

Final Report

Cambodia Farmland Carbon/CAFACA, Cambodia

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TABLE OF CONTENTS

1.	EXECUTIVE SUMMARY	2
2.	ASSESSMENT OF IMPLEMENTATION OF THE PROJECT.....	3
2.1	Implementation of Activities	3
2.2	Deviations from the Planned Activities	5
2.3	Achievement of Outputs and Objectives.....	6
3.	CLIMATE CHANGE	8
4.	DEVELOPMENT IMPACTS AND CROSS-CUTTING ISSUES.....	9
5.	ASSESSMENT OF THE RESULTS AND IMPACTS OF THE PROJECT	13
5.1	Relevance.....	13
5.2	Effectiveness.....	13
5.3	Efficiency.....	13
5.4	Impact	13
5.5	Innovativeness and learning.....	14
6.	SUSTAINABILITY AND POTENTIAL FOR SCALING UP AND FOLLOW-UP INVESTMENTS	14
7.	FINANCIAL REPORTING	16
8.	CONCLUSIONS AND RECOMMENDATIONS.....	16

1. EXECUTIVE SUMMARY

The main purpose of the project was to meet the call from NCF and establish a viable business that has positive effects on climate change and local development. It had one immediate objective: *A sustainable low cost carbon trading business supports livelihoods improvements among farmers through significant, marketable mitigation of climate change. Climate resilient farming practices are introduced, replicated and support carbon sequestration in the farming landscape.*

And it had four expected outputs:

1. Output. *Participating farmers contribute significantly to CC mitigation through climate-friendly farmland practices.*

2. Output. *Farmers and communities in the project area are increasingly capable of adapting to climate change in agricultural practices and natural resources management*

3. Output. *A commercially viable business entity collaborates with farmer organisations in obtaining carbon funding from tree planting and other CC mitigating agricultural practices*

4. Output. *Empowered farmers with improved livelihoods*

The project has met this objective and produced the outputs. The farming practices have contributed significantly to CC mitigation. The part of this that can be quantified, i.e. the trees planted during project lifetime can produce more than 100,000 tonnes CO₂e over the coming 20 years. Through expansion of the project this will even increase. Other farming practices, such as Systems of Rice Intensification, use of organic fertilizers etc. also contribute (so far unknown in quantity) towards mitigation. They are however, also part of adaptation, and the project has provided significant training to expand the use of these methods. The project has established a viable business in Cambodia, which due to changed focus in the NGO partner, is in the shape of an independent entity. It has qualified staff, operational procedures and technical capacity to continue. Concurrently and partly through support from EU Commission, a marketing and contract-holding company has been established in Denmark. It likewise is viable.

The project has improved local livelihoods in several ways: It has paid to mainly poorer members of the communities, and its trees will provide direct benefits to the communities worth more than 2,7 million € over the coming 20 years. These benefits consist of marketable fruits, reduced erosion of infrastructure and reduced health costs, due to access to traditional (and effective) medicine from some of the planted trees, which will reduce health costs. In addition there will be incomes/savings from compost, twigs for firewood and timber. Any timber use will be after at least 20 years, as the local communities and authorities guarantee tree growth for at least this period. And most of the planted trees are useful to people much beyond this. Other livelihoods aspects, such as social coherence, skills of farmers and of students and teachers in schools with tree planting and collaboration between local associations and local authorities have also been enhanced.

The project has demonstrated the viability of its innovative approach. This consists of mainly two parts; a) basing a mitigation project on pre-existing strong, local organisations in a developing country, who enjoy substantial benefits through the collaboration and b) building trust with clients through readily accessible and convincing documentation.

The key lessons learned is that this actually works and is attractive both the participating communities and to clients in the global North. The key to this success is, and will be, to maintain transparency and trust through all related processes. There are very considerable possibilities for scaling up. There are hundreds of thousands of farming communities in developing that could participate, and the largely untapped markets for credible offsets among concerned individuals; public entities and CSR-conscious companies seem very large and growing. The project/business is indeed already on its way to replicate in Vietnam, building on the CAFACA experience, but could (and intend to) also expand to other countries, with its experience and set-up.

