CLIMATE SMART COFFEE PRODUCTION WITH SMALL FARMERS IN SIPACAPA, SAN MARCOS, GUATEMALA

FINAL REPORT

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Flavio Linares
Operations and Programs Manager
Central America, Mexico and Caribbean Region

Roberto Castañón Bautista
President
Coffee Growers Association-ACAS-SIPACAPA, SAN MARCOS
COUNTRY: GUATEMALA, C.A.

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I. INTRODUCTION

1.1.The problem, analysis and opportunities.

The population of Guatemala exceeds 17 million inhabitants (40% are indigenous). The human development index is 133 out of 187 nations evaluated at the worldwide level, ranking last in the Central American region.[1] The population is eminently rural, reaching 94.1% and geographically, San Marcos, Alta Verapaz and Chiquimula departments are classified with very rural. Just San Marcos, with 29 municipalities, has around one million inhabitants.

Sipacapa belongs to the department of San Marcos located at 1,970 meters above sea level. It has an extension of 152 square kilometers with a Mayan population of 28,000 inhabitants, dispersed in 16 communities, who speak Spanish, Sipacapense and Mam (Mayan languages). The human development index is 0.57. It ranks 76 out of 333 municipalities in the country facing high levels of poverty and extreme poverty.

The Association of Coffee Farmers of Sipacapa (ACAS) was founded on November, 2009 as a non-profit association integrated by 305 members (195 men, 110 women) of the Maya-Sipakapense ethnic group.

Solidaridad has been working in this rural area with previous interventions carried out between 2009-2012. In May 2015, Solidaridad conducted a meeting with the ACAS Board of Directors in order to prepare the concept note to implement a small-scale intervention that could benefit low-income families through a two-year project. The new concept note was called **Climate Smart Coffee Production for Small Farmers**, which was approved by the donor in July 2015 through strong coordination between Mario Coolen, Yvette Faber and Michaelyn Bachhuber to be implemented along 2015 to June 2017, with probable extension for December 2017.

II. PROJECT HISTORY

The livelihoods of the population of Sipacapa are vegetables and potatoes (upper part), deciduous trees (middle part) and, on a smaller scale, diversified systems with coffee, plantain, and oranges. The region is rich in gold and other minerals, very attractive for foreign companies. One decade ago, the government authorized the exploitation of gold by foreign companies who acquired lands for that purpose. Indeed, social conflict has increased since 90% of the population does not accept this extractive activity in their territory. Recently, the issuance of new mining licenses was suspended by the Government.

The Association of Coffee Growers and Farmers of Sipacapa-ACAS was founded in 2009 and is integrated by 305 small producers (36% women) from 16 villages. On March 2017, by the ordinary assembly, the Board of Directors was elected with nine members; Maria Luisa Bautista Cruz acting

[1] (UNDP, 2013, Global Human Development Report).

as a vocal III and Mr. Roberto Castañón Bautista as President. Currently, 241 small farmers are dedicated to the production of coffee while the rest (55) cultivate basic crops such as corn, beans, vegetables, potatoes, broccoli, etc., and their farms are located in the upper sector of Sipacapa (up to 2,200 meters above sea level).

III. METHODOLOGICAL FRAMEWORK

The project was focused on supporting small coffee growers associated with ACAS, considering the alternatives and best practices to tackle poverty, as well as prior experience and projects implemented by Solidaridad (2009-2011) in the area. In order to contextualize the efforts towards small producers and using criteria for coffee productivity, quality, farm size, participation and attendance to different training workshops, etc., Solidaridad and ACAS implemented a system of farmers classification using the farmers´ typology A, B, C.

Training workshops and demonstrations were based on prior analyses through visits and interviews with farmers. The farm management plans were focused on adaptation to climate change and variability with the purpose to enhance their knowledge and skills to improve coffee productivity and and quality, as well as other crops planted/produced in their farms using an adaptation approach. Parallel to field schools management, communication was maintained with the organization Manos Campesinas, who has been responsible for marketing Organic Coffee from different grower associations in Guatemala and has active connections with different market niches or/and customers.

