



adapta

cacao, miel, futuro

www.proyectoadaptta.com

Revolutionizing agriculture
and apiculture in **Nicaragua**
and beyond

Annual Memory
2017



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About PROYECTO ADAPTA

Adaptation is the answer to climate change: cocoa, honey and the future

Proyecto Adapta: "Building climatic resilience in the fine cocoa and honey sectors" is a 4-year project, driven by the Nicaraguan firm of Danish origin Ingemann, and developed jointly with government organizations, the Humboldt Centre in Nicaragua and the international organisation Christian Aid. Its realization is possible thanks to finance from the International Development Bank, Multilateral Investment Bank and the Nordic Bank for Development.



An evaluation of the second year:

DRIVING FORCES

In its second year, Proyecto Adapta is entering a stage of maturity. Thanks to its journey since 2016, the producers and beneficiary firms have plans and strategies to manage climate risks and be more resilient in their business plans.

In this second year we can say that the project has detailed and reliable information for building climate scenarios, evaluating the climatic risks for cocoa and the production of honey; it features sure mechanisms for sharing processed and analysed information with producers and other actors, thanks to the Agrometeorological Information System; it is consolidating its observation systems regarding climate and the phenological phases of cocoa and honeybee species; it is developing mobile applications (apps) to send information and to monitor good practice; it is keeping watch for pests and disease with mechanisms to advise producers, so their products may be vigorous and healthy.

The producers are the key players, ensuring the basic inputs for the organisation's operations. They are the ones who carry out the climate observations and phenological observations relating to cocoa and beekeeping, enabling them to have a better understanding of the relationship between the climate and their own products and productivity. In this way, they take on ways of working orientated towards the climatic resilience of their productive activities; access to reliable, timely, information to reduce the impact of climatic variability and they have information about future climate, referring to climatic stress and extreme events, such as droughts, floods, hurricanes and mudslides, which enables them to take preventative measures to avoid or reduce the worse losses or damage to their productive sectors. The use of New Communication Technology (NTIC) places the producers at an advantage (more resilient) when it comes to protecting their livelihood in the face of climate change.

Our thanks to the producers, project partners, and financial organisations supporting the project, which without doubt is generating many benefits for the country.

***Note** Proyecto Adapta benefits more than a thousand producers in Nicaragua thanks to the help of FOMIN, the Multilateral Investment Fund, member of the Interamerican Development Bank and its ProAdapt programme, created in association with the Nordic development bank. ProAdapt is an international programme that identifies and pilots the development of methodologies, tools and innovative business models to help small and medium sized enterprises in Latin America and the Caribbean to increase their climatic resilience and benefit from related business opportunities.



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2nd year 2017

THE MATURITY STAGE OF PROYECTO ADAPTA

A revolution for the cocoa and honey producing sectors in Nicaragua.

In Nicaragua it appears that extreme climate phenomena are intensifying, in the dry seasons as well as the wet. This increases the climate vulnerability of honey and cocoa producers in the country. Moreover, analysis of climate tendencies in the last 40 years indicates a rise in temperatures at national and global level, and changes in the patterns of precipitation.

Most producers lack information to identify climatic threats or to determine their costs, making informed decision making difficult. Consequently, their levels of productivity fall and with those their income.

Proyecto Adapta emerges as a solution, bringing tools and the scientific information necessary for cocoa and honey to have a profitable and sustainable future.



The project's second year ran in 2017. During this time, the project has directly benefited almost 1000 cocoa and honey producers in Matagalpa, Nueva Segovia and Jinotega.



How?



Climate observation posts



Thanks to the **climate observation posts**, the project has been able to offer beneficiaries precise information about the climate's behaviour and its relationship to productive activities.



Capacity building

The project has offered training in the management of climate information, generating solutions for the adaptation of honey and cocoa harvests to climate change.

