

Concept Note
“Enhancing the Impact of Research for Development” Program

I. Contact Information

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Organization type:	NGO (CSO)
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Org. description:	CyD's mission is to promote sustainable development and the rational use of natural resources. The organization focuses on agricultural and sustainable tourism projects. CyD collaborates with several international organizations including the Rainforest Alliance. All of CyD's work is community based and situated in high biodiversity areas of Ecuador. CyD has led multi-year projects funded by sources such as USAID, GTZ and the Overbrook Foundation.
Date established:	1992

II. Project Details

Title of Proposal:	Use of native cacao varieties to reduce poverty and conserve globally important biodiversity in Northern Ecuador
Project Duration	24 months
Country	Ecuador

III. Primary CGIAR Center Partner

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IV. Other Partners

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Name of partner:	Freddy Amores
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Name of other Partner Organization(s):	Rainforest Alliance
Type of Organization:	NGO
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Name of other Partner Organization(s):	Universidad Tecnica de Esmeraldas (UTE)
Type of Organization:	Public, University
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V. Project Questions

1) PROBLEM DEFINITION:

Aroma fino cacao encompasses many native cacao (*Theobroma cacao*) varieties, such as nacional (forastero amazonico), trinitario and pepa blanca, which are primarily grown by small-scale growers in the coastal regions of Ecuador. In the last ten years the market for fine chocolate has grown significantly and there is a strong demand for high quality Aroma fino cacao (AFC). However, the supply of cacao is complicated in Ecuador by the existence of numerous native varieties of cacao, as well as high yielding hybrids, causing confusion among growers, intermediaries and buyers as to varieties origin. This situation often results in many cacao buyers paying premium prices for "Ecuadorian Cacao" that is a mix of many different varieties, with distinct flavor profiles. There exists a real threat that the reputation of Ecuadorian cacao could be permanently damaged by the mixing of varieties and the increasing adulteration of AFC cacao with hybrid varieties. It also creates distorted markets as buyers pay a premium for hybrid varieties that they assume are the same as AFC. Identifying and selecting AFC varieties for small-scale farmers, as well as setting up efficient trade relationships between these growers and fine-chocolate makers, will improve the share of the growing market price that producers are able to earn.

AFC is an especially promising crop from a biodiversity perspective since it offers farmers an alternative to more destructive practices such as raising cattle, growing annual crops and clearing forest for new planting. This is because cacao is potentially a high value crop that can be more profitable on a smaller plot of land than extensive forms of agriculture such as cattle. Moreover, since AFC is a perennial tree that grows well under a canopy of shade trees, wide scale deforestation is not necessary and native habitats and carbon stores are preserved. Furthermore, AFC varieties, in contrast to hybrids, do not need agrochemical inputs or full sun. Therefore, promoting sustainable practices that retain the structure of the forest while producing high quality cacao can provide increased income for farmers as well as protect the biodiversity of the ecosystem.

The Esmeraldas province in Northern Ecuador is an especially important cacao growing region known for the richness of its cultures, cacao varieties and forests, which are quickly being depleted. Esmeraldas is home to 80% of Ecuador's Afro-Ecuadorian population as well as to many indigenous groups such as the Chasquis. It is also one of the poorest provinces in Ecuador with a lack of basic infrastructure, the highest rates of infant and mother mortality and the lowest GNP at \$670 per capita (43% lower than national average) in the country. According to the last agricultural survey, there are 36,000 hectares of cacao in the province and 16,013 individual farms with an annual production of 11,251 metric tons. Esmeraldas stretches from the Andean province of Imbabura down to the Pacific coast and represents an area of globally important biodiversity, forming part of the Choco-Manabi conservation corridor. The project benefits will extend to all of the cacao farm families in Esmeraldas.

In the face of the present high market demand for Ecuadorian origin cacao, local buying prices have risen 150% in the last year from approximately \$60/quintal to \$150/quintal. There is a real danger that the long term stability of the market will be jeopardized: unscrupulous traders have entered the market, qualities are being mixed and groups are being weakened. In the long term this will weaken confidence in the Ecuadorian market. This project will check these tendencies by ensuring that the best Ecuadorian varieties are available to the international markets and that producers earn a proper reward. Moreover, by working with local farmers and the University in Esmeraldas, this project is dedicated to strengthening local capacities and the *on farm* and *ex situ* conservation of germplasm.