The Project Coordination was managed by Solidaridad through a specific Coordinator hired and assigned full time to the ACAS Association. Technical guidance was provided by the REC CAM Operation and Program Manager, Flavio Linares, who developed actions plans based on previous evaluations. The technical assistance program was discussed with seven promoters (two women, five men), local leaders and ACAS board of Directors considering the high geographical dispersion of small producers in the area. Then, promoters were selected according to this dispersion in different communities. Each promoter was hired on a part-time basis to provide assistance and follow up on practices implemented by farmers, and to improve their own coffee farms.

The environmental, agriculture and social issues have been managed through workshops, demonstration plots with leading farmers, field schools to promote farmer exchanges from around the country, and tours of successful model farms in the region (i.e. Marcala, Honduras, farms of the western highlands of the country).

Each small producer has been a key player participating in the elaboration of the Farm Management Plan which began in the third quarter of 2016 and was evaluated in terms of implementation in March-June 2017, in order to determine the level of adoption of good practices (Annex II). This evaluation was made by external consultant with terms of reference written by Solidaridad and revised by ACAS.

Gender inclusion was encouraged in all actions of the Project. Gender workshops for promoters, ACAS Board of Directors and farmer (women) were conducted by REC CAM-Solidaridad through the Gender Manager, Suyapa Saldivar and supported by Patricia Gomez, M&E Coordinator and Valery Cohn, Communication Coordinator.

IV. GENERAL OBJECTIVE

Improve livelihoods of 250 small coffee producers and their families by implementing good practices of climate smart agriculture (soil, water conservation, agroforestry system, integrated pest & disease management, pruning, waste management) to increase its resilience, productivity and quality of coffee with farms management plans and focused to pre competitive organic market niches.

V. SPECIFICS OBJECTIVES

By the end of 2017, the project was expected to achieve the following objectives :

1. Improved productivity and quality of organic coffee production by 250 small producers of the ACAS Association.
2. Increased resilience of 300 small producers to extreme changes and climate variability using agroforestry systems in coffee production and farm system.
3. Improved family economy by increasing the income of 305 small farmers and coffee growers.
4. Strengthened participation of women in agroecological coffee production systems with a gender approach.
5. Promotion of the ACAS Association´s economic sustainability through the diversification of income and the implementation and administration of the Revolving Fund Mechanism.

VI. PROJECT COMPONENTS

The components or actions implemented in the Project were:

1. Climate-smart coffee production to increase the resilience of small producers through integrated farm management plans.
2. Improvement of productivity and quality with good agronomic and processing practices.
3. Business training with effective management and business management tools that promote income diversification and economic sustainability.
4. Formation and strengthening of gender at the managerial and operational levels, opening spaces for the participation of men, women and youth.

VII. ACTIVITIES AND ACTIONS CARRIED OUT

The set of activities carried out are described in Annex I, and the evaluation regarding the adoption of good practices by small farmers are summarized in the Annex II.

VIII. ACHIEVEMENTS OR RESULTS

1. SMALL FARMERS AND PRACTITIONERS TRAINED IN GOOD PRACTICES OF CLIMATE SMART COFFEE PRODUCTION

a. 250 farmers were trained on good practices in 100 ha (organic system).

b. Seven promoters (5 men, 2 women) were trained on organic system indicators used in the annual inspection of organic farms to check their compliance with the Fairtrade Labeling Organization-FLO standard. The metric was applied for the harvest season 2016-2017.

c. Seven promoters were trained in the use of the mobile device (tablet) SIATMA SATCAFE (an early-warning measurement system to detect coffee leaf rust in Mesoamerica). All small producer farms were monitored and data was recorded in ACAS technical office. The incidence of leaf rust was about of 5.2%.

2. COFFEE FARMING MANAGEMENT PLANS WITH SMALL PRODUCERS

a. Seven promoters (5 men, 2 women) were trained in the design of Farm Management Plans and Internal Control system.