2. ASSESSMENT OF IMPLEMENTATION OF THE PROJECT

2.1 Implementation of Activities

Activity: Provide support to establishment of nursery businesses, training in nurseries, tree-planting and tending and support tree-planting awareness campaigns: The nurseries have produced the required number of seedlings for the tree planting, and operated as local businesses generating income to owners, most of whom are women. The number of nurseries has been expanded due to large interest from farmers and the benefits of producing locally. Local production ensures close relations between the provider (the nursery) and the customers, i.e. the associations. It also ensures use of local seed sources, which are well adapted to the locality



A CAFACA tree nursery and its owner. Siem Reap province, March 2014

Activity: Provide training and learning experimentation in CC mitigating agricultural practices (SRI, biochar, biodigesters, organic fertilizers): Many trainings have been completed by the partner, as have demonstration- and exchange visits.

Activity: Support farmers' associations and local authorities in planning of tree planting on public land and in watersheds. A routine has been developed for farmers' associations performing planning, jointly with commune councils. Agreements are entered between the

partners and no violations of these have been encountered. The procedures can continue unaltered in the business phase.

Activity: Support capacity development in obtaining carbon funding from markets, products development, products pricing, market analysis, market strategy, and marketing materials: CAFACA homepage has been developed as a main marketing tool. A marketing company (TroFaCo) has been established in Copenhagen, supported by marketing materials directed at companies and individual customers, as well as at organisers of international meetings and conference. The aim is to combine smaller but well-paying clients (including households) with clients who buy larger volumes. Marketing of trees and offsets in Cambodia has also been conducted. Through support from Climate KIC, a marketing video has been produced. The project foresaw focus on more formal markets, but experience showed these to have high costs, complicated procedures and low attraction for clients. Instead CAFACA is carving out several markets (developmental NGO's, cities, individual families, etc.) that previously barely existed, but are very promising.

Activity: Support capacity development in building business relations between farmers associations and CAFACA: Agreements describing the business relation has been developed and applied (See annex 6). Local facilitators (Community Facilitators/FA's) have been trained in this aspect. CAFACA office maintains vibrant relations with associations, directly and through Community Facilitators attached to CAFACA.

Activity: Support MRV capacity and production of monitoring reports to clients and publication of MRV results on Internet: The MRV capacity has been established, with reporting through small tablets/large smartphones onto a homepage. The MRV capacity has been marketed. Markets for this technology, in Cambodia and Denmark (among developmental NGOs) have been identified. A number of local staff has been trained in applying the technology, and the technology has been further upgraded for easy use and cost saving.

Activity: Collaborate with tourist agencies to arrange agro-tourism to project sites: (See below)

Activity: Provide awareness raising activities in participating communities (e.g. through schools, associations, pagodas): CAFACA staff and local facilitators has visited communes and provided awareness to schools, FA's and pagoda associations. In several schools the planted trees are used for educational purposes. In one school CAFACA has set up its experiment to establish growth curves of the species of trees the communities select. The school actively participates, and will use the experiment in teaching.



Schoolchildren, ready to plant trees for CAFACA's experiment on tree growth curves. Kampong Speu, July 2015

Collaboration with international schools in Phnom Penh is developing. This will entail study visits to CAFACA sites, participation in tree planting and development of teaching materials on conditions in villages, climate change in Cambodia and on trees and climate change. Through Climate-KIC TroFaCo is networking with the City of Copenhagen and some of its schools and has submitted a partnership proposal entailing similar educational collaboration, and potential purchase by the City of Copenhagen of carbon offsets for emissions from schools.

