



CACAORO
SUSTAINABILITY AND
INNOVATION HUB

www.cacaoro.com

CACAORO[®]
—NICARAGUA—

A SUSTAINABILITY AND INNOVATION HUB



Scan the QR for our latest farm video

CONTENT

- 3 Introduction
- 5 Acronym
- 6 Current Environmental Programs
- 10 Current Social Innovation Programs
- 14 New Upcomming Social Innovation Programs

Front Cover Image: Aerial View of the Forest Reserve at the Finca La Rosita.

www.cacaooro.com



SUSTAINABLE
DEVELOPMENT
GOALS

The Cornell Lab
of Ornithology



#cacaooro

CACAOORO[®]
—NICARAGUA—

AN INTRODUCTION TO OUR SUSTAINABILITY AND INNOVATION HUB

Promoting rapid economic, industrial and environmentally sustainable growth for the region.

Promotes rapid economic and industrial growth, builds trade capacities in industries, advances environmentally sustainable growth, builds institutional capacities for greening industries through cleaner production technologies and resource efficiency.

Cacao Oro de Nicaragua (COdN) was founded in 2014 with a singular mission: the establishment of large-scale sustainable cocoa plantations in Nicaragua. Our commitments revolve around the principles of Environmental, Social, and Governance (ESG), and we actively collaborate with a diverse spectrum of partners, institutions, and development stakeholders to advance our vision. Ensuring strict alignment with the rigorous standards outlined in our Environmental and Social Management System (ESMS) and our Annual Operating Plan, underscores the concepts of circularity and stakeholder engagement as essential pillars in our strategic framework.

In the first half of 2023, our main focus centered on La Rosita farm and the strategic pursuit of agreements with various local, national, governmental and non-governmental organizations. During this period, we organized and executed a total of 337 events, engaging 2,288 participants (891 female and 1,397 male) from neighboring communities and our workforce. These events encompassed a wide range of activities, including the monitoring of Key Performance Indicators (KPIs) and the promotion of effective Environmental, Social, and Governance (ESG) practices. Notably, 48 individuals (10 female and 38 male) actively participated in 157 MIROVA-led events, while 146 individuals (37 female and 109 male) received specialized environmental training through 18 sessions. Additionally, our social initiatives drew significant interest, with 2,094 participants (844 female and 1,250 male) taking part in 162 distinctive events.

Our ESG engagement initiatives involved strategic collaborations with key stakeholders, including our farm's management team, MIROVA, LDN Fund Investee, LDN TAF/Gender, UNIDO, COSUDE, E.U., CIAT, MEFCCA, and the Nexos+1 forum. On the environmental front, we extended our outreach to our farm's workforce and partnered with entities such as R.A., ISTOM, UCA, COOPESIUNA, MOCCA (LWR), WMO, FARENA-UNA, MARENA, and IUCN. Our dynamic social activities encompassed our COdN team members and neighboring communities, fostering collaborative relationships with organizations such as MINED, NF, Cornell Laboratory of Ornithology, MITRAB, MIFAM, UNITAR, the World Bank (W.B.) and FAO, (see acronym page).

Enhancing ESMS

Throughout the semester, we have prioritized sustainability by continually striving for self-improvement, conducting meticulous self-assessment, and taking proactive measures to strengthen our Environmental and Social Management System (ESMS). Our efforts were significantly bolstered by the invaluable support of MIROVA, who conducted a comprehensive analysis of our ESMS, emissions monitoring, and carbon capture, enhancing the understanding of our environmental impact.

Furthermore, our active participation in the LDN Fund Investee Knowledge Exchange session expanded our knowledge on the 2X Challenge and effective approaches for assessing Gender Impact in investments. This engagement deepened our understanding of LDN Fund's gender framework, LDN TAF approach, and available support mechanisms.

Lastly, our team conducted an extensive baseline analysis on the B Impact Assessment platform, resulting in an impressive overall B Impact score, surpassing sector standards, providing valuable insights into the policies and actions needed to advance further toward our sustainability objectives.

As a cocoa hub, we engaged in constructive dialogues on integrating further sustainability initiatives, reaffirming our commitment in the region for continuous growth and our dedication to the Sustainable Development Goals (SDGs).

A Cocoa Hub

The United Nations Industrial Development Organization has acknowledged COdN as social, economical and environment hub for the Northeastern RAACN region of Nicaragua. We are deeply honored to host multiple distinguished regional and global non-governmental organizations—UNIDO, the European Union (E.U.), COSUDE, and CIAT—alongside the Vice Minister of MEFCCA during multiple visits. These visits provided an opportunity to explore our cocoa plantations, gain insights into our social initiatives, understand our comprehensive sustainability plan, and our cutting-edge industrial facility, rigorous quality standards and a proprietary design optimized for the post-harvest cocoa processing.

Our commitment to sustainability has garnered recognition from both national and global organizations that have visited our farm to evaluate our conservation efforts, bee management practices, plastic recycling programs, and composting initiatives. Recently, UNIDO conducted an in-depth interview with us, featuring a panel to assess our participation in UNIDO's programs and gauge the outcomes of our institutional relationship that systematically enhance our activities and allows us to identify future prospects.

