities in coffee. Including women in farmer training programs strengthens their skills and improves overall coffee productivity. A stronger participation of women in farmer group activities in 2016 helped push the average training attendance to above 30 farmers per training session. As more farmers, many of them female, are exposed to qualification measures, this will increase the adoption of good agricultural practices and, thereby, coffee output and quality.

STRATEGIES TO INCREASE THE INCLUSION OF WOMEN

A strong role of women in coffee production and group leadership is not a purely intrinsic goal, but also instrumental in optimizing coffee production systems and farmer livelihoods. Based on the positive effects of a stronger involvement of women in coffee production, DAE has and will continue to put strong emphasis towards encouraging women to join and assume leadership positions in farmer organizations, i.e. through the following measures:

- Work closely with village leaders and elders in sensitization efforts for stronger women participation. During village meetings, project staff explained the importance of women participation in farmer group activities. This was combined with awareness-raising during training sessions.
- DAE has increased the number of female field staff in the project, not only to reflect the CPT's gender objectives but also to encourage more women to join farmer groups and attend training sessions.
- Training sessions have been organized at appropriate times during which women can conveniently attend. Lead farmers were also instructed to make sure that women farmers are consulted when agreeing on the time schedule for training.

However, a stronger involvement in field related work can only be justified and sustainable, if women reap the benefits of their work. Thus, a stronger involvement of women in coffee field work has to go hand in hand with equal gender roles and joint household decision making on coffee and other household income.

SUPPORT INCOME DIVERSIFICATION AND FOOD SECURITY

In pursuance of improved food security for rural households, some CPT implementation partners started supporting farmers with the cultivation of non-coffee crops. These interventions either focused on the production of crops solely to be sold and hence create additional income (sesame in the case of TKL and honey in the case of OLAM), or the cultivation of food crops for subsistence consumption and sale (such as maize and beans as promoted by HRNS). Both kinds of income diversification aim to improve the farmers' cash flow and, thus, their overall resilience as well as to decrease the risk of hungry seasons for the farmers more directly through a more stable and diversified food supply. In fact, negative cash flow periods for many farmers led to selling of immature

coffee to predatory lenders in the middle of the growing season, downsizing farmers' yields during the traditional marketing period and overall incomes from coffee drastically.

The percentage of CPT farmers who experienced a hungry season² is substantially lower than the percentage for these same farmers prior to the CPT. The average duration of the farmers' hungry season has also decreased for those farmers supported since 2012 for whom this change could be measured. The most common coping strategy for those households that experienced a hungry season is to use coffee income to buy food.

SOUTH		NORTH	
NAME	AMOUNT	NAME	AMOUNT
1. KIBUNGO	2415	1. KIBUNGO	3134
2. KIBAALE	2220	2. KIBAALE	931
3. KIBALANTAMA	10000	3. KIBALANTAMA	8238
4. KIBOMBO	2680	4. KIBOMBO	2781
5. KIBOMBO	1400	5. KIBOMBO	347
6. KIBOMBO	8910	6. KIBOMBO	5459
7. KIBOMBO	3550	7. KIBOMBO	3035
8. KIBOMBO	2510	8. KIBOMBO	4130
9. KIBOMBO	3290	9. KIBOMBO	2766
10. KIBOMBO	10446	10. KIBOMBO	8543
11. KIBOMBO	2580	11. KIBOMBO	1629
12. KIBOMBO	2460	12. KIBOMBO	1435
13. KIBOMBO	5000	13. KIBOMBO	4004
14. KIBOMBO	1700	14. KIBOMBO	1610
15. KIBOMBO	1200	15. KIBOMBO	592
16. KIBOMBO	1480	16. KIBOMBO	151
17. KIBOMBO	1207	17. KIBOMBO	124
18. KIBOMBO	NEW	18. KIBOMBO	NEW
TOTAL	63048	TOTAL	49742
TOTAL	5857	TOTAL	5857

57%

decrease in the incidence of hungry seasons for farmers supported since 2012

52%

decrease in the intensity and duration of hungry seasons for farmers supported since 2012

² The term „hungry season“ is used here to denote a period when the household does not have enough food to eat and must resort to one or more coping strategies in order to gain food.

