

## Final Project Report

# “Promotion of Sustainable Robusta Production in Lam Dong Province”

## 098-07-VNM

Prepared for



Finnpartnership

Finnish Business Partnership Programme

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**Abbreviations**

4C	Common Code for the Coffee Community
CC	CafeControl
CSC	Central Highlands Soil, Fertilizer and Environment Research Centre
DARD	Department for Agriculture and Rural Development
DAC	District Agricultural Office
DAO	District Agricultural Office
DPC	District Peoples Committee
FFB	Farmer Field Book
FFS	Farmer Field School
GAP	Good Agricultural Practices
Gb	Green bean
GSO	General Statistics Office
HRNS	Hanns R. Neumann Stiftung (Foundation)
LAREC	Lam Dong Agricultural Research and Experiment Centre
MARD	Ministry for Agriculture and Rural Development
Mt	Metric ton
PAEM	Participatory Agricultural Extension Methodology
PRA	Participatory Rural Appraisal
ICP-FP	International Coffee Partners - FinnPartnership
ToT	Training of Trainers
WASI	Western Highlands Agro forestry, Sciences and Technical Institute



## 1 Introduction

In January 2007 the International Coffee Partners (ICP) started the project “Promotion of Sustainable Robusta Production in Lam Dong Province”. In November 2007 the Finnpartnership (FP) joined the ICP project.

The objectives of the support provided by ICP and FP are to strengthen the actors of the coffee value chain in Di Linh District, Lam Dong Province in order to contribute to the sustainability of the coffee sector and add value to the product.

Immediate objectives of the project are:

- To improve practices at the farm, the processing and the marketing level of the value chain;
- To create economic benefits for the farmers, the processors and the businesses involved in selling the final product, due to an improved quality and efficiency at these levels;
- To contribute to a more sustainable coffee value chain from a social and environmental perspective;
- To support economies of scale by introducing farmer organizational development; and
- To facilitate access to certified markets for smallholder coffee producers under the internationally recognized 4C and Utz Certified programs.

Lam Dong province is located in Vietnam’s Central Highlands. In the north it borders Dak Lak and Dak Nong provinces, its eastern border is shared with Khanh Hoa and Ninh Tuan and to the south are Binh Tuan and Dong Nai provinces. The topography of Lam Dong is mountainous. Lam Dong’s population is 1,069,138. Of this population roughly 80% depends on agriculture. Agricultural share of GDP has been steadily declining from 55.6% in 1995 to 48.5% in 2005. Coffee, while not grown throughout the province is economically important (

Figure 1).

Lam Dong’s coffee acreage is around 118.000 ha (GSO, 2001) spread over 11 districts. During the period of high prices in the nineties the planted area expanded rapidly. The time of the coffee crisis saw a small decline in planted area, but since then planted area seems stable.

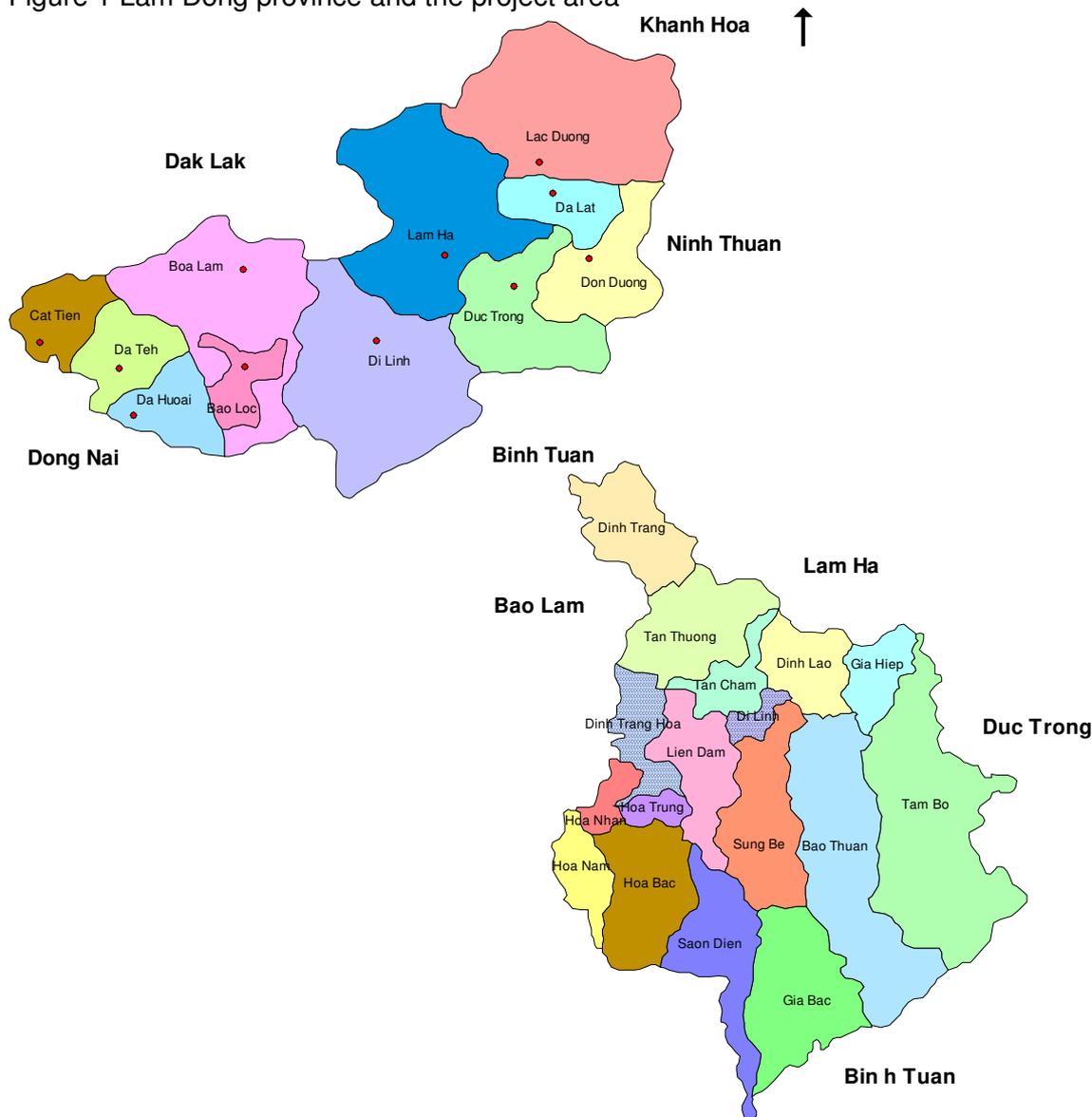
The Robusta coffee area of Lam Dong province is mainly located in the districts of Bao Loc, Duc Trong, Lam Ha, Bao Lam and Di Linh. Initially the project focused on two communes, i.e. Di Linh township and Dinh Trang Hoa and a target group of 200 smallholder coffee growers in Di Linh District. After the first year’s evaluation the project management decided to extend the project upon request of the local authorities, including two more communes (Tan Chau and Dinh Lac) and doubling the number of beneficiaries from 200 to 400 (Table 1).

This is the final project report which aims to summarize the main activities and results as well as to provide a quantitative assessment of the ICP-FP project impact. It is further aimed to provide a critical assessment on project implementation as well as to provide recommendations for future project interventions.

Table 1 Project information

Location	Di Linh District, Lam Dong Province, Vietnam
Project duration	01.01.2007 to 31.12.2009 (ICP)
Type of coffee	Dry processed Robusta
Elevation	400 m
Number of project farms	400
Number of people reached	Circa 1,600; 400 families
Average farm size	1.5 ha, coffee (mono cropping)
Partners	Department of Agriculture and Rural Development, Lam Dong Agricultural Research and Experiment Centre, CafeControl, District People's Committee, District Agricultural Centre and District Agricultural Office.