COdN stands out in the cocoa industry by boosting significant innovation and technological advances across the entire value chain. This expertise allows us to offer valuable guidance to other organizations seeking assistance in cocoa management. UNIDO remains as an important ally for our company, supporting the development of resilient infrastructure, the promotion of inclusive and sustainable industrialization, and the fostering of innovation. COdN partnership with UNIDO allows the development of our strategies aimed at poverty eradication, fostering inclusiveness, and building productive capacities through inclusive collaboration with all stakeholders involved in industrialization.

Climate Actions

Recently COdN had the privilege of attending the Nexos +1 and Libelula Latin American Forum. The primary focus was the in-depth analysis of climate actions and their alignment with business performance. Engaging with fellow professionals into this vital matter was a remarkable opportunity, actively engaging in formulating a robust Climate Action Plan, aimed to ensure our initiatives are well-structured and reflect our commitment to environmental stewardship. We firmly believe that addressing climate change is not only a necessity but also holds the potential for driving profitability in business.

Gender-Related Initiatives

COdN has established a collaboration model with the LDN Technical Assistance Facility (TAF), under the management of the Sustainable Trade Initiative (IDH). Within our broader framework of Environmental, Social, and Governance (ESG) initiatives, actively addressing gender-related concerns. During multiple meetings with LDN TAF/Gender, we have reviewed the progress COdN has made towards achieving gender equality. We reached a mutual understanding with TAF to embark on a collaborative journey, co-investing in the development of a comprehensive gender strategy and action plan that seamlessly aligns with our company's overarching objectives and scope. As our initial step, we have commissioned a consultancy to thoroughly evaluate our current procedures within the gender domain.

In our ongoing commitment to fostering a culture of excellence within our team, we regularly convene morning meetings. During this semester alone, we have conducted a total of 150 meetings, each serving as a platform for assessing progress across all areas, as well as addressing the various challenges and obstacles that may arise.



OUR COLLABORATIONS

COdN. Cacao Oro de Nicaragua.

CIAT. The International Center for Tropical Agriculture.

COOPESIUNA. Agricultural Cooperative of Essential Extractions Services.

COSUDE. Swiss Agency for Development and Cooperation.

ESG. Environmental, Social, and Governance.

ESMS. Environmental and Social Management System.

E.U. European Union.

FAO. Food and Agriculture Organization.

FARENA – UNA. Faculty of Natural Resources – National Agrarian University.

IPM. Integrated Pest Management.

ISTOM. Ecole supérieure d'agro-développement international.

IUCN. International Union for Conservation of Nature.

KPI. Key Performance Indicator.

LDN TAF. Land Degradation Neutrality Technical Assistance Facility.

LWR. Lutheran World Relief.

MARENA. Ministry of the Environment and Natural Resources.

MEFCCA. Ministry of Cooperative and Associative Community Family Economy.

MIFAM. Ministry of the Family.

MINED. Ministry of Education.

MITRAB. Ministry of Labor.

MOCCA. Maximizing Opportunities in Coffee and Cocoa in the Americas.

NF. Nica France Foundation.

PROCACAO. Improvement of the Organizational and Productive Capacities of Cocoa Producers.

R. A. Rainforest Alliance.

SDGs. Sustainable Development Goals.

UCA. Central American University.

UNIDO. United Nations Industrial Development Organization

UNITAR. United Nations Institute for Training and Research

USDA. United States Department of Agriculture.

WB. World Bank.

WMO. World Meteorological Organization.

Left image: Euphonia gouldi, seen at the La Rosita Farm. Image from the Ornithology Program from Cacao Oro and Cornell Lab of Ornithology.

CURRENT ENVIRONMENTAL PROGRAMS

INTERNATIONALLY RECOGNIZED CERTIFICATIONS ACHIEVED

COdN's cocoa production has achieved international recognition through the prestigious R.A. Sustainable Certification, and we are fully committed to upholding this esteemed designation. To ensure the continuous adherence to stringent certification requirements, we have implemented a comprehensive set of protocols.

Our proactive measures include multiple live communication tools for managerial training and meetings with our farm's General Manager, to serve as a platform for the proper evaluation of production objectives and the prompt addressing of any operational concerns. Our team received comprehensive updates on the latest revisions found in version 1.3 of the certification criteria, providing our team members with the necessary knowledge and skills to meticulously comply with all COdN procedures, thereby safeguarding our commitment to maintaining the highest certification standards.



SUSTAINABLE PRODUCTIVE LANDS AND SEASCAPES

Our farm encompasses an area of approximately 3,300 hectares, featuring 2,893,678 planted cacao trees and plants, dating back to its inception. Within this landscape, we have dedicated 150 hectares to the cultivation of Robusta coffee, and we have responsibly set aside an expansive natural reserve spanning 770.14 hectares.

To optimize the health and productivity of our cacao plantation, we have taken proactive measures by installing a network of 460 kilometers of drainage channels. These channels play a pivotal role in preventing water puddling, ensuring optimal growing conditions and disease mitigation for our cacao crops.