Coffee-Food-Crop Approach Promoted by Hanns R. Neumann Stiftung

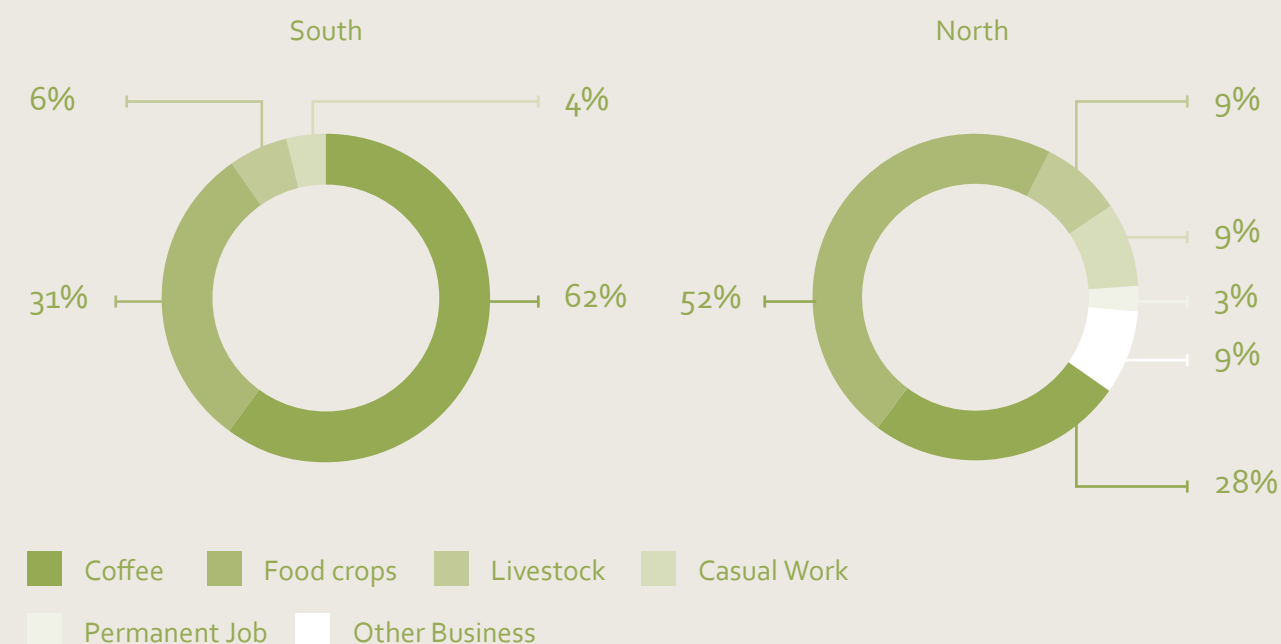


Most smallholder farmers in Tanzania combine food crop and coffee production for their livelihoods. Low yields on relatively small holdings make these farming households prone to the negative effects of economic and climate-related events and shocks. To ensure resilience of smallholder farmers, HRNS addressed the entire farm system following climate-smart principles such as climate change adaptation practices for coffee and Conservation Agriculture practices for maize and beans.

ADDRESSING INTEGRATED SYSTEMS MEANS ADDRESSING FARMERS' REALITIES

In its efforts to improve the livelihoods of smallholder families, HRNS Tanzania commissioned a representative survey in 2016 to assess the outcomes of the integrated food-cash-crop approach. The survey confirmed that this approach improved the overall situation of beneficiary households, especially with regard to gross margin, food security, and improved on-farm cash flows.