Activity: Support development of agreements on carbon-trading between associations and their members: Such agreements have been developed and continue to form part of the formal basis for collaboration between CAFACA and the local associations; CAFACA approves the agreements and make sure they include equitable sharing of benefits

2.2 Deviations from the Planned Activities

2.2.1 Activities that have not taken place

The project undertook several attempts at getting the planned tourism activities going. These attempts are beginning to bear fruit as the project ends and CAFACA has become a business. Along the way CAFACA lost its main Cambodian partner in tourism. The company, which specialised in travels for farmers from developed countries, ceased to exist. Also, a Danish partner (VietnamTravels) could not find customers for its travels to Cambodia, which would visit CAFACA sites. The latter now have customers a trip organised for early 2016 and will visit CAFACA sites. In addition CAFACA is negotiating collaboration (selling of carbon offsets, information about CAFACA activities) with a socially responsible, very high-end resort in Cambodia whose customers include many CEO's of overseas businesses. Further CAFACA is now in collaboration with 20 boutique hotels in Phnom Penh, to sell 1-day trips to CAFACA sites (list of hotels in Annex 3). The hotels promote the trips and their staff receives a small commission. This type of hotel is chosen because they have clients who come to Cambodia with no fixed plans, and often extend their visits, when they are offered something interesting.

The project intended to promote electricity production from local biodigesters. It did provide the project partner with a useful link to a Vietnamese specialist who could introduce this technology. The partner is implementing a large share of the national biodigester program, and could carry this new technology to many users. It did however; fail to act on the opportunity despite much encouragement.

The project also intended to promote the use of biochar stoves, which are beneficial to the climate, and can provide useful soil improvement from the ‘waste’ of the stove. The partner, by its own initiative, introduced this technology, and did not need any additional inputs from the project

2.2.2 Unforeseen activities that have taken place

The project document foresaw selling of offsets to international climate funds and other, pre-existing markets partly by using existing documentation methods. These markets contracted in volume and price and suffered loss of credibility. For these reasons, and because of prohibitively high prices of the certification schemes associate with these markets, CAFACA expanded its reliance on the MRV system developed early in the project, and directed its attention towards unconventional and innovative offsets markets. This paid off, with good prices for first contract, and promising negotiations with a multitude of potential clients for CAFACA/TroFaCo as businesses. It also attracted considerable media attention in South East Asia, with CAFACA being presented in Hanoi Radio, Hanoi Television, Radio Free Asia and many media in Cambodia (English and Khmer language). CAFACA held a workshop on request from Vietnam Environmental Network, which led to a visit from by a delegation organised by a national NGO CECAD¹ with representatives from Hoa Binh provincial administration.

Further, a large international NGO in Vietnam has proposed strategic collaboration with CAFACA; in this the NGO will find customers for carbon offsets according to the CAFACA-model, and CAFACA/TroFaCo will deliver the technical backstopping on tree production and verification.

2.3 Achievement of Outputs and Objectives

Planned Objectives and Outputs	Indicator(s):	Achievement of the objectives and outputs:
<p>Immediate Objective. A sustainable low cost carbon trading business supports livelihoods improvements among farmers through significant, marketable mitigation of climate change. Climate resilient farming practices are introduced,</p>	<p>Business is thriving, and entering mutually beneficial agreements with farmers’ associations. Households receive profits and increasingly have ability to adapt to climate change.</p>	<p>Business established in Cambodia (CAFACA) and in Denmark (TroFaCo). Based on contracts between CAFACA and farmers associations. Households profit from trees and carbon trading. Trees provide adaptation- and other co-benefits.</p>

¹ Not to be confused with CEDAC, the Cambodian NGO, which was partner in CAFACA.