In a strategic partnership with Organics, we are currently conducting trials involving soil regenerative bacteria. This innovative approach is geared towards enhancing soil quality along the Caribbean Coast, ultimately reducing both biotic and abiotic stress factors. These efforts are aimed at fortifying crop immunity and enhancing overall yield potential.

BIO-INPUTS

Our team recently completed training conducted by one of our university partners, focusing on highly effective natural strategies for managing pests and diseases in cocoa plantations. With the rising costs of agricultural inputs, prioritizing sustainable solutions is of utmost importance.

The training primarily centered on the preparation, application, and monitoring of bio-inputs utilizing *Bacillus* and *Trichoderma* as key components to combat *Monilia* and *Mazorca Negra* issues. We engaged with environmental training, research, and development to explore preventive measures against *Monilia*, a detrimental fungus affecting cocoa crops.

We delved into the latest advancements in bio-input research, emphasizing biological control methods for this fungus. As a result of our discussions, we have outlined specific on-farm activities for implementation.

CURRENT ENVIRONMENTAL PROGRAMS

To further our commitment to sustainability, we have decided to explore new product possibilities. We are investigating the potential of mucilage, a by-product of cocoa fermentation, for product development. Our team will begin experimentation on these products.

CHOCOLATE LABORATORY & COCOA QUALITY

Frequent sampling and monitoring of the organoleptic and sensory attributes of our cocoa are imperative for upholding its quality. To achieve this, our post-harvest team, continuously executes quality evaluations, and retains pre and post production samples for all clients shipments to ensure quality control.

COdN has established a meaningful partnership with Semilla Escuela, which stands as Nicaragua's pioneering institution dedicated to cocoa and chocolate education and research. This collaboration is dedicated to the enhancement and empowerment of communities through the dissemination of knowledge and training related to the cocoa transformation process. Our collective goal is to actively contribute to the development of a sustainable cocoa ecosystem in the region. This endeavor includes the establishment of state-of-the-art chocolate laboratories and comprehensive training initiatives aimed at elevating both the cocoa industry and the quality of life within these communities.

We are thrilled to announce the recent inauguration of the very first chocolate laboratory in the Rosita area. This milestone marks a significant step forward in our shared mission to advance the cocoa sector and foster positive change in the communities we serve.

BIO-COMPOSTING PROGRAM

At La Rosita farm, we employ cocoa pod composting as a strategic measure to reduce disease incidence and provide natural soil fertilization. This practice yields approximately 24 kg of K₂O, 5 kg of P₂O₅, and 2 kg of N per ton of dry cocoa beans. These nutrient contributions are essential for sustaining a robust crop of dry seeds totaling 1000 kg. To meet the specific nutrient requirements for this crop, we utilize 64.8 to 103 kg of K₂O, 31 to 40 kg of N, 11.5 to 13.75 kg of P₂O₅, in addition to 7 to 11.2 kg of CaO and 8.3 to 11.6 kg of MgO, as detailed by Furcal-Beriguete (2017).

It is imperative to emphasize that while composting plays a vital role in enhancing soil quality, reducing waste during harvest, mitigating disease risks, and supplementing other fertilization techniques, it is not the sole source of all necessary nutrients. Our approach encompasses an array of strategies to ensure optimal nutrient balance for sustained cocoa production.

MARENA COLLABORATION PROGRAM

COdN has been actively engaged with MARENA in training producers and collaborating with companies in neighboring communities to promote environmental conservation. The prevention of deforestation, protection of natural water sources, and the promotion of reforestation. The positive response and commitment shown by program participants are heartening, underscoring the importance of ongoing discussions, education, and enforcement of environmental regulations in Nicaragua for a sustainable future.

The establishment of a fire brigade by the El Rosario Kukalaya community is a commendable initiative with the potential to greatly benefit not only the community itself but also the surrounding areas.

MOCCA PARTNERSHIP

We have established a partnership with the MOCCA program and remain actively involved in climate change-related initiatives and events. COdN has participated in multiple training sessions for soil treatment as an effective strategy to mitigate the adverse effects of cadmium on cocoa plantations and the El Niño phenomenon, providing our team with insights into its impact and effective mitigation strategies.

CURRENT ENVIRONMENTAL PROGRAMS

Our hope is to better comprehend the significance of climate change and undertake necessary actions.



CLIMATE ACTIONS (EX-ACT)

Using the EX-Ante Carbon-balance Tool (EX-ACT), our team estimated COdN's greenhouse gas (GHG) emissions impact during the semester. Our calculations, consistent with IPCC methodology, predict sequestration of 19,882.24 tons of GHG (tCO₂e) by year-end, spanning 2,622 hectares, including 770 hectares of forests and 1,922 hectares of cocoa plantations.

Recognizing the gravity of climate change, we actively engage in relevant events to help address its consequences, particularly considering our Central American plantations and the forecasted severity of the upcoming El Niño weather phenomenon.

Our program's overarching goal is to comprehend the climate emergency's significance and undertake necessary actions. We are committed to reducing carbon emissions and enhancing carbon sequestration, as well as implementing a carbon management plan derived from our analysis of the Nexos +1 forum discussions within our comprehensive climate action plan.