PRIMARY INCOME SOURCES OF SMALLHOLDER COFFEE HOUSEHOLDS INTERVIEWED BY HRNS

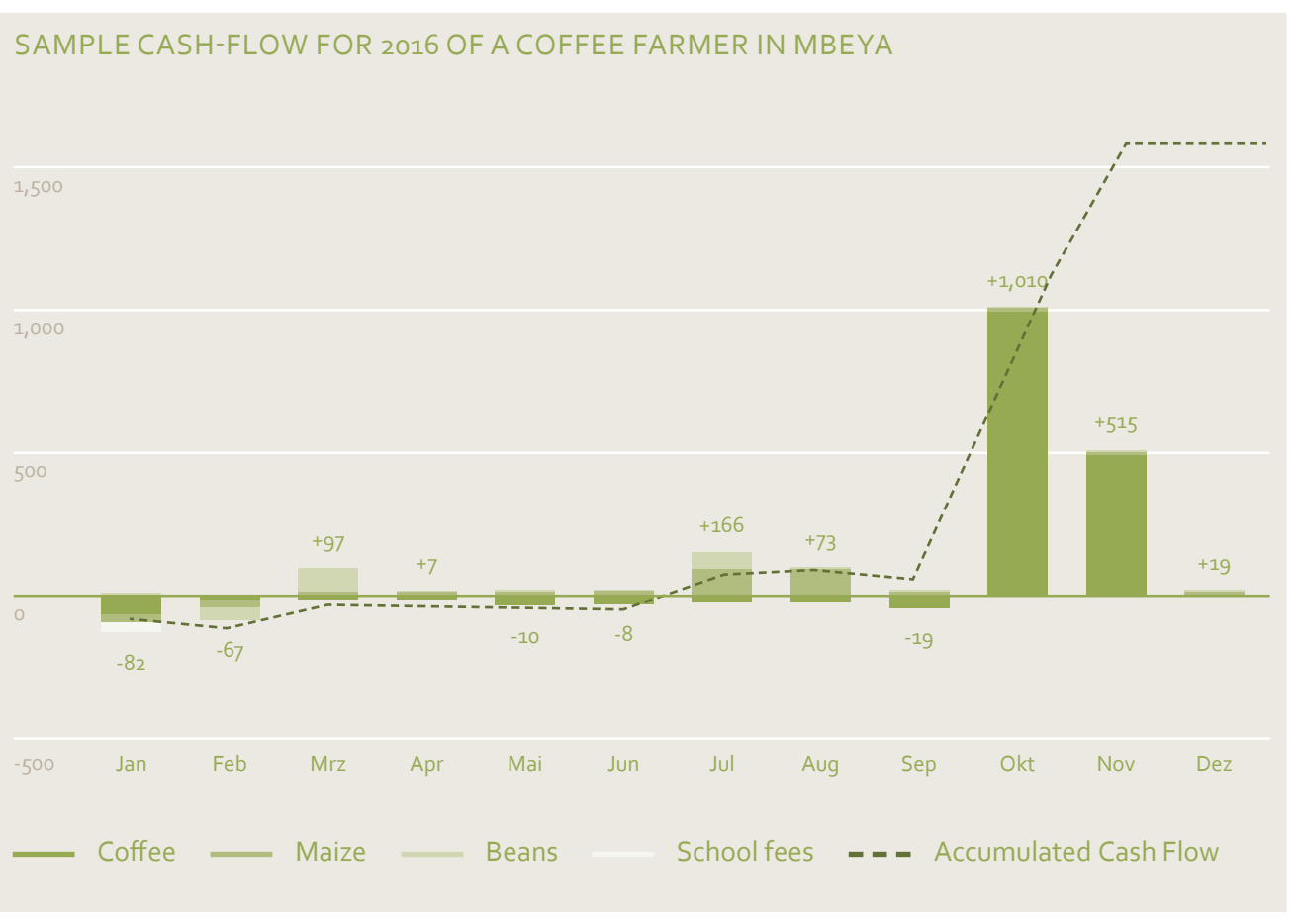


The majority of household crop revenue is derived from coffee, maize, and bean crops (referred to as food crops in the figure above), either as pure stands or intercropped. While coffee is the main source of cash income in Tanzania's South, maize has recently become more important in some of the country's northern parts. However, farmers are aware of price fluctuations and stress the importance of producing coffee as a traditional cash crop as well as maize and beans for home consumption.



DIVERSIFICATION IS THE SMALLHOLDERS’ STRATEGY TO ADDRESS SEASONAL CASH SHORTAGES AND ENSURE SHORT- AND LONG-TERM INVESTMENTS