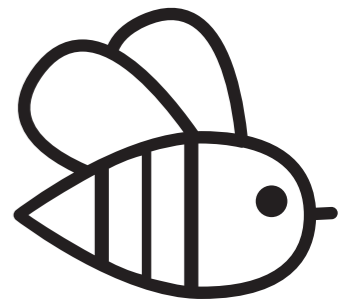


Access to reliable information



The information that producers receive through agrometeorological bulletins gives them the information necessary to make decisions about their harvests. Likewise, it warns them of possible future climatic scenarios, so they can take advance measures to reduce impacts on and losses to their livelihoods.

The second year of Proyecto Adapta AT A GLANCE:



Global Climate Analysis Base

Without information there is no adaptation, because of this the project brings a tool to the country to determine historical data in places where it did not exist due to a lack of national network coverage.

Result: Availability of reliable climatic data in zones not covered by the national network of stations

Analysis of National Climatic Data

It conducts an analysis of national climatic data which enables the calibration of climatic models (dynamic and statistical) and the projection of future climate data through climatic modelling.

Climatic Sensitivity in Project Areas

They analyse project areas and thankfully identify areas which may require more attention in the face of climate change for honey and cocoa to flourish. They study the ground to confirm that the project's cocoa plantations are well situated and moreover, they evaluate the climatic risks for coffee and propose a transition to cocoa as an alternative. In this way, they study good apiculture (beekeeping) practice in the project zones which contribute pollen and nectar for honey production, according to flowering at certain times in the year.

SIA

The most innovative tool of the project, a unique tool for managing timely and reliable information enabling decision-making in the face of climate risks in the two principal cocoa and honey value chains (producers and businesses). It offers productivity and profit predictions based on phenological cocoa observations. The second year of the project continues to the development and testing phase of SIA.



Establishment of 13 Phenological Posts (8 Cocoa and 5 honey)

They generate phenological information – that doesn't exist in the country – which linked to the climate information, enables the climatic requirements for cocoa and honeybee species to be established, aiming to predict the harvest, enable sustainable management and climate change adaptation.

Producer Training:

Producers are trained on climate change and resilience-oriented actions in their business plans, to collect climate data and use SIA.

Journalist Training in the Project Zone

Information of interest to producers is in collaboration with the media. The aim is to share information on climate change and its impact on productive activities, faced with the lack of information in this regard in the country.

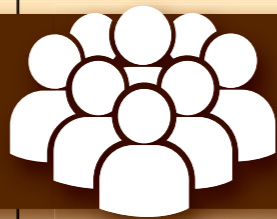
QUANTIFYING OUR ACHIEVEMENTS

2 YEARS
OF WORK AND
DEDICATION



1000 PRODUCERS

making informed decisions

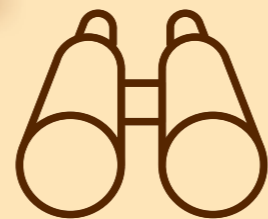


3 SUPPORTING INSTITUTIONS

WITH EXPERIENCE AND
ABSOLUTE COMMITMENT



8 POSTS OF PHENOLOGICAL VIGILANCE
RELATING TO
COCOA



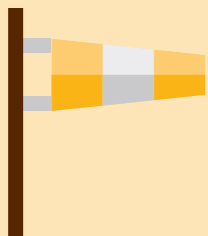
5 POSTS OF PHENOLOGICAL VIGILANCE
RELATING TO
HONEY

24 EXECUTIVE RESUMÉS

OF THE AGROMETEOROLOGICAL
CONDITIONS IN THE
PROJECT ZONE

20 ESTACIONES CLIMÁTICAS Y 13 PUESTOS FENOLÓGICOS

MANEJADAS POR
PRODUCTORES DE
CACAO Y MIEL

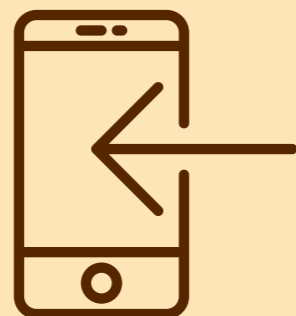


24 AGROMETEOROLOGICAL BULLETINS

with correct predictions and specific advice for the cocoa and honey crops for the 800 producers involved in the project.