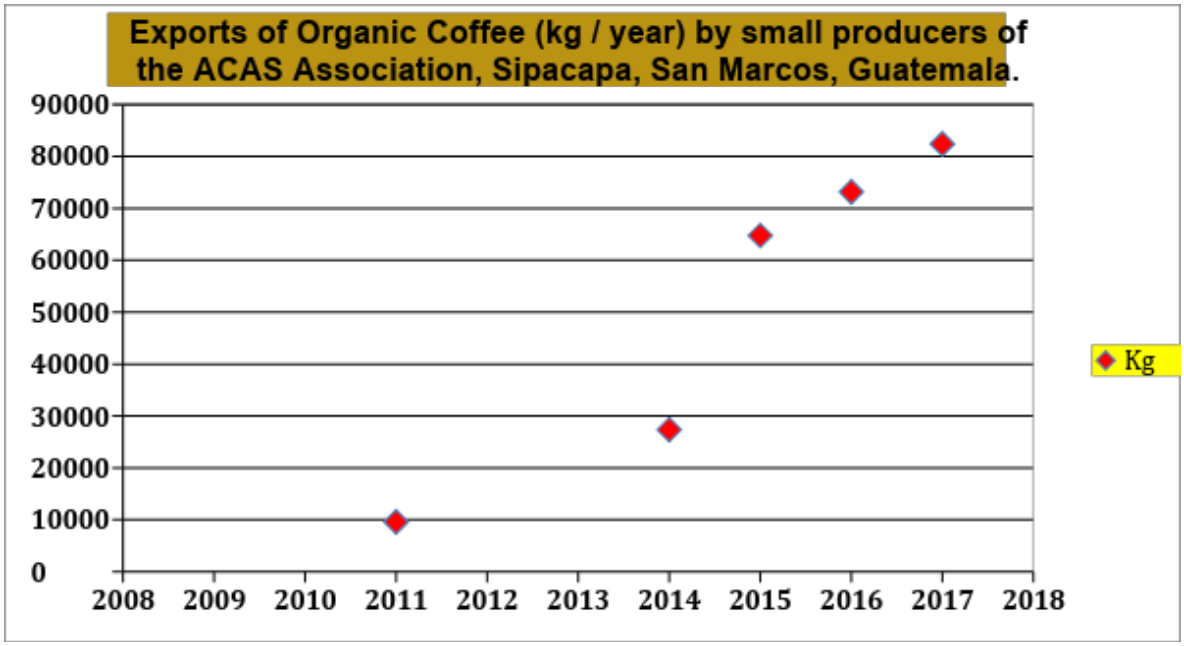
b. 220 coffee farm management plans were designed, and implemented with small farmers and internal control system were conducted to register agricultural labor, inputs and production costs.

c. The implementation of farm management plans provided specific information about farm locations and actions necessary to be implemented or revised using good practices.

3. PRODUCTIVITY RESULTS AND INCOME GENERATION

a. The income of small producers was increased as a result of the expansion of coffee area and a better yields/ha. In 2011, only 9,590 kg were produced but not exported. Since 2014, small farmers have been exporting certified coffee under FLO standard with the support of Manos Campesinas. The records of operations and marketing of the Association of producers, show the following historical volumes of coffee production and annual exports: 2014 (27,363 kg), 2015 (64,766 kg), 2016 (73,174 kg), 2017 (82,400 kg) (See graph 1).

b. The intervention of Solidaridad and its partners in this region has been successful, considering that this region has limited opportunities to generate employment and with highly vulnerable livelihoods.



4. COFFEE QUALITY RESULTS USING BEST PRACTICES

a. Coffee bean quality has been improved by 70%. International coffee buyers contacted by Manos Campesinas, a marketing organization of organic coffee, in coordination with Solidaridad, conducted several workshops, demonstrations and explanations about the importance of good practices along harvest and post harvest period and the relation with high quality of the coffee cup.

b. Coffee tasting practices and tests were demonstrated to small producers (women and men) who also had the experience of testing their product using a standard procedure and quality test indicators.

Farmers demonstration to explain the importance on coffee taste testing for quality control

5. AWARENESS, TRAINING ON GENDER INCLUSION IN THE LOCAL ORGANIZATION-ACAS

a. ACAS as local farmer association has 82 women (36%) who participate in different activities such as coffee nurseries maintenance and during the harvest season.
b. 39 participants (31 women and 8 men) were trained on gender inclusion by Solidaridad (facilitated by REC CAM team, Suyapa Díaz, Gender Inclusion Coordinator, Patricia Gomez, M&E Coordinator, Valery Cohn, Communication Coordinator)
c. Two promoters Rebeca Tojil and Maribel Tojil will be responsible for replicating this workshop and actions in the communities with different working groups.