Figure 1 Lam Dong province and the project area

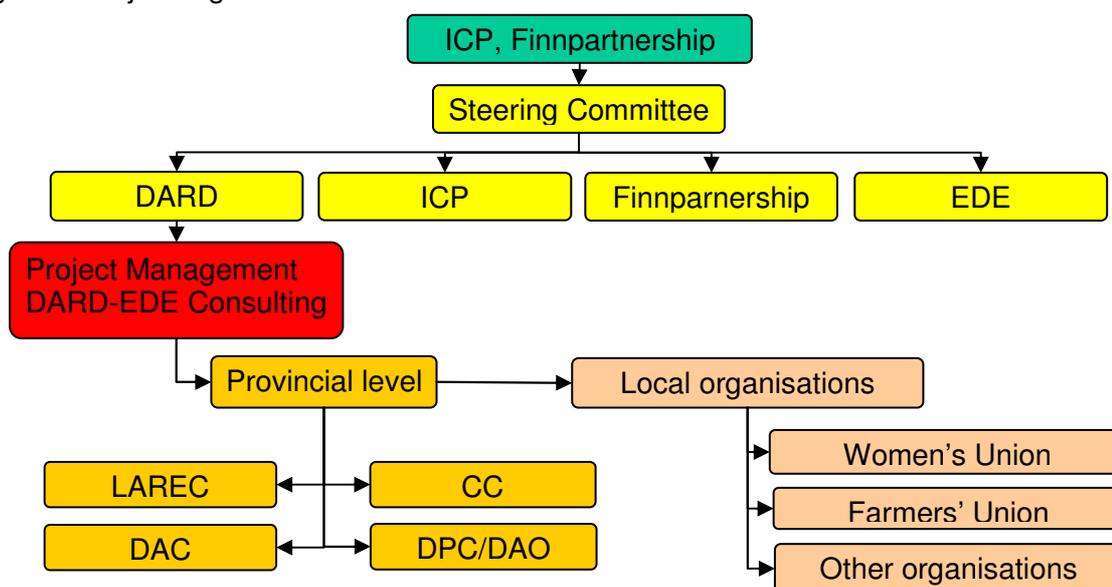


## 2 Project approach

The project implementation was setup in such a manner as to reach all provincial players in the coffee value chain and to assure ownership for the local partners to generate potential up-scaling after the project end.

At the level of the province, the Department of Agriculture and Rural Development was appointed the project director. This institute provided the overall management of the project and coordinated all activities with local partners. All information and lessons-learnt from the project are gathered by DARD and communicated to the provincial peoples committee and the Ministry of Agriculture and Rural Development (MARD) at the central level to in view of potential national up-scaling after the project closure (Annex 1; Program Proposal for “Coffee Sector Development towards Sustainable Coffee Production and Trade in Vietnam until 2020”). Figure 2 shows the project setup.

Figure 2 Project organizational structure



At district level the project cooperated closely with the District Agricultural Office (DAO) under the District Peoples Committee (DPC) for daily management, communication with the beneficiaries and to coach the entire training program. For training of farmers on Good Agricultural Practices the project hired the District Agricultural Centre (DAC). For trainings related to coffee quality, certification and Farmer Field Book record keeping CafeControl was hired. This is an organization under MARD which provides coffee quality control for over 90% of Vietnam’s coffee exports and which is an officially accredited auditor for the 4C and Utz Certified programs.

Technical training of trainers was provided by Lam Dong Agricultural Research and Experiment Centre, a local research centre. This centre was also responsible for setting up field demos on irrigation and composting. For other trainings related to entrepreneurial skills and participatory agricultural extension methods, external consultants were hired (cf. Chapter 9.2 and Chapter 9.4).

Each year EDE Consulting designed together with the local partners an operational plan, which was translated into specific service contracts with local partners on an annual basis. This approach has proven very successful since local partners recognize their efforts and it guarantees continued support for the coffee sector after project closure. On top of that this approach is very cost efficient and allowed to setup an intensive training program for 400 coffee families or circa 1,600 people.



### 3 Project progress and budget disbursement

According to the original plan a feasibility study was considered necessary to assess suitable organizational forms for coffee farmers. However as from the start of the project local authorities – the Provincial Department for Agriculture and Rural Development and the District Peoples Committee – indicated that according to the Vietnamese Law the "collaborative group" would initially be the most suitable organizational form. A collaborative group is an organizational form which is registered with the local authorities, but has no legal status as compared to limited liability or joint stock companies. In other words, participants with a common interest can organize themselves on a voluntary basis, define their own laws and bylaws internally and work together towards a common goal under distant supervision of the local authorities.

As a consequence on request of the local authorities the budget projected for the feasibility study was spent on the assistance of coffee producers to setup a collaborative group and to provide access for smallholders to certified markets under the Common Code for the Coffee Community and Utz Certified programs. This was successfully realized as justified by two certificates received in December 2007 and December 2008 respectively. Currently one collaborative group consisting of 32 key farmers exists (2 key farmers per farmer group). Each duo of key farmer is further responsible for training and internal audits for a group of 25-30 farmers.

Given the fact that certification of smallholder coffee producers was rather new in Vietnam by the start of the project, significant extra support was provided by EDE Consulting to train farmers on the respective codes of conduct, to develop an internal control system, to assist with internal audits, to liaise with the trade and industry (e.g. visits by Paulig, Lavazza and Neumann Gruppe Vietnam) in order to setup a suitable coffee collection system and to train farmers on post harvest processing and international coffee quality standards.



From left to right: visits by representatives of ICP, Paulig and Lavazza.

Originally projected according to the contract with Finnpartnership, the costs for the feasibility study were estimated at 51,850.00 Euro. The real expenses made however were 64,322.98 Euro or 12,472.98 euro in excess mainly because of the higher inputs required from EDE Consulting to support the process of certification for smallholders (Annex 1).

Originally projected according to the contract with Finnpartnership, the costs for capacity building activities were estimated at 23,700.00 Euro. The real expenses made however were 34,124.55 Euro or 10,424.55 Euro in excess.

The explanation for the excessive expenditures was an original underestimation of the real costs involved to train 400 coffee farmers and the unforeseen inflation rate in Vietnam resulting in higher expert wages than originally forecasted.

On the other hand the budget line 6 “Project phase: Employee training” was originally largely over-estimated as the original idea was to provide training materials for coffee farmers free of charge under the project framework. However in line with the government’s national coffee sector strategy training materials are considered an information service for which farmers have to pay. As a consequence the training manuals were sold at cost through the Ministry of Agriculture and Rural Development and the budget for training materials remained largely unused.

It is therefore proposed that the remaining budget in budget line 6 covers the over-expenses made in budget line 7 since both budget lines refer to training and capacity building (Annex 1).



Good Agricultural Practices manual for sales at cost



#### 4 Details of the business partnership

The below Table 2 provides an overview of the project beneficiaries reach through the support of the ICP-FP project and the product volumes and qualities (certificates) generated.

Table 2 Overview of the project beneficiaries and product volumes/qualities

Item	Quantity
Business partners (informal business partnership)	400 smallholder coffee producers 2 local collectors (Petec and Tai Nguyen) International trader Neumann Gruppe Vietnam Roasters in ICP, a.o. Paulig and Lavazza.
Technical trainer team	32 farmer trainers 3 researchers 4 extension trainers
Production volume total	2007: 1,257 Mt 2008: 2,490 Mt 2009: 2,490 Mt
Production Utz Certified	2008: 2,352 Mt 2009: 2,008 Mt
Production 4C verified	2007: 423 Mt 2008: 423 Mt 2009: 423 Mt

#### 5 Technology transfer

The main focus of the project was on technology transfer for smallholder coffee producers. The capacity building activities can be summarized in 2 broad categories i.e. training of trainers and extension staff and training of coffee farmers. The project applied a two tier approach. At first a group of extension staff and key farmers (head of farmer groups) were trained in detail on modern participatory teaching methodologies and the technical details of coffee production, processing and business management according to internationally recognized standards (exemplified by Utz Certified and 4C). Subsequently these trainers conducted training for the farmers in their respective groups. A detailed overview technology transfer activities is provided in Chapter 1.