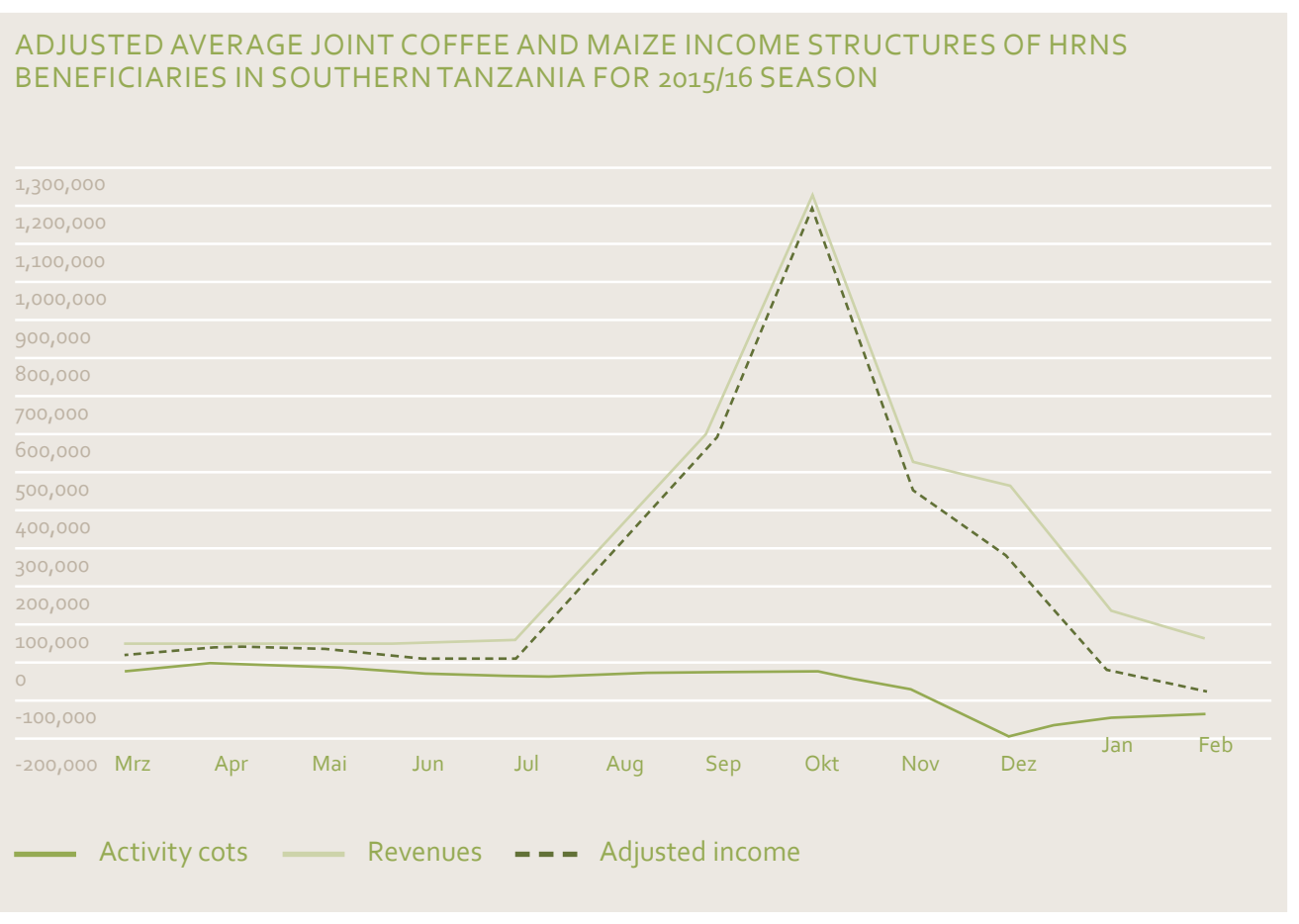
Coffee revenue is only earned during two to three months, but the costs occur throughout the year especially during the times of input application and harvesting, which often leads to a negative cash-flow in these months. By increasing the marketable surplus from food crops, smallholders can even out their cash flow and significantly improve their income structure. A sample cash-flow for 2016 of a progressive farmer in southern Tanzania illustrates how farming households make use of the different crop incomes throughout the year.



(in US\$, including home consumption of maize and beans)

Farmers use their coffee income for long-term investments such as school fees, construction, and household assets. Most of the food crop produce is consumed within the family. The maize income is used to cover day-to-day expenses as well as for maintaining the farming system including inputs for coffee and other crops. Food crops are fundamental for supporting the production cycle of coffee, which in turn supports sustainable livelihoods. The combination of both income sources is vital for securing the short-term and long-term needs of smallholder households.

Continuous cash-flows from different crops also enable farmers to market their produce via the most profitable marketing channels. Farmers increase their maize income considerably through selling maize in the off-season rather than directly after harvest. Their coffee income is maximized by marketing coffee via farmer-owned organizations instead of selling at farm-gate. Focusing on the overall concept of farming as a business including the costs and revenues of coffee and food crops enables farmers to plan their expenditures based on the anticipated cash-flows of the different crops. A combined food-cash-crop approach enables beneficiary households to become successful entrepreneurs by managing their farming business in an integrated manner.



(in Tanzanian Shilling, including home consumption of maize and beans)

The combined approach improves the monthly income (cash/food) of the households compared to the situation farmers would be in if they only grew coffee. Addressing each crop with specialized advice in an integrated program approach means addressing the livelihood strategy of farmers and giving them the best outcome. Moreover, this approach also contributes to improved gender relations at the household level, since family members are encouraged to make decisions on resource allocation for the different crops together to optimize their farming systems.

SUPPORT OF CLIMATE CHANGE ADAPTATION AND MITIGATION OPTIONS

The CPT engaged pro-actively to help farmers adapt to climatic challenges. HRNS, as implementation partner of the [initiative for coffee&climate](#) (c&c) has promoted the uptake of mitigation and adaptation options such as rain water harvesting, temporal shade trees and shade management, live soil cover and live mulching in order to increase on-farm and economic resilience. Lessons from the first phase of c&c and from other CPT implementation partners have also flown into the development of a National Coffee Sustainability Training Curriculum. This curriculum is standardized so that adaptation and mitigation measures can be mainstreamed and taken up by the Tanzanian coffee sector more generally.

Another area explored under the CPT by both TKL and CMS in cooperation with the NGO Solidaridad

was the planned installation of biogas digesters. These were to be fed by coffee pulp as a by-product of the coffee wet milling process, thus decreasing energy costs for the wet mills. This was to be combined with the introduction of a payment-for-ecosystem-services (PES) approach. Under this approach farmers were to be remunerated for their contributions in sequestering greenhouse gases and, thus, mitigating climate change. The initial pre-feasibility study, unfortunately, revealed that the farms did not meet the thresholds for cow dung required for running biogas digesters and establishing a PES system, which prompted the partners not to scale their efforts. This kind of work should be taken up in Tanzania in the future and has already proven to be feasible in other coffee sectors.