MELIPONA BEES PROGRAM

Melipona bees play a pivotal role as pollinators for up to 46 different crops, as highlighted in Real - Luna et al. (2022). This ecological service holds significant importance for our food security initiative while also serving as a valuable environmental bioindicator.

Our comprehensive program integrates five local schools alongside COdN and extends an invitation to interested producers. The program's aim is to empower single mothers, both those engaged in farm work and those residing in nearby communities, by facilitating their involvement in honey production for medicinal, domestic, and commercial purposes. Achieving this objective necessitates a series of steps:

To ensure sustainable production, we have initiated a rigorous three-month training program, deploying attractant-based traps, and transferring bees to wooden boxes. This process is supervised by a team on the farm, and are eager to involve individuals from neighboring communities, regardless of background, gender, or age.

ISTOM - COCOA MUCILAGE HERBICIDE

Students from ISTOM in France are conducting a comprehensive evaluation of various doses and processes for utilizing cocoa bean mucilage as an herbicide. Concurrently, they are undertaking an inventory of beneficial insects within cocoa plantations to formulate protective measures and optimize conditions conducive to insect reproduction.

UNA PARTNERSHIP

COdN has partnered with UNA to establish professional internships at the farm. The first internship demonstrated exceptional proficiency in conducting fieldwork, farm tours, and the systematic identification of diverse flora and fauna. Their collected data is currently undergoing processing for the final report.

PELLE BONGO DISTRIBUTION

COdN has entered into a strategic partnership with Pelle Bongo to facilitate the distribution of their innovative harvesting tool. This tool serves as a viable alternative to traditional machetes, offering cocoa farmers a safer, cleaner, and more efficient means of opening ripe cocoa pods and extracting the seeds, effectively separating them from the surrounding connective material. This process facilitates more comprehensive and effective fermentation of the seeds, thereby preserving and enhancing the flavor attributes crucial to chocolate production.

The ultimate outcome is the production of higher-quality dried cocoa beans, and the improved livelihoods and future prospects of cocoa farmers and their families in the region.

CURRENT ENVIRONMENTAL PROGRAMS

PRIVATE RESERVE PROGRAM

The Private Wildlife Reserve has formally designated 770.14 hectares of land as High Conservation Value (HCV) and has identified 237 protected species within this area. Ongoing patrols conducted by dedicated workers and security personnel are instrumental in safeguarding the well-being of these species.

The reserve's impressive animal inventory comprises 22 species of reptiles, with three among them classified as endangered. Additionally, there are 24 species of mammals, with 16 falling into the endangered category. In the realm of amphibians, there are 15 distinct species, one of which is considered endangered. The avian population is rich, encompassing a total of 176 species, with 23 of them classified as endangered.

Threat levels for these species are stringently assessed and determined in accordance with guidelines established by IUCN (International Union for Conservation of Nature), CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora), as well as national VEDA and the Red List of Nicaragua. Notably, the IUCN specifically lists 11 of these species under conservation concern.

PRIVATE WILDLIFE RESERVE CERTIFICATION

COdN's commitment to wildlife reserve preservation has garnered full recognition from MARENA. The organization orchestrated an exposition featuring a diverse collection of 25 distinct animal species. This event offered a firsthand experience to the community at large, including students, community leaders, farm workers, and government personnel.

Many of the species showcased during this event are confronting endangerment due to human activities, and its primary purpose was to raise awareness about the critical imperative of preserving their natural habitats. Furthermore, neighboring families of the farm have been strongly encouraged to establish breeding facilities for species amenable to captive reproduction, with the ultimate goal of releasing these animals into their native forest habitats.

To bolster our conservation endeavors, our team actively engages in comprehensive courses offered by the International Union for Conservation of Nature (IUCN) Red List of Threatened Species. This educational initiative helps ensure the effective implementation of our conservation strategies.

ORNITHOLOGY PROGRAM

COdN's ornithology program is a collaboration involving the Ornithology Lab at Cornell University, jointly implemented by the Nicafrance Foundation and Cacao Oro de Nicaragua S.A. The program's objective is to harmoniously integrate conservation principles with the productivity of agroforestry systems encompassing coffee, cocoa, and timber forest species employed for shading, all within the framework of sustainability.

Over the course of the program the partnership has conducted comprehensive training seen as crucial in educating workers and community leaders on these critical topics. Hosting 21 events, with children from six neighboring schools receiving the same valuable training in environmental management and bird watching.

COdN has established a partnership with the Nicafrance Foundation and The Cornell Lab of Ornithology, a member-supported unit affiliated with Cornell University, renowned for its specialization in the study of avian species and environmental management.

CURRENT SOCIAL INNOVATION PROGRAMS

We must promote gender equality from an early age to foster a society that values diversity and maximizes everyone's unique abilities. Eliminating violence and discrimination is vital for peaceful coexistence.

COMMUNITY ENGAGEMENT PROGRAM

We are committed to actively engaging with our local communities, and in recent times, we have successfully conducted 131 community engagement events. These events witnessed a total attendance of 1,549 individuals, with a demographic breakdown of 462 women and 1,087 men.