6. TRAINING ON BUSINESS MANAGEMENT WITH SOCIAL INCLUSION

a. 27 women in five groups have increased their income by producing and selling coffee seedlings (35,000 in 2015, 42,000 in 2016 and 30,000 in 2017) through the management of five tree nurseries (Borbón and Caturra varieties). The sale was USD O.27/coffee tree. Most of the coffee plants have been sold (80%) and the rest have been planted by women in their respective farms.

b. Genetic material evaluation: Bourbon, Anacafe 14, Icatu, Costarrica 95, Catuai are being validated to determine their adaptation and resistance to diseases.

7. ECONOMIC SUSTAINABILITY THROUGH THE DIVERSIFICATION OF INCOMES AND ADMINISTRATION OF THE ¨REVOLVING FUND¨

Distribution of benefits:

● Derived from coffee crop collection and sales of 73,174 kg in 2016, ACAS Association obtained an gross income of Q 665,578.22 (USD 90,555). After having paid each coffee producer, according to the volume marketed under the fair trade standard, the ACAS Association shared USD 19,048 among the producers, as a bonus, in order to improve their farms continuously. The delivery was based on the quantity and quality of coffee delivered by each small producer for marketing.

Goods and equipment:

● Land was purchased for the construction of ACAS office and the warehouse.
● A vehicle (4x4) was purchased to transport coffee from producers to the processing plant during the drying season.
● Promoters and an administrative assistant have been contracted to ensure continuity to the technical assistance program.

8. ACCOUNTABILITY AND ELECTION OF BOARD OF DIRECTORS IN ORDINARY ASSEMBLY

Attendance of 203 member in the General Assembly (129 men, 74 women)

9. INTRODUCTION AND PRESENTATION OF ADMINISTRATIVE AND ACCOUNTING MANUAL

Manuals of administrative and accounting procedures for ACAS were developed with the objective of strengthening the organization in the proper management of financial resources.

These manuals were approved in the General Assembly with the Manos Campesinas organization as witnesses.

10. STRENGTHENING OF TRACEABILITY PROCESS

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Board of Directors were trained on total quality control system for organic coffee production and traceability with organic producers with the objective to get high quality coffee from the tree to the export container. Tools to be used by the producers and the ACAS Organization are:

- Organic farm management plan.
- The field notebook
- Parchment coffee delivery receipts.
- Product control delivery receipts.
- Warehouse receipts
- Transport cleaning log
- Shipping note to the coffee process unit (coffee mill)

11. PROPOSAL TO INVEST INCOMES FROM THE CERTIFIED COFFEE SALES WITH FLO SEAL

ACAS Board of Directors, an accountant, Solidaridad staff and Manos Campesinas staff met to discuss how to use the financial resources from the coffee sales following the FLO (organic production) standard and principles in order to have transparency and invest these resources according to the priorities of the local organization.