replicated and supports carbon sequestration in the farming landscape		
1. Output. Participating farmers contribute significantly to CC mitigation through climate-friendly farmland practices.	8,600 tonnes of CO ₂ sequestered during project lifetime, through 310,200 trees planted and maintained in local communities.	On target. Over the coming 20 years the trees will sequester a total of more than 100,000 tonnes CO ₂
2. Output. Farmers and communities in the project area are increasingly capable of adapting to climate change in agricultural practices and NRM	1,500 households have adopted climate-resilient and effective farming practices. 250 km roads and irrigation infrastructure protected against erosion by planted trees. 100 ha of watersheds planted through project activities	More than 2,500 HHs have been trained in climate-smart farming. C. 140 km roads and irrigation canals have been protected. It was decided not to plant in watersheds due to risk of land-grabbing and ability to control illegal activities.
3. Output. A commercially viable business entity collaborates with farmer organisations in obtaining carbon funding from tree planting and other CC mitigating agricultural practices	Business entity able to sustain itself after less than 2 years and has proven capacity in monitoring and documenting carbon mitigation, making it able to obtain premium prices (20% above average voluntary carbon market).	The business entities are viable and obtain very good prices, on or above the level of Gold Standard for tree-based activities. They also attract additional public funding.
4. Output. Empowered farmers with improved livelihoods	4.1 Increased understanding among participating farming households about climate change. Increased household income (10 EUR/HH/year) obtained from tree tending and carbon trading. 50% of this income controlled by women.	Farming households have learned much about climate change and obtained considerable skills in tree farming. The households participating in the tree tending and carbon trading have obtained increased income at the expected level. (See table below for details)

3. CLIMATE CHANGE

The project has had the expected climate change mitigation impacts, as the participating farmers have planted and tended the expected number of trees (310,200, and will continue to maintain them and even plant more and thus and provide a very significant long-term carbon sink. The tree planting has sequestered an estimated 200 tonnes of carbon for the first year, 2900 tonnes of for the second year and additional 5,500 tonnes for the third year, based on the MRV. Over the expected 20 year+ lifetime of the trees they will sequester more than 100,000 tonnes of CO₂e. These are clearly additional, as the parts of the farming landscape, which were planted with trees, previously had none. There are very good chances many of the trees will stand for even more than 20 years, as many species continue to provide income to the local community much beyond this time frame (see Annex 5) and many trees are planted in locations where they become public property (e.g. along roads and irrigation canals) and therefore are protected by law. There have also been impacts both in terms avoided emissions and sequestering of carbon from changed agricultural methods. These are likely to be significant but still impossible to quantify due to the difficult technical aspects of monitoring soil carbon, not least under Cambodian conditions.

The tree planting has contributed significantly to local reduction of erosion from the increased number of extreme weather events. CAFACA has planted trees along 70 km of roads and 36 km of irrigation canals and borders of artificial ponds that previously had no protection against weather-induced erosion. Irrigation canals in Cambodia are more often than not simply dug out and the soils are left on both sides, levelled a bit and then serve as roads. Then the rains are left free to erode the soil back into the canal on one side and into farmers' fields on the other side. Tree planting prevents some of this and is therefore popular with the farmers, who avoid soil spilling into their fields as well as with authorities that enjoy longer duration of their infrastructure. These locations, as all in CAFACA, have been suggested by the associations and endorsed by local authorities



Young CAFACA trees (Cassia siamea) along a newly dug irrigation canal, with local road on top. 2014, Kampot province



2-year old CAFACA trees (*Cassia siamea*) along an irrigation canal with local road on top. 2015, Prey Veng province

Training in sustainable, climate-smart farming has increased resilience of agriculture against floods, more severe droughts and higher temperatures.