2) OBJECTIVE:

Overall objective: To reduce poverty and increase income among small-scale cacao farmers in Ecuador by identifying on-farm agro biodiversity and reproducing high production and quality native varieties that have high market demand.

Specific objectives:

1. Collect local cacao agro biodiversity for research and conservation *ex-situ* (both at INIAP Pichilingue and at the University in Esmeraldas).

2. Exploit local cacao agrobiodiversity through identification, separation and reproduction of promising plants *in situ*.
3. Create a denomination of origin label for cacao from Esmeraldas.
4. Facilitate contractual relationships between growers and chocolate makers to trade cacao at a fair price.

3) PROJECT IMPLEMENTATION:

Specific activities for project implementation:

1. Focus groups with women and men to identify causes of poverty and share knowledge on the diversity of cacao varieties.
2. Baseline survey of socio-economic status of households (n=150)
3. Analysis of deforestation through GPS coordinates of each household and satellite images.
4. Participative identification and selection of varieties being produced by small scale farmers in Esmeraldas (15 farms per zone in 3 zones = 45 farms)
5. Genetic analysis of 40 cacao samples.
6. Seed quality analysis of 50 cacao samples.
7. Identification of promising varieties by fine chocolate makers according to taste and manufacturing characteristics.
8. Application for denomination of origin labeling for native varieties from Esmeraldas.
9. Create contracts between private-sector chocolate makers and farmer-cooperative to ensure a long-term sustainable market relationship.
10. Work with farmers and buyers to properly classify and separate varieties
11. Participative selection and reproduction of native varieties.
12. Annual monitoring and evaluation of baseline indicators (height-weight measurements, socio-economic survey, deforestation.)
13. Dissemination of research results to farmers
14. Semi-annual monitoring of number of new trees planted
15. Semi-annual monitoring of cacao sales (after 3 years)

While all of the participating organizations have long histories working with cacao in Ecuador, this project would be an innovative partnership to bring together unique areas of expertise to address current problems for small-scale growers in the Esmeraldas province. Specifically, this project would address the lack of scientific information on cacao agrobiodiversity in the province and create a sustainable market based on that diversity.

INIAP and Bioversity International have extensive experience working with cacao varieties in Ecuador. CyD has been working with over 15,000 small cacao producers for the last twelve years in all the cacao productive regions of Ecuador with special emphasis in the Northern border for the last four years, meanwhile CyD and Rainforest Alliance have been working on Public Private Partnerships that connect chocolate makers with about 3000 small cacao producers for the last two years. The aim of this project is to unite the scientific expertise and local knowledge of INIAP and Bioversity with the implementation and development work carried out by CyD and the development of private sector relationships by the marketing team of RA. Research results on the geographic, management and agrobiodiversity drivers of the quality of high-end cacao will be instrumental in helping poor farmers to increase cacao quality and market linkages.

4) INNOVATION:

While scientific research has been done in Ecuador to identify promising lines of cacao varieties, in the past research entities have not worked with development NGOs and the private sector to promote native agrobiodiversity. This partnership brings together civil society organizations, a government research organization, and a CGIAR center to develop high quality products from Ecuador's natural resources and to target buyers in specialized markets that are growing strongly. It will thereby harness market forces to develop and sustain, after the life of the

project, a native product that through sustainable production practices will provide increased income to poor rural farming families and economic development to Esmeraldas.

5) RELEVANCE and INNOVATIVENESS of PARTNERSHIP:

CyD has worked with over 15,000 small scale cacao growers in Ecuador for the last twelve years. Presently CyD builds the capacity of over 3,000 farmers organized into six large cooperative in sustainable production practices, market development and certification systems. CyD works with the successful Farmer Field School participative methodology, which is responsible for the training of approximately 9,300 small cacao farmers. CyD represents the link to cacao farmers' organizations in Esmeraldas.

Bioversity International is a partner in global efforts to strengthen the conservation and use of agricultural biodiversity for the benefit of the rural poor. Bioversity's mission is to produce international public goods for a range of different research and development partners. Bioversity has a long track record in cacao research and development activities in partnership with the Common Fund for Commodities (CFC), the International Cocoa Organization (ICCO) and other organizations, ranging from the establishment of cacao standard descriptors, best practices for the disease-free movement of planting material and networking to strengthen cacao improvement programmes to international cacao trials and research on cacao quality. Among the CGIAR Centers, Bioversity has the crop mandate for cacao.