During these gatherings, we communicated to attendees the existence of our complaint and suggestion box, located on our farm premises. We underscored that community members are encouraged to anonymously report any concerns they may have and provided contact information for our farm manager and director of sustainability to facilitate direct reporting. It is our priority to create an environment where the community feels secure when reporting issues, and we uphold a zero-tolerance policy against any form of retaliation, ensuring the safety and well-being of all stakeholders.

MINISTRY OF EDUCATION PARTNERSHIP

At COdN, we have forged a strategic partnership with the Ministry of Education (MINED) to extend continuous support to six public schools. Our primary mission centers on the comprehensive education of 70 female and 15 male parents, representing a total of 316 primary education students across each community. Our educational outreach is designed to highlight the program's core objectives and its scope.

Our aspiration is to guarantee the continued enrollment and attendance of students within these educational institutions, and we are dedicated to the attainment of this goal.

LOCAL SCHOOLS PARTNERSHIPS

Our partnership with local schools plays an important role in fostering education and reshaping perspectives. We emphasize the importance of prioritizing children's education to equip them with essential skills for navigating the complexities of the modern world. To promote inclusivity and fairness in the education system, we continuously organized events to create platforms for discussing the significance of harmonious coexistence within homes and communities to illustrate its positive impact on academic success. Our approach places a strong emphasis on gender equality, notably reflected in the recognition of mothers as primary participants in their children's events.

Furthermore, we conduct training sessions for multiple groups of students, instructing them in proper procedures for recycling plastic and bottles that will attract melipona bees, and support hive development. Our primary objective is to reduce waste in schools, mitigating environmental degradation and inspiring innovation within academic institutions. In parallel, we engage in motivational activities within schools to demonstrate the value of a sustainable future.

As part of our engagement, we have introduced our farm-made artisan chocolate for students. This nutritious alternative to junk food, enriched with essential vitamins and serves as a catalyst for healthier eating habits among children.

CURRENT SOCIAL PROGRAMS

We are excited to introduce children to a language system that will prove advantageous to their future.

SCHOOL TRAINING

With our commitment to the community we have implemented a comprehensive training program encompassing 32 events aimed at imparting fundamental English vocabulary skills to students.

Regrettably, procuring English teachers in this remote region of the municipal capital poses a considerable challenge. Some educators prefer to seek professional development opportunities in urban centers. Despite the Ministry of Education's (MINED) dedicated efforts to provide an adequate number of teachers for all schools, the region's geographical isolation, limited communication infrastructure, and absence of electricity render it less attractive to potential educators.

Nonetheless, despite these formidable obstacles, our program has garnered widespread acceptance among both students and their parents, owing to COdN's established and professional capabilities.

MATHEMATICS PROGRAM

COdN has instituted a School Reinforcement Program specifically tailored for elementary school mathematics, and its implementation has begun to yield success. This comprehensive program, developed in collaboration with professional student practitioners from ISTOM, delivers support to students grappling with fundamental mathematical operations, resulting in enhancements to their comprehension of subject matter.

This initiative is strategically focused on students spanning from the first to sixth grade, a demographic selected due to the widespread recognition that mathematics presents one of the most substantial academic challenges within this age group.

BASEBALL LEAGUE PROGRAM

Our company is located in an area where baseball enjoys significant popularity. We take great satisfaction in our role as a contributor to the local community, and as such, we have established partnerships with neighboring towns to orchestrate the Cacao Oro de Nicaragua Peasant Baseball League. This league not only fosters a secure and enjoyable family-friendly atmosphere but also plays a pivotal role in bolstering the local economy. It achieves this by engaging nearby businesses to provide food for event attendees.

We take pride in our involvement in this initiative and the positive and far-reaching impact it has on our community. It's essential to recognize the positive impact that COdN has on promoting entrepreneurship at baseball games. Many individuals sell a variety of foods and snacks, which not only increases their income but also contributes to a circular economy within their communities.

The team managers of the league conduct weekly meetings to deliberate upon crucial technical matters aimed at enhancing the company's overall sports management. This has yielded benefits as they engaged in constructive debates and reach unanimous consensus on initiatives to improve the league's performance.

**CURRENT
SOCIAL
PROGRAMS**

COdN
is committed
to advancing
gender diversity
and cultivating
an inclusive
environment.
Empowering
transformation and
equal opportunities
for all individuals
within our
community.

ENVIRONMENTAL AND SOCIAL MANAGEMENT

We conduct inclusive bi-monthly meetings with community leaders, welcoming attendees regardless of gender. The primary purpose of these gatherings is to disseminate information about COdN's activities and to address any concerns or complaints related to our operations. These meetings also serve as a platform for identifying community needs, facilitating communication with other stakeholders, and collaborating to resolve community issues.

We also use these opportunities to educate attendees about our Environmental and Social Management System (ESMS), which governs our interactions with collaborators and neighbors. During these meetings, we take great care to provide a comprehensive overview of our ESMS to ensure that everyone is well-informed and remains apprised of our progress.