CPT INNOVATION VOUCHER SCHEME

In order to further increase the CPT's scale and impact, an Innovation Voucher Scheme (IVS) has been established to support innovative projects of smaller Tanzanian partners. The IVS provided financial support in the form of non-repayable grants to organizations that aim to foster innovation in the Tanzanian coffee sector and improve the livelihoods of smallholder coffee farmers.

A Grant Selection Committee, comprised of representatives of the Tanzania Coffee Board, the NGO Café Africa and the Kagera Co-operative Union, manages the IVS. Its responsibilities range from launching the calls for proposals and selecting eligible grantees to monitoring the project progress and validating reports submitted by the IVS winners as well as reporting to the CPT's Advisory Board. DEG provided the overall legal framework for the implementation of the scheme and was in charge of

fund disbursement to the voucher winners in addition to supporting the Grant Selection Committee with oversight of the grantees.

To guarantee the sustainability and economic viability of the supported projects, grantees of the scheme are expected to co-finance up to 50% of the project cost in cash. DEG has slightly softened this requirement for smaller producer groups, allowing them to contribute partly in-kind. Still, all grantees co-financed their projects in cash or on an in-kind basis.

In the last three years, eleven complementary projects have been jointly established with local partners and are financially supported through the IVS with more than US\$ 250,000. Overall, the IVS supports additional 7,000 coffee producers and attracted about US\$ 200,000 of co-financing from its grantees.

Biochar – How the IVS Enabled the Introduction of a Promising Innovation in Tanzania's Coffee Sector

Smallholder farmers in and around the Mbeya region continue to struggle with largely poor-quality soil that has difficulty holding the nutrients and moisture needed for healthy crops. As conventional inputs are rather expensive and many farmers do not have access to pre-harvest finance for farm inputs, this further aggravates the situation. With the support of the CPT supported IVS and the expertise of Radio Lifeline, TEMBO and MIICO, a network of community-based agriculture development organizations based in Mbeya, were able to launch a project which involves the low-tech, cost-effective creation of biochar, which can then be used as a soil amendment on coffee farms.

In order to make the biochar project possible, the implementing partners first had to design and order kilns that would be easy to make and distribute while still converting readily available dried biomass (such as dried corn stalks, coffee pulp, grasses, cow manure, etc.) into good quality biochar. Once designed, the proper materials were gathered and five kilns were initially created for training and demonstration purposes. Biochar experts from Radio Lifeline were hired to provide information and demonstrate biochar production in a ten-day training session. The training included representatives from TEMBO and MIICO, all TEMBO field officers and five of MIICO's field officers. The objective was to come up with a product that can be replicable everywhere in Tanzania at a low cost.



Application of biochar on a coffee tree in the Mbeya region



© TEMBO

A coffee demo plot representative of the area was chosen and allocated to monitor the effects of biochar and other inputs. Different combinations of fertilizers, compost and biochar were applied to groups of coffee trees within the plot in order to determine the impact of each.

In the projects' first year, biochar has been made readily available to about 7,000 farmers and is expected to improve the overall soil fertility of the dry and sandy soils by making both water and nutrients available to plants through its unique sponge-like features over an extended period of time.

THE NATIONAL SUSTAINABILITY CURRICULUM

Headed by the Tanzania Coffee Board (TCB), coordinated by the NGO Café Africa and supported by all six CPT implementation partners, the National Sustainability Curriculum (NSC), a coffee-specific training curriculum, has been developed based on existing national guidelines and training materials during the CPT's tenure. Final extension materials have

been agreed and introduced in Tanzania's three major production zones. Contributions for these materials were made by the TCB, TaCRI, IDH, the Sustainable Trade Initiative, private sector partners, Café Africa, farmer representatives from the Kilimanjaro and Kagera Cooperative Union, Yara Tanzania and local coffee stakeholders in Zonal Committee meetings.



Former Minister for Agriculture, Livestock and Fisheries, Mwigulu Nchemba, speaking during the launch of the NSC at the 2016 National Coffee Conference

The CPT has financially supported the rollout of the curriculum in the Ruvuma and Kagera regions, which has been and continues to be coordinated by Café Africa in a collaborative way between public and private sector coffee extension officers.

Through the promotion and uptake of the extension materials in these regions and beyond, there will be additional effects in areas not serviced by the CPT partners. The associated increase in networking and information sharing among public and private extension officers through learning, joint discussions and exchanging of ideas will also create a stronger commitment of the public sector to intensify its extension services based on the NSC. Participatory and consultative post-training monitoring and evaluation, led by the Tanzania Coffee Board, will be carried out in all zones where the NSC trainings

were conducted. The NSC training approach should be replicated in other coffee production zones incorporating lessons learned from previous training sessions in the near future (while funding for this will still need to be acquired).