The training of trainers and farmers program consisted of 3 packages:

- Participatory Agricultural Extension Methodologies, where trainers learn to develop concise and participatory training sessions for an adult trainee audience; this training was provided by a freelance consultant who applied the methodology as developed by GTZ, SNV and the EU.
- Good Agricultural Practices, where trainers learn in detail all aspects of coffee production and processing; this training was provided by a local research centre (LAREC with support from WASI and CSC).
- Entrepreneurial Skills, where trainers learn basic accounting, negotiation skills and business plan development to get access to formal credits; this training was conducted by the Business Promotion and Support Centre and the CEFE methodology was applied.
- Training on Certification under the 4C and Utz Certified programs; this training was respectively conducted by EDE Consulting, CC and the Utz Certified representative for Vietnam.



## 6 Development effects of the project

Based among others on the lessons learnt of the ICP-FP and other projects managed through EDE Consulting, the Ministry of Agriculture and Rural Development has invited EDE Consulting to jointly develop a National Coffee Sector Strategy to scale up the impact of the pilot projects. The program was designed and approved with multi-stakeholder agreement in 2008 and is attached for reference (Annex 1).

The overall objective of the Program is to contribute to the improvement of the competitive position of Vietnam's coffee sector, allowing for farming efficiency and quality improvement which results in an increase of coffee export turnover for Vietnam and the stabilization of coffee farmers' livelihood.

In particular the Program aims to work on 3 immediate objectives.

Firstly, at the level of governance, policy making and institutional development, the Program will contribute to "Strengthening organizational capacity in the coffee sector", by supporting the development of a sector coordination board, a sustainable development fund, a national coffee grower association and business oriented producer organizations.

Secondly, the Program will contribute to "Supporting the Vietnamese coffee sector in the adaptation of market strategies, regulations and standards towards sustainability and global integration" through revision and adaptation of standards by means of a multi-stakeholder approach.

Thirdly, at the level of immediate implementation for the producers and processors, the Program will contribute to "Improving coffee quality both in terms of sensorial/physical and processing and production management aspects", by supporting a nation wide training program for trainers and beneficiaries.

For the third immediate objective the Program will intensively build on the lessons learnt from the ICP-FP project as well as others. While the first component of the national program was the core aim of the ICP-FP project, the timing was a bit early. Nevertheless the informal farmer groups with improved capacity on production, processing and business management that have been established through the support of the ICP-FP project will facilitate further formal organizational development in the mid-term in line with National policies.

## 7 Number of directly and indirectly created jobs

While the project did not aim to generate more jobs, it was rather geared towards professionalizing the business of existing coffee producers in order to make the coffee value chain work more efficiently by linking roasters and exporters directly to the producers and by generating access to certified markets for smallholders. As a consequence the number of jobs generated remained status quo, while the business relations between producers and traders have been strengthened. Producers are now able to deliver certified high quality coffee directly to recognized traders and roasters.

On top of this the project created nuclei of knowledge transfer by setting up a network of well-trained key farmers. Those will be officially recognized by the local authorities and currently complement the regular extension network. As such the project has significantly contributed to the scaling up of knowledge transfer on sustainable coffee farming from an economic, social and environmental perspective.



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## 8 Social and environmental impact

### 8.1 Certification

Through the project farmers have gained access to certified markets under the 4C and Utz Certified programs. Both programs foster sustainable production from an economic, social and environmental perspective and aim to improve business relationship between players in the supply chain.

The fact that the project successfully obtained the 4C and Utz Certified certificates in 2007 and 2008 respectively – audited by an independent third party - objectively justifies that farmers have adapted their business management to comply with the detailed Codes of Conduct of both programs, which adhere to European standards and include international regulation e.g. ILO labor standards, international health standards, standards for education, food safety regulations and safety regulations at the work floor, etc.

### 8.2 Production efficiency improvements

While a certificate may serve as an official recognition, this project can also quantitatively provide evidence for major improvements made at social and environmental level since participating farmers have monitored their production process on a daily basis throughout the project lifetime (cf. Chapter 9.7).

As a result of the intensive training program, farmers have realized that more efficient farm management can be realized. As a consequence the production costs (under fixed input prices) can be lowered and the net benefit for the families increases (cf. Chapter 9.7.3). Also the fact that the producers have been certified allows them to receive premium prices for their product. Additionally a reduction in the use of chemical fertilizers, agro-chemicals, water and fuel for irrigation has beneficial effects on the environment, in particular the soil, water and atmosphere (reduction of green house gasses).

### 8.3 The project beneficiaries

This project followed an approach where all interested stakeholders could voluntary participate. As a consequence there was no discrimination in the selection process of the participants leading to a healthy mix of different kinds of farmer families, which enabled that less advanced farmers often benefited from the 'innovators' (e.g. through group discussions on the farm results in farmer field schools; cf. Chapter 9.7.2).

Also there was no discrimination at the level of ethnicity or gender. While the men were officially registered in the project, generally both men and women manage the plantations together. As a result sometimes the men participated in the trainings while at other times the wives participated depending on the allocation of tasks.

Last but not least about 10% of the target group consisted of ethnic minority families of the Co Ho ethnicity. Those people often adhere to more traditional farming practices and are often poorer and less integrated into the society. Active participation of this target group has allowed for knowledge "cross-pollination" between the ethnic Vietnamese and minority farmers in favor of more sustainable production and access to certified markets.



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## 9 Activities and results

### 9.1 Baseline study

From 30 of October until 5 November 2006 EDE Consulting in cooperation with DARD Lam Dong, DPC Di Linh and DAO, conducted a baseline study to assess detailed project intervention needs.

In total 14 farmers from Dong and Tay cooperatives in Di Linh and Dinh Trang Hoa plantation were interviewed in a group session and individually. For trade information 2 collectors/traders were visited. Input from local authorities was collected during a one-afternoon stakeholder consultation meeting with representatives of DARD, DPC, DAC, DAO, LAREC and CafeControl. Farmer's training needs were explored in a one-morning training needs assessment with 25 farmers from 2 areas. Various fieldtrips to Di Linh Township and Dinh Trang Hoa Commune supplemented the stakeholder meetings. Initial outcomes of the study were fine-tuned in a debriefing meeting with DARD, DPC, DAC, DAO, LAREC and CafeControl.

The findings can be summarized as follows:

- Training needs on Good Agricultural Practices (GAP) with a major focus on irrigation and fertilizer management for coffee producers.
- Training needs on farm economics and record keeping (particular focus on efficiency improvement for input management and labor allocation) for coffee producers.
- Training needs on Good Processing Practices in particular harvest and post-harvest management (including processing and storage) and quality standards (TCVN and ISO) for farmers and collectors.
- Awareness raising on financing tools, credit schemes and use of credits.
- Awareness raising on verification (4C) and certification (Utz Certified) schemes for farmers and collectors.

The detailed baseline study report is available in Annex 1.

## 9.2 Training of Trainers on Participatory Agricultural Extension Methodology

One freelance consultant from Son La province conducted a training for trainers program on Participatory Agricultural Extension Methodologies. The training program took 22 days in 2007 and the refresher course in 2008 took another 10 days (26-30.03.2007; 09-13.04.2007; 8-12.05.2007 27.06-06.07.2007 coaching in FFS).

Participants were:

- 32 Key farmers (2 women and 4 minority participants)
- 4 extension staff from DAC
- 3 researchers from LAREC
- 1 local collector

The PAEM training curriculum comprised the following topics:

- Basic extension concepts, functions and Government policies.
- The use of PRA tools for analyzing commune training needs and building up extension plans.
- Adult learning techniques, different training methodologies and facilitation skills (e.g. group discussions, brainstorming sessions, role games, etc.).
- Training skills and feedback skills (e.g. presentation skills, use of zopp cards, use of pin boards, etc.).
- How to build a course design and session plans.
- Organization of and performance during a training course.

After the training course the participants were able to design and implement training courses independently. Besides the regular extension trainers also 32 key farmers were trained in PAEM. These farmers have become more verbal during the course and can currently be considered as a complimentary pool of coffee experts additional to the regular extension network. Different from traditional training methodologies, the participants have learned and currently apply demand driven extension, which is more efficient and responds directly to the needs of the beneficiaries. The local authorities consider to officially recognizing the key farmers as qualified extension staff by the end of 2009. With budgets from the district, the key farmers will then continue to provide trainings on sustainable coffee production to farmers in and outside the project area.