LIVELIHOOD PROGRAMS

At present, our workforce comprises a total of 511 employees. Among these, 211 are permanent employees, consisting of 63 women and 148 men. Additionally, we employ 340 temporary workers, with 110 women and 230 men.

At COdN, we work on enhancing employee productivity through continuous learning and development. To facilitate this, our production unit managers have the authority to approve employees' pursuit of additional education. The decision-making process in this regard is pivotal to our growth strategy and involves careful deliberation by our managers.

INCLUSION, VALUES AND EMPOWERMENT PROGRAMS

We take pride in having five women occupying critical positions within our organization, making significant contributions to our daily operations. Furthermore, our senior executive team is led by a highly competent female leader. We deeply value the presence of our 39 permanent female employees, recognizing their vital role in our success.

In alignment with our commitment to gender equality, we have established a significant partnership with the Ministry of Family to foster gender equality and address various forms of violence. Through the execution of twenty specialized events, we have provided exceptional training to one hundred females and forty males on a wide range of pertinent topics. We remain steadfast in offering unwavering support and assistance, particularly in cases where government intervention is required.

Our organization places great importance on inclusivity, especially when it comes to the indigenous population. During the busiest harvest season, we are proud to employ a diverse workforce, including 15% Miskitos, 2% Mayagnas, and 1% Creoles. To demonstrate our commitment to supporting and honoring these minority groups, we have equipped our camps with suitable housing and kitchens to facilitate their nutritional needs. Our approach in identifying and documenting these minority groups has enabled us to create a conducive camp environment where they can work alongside familiar faces, fostering a sense of trust and camaraderie to that of a family.

**CURRENT
SOCIAL
PROGRAMS**

At COdN, we
prioritize employee
education and
training as an
integral part of
our commitment
to a sustainable
and safe business
environment.

CONNECTING COMMUNITIES ROAD PROGRAMS

The company has committed to fulfilling the request of community leaders in Rosario 1 and Rosario Sector 2 for the construction of a 1,000-meter road, which serves as a vital pathway for ambulance access during emergencies. Beyond its critical role in emergency response, this road also carries significant economic benefits for the local community. It facilitates the transportation of harvested crops by producers and grants easier access to the area for suppliers.

WELL BEING

At our organization, we place significant importance on the continuous education and training of our employees, an integral component of our commitment to maintaining a sustainable and safe business environment. Recently, members of the COdN team actively participated in a seminar workshop led by MITRAB, focusing on the Organization and Management of Hygiene and Safety in the workplace. This training holds significance for our company, as it plays a pivotal role in ensuring the currency and efficacy of our Health and Safety plans, ultimately safeguarding our employees from potential harm.

Given the ever-evolving nature of workplace risks, it is imperative for us to consistently evaluate and adapt our safety measures. The training program was attended by individuals responsible for sensitive areas, including field supervision, nursery operations, and sustainability initiatives. These participants were actively engaged in mixed commissions dedicated to promoting the overall well-being of our business.

LEARNING TO ACTION PROGRAMS

Our participation in learning-to-action programs has equipped us with the technical expertise required to proactively prepare our community and farm for the challenges posed by climate change within our region. COdN has been actively engaged in courses offered by FAO and the World Bank, specifically focusing on the EX-ACT tool. These educational initiatives have provided us with insights into greenhouse gases, encompassing their measurement, and capture. We are committed to utilizing this knowledge to offer training on these critical subjects to our community members.

DISASTER PREVENTION PROGRAMS

In our leadership roles, we believe that the community bears a collective responsibility for effectively addressing risk management concerns, which we address during our monthly meetings. During our most recent discussions, we focused on disaster prevention, utilizing instructional videos to gain a deeper understanding of the far-reaching consequences of natural disasters. Additionally, we have forged a valuable partnership with Lutheran World Relief to procure essential medical and emergency response kits. These kits are in the process of being acquired in conjunction with LWR to ensure the readiness and resilience of our communities in the event of a disaster.

NEW UPCOMING CIRCULAR INNOVATION PROGRAMS

VilaVi Partnership

COdN has the capacity to conceptualize and execute multiple projects with the social funding initiatives provided by the Government of Canada. These projects would encompass various segments of the community, including children from the five affiliated schools, single mothers, and members of the Miskito, Mayagna, and Creole ethnic groups from neighboring communities.

Such an undertaking would serve a multi-faceted purpose, including the generation of supplementary economic resources, active participation in environmental conservation, and the facilitation of youth engagement in entrepreneurial endeavors. The successful realization of this project requires planning the establishment of a strategic alliance with VilaVi Foundation Canada to manage the funding, and collaborative work sessions with community leaders to establish a structured framework for implementation.

Avocado Program

COdN is collaborating with an avocado program expert to implement avocado cultivation in the region. The recommended planting density for avocados falls within the range of 350 to 400 plants per hectare, making it a promising avenue for reforestation efforts in areas affected by degradation. Avocado trees thrive in soils with a medium texture and necessitate deep soil profiles, with an ideal pH range of 5.5 to 7. Local farmers near COdN have a unique opportunity to contribute to reforestation initiatives on degraded lands, potentially capitalizing on the robust export market for this sought-after agricultural commodity.