4 PHASES:

Investigation
Consolidation
Finance
Dissemination



25 MOBILE PHONES
with App linked to SIA
operated by producers



2 MANUALS OF GOOD PRACTICE (COCOA AND HONEY)

720 SMS WITH INFORMATION FROM THE COCOA AND HONEY BULLETINS



4 REPORTS AND ALERTS
ON DANGEROUS PHENOMENA FOR
COCOA AND APICULTURE

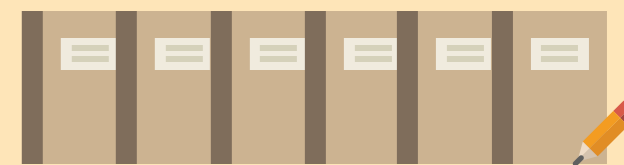


2 CATALOGUES
ABOUT PESTS AND
DISEASES (COCOA
AND HONEY)

3 VIDEOS
EXPLAINING HOW
TO TAKE DATA IN THE
OBSERVATION POSTS



1 MONITORING AND TRACKING SYSTEM



6 MANUALS AND FIELDWORK BOOKS
ON CLIMATE AND PHENOLOGICAL OBSERVATIONS

1 AGROMETEOROLOGICAL INFORMATION SYSTEM



1 APP ABOUT HONEYBEE SPECIES

1 APP OF GOOD PRACTICE (COCOA AND HONEY)

1 APP ABOUT COCOA AND PHENOLOGY

1 APP ABOUT CLIMATE



The protagonists: TRAINING PRODUCERS

THE PROJECT'S PROTAGONISTS ARE **THE PRODUCERS.**



Generating information

In the project's 2nd year, the producers have received different training to collect data daily from the meteorological stations. Data such as temperature, air and ground humidity and the amount of rainfall. Thanks to this and other training the producers and their families have received within the project framework, observations on the development of the cocoa plantations and the behaviour of its beehives are being carried out.

Making the information accessible to the producers

All this information is used in the bulletins, early warnings and for the Climate-Cocoa-Honey-bee connection, very worthwhile information for making decisions relating to harvests. This information generated by the Proyecto Adapta reaches the producers via the Agrometeorological bulletins, early warnings and other information received via SMS, available on the webpage and also available via the SIA App.

Adaptation to changes and to new technologies

Through 25 smartphones with their respective lines, the project collects and sends information to SIA via the Cocoa, honey and Good Practice App.



ADAPTATION BASED ON SCIENTIFIC ANALYSIS

PART OF PROYECTO ADAPTA'S SUCCESS IS BASED ON ITS METHODOLOGY

In studies and scientific rigorous analysis of all the variables that affect cocoa and honey production in Nicaragua, focusing on the climatic instability produced by climatic variability and by climate change, as well as the phenological characteristics of each product.

SOME OF THE AREAS OF INVESTIGATION UNDERTAKEN IN THE SECOND YEAR OF THE PROJECT:



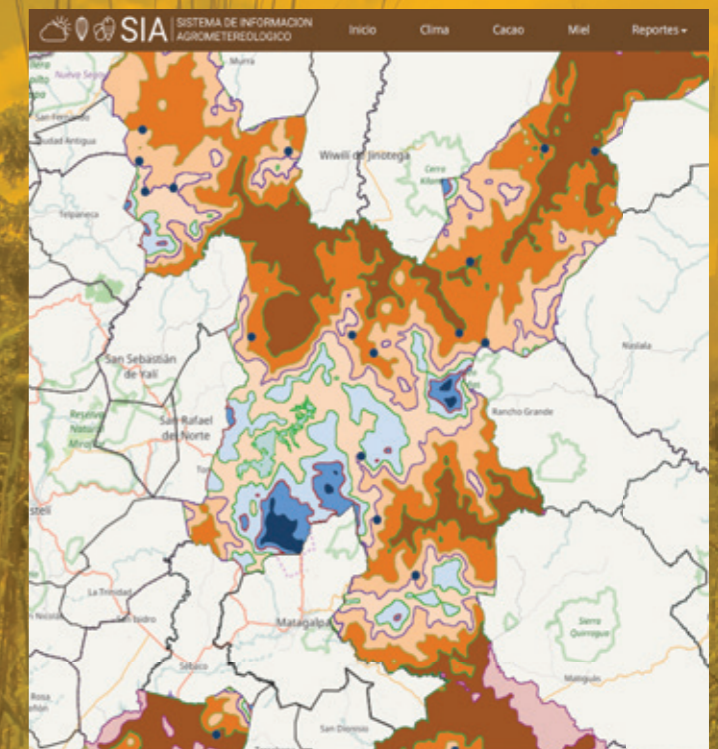
CLIMATE RESEARCH AND VULNERABILITY ANALYSIS OF COCOA AND HONEY VALUE CHAINS

Thanks to the project's scientific base we know the current state and climatic viability of cocoa in the project zone, climatic and phenological conditions in which cultivation develops, as well as estimates of outputs for cocoa varieties in the project zone, as well as evaluating the capacity of producers to manage cocoa in accordance with the methodologies used in the rural extension concept.

ON ONE HAND, THE PROFILING OF SEEDS AND VARIETIES OF COCOA

Proyecto Adapta carried out an evaluation of cocoa production, centred on 3 fundamental aspects:

- 1) *Evaluation on the current state of cocoa harvests, identifying the main varieties in the project area and making a representative map.*
- 2) *Determining the conditions Edafo Climatic that the cocoa varieties in the project area need in each vegetative stage to produce the best yield at harvest.*
- 3) *Evaluation of the current efficiency of the cocoa plantations, considering the processes of seed selection, cultural practices, and the incidence of pests and diseases.*



CLIMATE SCENARIOS FOR COCOA, HONEY AND COFFEE: ANALYSIS OF CLIMATIC RISK IN THE VALUE CHAIN

The project carried out a “Construction of Scenarios for Fine Cocoa, Honeybee Species and Appraisal of Climatic risks in the value chain of Fine Cocoa and honey.”

Among the contents of this study we find:

Climatic scenarios: Climatic scenarios for cocoa and coffee at the general level of the 12 project municipalities and climatic scenarios for honeybee species at the general level of the 12 project municipalities.

Climatic Risks: Identification and evaluation

a) Climatic risks for cocoa and coffee, in terms of migration or geographical movements with

potential for crops, calculating the areas of those affected, moreover best current areas for cocoa and coffee inside the project area, the best future areas.

b) Climate change risks for honeybee species

c) Risk analysis in the cocoa and honey value chains (first link – producers and second link the company) due to extreme climate events and climate stress, establishing the degree of confidence in the scenarios, the frequency and the threshold of the impacts, intensity and duration of events.

SISTEMA DE INFORMACIÓN AGROMETEOROLÓGICO: THE STAR TOOL



Proyecto Adapt came into being to provide the tools and scientific information necessary for making cocoa and honey a sustainable and profitable future. The scientific information, combined with their existing knowledge, enables producers to make good decisions about their harvests.

SIA is the star product of Proyecto Adapta. It is a system that contributes information, knowledge and adaptive solutions to the small cocoa and honey producers in Nicaragua.

SIA FUNCTIONS



1. Climatic and phenological data collection

The climatic and phenological data from the stations and phenological posts are registered according to established textbook techniques, following specific timetables and procedures.

2. Application (App) for data transmission

Data is input via an App for smartphones and tablets. This enables the collection, verification and trans-



mission of all the information from the meteorological stations. Alerts, climate information and any other relevant information are sent to the producers, to help them adapt and respond with solutions to possible climatic effects.

3. Quality control of the climate station identity

Data input into the SIA from the stations is subject to a process of quality control, especially those that are were input into the App by agreement.

The SIA analyses the data:

It conducts seasonal analysis of the climate data registering rises and falls in temperature and other climatic variables relevant to cocoa and honey production.