Key farmers practice modern Participatory Agricultural Extension Methods



### 9.3 Training of Trainers on Good Agricultural Practices

Throughout the project a complete technical Training of Trainers program was conducted. The trainings were provided by various experts from institutions such as DARD, LAREC, WASI, CSC and CC. The objective of this training package was to train extension workers and key farmers intensively on all the management aspects of the coffee business from production to post-harvest processing and storage. Subsequently these trainers can multiply their knowledge for farmers in Farmer Field Schools (cf. chapter 9.5).

Participants were:

- 32 Key farmers (2 women and 4 minority participants)
- 4 extension staff from DAC
- 3 researchers from LAREC
- 1 local collector

The following topics were covered:

- Vegetative propagation and nursery management; WASI, DARD and Truong Son Company
- Grafting and post-grafting management; WASI, DARD and Truong Son Company
- Soil Science and fertilizer management; LAREC assisted by CSC
- Organic matter management and composting; LAREC assisted by CSC
- Irrigation; LAREC assisted by WASI
- Pruning; LAREC
- Pest and disease management; LAREC
- Harvest, processing and coffee quality; CC

The training package was conducted according to the crop calendar in several modules. E.g. during the dry season courses on irrigation were provided, while during the harvest season coffee processing and quality was discussed. The trainings consisted of a full day per module, a theoretical session in the morning and practical exercises in the farmers' fields in the afternoon.

Different from the regular extension system in Vietnam, where farmers are paid minimum 15,000 VND per person (or 0.8 USD) to participate in trainings according to law, the project did not pay any participant, but argued that farmers would receive training free of charge and could participate on a voluntary basis. Unexpectedly participation rates were high (up to 90%).

The training curriculum was developed by WASI in cooperation with EDE Consulting. The training materials were tested in during the farmer field schools and feedback was provided by farmers and trainers to improve the GAP manual. By the end of 2008 the Ministry of Agriculture and Rural Development informally approved to print 2,000 copies for sales at cost as a test pilot.



Key farmers practice training on Good Agricultural Practices



#### 9.4 Training of Trainers on Entrepreneurial skills

The Business Promotion and Support Centre was hired to conduct a Training of Trainers program on entrepreneurial skills. The training program took 20 days in 2008 and the refresher course in 2009 took another 10 days (10-20.08.2008; 08-19.09.2008; 13-23.03.2009 coaching in FFS).

The trainers applied the CEFE methodology; Competency based Economies through Formation of Enterprise. CEFE is a comprehensive set of training instruments using an action-oriented approach and experiential learning methods to develop and enhance the business management and personal competencies of a wide range of target groups, mostly in the context of income and employment generation and economic development.

The objective of this training course was to enable 400 farmers to make their own business plan towards more efficient farming management, to acquire formal credits and to organize themselves in groups/enterprises, able to independently market coffee. Participants were:

- 32 Key farmers (2 women and 4 minority participants)
- 4 extension staff from DAC
- 3 researchers from LAREC
- 1 local collector

The CEFE training curriculum comprised the following topics:

- characteristics of the entrepreneur;
- Marketing;
- Production organization & labor allocation;
- Financial management;
- Negotiation and cooperation in business; and
- Business plan development.



## 9.5 Training of Farmers on Good Agricultural Practices and Entrepreneurial skills

Throughout the project a complete training program for farmers was conducted in so-called farmer field schools. The trainings were provided by the beneficiaries of the methodological and technical ToT curriculum as described in chapter 9.2, 9.3 and 9.4. The objective of this training package was to train farmers and collectors intensively on all the management aspects of the coffee business from production to post-harvest processing and storage in order to make their business more cost efficient and to create awareness on sustainable coffee production with a focus on economic viability, social responsibility and environmental protection. The participants were 400 farmers divided in groups of 20 to 25 trainees. The training curriculum followed the crop cycle (i.e. irrigation was explained during the dry season, while processing and quality was discussed during the harvesting season) and consisted of a theoretical session in the morning and practical exercises in the afternoon.

The following topics were covered for GAP:

- Vegetative propagation and nursery management
- Grafting and post-grafting management
- Soil Science and fertilizer management
- Organic matter management and composting
- Irrigation
- Pruning
- Pest and disease management
- Harvest, processing and coffee quality

The following topics were covered for Entrepreneurial Skill Training:

- characteristics of the entrepreneur;
- Marketing;
- Production organization & labor allocation;
- Financial management;
- Negotiation and cooperation in business; and
- Business plan development.



## 9.6 Training of Trainers and Farmers on Certification

To provide access to certified markets and to recognize farmers' efforts to produce in a sustainable manner in terms of economic viability, social responsibility and environmental protection, the project decided to implement a program towards verification/certification under the 4C and Utz Certified schemes. Both certificates are internationally recognized and their main objective is to certify not only the sensorial coffee quality but also the process how the product was produced. Therefore farmers need to document their farming activities and assure that the coffee is traceable.

### 9.6.1 *Common Code for the Coffee Community (4C)*

Within the Common Code for the Coffee Community Association (4C), producers, trade and industry and civil society from around the world work together for more sustainability in the entire coffee sector. This global community has joined forces to continuously improve the social, environmental and economic conditions for the people making their living with coffee.

The ICP-FP project actively contributed to awareness rising on the Common Code for the Coffee Community Program (4C) and its implementation in line with the National Strategy (Decision No. 2635/QĐ-BNN-CB by the Minister dated 26.08.2008 namely "Approving the Program on Competitiveness Enhancement for the Vietnamese Coffee Sector by 2015 and Orientation toward 2020"). Following activities were conducted:

- Organization of an info session on 4C for 200 farmers in 2007, conducted by DAO in cooperation with EDE Consulting and Neumann Gruppe Vietnam.
- Registration of interested farmers on a voluntary basis and self-assessment on compliance with the 4C code of conduct assisted by DAO, Neumann Gruppe Vietnam and EDE Consulting;
- On a voluntary basis 189 farmers registered in the program; this is equivalent to a registered production of 423 Mt.
- Selection of a trading company to assist in administration and to become the 4C license holder. In agreement with local beneficiaries, Neumann Gruppe Vietnam was selected to become the unit holder. This is only considered a transitional solution. Once farmer groups become better organized, the certificate holder would be transferred to the farmer groups, which will allow them to sell verified 4C coffee to the best bidder.
- Registration of the farmer groups and trading house with the 4C association; in total 189 farmers signed up.
- In December 2008 CafeControl conducted a verification audit; the audit was successful and a 4C license was granted to Neumann Gruppe Vietnam.

### 9.6.2 Utz Certified

Utz Certified is responsible for creating an open and transparent marketplace for agricultural products. In just over five years the program has grown to be one of the leading coffee certification programs worldwide and is now expanding to become a multi-commodity program. Utz Certified's vision is to achieve sustainable agricultural supply chains, that meet the growing needs and expectations of farmers, the food industry and consumers alike. With its in-depth Code of Conduct, the program gives independent assurance of sustainable production and sourcing and offers online real-time traceability of agricultural products back to their origin.

Given the increasing demand for Utz Certified coffee on the world market, the project committed to offer smallholders access to this certification program. Following activities were conducted:

- In April 2008, a 2-days info session on Utz Certified was organized for 400 project farmers in cooperation with the national Utz Certified Representative and CafeControl. The two-day session attracted over 70% of the project beneficiaries and about 378 farmers have finally registered on a voluntary basis (equivalent to circa 2,352 Mt of green beans).
- Since the project area is subject to severe competition from other international traders, Neumann Gruppe Vietnam decided not to take the Utz Unit position but proposed rather to train one local trader on the Utz Code of Conduct. Petec was selected in agreement with the beneficiaries and local authorities.
- In view of Utz certification by the end of 2008, the project has conducted a diagnostic audit for registered farmers by July. The consultancy was provided by CafeControl, a coffee quality inspection company and recognized Utz Certified auditor. The objectives of the 4-day training were: (i) to familiarize key farmers with standard auditing procedures; (ii) to train farmers on internal auditing procedures; and (iii) to assess the current compliance of project farmers with the Utz Certified code of conduct. At the time of the self-inspection the Utz unit (incl farmers, a local collector/processor and NG Vietnam) complied for over 76% with the major criteria and for almost 82% with the minor criteria. The main shortcomings were found at the level of the collector (e.g. traceability was not yet in place, roles and responsibilities for the local collector's staff were not clearly defined,...). To address the non-compliances, a corrective action plan was developed.
- In October 2008, in preparation of the official audit, a second internal audit was conducted by the key farmers. Compliance with the Utz Code of Conduct was first assessed in a group discussion, where shortcomings were indicated and recorded. Subsequently key farmers of one group cross-checked the performance of other groups, so as to assure objectiveness.
- In December 2008, the project represented by a local processor (Petec), was rewarded by CafeControl with an official Utz certificate.