4. DEVELOPMENT IMPACTS AND CROSS-CUTTING ISSUES

The developmental impacts include improved income of participating farming families provided through the income from tree tending, and carbon trading. The tables below summarise the amounts earned and the number of benefiting people:

Table 1: Payment to farmers for seedlings and planting and tending of trees

	Province	Paid to farmers for production of seedlings	Paid to farmers for planting of trees	Paid to farmers for weeding of trees	Paid to farmers for carbon (until end 2015 ²)	Total
1	Kampong Speu province planted 20 locations for 2014 and 17 locations for 2015	\$8.711,25	\$4.668,52	\$267,17	\$1.068,58	\$14.715,52
2	Kampong Speu Palm ³ Sugar association planted trees in 2015 in 3 locations	n.a.	\$500,00	n.a.	n.a.	\$500,00

² The rest of the revenue is used for three purposes: a) a share is deposited in a designated account in Cambodia for future carbon payments to FA's, i.e. over the coming 17-19 years, b) a share is reserved to pay for MRV activity in the same period and c) a share is reserved as security in case of failures leading to customer requests for compensation. There will be no profits to neither Nordeco nor CAFACA

³ In this location the seedlings were paid for by another project, and weeding will take place first time in 2016

3	Kam Pot province; 25 locations	\$4.813,43	\$4.437,24	\$1.152,22	n.a.	\$10.402,89
5	Prey Veng province ;18 locations	\$8.189,52	\$7.273,03	\$1.712,33	n.a.	\$17.174,88
6	Others	\$2.198,15	\$347,91	\$73,25	n.a.	\$2.619,31
Total		\$27.207,88	\$21.426,10	\$4.077,63	\$1.068,58	\$53.780,19
A/P to Farmers		\$3.442,75				\$3.442,75
Grand total						\$57.222,94
Farmer Training (CEDAC contribution + CAFACA expense)						\$20.337,35
Total contribution to farmers is						\$77.560,29

Number of farmers who have benefitted

CAFACA have planted in 142 Villages in 4 provinces	
Each village has a population of about 200-300 people and 40% of those are female *	
About 10-15% of village population were directly involved in CAFACA (50% female) *	
* Information received from Farmers' Associations in provinces CAFACA work with.	
So CAFACA tree planting has benefited:	
<u>Indirect</u> farmers (all villagers who will share co-benefits)	28,400
female	11,360
Farmers who received <u>direct</u> benefit (payment for their work)	2,840
female	1,420

As the trees mature income can be generated from selling fruits and other tree-products, such as compost from the leaves or fungi growing on the trees or other non-timer tree products. The other co-benefits that can be expressed directly in economic terms include the erosion-inhibiting effects of the trees and the reduced health costs related to use of especially the 'neem' tree (CAFACA notes that leaves of planted 'neem' trees are frequently harvested for medicinal purposes. Neem is known as the 'village drugstore' and has a

multitude of health-related uses⁴. This well-documented property of the trees is likely to provide significant health benefits for especially the poorest.

In addition neem is often used as a botanical insecticide and fungicide, and other species of CAFACA trees have some medicinal uses (See annex 5). In the table below, it is attempted to sum up the **direct economic benefits of the trees planted**:

Benefit	Unit	No of units	Duration of benefit (years)	Benefit per Unit (€)	Subtotal	Source of data
Income from fruits from planted trees	Trees w. marketable fruits	10.000	20	10	2.000.000	Farmers in project area (for size of benefit), project records (for number of mango and tamarind trees)
Erosion control, roads	km of roads/reduced frequency of renovation	70	20	90	126.000	Cambodian road construction company
Erosion control, canals	km of roads/reduced frequency of renovation	36	20	20	14.400	Estimate
Access to traditional medicine, saved costs from buying	Saved medicine purchases/year	3.000	20	10	600.000	Estimate, more than 1,700 neem trees planted
Total:					2.740.400	

Even this quite conservative⁵ estimate suggests direct economic benefits of more than 2,7 million €. It does not include benefits which are harder to estimate, such as; improved soil fertility from use of compost derived from the trees, reduced sickness of people due to the medicinal use of traditional medicine or reduced time spent looking for small firewood. The estimate of course assumes that no trees will die, due to floods, landslides, droughts or other. CAFACA's mode of operation makes this quite unlikely, as the farmers have high commitments due to the advantages the trees bring.