Cocoa Fiber for Paper

During the production of dry cocoa, losses occur due to broken beans, which not only compromise the quality and value of the product but can also introduce internal mold contamination to a batch of cocoa. An innovative solution to utilize these broken beans post-selection is the creation of cocoa fiber paper (ECOBIOPACK, n.d.). The production of this eco-friendly material necessitates investments in sorting machinery or the establishment of a dedicated selection area subsequent to dry cocoa classification. Additional requirements include cocoa roasting equipment, research and development for product formulation, cocoa processing machinery for paper manufacturing, product generation.

University partnership programs

The North Eastern Caribbean region of Nicaragua faces many challenges related to the access to professionals in various fields. Primarily due to the limited availability of higher education opportunities, despite the commendable efforts of institutions like URACCAN and BICU. COdN has established collaborative mechanisms with various national and international partners, such as ISTOM in France, UNA, and UCA in Nicaragua, to facilitate closer interactions through internship programs, with the support of these universities.

In line with our commitment to community development, we aim to further strengthen our engagement with other educational institutions, including UNI, UNAN, URACCAN, BICU, KEISER, and UNIDES, among others. To achieve this, we require the establishment of suitable lodging facilities, dedicated office spaces for interns, the development of guidelines to regulate internship programs, the formalization of collaboration agreements, and a budget allocation to support interns.

Bio-Digester Program

COdN is committed to enhancing sustainability across its operations. Currently, we utilize propane gas for our main kitchen, while firewood is employed in the camp kitchens. To further promote economic sustainability through a circular economy approach, improve the working conditions for our kitchen staff, and reduce our carbon footprint, we are exploring the utilization of cocoa by-products. This initiative, though relatively new in Nicaragua, holds great promise.

Implementing biogas-producing biodigesters, will need to initiate an in-depth research process, potentially through a thesis project. This research would assess the feasibility of anaerobic processes for biogas production used in cooking. It would involve various stages, including budgeting, design, and economic and financial evaluation to determine the project's viability.

NEW UPCOMING PROGRAMS

Cacao Leather Program

In a step towards sustainability and innovation, COdN has embarked on a pioneering venture – the creation of leather products crafted from cocoa fibers. This innovative endeavor is not only ecologically conscious but also showcases the versatility of cocoa, extending beyond its typical role. Cocoa fibers, a byproduct of our cocoa production process, are being transformed into a unique and eco-friendly alternative to traditional leather. This groundbreaking initiative aligns seamlessly with COdN's commitment to sustainable practices and circular economy principles. By repurposing cocoa fibers, we not only minimize waste but also contribute to reduced environmental impact.

The production of cocoa fiber leather involves a tight process that includes cleaning, processing, and transforming the fibers into a durable and sustainable material. These cocoa fiber leather products have the potential to revolutionize industries that rely on leather, offering a more environmentally responsible alternative without compromising on quality or aesthetics. Beyond serving as an eco-conscious alternative, this innovation shows COdN's dedication to exploring new frontiers in sustainability, creating products that resonate with consumers seeking eco-friendly choices. This venture not only positions COdN as an industry leader but also reinforces our commitment to a greener and more sustainable future.

Kukulaya River Rehabilitation Program

To safeguard the Kukulaya River, which traverses multiple municipalities including Bonanza, Rosita, Waspán, Puerto Cabezas, and Prinzapolka, COdN recognizes the imminent threat of deforestation. Situated about 10 kilometers from the river, the farm acknowledges the potential consequences, including the drying up of tributaries within its vicinity. In line with our environmental commitment and the preservation of this vital watercourse, we are working to devise a comprehensive management plan encompassing a 5-kilometer stretch along the river, promoting the establishment of agroforestry systems featuring cocoa cultivation along the riverbanks.

Plastic Recycling Programs

Addressing the issue of waste management, we are launching a Bottle Recycling Program in collaboration with local schools and community leaders. This initiative aims to repurpose recyclable materials for the production of Melipona Bee traps, thereby establishing a sustainable business model for the communities involved.

This comprehensive program encompasses various key components, including the procurement of essential raw materials, the establishment of dedicated collection points, active engagement with community leaders, the manufacturing process, and the ultimate creation of a marketable final product. The strategic plan for this endeavor is carefully designed, aligning its vision, goals, and objectives with the overarching strategic plan of Cacao Oro. This ensures that each project undertaken contributes effectively to the holistic development of our organizational ecosystem.

La Caravana Escuela Partnership

Within the region spanning from Risco de Oro to Kukulaya, a substantial accumulation of metal waste stemming from items like machetes, batons, chairs, motorcycles, and vehicles has been observed. There exist innovative approaches from other nations where such scrap materials are ingeniously repurposed, for instance, being transformed into horseshoes. The successful realization of this endeavor necessitates a broad approach, beginning with the establishment of strategic partnerships with foundations experienced in metal recycling.

This initiative aims to foster community awareness by the systematic formulation, validation, execution and partnership with La Caravana Escuela, aiming to securing necessary funding for the project. Critical components of this project encompass the creation of designated collection points, the acquisition of specialized machinery for material transformation, identification of viable markets for the commercialization of these repurposed products, and the integration of environmental engineering students through internships to drive sustainable progress in this recycling initiative.