Key farmers conduct an Internal audit for the Utz Certified Program

## 9.7 Training of farmers on basic accounting through Farmer Field Book Records

### 9.7.1 Background

The Farmers' Field Book (FFB) is a multi-dimensional tool for registration of activities by farmers and for analyzing labor efficiency, nutrient flows and household economics in coffee. It gives project staff, extension workers, researchers and farmers easy access to analyzed field data on which to base technical or economical interventions in coffee farming systems.

Reasons to apply it are:

- to make farmers aware of costs and benefits; and
- to enable comparison of different farmers/crop management to find out better ways of farming

This is done through:

- Calculating financial results of farm activities e.g. costs (of inputs) and benefits (from selling products);
- Evaluating input - output relations e.g. relation between Nitrogen input and yield;
- To compare performance with other farmers e.g. "What can I learn from 'better' farmers?"; and
- Analyzing sensitivity of farming system to changes e.g. what if the price of labor goes up 20%.

The FBB consists of two software components and a guide book:

- Data entry module
- Data processing and report generation module

The data entry module recognizes the most commonly used inputs in coffee (fertilizers, compost, pesticides, etc.), detailed activities (pruning, fertilizing, harvesting, pruning shade trees, etc) and labor inputs (household adult, household child and hired labor). Any additional inputs or activities that are not specified in the original version can easily be added by the user at any given time.

The data processing module analyses the registered activities and produces several predefined figures and tables on either per field, per tree or per hectare basis. All figures and tables are open for editing.

The entire software package is Excel based and can be used in 4 languages (Vietnamese, English, Spanish and Dutch). The user can add additional languages or replace existing ones. Furthermore, it is possible to enter data in one language (e.g. Vietnamese) and have the output reports (charts and tables) in any of the other three languages.

Although originally designed for coffee the FBB can be adapted for use in other crops as well. Besides record keeping for agronomic management practices the software can also be used to register post harvest processing practices.



Farmers get support in the field to record daily production management activities and assess annual results in farmer field schools



### 9.7.2 *Methodology*

The implementation of the Farmer Field Book tool consists of the following steps:

- Organization of an info session for farmers on the benefits of record keeping for the purpose of individual business administration and as required for certification/verification programs.
- Registration of interested farmers and collection of general background information required by the software to perform analyses (e.g. coffee area, date planted, no. of trees, household situation, etc.); 294 farmers participated.
- In case the first registration does not coincide with the start of the cropping season (in Vietnam this is considered in January with the start of the irrigation season and coffee flowering), a backward recording session is organized to collect and register all management practices from the start of the growing season until the point in time where daily recording actually starts.
- Farmers are trained on the record keeping procedures/protocol (e.g. how to note down amounts of fertilizers, correct use of units such as kg, liters, etc. and receive a template (for the whole cropping season, i.e. one year for coffee) indicating the main activities of the coffee farming system. An example is provided in Annex 2.
- Farmers keep records on a daily basis and write down hours worked (household or hired labor, adult or child labor), the wages paid for hired labor and the inputs used (fertilizer, water, fuel, etc.).
- By the end of each month the farmers cumulate the daily data in a template as provided in Annex 3.
- Farmers are informally organized in groups of 20-25 participants. One farmer is elected by the group as the team leader, so-called “key farmer”
- By the end of each month, the key farmers collect the monthly cumulative data records, assess the quality (mainly accuracy and consistency; e.g. if a farmer applies fertilizer, there should be records on the amount and type applied plus the labor time spent for application) and correct/complete data in discussion with the farmer where necessary.
- Subsequently the data are delivered to the District Agricultural Office (DAO), where a double check on data correctness is performed. DAO delivers the hardcopy files to CafeControl.
- CafeControl enters the data into a central database and analyzes the data by the end of the cropping season in cooperation with EDE Consulting.
- Two kinds of reports are generated. Group reports, which allow farmers to compare their own management with that of their peers, and individual reports explaining the financial situation and input balances (for nutrients and water). Both reports are provided in Annex 4.
- Each year the analysis reports are used in one technical Training of Trainers session; subsequently the trainers organize Farmer Field School sessions where results are explained and advice is provided on-demand to improve the farmers’ management efficiency.

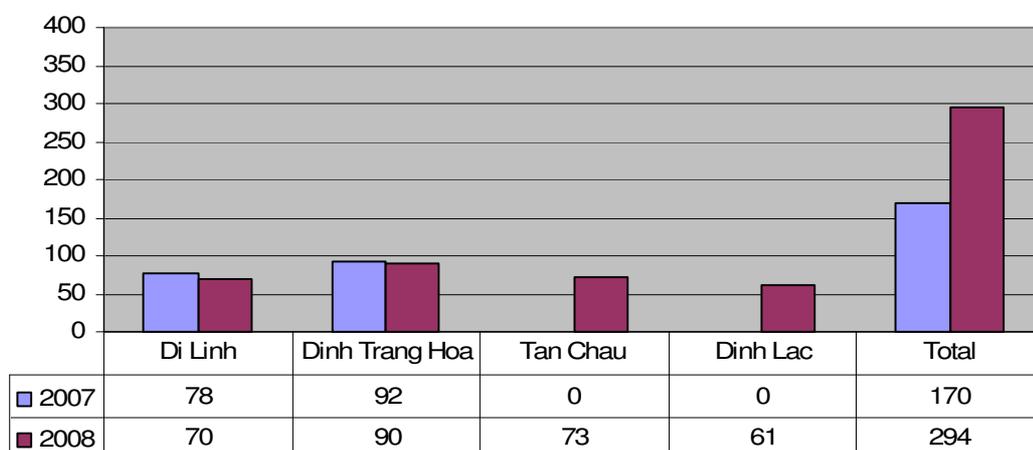
### 9.7.3 Quantitative results

The results described in this chapter are all derived from records kept by farmers on a daily basis. Over the project lifetime the number of farmers keeping records has increased from 170 in 2007 to 294 in 2008 (Figure 3). While there was a small drop out of participating farmers the figures remain rather constant in Di Linh and Dinh Trang Hoa commune. The reasons for the high participation rate (73.5 % on a total of 400 project beneficiaries are:

- Record keeping is a prerequisite to participate in certification programs such as Utz Certified and 4C; and
- The project makes use of the collected data to analyze shortcomings in the production management at the group and individual level in Farmer Field Schools, which is highly appreciated by participating farmers as it helps fine-tuning their farm management.

The project team has developed a new reporting template in 2007 for both individual results as group results, which is very much appreciated by the project beneficiaries.

Figure 3 Number of farmers keeping daily records per commune over time



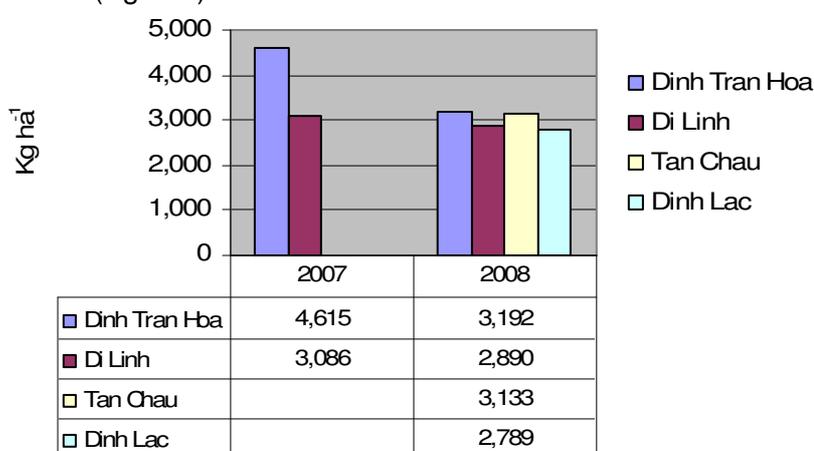
While the project lifetime was rather short to draw significant conclusions – only two years of record keeping for Di Linh and Dinh Trang Hoa and one year for Tan Chau and Dinh Lac – the results of 2008 will be compared to the observations recorded in 2007 for the first 2 communes. Also a comparison will be made in production costs and allocation for farmers participating in the project since 2 years with those who joined only since one year.