⁴ Neem leaf is used for [leprosy](#), [eye](#) disorders, [bloody nose](#), intestinal worms, [stomach](#) upset, loss of appetite, [skin](#) ulcers, diseases of the [heart](#) and [blood](#) vessels ([cardiovascular disease](#)), fever, [diabetes](#), [gum disease](#) ([gingivitis](#)), and [liver](#) problems. The leaf is also used for [birth control](#) and to cause [abortions](#). The bark is used for [malaria](#), stomach and intestinal ulcers, skin diseases, pain, and fever. The flower is used for reducing bile, controlling phlegm, and treating intestinal worms. The fruit is used for [hemorrhoids](#), intestinal worms, urinary tract disorders, [bloody nose](#), phlegm, eye disorders, [diabetes](#), wounds, and leprosy. Neem twigs are used for [cough](#), [asthma](#), [hemorrhoids](#), intestinal worms, low [sperm](#) levels, urinary disorders, and [diabetes](#). People in the tropics sometimes chew neem twigs instead of using [toothbrushes](#), but this can cause illness; neem twigs are often contaminated with fungi within 2 weeks of harvest and should be avoided. The seed and seed oil are used for leprosy and intestinal worms. They are also used for [birth control](#) and to cause [abortions](#). The stem, root bark, and fruit are used as a tonic and astringent. From [webmd.com](#)

⁵ It is conservative for several reasons: Tamarind trees live for 100 years (not 20) and fruits can be harvested throughout. The period of benefits from erosion control is probably longer than 10 years and the saved medicine costs are probably also too low, given that more than 25,000 people have access to the trees.

Improved farming practises have led to higher and more climate resilient yields.

Through the spread of the business activities to cover increasing numbers of farmer associations in the coming years the developmental impacts are likely to spread and be further sustained. Institutional sustainability has been facilitated by development of business relations with existing farmer associations and by using the principles of shared value where CAFACA and the farmer associations in common benefit from developing mutually beneficial business relations. Trading in sequestered carbon is being dealt with simply as one more aspect of existing farmer organisations and it has not been necessary to create new structures. This improves sustainability significantly.

Social sustainability has been facilitated through the promotion of better understanding among farming households of climate change, ways to adapt and combat it, and ways of benefitting from sequestering carbon in the farming landscape. By working with organised farmers the project facilitated further social coherence and further empowerment. Gender aspects were being addressed in the promotion of women participation in the activities under the farmer associations. Women have got a significant share of the paid work of the farmer associations on planting and tending trees and nurseries and on monitoring. The project has planted trees in 23 schools. In the large majority of these the trees have become instruments in learning, as children in various classes get allocated parts of the tree stands, and compete in being best in taking care of the trees. Also trees and their role in the local community have entered the curriculum in several schools.



*Children's drawings of trees in the village.
In classroom in Ang Lom Tong primary
school, Kampong Speu 2014*

Finally, the significant number of tourist who will experience effective actions on rural development and climate change mitigation in the post-project phase will constitute another aspect of development impact; that of increased understanding and motivation for climate change action in developed countries.

5. ASSESSMENT OF THE RESULTS AND IMPACTS OF THE PROJECT

5.1 Relevance

The project has been highly relevant. It has provided tangible climate action, with direct benefits to rural people in Cambodia and with strong co-benefits. It has developed and applied a new method for credible, accessible documentation to customers, of the climate- and social benefits of the climate action. This system is key to the attractiveness to markets for offsets that previously barely existed or did not exist, but now being developed by CAFACA.

5.2 Effectiveness

The project has been overall effective. It has achieved its main objectives and in line with the 3rd call from NCF, it has developed a viable business with the aim and potential to expand to other tropical countries. The business has sound procedures and qualified staff. The intended beneficiaries have been reached with substantial direct and indirect benefits. A major element of the effectiveness has been the creation, during project lifetime, of a durable and effective local business that continues the operation beyond the project.