The NSC serves as a good example of how a committed government and a galvanized private sector can successfully work together if the farmer and the issue of production is put at the center of the cooperation. This allows the pre-competitive space to be broadened to share information and approaches that can be of benefit to those farmers supported only by the government extension services. Therefore, public-private stakeholder consultation, while time consuming and costly in a country the size of Tanzania, is essential for broad ownership.

BROADER LESSONS LEARNED FROM THE CPT AT A GLANCE

Building a Multi-stakeholder Partnership and Learning Environment

The CPT was comprised of six implementation partners with diverse approaches, capacities and expectations, who remained competitors at the same time. This presented challenges that were gradually overcome and ultimately generated excellent learning opportunities that can be leveraged for future work. In the end, it was a common vision and neutral framework provided by DEG which helped mitigate some of the initial concerns and created trust based on which in-depth cooperation between CPT implementation partners could be built over the project's tenure.

A Case for Coffee Smallholder Support

Based on the CPT's experience, the case for supporting smallholder production systems remains compelling. The developmental benefits generated in smallholder setups are tremendous when compared to large-scale estate or agribusiness models. The promotion of livelihoods through the support of smallholder production systems will remain an effective strategy in many countries and commodity sectors.

Farmer Segmentation

The CPT final evaluation report and select farmer cohort analyses reveal that there is a tremendous amount of variation amongst the CPT beneficiaries in terms of the progress which has been made on an individual basis. Taking changes of productivity as an example, there seems to be a clear pattern that producers with relatively smaller amounts of coffee trees who have substantially increased their coffee tree holdings during the CPT have occasionally had difficulty in increasing productivity due to labor and/or capital constraints. There is also a large extent of variation among farmers regarding land size, tree holdings, crop mix and age. This begs the question as to whether a one-size-fits-all approach is most effective in creating impact, or if a more nuanced model that factors in initial conditions and behavioral aspects would deliver even better results.

"Kahawa ni Mali" - The Role of Profitability and Business Opportunity

One key insight from the CPT is that the profitability and comparative business opportunity provided by coffee vis-à-vis other crops is the most critical element for success. The private-sector, government and donors can provide whatever support and funding, but the bottom line is the business case that coffee offers to producers. Thus, the commonly used slogan in Tanzania "Kahawa ni Mali" ("Coffee is an asset") will need to prove itself against competing non-coffee business opportunities, high taxation and deductions on coffee proceeds, and a volatile global coffee price environment.

Coffee Field Renovation & Rehabilitation

Smallholder farmers engaged in cultivation of 'tree crops' such as coffee face particularly complex challenges related to maintaining productivity and their associated livelihoods. Tree crops are long-term assets that decline in productivity over time and require ongoing maintenance and periodic renewal to maintain yields. Due to the lack of dedicated financial services to help farmers make the required investments, Tanzania's coffee tree stock is relatively old in most production zones, resulting in decreasing yields, also due to the susceptibility to coffee pests and diseases. Thus, in addition to the CPT's achievements, further investment into research, development and dissemination of high-yielding, disease resistant and drought tolerant coffee planting material will be critical in the years to come. This will need to be complemented by an enabling environment for private nurseries operating as profitable businesses to meet the increasing demand for improved planting material.