Figure 4 depicts the productivity in the four project communes over time. There was a significant production decrease in Dinh Trang Hoa in 2008, while a more moderate reduction was observed in Di Linh (a decrease by 1,423 kg and 196 kg of green beans per ha respectively).

The fluctuations in yield performance are attributed to external factors beyond the control of the project. In particular the climatic conditions in 2008 were characterized by a long dry spell from May to July. This period coincides with the swelling stage of the coffee cherries and determined the final bean size. Given the dry spell the swelling was hindered resulting in smaller bean size and hence lower volumes. On the other hand the long dry spell was followed by a sudden extremely wet period. This resulted in the “wet-feet” syndrome, where coffee plants shed their cherries prematurely.

However in both communes and in both years the average yields are high as compared to a national average yield of 2 Mt per ha.

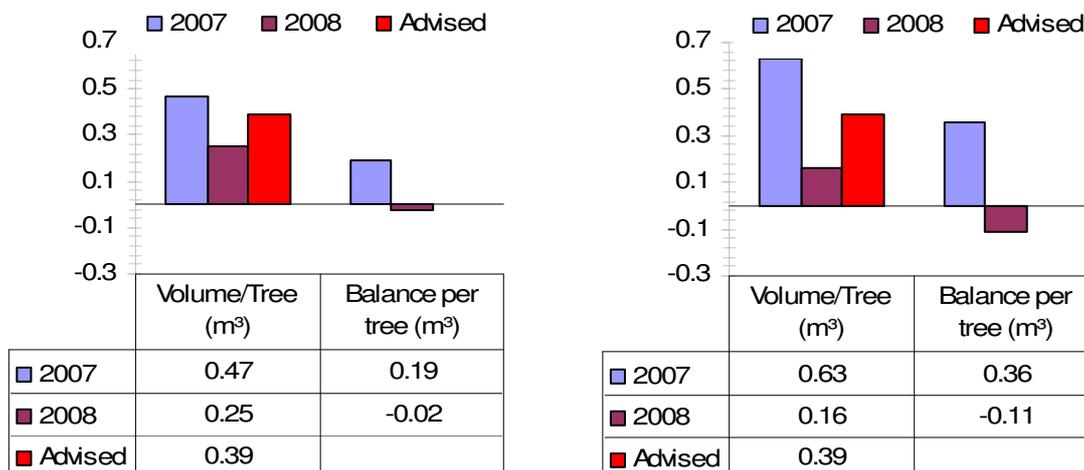
Figure 4 Productivity in Di Linh, Dinh Trang Hoa, Tan Chau and Dinh Lac Commune over time (Kg ha<sup>-1</sup>)



Farmers in Di Linh district irrigate on average 1 to 2 times per season. The number of irrigation rounds may however vary significantly from commune to commune as the area is characterized by a patchy variation of micro climates. While a farmer in the Central Highlands applies on average between 0.8 and 1.0 m<sup>3</sup> of water per round per tree, the advised optimum is circa 0.39 m<sup>3</sup> per tree per round (WASI & D'haeze, 2004).

In the project, the volume of water used per season reduced significantly (by a factor of 1.9 and 3.9 respectively) as compared to 2007, even showing a slightly negative balance in 2008, while this does not significantly affect yields. One may hence conclude that the advised 0.39 m<sup>3</sup> per tree and per round is still excessive. In theory one could still reduce to 0.30 m<sup>3</sup> per tree per round (D'haeze, 2004), while experiments to demonstrate this have not yet been conducted in Vietnam.

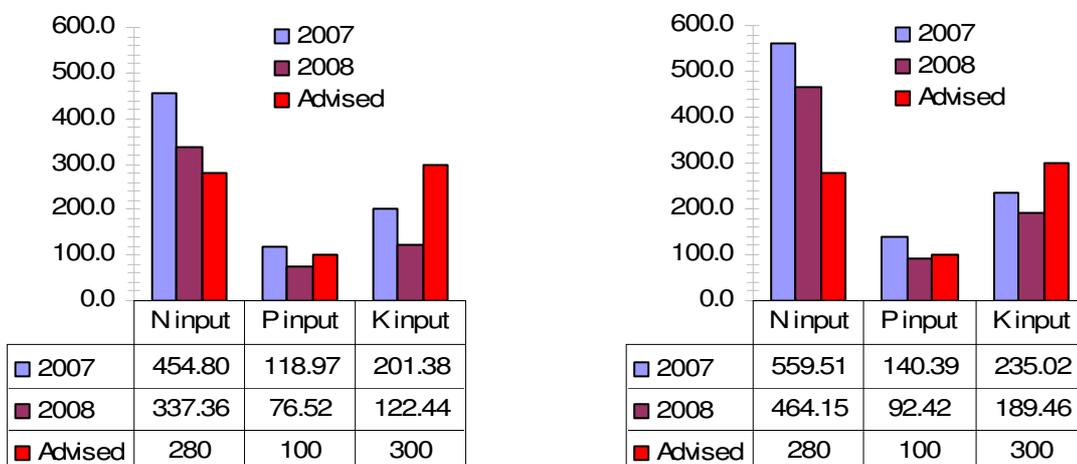
Figure 5 Annual water volume per tree (m<sup>3</sup>) and water balance in Di Linh (left) and Dinh Trang Hoa (right)



It is clear from the balance calculations that farmers appear to have taken advice for granted (Figure 5). It is recommended to continue training on best irrigation management and combine this with visual aid for broadcasting at a large scale.

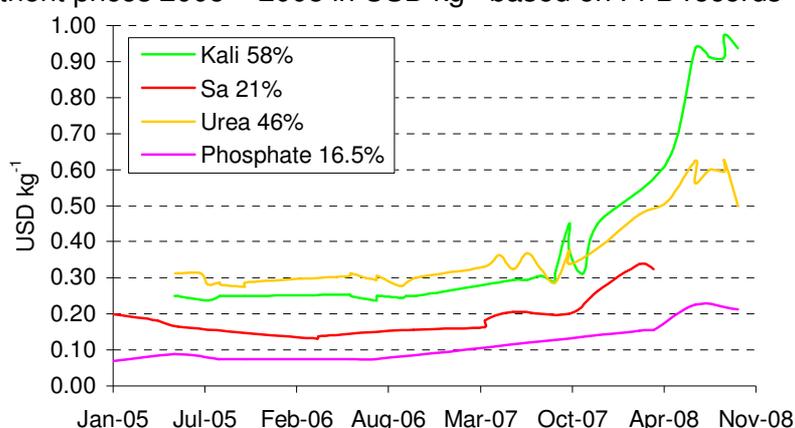
The overall picture appears to confirm that farmers have reduced the volumes of inputs in line with the advice provided during the farmer field schools (Figure 6). For all nutrients in both communes a significant reduction is observed (by 21% to 64%).

Figure 6 Nutrient input and advised input volume for Di Linh (left) and Dinh Trang Hoa (right) (kg ha<sup>-1</sup>)



The apparent deficit application of potassium needs further attention, since considerable fruit drop was recorded in 2008 during the month of August. While the fruit drop was partly related to excessive rainfall, more appropriate potassium application may provide a solution. The deficit application of potassium may as well be directly related to the steepest price increase for this fertilizer since October 2007 (Figure 6).

Figure 7 Nutrient prices 2005 – 2008 in USD kg<sup>-1</sup> based on FFB records<sup>1</sup>



While chemical fertilizers remain widely applied in large quantities, the project has focused on organic matter management and composting through demonstration farms (2008; chapter 9.8) and the Farmer Field School program. Further training on balanced nutrient application including some rules of thumb and simple calculations for farmers remains important and necessary.