5.3 Efficiency

The trees planted by the project represent a market value (as offsets) of c. 1 million € and their expected, direct benefits over the coming 20 years are above 2.7 million €. This has come from an investment of 523,075 €.

The monetary co-benefits may be roughly estimated at 10-20 USD/tree/year from fruits of tamarind and mango (in the near future when the trees start bearing fruits), and 1,000 USD per km over approximately 10 years from reducing erosion of roads and canals as this results in longer durability.

In addition, there are benefits, which are difficult to assess in monetary terms: Health effects (mainly based on the neem trees), additional strengthening of the farmers' associations and their relations to communities at large and to local authorities, as well as the benefit of development of a novel approach to offset markets, which has opened up new markets and will continue to do so.

5.4 Impact

At the local level the project has had impacts at social, environmental and economic levels as well as on individual skills and income: The associations and their collaboration with local authorities have been strengthened further, through organising of the tree planting and the trainings and through the reaching of internal agreements on management of the trees and the external agreements with CAFACA and with authorities. The environmental impact consists of considerable and long-lasting positive climate mitigation effects, positive adaptation impact, especially along roads and irrigation canals, as well as biodiversity impacts. Several nurseries have dug ponds, which benefit local aquatic biodiversity and some of the tree species planted are locally endangered, so the planting has increased diversity. At the individual levels hundreds of farmers have obtained increased skills in

sustainable farming and tree planting and –caring, and thousands of farming households will have increased income from the trees in the coming years, as well as reduced expenditures.

The NGO partner chose to shift its focus away from development work, and has therefore not enjoyed much benefit from the project. On the other hand, the local partners in the form of the farmers' associations have enjoyed and keep enjoying the benefits already described.

The project was built on previous experience of the applicants in rural Cambodia, built through more than 10 years of assessing and supporting various projects and programmes. This project was able to utilise the best practices learned through this period and lift them to the level of creating a viable business that benefits the local people as well as the global climate.

In the Nordic region the project has led to the establishment of partly new markets for climate offsets (among private households, developmental organisations and CSR-conscious companies). These markets are likely to expand and the CAFACA model has potential to contribute significantly to climate change mitigation and also involves the population more directly in positive climate change action.

5.5 Innovativeness and learning

The project has proven highly innovative; it has developed a new kind of offsets which are effective, are documented in easy-to-understand and highly visible ways, and also in obvious way benefit victims of the changing climate. This approach tends to excite possible clients and others who learn about it. It appears to have opened partly new venues for organisations, companies and the general public to act positively on climate change.

The system the project developed and is using for MRV is a large part of this, and is also in itself quite innovative. Similar systems do exist, but they are not applied to link direct to the clients and the public.

CAFACA has held two workshops, in Phnom Penh and Copenhagen to tell about this system TroFaCo intends to expand the approaches to other countries, and expand its markets as fast as possible, it is receiving support from the EU Commission's Climate KIC for this, and intends to seek other public fund, i.e. NOPEF.

6. SUSTAINABILITY AND POTENTIAL FOR SCALING UP AND FOLLOW-UP INVESTMENTS

The project's climate benefits will continue to grow, as the vast majority of tree plantings are well-secured and tended to by the communities, and they are eager to participate in further expansion. Several plantings provide significant and lasting adaptation benefits by securing infrastructure against climate effects. This contributes towards environmental sustainability.

At the larger scale of climate change action, the project has been able to demonstrate that climate action can work, can be documented in easy-to-understand ways and can benefit the poor people of a tropical country who suffer much from climate change effects. This is

the main reason CAFACA is now being promoted by leading CC personalities in Scandinavia and EU and continues to motivate prospective and existing customers.