Hydroelectric Energy Programs

A pressing need that is deeply felt both within the surrounding communities and on the La Rosita farm is access to reliable electricity. However, a potential solution lies in harnessing the water springs that traverse the farm, as suggested by Maldonado Quispe (2005). This approach not only addresses the immediate need for electricity but also offers the possibility of generating surplus energy, which can be marketed at established rates as per national legislation outlined in Law 467 (La Gaceta, s.f.).

This program requires forging strategic alliances with stakeholders such as the National Water Authority, the Ministry of Energy and Mines, the mayor's office, local communities, the National Engineering University (UNI), and the National Electricity Transmission Company (ENATREL).

Medical Brigades Program

The company invests in medical resources, including supplies and a professional nurse, and facilitates transportation for injured individuals, including local residents. Healthcare options in nearby communities are limited, often offering only basic services. Some workers avoid social security clinics due to distance and financial constraints associated with multiple trips. To address these issues, partnerships with MINSA and voluntary medical organizations are needed to provide specialized care. Expanding and improving the clinic's infrastructure is crucial to accommodate specialists like obstetricians, pediatricians, nutritionists, and psychologists. A dedicated budget should cover logistical expenses for these medical professionals.

NEW UPCOMING PROGRAMS

Cocoa Baba Program

At COdN, the post-harvest production unit, loses approximately 70 liters of mucilage, or slime for each ton of processed cocoa. This mucilage represents a valuable resource that can be repurposed into a range of products, including energy drinks, cocoa jelly, alcohol, vinegar, juices, ice creams, and yogurts, as demonstrated by the research of Arciniega-Alvarado and Espinoza-León (2020).

To effectively capitalize on this opportunity, it is essential to secure the necessary funding for research and product validation. Simultaneously, the research endeavors can be integrated into the academic sphere by engaging students specializing in industrial engineering, marketing, and nutrition, thus making it possible to undertake these projects as part of their thesis.

This approach not only presents a compelling avenue for research but also opens doors to competitive opportunities for securing innovation funding from a variety of international agencies and governmental bodies. This collaborative approach holds the potential to transform an otherwise wasted resource into a source of innovative and sustainable products.

Schools and Environment Programs

The environmental stewardship component of COdN's mission is intrinsically linked to the active engagement of the neighboring communities. Within this context, one of the most responsive demographic segments to environmental awareness is children. To this end, COdN has implemented a comprehensive training program in collaboration with partners such as the Nica France Foundation, Cornell Lab of Ornithology, and More People More Trees.

This program involves the delivery of monthly instructional and hands-on sessions designed to equip children with an understanding of environmental preservation and an early sense of individual responsibility in this regard. Financial support for the program's execution within the five participating schools is fully underwritten through the established alliance.

Teachers Financial Support

COdN currently provides supplementary compensation for volunteer teachers within the nearby communities. Nevertheless, additional schools have expressed the need for similar support for their educators. To address this demand, COdN envisions a collaborative solution involving a company engaged in the provision of goods or services to the farm, or through one of its emerging business initiatives. This approach would involve allocating a proportion of resources from these endeavors to ensure a fair and equitable distribution of economic support.

School Infrastructure Program

The five schools located in proximity to the farm face significant shortcomings in terms of infrastructure and essential equipment such as; potable water, sanitary facilities, electricity, better classrooms conditions to name a few. COdN addresses this issue through collaborative efforts involving partnerships with the Nica France Foundation and the Calibre company. Furthermore, it will be imperative to establish formal collaboration agreements with the Ministry of Education (MINED) and the Rosita Mayor's Office to facilitate and support necessary improvements. Prior to commencing these enhancements, a comprehensive needs assessment will be conducted, supplemented by community engagement initiatives such as meetings with students and parents to foster a sense of ownership and commitment within the local community.

Education - English Classes

While the national education policy emphasizes the importance of introducing children to English as a second language, the shortage of teachers in rural areas remains a challenge. COdN aims to facilitate the learning of basic vocabulary by conducting monthly sessions for children in nearby schools. To enhance this initiative, it is essential to provide didactic materials for both facilitators and students. COdN is searching for sponsors for this initiative.

Education - Sports Program

La Rosita Farm annually hosts a peasant baseball championship, spanning six months, involving both workers and neighboring communities. Recently, there has been a growing interest among young individuals, both men and women, in participating in other sports such as softball and soccer. To facilitate this expansion of sporting activities, it is imperative to establish strategic partnerships with a Spanish cooperation agency, MINED (Ministry of Education), and community leaders to ensure widespread participation and support. Furthermore, it is advisable to explore the creation of a project aimed at securing funding for the acquisition of sports equipment and apparel, potentially involving companies that are suppliers to COdN. This initiative aims to promote physical activity and community engagement through various sports beyond baseball.

#cacaoro



CACAOORO SUSTAINABILITY AND INNOVATION HUB

www.cacaoro.com

CACAOORO[®]
—NICARAGUA—