<sup>1</sup> The data are derived from the Nestle-Neumann Kaffee Gruppe project: "Promotion of Sustainable Coffee Production in Dak Lak", (2005 – 2009)



Table 3 depicts the cost structure over time for Robusta production in the entire project. In line with observations elsewhere in the Central Highlands and in line with the high inflation rate in 2008, the production costs have significantly increased as compared to 2007; an increase by 40%.

Table 3 Production costs (USD Mt<sup>-1</sup>)

Activity	Baseline		Project	
	2006	2007	2007	2008
<b>Irrigation inputs</b>	-		47.73	63.12
<b>Labor irrigation</b>	-		13.36	13.12
<b>Fertilizer inputs</b>	-		354.14	588.34
<b>Labor fertilization</b>	-		183.02	201.89
<b>Total labor costs</b>	-		67.49	66.83
<b>Other costs</b>	-		0.00	0.00
<b>Total costs</b>	410.50		665.74	933.30
<b>Gross income</b>	1000.00		1875.00	1562.50
<b>Net revenue</b>	589.50		1315.30	629.20

Major contributors to the production cost increase are in order of importance: fertilizers (+66%) and fuel for irrigation (+33%). While the labor wages also increased per manday (+20%) from 2007 to 2008, it appears that farmers have learned to allocate hired labor more efficiently resulting in a stable cost pattern over time.

Currently the production cost (exclusive processing costs) stands at circa 933 USD Mt<sup>-1</sup> green beans. While this is more than double the cost as compared to 2006, it is in strong contrast to the signaled figures in the sector, talking about 1,000 – 1,300 USD Mt<sup>-1</sup>. Importantly one should take into account that the below figures are based on daily recording – not just a snapshot interview as usual during crop surveys – and that data have been continuously crosschecked for inconsistencies and potential outliers in discussion with the farmers.

Besides the increasing prices for inputs the coffee prices followed an opposite trend and decreased from 1,875 USD Mt<sup>-1</sup> to 1,562 USD Mt<sup>-1</sup> (-17%). As a consequence coffee producers experienced a net loss in revenues of circa 580 USD Mt<sup>-1</sup> (-48%).

While farmers appear to have improved management efficiently, the extreme combination of reduced coffee volumes, soaring input costs and plummeting coffee prices, made it impossible for farmers to balance the net revenues through improved farm management efficiency.



Table 4 depicts the farm management efficiency in relation to the number of years participants have received training. By the start of the project only 200 producers were involved in Di Linh township and Dinh Trang Hoa commune. As from 2008 onwards the group of beneficiaries was doubled to 400 by including Tan Chau and Dinh Lac communes. In order to compare the efficiency based on training received the figures in Table 4 all refer to the results in 2008 and show averages for Di Linh and Dinh Trang Hoa for participants who received 2 years training, while the figures in the second column are the averages of Tan Chau and Dinh Lac communes for project participants who received only one year training. From the table it becomes clear that farmers, who have been trained more intensively and received refresher courses in 2008, can save up to 46 USD Mt<sup>-1</sup> of green beans. Given that most farmers have a field size of 1.5 ha, with an average productivity of 4 Mt per ha, the absolute savings add up to 250 USD per year. The cost savings are mainly attributable to more efficient irrigation and fertilizer management.

Besides 94.5% of the target group of 400 farmers signed up with the Utz Certified program, which potentially can generate premium prices between 17 and 33 USD Mt<sup>-1</sup>. In case all the certified coffee can be sold under the Utz program, potentially another 200 USD per year per producer can be gained.

Table 4 Production costs in relation to the number of years training was received by the coffee producers (USD Mt<sup>-1</sup>)

Activity	Training received for	
	2 years	1 year
Irrigation inputs	17	46
Labor irrigation	4	4
Fertilizer inputs	572	607
Labor fertilization	206	182
Other costs	15	88
<b>Total costs</b>	<b>815</b>	<b>861</b>
<b>Gross income</b>	<b>1,563</b>	<b>1,563</b>
<b>Net revenue</b>	<b>748</b>	<b>702</b>

## 9.8 Demonstrations on composting

### 9.8.1 Background

The use of organic matter on the plantation is crucial to economize on chemical fertilizer inputs and protect the environment. While composting was little applied by farmers in previous years, CSC has developed a methodology to apply the by-products of post harvest processing to be converted to a useful organic fertilizer. The project supported awareness rising on application of the technique through setup of 4 demonstrations.

### 9.8.2 Methodology

Table 5 depicts the ingredients to produce 1 Mt of compost. Each demo farmer provides 1,000 kg of husks. The preparation of the compost consists of the following steps:

- Mix 1,000 kg of coffee husks with 200 kg of manure, 20 kg lime, 50 kg thermo phosphate (Van Dien fertilizer) and 9.9 kg urea and spread evenly on a yard (or on bare soil). Irrigate the mixture up to a moisture content of circa 60% and cover by canvas or leaves to avoid influence of rainfall and direct sunlight.
- Prepare a fermentation solution after 5 days by dissolving 1-2 kg enzymes, 1 kg of sugar and 0.1 kg urea in 200 liters of water. Stir the mixture every hour to speed up dissolution.
- When the fermentation solution is ready (i.e. after 4 - 6 hours), irrigate the solution over the composting bed and mix the organic mixture thoroughly. After mixing in the fermentation solution prepare a composting bed of 250 cm wide and 120 cm high. Keep the heap covered by a canvas or leaves to avoid influence of rainfall and direct sunlight.
- Check the compost after 20 days and mix up once more. If the humidity drops low, sprinkle water over the composting mixture. Keep the dimensions of the heap at a height of 100 - 120 cm and recover with the canvas or leaves after mixing.
- After 2.5 to 3.0 months the coffee husks will be completely decomposed and the compost is ready for application in the field.

Table 5 Ingredients to produce 1Mt of compost

Item	Volume kg
Husks	1,000
Manure	200
Lime	20
Thermo phosphate	50
Urea	10
Sugar	1
Enzyme	2



Farmers demonstrate composting for project visitors



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## 10 Main Results/Impacts

### 10.1 Successful

- While the project lifetime was short, local authorities, farmers, collectors and exporters have recognized the importance of sustainable production and food safety. Therefore local authorities are currently lobbying to extend the project lifetime and upscale the approach to other districts in Lam Dong province through other resources.
- Within the project 4 extension workers, 32 key farmers and 3 researchers have been successfully trained to become professional trainers on Participatory Agricultural Extension Methods, Good Agricultural Practices, Good Processing Practices, Entrepreneurial Skills and Certification. The key farmers are currently informally recognized as a professional backup for the existing extension network. MARD and provincial DARD are considering organizing an examination in 2009, to officially recognize key farmers as extension trainers.
- The project has successfully raised awareness for the importance of record keeping. This has enabled producers to take well-elaborated management decisions leading to more efficient production and processing management. Besides it has facilitated access to the certified/verified coffee markets for smallholders (in particular 4C and Utz Certified), for which record keeping is mandatory for reasons of transparency and traceability.
- With the introduction of a record keeping system for project beneficiaries the Project Management Unit was able to quantitatively assess the project impact. The ToT and FFS program has created awareness among farmers on efficient irrigation and fertilizer management. Fertilizer and irrigation inputs were respectively reduced by 21 - 64% and 88 - 394% without yield decrease attributed to a reduction in inputs. While more efficient management allows for significant cost savings, making farmers more competitive, it has additionally a positive impact on the environment and social situation (less soil and groundwater pollution and reduced risk for water scarcity and (hydro)power cuts).
- The project has successfully created new market opportunities for producers and collectors through support to access the 4C verification scheme and the Utz Certified program. While the project targeted a maximum of 400 direct beneficiaries, active support from DARD, DPC and DAO made that nearly 95% of the farmers have signed up and were successfully verified/certified in 2007 and 2008 respectively. Besides, the district has created opportunities for local trading companies, new in the certification/verification market (i.e. Petec as compared to international competitors like Ecom or Olam who are active in certified markets since 2005), to participate in the promotion of sustainable coffee production.
- While the short project lifetime does not allow to assess quantitative impacts of composting, discussions with farmers and extension workers indicate that farmers are enthusiastic to continue applying compost to their fields. One local bio-fertilizer supplier stated that his sales have reduced since the project introduced composting. The farmers on the other hand mentioned that production costs for fertilizers have reduced since compost is applied and the purchase of bio-fertilizer has reduced. From an environmental point of view the application of the "waste product" of processing (i.e. husks and pulp) for composting reduces CO<sub>2</sub> emissions since the by-products were previously generally burned. On top of that, in the mid-term the technology will allow for farmers to reduce chemical fertilizer applications hence protecting soil and water resources.