12. ANNEX I. DESCRIPTION OF ACTIVITIES

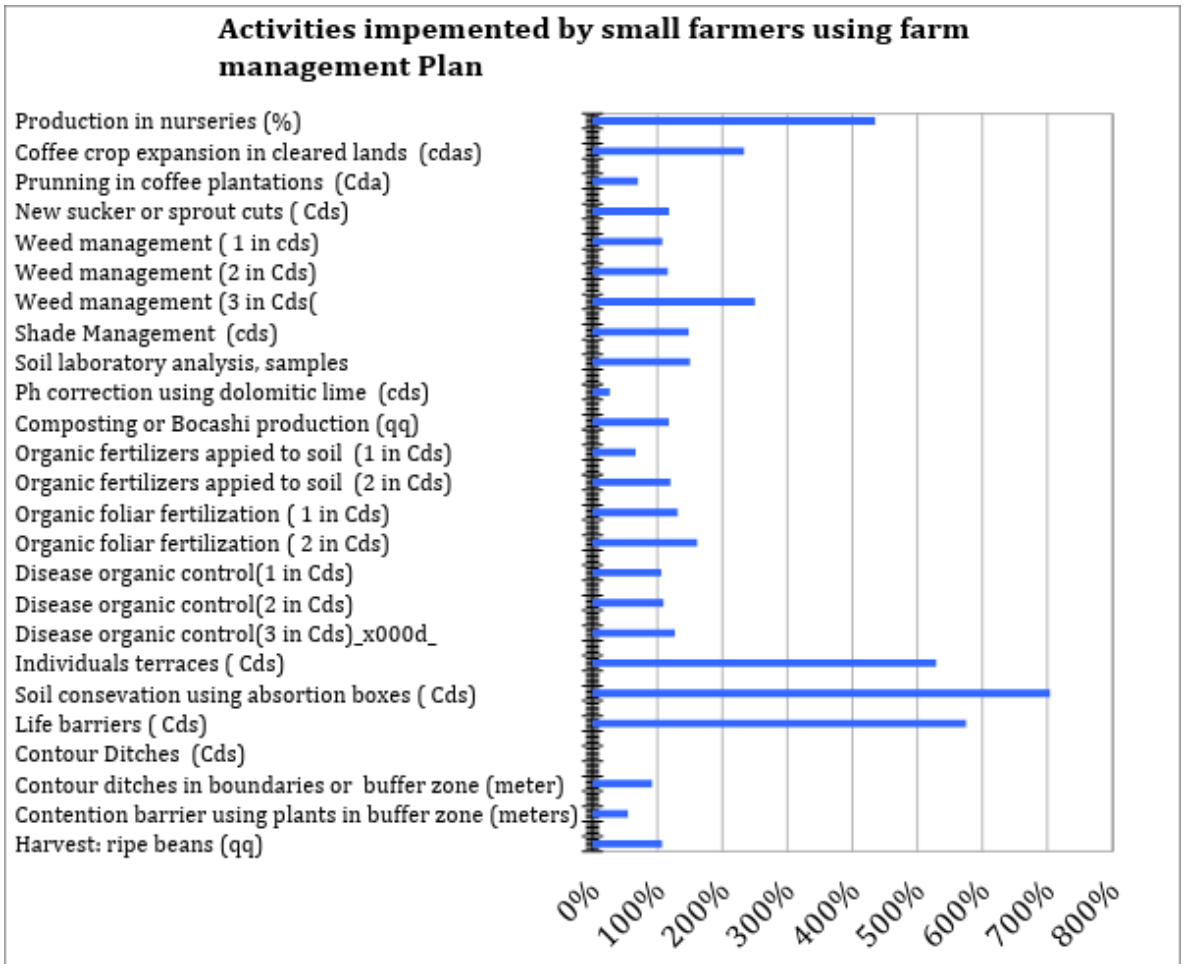
ANNEX I. ACTIVITIES:

✔ TRAINING WORKSHOP: COFFEE CROP
● Coffee crop management (planting, plant nutrition, pruning (coffee tree and shade management), pest and disease management, harvest, transportation, etc.
● Coffee nurseries management.
● Processing
● Organic fungicides elaboration.
● Organic fertilizers elaboration: Composting and red worm management.
● Bio-fertilizers elaboration.
● Farm Management Plans. Budget and production costs
● Use of the App for SIATMA-SATCAFE to monitor coffee leaf rust.
● Harvest practices to improve coffee quality.
● Construction of bio fertilizers and organic pesticides factory.
✓ Field schools.
● Technical assistance to 250 farmers and establishment of 10 demonstration plots.
● Pruning management for coffee plantations and shade.
● Pest management and monitoring.

● Calibration of 20 manual coffee pulpers. Handling of parchment bean and humidity control.
✓ Experiences exchange.
● 3 tours of the villages: Saquimlaj, la Vega, Maguey, and large plan, (H11 and M = 2), Saquimlaj guancache and carrizal poj (H = 10, M = 5), of the Town (H = 15, M = 5)
✓ Strengthening the traceability processes of organic producers
● Coffee organic farm management plan.
● Field notebook or field diary
● Coffee batches control.
● Coffee produced by farmer
● warehouse receipts.
● Transportation logs
● Shipping logs and coffee mills control
✓ TRAINING WORKSHOP ON COFFEE QUALITY CONTROL
● Quality control for ripe beans harvest.
● Coffee cupping (taste) and factors that affect quality.
● Laboratory analysis and interpretation
✓ Training on internal control system for Organic Coffee certification.
● Revision of the Organic Production Standard: FLO
● Coffee organic production.
● Field and crop notebook or diary
● Registration formats.
● Documentation process and evidences.
✓ TRAINING WORKSHOP ON ADMINISTRATION AND RESOURCES MANAGEMENT.
● Elaboration of Administration and Accounts Manual for SBE.
✓ TRAINING WORKSHOP ON GENDER INCLUSION
● Training workshop to introduce the importance of gender in development and the use of different tools.
✓ TRAINING WORKSHOP N ORGANIZATIONAL STRENGTHENING
● General Assembly for Election New Board of Directors (Assistance of 203 members, Men = 129, Women = 74

13. ANNEX II. LEVELS OF ADOPTION OF GOOD PRACTICES BY SMALL FARMERS

In order to measure the degree of progress in the implementation of the Farm Management Plans (PMF), a sample of 2% of the total producers was taken. Out of a total of 24 activities included in the FMP, 29% of activities exceeded 100% of execution; 21% have an execution between 15 to 67%; 25% have 0% and another 25% (activities without data) have the date of completion pending or scheduled. The following chart shows the execution progress per activity.