The project has led to establishment of a viable business, so far based mainly on markets in Denmark and production in Cambodia. During the project lifetime, CAFACA developed a marketing approach and identified markets that are not served by existing offset products. These markets are of considerable size and exist also beyond Denmark. A four-year agreement for offsets of air travel emissions has been entered with one customer (The NGO DanChurchAid/DCA), which has a high recognition for its work on climate change and development, and others are close to being signed ('Green Church' in Denmark, Nordic Development Fund, a resort in Cambodia, a network of Danish Citizens called Grow For It). DCA is promoting CAFACAs approach in Denmark and within an international alliance of NGOs, with 142 members. Production can be scaled up easily in Cambodia, and CAFACA has entered MoU with a partner in Vietnam (see above) and is in discussion with potential partners in Africa to expand there.

Through the above the project results may be significantly scaled up. There are further millions of rural people in tropical countries, who are potential producers of tree-based offsets. The market for credible offsets seems huge and even growing as the climate crisis deepens and the demand for credible, effective action grows. Even the Paris Agreement committed all countries to act, the commitments are far from sufficient. Hence the need for activities that reduce the CO₂ content of the atmosphere will be in steadily expanding demand. Among these tree growth is a primary candidate, and quite possibly especially such activities that benefit the local people are preferable to many. CAFACA's model is quite unique, but may still need to compete with e.g. the Gold Standard credits. Still CAFACA brings more benefits to the local people, have much smaller transaction costs and its reporting is more exciting. It may be copied by others, which will be welcomed. But it requires a quite rare combination of solid experience in rural development, climate change and business operation

Additional funds would be needed, as financing through profits will be slow in coming and initial investments are relatively high. The funds would go towards a) identification (due diligence screening) of suitable producer groups i.e. well-functioning and democratically led farmer associations in additional countries, b) identification of suitable staff for local operations (ICT, business manager, accountant), c) training of the staff (by CAFACA staff) d) set up of local business, i.e. system of agreements with associations and authorities, MRV system and homepage, some of which could be allocated to a local partner, if one can be identified, and e) marketing and sales of the offsets. Expansion could be financed by customers who agree to pay this investment, private foundations or by public funds. The latter would be best suited and more likely. TroFaCo operates as a socio-economic enterprise and would not attract commercial investments.

Towards the end of the project phase, the Denmark-based business TroFaCo (international sales organisation for CAFACA and expected sisters in other countries) was awarded a place in the EU-commission's program for promising start-ups with climate change, Climate KIC. This has provided very valuable training and mentoring in business development and continues to provide very significant networking and marketing opportunities.

7. FINANCIAL REPORTING

	Project €		Financing Breakdown €							
	Total		NCF		Nordeco		Project income		CEDAC	
	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
Expenditures	500,992	518,675	367,742	367,742	15,400	43,295	39,350	25,280	78,500	82,358
Contingencies	25,062	20,351	18,387	15,644	4,707	4,707	1,968	0	0	0
Total	526,054	539,026	386,130	383,386	20,107	48,002	41,318	25,280	78,500	82,358

8. CONCLUSIONS AND RECOMMENDATIONS

Conclusions and recommendations; Suggestions for operational improvements and lessons learnt.

The project has performed as expected. Its main achievements are improved local livelihoods (social, human, natural and financial assets), as well as the creation of viable businesses in Cambodia and Denmark, which exploit partly new markets for carbon offsets. These markets are available because the innovative approach of the project and the businesses create trust that the offsets are actually being produced, they do so based on the innovative and instructive documentation and on the fact that substantial benefits actually go to poor communities in a developing country. The NCF financing has been instrumental in obtaining these results.

A possible recommendation, for calls that include support to the emergence of private sector organisations, could be for NCF/NEFCO to provide additional ‘hands on’ business development support, such as organizational development, business planning, marketing etc.. This may be needed for grantees, such as Nordeco, who has little experience in this field. In the present case, TroFaCo was able to obtain this highly critical support through Climate KIC, but without this the business development may have failed.

At the operational level it may have been advantageous had NCF been able to visit the project along the way. This was not possible due to staff time constraints.