Rainforest Alliance has been an international leader for over 15 years in forming partnerships between agricultural producers and the private sector. It has developed a range of innovative and durable partnerships, including Chiquita (bananas), Kraft (coffee and cacao) and McDonald's (coffee). It has a global standard for sustainable agriculture that is distinguished by a focus on both social and environmental criteria and a certification scheme to enable companies to seal their products in the market. In partnership with CyD it has been promoting cacao in Ecuador for two years. RA's role is to facilitate the links between the cacao growers of Esmeraldas and cacao buyers.

INIAP experimental station in Pichilingue is the home of the National Cacao and Café Research Program and is dedicated to researching and conserving the cacao germplasm and studying cacao cultivation systems. Freddy Amores has worked extensively with the World Cacao Foundation on germplasm identification and conservation, their participation is necessary to provide technical information and training on the cacao germplasm.

UTE is a research and agriculture university in the province of Ecuador that works with students on the agricultural issues of the region. It is important to include local actors and make sure that the research benefits local institutions.

Decisions will be made collaboratively and through triennial meetings. CyD and INIAP are the two lead organizations that are based in Ecuador and will meet more frequently. UTE will be represented by the participation of two thesis student. Bioversity and RA will provide international consultation. Each partner has its area of expertise and the collaboration will be one of sharing information and finding solutions through the intersection of scientific, local and market knowledge. Moreover, it is important for the farmers and cooperative to have an active participation in each step of the project. Representatives from farmer associations and cooperatives will also be part of the decision making process and be present at the triennial meetings.

6) EXPECTED RESULTS:

a) The principal expected result of this project is for each cacao farm family in Esmeraldas to grow and sell high quality cacao for a fair price. This outcome will increase incomes because currently cacao farmers are working through intermediaries and have limited access and knowledge about plant selection and reproduction. Studies have shown that increased income is the best indicator for improved food security and health care. Based on the experience of CyD, it is a reasonable expectation that the incomes of the cacao growers will be improved because of this program. Historically, the farms that CyD has worked with improve their production by 50% and increase their selling price by 75%. A secondary benefit of the program will be the conservation of existing forest cover as well as reforestation of many parcels.

b) Measurement of results

- GIS and satellite images to determine levels of forestation
- Questionnaires and focus groups to determine perception of poverty reduction, and distribution of wealth among the household and impact on food security (men, women, children)
- Number and varieties of trees planted in association with new and re densified cocoa plantations
- Interviews and observation of key economic indicators to assess economic well-being
- Records of sales by cooperatives and payments to individual farm families
- Annual records of viable new trees
- Records of AFC volumes being produced and sold over time (take 3-5 years to reach full production)
- Quality control assessments made by private sector actors.

7) REPLICABILITY:

This project could easily be expanded to other cacao growing areas in Ecuador where CyD and INIAP already work. Moreover, this model could quickly be applied to other cacao growing regions where Rainforest Alliance and Bioversity are working and where high quality varieties are grown such as Peru, Nicaragua and Venezuela. The model that is being proposed of using biodiversity as a marketing tool has precedent in the fine coffee market and could serve to influence other crops as well. Results and methods will be made public through conferences, publications and postings on websites.

8) SUSTAINABILITY:

CyD has a long-term commitment to cacao growers in Esmeraldas that extends past the duration of this project and will ensure the presence of outside expertise to see the growers through the processes of harvesting, post-harvesting and selling their cacao. Furthermore, one of the principal objectives of this project is to forge private sector relationships with companies that are willing to make a long-term commitment to farmers that are growing desirable varieties. It is expected that after two years, a significant increase in the amount of new cacao trees will be planted and CyD will continue to provide support to the farmers for another three years until the trees are fully producing and direct relationships between cacao buyers and the farmer-cooperatives are firmly in place. The capacity building in cacao variety selection, reproduction and production among local farmers and the local university, as well as, the amplification of the cacao germplasm at UTE and the creation of denomination of origin certification for Esmeraldas will provide long term sustainability and autonomy for the region.

VI. Proposed Budget

Item	Proposed budget (in US\$)
Personnel	\$93,200
Research supplies and services	\$66,000
Equipment	\$13,600
Training /knowledge-sharing	\$33,900
Travel	\$66,000
Communication	\$6,000
General Administrative Expenses	\$18,470
TOTAL Project Cost	\$291,170
Co-Financing and Funding	\$88,000
GRANT Funding Request	\$203,170
Details of co-financing and funding sources	CyD: \$28,000 Bioversity: \$10,000 INIAP: \$15,000 RA:\$35,000