It conducts decadal analysis of the internal consistency of ongoing variables: temperature, relative humidity and dew point. In this way, it analyses the rainfall (precipitation) and the phenological phases of cocoa and honeybee species.

The system registers good practice by producers in managing cocoa and the apiaries in order to evaluate changes contributing to climate resilience.

Capacity building and workshops

There is much to learn about adapting to climate change and to systematize the collection of all the data from the meteorological stations. Because of this, Proyecto Adapta has undertaken an intense educational phase in its second year, based on the use of the technological tools that will enable the collection of meteorological data, to understand how climatic changes influence cocoa and honey production and what actions producers can take to adapt and maintain, or even increase their production.

The objective of the training is to train and accompany the producers so that they can benefit from the project by using the climatic information and the recording of data, moreover to evaluate the use of good practice oriented towards adaptation in the face of climate change.

Training on the Life Zones and Climate Change in the Proyecto Adapta areas.

The workshop of Life Zones and climate change equipped INGEMANN technicians with the knowledge and tools needed to understand the importance of the life zones with respect to climate change.

This training was useful to define methods and techniques to build capacity amongst producers regarding current and future project life zones.



This is some of Proyecto Adapta's 2nd Year training:

Training on Climate Resilience in the honey sector:

The workshop on climate resilience in the honey sector, with the study and phenology of honeybee species, equipped the INGEMANN technicians with knowledge and tools to understand the importance of the phenology of honeybee species. This training mapped honeybee species, flowering timetables and variations between species in their flowering periods, in places prioritized in the Proyecto Adapta area. This workshop boosted knowledge of the current floristic potential, the apiculture potential, the identification of risk factors in the project zone.



Workshops on general aspects of SIA

SIA is a key link in the project, bringing in the primary information from the weather stations and phenological posts linked to cocoa and honeybee species. Through SIA different workshops have been held. SIA works by registering, processing and analysing information. Through its training it demonstrates how to collect field information, enabling controlled study and diffusion of information about the use of good practice in both the production of cocoa and honey.



Knowledge about the SIA App use is shared in training. The key aim of this learning is to subsequently support producers associated to Proyecto Adapta

Manuals and field books for Climate and Phenological Observations:

Training is held on the use of these manuals, which leads to the creation of an information register by observers. This information is sent regularly for the production of the agrometeorological bulletins. This data now forms part of the SIA and need to be modified in order to codify the observations.

And much more to come ...
in 2018 and 2019

And also international fairs:

- Junio 2017:** Congreso Agropecuario Upanic 2017 Ingemann.
- 13 - 15 octubre 2017:** Participación en feria The Chocolate Show London.
- 28 octubre - 1 noviembre 2017:** Salon du Chocolat, París.
- Octubre 2017:** COP 23, *Resilience as a business*.
- 6 diciembre 2017:** Turning Risks into Opportunities: Improving Climate Resilience among Smallholder Farmers. São Paulo.
- 12 y 13 Diciembre 2017:** Seminario Internacional de Escalonamiento de Cacao Climáticamente Inteligente, Managua.

2017

Next steps

WHAT IS COMING UP



- // Widening the project's impact area
- // Increasing producer use of climatic information to encourage adaptive measures
- // Putting in place the plan for administering climate risk in the links prioritised in the cocoa and honey value chains
- // Supporting producers in implementing strategies to reduce the economic, social and environmental impacts of climate change in the project zone
- // Putting in place effective response mechanisms by producers and firms to early warnings of climatic risks
- // Increasing the use of good practice in the management of cocoa and apiculture activities
- // Evaluating the outlook for the next rainy season (May - November) and giving the most appropriate recommendations to the cocoa and honey producers
- // National cocoa and apiculture forum to share experiences
- // Making scientific evidence on climatic change accessible to producers to increase understanding of this issue
- // An alliance of Media and Communication in the project zone to scale up messages about climatic change to producers and the population
- // Preparation of video tutorials supporting producers to build climate resilience
- // ...and much more

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