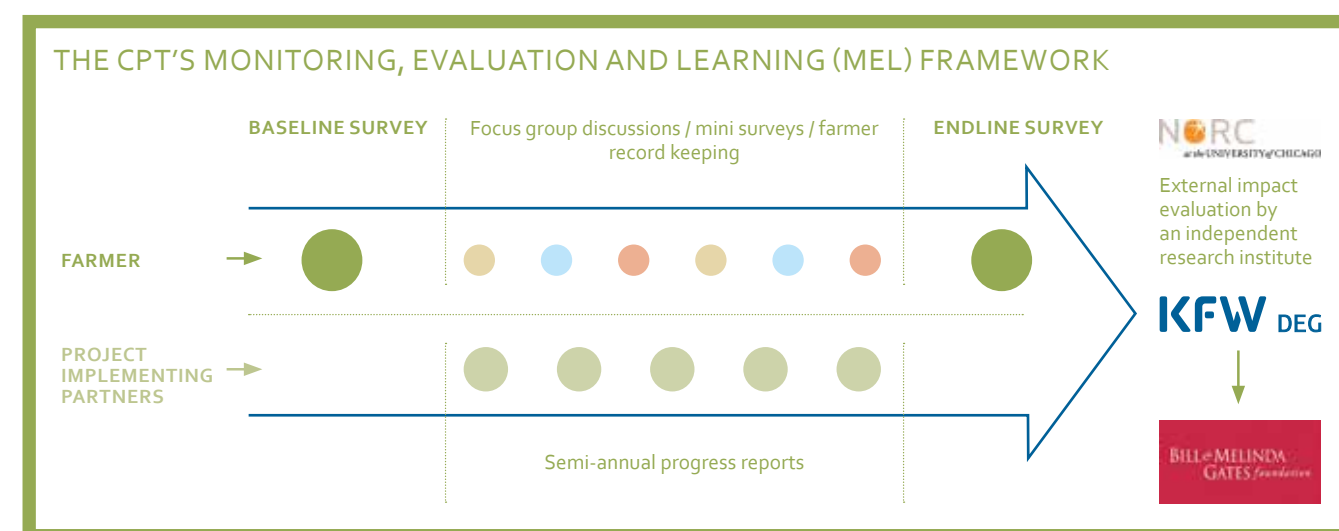
The Return of Sustainability Work

Although financial returns of extension work and small-scale producer support take time to materialize, investment in sustainability work is worthwhile, not only for smallholder farmers, but also for value chain partners and service providers working with them. The CPT implementation partners recognize the value of a strong mutually beneficial relationship with coffee farmers in the field.

THE IMPACT OF THE COFFEE PARTNERSHIP

The CPT's Monitoring, Evaluation and Learning (MEL) framework encompassed a mix of periodic CPT implementation partner reporting, qualitative focus group discussions in select CPT supported farming communities and quantitative surveys with CPT beneficiary farmers that explore changes at the outcome-level. An independent project evaluation has been conducted by the National Opinion Research Center (NORC) based on a baseline-endline

comparison. Project monitoring was designed to provide for close and periodic tracking of changes in the Tanzanian coffee sector and in project implementation, and, thus, to allow for adjustments by the project management and the implementation partners in the program's original blueprint. A lean budget for MEL related activities has ensured that available project funds could be effectively used for field level support activities.



NORC's evaluation of the CPT explored how agro-nomic training, adoption of good agricultural practices and improved productivity are causally related. It

revealed that the CPT's goal of improving coffee livelihoods through productivity increases was achieved:

"The CPT has had positive impacts on the likelihood that farmers would be both trained in good agricultural practices (GAP) and also that they would adopt the techniques taught in the training. This conclusion is supported by changes that occurred during the CPT life cycle in coffee production, productivity and income. This becomes even more apparent if global coffee price trends and climatic challenges that adversely affected coffee growing and prices are factored in. GAP training has a positive and statistically significant effect on overall adoption of an additional GAP topic as well as on adopting any additional GAP technique."

THE NATIONAL OPINION RESEARCH CENTER (NORC)

Outcome Level Targets	CPT Achieved	CPT Target
Percentage of trained CPT farmers adopting at least 50% of coffee key GAP	64% [Baseline 8%]	60-75%
Change in yield per productive coffee tree (kg of cherry) for farmers supported since 2012	+22%	+75-100%
Change in coffee net income (US\$) for Arabica farmers supported since 2012	-5% ¹	n. a.
Change in coffee net income (US\$) for Arabica farmers supported since 2014	+104%	n. a.
Change in coffee net income (US\$) for Robusta farmers supported since 2014	+162%	n. a.
Change in the incidence of hungry seasons ²	-57%	n. a.

¹ Coffee net income increases for Arabica farmers supported since 2012 have been offset by a steep decrease of the coffee world market price of around 50% over the evaluation period. For Arabica farmers supported since 2014, however, the price level has been about the same at baseline (2014) and endline (2016).

² The term „hungry season“ is used here to denote a period when the household does not have enough food to eat and must resort to one or more coping strategies in order to gain food.

Overall, there seems to be a substantial level of regional variation of productivity changes. In the Ruwuma and Mbeya regions, where by far most coffee producers were supported by the CPT, the production per coffee tree has increased most substantially, i.e. by 42% and 18% respectively since 2012. NORC found that the uptake of any additional GAP technique increased the yield by 0.5 kg of coffee cherry per tree for Arabica farmers supported since 2012. However, it must be acknowledged that training has not translated in the adoption of GAP and, thus, in improved yield

in all cases. There are indications that key explanatory factors for this are labor and capital constraints, especially for farmers with larger numbers of coffee trees. This suggests that smallholder coffee farmers may often have limited amounts of available household labor and fixed budgets for hired labor and coffee inputs. Therefore, increasing access to financial services and preserving a convincing business case will be critical for coffee producers to reap the full benefits of coffee growing in the future.

SUSTAINABILITY

The CPT implementation partner organizations and the structures and relationships they built will prevail. All private-sector partners that were involved in the CPT's implementation remain strongly committed and have an intrinsic interest in sustaining their business relationship with farmers that produce more and higher quality coffee than they did prior to the CPT. This ensures sustainability post-CPT. In addition to that, the established organizational farmer group structures, the durable effect of qualification measures and the long-term multiplier effect of farmer-to-farmer extension systems will ensure a lasting effect of the CPT.