- Local authorities at the district, provincial and national level highly appreciate the project approach and impact. As a consequence they have started to assess options for up-scaling (see also Chapter 6 and Annex 1).
- Training manuals developed in cooperation with the ICP-FP project have been informally recognized by MARD and are available for sales (at cost) through a revolving fund. Numerous farmers already bought the manual on the Buon Ma Thuot Coffee Festival (December, 2008).

#### 10.2 Issues that need further attention

- One objective was to support farmer organizational development and create farmer organizations which could also hold the certificate of Utz Certified and 4C at the farmer organization level. The project has so far contributed to setup informal collaborative groups, which are legally recognized by the state and form a good basis for further development of private coffee producer enterprises. The required management know-how and skills have been established among the farmers in order to enable further development and strengthening. While good progress was achieved it also became clear that this process takes more time than previously expected since it represents a major change in Vietnamese rural areas and organizational structures as a whole. For this reason, it is crucial to have a broad participation of the different stakeholders in this issue when discussing the required changes and features of improved structures. Through stakeholder participation it is ensured that relevant interests and valuable input are considered and also, that the much needed ownership of the local stakeholders is established. This work will be followed up with the project farmers.
- While the certification itself was successfully achieved (4C and Utz Certificates were obtained in 2007 and 2008 respectively), the collection and trade of certified coffee should still be further improved. One reason for this is that the company Petec receives the coffee at the factory, while transport could only be organized in case farmers offer larger volumes, which is not yet common practice. On the other hand Utz Certified did not yet support Petec in on-line sales announcement, which makes it in turn difficult for the company to prospect demand, determine purchase volumes and set premiums. Therefore local authorities propose to create more competitiveness in the area, through support to other local collectors to become 4C/Utz compliant buyers. For 2009 the project team will train Tai Nguyen Company to become Utz Certified unit holder.
- According to 4C/Utz system Petec is the unit holder, so that farmers can only sell 4C/Utz coffee to this unit at premium prices (up to 300 VND per kg or circa 17 USD per Mt). While other companies were actively sourcing more 4C/Utz coffee in Di Linh district, they could not buy this coffee from the project farmers as 4C/Utz coffee at premium prices, as the farmers are not a part of their supply chain. Against this background, in the mid-term the certificate holder level will ultimately be shifted from the trading companies to the farmer groups.



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## 11 Recommendations

- The project lifetime (two years Finnpartnership; 3 years ICP) is perceived to be rather short, thus limiting progress in performance which could be further improved and stabilized. At the same time a 4-5 ys project would allow for a more consolidated impact assessment.
- The project has contributed to awareness raising on sustainable coffee production (economic viability, social responsibility and environmental protection) through active support for producers and trading companies to enter the certified/verified markets (i.e. 4C). Based upon the experience generated, it is advised to promote training and awareness raising on all business aspects (from production to processing and marketing) hence providing an entrance point for producers to certified markets on a voluntary basis. Sustainable production and efficiency improvement of the supply chain is perfectly possible without certification.
- Especially by the beneficiaries themselves it would be much appreciated if representatives of the Finnpartnership support facility could pay a visit to the project, to assess its impact and potential scaling up first hand.

## **Annex 1**

- 090917 Letter budget overspent FP\_EDE\_days.doc
- 090916 Letter budget overspent FP.doc
- Baseline study report: "Baseline\_study\_ICP-FP.pdf"
- 090206 VN Coffee Sector Program proposal.pdf



**Annex 2**

Daily data record keeping template

Name:  
Address:  
Telephone no.:

Labor		Thursday, March 08, 2007 Cost	Friday, March 09, 2007 Cost	Saturday, March 10, 2007 Cost	Sunday, March 11, 2007 Cost	Monday, March 12, 2007 Cost	Tuesday, March 13, 2007 Cost	Wednesday, March 14, 2007 Cost	Thursday, March 15, 2007 Cost	Total cost	
Activity	Weeding	Household	<b>Total hours</b>							Sum 1 to 8	
		Hired	<b>Total hours; total cost</b>							E.g.: 16 hours; 60,000 VND	
	Fertilizing	Household			E.g.: 16 hours	E.g.: 8 hours				Sum; e.g.: 24 hours	
		Hired									
	Pruning	Household									
		Hired		E.g.: 16 hours; 60,000 VND		E.g.: 24 hours; 90,000 VND				Sum; e.g.: 40 hours; 150,000 VND	
	Spraying	Household									
		Hired									
	Harvesting	Household				E.g.: 6 hours				Sum; e.g.: 6 hours	
		Hired				E.g.: 24 hours; 120,000 VND				Sum; e.g.: 24 hours; 120,000	
	Irrigation	Household									
		Hired									
	Other	Household									
		Hired									
	<b>Materials</b>		<b>Amount/Unit/cost</b>	<b>Amount/Unit/cost</b>	<b>Amount/Unit/cost</b>	<b>Amount/Unit/cost</b>	<b>Amount/Unit/cost</b>	<b>Amount/Unit/cost</b>	<b>Amount/Unit/cost</b>	<b>Amount/Unit/cost</b>	<b>Total cost</b>
	Fertilizers	Product name	Amount; Total Cost								
E.g: NPK 16:8:16		E.g.: 120 kg; 200,000 VND		E.g.: 60 kg; 100,000 VND						Sum; e.g. 180 kg; 300,000 VND	
Biocides	Product name	Amount; Total Cost									
	E.g. Basudin	E.g.: 660 ml; 140,000 VND								Sum; e.g. 660 ml; 140,000 VND	
Equipment	Water	<b>Total volume (m<sup>3</sup>)</b>	E.g.: 500 m <sup>3</sup>							Sum; e.g.: 500 m <sup>3</sup>	
	Fuel	<b>Total cost (VND)</b>	E.g.: 100,000 VND		E.g.: 50,000 VND					Sum; e.g.: 150,000 VND	
	Tubes	<b>Number; Total cost</b>	E.g.: 2; 240,000 VND	E.g.: 1; 120,000 VND						Sum; e.g. 3; 360,000 VND	
	pruning scissors	<b>Number; Total cost</b>		E.g.: 3; 90,000 VND							
	Pump (irrigation)										
Yield	Fresh cherries	E.g.: 100 kg	E.g.: 100 kg							Sum; e.g.: 200 kg	

Final Project Report

"Promotion of Sustainable Robusta production in Lam Dong province"



### Annex 3

#### Monthly data record keeping template

Name:

Address:

Telephone no.:

March

Labor			Farm	
			Hours	Total Cost
Activity	Weeding	Household		
		Hired		
	Fertilizing	Household		
		Hired		
	Pruning	Household		
		Hired		
	Spraying	Household		
		Hired		
	Harvesting	Household		
		Hired		
	Irrigation	Household		
		Hired		
	Other	Household		
		Hired		
Materials			Farm	
			Amount	Total Cost
Fertilizers	Product name			
Biocides	Product name			
Yield	Fresh cherry			
	Others			
Equipment	Water			
	Fuel			
	Tubes			
	pruning scissors			
	Pump (irrigation)			
Yield	Fresh cherries			

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**Annex 4**

Farmer Field Book group report (in Vietnamese only):

2008:

- Bao cao DTH 1-2.doc (example)

Example Farmer Field Book Group and Individual report (in English for reference)

- Example\_Farmer\_Field\_Book\_Results\_Individual\_Farmer.pdf
- Example\_Farmer\_Field\_Book\_Group\_results.pdf