Observations:

a) The activities without data were scheduled for March-June 2017 by farmers. Therefore, these were not analyzed in this opportunity.

b) Activities that have 0% execution are activities programmed for certain dates but were not executed by the farmer.

INTERPRETATION OF RESULTS:

a. Compliance in the implementation of the FMP, for the activities carried out in more than 100% (practices: individual terraces, weed management, organic control of diseases and expansion of the crop in areas already cleared).

b. In the case of the coffee plant sprouts management, the low level of execution is understandable due to the fact that most producers have plantations that do not exceed 6 years of age and this activity will be important to the extent that the plantations are developed.

c. Execution of activities to improve the implementation of acequias practices and live barriers as soil conservation structures is 0%.

d. Improve the implementation of containment practices in the buffer zone such as the establishment of ditches and live barriers in the boundaries of coffee plots to avoid risks of contamination to organic pesticides by runoff water and possible sprays from neighboring farms.

Tabla 1. Evaluation of good practices adoption by coffee small farmers (spanish version).

PRODUCTOR / ACTIVIDAD	Audulio Noé Rodas			Bernardo Constanza López			Félix Federico Cruz			Esperanza Ruiz Bravo			Totales		
	Area con café =12 cds			Area con café =9 cds			Area con café =10 cds			Area con café =8 cds					
	Cantidad de Meta	Cantidad ejecutada	% de ejecución	Cantidad de Meta	Cantidad ejecutada	% de ejecución	Cantidad de Meta	Cantidad ejecutada	% de ejecución	Cantidad de Meta	Cantidad ejecutada	% de ejecución	Cantidad de Meta	Cantidad Ejecutada	% de ejecución
Manejo de hierbas 3, cds	12	0	0%	9	0	0%							21	0	0%
Fertilización orgánica foliar 1, cds										5	0	0%	5	0	0%
Fertilización orgánica foliar 2, cds										5	0	0%	5	0	0%
Barreras, cds	12	0	0%	3	0	0%	10	0	0%				25	0	0%
Acequias, cds				1	0	0%							1	0	0%
Barrera viva, mts				63	0	0%	210	0	0%	3			276	0	0%
Acequia, mts	42	42	100%	21	0	0%	210	0	0%				273	42	15%
Deshije, cds	12	3	25%	9	0	0%				3	1	33%	24	4	17%
Control orgánico enfermedades 3, cds	12	0	0%	9	0	0%	10	10	100%				31	10	32%
Fertilización orgánica al suelo 1, cds							10	6	60%	5			15	6	40%
Cajuelas, cds	12			9	6	67%							21	6	29%
Terrazas individuales, cds	12	12	100%	9			10	10	100%				31	22	71%
Manejo de hierbas 1, cds	12	12	100%	9	9	100%	10	10	100%	5	8	160%	36	39	108%
Manejo de hierbas 2, cds	12	12	100%	9	9	100%	10	10	100%	5	8	160%	36	39	108%
Control orgánico enfermedades 1, cds	12	12	100%	9	9	100%	10	10	100%	5	8	160%	36	39	108%
Control orgánico enfermedades 2, cds	12	12	100%	9	9	100%	10	10	100%	5	8	160%	36	39	108%
Recolección de frutos maduros (qqs cereza)	15	18	120%	14	23	2	10	10	100%	20	27	135%	59	78	132%
Ampliación de cultivo, cds										2	3	150%	2	3	150%
Poda selectiva, cds				9									9		
Manejo de Sombra, cds	12			9									21		
Análisis de suelos, muestras				1									1		
Aplicación de Cal dolomita, cds				2			5						7		
Produción Composta o Bocashi, qqs	54			14			20			15			103		
Fertilización orgánica al suelo 2, cds							10						10		