Local coffee value chain infrastructure investments such as coffee nurseries and wet mills, as well as the knowledge transmitted to the farmers who manage and operate these facilities, will sustain beyond the CPT's tenure. In addition, the relationships that financial institutions and other service providers have established with successful farmer organizations will be sustained through commercial self-interest on both sides. Improved business relationships between CPT partners and the farming communities they support can also be leveraged to attract investors and financial institutions to play a stronger role in smallholder financing, e.g. in multi-stakeholder partnerships based on de-risking and risk-sharing.

Extension systems create a permanent presence with farmers all year round and provide valuable market information from the start of the supply chain. Maintaining a 'face in the field' remains a valuable asset for the CPT partners. However, the competitive advantage induced through sustainability work that is an important driver of loyalty and trust also comes at a substantial cost.

The inclusion of women in household decision-making, in spite of notable improvements, remains a challenge in Tanzania. Moreover, encouraging youth to stay engaged in coffee growing will be a critical task in a sector with aging farmers and trees. Further support will need to be provided to help younger farmers pursue the business opportunity which coffee growing provides.



OUTLOOK

The recently published [African Investment Review report on Tanzania's coffee sector](#) provides a compelling case for further investment in Tanzania's coffee sector and highlights the impact and returns on various investments for coffee producers, the Tanzanian Government and the local value chain. Assuming that a gradual process is most effective, endeavors such as coffee field rehabilitation and access to professional extension and affordable inputs should now be scaled based on the structures and business relationships built under the CPT.

There will be ample opportunities for the Tanzanian coffee sector to attract further investments and support to the industry. However, in order to achieve this, a coordinated private sector dialogue with the government is more important than ever. The CPT partners are determined to engage with the relevant coffee sector institutions to ensure that there is broad dissemination of CPT's lessons learned through sector processes.



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To achieve the coffee sector's ambitious targets formulated in Tanzania's Coffee Industry Development Strategy 2011-2021, the CPT believes that a combination of the following will be required:

- Continued and intensified dialogue between public and private stakeholders within the framework of the National Coffee Stakeholder Committee and at the local production zone level
- Development of a tangible roadmap for future coffee sector development including intervention priorities, clear roles and responsibilities for both the public and private sector as well funding requirements
- Implementation of this public-private roadmap enabled through the generation of further public and private sector investment

Based on the CPT's experience, a roadmap should include the following pillars:

- Further promotion of financial literacy and basic business skills
- Improved access to financial services from local financial institutions and coffee supply chain partners
- Coffee field renovation and rehabilitation to renew Tanzania's aging coffee tree stock
- Facilitation and support of strong farmer groups as effective intermediaries to reach individual coffee growers
- Further support of climate change adaptation and mitigation options at the farm level
- Enablement of gender equality and encouragement of youth to engage in coffee growing to ensure that coffee is a crop of the future

CPT'S TARGETS AND ACHIEVEMENTS

Output Level Targets ¹	HRNS	TKL	CMS	TEMBO	OLAM	DAE	CPT Achieved	CPT Target
# of farmers organized in producer organizations ²	25,223	25,620	6,750	5,041	5,208	10,863	78,705	73,500
# of farmers trained in good agricultural practices (GAP)	36,292	24,461	18,503	5,285	5,345	10,125	100,011	90,000
# of farmers certified under voluntary sustainability standards ³	n.a.	14,934	16,996	n.a.	n.a.	3,154	35,084	31,850
# of farmers who deliver coffee to CPT supported wet mills	n.a.	24,461	14,918	1,248	n.a.	7,214	47,841	n. a.
# of wet mills supported	12	40	36	14	0	28	130	114
# of nurseries supported	258	16	3	0	8	2	287	50
Credit provided for pre-harvest input finance (in US\$)	1,022,390	72,752	53,326	232,015	419	127,523	1,508,425	n. a.
Credit provided for post-harvest crop collection finance (in US\$)	881,294	6,151,135	4,146,119	1,773,871	598,840	653,023	14,204,282	n. a.
Credit provided for long-term investment finance (in US\$)	0	0	0	67,066	57,688	0	124,754	n. a.
# of new coffee seedlings planted by smallholder farmers	1,170,932	161,912	312,900	0	78,000	67,213	1,790,957	4,303,600

¹ Different goals were agreed for the various implementation partners according to the implementation period and CPT funding allocated.

² For HRNS this refers to the number of households (and not individual farmers) supported. Note that oftentimes multiple household members attend training sessions.

³ These included the Rainforest Alliance, C.A.F.E Practices and 4C voluntary certification/verification schemes.

Imprint

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